

# White-Rodgers Wholesale Catalog



**COPELAND**

sen | si

**WHITE-RODGERS™**

# Pro Contractor Branding

Your company info in sight, right when your customers need it.



Copeland knows that a name is important. That's why we offer custom contractor branding for your HVACR professionals. Available as a thermostat imprint or in-app branding for Sensi™ thermostats, **Contractor Branding** makes it possible to stay directly connected with homeowners.





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White-Rodgers Cross Reference: [wrcrossref.com](http://wrcrossref.com)

Pro Contractor Branding: [procontractorbranding.com](http://procontractorbranding.com)

Sensi Partner Program: [sensipartnerprogram.com](http://sensipartnerprogram.com)

Contractor Rewards: [copeland.com/contractorrewards](http://copeland.com/contractorrewards)

Wholesaler Resource Site: [copeland.com/wrresources](http://copeland.com/wrresources)

## White-Rodgers Mobile App

Answers at your fingertips, with your smartphone or tablet.

- ✓ Latest cross reference
- ✓ Installation instructions
- ✓ Spec sheets
- ✓ Product selection



Visit the web version of WRMobile at: [wrcrossref.com](http://wrcrossref.com)

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# Meet Sensi Smart Thermostats



## A BRAND YOU CAN TRUST

Sensi smart thermostats from Copeland are designed with both the homeowner and contractor in mind. Backed by 100+ years of HVAC expertise, we're committed to creating reliable HVAC solutions that are easy to install and provide superior customer satisfaction.

## DESIGNED FOR CONTRACTORS

Connect every Sensi you install directly to your company. Generate loyal customers when they need service with your contact information on:

- Usage reports
- Maintenance reminders
- Smart alerts
- In-app contractor branding



### EASY TO INSTALL & CONNECT

Featuring in-app instructions, built-in level, standard thermostat footprint and easy wi-fi setup.

### PRIVACY PROTECTION

Sensi smart thermostats are engineered to protect privacy—giving consumers full control of their home's comfort with the peace of mind their smart thermostat's data is secure.

### SMART ALERTS

Notifies customers of extreme temperature and humidity levels.

### HUMIDITY CONTROL

Help homeowners stay comfortable with humidification/dehumidification control.

### REMOTE ACCESS

The Sensi mobile app for iOS and Android gives homeowners total on-the-go access to adjust the thermostat from anywhere, anytime.

### SAVE ABOUT 23% ON HVAC ENERGY<sup>1</sup>

By adjusting the temperature using flexible scheduling, remote access, and geofencing, Sensi customers save about 23% on HVAC energy usage.

### USAGE REPORTS

Monitor current day and historical heating, cooling and fan runtimes right in the app.

### CIRCULATING FAN

Helps maximize comfort and balance temperature throughout your home by increasing air circulation.

### KEYPAD LOCKOUT & TEMPERATURE LIMITS

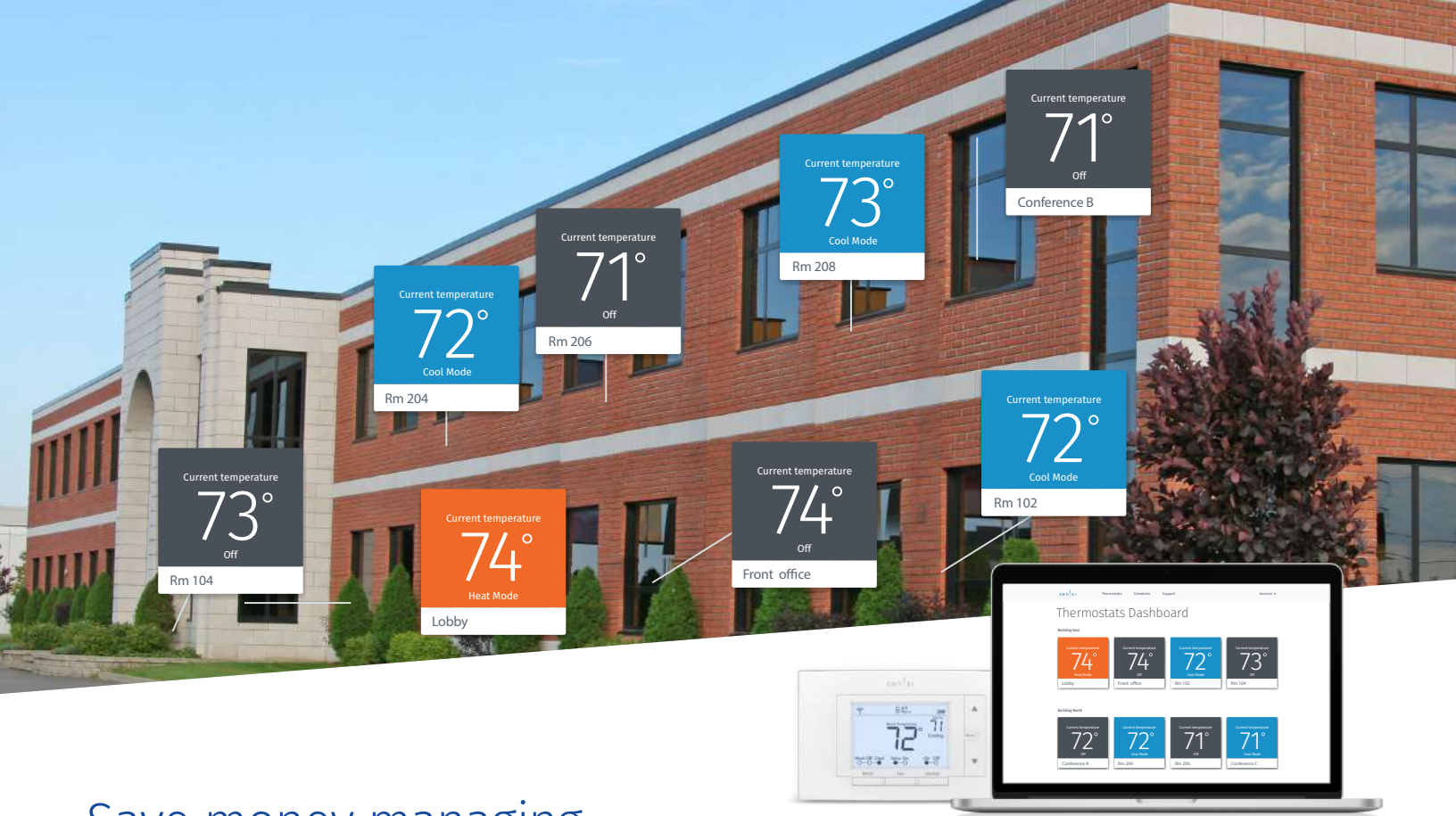
Maintain total control by setting temperature limits and disabling changes by others at the thermostat

### SMART HOME COMPATIBLE

Compatible with smart home platforms Amazon Alexa, the Google Assistant, Apple HomeKit and SmartThings.

The Sensi app stores your contact information so when your customer needs service, you're just a tap away. Register at

[sensiregistration.com](https://sensiregistration.com)



## Save money managing thermostats from one simple portal.

Now you can manage your facility's energy usage through one central dashboard. With Sensi Manager, control the comfort of every room at your fingertips.



### Group scheduling with batch operations

Easily consolidate and customize settings across multiple thermostats by grouping and sorting.



### Temperature limits

Provide a range of temperatures to end users to prevent misuse of the HVAC system.



### Quick schedule creation

Create and adjust schedules for single or groups of thermostats from anywhere.



### Custom keypad lockout

Maintain total control of each thermostat by selecting which buttons are locked or unlocked.

## THE POWER OF SIMPLICITY, RIGHT AWAY.

Getting started is easy. Just buy and install the Sensi thermostats you need and select the Sensi Manager payment plan that fits you and your business.

### Monthly

**\$1.50**  
per thermostat

### Yearly

**\$15**  
per thermostat

## CATALOG

### Receive a FREE 90 Day Trial of Sensi Manager

Visit [Manager.SensiComfort.com](https://Manager.SensiComfort.com) and enter promo code **Catalog** to start your free trial.





1F76U-22WFB



## SENSI™ LITE SMART THERMOSTAT

Everything your customers are looking for in a smart thermostat - energy savings, modern design and lasting quality. Smart has never been so easy.

### FEATURES

- Quick and simple installation. No common wire required with most systems.
- Familiar and intuitive controls.
- Your customers usage activity and personal data stays private.
- Aids in monitoring the effectiveness and efficiency of your customers' HVAC systems by providing valuable usage reports, equipment alerts, and maintenance reminders such as filter replacements.
- Top rated mobile app gives customers total on-the-go access to adjust their thermostat from anywhere, anytime.
- ENERGY STAR certified. Check for eligible utility rebates at [sensi.Copeland.com/rebates](http://sensi.Copeland.com/rebates)
- Saves about 23% of HVAC energy by adjusting the temperature using flexible scheduling, remote access and geofencing.
- Geofencing allows temperatures to change automatically based on the location of the homeowner's smartphone.
- Sensi easily integrates with popular smart home platforms including Amazon Alexa, Google Assistant and Samsung SmartThings.

### SPECIFICATIONS

|                                                           |                                                                  |
|-----------------------------------------------------------|------------------------------------------------------------------|
| Electrical Rating Hardwire.....                           | 20 to 30 VAC, 50/60 Hz                                           |
| Electrical Rating Battery Power.....                      | N/A                                                              |
| Terminal Load .....                                       | 1.5 Amps per terminal, 2.5 Amps maximum (all terminals combined) |
| Set-point Range .....                                     | 45 to 99°F (7 to 37°C)                                           |
| Heat Differential (Conventional / Gas / Oil / Elec) ..... | Fast 0.5°F, Med. 0.75°, Slow 1.9°F                               |
| Cool Differential (Central Air) .....                     | Fast 0.9°F, Med. 1.2°, Slow 1.7°F                                |
| Heat Pump Differential (Heat and Cool) .....              | Fast 0.9°F, Med. 1.2°, Slow 1.7°F                                |
| Aux. Heat Differential .....                              | Fast 0.5°F, Med. 0.75°, Slow 1.9°F                               |
| Operating Humidity.....                                   | 0%-90% RH non-condensing max.                                    |
| Dimensions.....                                           | 5.6 in. L X 3.25 in. H X .77 in. D                               |
| Storage Temperature Range.....                            | -20 to 150°F (-29 to 65°C)                                       |

### PARTS AND ACCESSORIES

| DESCRIPTION                               | MODEL NUMBER | ITEM NUMBER |
|-------------------------------------------|--------------|-------------|
| Wallplate (Black) 7" W X 4.6" H X 0.24" D | SA6B         | SA6B        |
| Wallplate (White) 7" W X 4.6" H X 0.24" D | SA6W         | SA6W        |
| Thermostat Guard - Clear Plastic          | F29-0198     | F29-0198    |

## UNIVERSAL – 2 HEAT/1 COOL OR 1 HEAT/2 COOL SENSI LITE WI-FI THERMOSTAT

| PROGRAMS        |                         | STAGES BY SYSTEM         |                         |                       | SYSTEM TYPE                                                     | MODEL NUMBER | ITEM NUMBER | APPLICATIONS         |                   |                      |            |                  | POWER SOURCE                                             | SELECTABLE PERFORMANCE FEATURES              |                                                        |                 |                                                    |                        |                                    |                          | AVAILABLE CONNECTIONS      |                                                   |                                                                                 |
|-----------------|-------------------------|--------------------------|-------------------------|-----------------------|-----------------------------------------------------------------|--------------|-------------|----------------------|-------------------|----------------------|------------|------------------|----------------------------------------------------------|----------------------------------------------|--------------------------------------------------------|-----------------|----------------------------------------------------|------------------------|------------------------------------|--------------------------|----------------------------|---------------------------------------------------|---------------------------------------------------------------------------------|
| Program Options | Periods Per Day Options | Single Stage Heat / Cool | Multi-Stage Heat / Cool | Heat Pump Heat / Cool | Universal / Single Stage / Multi-Stage / Heat Pump <sup>1</sup> |              |             | Gas / Oil / Electric | 3 Wire Zone Valve | Millivolt Compatible | Economizer | Humidity Control | Dual Fuel Heat Pump Control Logic (L) Outdoor Sensor (O) | Remote Sensor Options Indoor (I) Outdoor (O) | Battery (B) Hardwire / Common (H) / Power Sharing (PS) | Auto Chargeover | Programmable Fan (PF) Comfort Circulating Fan (CC) | Filter Change Reminder | Energy Mgt. Recovery / Early Start | Total Keypad Lockout (T) | Partial Keypad Lockout (P) | Set-Point Temperature Limits Adjustable Max / Min | Display Size, Backlight with Key Press (K) Continuous Backlight with Common (C) |
| 7, NP           | 8 Max                   | 1/1                      | 2/1 or 1/2              | 2/1                   | Universal Sensi Lite                                            | 1F76U-22WFB  | 1F76U-22WFB | ✓                    | ✓                 | —                    | —          | —                | L                                                        | —                                            | H, PS                                                  | ✓               | CC                                                 | ✓                      | ✓                                  | T                        | ✓                          | 2.3" LCD                                          | R, C, W/E, G, Y, O/B/*                                                          |

<sup>1</sup> Universal thermostats provide the flexibility to control Single Stage, Multi-Stage, or Heat Pump systems.



1F96U-42WF



1F96U-42WFB



### SENSI ROOM SENSORS

Sensi room sensors are designed to remotely monitor temperature and humidity in different rooms of your home. Sensors are sold separately.

## SENSI™ TOUCH 2 SMART THERMOSTAT

Meet the next evolution of smart thermostats by Copeland. With a new modern design, glass LCD touchscreen, enhanced user experience and compatibility with room sensors, this thermostat proves why Sensi smart thermostats are top rated by consumers.

### FEATURES

- **WORKS WITH ROOM SENSORS:** Compatible with Sensi Room Sensors to balance temperatures throughout your customer's home (sold separately).
- **EASY INSTALLATION:** Step-by-step instructions and a traditional footprint makes install easy, no painting or patching needed.
- **CONTRACTOR BRANDING:** Add your information on the thermostat sleep screen and in your customer's app, to make sure you stay top of mind.
- **ACCESSORY TERMINALS:** Dedicated accessory terminals designed for humidifiers.
- **SMART MAINTENANCE:** Sensi can help monitor the performance and efficiency of your customer's HVAC system by delivering valuable usage reports, alerts about their equipment, and maintenance reminders like filter replacement.
- **SMART HOME COMPATIBLE:** Sensi easily integrates with popular smart home platforms including Amazon Alexa, Google Assistant and Samsung SmartThings.

### SPECIFICATIONS

|                                                           |                                                                  |
|-----------------------------------------------------------|------------------------------------------------------------------|
| Electrical Rating Hardwire.....                           | 30 Vac, NEC Class II, 50/60 Hz                                   |
| Electrical Rating Battery Power.....                      | N/A                                                              |
| Terminal Load .....                                       | 1.5 Amps per terminal, 2.5 Amps maximum (all terminals combined) |
| Set-point Range .....                                     | 45 to 99°F (7 to 37°C)                                           |
| Heat Differential (Conventional / Gas / Oil / Elec) ..... | Fast 0.5°F, Med. 0.75°, Slow 1.9°F                               |
| Cool Differential (Central Air) .....                     | Fast 0.9°F, Med. 1.2°, Slow 1.7°F                                |
| Heat Pump Differential (Heat and Cool) .....              | Fast 0.9°F, Med. 1.2°, Slow 1.7°F                                |
| Aux. Heat Differential .....                              | Fast 0.5°F, Med. 0.75°, Slow 1.9°F                               |
| Operating Humidity .....                                  | 0%-90% RH non-condensing max.                                    |
| Dimensions.....                                           | 5.6 in. L X 3.25 in. H X .77 in. D                               |
| Storage Temperature Range .....                           | -40 to 150°F (-40 to 65°C)                                       |
| Requires Common Wire .....                                | Yes                                                              |

### PARTS AND ACCESSORIES

| DESCRIPTION                      | MODEL NUMBER | ITEM NUMBER |
|----------------------------------|--------------|-------------|
| Room Sensor - 1 pack             | RS01-SG      | RS01-SG     |
| Room Sensor - 3 pack             | RS01-SGB3    | RS01-SGB3   |
| Thermostat Guard - Clear Plastic | F29-0198     | F29-0198    |
| Wallplate (White) 6.75"W X 4.5"H | SA6W         | SA6W        |
| Wallplate (Black) 6.75"W X 4.5"H | SA6B         | SA6B        |
| Thermostat Common Wire Kit       | SA11         | SA11        |

## UNIVERSAL – 4 HEAT / 2 COOL SENSI TOUCH 2 SMART THERMOSTAT

| PROGRAMS        |                         | STAGES BY SYSTEM         |                         |                       | SYSTEM TYPE             | MODEL NUMBER | ITEM NUMBER | APPLICATIONS         |                   |                      |            |                  |                                                          | POWER SOURCE | SELECTABLE PERFORMANCE FEATURES              |                                                        |                 |                                                    |                        |                                    | AVAILABLE CONNECTIONS |                                                     |                                                   |
|-----------------|-------------------------|--------------------------|-------------------------|-----------------------|-------------------------|--------------|-------------|----------------------|-------------------|----------------------|------------|------------------|----------------------------------------------------------|--------------|----------------------------------------------|--------------------------------------------------------|-----------------|----------------------------------------------------|------------------------|------------------------------------|-----------------------|-----------------------------------------------------|---------------------------------------------------|
| Program Options | Periods Per Day Options | Single Stage Heat / Cool | Multi-Stage Heat / Cool | Heat Pump Heat / Cool |                         |              |             | Gas / Oil / Electric | 3 Wire Zone Valve | Millivolt Compatible | Economizer | Humidity Control | Dual Fuel Heat Pump Control Logic (L) Outdoor Sensor (O) |              | Remote Sensor Options Indoor (I) Outdoor (O) | Battery (B) Hardwire / Common (H) / Power Sharing (PS) | Auto Changeover | Programmable Fan (PF) Comfort Circulating Fan (CC) | Filter Change Reminder | Energy Mgt. Recovery / Early Start |                       | Total Keypad Lockout (T) Partial Keypad Lockout (P) | Set-Point Temperature Limits Adjustable Max / Min |
| 7, NP, Geo      | 8 Max                   | 1/1                      | 2/2                     | 4/2                   | Universal Sensi Touch 2 | 1F96U-42WF   | 1F96U-42WF  | ✓                    | ✓                 | —                    | —          | H, D             | L                                                        | I            | H                                            | ✓                                                      | CC              | ✓                                                  | ✓                      | T                                  | ✓                     | 4.3" Color                                          | RC, RH, C, W/E, W2,Y, Y2, O/B, G, ACC+, ACC-      |
| 7, NP, Geo      | 8 Max                   | 1/1                      | 2/2                     | 4/2                   | Universal Sensi Touch 2 | 1F96U-42WFB  | 1F96U-42WFB | ✓                    | ✓                 | —                    | —          | H, D             | L                                                        | I            | H                                            | ✓                                                      | CC              | ✓                                                  | ✓                      | T                                  | ✓                     | 4.3" Color                                          | RC, RH, C, W/E, W2,Y, Y2, O/B, G, ACC+, ACC-      |

1 Universal thermostats provide the flexibility to control Single Stage, Multi-Stage, or Heat Pump systems.



RS01-SG (1-Pack)  
RS01-SG3 (3-Pack)

SENSI™ ROOM SENSORS

Sensi room sensors are designed to remotely monitor and control temperatures in different rooms of your home. When paired with the Sensi Touch 2 smart thermostat, room sensors can prioritize temperatures where you need it most while also helping to reduce hot and cold spots.

Features

- Control the temperature where you need it most.
- Choose to average your temperature settings across all sensors and thermostat to help reduce hot and cold spots.
- View room temperatures and humidity levels across your home.
- No wires needed. Use the stand or mount directly on a wall.
- Sensi room sensors are only compatible with the Sensi Touch 2 smart thermostat.
- Connect and manage up to 15 Sensi room sensors with the Sensi Touch 2.

Specifications

|                                        |                                   |
|----------------------------------------|-----------------------------------|
| Product Dimensions Without Stand ..... | 2.4 in. L X 2.4 in. H X .75 in. D |
| Product Dimensions With Stand .....    | 2.4 in. L X 2.8 in. H X 1.2 in. D |
| Compatibility .....                    | Sensi Touch 2 Smart Thermostat    |
| Max Sensors Per Thermostat .....       | 15                                |
| Power Source.....                      | 2 AAA Batteries                   |
| Battery Life .....                     | Up to 2 Years                     |
| Warranty .....                         | 3 Years                           |

Accessory - Sensi Room Sensor

| Compatibility                  | Remote Sensor Options, Indoor (I), Outdoor (O) | Dimensions                                                                | Weight                                          | Color | Material | MODEL NUMBER | ITEM NUMBER | Mounting Type | Hardware Included | Range          | Battery (B) Hardwire / Common (H) Power Sharing (PS) | Batteries Included | Power Source | Battery Life  | Warranty |
|--------------------------------|------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------|-------|----------|--------------|-------------|---------------|-------------------|----------------|------------------------------------------------------|--------------------|--------------|---------------|----------|
| Sensi Touch 2 smart thermostat | I                                              | 2.4"W x 2.4"H x .75"D (sensor only)<br>2.4"W x 2.8"H x .75"D (with stand) | 1.97 oz. (sensor only)<br>2.26 oz. (with stand) | White | Plastic  | RS01-SG      | RS01-SG     | Wall / Stand  | ✓                 | Approx 100 ft. | B                                                    | ✓                  | AAA Batt.    | Up to 2 Years | 3 Years  |



1F95U-42WF



1F95U-42WFB



1F95U-42WFS



## SENSI™ TOUCH SMART THERMOSTAT

Connect to comfort with Sensi Smart Thermostats - Anytime, Anywhere.

### FEATURES

- HD color touchscreen display features easy to read temperatures and intuitive menus.
- Easy to install with easy-click terminals and built in level & easy to connect to Wi-Fi with step-by-step guide in the app.
- Contractor-On-Call feature stores your contact information so when your customer needs service, you're just a tap away. Sign up at [sensiregistration.com](http://sensiregistration.com)
- Provides multiple thermostat control for easy management for schools and light commercial applications.
- Smart alerts notify homeowners of extreme temperature and humidity levels.
- Controls humidification and dehumidification
- Circulating fan: Helps maximize comfort and balance temperature throughout your home by increasing air circulation.
- ENERGY STAR Certified and Title 24 compliant. Check for eligible utility rebates at [Sensi.Copeland.com/rebates](http://Sensi.Copeland.com/rebates)
- Saves about 23% of HVAC energy by adjusting the temperature using flexible scheduling, remote access and geofencing.
- Geofencing allows temperatures to change automatically based on the location of the homeowner's smartphone.
- Integrates directly with smart home platforms including Amazon Alexa, the Google Assistant, Apple HomeKit and Samsung SmartThings.

### PARTS AND ACCESSORIES

| DESCRIPTION                          | MODEL NUMBER | ITEM NUMBER |
|--------------------------------------|--------------|-------------|
| Thermostat Guard Clear Plastic       | F29-0198     | F29-0198    |
| Wallplate (White)<br>6.75"W X 4.5"H  | F61-2689     | F61-2689    |
| Wallplate (Black)<br>6.75"W X 4.5"H  | SA5B         | SA5B        |
| Wallplate (Silver)<br>6.75"W X 4.5"H | SA5S         | SA5S        |
| Thermostat Common Wire Kit           | SA11         | SA11        |

### SPECIFICATIONS

|                                                          |                                                                  |
|----------------------------------------------------------|------------------------------------------------------------------|
| Electrical Rating Hardwire .....                         | 30 VAC, NEC Class II, 50/60 Hz                                   |
| Electrical Rating Battery Power .....                    | N/A                                                              |
| Terminal Load.....                                       | 1.5 Amps per terminal, 2.5 Amps maximum (all terminals combined) |
| Set-point Range.....                                     | 45 to 99°F (7 to 37°C)                                           |
| Heat Differential (Conventional / Gas / Oil / Elec)..... | Fast 0.5°F, Med. 0.75°, Slow 1.9°F                               |
| Cool Differential (Central Air).....                     | Fast 0.9°F, Med. 1.2°, Slow 1.7°F                                |
| Heat Pump Differential (Heat and Cool) .....             | Fast 0.9°F, Med. 1.2°, Slow 1.7°F                                |
| Aux. Heat Differential .....                             | Fast 0.5°F, Med. 0.75°, Slow 1.9°F                               |
| Operating Humidity .....                                 | 0%-90% RH non-condensing max.                                    |
| Dimensions .....                                         | 5.63"W X 3.38"H X 1.00"D                                         |
| Storage Temperature Range .....                          | -40 to 150°F (-40 to 65°C)                                       |

### UNIVERSAL - 4 HEAT / 2 COOL SENSI TOUCH WI-FI THERMOSTAT

| PROGRAMS        |                         | STAGES BY SYSTEM         |                         |                       | SYSTEM TYPE                                                     | MODEL NUMBER                                                         | ITEM NUMBER                                                          | APPLICATIONS         |                   |                      |            |                  |                                                          | POWER SOURCE                                 | SELECTABLE PERFORMANCE FEATURES                      |                 |                                                    |                        |                                    |                                                     | AVAILABLE CONNECTIONS                             |                                                                                 |
|-----------------|-------------------------|--------------------------|-------------------------|-----------------------|-----------------------------------------------------------------|----------------------------------------------------------------------|----------------------------------------------------------------------|----------------------|-------------------|----------------------|------------|------------------|----------------------------------------------------------|----------------------------------------------|------------------------------------------------------|-----------------|----------------------------------------------------|------------------------|------------------------------------|-----------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------------------|
| Program Options | Periods Per Day Options | Single Stage Heat / Cool | Multi-Stage Heat / Cool | Heat Pump Heat / Cool | Universal / Single Stage / Multi-Stage / Heat Pump <sup>1</sup> |                                                                      |                                                                      | Gas / Oil / Electric | 3 Wire Zone Valve | Millivolt Compatible | Economizer | Humidity Control | Dual Fuel Heat Pump Control Logic (L) Outdoor Sensor (O) | Remote Sensor Options Indoor (I) Outdoor (O) | Battery (B) Hardwire / Common (H) Power Sharing (PS) | Auto Changeover | Programmable Fan (PF) Comfort Circulating Fan (CC) | Filter Change Reminder | Energy Mgt. Recovery / Early Start | Total Keypad Lockout (T) Partial Keypad Lockout (P) | Set-Point Temperature Limits Adjustable Max / Min | Display Size, Backlight with Key Press (K) Continuous Backlight with Common (C) |
| 7, NP, Geo      | 8 Max                   | 1/1                      | 2/2                     | 4/2                   | Univrsl. Sensi Touch                                            | 1F95U-42WF (White)<br>1F95U-42WFB (Black)<br>1F95U-42WFS (Silver)    | 1F95U-42WF (White)<br>1F95U-42WFB (Black)<br>1F95U-42WFS (Silver)    | √                    | √                 | —                    | H, D       | L                | —                                                        | H                                            | √                                                    | CC              | √                                                  | √                      | T                                  | √                                                   | 4.3" Color                                        | RC, RH, C, W/E, W2*/, Y, Y2*/, O/B/6, G, L                                      |
| 7, NP, Geo      | 8 Max                   | 1/1                      | 2/2                     | 4/2                   | Univrsl. Sensi Touch                                            | 1F95U-42WFC (White)<br>1F95U-42WFBC (Black)<br>1F95U-42WFSC (Silver) | 1F95U-42WFC (White)<br>1F95U-42WFBC (Black)<br>1F95U-42WFSC (Silver) | √                    | √                 | —                    | H, D       | L                | —                                                        | H                                            | √                                                    | CC              | √                                                  | √                      | T                                  | √                                                   | 4.3" Color                                        | RC, RH, C, W/E, W2*/, Y, Y2*/, O/B/6, G, L                                      |

<sup>1</sup> Universal thermostats provide the flexibility to control Single Stage, Multi-Stage, or Heat Pump systems. \* Indicates Canadian Model Number: Call 1-800-305-6953 to order.



1F87U-42WF



## SENSI™ SMART THERMOSTAT

Connect to comfort with Sensi Smart Thermostats - Anytime, Anywhere.

### FEATURES

- Easy to install with built in level. No common wire (c-wire) required for most installations.
- Easy to connect to Wi-Fi with step-by-step guide in the Sensi app.
- Contractor-On-Call feature stores your contact information so when your customer needs service, you're just a tap away. Sign up at [sensiregistration.com](https://sensiregistration.com)
- Provides multiple thermostat control for easy management for schools and light commercial applications.
- Smart alerts notify homeowners of extreme temperature and humidity levels.
- Controls humidification and dehumidification
- Circulating fan: Helps maximize comfort and balance temperature throughout your home by increasing air circulation.
- ENERGY STAR Certified and Title 24 compliant. Check for eligible utility rebates at [Sensi.Copeland.com/rebates](https://Sensi.Copeland.com/rebates)
- Saves about 23% of HVAC energy by adjusting the temperature using flexible scheduling, remote access and geofencing.
- Geofencing allows temperatures to change automatically based on the location of the homeowner's smartphone.
- Integrates directly with smart home platforms including Amazon Alexa, the Google Assistant, Apple HomeKit and Samsung SmartThings.

### PARTS AND ACCESSORIES

| DESCRIPTION                    | MODEL NUMBER | ITEM NUMBER |
|--------------------------------|--------------|-------------|
| Thermostat Guard Clear Plastic | F29-0198     | F29-0198    |
| Wallplate 6.75"W X 4.5"H       | F61-2689     | F61-2689    |
| Thermostat Common Wire Kit     | SA11         | SA11        |

### SPECIFICATIONS

Electrical Rating Hardwire ..... 20-30 VAC, NEC Class II, 50/60Hz  
 Electrical Rating Battery Power ..... 0 to 30 VAC, 50/60 Hz or DC  
 Terminal Load ..... 1.5 Amps per terminal, 2.5 Amps maximum (all terminals combined)  
 Set-point Range ..... 45 to 99°F (7 to 37°C)  
 Heat Differential (Conventional / Gas / Oil / Elec) ..... Fast 0.5°F, Med. 0.75°, Slow 1.9°F  
 Cool Differential (Central Air) ..... Fast 0.9°F, Med. 1.2°, Slow 1.7°F  
 Heat Pump Differential (Heat and Cool) ..... Fast 0.9°F, Med. 1.2°, Slow 1.7°F  
 Aux. Heat Differential ..... Fast 0.5°F, Med. 0.75°, Slow 1.9°F  
 Operating Humidity ..... 0%-90% RH non-condensing max.  
 Dimensions ..... 5.58"W X 3.75"H X 1.00"D  
 Storage Temperature Range ..... -40 to 150°F (-29 to 65°C)

### UNIVERSAL – 4 HEAT / 2 COOL SENSI WI-FI THERMOSTAT

| PROGRAMS          |                         | STAGES BY SYSTEM         |                         |                       | SYSTEM TYPE                                                    | MODEL NUMBER | ITEM NUMBER | APPLICATIONS         |                   |                      |            |                  |                                                           | POWER SOURCE                                  | SELECTABLE PERFORMANCE FEATURES                            |                 |                                                       |                        |                                    |                                                        | AVAILABLE CONNECTIONS                              |                                                                                       |                                            |
|-------------------|-------------------------|--------------------------|-------------------------|-----------------------|----------------------------------------------------------------|--------------|-------------|----------------------|-------------------|----------------------|------------|------------------|-----------------------------------------------------------|-----------------------------------------------|------------------------------------------------------------|-----------------|-------------------------------------------------------|------------------------|------------------------------------|--------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------|
| Program Options   | Periods Per Day Options | Single Stage Heat / Cool | Multi-Stage Heat / Cool | Heat Pump Heat / Cool | Universal / Single Stage / Multi-Stage, Heat Pump <sup>1</sup> |              |             | Gas / Oil / Electric | 3 Wire Zone Valve | Millivolt Compatible | Economizer | Humidity Control | Dual Fuel Heat Pump Control Logic (L), Outdoor Sensor (O) | Remote Sensor Options Indoor (I), Outdoor (O) | Battery (B)<br>Hardwire / Common (H)<br>Power Sharing (PS) | Auto Changeover | Programmable Fan (PF)<br>Comfort Circulating Fan (CC) | Filter Change Reminder | Energy Mgt. Recovery / Early Start | Total Keypad Lockout (T)<br>Partial Keypad Lockout (P) | Set-Point Temperature Limits<br>Adjustable Max/Min | Display Size,<br>Backlight with Key Press (K)<br>Continuous Backlight with Common (C) | TERMINALS                                  |
| 7, NP, Geofencing | 8 Max                   | 1/1                      | 2/2                     | 4/2                   | Universal Sensi                                                | 1F87U-42WF   | 1F87U-42WF  | √                    | √*                | —                    | —          | H, D             | L                                                         | —                                             | B, H, PS*                                                  | √               | CC                                                    | √                      | √                                  | T                                                      | √                                                  | 5.0" K,C                                                                              | RC, RH, C, W/E, W2/*, Y, Y2/*, O/B/2, G, L |
| 7, NP, Geofencing | 8 Max                   | 1/1                      | 2/2                     | 4/2                   | Universal Sensi                                                | 1F87U-42WFC  | 1F87U-42WFC | √                    | √*                | —                    | —          | H, D             | L                                                         | —                                             | B, H, PS*                                                  | √               | CC                                                    | √                      | √                                  | T                                                      | √                                                  | 5.0" K,C                                                                              | RC, RH, C, W/E, W2/*,Y, Y2/*, O/B/2, G, L  |

<sup>1</sup> Universal thermostats provide the flexibility to control Single Stage, Multi-Stage, or Heat Pump systems.

\* Heat only, Cool only and 3-wire zone systems require common

✦ Indicates Canadian Model Number: Call 1-800-305-6953 to order.





1F95-1291

## BLUE™ SERIES 12" TOUCHSCREEN THERMOSTATS

Blue 12" Touchscreen - universal, commercial, humidity control and single stage thermostats provide ultimate comfort, features and performance.

### FEATURES

- Universal models quickly configure for single stage, multi-stage or heat pump
- Heat pump dual fuel option (with or without outdoor sensor) eliminates the need for a fossil fuel kit
- Humidification/dehumidification control
- Commercial model offers occupied damper or economizer control
- Keypad lockout and set-point temperature limits
- Automatic changeover, Program fan and Indoor / Outdoor remote sensor options

### SPECIFICATIONS

Electrical Rating Hardwire ..... 20 to 30 VAC, NEC Class II 50/60 Hz  
 Electrical Rating Battery Power ..... mV to 30 VAC, NEC Class II 50/60 Hz or DC  
 Terminal Load ..... 1.5 Amps per terminal, 2.5 Amps maximum (all terminals combined)  
 Set-point Range ..... 45 to 99°F (7 to 37°C)  
 Heat Differential (Conventional / Gas / Oil / Elec) ..... Fast 0.5°F, Slow 1.9°F  
 Cool Differential (Central Air) ..... Fast 0.9°F, Slow 1.7°F  
 Heat Pump Differential (Heat and Cool) ..... Fast 0.9°F, Slow 1.7°F  
 Aux. Heat Differential ..... Fast 0.5°F, Slow 1.9°F  
 Operating Humidity ..... 0%-90% RH non-condensing max.  
 Dimensions ..... 4.56"H X 5.81"W X 1.81"D  
 Storage Temperature Range ..... -40 to 150°F (-29 to 65°C)

### PARTS AND ACCESSORIES

| DESCRIPTION                                | MODEL NUMBER | ITEM NUMBER    |
|--------------------------------------------|--------------|----------------|
| Locking Thermostat Guard Clear Plastic     | F29-0198     | F29-0198       |
| Locking Thermostat Guard Metal, Solid Base | F29-0220     | F29-0220       |
| Wallplate 8.13"W X 5.38"H                  | F61-2600     | F0061 260000   |
| Wallplate 6.50"W X 5.00"H                  | F61-2634     | F0061 263400   |
| Indoor Remote Sensor                       | F145-1328    | F0145 132800S1 |
| Outdoor Remote Sensor                      | F145-1378    | F0145 137800S1 |

See Thermostat Guards for additional options.

### UNIVERSAL STAGING/HEAT PUMP/SINGLE STAGE THERMOSTATS – BLUE 12" THERMOSTATS

| PROGRAMS        |                         | STAGES BY SYSTEM         |                         |                       | SYSTEM TYPE                                                   | MODEL NUMBER | ITEM NUMBER | APPLICATIONS         |                   |                     |            |                  |                                                           | POWER SOURCE                                 | SELECTABLE PERFORMANCE FEATURES                            |                 |                                                       |                        |                                    |                                                        |                                                   | AVAILABLE CONNECTIONS                                                              |                                                           |
|-----------------|-------------------------|--------------------------|-------------------------|-----------------------|---------------------------------------------------------------|--------------|-------------|----------------------|-------------------|---------------------|------------|------------------|-----------------------------------------------------------|----------------------------------------------|------------------------------------------------------------|-----------------|-------------------------------------------------------|------------------------|------------------------------------|--------------------------------------------------------|---------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------|
| Program Options | Periods Per Day Options | Single Stage Heat / Cool | Multi-Stage Heat / Cool | Heat Pump Heat / Cool | Universal / Single Stage / Multi-Stage Heat Pump <sup>1</sup> |              |             | Gas / Oil / Electric | 3 Wire Zone Valve | Milivolt Compatible | Economizer | Humidity Control | Dual Fuel Heat Pump Control Logic (L), Outdoor Sensor (O) | Remote Sensor Options Indoor (I) Outdoor (O) | Battery (B)<br>Hardwire / Common (H)<br>Power Sharing (PS) | Auto Changeover | Programmable Fan (PF)<br>Comfort Circulating Fan (CC) | Filter Change Reminder | Energy Mgt. Recovery / Early Start | Total Keypad Lockout (T)<br>Partial Keypad Lockout (P) | Set-Point Temperature Limits Adjustable Max / Min | Display Size, Backlight with Key Press (K)<br>Continuous Backlight with Common (C) | TERMINALS                                                 |
| 7, 5+1+1, NP    | 4, 2, Ø                 | 1/1                      | 2/2                     | 4/2                   | Universal Humidity Control                                    | 1F95-1291    | 1F95-1291   | √                    | √                 | √                   | —          | H, D             | L, O **                                                   | 1 (I or O)                                   | B, H, PS                                                   | √               | PF, CC                                                | √                      | √                                  | T, P                                                   | √                                                 | 12.0" K,C                                                                          | RC, RH, C, W/E, W2, Y, Y2, O/B, G, L, 6, +, S, -, DHM, HM |
| 7, 5+1+1, NP    | 2, Ø                    | 1/1                      | 2/2                     | 4/2                   | Universal Commercial                                          | 1F95-1280    | 1F95-1280   | √                    | √                 | √                   | √          | —                | L, O **                                                   | 1 (I or O)                                   | B, H, PS                                                   | √               | PF, CC *                                              | √                      | √                                  | T, P                                                   | √                                                 | 12.0" K,C                                                                          | RC, RH, C, W/E, W2, Y, Y2, O/B, G, L, 6, +, S, -, A1      |
| 7, 5+1+1, NP    | 4, 2, Ø                 | 1/1                      | 2/2                     | 3/2◇                  | Universal                                                     | 1F95-1277    | 01F95 1277  | √                    | √                 | √                   | —          | —                | L, O **                                                   | 1 (I or O)                                   | B, H, PS                                                   | √               | PF, CC                                                | √                      | √                                  | T, P                                                   | √                                                 | 12.0" K,C                                                                          | RC, RH, C, W/E, W2, Y, Y2, O/B, G, L, 6, +, S, -          |
| 7, 5+1+1, NP    | 4, 2, Ø                 | 1/1                      | —                       | 2/1                   | Single Stage or Heat Pump                                     | 1F97-1277    | 01F97 1277  | √                    | √                 | √                   | —          | —                | L, O **                                                   | 1 (I or O)                                   | B, H, PS                                                   | √               | PF, CC                                                | √                      | √                                  | T, P                                                   | √                                                 | 12.0" K,C                                                                          | RC, RH, C, W/E, Y, O/B, G, L, 6, +, S, -                  |

1 Universal thermostats provide the flexibility to control Single Stage, Multi-Stage, or Heat Pump systems.

◇ 4/2 on Dual Fuel systems when using an Outdoor Remote Sensor.

\* Occupancy fan option with selectable pre-purge (1-3 hours).

\*\* Outdoor sensor provides outdoor temperature settings to lock out auxiliary heat and/or lock out the heat pump and switch to gas heat.



1F95EZ-0671

## BLUE™ SERIES 6" THERMOSTATS

Blue 6" universal, commercial and Easy Reader thermostats offer more premium features than higher priced competitive models.

### FEATURES

- Universal models quickly configure for single stage, multi-stage or heat pump
- Heat pump dual fuel option (with or without outdoor sensor) eliminates the need for a fossil fuel kit on selected models
- Easy Reader model is easy to read and easy to use
- Commercial offers occupied damper or economizer control and locking cover and subbase
- Keypad lockout and set-point temperature limits
- Automatic changeover, Program fan and Indoor / Outdoor remote sensor options available on selected models

### PARTS AND ACCESSORIES

| DESCRIPTION                               | MODEL NUMBER | ITEM NUMBER    |
|-------------------------------------------|--------------|----------------|
| Locking Thermostat Guard Clear Plastic    | F29-0198     | F29-0198       |
| Locking Thermostat Guard Metal Solid Base | F29-0220     | F29-0220       |
| Wallplate 8.13"W X 5.38"H                 | F61-2600     | F0061 260000   |
| Wallplate 6.50"W X 5.00"H                 | F61-2634     | F0061 263400   |
| Indoor Remote Sensor                      | F145-1328    | F0145 132800S1 |
| Outdoor Remote Sensor                     | F145-1378    | F0145 137800S1 |

See Thermostat Guards for additional options.

### SPECIFICATIONS

Electrical Rating Hardwire ..... 20 to 30 VAC, NEC Class II 50/60 Hz  
 Electrical Rating Battery Power ..... mV to 30 VAC, NEC Class II 50/60 Hz or DC  
 Terminal Load..... 1.5 Amps per terminal, 2.5 Amps maximum (all terminals combined)  
 Set-point Range..... 45 to 99°F (7 to 37°C)  
 Heat Differential (Conventional / Gas / Oil / Elec).....Fast 0.5°F, Med. 0.75°, Slow 1.9°F  
 Cool Differential (Central Air).....Fast 0.9°F, Med. 1.2°, Slow 1.7°F  
 Heat Pump Differential (Heat and Cool).....Fast 0.9°F, Med. 1.2°, Slow 1.7°F  
 Aux. Heat Differential .....Fast 0.5°F, Med. 0.75°, Slow 1.9°F  
 Operating Humidity .....0%-90% RH non-condensing max.  
 Dimensions ..... 4.19"H X 6.50"W X 1.63"D  
 Storage Temperature Range ..... -40 to 150°F (-29 to 65°C)

### UNIVERSAL STAGING/HEAT PUMP THERMOSTATS – BLUE 6" THERMOSTATS

| PROGRAMS        |         | STAGES BY SYSTEM        |                          |                         | SYSTEM TYPE           | MODEL NUMBER | ITEM NUMBER | APPLICATIONS         |                   |                      |            |                  |                                                          |                                              | POWER SOURCE | SELECTABLE PERFORMANCE FEATURES                      |                 |                                                    |                        |                                    |                                                     |                                                 | AVAILABLE CONNECTIONS                                                           |
|-----------------|---------|-------------------------|--------------------------|-------------------------|-----------------------|--------------|-------------|----------------------|-------------------|----------------------|------------|------------------|----------------------------------------------------------|----------------------------------------------|--------------|------------------------------------------------------|-----------------|----------------------------------------------------|------------------------|------------------------------------|-----------------------------------------------------|-------------------------------------------------|---------------------------------------------------------------------------------|
| Program Options |         | Periods Per Day Options | Single Stage Heat / Cool | Multi-Stage Heat / Cool | Heat Pump Heat / Cool |              |             | Gas / Oil / Electric | 3 Wire Zone Valve | Millivolt Compatible | Economizer | Humidity Control | Dual Fuel Heat Pump Control Logic (L) Outdoor Sensor (O) | Remote Sensor Options Indoor (I) Outdoor (O) |              | Battery (B) Hardwire / Common (H) Power Sharing (PS) | Auto Changeover | Programmable Fan (PF) Comfort Circulating Fan (CC) | Filter Change Reminder | Energy Mgt. Recovery / Early Start | Total Keypad Lockout (T) Partial Keypad Lockout (P) | Set-Point Temperature Limits Adjustable Max/Min | Display Size, Backlight with Key Press (K) Continuous Backlight with Common (C) |
| 7, 5+1+1, NP    | 4, 2, Ø | 1/1                     | 2/2                      | 4/2                     | Universal Commercial  | 1F95-0680    | 1F95-0680   | ✓                    | ✓                 | ✓                    | —          | —                | O **                                                     | 1 (I or O)                                   | B, H, PS     | ✓                                                    | PF *            | ✓                                                  | ✓                      | T, P                               | ✓                                                   | 6.0" K,C                                        | RC, RH, C, W/E, W2, Y, Y2, O/B, G, L, 6, +, S, -, A1                            |
| 7, 5+1+1, NP    | 4, 2, Ø | 1/1                     | 2/2                      | 4/2                     | Universal             | 1F95-0671    | 1F95-0671   | ✓                    | ✓                 | ✓                    | —          | —                | O **                                                     | 1 (I or O)                                   | B, H, PS     | ✓                                                    | PF              | ✓                                                  | ✓                      | T, P                               | ✓                                                   | 6.0" K,C                                        | RC, RH, C, G, Y, Y2, W/E, W2, O/B, L, 6, +, S, -                                |
| 7, NP           | 4, 2, Ø | 1/1                     | 2/2                      | 4/2                     | Universal Easy Reader | 1F95EZ-0671  | 1F95EZ-0671 | ✓                    | ✓                 | ✓                    | —          | —                | L                                                        | —                                            | B, H, PS     | —                                                    | —               | ✓                                                  | ✓                      | —                                  | ✓                                                   | 6.0" K,C                                        | RC, RH, C, W/E, W2, Y, Y2, O/B, G, L, 6                                         |

1 Universal thermostats provide the flexibility to control Single Stage, Multi-Stage, or Heat Pump systems.

\* Occupancy fan option with selectable pre-purge (1-3 hours).

\*\* Outdoor sensor provides outdoor temperature settings to lock out auxiliary heat and/or lock out the heat pump and switch to gas heat.



1F82-0261

## BLUE™ SERIES 2" THERMOSTATS

Heat pump or single stage models, offer a step up from 70 Series.

### FEATURES

- Easy Set models feature simple Home-Sleep-Away preset buttons
- Programmable, 5/1/1 day, 24 hour, 0-day or non-programmable
- Lighted display for easier low light viewing
- Air filter change indicator option
- Cool Savings™ saves energy during peak A/C demand periods

### PARTS AND ACCESSORIES

| DESCRIPTION                                | MODEL NUMBER | ITEM NUMBER  |
|--------------------------------------------|--------------|--------------|
| Locking Thermostat Guard Clear Plastic     | F29-0198     | F29-0198     |
| Locking Thermostat Guard Metal, Solid Base | F29-0220     | F29-0220     |
| Wallplate 6.50"W X 5.00"H                  | F61-2634     | F0061 263400 |
| Wallplate (6 pack of F61-2634 above)       | F61-2648     | F61-2648     |

See Thermostat Guards for additional options.

### SPECIFICATIONS

Electrical Rating Hardwire ..... 20 to 30 VAC, NEC Class II 50/60 Hz  
 Electrical Rating Battery Power ..... mV to 30 VAC, NEC Class II 50/60 Hz or DC  
 Terminal Load ..... 1.5 Amps per terminal, 2.5 Amps maximum (all terminals combined)  
 Set-point Range ..... 45 to 99°F (7 to 37°C)  
 Heat Differential (Conventional / Gas / Oil / Elec) ..... Fast 0.5°F, Med. 0.75°, Slow 1.9°F  
 Cool Differential (Central Air) ..... Fast 0.9°F, Med. 1.2°, Slow 1.7°F  
 Heat Pump Differential (Heat and Cool) ..... Fast 0.9°F, Med. 1.2°, Slow 1.7°F  
 Aux. Heat Differential ..... Fast 0.5°F, Med. 0.75°, Slow 1.9°F  
 Operating Humidity ..... 0%-90% RH non-condensing max.  
 Dimensions ..... 3.75"H X 5.88"W X 1.00"D  
 Storage Temperature Range ..... -40 to 150°F (-29 to 65°C)

### HEAT PUMP THERMOSTATS – BLUE 2" THERMOSTATS

| PROGRAMS        |                                           | STAGES BY SYSTEM         |                         |                       | SYSTEM TYPE                                       | MODEL NUMBER | ITEM NUMBER | APPLICATIONS         |                   |                      |            |                  |                                                          |                                              | POWER SOURCE                                               | SELECTABLE PERFORMANCE FEATURES |                                                       |                        |                                    |                          |                            |                                                 | AVAILABLE CONNECTIONS                                                              |           |
|-----------------|-------------------------------------------|--------------------------|-------------------------|-----------------------|---------------------------------------------------|--------------|-------------|----------------------|-------------------|----------------------|------------|------------------|----------------------------------------------------------|----------------------------------------------|------------------------------------------------------------|---------------------------------|-------------------------------------------------------|------------------------|------------------------------------|--------------------------|----------------------------|-------------------------------------------------|------------------------------------------------------------------------------------|-----------|
| Program Options | Periods Per Day Options                   | Single Stage Heat / Cool | Multi-Stage Heat / Cool | Heat Pump Heat / Cool | Universal / Single Stage / Multi-Stage Heat Pump¹ |              |             | Gas / Oil / Electric | 3 Wire Zone Valve | Millivolt Compatible | Economizer | Humidity Control | Dual Fuel Heat Pump Control Logic (L) Outdoor Sensor (O) | Remote Sensor Options Indoor (I) Outdoor (O) | Battery (B)<br>Hardwire / Common (H)<br>Power Sharing (PS) | Auto Changeover                 | Programmable Fan (PF)<br>Comfort Circulating Fan (CC) | Filter Change Reminder | Energy Mgt. Recovery / Early Start | Total Keypad Lockout (T) | Partial Keypad Lockout (P) | Set-Point Temperature Limits Adjustable Max/Min | Display Size, Backlight with Key Press (K)<br>Continuous Backlight with Common (C) | TERMINALS |
|                 | 5+1+1                                     | 4                        | —                       | —                     | 2/1                                               | Heat Pump    | 1F82-0261   | 1F82-0261            | √                 | —                    | √          | √                | —                                                        | —                                            | B, H                                                       | —                               | —                                                     | √                      | √                                  | —                        | —                          | 2.0" K,C                                        | R, C, W2, Y, O/B, G, L                                                             |           |
|                 | Easy Set Non-Programmable Home-Sleep-Away | Ø                        | —                       | —                     | 2/1                                               | Heat Pump    | 1F89EZ-0251 | 1F89EZ-0251          | √                 | —                    | —          | —                | —                                                        | —                                            | B, H                                                       | —                               | —                                                     | √                      | —                                  | —                        | —                          | 2.0" K,C                                        | R, C, W2, Y, O/B, G, L                                                             |           |
|                 | NP                                        | Ø                        | —                       | —                     | 2/1                                               | Heat Pump    | 1F89-0211   | 1F89-0211            | √                 | —                    | √          | —                | —                                                        | —                                            | B, H                                                       | —                               | —                                                     | √                      | —                                  | —                        | —                          | 2.0" K,C                                        | R, C, W2, Y, O/B, G, L                                                             |           |

### SINGLE STAGE THERMOSTATS – BLUE 2" THERMOSTATS

|                                           |   |     |   |     |              |             |             |   |   |   |   |   |   |      |   |   |   |   |   |   |          |                    |
|-------------------------------------------|---|-----|---|-----|--------------|-------------|-------------|---|---|---|---|---|---|------|---|---|---|---|---|---|----------|--------------------|
| 5+1+1                                     | 4 | 1/1 | — | 1/1 | Single Stage | 1F80-0261   | 1F80-0261   | ✓ | — | ✓ | — | — | — | B, H | — | — | ✓ | ✓ | — | — | 2.0" K,C | R, C, W, Y, O/B, G |
| 24 Hours                                  | 4 | 1/1 | — | 1/1 | Single Stage | 1F80-0224   | 1F80-0224   | ✓ | — | ✓ | — | — | — | B, H | — | — | ✓ | ✓ | — | — | 2.0" K,C | R, C, W, Y, O/B, G |
| Easy Set Non-Programmable Home-Sleep-Away | 3 | 1/1 | — | 1/1 | Single Stage | 1F86EZ-0251 | 1F86EZ-0251 | ✓ | — | ✓ | — | — | — | B, H | — | — | ✓ | — | — | — | 2.0" K,C | R, C, W, Y, O/B, G |
| NP                                        | 0 | 1/1 | — | 1/1 | Single Stage | 1F86-0244   | 1F86-0244   | ✓ | — | ✓ | — | — | — | B, H | — | — | ✓ | — | — | — | 2.0" K,C | R, C, W, Y, O/B, G |

<sup>1</sup> Universal thermostats provide the flexibility to control Single Stage, Multi-Stage, or Heat Pump systems.



1F85U-42PR

## 80 SERIES™ THERMOSTATS

*Copeland 80 Series thermostats are the perfect fit for every*

### FEATURES

- Large display, bright backlight, high contrast screen
- Easy to install with built-in level, simple set-up menu and separate subbase
- Selectable programming, choice of 7 Day, 5+1+1 Day or Off is standard on all programmable models, auto changeover on all universal models
- Dual fuel control, no outdoor sensor required, standard on all staging models
- Keypad lockout and adjustable heat/cool temperature limits

### PARTS AND ACCESSORIES

| DESCRIPTION                                  | MODEL NUMBER | ITEM NUMBER |
|----------------------------------------------|--------------|-------------|
| Thermostat Guard Clear Plastic               | F29-0198     | F29-0198    |
| Locking Thermostat Guard - Metal, Solid Base | F29-0220     | F29-0220    |
| Wallplate 6.75"W X 4.5"H                     | F61-2663     | F61-2663    |

### SPECIFICATIONS

Electrical Rating Hardwire ..... 20-30 VAC, NEC Class II 50/60Hz  
 Electrical Rating Battery Power ..... mV to 30 VAC  
 Terminal Load..... 1.5 Amps per terminal, 2.5 Amps maximum (all terminals combined)  
 Set-point Range..... 45 to 99°F (7 to 37°C)  
 Heat Differential (Conventional / Gas / Oil / Elec).....Fast 0.5°F, Med. 0.75°, Slow 1.9°F  
 Cool Differential (Central Air).....Fast 0.9°F, Med. 1.2°, Slow 1.7°F  
 Heat Pump Differential (Heat and Cool).....Fast 0.9°F, Med. 1.2°, Slow 1.7°F  
 Aux. Heat Differential .....Fast 0.5°F, Med. 0.75°, Slow 1.9°F  
 Operating Humidity .....0%-90% RH non-condensing max.  
 Dimensions ..... 5.58"W X 3.75"H X 1.13"D  
 Storage Temperature Range ..... -40 to 150°F (-29 to 65°C)

### MODEL NUMBER NOMENCLATURE - Example: 1F85U-42PR

| SERIES                                               | SYSTEM TYPE                                                                                                                                                                                                                             | DASH                | MAX STAGES HEAT/COOL                                                                         | PROGRAMMABILITY/SPECIAL FEATURES                                    |
|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| 1F85                                                 | U                                                                                                                                                                                                                                       | —                   | 42                                                                                           | PR                                                                  |
| 1F83 = Thermostat Series<br>1F85 = Thermostat Series | U = Universal Thermostat for Single Stage, Multi-Stage Or Heat Pump Systems<br>H = Heat Pump Thermostat for Systems With Or Without Aux. Heat<br>C = Conventional Thermostat (Gas / Oil / Electric) or Single Stage Heat Pump (No Aux.) | Character Separator | 42 = 4 Heat / 2 Cool<br>22 = 2 Heat / 2 Cool<br>21 = 2 Heat / 1 Cool<br>11 = 1 Heat / 1 Cool | PR = Programmable<br>NP = Non-Programmable<br>WF = Wi-Fi Thermostat |

### UNIVERSAL STAGING / HEAT PUMP THERMOSTATS – 80 SERIES THERMOSTATS

| PROGRAMS        |                         | STAGES BY SYSTEM         |                         |                       | SYSTEM TYPE                                         | MODEL NUMBER | ITEM NUMBER | APPLICATIONS         |                   |                      |            |                  |                                                          | POWER SOURCE                                | SELECTABLE PERFORMANCE FEATURES                            |                 |                                                       |                        |                                    |                                                        |                                                    | AVAILABLE CONNECTIONS                                                           |                                        |
|-----------------|-------------------------|--------------------------|-------------------------|-----------------------|-----------------------------------------------------|--------------|-------------|----------------------|-------------------|----------------------|------------|------------------|----------------------------------------------------------|---------------------------------------------|------------------------------------------------------------|-----------------|-------------------------------------------------------|------------------------|------------------------------------|--------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------|----------------------------------------|
| Program Options | Periods Per Day Options | Single Stage Heat / Cool | Multi-Stage Heat / Cool | Heat Pump Heat / Cool | Universal / Single Stage / Multi-Stage / Heat Pump¹ |              |             | Gas / Oil / Electric | 3 Wire Zone Valve | Millivolt Compatible | Economizer | Humidity Control | Dual Fuel Heat Pump Control Logic (L) Outdoor Sensor (O) | Remote Sensor Options Indoor (I)Outdoor (O) | Battery (B)<br>Hardwire / Common (H)<br>Power Sharing (PS) | Auto Changeover | Programmable Fan (PF)<br>Comfort Circulating Fan (CC) | Filter Change Reminder | Energy Mgt. Recovery / Early Start | Total Keypad Lockout (T)<br>Partial Keypad Lockout (P) | Set-Point Temperature Limits<br>Adjustable Max/Min | Display Size, Backlight with Key Press (K) Continuous Backlight with Common (C) | TERMINALS                              |
| 7, 5+1+1, NP    | 4, 2, Ø                 | 1/1                      | 2/2                     | 4/2                   | Univrsl.                                            | 1F85U-42PR   | 1F85U-42PR  | √                    | √                 | √                    | —          | —                | L                                                        | —                                           | B, H                                                       | √               | —                                                     | √                      | √                                  | T                                                      | √                                                  | 5.0" K,C                                                                        | RC, RH, C, W/E, W2, Y, Y2, O/B/6, G, L |
| 7, 5+1+1, NP    | 4, 2, Ø                 | 1/1                      | 2/2                     | 2/1                   | Univrsl.                                            | 1F85U-22PR   | 1F85U-22PR  | √                    | √                 | √                    | —          | —                | L                                                        | —                                           | B, H                                                       | √               | —                                                     | √                      | √                                  | T                                                      | √                                                  | 5.0" K,C                                                                        | RC, RH, C, W/E, W2, Y, Y2, O/B/6, G, L |
| 7, 5+1+1, NP    | 4, Ø                    | —                        | —                       | 2/1                   | Heat Pump                                           | 1F83H-21PR   | 1F83H-21PR  | √                    | —                 | —                    | —          | —                | L                                                        | —                                           | B, H                                                       | —               | —                                                     | √                      | √                                  | T                                                      | √                                                  | 4.5" K,C                                                                        | R, C, W2, E, Y, O/B, G, L              |
| NP              | Ø                       | 1/1                      | 2/2                     | 4/2                   | Univrsl.                                            | 1F85U-42NP   | 1F85U-42NP  | √                    | √                 | √                    | —          | —                | L                                                        | —                                           | B, H                                                       | √               | —                                                     | —                      | —                                  | T                                                      | √                                                  | 5.0" K,C                                                                        | RC, RH, C, W/E, W2, Y, Y2, O/B/6, G, L |
| NP              | Ø                       | 1/1                      | 2/2                     | 2/1                   | Univrsl.                                            | 1F85U-22NP   | 1F85U-22NP  | √                    | √                 | √                    | —          | —                | L                                                        | —                                           | B, H                                                       | √               | —                                                     | —                      | —                                  | T                                                      | √                                                  | 5.0" K,C                                                                        | RC, RH, C, W/E, W2, Y, Y2, O/B/6, G, L |
| NP              | Ø                       | —                        | —                       | 2/1                   | Heat Pump                                           | 1F83H-21NP   | 1F83H-21NP  | √                    | —                 | —                    | —          | —                | L                                                        | —                                           | B, H                                                       | —               | —                                                     | —                      | —                                  | T                                                      | √                                                  | 4.5" K,C                                                                        | R, C, W2, E, Y, O/B, G, L              |
| 7, 5+1+1, NP    | 4, Ø                    | 1/1                      | —                       | 1/1                   | Single Stage                                        | 1F83C-11PR   | 1F83C-11PR  | √                    | —                 | √                    | —          | —                | —                                                        | —                                           | B, H                                                       | —               | —                                                     | √                      | √                                  | T                                                      | √                                                  | 4.5" K,C                                                                        | RC, RH, C, W, Y, O/B, G                |
| NP              | Ø                       | 1/1                      | —                       | 1/1                   | Single Stage                                        | 1F83C-11NP   | 1F83C-11NP  | √                    | —                 | √                    | —          | —                | —                                                        | —                                           | B, H                                                       | —               | —                                                     | —                      | —                                  | T                                                      | √                                                  | 4.5" K,C                                                                        | RC, RH, C, W, Y, O/B, G                |

<sup>1</sup> Universal thermostats provide the flexibility to control Single Stage, Multi-Stage, or Heat Pump systems.



1F89-211



1F87-361

## CLASSIC 80 SERIES™ THERMOSTATS

Our Classic 80 Series is available as universal, heat pump and single stage styles offering proven performance and reliability.

### FEATURES

- Choice of battery powered, dual power or hardwired models
- Fossil fuel or electric heat compatible
- Permanent program retention during power loss
- Configuration menu allows keypad selection of options
- Selectable energy management recovery (1F80-361 / 1F87-361 / 1F82-261)

### SPECIFICATIONS

|                                                           |                                                                  |
|-----------------------------------------------------------|------------------------------------------------------------------|
| Electrical Rating Hardwire .....                          | 20-30 VAC, NEC Class II 50/60Hz                                  |
| Electrical Rating Battery Power .....                     | mV to 30 VAC                                                     |
| Terminal Load .....                                       | 1.5 Amps per terminal, 2.5 Amps maximum (all terminals combined) |
| Set-point Range .....                                     | 45 to 99°F (7 to 37°C)                                           |
| Heat Differential (Conventional / Gas / Oil / Elec) ..... | Fast 0.5°F, Slow 1.9°F                                           |
| Cool Differential (Central Air) .....                     | 1.2°F                                                            |
| Heat Pump Differential (Heat and Cool) .....              | Fast 0.9°F, Slow 1.7°F                                           |
| Aux. Heat Differential .....                              | Fast 0.5°F, Slow 1.9°F                                           |
| Operating Humidity .....                                  | 0%-90% RH non-condensing max.                                    |
| Dimensions .....                                          | 3.88"H X 6.00"W X 1.88"D                                         |
| Storage Temperature Range .....                           | -40 to 150°F (-29 to 65°C)                                       |

### PARTS AND ACCESSORIES

| DESCRIPTION                                                                                                                 | MODEL NUMBER | ITEM NUMBER    |
|-----------------------------------------------------------------------------------------------------------------------------|--------------|----------------|
| Thermostat Guard - Clear Plastic                                                                                            | F29-0198     | F29-0198       |
| Locking Thermostat Guard - Metal, Solid Base                                                                                | F29-0220     | F29-0220       |
| Wallplate for all Classic 1F80's 4.63"W X 7.63"H Includes adapter plate for mounting to horizontal or vertical junction box | F61-2500     | F0061 250000S1 |

See Thermostat Guards for additional options.

### UNIVERSAL STAGING / HEAT PUMP THERMOSTATS – CLASSIC 80 SERIES THERMOSTATS

| PROGRAMS        |                         | STAGES BY SYSTEM         |                         |                       | SYSTEM TYPE                                                     | MODEL NUMBER | ITEM NUMBER | APPLICATIONS         |                   |                      |            |                  |                                       | POWER SOURCE       | SELECTABLE PERFORMANCE FEATURES              |                                                            |                 |                                                       |                        |                                    |                                                        | AVAILABLE CONNECTIONS                           |
|-----------------|-------------------------|--------------------------|-------------------------|-----------------------|-----------------------------------------------------------------|--------------|-------------|----------------------|-------------------|----------------------|------------|------------------|---------------------------------------|--------------------|----------------------------------------------|------------------------------------------------------------|-----------------|-------------------------------------------------------|------------------------|------------------------------------|--------------------------------------------------------|-------------------------------------------------|
| Program Options | Periods Per Day Options | Single Stage Heat / Cool | Multi-Stage Heat / Cool | Heat Pump Heat / Cool | Universal / Single Stage / Multi-Stage / Heat Pump <sup>1</sup> |              |             | Gas / Oil / Electric | 3 Wire Zone Valve | Millivolt Compatible | Economizer | Humidity Control | Dual Fuel Heat Pump Control Logic (L) | Outdoor Sensor (O) | Remote Sensor Options Indoor (I) Outdoor (O) | Battery (B)<br>Hardwire / Common (H)<br>Power Sharing (PS) | Auto Changeover | Programmable Fan (PF)<br>Comfort Circulating Fan (CC) | Filter Change Reminder | Energy Mgt. Recovery / Early Start | Total Keypad Lockout (T)<br>Partial Keypad Lockout (P) | Set-Point Temperature Limits Adjustable Max/Min |
| 5+1+1           | 4                       | —                        | —                       | 2/1                   | Heat Pump                                                       | 1F82-261     | 01F82 261S1 | √                    | —                 | —                    | —          | —                | —                                     | H                  | —                                            | —                                                          | √               | √                                                     | —                      | —                                  | 1.8" K,C                                               | R, C, W2, E, Y, O/B, G, L                       |
| NP              | Ø                       | —                        | —                       | 2/1                   | Heat Pump                                                       | 1F89-211     | 01F89 211S1 | √                    | —                 | —                    | —          | —                | —                                     | H                  | —                                            | —                                                          | √               | —                                                     | —                      | —                                  | 1.8" K,C                                               | R, C, W2, E, Y, O/B, G, L                       |
| 7-day           | 4                       | 1/1                      | —                       | 1/1                   | Single Stage                                                    | 1F87-361     | 01F87 361   | √                    | —                 | √                    | —          | —                | —                                     | B, H               | —                                            | —                                                          | √               | √                                                     | —                      | —                                  | 2.2" K                                                 | RC, RH, C, W, Y,O, B, G                         |
| 5+1+1           | 4                       | 1/1                      | —                       | 1/1                   | Single Stage                                                    | 1F80-361     | 01F80 361   | √                    | —                 | √                    | —          | —                | —                                     | B, H               | —                                            | —                                                          | √               | √                                                     | —                      | —                                  | 2.2" K                                                 | RC,RH, C, W, Y,O, B, G                          |
| NP              | Ø                       | 1/1                      | —                       | 1/1                   | Single Stage                                                    | 1F86-344     | 01F86 344   | √                    | —                 | √                    | —          | —                | —                                     | B, H               | —                                            | —                                                          | √               | —                                                     | —                      | —                                  | 2.2" K                                                 | RC, RH, C, W, Y,O, B, G                         |

<sup>1</sup> Universal thermostats provide the flexibility to control Single Stage, Multi-Stage, or Heat Pump systems.





1F75C-11PR



1F75C-11NP

## 70 SERIES™ THERMOSTATS

The 70 Series™ provides an easy-to-use thermostat with a modern design that helps reduce complexity for the customer and in turn helps reduce contractor callbacks.

### FEATURES

- Large display, bright backlight, high contrast screen
- Easy to install with built-in level, simple set-up menu and separate subbase
- Selectable programming, choice of 7 Day, 5+1+1 Day or Off is standard on all programmable models, auto-changeover on all universal models
- Dual-fuel control, no outdoor sensor required, standard on all staging models

### SPECIFICATIONS

|                                                    |                                          |
|----------------------------------------------------|------------------------------------------|
| Electrical Rating Hardwire (Heat Pump).....        | Hardwire: 20 to 30 VAC                   |
| Electrical Rating Battery Power (Single Stage)     |                                          |
| Terminal Load.....                                 | 1.5 A per terminal                       |
|                                                    | 2.5 A per maximum all terminals combined |
| Set-point Range.....                               | 45 to 99°F (7 to 37°C)                   |
| Heat Differential (Conventional/Gas/Oil/Elec)..... | Fast 0.5°F, Med. 0.75°, Slow 1.9°F       |
| Cool Differential (Central Air).....               | Fast 0.9°F, Med. 1.2°, Slow 1.7°F        |
| Heat Pump Differential (Heat and Cool).....        | Fast 0.9°F, Med. 1.2°, Slow 1.7°F        |
| Aux. Heat Differential .....                       | Fast 0.5°F, Med. 0.75°, Slow 1.9°F       |
| Operating Humidity .....                           | 0%-90% RH non-condensing max.            |
| Dimensions .....                                   | 3-3/4"H x 6"W x 1-1/8"D                  |
| Storage Temperature Range .....                    | -20 °F to +150 °F (-29 °C to +65 °C)     |

### PARTS AND ACCESSORIES

| DESCRIPTION                 | MODEL NUMBER | ITEM NUMBER |
|-----------------------------|--------------|-------------|
| Thermostat Guard            | F29-0198     | F29-0198    |
| Wallplate (6-3/4" X 4-1/2") | F61-2663     | F61-2663    |

### HEAT PUMP THERMOSTATS – 70 SERIES THERMOSTATS

| PROGRAMS         |                         | STAGES BY SYSTEM         |                         |                       | SYSTEM TYPE                                                     | MODEL NUMBER | ITEM NUMBER | APPLICATIONS         |                   |                      |            |                  |                                                          | POWER SOURCE                                 | SELECTABLE PERFORMANCE FEATURES                            |                 |                                                       |                        |                                    |                                                        | AVAILABLE CONNECTIONS                           |                                                                                 |                        |
|------------------|-------------------------|--------------------------|-------------------------|-----------------------|-----------------------------------------------------------------|--------------|-------------|----------------------|-------------------|----------------------|------------|------------------|----------------------------------------------------------|----------------------------------------------|------------------------------------------------------------|-----------------|-------------------------------------------------------|------------------------|------------------------------------|--------------------------------------------------------|-------------------------------------------------|---------------------------------------------------------------------------------|------------------------|
| Program Options  | Periods Per Day Options | Single Stage Heat / Cool | Multi-Stage Heat / Cool | Heat Pump Heat / Cool | Universal / Single Stage / Multi-Stage / Heat Pump <sup>s</sup> |              |             | Gas / Oil / Electric | 3 Wire Zone Valve | Millivolt Compatible | Economizer | Humidity Control | Dual Fuel Heat Pump Control Logic (L) Outdoor Sensor (O) | Remote Sensor Options Indoor (I) Outdoor (O) | Battery (B)<br>Hardwire / Common (H)<br>Power Sharing (PS) | Auto Changeover | Programmable Fan (PF)<br>Comfort Circulating Fan (CC) | Filter Change Reminder | Energy Mgt. Recovery / Early Start | Total Keypad Lockout (T)<br>Partial Keypad Lockout (P) | Set-Point Temperature Limits Adjustable Max/Min | Display Size, Backlight with Key Press (K) Continuous Backlight with Common (C) | TERMINALS              |
| NP               | —                       | —                        | —                       | 2/1                   | Heat Pump                                                       | 1F75H-21NP   | 1F75H-21NP  | ✓                    | —                 | —                    | —          | —                | L                                                        | —                                            | B, H                                                       | —               | —                                                     | —                      | —                                  | —                                                      | ✓                                               | 3" C                                                                            | R, Y, G, E, W2, O/B, C |
| 7, 5 + 1 + 1, NP | 4                       | —                        | —                       | 2/1                   | Heat Pump                                                       | 1F75H-21PR   | 1F75H-21PR  | ✓                    | —                 | —                    | —          | —                | L                                                        | —                                            | B, H                                                       | —               | —                                                     | ✓                      | ✓                                  | —                                                      | ✓                                               | 3" C                                                                            | R, Y, G, E, W2, O/B, C |

### SINGLE STAGE THERMOSTATS – 70 SERIES THERMOSTATS

|                  |   |     |   |     |              |            |            |   |   |   |   |   |   |   |      |   |   |   |   |   |   |   |   |   |   |   |      |                         |
|------------------|---|-----|---|-----|--------------|------------|------------|---|---|---|---|---|---|---|------|---|---|---|---|---|---|---|---|---|---|---|------|-------------------------|
| NP               | — | 1/1 | — | 1/1 | Single Stage | 1F75C-11NP | 1F75C-11NP | ✓ | — | ✓ | — | — | — | — | B, H | — | — | — | — | — | — | — | — | — | — | — | 3" C | RC, RH, Y, W, O/B, G, C |
| 7, 5 + 1 + 1, NP | 4 | 1/1 | — | 1/1 | Single Stage | 1F75C-11PR | 1F75C-11PR | ✓ | — | ✓ | — | — | — | — | B, H | — | — | — | — | — | — | — | — | — | — | — | 3" C | RC, RH, Y, W, O/B, G, C |



1F72-151

## CLASSIC 70 SERIES™ THERMOSTATS

*The perfect upgrade from mechanical thermostats available in heat pump or single stage that offer economy and value with proven reliability.*

### FEATURES

- Horizontal and vertical models
- Programmable and non-programmable models
- Selectable Celsius or Fahrenheit temperature display
- Fossil fuel or electric heat compatible
- Electronic accuracy
- Temperature accuracy for customers on a budget

### SPECIFICATIONS

Electrical Rating Hardwire (Heat Pump)..... 20 to 30 VAC, NEC Class II 50/60 Hz  
 Electrical Rating Battery Power (Single Stage)..... mV to 30 VAC, NEC Class II 50/60 Hz or DC  
 Terminal Load..... 1.5 Amps per terminal, 2.5 Amps maximum (all terminals combined)  
 Set-point Range..... 45 to 99°F (7 to 37°C)  
 Heat Differential (Conventional / Gas / Oil / Elec)..... Fast 0.75°, Slow 1.9°F  
 Cool Differential (Central Air)..... 1.2°F  
 Heat Pump Differential (Heat and Cool)..... Fast 0.9°F, Slow 1.7°F  
 Aux. Heat Differential ..... Fast 0.5°F, Slow 1.9°F  
 Operating Humidity ..... 0%-90% RH non-condensing max.  
 Dimensions ..... 3.19"H X 5.13"W X 1.13"D  
 Storage Temperature Range ..... -40 to 150°F (-29 to 65°C)

### PARTS & ACCESSORIES

| DESCRIPTION                                                                                                                                      | MODEL NUMBER | ITEM NUMBER    |
|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|
| Thermostat Guard - Clear Plastic                                                                                                                 | F29-0198     | F29-0198       |
| Locking Thermostat Guard - Metal, Solid Base                                                                                                     | F29-0220     | F29-0220       |
| Wallplate for all Copeland 70 Series thermostats, 6.50"W x 4.50"H,<br>Includes adapter plate for mounting to horizontal or vertical junction box | F61-2510     | F0061 251000S1 |
| Wallplate for 1d70, 1E70 models with adapter for horizontal<br>Or vertical junction box 4.5"W x 6.59"H                                           | F61-2593     | F0061 255000S1 |

See Thermostat Guards for additional options.

### 70 SERIES THERMOSTATS

| PROGRAMS        |                         | STAGES BY SYSTEM         |                         |                       | SYSTEM TYPE                                         | MODEL NUMBER | ITEM NUMBER | APPLICATIONS         |                   |                     |            |                  |                                                          | POWER SOURCE                                 | SELECTABLE PERFORMANCE FEATURES                            |                 |                                                       |                        |                                    |                                                        |                                                 | AVAILABLE CONNECTIONS                                                           |
|-----------------|-------------------------|--------------------------|-------------------------|-----------------------|-----------------------------------------------------|--------------|-------------|----------------------|-------------------|---------------------|------------|------------------|----------------------------------------------------------|----------------------------------------------|------------------------------------------------------------|-----------------|-------------------------------------------------------|------------------------|------------------------------------|--------------------------------------------------------|-------------------------------------------------|---------------------------------------------------------------------------------|
| Program Options | Periods Per Day Options | Single Stage Heat / Cool | Multi-Stage Heat / Cool | Heat Pump/Heat / Cool | Universal / Single Stage / Multi-Stage / Heat Pump¹ |              |             | Gas / Oil / Electric | 3 Wire Zone Valve | Milivolt Compatible | Economizer | Humidity Control | Dual Fuel Heat Pump Control Logic (L) Outdoor Sensor (O) | Remote Sensor Options Indoor (I) Outdoor (O) | Battery (B)<br>Hardwire / Common (H)<br>Power Sharing (PS) | Auto Chargeover | Programmable Fan (PF)<br>Comfort Circulating Fan (CC) | Filter Change Reminder | Energy Mgt. Recovery / Early Start | Total Keypad Lockout (T)<br>Partial Keypad Lockout (P) | Set-Point Temperature Limits Adjustable Max/Min | Display Size, Backlight with Key Press (K) Continuous Backlight with Common (C) |
| 5+2             | 4                       | —                        | —                       | 2/1                   | Heat Pump                                           | 1F72-151     | 01F72 151S1 | √                    | —                 | —                   | —          | —                | H                                                        | —                                            | —                                                          | —               | √                                                     | —                      | —                                  | 1.2" K, C                                              | R, C, W2, E, Y, O/B, G, L                       |                                                                                 |
| NP              | Ø                       | —                        | —                       | 2/1                   | Heat Pump                                           | 1F79-111     | 01F79 111S1 | √                    | —                 | —                   | —          | —                | H                                                        | —                                            | —                                                          | —               | —                                                     | —                      | —                                  | 1.2" K, C                                              | R, C, W2, E, Y, O/B, G, L                       |                                                                                 |
| 5+2             | 4                       | 1/1                      | —                       | 1/1                   | Single Stage                                        | 1F78-151     | 01F78 151S1 | √                    | —                 | √                   | —          | —                | B                                                        | —                                            | —                                                          | —               | √                                                     | —                      | —                                  | 1.2" K                                                 | RC, RH, W, Y, O, B, G                           |                                                                                 |
| 5+2             | 4                       | 1/1                      | —                       | 1/1                   | Single Stage Vertical                               | 1E78-151     | 01E78 151   | √                    | —                 | √                   | —          | —                | B                                                        | —                                            | —                                                          | —               | √                                                     | —                      | —                                  | 1.2" K                                                 | RC, RH, W, Y, O, B, G                           |                                                                                 |
| NP              | Ø                       | 1/1                      | —                       | 1/1                   | Single Stage                                        | 1F78-144     | 01F78 144S1 | √                    | —                 | √                   | —          | —                | B                                                        | —                                            | —                                                          | —               | —                                                     | —                      | —                                  | 1.2" K                                                 | RC, RH, W, Y, O, B, G                           |                                                                                 |
| NP              | Ø                       | 1/1                      | —                       | 1/1                   | Single Stage Vertical                               | 1E78-144     | 01E78 144   | √                    | —                 | √                   | —          | —                | B                                                        | —                                            | —                                                          | —               | —                                                     | —                      | —                                  | 1.2" K                                                 | RC, RH, W, Y, O, B, G                           |                                                                                 |
| NP              | Ø                       | 1/0                      | —                       | —                     | Single Stage                                        | 1E78-140     | 01E78 140   | √ *<br>—             | —                 | √                   | —          | —                | B                                                        | —                                            | —                                                          | —               | —                                                     | —                      | —                                  | 1.2" K                                                 | RH, W                                           |                                                                                 |

<sup>1</sup> Universal thermostats provide the flexibility to control Single Stage, Multi-Stage, or Heat Pump Systems. \* Does not control fan on a call for heat.



1F56N-444

## STANDARD MECHANICAL THERMOSTATS

Mercury free replacement for White-Rodgers and competitive models installed over the past 50 years.

### FEATURES

- Mercury free snap-action contacts with dust cover
- Horizontal and vertical models
- Built in bimetal thermometer
- Same footprint since the introduction of the series saves time and aggravation, so wall marks are not a problem and no cover-up wallplate is necessary
- 24 volt, 750 mV and 3 - wire zone options

### SPECIFICATIONS

Electrical Rating .....mV to 30 VAC, NEC Class II 50/60 Hz  
 Heating Anticipator ..... Adjustable from 0.15 to 1.2 Amps  
 Cool Anticipator ..... Fixed  
 Differential (Heat)..... 1°F  
 Differential (Cool)..... 1.5°F  
 Set-point Range..... 50 to 90°F (10 to 32°C)  
 1E (Vertical) Dimensions .....4.5"H X 2.75"W X 1.5"D  
 1F (Horizontal) Dimensions ..... 2.75"H X 4.5"W X 1.50"D

### PARTS & ACCESSORIES

| DESCRIPTION                                                                                                                                                   | MODEL NUMBER | ITEM NUMBER    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|
| Thermostat guard - clear plastic                                                                                                                              | F29-0198     | F29-0198       |
| Locking thermostat guard - metal, solid base                                                                                                                  | F29-0220     | F29-0220       |
| Wallplate for low voltage thermostats, 5.63"W x 5.75"H, includes horizontal or vertical "J" box adapter. for models 1D51W-, 1D56W, 1E30W, 1E56W, 1F56W, 1F58W | F61-2301     | F0061 230100S1 |
| Thermostat locking kit for types 1E30N, 1E50N, 1E56N, 1F51N, 1F56N                                                                                            | F92-0563     | F0092 056300S1 |

See Thermostat Guards for additional options.

## STANDARD MECHANICAL THERMOSTATS

| Stages Heat / Cool | Heat Pump Heat / Cool | Includes                                                                                                                                                            | Gas / Oil / Electric | (mV) Millivolt Compatible | 3-Wire Zone Valve | Orientation Vertical, Horizontal | TERMINALS                | MODEL NUMBER | ITEM NUMBER |
|--------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------------|-------------------|----------------------------------|--------------------------|--------------|-------------|
| 1/0                | —                     | Heat Only Wallplate (no System Off or Fan Switch)                                                                                                                   | √ *                  | √                         | —                 | V                                | R, W                     | 1E30N-910    | 1E30N-910   |
| 1/0                | —                     | Heat Only Wallplate (no System Off or Fan Switch) / Switched Subbase Heat-Off / Optional F92-0563 Temperature Locking / Limiting Kit                                | √ *                  | √                         | —                 | V                                | RH, W                    | 1E50N-301    | 1E50N-301   |
| 1/1 ①              | Heat Pump No Aux.     | Heat Only Wallplate (no System Off or Fan Switch) / Switched Subbase Heat-Off-Cool & Fan Auto-On / Cool Only or 3-wire Zone Wallplate (no System Off or Fan Switch) | √                    | √                         | √                 | V                                | RC, RH, W, Y, O, B, G, A | 1E56N-444    | 1E56N-444   |
| 1/1 ①              | Heat Pump No Aux.     | Heat Only Wallplate (no System Off or Fan Switch) / Switched Subbase Heat-Off-Cool & Fan Auto-On / Cool Only or 3-wire Zone Wallplate (no System Off or Fan Switch) | √                    | √                         | √                 | H                                | RC, RH, W, Y, O, B, G, A | 1F56N-444    | 1F56N-444   |
| 1/0                | —                     | Heat Only Wallplate (no System Off or Fan Switch)                                                                                                                   | √ *                  | √                         | —                 | V                                | R, W                     | 1E30N-311    | 1E30N-311   |
| 1/0                | —                     | Heat Only Wallplate (no System Off or Fan Switch) / Switched Subbase Heat-Off / Optional F92-0563 Temperature Locking / Limiting Kit                                | √ *                  | √                         | —                 | V                                | R, W                     | 1E50N-303    | 1E50N-303   |
| 1/1 ①              | Heat Pump No Aux.     | Heat Only Wallplate (no System Off or Fan Switch) / Switched Subbase Heat-Off-Cool & Fan Auto-On / Cool Only or 3-wire Zone Wallplate (no System Off or Fan Switch) | √                    | √                         | √                 | V                                | RC, RH, W, Y, O, B, G, A | 1E56N-361    | 1E56N-361   |
| 1/1 ①              | Heat Pump No Aux.     | Heat Only Wallplate (no System Off or Fan Switch) / Switched Subbase Heat-Off-Cool & Fan Auto-On / Cool Only or 3-wire Zone Wallplate (no System Off or Fan Switch) | √                    | √                         | √                 | H                                | RC, RH, W, Y, O, B, G, A | 1F56N-361    | 1F56N-361   |



① Includes optional "A" terminal connection for Electric Heat systems that require the thermostat to energize the Blower (G terminal) on a call for heat.

\* Does not control fan on a call for heat.

✳ Indicates a Canadian Model Number: call 1-800-305-6953 to order.



1C20-101

## ECONOMY MECHANICAL THERMOSTATS

*Mercury free reliable performance in an attractive design.*

### FEATURES

- Rugged snap-action contacts
- Adjustable heat anticipator
- Built in bimetal thermometer
- Heat / cool model includes switching subbase
- Heat / cool model compatible with electric heat systems

### SPECIFICATIONS

Electrical Rating ..... mV to 30 VAC, 50/60 Hz or DC  
 Heating Anticipator ..... Adjustable from 0.15 to 1.2 Amps  
 Cooling Anticipator ..... Fixed  
 Differential (Heat)..... 2°F (1.1°C)  
 Differential (Cool)..... 4°F (2.2°)  
 Set-point Range..... 50 to 90°F (10 to 32°C)  
 Dimensions ..... 3.75"H X 2.88"W X 1.50"D  
 Dimensions, Switching Models ..... 3.75"H X 3.13"W X 1.63"D

### PARTS & ACCESSORIES

| DESCRIPTION                                        | MODEL NUMBER | ITEM NUMBER    |
|----------------------------------------------------|--------------|----------------|
| Thermostat Guard - Clear Plastic                   | F29-0198     | F29-0198       |
| Locking Thermostat Guard - Metal, Solid Base       | F29-0220     | F29-0220       |
| Wall Coverplate for 1C20/1C26-XXX, 5.13"H X 5.00"W | F61-2499     | F0061 249900S1 |

See Thermostat Guards for additional options.

### ECONOMY MECHANICAL THERMOSTATS

| Stages<br>Heat / Cool | Heat Pump<br>Heat / Cool | System Switch | Fan Switch | Gas / Oil /<br>Electric | (Mv) Millivolt<br>Compatible | Orientation<br>Vertical /<br>Horizontal | TERMINALS                | MODEL NUMBER | ITEM NUMBER |
|-----------------------|--------------------------|---------------|------------|-------------------------|------------------------------|-----------------------------------------|--------------------------|--------------|-------------|
| 1/0 ①③                | —                        | None          | None       | √ *                     | √                            | Vertical                                | R, W                     | 1C20-101     | 01C20 101S1 |
| 1/0                   | —                        | None          | None       | √ *                     | √                            | Vertical                                | R, W                     | 1C20-102     | 01C20 102S1 |
| 0/1                   | —                        | None          | None       | —                       | —                            | Vertical                                | R, Y                     | 1C21-101     | 01C21 101S1 |
| 1/1 ②③                | Heat Pump No Aux.        | Heat-Off-Cool | Auto-On    | √                       | √                            | Vertical                                | RC, RH, W, Y, O, B, G, A | 1C26-101     | 01C26 101S1 |

\* Does not control fan on a call for heat

① Lowest temperature setting is "OFF" position

② Includes optional "A" terminal connection for Electric Heat systems that require the thermostat to energize the Blower (G terminal) on a call for heat

③ Includes F61-2499 wall mounting plate to cover marks left by previous thermostat



1E65-144

1E65 LINE VOLTAGE DIGITAL THERMOSTATS

Line voltage digital thermostats for baseboard and resistance heat.

FEATURES

- LCD with great contrast for enhanced visibility
- 100% silent operation with optional proportional control feature
- Precise electric heat temperature control
- Digital non-programmable
- Celsius or Fahrenheit

SPECIFICATIONS

Electrical Rating ..... 120/240 VAC, 50/60 Hz  
1E65-144 Minimum load ..... 2 A (resistive only), 500 W @ 240 VAC, 250 W @ 120 VAC  
1E65-144 Maximum load ..... 16.7 A (resistive only), 4000 W @ 240 VAC, 2000 W @ 120 VAC  
Differential ..... 1.0°F  
Set-point Range ..... 45 to 90°F (7 to 32°C)  
Display Resolution ..... 1°F (0.1°C)  
Approval ..... CSA

PARTS & ACCESSORIES

| DESCRIPTION                                                                                                  | MODEL NUMBER | ITEM NUMBER |
|--------------------------------------------------------------------------------------------------------------|--------------|-------------|
| Thermostat Guard - Clear Plastic                                                                             | F29-0198     | F29-0198    |
| Junction box offset adapter plate for universal mounting.<br>Allows offset for 1E65-144 9/16" Left or Right. | F61-2642     | F61-264200  |

See Thermostat Guards for additional options.

1E65 LINE VOLTAGE DIGITAL THERMOSTATS

| Heat / Cool | Programmable | Switch Action | 120 VAC Resistive (Non-Inductive) | 240 VAC Resistive (Non-Inductive) | Typical Applications                                                                   | MODEL NUMBER | ITEM NUMBER |
|-------------|--------------|---------------|-----------------------------------|-----------------------------------|----------------------------------------------------------------------------------------|--------------|-------------|
| Heat        | —            | Open on Rise  | 2.0A to 16.7A (250 to 2000W)      | 2.0A to 16.7A (500 to 4000W)      | Baseboard Electric Heat, Convectors, Fan-forced Heaters, Radiant Floor or Ceiling Heat | 1E65-144     | 01E65 144   |

1E65-144 replaces Honeywell RLV310.





1A65-641

## LINE VOLTAGE BASEBOARD THERMOSTATS - HYDRAULIC

*Line voltage mechanical thermostats for baseboard and resistance heat.*

### FEATURES

- Precision hydraulic switch action
- 1A66 types are a double-pole disconnect model with "OFF" position which mechanically breaks both sides of line
- Thermostat mounts on 2" X 4" electrical box
- Classic white or beige color
- Mercury free design

### SPECIFICATIONS

Differential ..... 1.0°F (.5°C)  
 Set-point Range..... 40 to 85°F (4 to 29°C)  
 Dimensions for 1A65/1A66 ..... 4.5"H X 2.75"W X 1.25"D  
 Agency..... UL

### PARTS & ACCESSORIES

| DESCRIPTION                                                                                                                                              | MODEL NUMBER | ITEM NUMBER    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|
| 1A65-641, 1A65W-641, 1A66-641 or 1A66W-641 locking or limiting kit.<br>Locks at 66°C 69°C 72°F or 75°F. Temperature limit can also be set at 60° or 63°. | F75-0176     | F0075 017600S1 |

See Thermostat Guards for additional options.

## LINE VOLTAGE BASEBOARD THERMOSTATS - HYDRAULIC

| Heat / Cool | Switch Action | 120 VAC Resistive (Non-Inductive) | 240 VAC Resistive (Non-Inductive) | 277 VAC Resistive (Non-Inductive) | Typical Application                               | MODEL NUMBER | ITEM NUMBER |
|-------------|---------------|-----------------------------------|-----------------------------------|-----------------------------------|---------------------------------------------------|--------------|-------------|
| Heat        | Open on Rise  | 22.0A (2500W)                     | 22.0A (5000W)                     | 18.0A (5000W)                     | Baseboard Electric Heat, Cable Heat, Glass Panels | 1A65-641     | 01A65 641S1 |
| Heat        | Open on Rise  | 22.0A (2500W)                     | 22.0A (5000W)                     | 18.0A (5000W)                     | Baseboard Electric Heat, Cable Heat, Glass Panels | 1A65W-641 ①  | 01A65W641S1 |
| Heat        | Open on Rise  | —                                 | 22.0A (5000W)                     | 18.0A (5000W)                     | Baseboard Electric Heat, Cable Heat, Glass Panels | 1A66-641     | 01A66 641S1 |
| Heat        | Open on Rise  | —                                 | 22.0A (5000W)                     | 18.0A (5000W)                     | Baseboard Electric Heat, Cable Heat, Glass Panels | 1A66W-641 ①  | 01A66W641S1 |

① W in model number denotes Classic White Color. Replaces Honeywell T498A / B SERIES.



1G65-641

LINE VOLTAGE BASEBOARD THERMOSTATS  
- BIMETAL

Line voltage mechanical thermostats baseboard and resistance heat.

FEATURES

- Rugged bimetal switch action
- 1G66 types are a double-pole disconnect model with "OFF" position which mechanically breaks both sides of line
- Thermostat mounts on 2" X 4" electrical box
- Classic white
- Mercury free design

SPECIFICATIONS

Differential ..... 3.0°F (1.5°C)  
Set-point Range..... 40 to 80°F (4 to 26°C)  
Dimensions ..... 4.81"H X 3.31"W X 1.44"D  
Agency..... UL, CSA

PARTS AND ACCESSORIES

| DESCRIPTION                      | MODEL NUMBER | ITEM NUMBER |
|----------------------------------|--------------|-------------|
| Thermostat guard - clear plastic | F29-0198     | F29-0198    |

See Thermostat Guards for additional options.

LINE VOLTAGE BASEBOARD THERMOSTATS - BIMETAL

| Heat / Cool | Switch Action | 120 VAC<br>Resistive<br>(Non-Inductive) | 240 VAC<br>Resistive<br>(Non-Inductive) | 277 VAC<br>Resistive<br>(Non-Inductive) | Typical Application                               | MODEL NUMBER | ITEM NUMBER |   |
|-------------|---------------|-----------------------------------------|-----------------------------------------|-----------------------------------------|---------------------------------------------------|--------------|-------------|---|
| Heat        | Open on Rise  | 22.0A (2500W)                           | 22.0A (5000W)                           | 18.0A (5000W)                           | Baseboard Electric Heat, Cable Heat, Glass Panels | 1G65-633     | 1G65-633    | ✳ |
| Heat        | Open on Rise  | 22.0A (2500W)                           | 22.0A (5000W)                           | 18.0A (5000W)                           | Baseboard Electric Heat, Cable Heat, Glass Panels | 1G65-641     | 01G65 641   |   |
| Heat        | Open on Rise  | —                                       | 22.0A (5000W)                           | 18.0A (5000W)                           | Baseboard Electric Heat, Cable Heat, Glass Panels | 1G66-633     | 1G66-633    |   |
| Heat        | Open on Rise  | —                                       | 22.0A (5000W)                           | 18.0A (5000W)                           | Baseboard Electric Heat, Cable Heat, Glass Panels | 1G66-641     | 01G66 641   | ✳ |

✳ Indicates Canadian Model Number: Call 1-800-305-6953 to order.



1A10-651

## LIGHT & HEAVY DUTY LINE VOLTAGE THERMOSTATS

*Line voltage mechanical thermostats light duty, heavy duty and fan coils.*

### FEATURES

- Two dial stops for setting a maximum or minimum temperature. Minimum between 66 to 87°F. Maximum between 60 to 81°F
- Includes set point locking feature at 66°, 69°, 72°, 75°, 78°, or 81°F
- Thermostat mounts on 2" X 4" electrical box
- Optional heating and cooling subbase S29-21 available
- Beige color / mercury free design

### SPECIFICATIONS

|                                 |                          |
|---------------------------------|--------------------------|
| Differential .....              | 1.0°F                    |
| Set-point Range.....            | 36 to 90°F (2 to 32°C)   |
| Dimensions without subbase..... | 4.5"H X 2.88"W X 1.75"D  |
| Dimensions with subbase .....   | 5.13"H X 2.88"W X 2.75"D |
| Agency .....                    | UL                       |

### PARTS AND ACCESSORIES

| DESCRIPTION                                                                                      | MODEL NUMBER | ITEM NUMBER |
|--------------------------------------------------------------------------------------------------|--------------|-------------|
| Thermostat Guard - Clear Plastic                                                                 | F29-0198     | F29-0198    |
| Subbases for Use with 1A10-651 or 1A16-51 Line Voltage Thermostats, System Switch: Cool-Off-Heat | S29-21       | S29 021S1   |

See Thermostat Guards for additional options.

### LIGHT & HEAVY DUTY LINE VOLTAGE THERMOSTATS

| Heat / Cool | Switch Action | 120 VAC Inductive (Motor) Full Load | 120 VAC Inductive (Motor) Locked Rotor | 120 VAC Resistive (Non-Inductive) | 240 VAC Inductive (Motor) Full Load | 240 VAC Inductive (Motor) Locked Rotor | 240 VAC Resistive (Non-Inductive) | 277 VAC Inductive (Motor) Full Load | 277 VAC Inductive (Motor) Locked Rotor | 277 VAC Resistive (Non-Inductive) | Pilot Duty | Typical Application                                                                                                                                     | MODEL NUMBER | ITEM NUMBER |
|-------------|---------------|-------------------------------------|----------------------------------------|-----------------------------------|-------------------------------------|----------------------------------------|-----------------------------------|-------------------------------------|----------------------------------------|-----------------------------------|------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| Heat / Cool | SPDT          | 8.0A                                | 48.0A                                  | 8.0A                              | 4.0A                                | 24.0A                                  | 8.0A                              | 4.0A                                | 24.0A                                  | 8.0A                              | 125 VA     | Fan Coils, Fans, Motor Starters, Circulators, Heating Valves, Cooling Valves, SPDT Applications, Baseboard Electric Heat, Radiant Floor or Ceiling Heat | 1A10-651*    | 01A10 651S1 |
| Heat / Cool | SPDT          | 16.0A                               | 96.0A                                  | 16.0A                             | 8.0A                                | 48.0A                                  | 16.0A                             | 8.0A                                | 48.0A                                  | 16.0A                             | 125 VA     | Fan Coils, Fans, Motor Starters, Circulators, Heating Valves, Cooling Valves, SPDT Applications, Baseboard Electric Heat, Radiant Floor or Ceiling Heat | 1A16-51*     | 01A16 051S1 |

Optional heating and cooling subbase S29-21 available separately.

\* See White-Rodgers General Information for full electrical ratings.



1A11-2

## 1A11-2 FAN COIL THERMOSTAT

*Fan coil units, valves, blower motors and 3 speed fan systems.*

### FEATURES

- 3-speed manual fan switch: High - Medium - Low
- System switch: Heat - OFF - Cool. "OFF" breaks both valve and fan circuits
- Mounts to a standard 2" X 4" vertical box or a two-gang outlet box.  
May also be mounted on a 4" X 4" junction box with an adapter (not provided)
- Color coded wiring for ease of installation
- Beige color

### SPECIFICATIONS

Differential ..... 1.5°F  
 Set-point Range ..... 36 to 90°F (2 to 32°C)  
 Dimensions ..... 4.50"H X 4.50"W X 2.25"D  
 Agency ..... UL

### PARTS AND ACCESSORIES

| DESCRIPTION                      | MODEL NUMBER | ITEM NUMBER |
|----------------------------------|--------------|-------------|
| Thermostat Guard - Clear Plastic | F29-0198     | F29-0198    |

See Thermostat Guards for additional options.

### 1A11-2 FAN COIL THERMOSTAT

| Heat / Cool | Switch Action             | 120 VAC Inductive (Motor) Full Load | 120 VAC Inductive (Motor) Locked Rotor | 120 VAC Resistive (Non-Inductive) | 240 VAC Inductive (Motor) Full Load | 240 VAC Inductive (Motor) Locked Rotor | 240 VAC Resistive (Non-Inductive) | 277 VAC Inductive (Motor) Full Load | 277 VAC Inductive (Motor) Locked Rotor | 277 VAC Resistive (Non-Inductive) | Pilot Duty | Typical Application                                        | MODEL NUMBER | ITEM NUMBER |
|-------------|---------------------------|-------------------------------------|----------------------------------------|-----------------------------------|-------------------------------------|----------------------------------------|-----------------------------------|-------------------------------------|----------------------------------------|-----------------------------------|------------|------------------------------------------------------------|--------------|-------------|
| Heat / Cool | SPDT Open / Close on Rise | 5.5A                                | 33.0A                                  | —                                 | 2.75A                               | 16.5A                                  | —                                 | 2.3A                                | 13.8A                                  | —                                 | 120 VA     | Fan Coil Units, Valves, Blower Motors, 3 Speed Fan Systems | 1A11-2       | 01A11 002S1 |



152-10

## LINE VOLTAGE STEEL CASE THERMOSTATS FOR HEATING & COOLING

*Line voltage mechanical thermostats with heavy gauge steel case.*

### FEATURES

- Models to control resistive heat loads or most heating / cooling inductive loads without a relay or motor starter
- "Summer" dial position (152-9 model)
- Hydraulic switch action unaffected by motion, no leveling required
- Open on rise and single pole double throw (SPDT) options
- Heavy gauge steel dustproof case, mounts on vertical 2" X 4" box or flush to wall

### SPECIFICATIONS

Dimensions ..... 6.00"H X 2.75"W X 2.50"D  
 Finish ..... Grey Color  
 Agency ..... UL, CSA

### LINE VOLTAGE STEEL CASE THERMOSTATS FOR HEATING & COOLING

| SWITCH ACTION          | RANGE                   | DIFFERENTIAL        | MOTOR RATING (FULL LOAD) |         | RESISTIVE RATING (NON-INDUCTIVE) |         |         | MODEL NUMBER | ITEM NUMBER |
|------------------------|-------------------------|---------------------|--------------------------|---------|----------------------------------|---------|---------|--------------|-------------|
|                        |                         |                     | 120 VAC                  | 240 VAC | 120 VAC                          | 240 VAC | 277 VAC |              |             |
| Open on Rise (Heating) | 55 to 85°F (13 to 29°C) | Fixed 2°F (1.0°C)   | 14.0A                    | 7.0A    | 25.0A                            | 22.0A   | 18.0A   | 152-9*       | 01 52 009S1 |
| Open on Rise (Heating) | 40 to 90°F (4 to 32°C)  | Fixed 3°F (1.6°C)   | 14.0A                    | 7.0A    | 25.0A                            | 20.0A   | —       | 152-10**     | 01 52 010S1 |
| SPDT (Heat / Cool)     | 55 to 95°F (13 to 35°C) | Fixed 3.0°F (1.6°C) | 7.4A                     | 3.7     | —                                | —       | —       | 179-1        | 01 79 001S1 |

\* Summer fan position control only has two terminals. It thermostatically cycles (based on temperature) unless set to the summer fan position in which case the contacts are closed.

\*\* Locked case, concealed dial.

See White-Rodgers General Information for full electrical ratings.



F145-1328

## REMOTE SENSORS FOR 24V THERMOSTATS

Wired and wireless remote sensors for 24V thermostats. Indoor and outdoor sensors for Blue™ Series 12" and 6" digital thermostats, wireless indoor - outdoor sensor.

### FEATURES

- Wired sensors provide superior temperature control, even over long wire runs
- Perfect for securing the thermostat in one area or room while sensing temperature in the conditioned space
- No temperature variance caused by wire resistance
- Up to 3 indoor and 1 outdoor wireless remote sensors can be used on one 1F98EZ-1621 wireless thermostat system
- Wireless sensor powered with 2 "AA" alkaline batteries

### SPECIFICATIONS

Operating Humidity .....0%-90% RH non-condensing max  
 Maximum Distance from Thermostat ..... 300'  
 Recommended Wire (F145-1328 / F145-1378) ..... 20 gauge, 3-conductor cable  
 F145-1328 / F145-1378 Dimensions .....2.13"H X 3.5"W X .75"D

### PARTS & ACCESSORIES

| APPLICATION                                                                                                                                      | REMOTE SENSOR | COLOR         | MODEL NUMBER | ITEM NUMBER    |
|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------|--------------|----------------|
| Compatible with all Copeland / White-Rodgers Thermostats that accept wired indoor remote sensors                                                 | Wired Indoor  | Classic White | F145-1328    | F0145 132800S1 |
| Compatible with all Copeland / White-Rodgers Thermostats that accept wired outdoor remote sensors. Outdoor remote sensor has 12 ft. sensor lead. | Wired Outdoor | Classic White | F145-1378    | F0145 137800S1 |

### CONNECTION CROSS REFERENCE - THERMOSTATS & WIRED SENSORS

| OLD TERMINAL (THERMOSTAT OR REMOTE) | NEW TERMINAL (THERMOSTAT OR REMOTE) |
|-------------------------------------|-------------------------------------|
| S1                                  | +                                   |
| S2                                  | S                                   |
| S3                                  | —                                   |

### WIRED REMOTE SENSOR TERMINAL DESIGNATIONS

| MODEL NUMBER          | TERMINAL DESIGNATION CROSS REFERENCE |                      |                 |
|-----------------------|--------------------------------------|----------------------|-----------------|
| F145-1328 , F145-1378 | +                                    | S                    | —               |
|                       | Sensor Positive                      | Sensor Return Signal | Sensor Negative |





F29-0143

## THERMOSTAT GUARDS - PLASTIC

Durable plastic thermostat guards are designed for use in public areas of offices, churches and restaurants to prevent tampering

### FEATURES

- Each model furnished with one key and can be mounted vertically or horizontally
- Clear plastic models for applications that need the thermostat visible
- Each model furnished with a ring and/or solid wall mounting plate
- F29-0198 fits all Copeland/White-Rodgers thermostats

### PARTS & ACCESSORIES

| DESCRIPTION                     | MODEL NUMBER | ITEM NUMBER |
|---------------------------------|--------------|-------------|
| Key for Thermostat Guards (All) | F145-0999    | F145-0999   |

### THERMOSTAT GUARDS SELECTION

| MODEL NUMBER |                            | F29-0143 |       | F29-0198 |       | F29-0225 | F29-0227 |       | F29-0231 |       |
|--------------|----------------------------|----------|-------|----------|-------|----------|----------|-------|----------|-------|
| ITEM NUMBER  |                            | F29-0143 |       | F29-0198 |       | F29-0225 | F29-0227 |       | F29-0231 |       |
| BASE STYLE   |                            | RING     | SOLID | RING     | SOLID | RING     | RING     | SOLID | RING     | SOLID |
| Digital      | Sensi™ / Sensi Touch Wi-Fi | —        | —     | √        | √     | —        | —        | —     | √        | √     |
|              | 70™ Series                 | —        | —     | √        | √     | —        | —        | √     | √        | √     |
|              | 80™ Series                 | —        | —     | √        | √     | —        | —        | —     | √        | √     |
|              | Classic 80 Series          | —        | —     | √        | √     | —        | —        | √     | √        | √     |
|              | Copeland Blue 2", 4"       | √        | √     | √        | √     | —        | √        | √     | √        | √     |
|              | Copeland Blue 6", 12"      | —        | —     | √        | √     | —        | √        | √     | —        | —     |
| Mechanical   | 1C20 Series                | √        | √     | √        | √     | √        | √        | √     | √        | √     |
|              | 1E30 / 31 / 35 / 56 Series | √        | √     | √        | √     | —        | √        | √     | √        | √     |
|              | 1F51 / 56 / 57 Series      | √        | √     | √        | √     | —        | √        | √     | √        | √     |
| Line Voltage | 1A65 - 1A66 Series         | —        | —     | √        | —     | —        | √        | —     | √        | —     |
|              | 1G65 - 1G66 Series         | —        | —     | √        | —     | —        | √        | —     | √        | —     |
|              | 1A10 - 1A16 Series         | —        | —     | √        | —     | —        | —        | —     | —        | —     |
|              | 1A11 Series                | —        | —     | √        | —     | —        | —        | —     | —        | —     |
|              | 1E65 Series                | —        | —     | √        | —     | —        | √        | —     | —        | —     |

### THERMOSTAT GUARDS DIMENSIONS

| DESCRIPTION   | (RING) LENGTH           | (RING) HEIGHT           | (RING) DEPTH            | (SOLID) LENGTH | (SOLID) HEIGHT | (SOLID) DEPTH | BEKO NUMBER | MODEL NUMBER | ITEM NUMBER |
|---------------|-------------------------|-------------------------|-------------------------|----------------|----------------|---------------|-------------|--------------|-------------|
| Clear Plastic | 6-1/4"                  | 3-3/8"                  | 3-1/4"                  | 6-3/8"         | 3-1/2"         | 3"            | BTG-RK      | F29-0143     | F29-0143    |
| Clear Plastic | 8-1/8"                  | 4-5/8"                  | 3-5/8"                  | 8-1/4"         | 5-3/8"         | 3-1/2"        | BTG-UK2     | F29-0198     | F29-0198    |
| Clear Plastic | Mounting Plate, No Ring | Mounting Plate, No Ring | Mounting Plate, No Ring | 3-7/8"         | 3-1/2"         | 2-1/2"        | BTG-EK      | F29-0225     | F29-0225    |
| Clear Plastic | 5-1/4"                  | 4-5/8"                  | 3-1/4"                  | 5-1/4"         | 4-5/8"         | 3"            | BTG-K       | F29-0227     | F29-0227    |
| Clear Plastic | 7-1/16"                 | 4-1/8"                  | 2-1/4"                  | 7-5/8"         | 4-1/4"         | 2-1/8"        | TG-DK       | F29-0231     | F29-0231    |

All dimensions are horizontal inside dimensions.



F29-0192

## THERMOSTAT GUARDS - METAL

Durable metal thermostat guards are designed for use in public areas of offices, churches and restaurants to prevent tampering

### FEATURES

- Each model furnished with one key and can be mounted vertically or horizontally
- Beige enamel finish over heavy-duty steel enclosure with tamper-resistant design 18 gauge cover, 22 gauge frame
- Each model furnished with a ring and/or solid wall mounting plate
- F29-0220 fits all Copeland/White-Rodgers thermostats

### PARTS & ACCESSORIES

| DESCRIPTION                     | MODEL NUMBER | ITEM NUMBER |
|---------------------------------|--------------|-------------|
| Key for Thermostat Guards (All) | F145-0999    | F145-0999   |

### THERMOSTAT GUARDS SELECTION

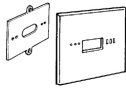
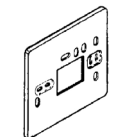
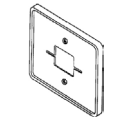
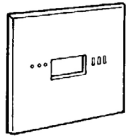
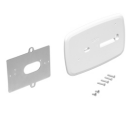
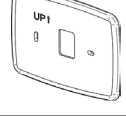
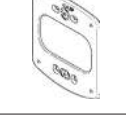
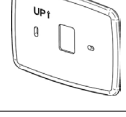
|              |                            | HINGED COVER | HINGED COVER | NO HINGE | NO HINGE |
|--------------|----------------------------|--------------|--------------|----------|----------|
| MODEL NUMBER |                            | F29-0192     | F29-0193     | F29-0220 | F29-0222 |
| ITEM NUMBER  |                            | F29-0192     | F29-0193     | F29-0220 | F29-0222 |
| BASE STYLE   |                            | SOLID        | RING         | SOLID    | RING     |
| Digital      | Sensi™ / Sensi Touch Wi-Fi | —            | —            | —        | —        |
|              | 70™ Series                 | √            | √            | √        | √        |
|              | 80™ Series                 | —            | √            | √        | √        |
|              | Classic 80 Series          | —            | √            | √        | √        |
|              | Copeland Blue 2", 4"       | √            | √            | √        | √        |
|              | Copeland Blue 6", 12"      | —            | —            | √        | √        |
| Mechanical   | 1C20 Series                | √            | √            | √        | √        |
|              | 1E30 / 31 / 35 / 56 Series | √            | √            | √        | √        |
|              | 1F51 / 56 / 57 Series      | √            | √            | √        | √        |
| Line Voltage | 1A65 - 1A66 Series         | —            | √            | —        | √        |
|              | 1G65 - 1G66 Series         | —            | √            | —        | √        |
|              | 1A10 - 1A16 Series         | —            | √            | —        | √        |
|              | 1A11 Series                | —            | —            | —        | √        |
|              | 1E65 Series                | —            | —            | —        | √        |

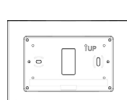
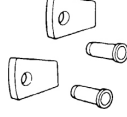
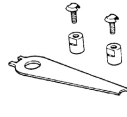
### THERMOSTAT GUARDS DIMENSIONS

| DESCRIPTION | (RING) LENGTH | (RING) HEIGHT | (RING) DEPTH | COMMENTS     | BEKO NUMBER | MODEL NUMBER | ITEM NUMBER |
|-------------|---------------|---------------|--------------|--------------|-------------|--------------|-------------|
| Solid base  | 6-1/4"        | 4-3/4"        | 3"           | Hinged cover | BTG-54VL    | F29-0192     | F29-0192    |
| Ring base   | 6"            | 3-13/16"      | 3-1/8"       | Hinged cover | BTG-54VLW   | F29-0193     | F29-0193    |
| Solid base  | 7-1/8"        | 4-5/8"        | 3-1/4"       | —            | BTG-UM      | F29-0220     | F29-0220    |
| Ring base   | 6-5/8"        | 4-1/2"        | 3-3/8"       | —            | BTG-UWM     | F29-0222     | F29-0222    |

All dimensions are horizontal inside dimensions.

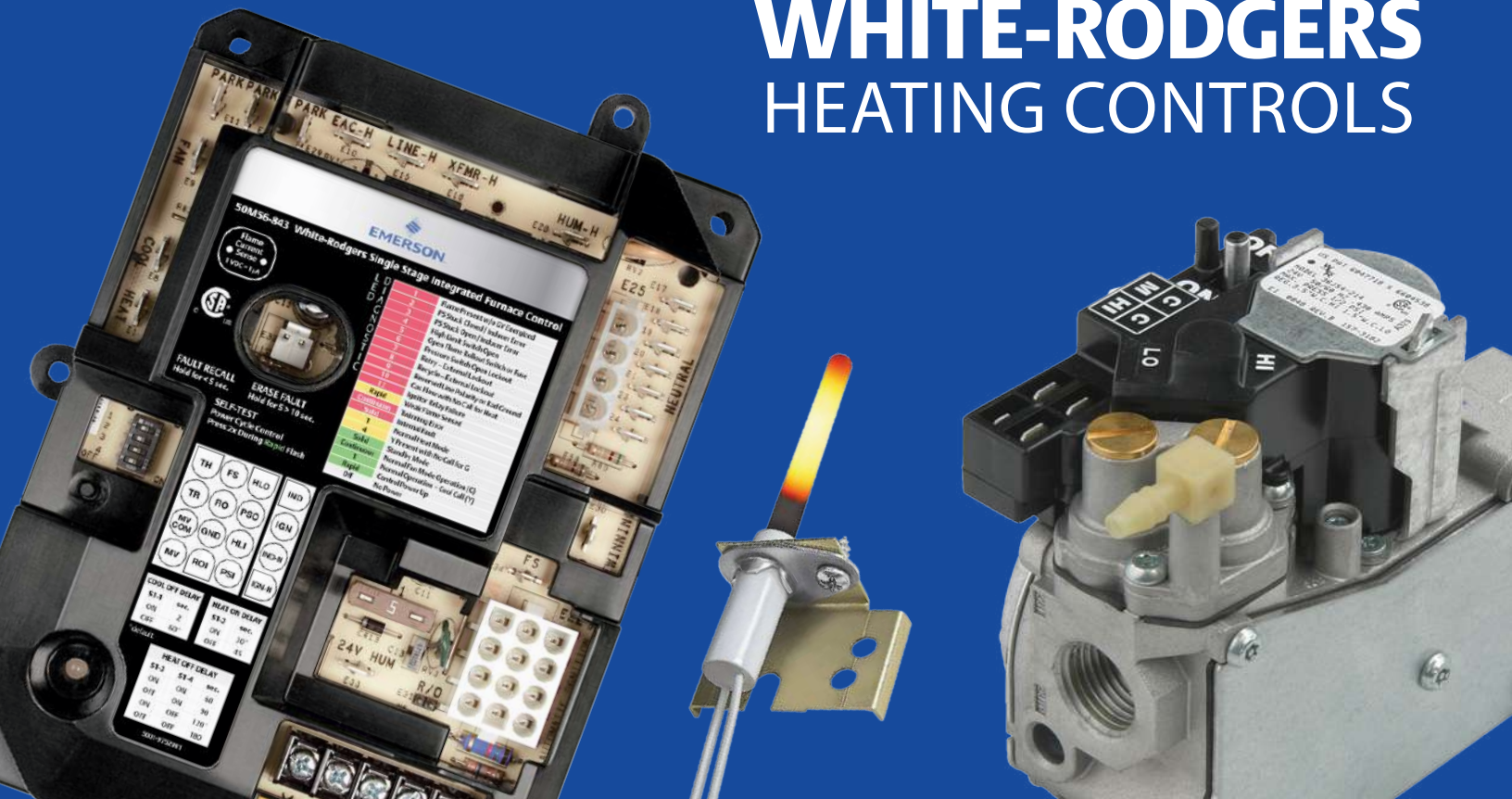
# THERMOSTAT PARTS AND ACCESSORIES

|                                                                                    | DESCRIPTION                                                                                                                                                                                                                | MODEL NUMBER | ITEM NUMBER    |
|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|
|    | Cover assembly for 1f78-151 programmable.                                                                                                                                                                                  | F16-8101     | F0016 810100S1 |
|    | Wallplate for low voltage standard thermostats (55/8" h x 5-3/4" w). Beige. Includes adapter for mounting to vertical junction box. Same as f61-2068 except white.                                                         | F61-2301     | F0061 230100S1 |
|    | Wallplate for all 1f90 series thermostats (except Copeland blue 6" and 12" models), (7-1/4" W x 5-1/2" h), classic white color, includes adapter plate for mounting to horizontal or vertical junction box.                | F61-2300     | F0061 230000S1 |
|    | Wallplate for 1c20-xxx/1c26-xxx (5-5/8" h x 5" w)                                                                                                                                                                          | F61-2499     | F0061 249900S1 |
|    | Wallplate for all classic 80™ series thermostats (except Copeland 2" and 4" and 80 series models), (7-5/8" w x 4-7/8" h), classic white color, includes adapter plate for mounting to horizontal or vertical junction box. | F61-2500     | F0061 250000S1 |
|  | Wallplate for all 1f70 series thermostats, 6 1/2" w x 4 1/2" h, classic white color, includes adapter plate for mounting to horizontal or vertical junction box.                                                           | F61-2510     | F0061 251000S1 |
|  | Wallplate for all 1f70 series thermostats, 6-1/2" w x 4-1/2" h, classic white color, does not include adapter plate for mounting to horizontal or vertical junction box.                                                   | F61-2550     | F0061 255000S1 |
|  | Wallplate for 70™ series (1d70 or 1e70) vertical thermostats, 4-1/2" w x 6-19/32" h, classic white color.                                                                                                                  | F61-2593     | F0061 259300   |
|  | Wallplate for Copeland blue 12", 6" thermostats, 8-1/8" w x 5-3/8" h, classic white color, for use with or without horizontal junction box.                                                                                | F61-2600     | F0061 260000   |
|  | Wallplate for Copeland blue 2", 4", 6", 12" thermostats, 6-1/2" w x 5" h, classic white color, for use with or without horizontal junction box.                                                                            | F61-2634     | F0061 263400   |
|  | Junction box offset adapter plate. Allows offset for 1e65-144 9/16" left or right.                                                                                                                                         | F61-2642     | F61-264200     |
|  | Same as f61-2634 except 6 Pack.                                                                                                                                                                                            | F61-2648     | F61-264800     |

|                                                                                     | DESCRIPTION                                                                                                                                                                                              | MODEL NUMBER                                      | ITEM NUMBER                                       |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------|
|    | Wallplate for Sensi™ smart thermostat and Copeland 80 Series 1F85U-42PR, -42NP, -22PR, -22NP, 1F83H-21PR, -21NP, 1F83C-11PR, -11NP, 6-3/4" W x 4-1/2" H for use with or without horizontal junction box. | F61-2663                                          | F61-2663                                          |
|    | Wallplates for Sensi Touch smart thermostat. 6-3/4" W x 4-1/2" H                                                                                                                                         | F61-2689 (white)<br>SA5B (black)<br>SA5S (silver) | F61-2689 (white)<br>SA5B (black)<br>SA5S (silver) |
|    | Wallplates for Sensi Touch 2 and Sensi Lite smart thermostats. 7" W x 4.6" H                                                                                                                             | SA6W (white)<br>SA6B (black)                      | SA6W (white)<br>SA6B (black)                      |
|    | Sensi room sensor - 1 pack                                                                                                                                                                               | RS01-SG                                           | RS01-SG                                           |
|    | Temperature knob locking or limiting kit for 1A65-641, 1A65W-641, 1A66-641 and 1A66W-641.                                                                                                                | F75-0176                                          | F0075 017600S1                                    |
|   | Temperature lever locking or temperature limiting kit for low voltage thermostats except 1C70, 1C20 and 1E26 series.                                                                                     | F92-0563                                          | F0092 056300S1                                    |
|  | Replacement key for all thermostat guards, F29 series.                                                                                                                                                   | F145-0999                                         | F145-0999                                         |
|  | Replacement door 1F90/1F97 (-51, -60, -71) 1F91-71, 1F92-71, 1F94-71, 1F95-71.                                                                                                                           | F145-1082                                         | F0145 108200S1                                    |
|  | 90 Series wired indoor remote sensor. Replaces all previous indoor remote sensors.                                                                                                                       | F145-1328                                         | F0145 132800S1                                    |
|  | 90 Series wired outdoor temperature sensor, for models with outdoor sensor option.                                                                                                                       | F145-1378                                         | F0145 137800S1                                    |
|  | Wireless remote sensor for 1F98EZ-1621.                                                                                                                                                                  | F145RF-1600                                       | F145RF-1600                                       |
|  | Thermostat common wire kit                                                                                                                                                                               | SA11                                              | SA11                                              |

# TRUST THE CONTROLS TRUSTED BY MORE OEMS.

**WHITE-RODGERS**  
HEATING CONTROLS



THE WIDEST RANGE OF  
**UNIVERSAL AND  
DIRECT OEM**  
REPLACEMENT CONTROLS.

**PERIOD.**



**WHITE-RODGERS™**





50M56X-843

## UNIVERSAL INTEGRATED FURNACE CONTROLS

Replaces over 700 OEM, White-Rodgers and competitive model numbers.

### FEATURES

- Reduces inventory by providing maximum control replacement coverage
- Select models include a universal 120V nitride ignitor to allow replacement of 80V and 120V controls
- Diagnostic LED indicators streamline installation and system troubleshooting
- 120V air cleaner output and 120V humidifier output up to 1 Amp max
- Factory standard safety timings and adjustable fan delay options
- Replaceable automotive style fuse

### SPECIFICATIONS

|                                   |                                              |
|-----------------------------------|----------------------------------------------|
| Low Voltage Circuit .....         | 24 VAC, 50/60 Hz                             |
| Line Voltage Circuit .....        | 120 VAC, 50/60 Hz                            |
| Circulator Relay .....            | 14.5 FLA - 25.0 LRA @ 120 VAC                |
| Circulator Relay: PSC .....       | 14.5 FLA - 25.0 LRA @ 120 VAC                |
| Circulator Relay: ECMx .....      | 12.0 mA @ 30 VAC                             |
| Operating Temperature Range ..... | -40° to 175°F (-40° to 79°C)                 |
| Humidity Range .....              | 5% to 93% relative humidity (non-condensing) |

### UNIVERSAL INTEGRATED FURNACE CONTROLS

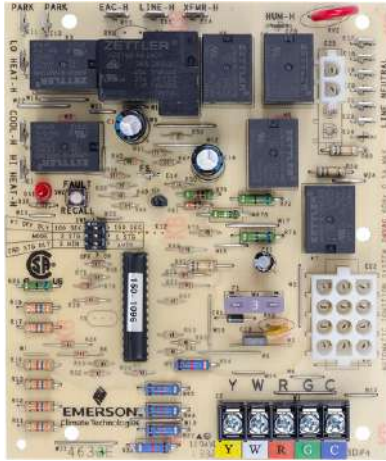
| FAMILY BRANDS OF EQUIPMENT                            | STAGES       | IGNITION TYPE | IGNITOR VOLTAGE | INDUCER MOTOR / BLOWER MOTOR | BLOWER MOTOR SPEED TAPS                             | THERMOSTAT INPUTS                  | INCLUDES IGNITOR OR ELECTRODE | TWINNING | INCLUDES WIRING ACCESSORIES | COMM SYSTEM | CONTROL MOUNTING | MODEL NUMBER            | ITEM NUMBER |
|-------------------------------------------------------|--------------|---------------|-----------------|------------------------------|-----------------------------------------------------|------------------------------------|-------------------------------|----------|-----------------------------|-------------|------------------|-------------------------|-------------|
| Carrier, Goodman, Lennox, Nordyne, Rheem, Trane, York | Single Stage | HSI           | 120 Vac*        | PSC / PSC, ECMx              | PSC - 2 or 3 speeds<br>ECMx: 2, 3, 4, 5, & 9 speeds | R, C, W, G, Y1, Y/Y2, DHUM         | ✓                             | ✓        | —                           | —           | Flush Mount      | 50M56X-843 <sup>1</sup> | 50M56X-843  |
| Carrier, Goodman, Lennox, Trane, York                 | Single Stage | HSI           | 120 VAC         | PSC / PSC                    | Heat, Cool                                          | R, C, W, Y G                       | —                             | ✓        | ✓                           | —           | Flush Mount      | 50A55-843               | 50A55-843S1 |
| Goodman, Lennox, Trane                                | Single Stage | HSI           | 80 VAC only     | PSC / PSC                    | Heat, Cool                                          | R, C, W, Y G                       | —                             | —        | —                           | —           | Flush Mount      | 50A65-843               | 50A65-843S1 |
| Goodman, Lennox, Trane, York                          | Two-Stage    | HSI           | 120 VAC*        | PSC / PSC                    | Lo Heat, Hi Heat, Cool                              | R, C, W1, W2, YLo, Y, G            | ✓                             | ✓        | —                           | —           | Standoff         | 21M51U-843              | 21M51U-843  |
| Goodman, Lennox, Trane, York                          | Two-Stage    | HSI           | 120 VAC*        | PSC / Var. Speed             | 16-pin Interface                                    | R, B/C, W1, W2, YLo, Y, G, O, DHUM | ✓                             | —        | ✓                           | —           | Standoff         | 21V51U-843              | 21V51U-843  |

Ort 80 VAC applications use supplied 21D64-2 Universal Ignitor.

Ort 80 VAC applications purchase 21D64-2 Universal Ignitor.

**NOTE:** Coming Fall 2022, replaces 50M56U-843 & 50X57-843, uses White-Rodgers Connect app for quick configuration and diagnostics.





50M56-743

## DIRECT OEM REPLACEMENT INTEGRATED FURNACE CONTROLS

*Direct drop-in replacements for Carrier, Goodman, Lennox, Trane and York.*

### Features

- Direct OEM replacements designed for high-volume major brand controls
- Models include PSC, Var. speed and ECMx motor control
- Diagnostic LED indicators streamline installation and system troubleshooting
- 120V air cleaner output and 120V humidifier output up to 1 Amp max
- Factory standard safety timings and adjustable fan delay options
- Replaceable, automotive-style fuse

### Specifications

|                                   |                                                  |
|-----------------------------------|--------------------------------------------------|
| Low-Voltage Circuit.....          | 24 VAC, 50 / 60 Hz                               |
| Line-Voltage Circuit.....         | 120 VAC, 50 / 60 Hz                              |
| Circulator Relay: PSC .....       | 14.5 FLA - 25.0 LRA @ 120 VAC; 25A LRA @ 120 VAC |
| Circulator Relay: ECMx .....      | 4.0 mA RMS @ 18 VAC; 12.0 mA RMS @ 30 VAC        |
| Operating Temperature Range ..... | -40° to 175°F (-40° to 79°C)                     |
| Humidity Range .....              | 5% to 93% relative humidity (non-condensing)     |

## Direct OEM Replacement Integrated Furnace Controls

| FAMILY BRANDS<br>OF EQUIPMENT | STAGES               | IGNITION TYPE | IGNITOR<br>VOLTAGE | INDUCER MOTOR<br>/ BLOWER MOTOR | BLOWER MOTOR<br>SPEED TAPS            | THERMOSTAT<br>INPUTS                          | INCLUDES IGNITOR<br>OR ELECTRODE | TWINNING | INCLUDES WIRING<br>ACCESSORIES | COMM SYSTEM | CONTROL<br>MOUNTING                    | MODEL<br>NUMBER | ITEM<br>NUMBER |
|-------------------------------|----------------------|---------------|--------------------|---------------------------------|---------------------------------------|-----------------------------------------------|----------------------------------|----------|--------------------------------|-------------|----------------------------------------|-----------------|----------------|
| Carrier                       | Single Stage         | HSI           | 120 VAC            | PSC/PSC                         | Heat, Cool, Fan                       | R, C, W, Y/Y2, Y1, G,<br>DEHUM                | —                                | ✓        | ✓                              | —           | Cover                                  | 50M56U-751      | 50M56U-751     |
| Carrier                       | Single Stage         | HSI           | 120 VAC            | PSC/PSC                         | Heat, Cool, Fan                       | R, C, W, Y, G, DEHUM                          | —                                | ✓        | ✓                              | —           | Flush Mount                            | 50M56D-751      | 50M56D-751     |
| Carrier                       | Two-Stage            | HSI           | 120 VAC            | PSC/PSC,<br>Var. speed/ECMx     | Lo Heat,<br>Hi Heat, Cool             | R, COM 24 VAC, W/W1,<br>W2, Y1, Y/Y2, G, DHUM | —                                | ✓        | ✓                              | —           | Tray                                   | 21V51D-751      | 21V51D-751     |
| Goodman                       | Single Stage         | HSI           | 120 VAC            | PSC/PSC                         | Heat, Cool                            | R, C, W, Y G                                  | —                                | ✓        | —                              | —           | Standoff                               | 50A55-743       | 50A55-743      |
| Goodman                       | Single Stage         | HSI           | 120 VAC            | PSC/PSC                         | Heat, Cool                            | R, G, W                                       | —                                | ✓        | ✓                              | —           | Standoff                               | 50T35-743       | 50T35-743      |
| Goodman                       | Single/<br>Two Stage | HSI           | 120 VAC            | PSC/PSC                         | Lo Heat,<br>Hi Heat, Cool             | R, C, W, Y G                                  | —                                | —        | ✓                              | —           | Standoff                               | 50M56-743       | 50M56-743      |
| Goodman                       | Single Stage         | HSI           | 120 VAC            | PSC/PSC                         | Heat, Cool                            | R, C, W, Y, G                                 | —                                | ✓        | —                              | —           | Standoff                               | 50M56-707       | 50M56-707      |
| Goodman                       | Two-Stage            | HSI           | 120 VAC            | Var. speed/Var. speed           | 4-wire Interface                      | 1, 2, R, C, W1, W2, Y1, Y2,<br>G, O DHUM      | —                                | ✓        | —                              | ✓           | Standoff                               | 50C51-707       | 50C51-707      |
| Goodman                       | Two-Stage            | HSI           | 120 VAC            | ECMx                            | 6-wire Interface                      | R, C, W1, W2, YLO, Y, G                       | —                                | ✓        | ✓                              | —           | Standoff                               | 50M58-707       | 50M58-707      |
| Lennox*                       | Single Stage         | HSI           | 80 VAC<br>only     | PSC/PSC                         | Heat, Cool, Fan                       | R, C, W, Y G                                  | —                                | —        | ✓                              | —           | Standoff/steel<br>mounting BRKT (INCL) | 21D83M-843      | 21D83M-843     |
| Lennox                        | Single Stage         | HSI           | 120 VAC            | PSC/PSC                         | Heat, Cool, Fan                       | R, C, W, Y G                                  | —                                | —        | ✓                              | —           | Standoff                               | 50M56U-801      | 50M56U-801     |
| Lennox*                       | Single Stage         | HSI           | 80 VAC only        | PSC/PSC                         | Heat, Cool, Fan                       | R, C, W, Y G                                  | —                                | —        | —                              | —           | Standoff                               | 50A66-743       | 50A66-743      |
| Trane*                        | Single Stage         | HSI           | 120 VAC            | PSC/PSC                         | Heat, Cool                            | R, C, W, Y G                                  | —                                | —        | —                              | —           | Standoff                               | 50A55-3797      | 50A55-3797     |
| Trane*                        | Single Stage         | HSI           | 80 VAC only        | PSC/PSC                         | Heat, Cool                            | R, C, W, Y G                                  | —                                | ✓        | —                              | —           | Standoff                               | 50A65-5165      | 50A65-5165     |
| Trane                         | Two-Stage            | HSI           | 120 VAC**          | Var. speed/Var. speed           | 16-pin<br>Interface                   | R, B/C W1, W2, Y, YLO,<br>G, O, BK            | ✓                                | ✓        | ✓                              | —           | Standoff                               | 50V54-820       | 50V54-820      |
| York                          | Single Stage         | HSI           | 120 VAC            | PSC/PSC                         | Heat, Lo Cool,<br>Hi Cool             | R, C, W, Y1, Y/Y2, G                          | —                                | ✓        | —                              | —           | Standoff/steel<br>mounting BRKT (INCL) | 50A56-956       | 50A56-956      |
| York                          | Two-Stage            | HSI           | 120 VAC            | ECMx                            | Lo Heat, Hi Heat,<br>Lo Cool, Hi Cool | R, C, WW1, W2, Y1, Y/<br>Y2, G                | —                                | ✓        | ✓                              | —           | Standoff                               | 50M58-956       | 50M58-956      |

\* Replaces White-Rodgers OEM Models.

\*\* On 80 VAC applications use supplied 21D64-2 Universal Ignitor.



NON-INTEGRATED  
IGNITION MODULES

Universal and direct OEM non-integrated controls for various applications that replace over 850 OEM and competitive part numbers.

FEATURES

- Advanced 7-segment LED display for on-board configuration (program keys required on some models)
- Microprocessor-based ignition control
- Works with single-rod or dual-rod remote sensor
- Provides ignition, proof of ignition and precise timings
- LED diagnostic indicator
- For use in Natural and LP gas applications

SPECIFICATIONS

Low Voltage Circuit..... 24 VAC, 50 / 60 Hz  
Line Voltage Circuit..... 120 VAC, 50 / 60 Hz  
Operating Temp Range ..... -40° to 175°F (-40° to 79°C)  
Humidity Range..... 5% to 95% relative humidity  
..... (non-condensing)

NON-INTEGRATED IGNITION MODULES

| FAMILY BRANDS OF EQUIPMENT                                     | STAGES       | IGNITION TYPE                                      | IGNITOR VOLTAGE | THERMOSTAT INPUTS | INCLUDES IGNITOR OR ELECTRODE | TWINNING | INCLUDES WIRING ACCESSORIES | MOUNTING                                                    | MODEL NUMBER            | ITEM NUMBER |
|----------------------------------------------------------------|--------------|----------------------------------------------------|-----------------|-------------------|-------------------------------|----------|-----------------------------|-------------------------------------------------------------|-------------------------|-------------|
| Carrier, Goodman, Lennox, Trane, York                          | Single Stage | HSI                                                | 120 VAC         | TH (W) , TR (C)   | —                             | —        | √                           | Surface mount or 4" x 4" junction box                       | 50E47-843               | 50E47 843S1 |
| Carrier, Goodman, Lennox, Trane, York, Pentair, StaRite, Jandy | Single Stage | HSI                                                | 24,120, 240 VAC | TH (W) , TR (C)   | —                             | —        | √                           | Surface mount or 4" x 4" junction box                       | 50E47U-843 <sup>1</sup> | 50E47U 843  |
| Carrier, Lennox, Goodman, Rheem, Trane, York                   | Single Stage | Proven / Intermittent Pilot - Spark & Direct Spark | —               | TH (W) , TR (C)   | —                             | —        | √                           | Surface mount or 4" x 4" junction box                       | 50D50U-843 <sup>1</sup> | 50D50U 843  |
| Lennox                                                         | Single Stage | Proven / Intermittent Pilot - Spark                | —               | TH (W) , TR (C)   | √                             | —        | √                           | Surface mount or 4" x 4" junction box or with steel bracket | 50D50-801               | 50D50-801   |

<sup>1</sup> These ignition modules utilize the White-Rodgers Connect app for quick configuration and accurate diagnostics.

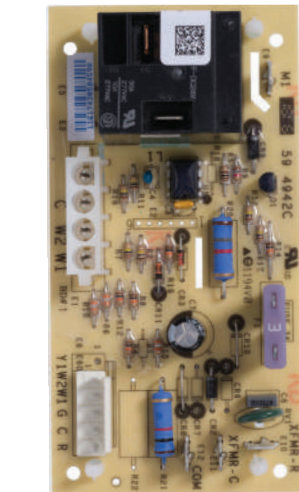
NON-INTEGRATED CYCLE PILOT RELIGHT CONTROL

| DESCRIPTION                                        | INPUT VOLTAGE | ELECTRICAL RATING | MODEL NUMBER | ITEM NUMBER |
|----------------------------------------------------|---------------|-------------------|--------------|-------------|
| Generates spark until pilot is lit spike connector | 24 VAC        | 0.03 amps         | 5059-134     | 50 59 134S1 |

INTEGRATED THERMOSTAT SENSOR<sup>2</sup>

| DESCRIPTION                                               | LEAD WIRE LENGTH (IN) | TEMPERATURE TOLERANCE   | MODEL NUMBER          | ITEM NUMBER |
|-----------------------------------------------------------|-----------------------|-------------------------|-----------------------|-------------|
| Integrated Temperature Sensor for select Ignition Modules | 48                    | +/- 5% at 77 °F (25 °C) | F67-8535 <sup>2</sup> | F67-8535    |

<sup>2</sup> The integrated thermostat sensor when installed in the ignition module acts independently to maintain temperature without an external thermostat. For use on infrared heaters and tube heaters.



48P21-811

AIR HANDLER AND TIME DELAY CONTROLS

Variable speed, ECMx air handler and PSC blower time delay relay controls.

FEATURES

- Goodman style controls for communicating or legacy systems
- Trane style single stage blower time delay relay for PSC inducer and blower allows residual cooled air to be blown into the controlled space, increasing efficiency
- Rheem single stage air handler controls available for both PSC and ECMx blower motors
- Carrier controls offer a selectable fan off delay switch of 0 or 90 seconds

SPECIFICATIONS

Operating Temperature Range ..... -40 to 175°F (-40 to 79°C)  
Input Voltage ..... 24 VAC 50/60 Hz  
Input Voltage (48C21-707).....24 VAC 60 Hz

AIR HANDLER AND TIME DELAY CONTROLS

| OEM DIRECT REPLACEMENT | DESCRIPTION              | BLOWER MOTOR   | MOUNTING       | BLOWER MOTOR SPEED TAPS | THERMOSTAT INPUTS                       | ADDITIONAL WIRING ACCESSORIES | COMMUNICATING SYSTEM | MODEL NUMBER | ITEM NUMBER |
|------------------------|--------------------------|----------------|----------------|-------------------------|-----------------------------------------|-------------------------------|----------------------|--------------|-------------|
| Carrier                | Single Stage Air Handler | PSC or ECMx    | Metal Standoff | 1                       | R, C, G, W                              | —                             | —                    | 48M55-751    | 48M55-751   |
| Carrier                | Single Stage Air Handler | PSC            | Metal Standoff | 1                       | R, C, G, W                              | —                             | —                    | 48P55-751    | 48P55-751   |
| Goodman                | Two-Stage Air Handler    | Variable Speed | Standoff       | 4-wire Interface        | 1, 2, R, C, W1, W2, Y1, Y2, G, O, DEHUM | —                             | √                    | 48C21-707    | 48C21-707   |
| Rheem                  | Single Stage Air Handler | PSC            | Standoff       | M1, Fan                 | R, C, G, W1, W2, Y1                     | √                             | —                    | 48P21-811    | 48P21-811   |
| Rheem                  | Single Stage Air Handler | ECMx           | Standoff       | X13 SPD, X13 G, COM     | X13 SPD, X13 G, COM                     | —                             | —                    | 48X21-811    | 48X21-811   |
| Trane                  | Single Stage Time Delay  | PSC            | Metal Plate    | —                       | —                                       | —                             | —                    | 57T01-843    | 57T01-843   |



50F06-843

UNIVERSAL FURNACE ELECTRONIC FAN TIMER

The 50F06-843 is an aftermarket universal replacement fan timer control for single stage furnaces with PSC inducer and blower motors. Works with non-integrated furnace controls or intelligent valves.

FEATURES

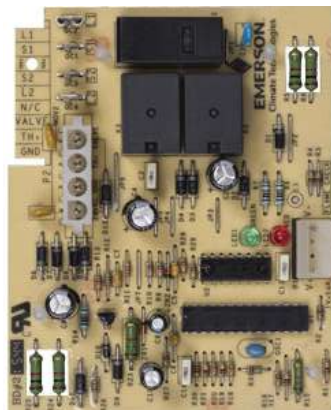
- Six mounting hole options that works with 2 or 4 screw configurations
- Harnesses with terminal flags for easy wiring
- Terminals are labeled to match multiple existing boards
- Transformer connections offer 1/4" and 3/16" terminals
- Tri-Color LED displays status and fault codes
- Exclusive fault recall button

SPECIFICATIONS

Ambient Operating Temperature..... -40 to 175°F (-40 to 79°C)  
Humidity Range ..... 5% to 95% relative humidity (non-condensing)  
Dimensions ..... 5.0"W x 7.0"L x 1.50"D

UNIVERSAL FURNACE ELECTRONIC FAN TIMER

| DESCRIPTION                                                                                                                                    | INPUT LOW VOLTAGE | INPUT LINE VOLTAGE | MAX INPUT CURRENT | BLOWER MOTOR | MODEL NUMBER | ITEM NUMBER |
|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|--------------------|-------------------|--------------|--------------|-------------|
| Universal Electronic Fan Timer for non-integrated single stage furnaces. <b>Replaces Honeywell ST9120U1011, ICM270, and Robertshaw 695-003</b> | 25 VAC 60 Hz      | 115/230 VAC, 60 Hz | 800mA @ 25 VAC    | PSC          | 50F06-843    | 50F06-843   |



50E70-820

## COMMERCIAL ROOFTOP AND PACKAGE UNIT

*For Trane Integrated and Non-Integrated ignition, single and two stage.*

### FEATURES

- For Trane Integrated and Non-Integrated ignition, single and two stage
- Direct replacement and adapter board style controls
- For Hot Surface Ignition and Direct Spark systems
- Integrated models control fan functions Non-Integrated models provide burner supervision

### SPECIFICATIONS

Operating Voltage ..... 18 to 30 VAC  
 Operating Temperature Range ..... -40° to 175°F (-40° to 79°C)  
 Humidity Range ..... 0 to 95% relative humidity (non-condensing)

### COMMERCIAL ROOFTOP & PACKAGE UNIT

| FAMILY BRANDS OF EQUIPMENT | STAGES       | CONTROL TYPE                                    | IGNITION TYPE | IGNITOR VOLTAGE | INDUCER MOTOR / BLOWER MOTOR | BLOWER MOTOR SPEED TAPS | THERMOSTAT INPUTS                 | INCLUDES WIRING ACCESSORIES | CONTROL MOUNTING           | MODEL NUMBER | ITEM NUMBER |
|----------------------------|--------------|-------------------------------------------------|---------------|-----------------|------------------------------|-------------------------|-----------------------------------|-----------------------------|----------------------------|--------------|-------------|
| Trane                      | Single Stage | Non-Integrated Ignition Module                  | HSI           | 120 VAC         | PSC / PSC                    | —                       | System 4 Pin Connector            | √                           | Stand-Offs / Adapter Board | 50E70-820    | 50E70-820   |
| Trane                      | Two-Stage    | Integrated Furnace Control 80 Second Time Delay | Direct Spark  | —               | PSC / PSC                    | Hi, Low                 | R (24 VAC), B (GND), W1, W2, Y, G | —                           | Stand-Offs / Adapter Board | 50N02A-820   | 50N02A-820  |
| Trane                      | Two-Stage    | Integrated Furnace Control 45 Second Time Delay | Direct Spark  | —               | PSC / PSC                    | Hi, Low                 | R (24 VAC), B (GND), W1, W2, Y, G | —                           | Stand-Offs / Adapter Board | 50N02B-820   | 50N02B-820  |
| Trane                      | —            | Adapter Board for 50N02A or B Controls          | —             | —               | —                            | —                       | —                                 | √                           | Adapter Board              | F50N02-820   | F50N02-820  |



36C01A-405

## 36C SERIES UNIVERSAL STANDING PILOT

*Universal replacements for Standing Pilot systems*

### FEATURES

- Line interrupter styles use standard 30 mV thermocouples
- Straight through design with side tapped models available
- Inlet / outlet reducer bushings included on select models
- Mounting position upright, or 0° to 90° from upright in any direction

### SPECIFICATIONS

Electrical Rating ..... 0.23 amps  
 Ambient Operating Range ..... -40 to 175°F (-40 to 79°C)  
 Maximum Pressure Rating ..... 1/2" PSI (14.0" WC)  
 Pilot Gas Connection ..... Compression fitting for 1/4" OD tubing  
 Inlet & Outlet Pressure Taps ..... 1/8" NPT  
 UR/CUR File Number ..... MP1323  
 CSA/CUS Certificate Number ..... 1113449

| PIPE SIZE   | 1" PRESSURE DROP CAPACITY<br>NATURAL GAS<br>.64 SP. GR. (1000 BTU/FT <sup>3</sup> ) | 1" PRESSURE DROP CAPACITY<br>LP GAS<br>1.53 SP. GR. (2500 BTU/FT <sup>3</sup> ) | RANGE OF REGULATION<br>NATURAL GAS<br>.64 SP. GR. (1000 BTU/FT <sup>3</sup> ) | RANGE OF REGULATION<br>LP GAS<br>1.53 SP. GR. (2500 BTU/FT <sup>3</sup> ) |
|-------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| 1/2" X 3/8" | 100,000                                                                             | 162,000                                                                         | 15,000-100,000                                                                | 15,000-162,000                                                            |
| 1/2" X 1/2" | 230,000                                                                             | 372,600                                                                         | 30,000-290,000                                                                | 30,000-469,000                                                            |
| 1/2" X 3/4" | 230,000                                                                             | 372,600                                                                         | 30,000-290,000                                                                | 30,000-469,000                                                            |
| 3/4" X 3/4" | 280,000                                                                             | 453,600                                                                         | 50,000-400,000                                                                | 50,000-648,000                                                            |

### 36C SERIES UNIVERSAL STANDING PILOT

| VOLTAGE          | STAGES / OPENING       | PIPE SIZE   | REGULATOR SETTING | NATURAL GAS ADJ.<br>RANGE (WC) | LP GAS ADJ.<br>RANGE (WC) | LP KIT INCLUDED | REDUCER BUSHING KIT | FLOW DIRECTION | SIDE TAPS | INLET / OUTLET<br>PRESSURE TAP | STANDING PILOT WITH<br>LINE INTERRUPTER | INTERNAL WIRING<br>SEE FIGURE | MODEL<br>NUMBER | ITEM<br>NUMBER |
|------------------|------------------------|-------------|-------------------|--------------------------------|---------------------------|-----------------|---------------------|----------------|-----------|--------------------------------|-----------------------------------------|-------------------------------|-----------------|----------------|
| 120 VAC<br>60 Hz | 1 - Stage<br>Fast Open | 3/4" x 3/4" | 3.5"              | 2.5"-5.0"                      | 7.5"-12.0"                | Yes             | Yes                 | Str. Thru      | No        | No / Yes                       | Yes                                     | 3                             | 36C03A-410      | 36C03A410S1    |
| 120 VAC<br>60 Hz | 1 - Stage<br>Fast Open | 3/4" x 3/4" | 3.5"              | 2.5"-5.0"                      | 4.2"-11.0"                | Yes             | Yes                 | Str. Thru      | No        | No / Yes                       | Yes*                                    | 3                             | 36C01A-405      | 36C01A405S1    |
| 24 VAC<br>60 Hz  | 1 - Stage<br>Fast Open | 1/2" X 3/4" | 3.5"              | 2.5"-5.0"                      | 7.5"-12.0"                | Yes             | Yes                 | Str. Thru      | No        | No / Yes                       | Yes                                     | 1                             | 36C03-300       | 36C03-300      |
| 24 VAC<br>60 Hz  | 1 - Stage<br>Fast Open | 1/2" X 3/4" | 3.5"              | 2.5"-5.0"                      | 7.5"-12.0"                | Yes             | Yes                 | Str. Thru      | Yes       | Yes / Yes                      | Yes                                     | 1                             | 36C03-333       | 36C03-333      |
| 24 VAC<br>60 Hz  | 1 - Stage<br>Fast Open | 3/4" x 3/4" | 3.5"              | 2.5"-5.0"                      | 7.5"-12.0"                | Yes             | Yes                 | Str. Thru      | No        | Yes / Yes                      | Yes                                     | 1                             | 36C03-400       | 36C03-400      |
| 24 VAC<br>60 Hz  | 1 - Stage<br>Fast Open | 3/4" x 3/4" | 3.5"              | 2.5"-5.0"                      | 7.5"-12.0"                | Yes             | Yes                 | Str. Thru      | Yes       | Yes / Yes                      | Yes                                     | 1                             | 36C03-433       | 36C03-433      |



## 36C SERIES UNIVERSAL STANDING PILOT (CONTINUED)

| VOLTAGE         | STAGES / OPENING       | PIPE SIZE   | REGULATOR SETTING | NATURAL GAS ADJ. RANGE (WC) | LP GAS ADJ. RANGE (WC) | LP KIT INCLUDED | REDUCER BUSHING KIT | FLOW DIRECTION | SIDE TAPS | INLET / OUTLET PRESSURE TAP | STANDING PILOT WITH LINE INTERRUPTER | INTERNAL WIRING SEE FIGURE | MODEL NUMBER | ITEM NUMBER |
|-----------------|------------------------|-------------|-------------------|-----------------------------|------------------------|-----------------|---------------------|----------------|-----------|-----------------------------|--------------------------------------|----------------------------|--------------|-------------|
| 24 VAC<br>60 Hz | 1 - Stage<br>Fast Open | 3/4" x 3/4" | 3.5"              | 2.5"-5.0"                   | 7.5"-12.0"             | No **           | Yes                 | Str. Thru      | No        | No / Yes                    | Yes                                  | 1                          | 36C53-418    | 36C53 418S1 |
| 24 VAC<br>60 Hz | 1 - Stage<br>Fast Open | 1/2" X 1/2" | 3.5"              | 2.5"-5.0"                   | 7.5"-12.0"             | No              | No                  | Str. Thru      | No        | Yes / Yes                   | Yes                                  | 1                          | 36C03-258    | 36C03 258S1 |
| 750 mV          | 1 - Stage<br>Fast Open | 1/2" X 3/4" | 3.5"              | 2.5"-5.0"                   | 7.5"-12.0"             | Yes             | Yes                 | Str. Thru      | Yes       | Yes / Yes                   | Yes                                  | 2                          | 36C03U-333   | 36C03U-333  |
| 750 mV          | 1 - Stage Fast<br>Open | 3/4" x 3/4" | 3.5"              | 2.5"-5.0"                   | 7.5"-12.0"             | Yes             | Yes                 | Str. Thru      | Yes       | Yes / Yes                   | Yes                                  | 2                          | 36C03U-433   | 36C03U-433  |

NOTE: Not for HSI / DSI / Intermittent / Proven Pilot.

\* 36C01A-405 has pilot port but no thermocouple line interrupter.

\*\* 36C53-418 order F92-0659 Nat. to LP conversion kit for 7.5"-12.0" range.  
See White-Rodgers General Information for capacities of other gases.

## PARTS AND ACCESSORIES

| IMAGE                                                                               | DESCRIPTION                                                                                                                          | MODEL NUMBER | ITEM NUMBER    |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|
|  | Brass Compression Fitting for 1/4" Pilot Line Connections 7/16"-24 Thread                                                            | F69-0727     | F0069 072700S1 |
|  | LP to Natural Gas Conversion Kit for Use On Single Stage 36C, D, E, F, G, H, J Valves, Regulation Range 2.5" to 5.0"W.C.             | F92-0656     | F0092 065600S1 |
|  | Natural to Regulated LP Gas Conversion Kit for Use On Single Stage 36C, D, E, F, G, H, J Valves. Regulation Range 7.0 " to 12.0"W.C. | F92-0659     | F0092 065900S1 |
|  | Natural to Unregulated LP Gas Conversion Kit for All 36C00 Valves. Use With External Regulator Set for LP Gas                        | F92-0737     | F0092 073700S1 |





36C94-303

## 36C SERIES HSI / DSI / INTERMITTENT / PROVEN PILOT

*Ideal general purpose replacements for Intermittent Ignition systems.*

### FEATURES

- Straight through design
- Inlet / outlet reducer bushings included
- Mounting position upright, or 0° to 90° from upright in any direction
- Special Intermittent Ignition Device model for two-stage applications (36C74-913)

### SPECIFICATIONS

Electrical Rating ..... 0.6 amps  
 Ambient Operating Range ..... -40 to 175°F (-40 to 79°C)  
 Maximum Pressure Rating ..... 1/2" PSI (14.0" WC)  
 Pilot Gas Connection ..... Compression fitting for 1/4" OD tubing  
 Inlet & Outlet Pressure Taps ..... 1/8" NPT  
 UR/CUR File Number ..... MP1323  
 CSA/CUS Certificate Number ..... 1113449

| PIPE SIZE   | 1" PRESSURE DROP<br>CAPACITY NATURAL GAS<br>.64 SP. GR.<br>(1000 BTU/FT³) | 1" PRESSURE DROP<br>CAPACITY LP GAS<br>1.53 SP. GR.<br>(2500 BTU/FT³) | RANGE OF REGULATION<br>NATURAL GAS<br>.64 SP. GR.<br>(1000 BTU/FT³) | RANGE OF REGULATION<br>LP GAS<br>1.53 SP. GR.<br>(2500 BTU/FT³) |
|-------------|---------------------------------------------------------------------------|-----------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------|
| 1/2" X 3/8" | 100,000                                                                   | 162,000                                                               | 15,000-100,000                                                      | 15,000-162,000                                                  |
| 1/2" X 1/2" | 230,000                                                                   | 372,600                                                               | 30,000-290,000                                                      | 30,000-469,000                                                  |
| 1/2" X 3/4" | 230,000                                                                   | 372,600                                                               | 30,000-290,000                                                      | 30,000-469,000                                                  |
| 3/4" X 3/4" | 280,000                                                                   | 453,600                                                               | 50,000-400,000                                                      | 50,000-648,000                                                  |

### 36C SERIES HSI / DSI, INTERMITTENT / PROVEN PILOT

| VOLTAGE         | STAGES / OPENING | PIPE SIZE   | REGULATOR SETTING | NATURAL GAS ADJ. RANGE (WC) | LP GAS ADJ. RANGE (WC) | LP KIT INCLUDED | REDUCER BUSHING KIT | FLOW DIRECTION | SIDE TAPS | INLET / OUTLET PRESSURE TAP | HSI / DSI | INTERMITTENT / PROVEN PILOT | INTERNAL WIRING SEE FIGURE | MODEL NUMBER | ITEM NUMBER |
|-----------------|------------------|-------------|-------------------|-----------------------------|------------------------|-----------------|---------------------|----------------|-----------|-----------------------------|-----------|-----------------------------|----------------------------|--------------|-------------|
| 24 VAC<br>60 Hz | Step<br>Open     | 3/4" x 3/4" | 0.9"/3.5"         | 2.5"-5.0"                   | Nat.<br>Only           | No              | Yes                 | Str. Thru      | No        | Yes / Yes                   | Yes       | Yes                         | 5                          | 36C74-913    | 36C74-913   |

### 36C SERIES INTERMITTENT / PROVEN PILOT

|                 |               |             |      |           |                |     |    |           |    |           |    |     |    |           |           |
|-----------------|---------------|-------------|------|-----------|----------------|-----|----|-----------|----|-----------|----|-----|----|-----------|-----------|
| 24 VAC<br>60 Hz | Delay<br>Slow | 1/2" X 3/4" | 3.5" | 2.5"-5.0" | 7.5"-<br>12.0" | Yes | No | Str. Thru | No | Yes / Yes | No | Yes | 15 | 36C94-303 | 36C94-303 |
|-----------------|---------------|-------------|------|-----------|----------------|-----|----|-----------|----|-----------|----|-----|----|-----------|-----------|

NOTE: Not for Standing Pilot.

### PARTS AND ACCESSORIES

| IMAGE                                                                              | DESCRIPTION                                                                                                                          | MODEL NUMBER | ITEM NUMBER    |
|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|
|  | Brass Compression Fitting for 1/4" Pilot Line Connections 7/16"-24 Thread                                                            | F69-0727     | F0069 072700S1 |
|  | LP to Natural Gas Conversion Kit for Use On Single Stage 36C, D, E, F, G, H, J Valves, Regulation Range 2.5" to 5.0"W.C.             | F92-0656     | F0092 065600S1 |
|  | Natural to Regulated LP Gas Conversion Kit for Use On Single Stage 36C, D, E, F, G, H, J Valves. Regulation Range 7.0 " to 12.0"W.C. | F92-0659     | F0092 065900S1 |
|  | Natural to Unregulated LP Gas Conversion Kit for All 36C00 Valves. Use With External Regulator Set for LP Gas                        | F92-0737     | F0092 073700S1 |



36C84-912

## 36C CYCLE PILOT GAS VALVES

*Ideal general purpose replacements for Cycle-Pilot Intermittent Ignition systems*

### FEATURES

- Straight through design
- Mounting position upright, or 0° to 90° from upright in any direction
- Inlet/outlet reducer bushings

### SPECIFICATIONS

Electrical Rating ..... 0.6 amps  
 Maximum Pressure Rating ..... 1/2 PSI (14.0" W.C.)  
 Ambient Operating Range ..... -40 to 175°F (-40 to 79°C)  
 UR/CUR File Number ..... MP1323  
 CSA/CUS Certificate Number ..... 1113449

| PIPE SIZE   | 1" PRESSURE DROP CAPACITY                                                           |                                                                                 | RANGE OF REGULATION                                                           |                                                                           |
|-------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------|
|             | BTU/HR                                                                              |                                                                                 | BTU/HR                                                                        |                                                                           |
|             | 1" PRESSURE DROP CAPACITY NATURAL GAS<br>.64 SP. GR.<br>(1000 BTU/FT <sup>3</sup> ) | 1" PRESSURE DROP CAPACITY LP GAS<br>1.53 SP. GR.<br>(2500 BTU/FT <sup>3</sup> ) | RANGE OF REGULATION NATURAL GAS<br>.64 SP. GR.<br>(1000 BTU/FT <sup>3</sup> ) | RANGE OF REGULATION LP GAS<br>1.53 SP. GR.<br>(2500 BTU/FT <sup>3</sup> ) |
| 1/2" X 3/8" | 100,000                                                                             | 162,000                                                                         | 15,000-100,000                                                                | 15,000-162,000                                                            |
| 1/2" X 1/2" | 230,000                                                                             | 372,600                                                                         | 30,000-290,000                                                                | 30,000-469,000                                                            |
| 1/2" X 3/4" | 230,000                                                                             | 372,600                                                                         | 30,000-290,000                                                                | 30,000-469,000                                                            |
| 3/4" X 3/4" | 280,000                                                                             | 453,600                                                                         | 50,000-400,000                                                                | 50,000-648,000                                                            |

### 36C SERIES CYCLE PILOT

| VOLTAGE      | STAGES / OPENING       | PIPE SIZE   | REGULATOR SETTING | NATURAL GAS ADJ. RANGE (WC) | LP GAS ADJ. RANGE (WC) | LP KIT INCL | REDUCER BUSHING KIT | FLOW DIRECTION | SIDE TAPS | INLET / OUTLET PRESSURE TAP | INTERMITTENT / PROVEN PILOT | INTERNAL WIRING SEE FIGURE | MODEL NUMBER | ITEM NUMBER |
|--------------|------------------------|-------------|-------------------|-----------------------------|------------------------|-------------|---------------------|----------------|-----------|-----------------------------|-----------------------------|----------------------------|--------------|-------------|
| 24 VAC 60 Hz | 1 - Stage Fast Opening | 3/4" x 3/4" | 3.5"              | 2.5"-5.0"                   | 7.5"-12.0"             | Yes         | Yes                 | Str. Thru      | No        | Yes / Yes                   | Cycle Pilot                 | 7                          | 36C84-912    | 36C84 912   |
| 24 VAC 60 Hz | 1 - Stage Fast Opening | 3/4" x 3/4" | 3.5"              | 2.5"-5.0"                   | 7.5"-12.0"             | Yes         | Yes                 | Str. Thru      | No        | Yes / Yes                   | Cycle Pilot                 | 7                          | 36C84-921    | 36C84 921   |
| 24 VAC 60 Hz | 1 - Stage Fast Opening | 3/4" x 3/4" | 3.5"              | 2.5"-5.0"                   | Nat. Only              | No          | No                  | Str. Thru      | No        | Yes / Yes                   | Cycle Pilot                 | 14                         | 36C84-923    | 36C84 923   |
| 24 VAC 60 Hz | 1 - Stage Fast Opening | 3/4" x 3/4" | 3.5"              | 2.5"-5.0"                   | Nat. Only              | No          | Yes                 | Str. Thru      | No        | No / No                     | Cycle Pilot                 | 4                          | 36C84-926    | 36C84 926   |
| 24 VAC 60 Hz | 1 - Stage Fast Opening | 3/4" x 3/4" | 3.5"              | 2.5"-5.0"                   | 7.5"-12.0"             | Yes         | Yes                 | Str. Thru      | No        | Yes / Yes                   | Cycle Pilot                 | 8                          | 36C84-945    | 36C84 945   |
| 24 VAC 60 Hz | 1 - Stage Fast Opening | 3/4" x 3/4" | 3.5"              | 2.5"-5.0"                   | Nat. Only              | No          | Yes                 | Str. Thru      | No        | Yes / Yes                   | Cycle Pilot                 | 7                          | 36C94-906    | 36C94 906   |

NOTE: Not for Standing Pilot / HSI / DSI.

NOTE: -9XX series replaces -4XX series. Knob replaced with an ON-OFF switch.

See White-Rodgers General information for capacities of other gases.

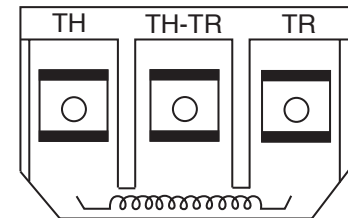
### PARTS AND ACCESSORIES

| IMAGE | DESCRIPTION                                                                                                                         | MODEL NUMBER | ITEM NUMBER    |
|-------|-------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|
|       | Bracket for Bryant pilots when retrofitting with Cycle-Pilot®.                                                                      | F6-1794      | F0006 179400B1 |
|       | LP to Natural Gas Conversion Kit for Use On Single Stage 36C, D, E, F, G, H, J Valves, Regulation Range 2.5" to 5.0"W.C.            | F92-0656     | F0092 065600S1 |
|       | Natural to Regulated LP Gas Conversion Kit for Use On Single Stage 36C, D, E, F, G, H, J Valves. Regulation Range 7.0" to 12.0"W.C. | F92-0659     | F0092 065900S1 |
|       | Natural to Unregulated LP Gas Conversion Kit for All 36C00 Valves. Use With External Regulator Set for LP Gas                       | F92-0737     | F0092 073700S1 |

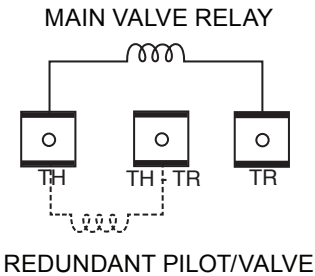
| IMAGE | DESCRIPTION                                                                                                        | MODEL NUMBER | ITEM NUMBER    |
|-------|--------------------------------------------------------------------------------------------------------------------|--------------|----------------|
|       | Gas valve pilot fitting 1/4" brass compression fitting for pilot line connections.                                 | F69-0727     | F0069 072700S1 |
|       | 36" replacement harness assembly for connection of 5059-23 to 36C84-426 in the 21D18-3 Cycle-Pilot® retrofit kit.  | F115-0064    | F0115 006400S1 |
|       | 36" replacement harness assembly for connection of 5059-23 to 36C86-302 in the 21D18-14 Cycle-Pilot® retrofit kit. | F115-0087    | F0115 008700   |

3 TERMINAL PANEL

FIG. 1



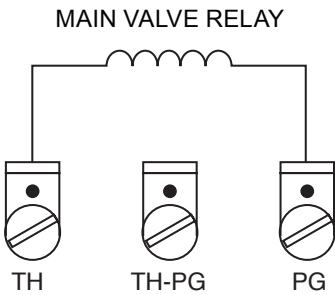
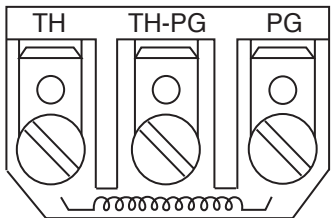
Some models have screw terminals instead of spade terminals shown



Some models may not have redundant valve

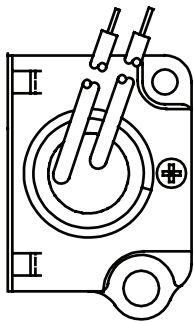
MILLIVOLT 3 TERMINAL PANEL

FIG. 2



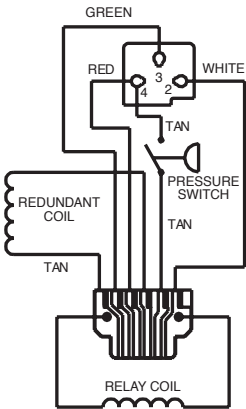
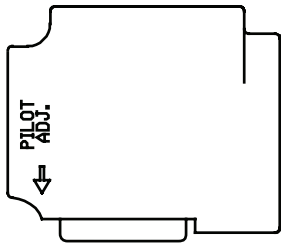
SNAP OPEN

FIG. 3



CYCLE PILOT

FIG. 4



## 4 TERMINAL PANEL

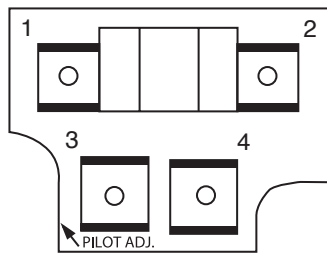
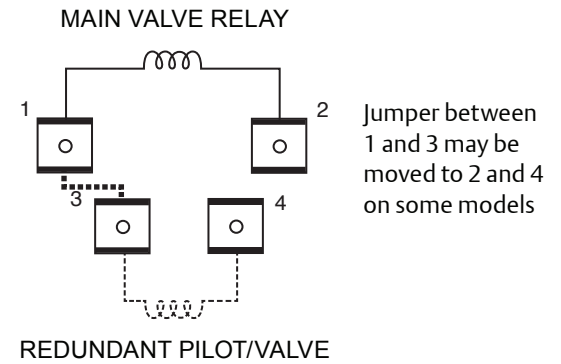
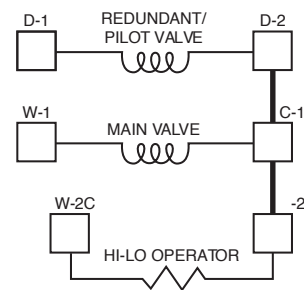
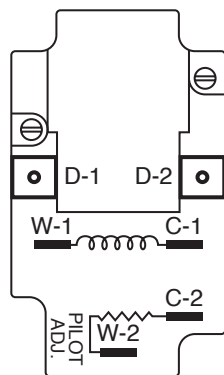


FIG. 5



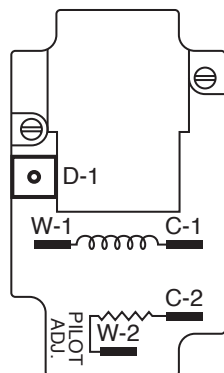
## BI-METAL TWO STAGE

FIG. 6A

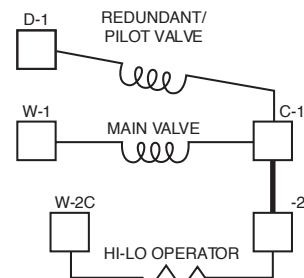


## BI-METAL TWO STAGE

FIG. 6B

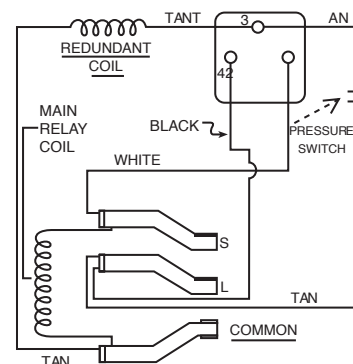
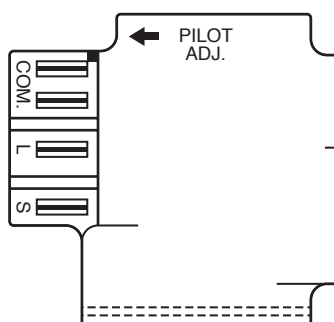


On some models, W1 and W2 are designated GV1 and GV2



## CYCLE PILOT PLUG-IN

FIG. 7



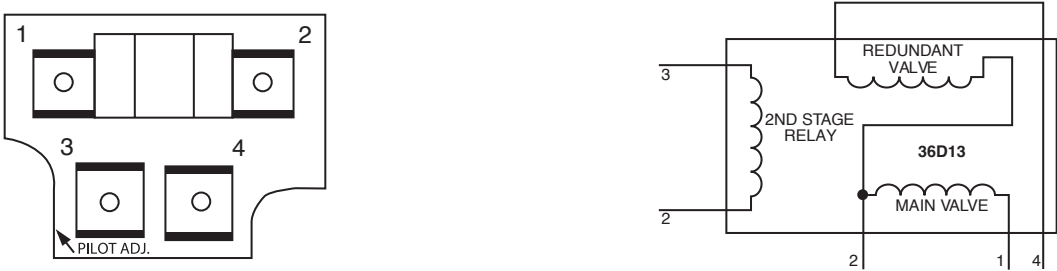
CYCLE PILOT WITH 4 TERMINAL PANEL

FIG. 8



RELAY TWO STAGE

FIG. 9



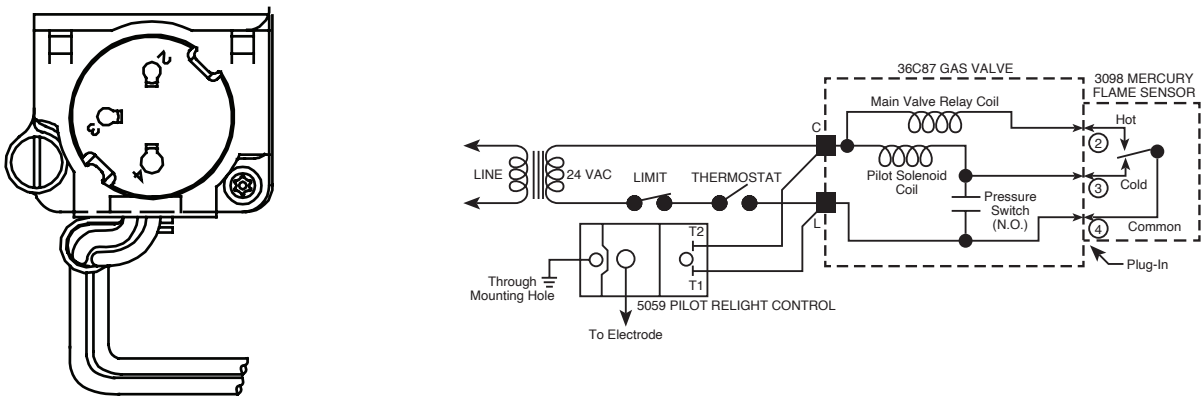
2 TERMINAL PANEL

FIG. 10



CYCLE PILOT

FIG. 11



CYCLE PILOT

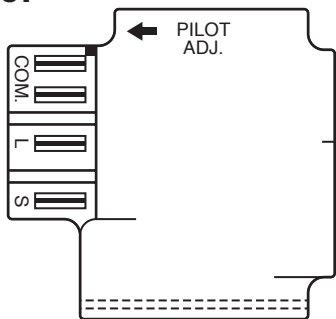
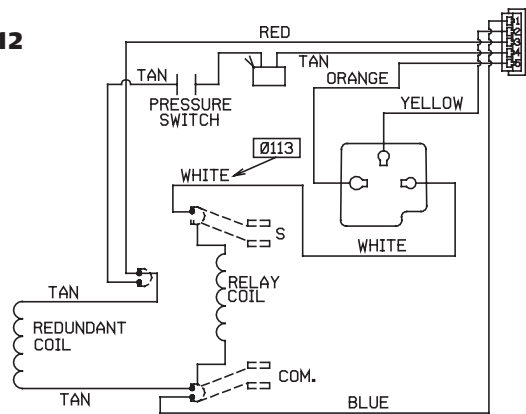


FIG. 12



CYCLE PILOT

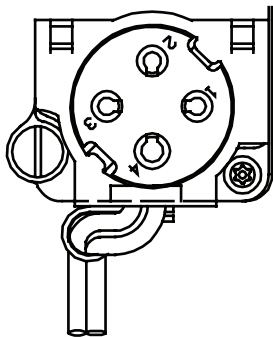
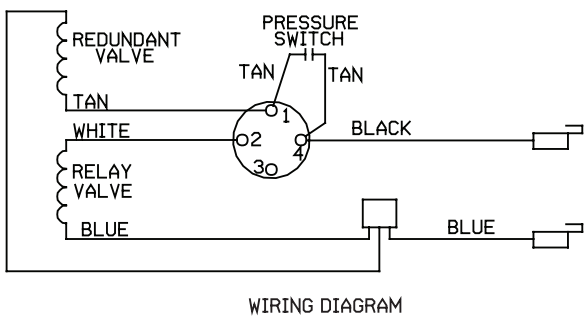


FIG. 13



CYCLE PILOT

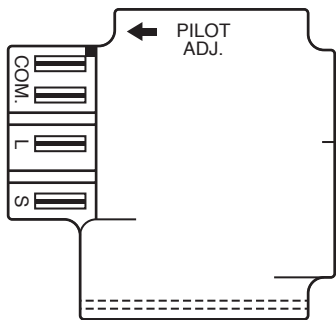
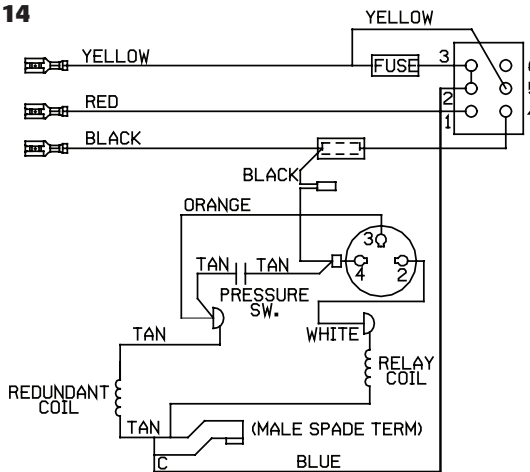


FIG. 14



INTERMITTENT IGNITION

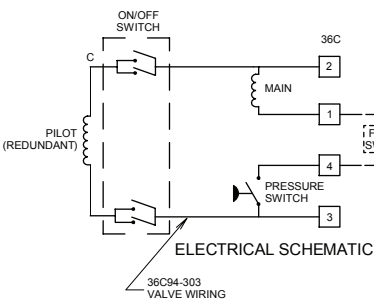


FIG. 15

| 36E93 Terminal Panel                                              |                        | 36C94 Terminal Panel                                |                                         |
|-------------------------------------------------------------------|------------------------|-----------------------------------------------------|-----------------------------------------|
|                                                                   |                        |                                                     |                                         |
| 36E93-301<br>36E93-302<br>36E93-303<br>36E93-304<br>Old Terminals | Description            | Term and Size                                       | 36C94-303<br>36C94-302<br>New Terminals |
| 5P                                                                | Pilot (Redundant) Coil | 1/4" Male Spade                                     | 3                                       |
| 1M                                                                | Main Coil              | 1/4" Male Spade                                     | 1                                       |
| 4P                                                                | Pressure Switch        | 1/4" Male Spade with 1/4" x 3/16" adapter installed | 4                                       |
| 2                                                                 | Common                 | 1/4" Male Spade                                     | 2                                       |
| 3                                                                 |                        |                                                     |                                         |





36H32-423

## 36H SERIES HSI / DSI / INTERMITTENT / PROVEN PILOT

Universal electronic ignition gas valves. Our highest capacity multi-function combination control covering a wide range of gas heating applications.

### FEATURES

- Pilot port plugged for Hot Surface and Direct Spark Ignition systems, remove plug for Intermittent / Proven Pilot systems
- Fast open, slow open, single and two stage models
- Electric on-off switch and convenient quick connect coil terminals
- Tamper resistant screws and controlled gasket compression to withstand high inlet pressures
- Mounting position upright, or 0° to 90° from upright in any direction

### SPECIFICATIONS

|                                       |                            |
|---------------------------------------|----------------------------|
| Operating Voltage.....                | 24 VAC 50/60 Hz            |
| Electrical Rating - Single Stage..... | 0.41 amps                  |
| Electrical Rating - Two Stage.....    | 0.54 amps                  |
| Ambient Operating Range.....          | -40 to 175°F (-40 to 79°C) |
| Maximum Pressure Rating.....          | 1/2" PSI (14.0" WC)        |
| CSA/CUS Certificate Number.....       | 1636373                    |

| PIPE SIZE   | 1" PRESSURE DROP CAPACITY<br>NATURAL GAS .64 SP. GR.<br>(1000 BTU/FT <sup>3</sup> ) | 1" PRESSURE DROP CAPACITY<br>LP GAS 1.53 SP. GR.<br>(2500 BTU/FT <sup>3</sup> ) | RANGE OF REGULATION<br>NATURAL GAS .64 SP. GR.<br>(1000 BTU/FT <sup>3</sup> ) | RANGE OF REGULATION<br>LP GAS 1.53 SP. GR.<br>(2500 BTU/FT <sup>3</sup> ) |
|-------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| 3/4" x 3/4" | 300,000                                                                             | 486,000                                                                         | 50,000-400,000                                                                | 81,000-648,000                                                            |
| 1/2" x 3/4" | 230,000                                                                             | 372,600                                                                         | 50,000-300,000                                                                | 80,000-500,000                                                            |
| 1/2" x 1/2" | 170,000                                                                             | 275,500                                                                         | 40,000-240,000                                                                | 40,000-400,000                                                            |

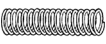
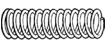
### 36H SERIES HSI / DSI / INTERMITTENT / PROVEN PILOT

| VOLTAGE        | STAGES / OPENING    | PIPE SIZE   | REGULATOR SETTING     | NATURAL GAS ADJ. RANGE (WC)     | LP GAS ADJ. RANGE (WC)           | LP KIT INCLUDED | REDUCER BUSHING KIT | FLOW DIRECTION | SIDE TAPS | INLET / OUTLET PRESSURE TAP* | HSI / DSI INTERMITTENT / PROVEN PILOT | INTERNAL WIRING SEE FIGURE | MODEL NUMBER | ITEM NUMBER |
|----------------|---------------------|-------------|-----------------------|---------------------------------|----------------------------------|-----------------|---------------------|----------------|-----------|------------------------------|---------------------------------------|----------------------------|--------------|-------------|
| 24 VAC 50/60Hz | 1 - Stage Fast Open | 1/2" X 1/2" | 3.5"                  | 2.5"-5.0"                       | 5.0"-12.0"                       | Yes             | No                  | Str. Thru      | No        | Yes / Yes                    | Yes                                   | 1                          | 36H32-214    | 36H32-214   |
| 24 VAC 50/60Hz | 1 - Stage Fast Open | 1/2" X 3/4" | 3.5"                  | 2.5"-5.0"                       | 5.0"-12.0"                       | Yes             | Yes                 | Str. Thru      | No        | Yes / Yes                    | Yes                                   | 1                          | 36H32-304    | 36H32-304   |
| 24 VAC 50/60Hz | 1 - Stage Fast Open | 3/4" X 3/4" | 3.5"                  | 2.5"-5.0"                       | 5.0"-12.0"                       | Yes             | Yes                 | Str. Thru      | No        | Yes / Yes                    | Yes                                   | 1                          | 36H32-423    | 36H32-423   |
| 24 VAC 50/60Hz | 1 - Stage Slow Open | 3/4" X 3/4" | 3.5"                  | 2.5"-5.0"                       | 5.0"-12.0"                       | Yes             | Yes                 | Str. Thru      | No        | Yes / Yes                    | Yes                                   | 1                          | 36H33-412    | 36H33-412   |
| 24 VAC 50/60Hz | 2 - Stage Fast Open | 3/4" X 3/4" | 1.1" Low<br>3.5" High | 1.0"-3.5" Low<br>2.5"-5.0" High | 4.0"-9.5" Low<br>8.0"-12.0" High | Yes             | Yes                 | Str. Thru      | No        | Yes / Yes                    | Yes                                   | 1                          | 36H64-463    | 36H64-463   |
| 24 VAC 50/60Hz | 2 - Stage Slow Open | 3/4" X 3/4" | 1.1" Low<br>3.5" High | 1.0"-3.5" Low<br>2.5"-5.0" High | 4.0"-9.5" Low<br>8.0"-12.0" High | Yes             | Yes                 | Str. Thru      | No        | Yes / Yes                    | Yes                                   | 1                          | 36H65-401    | 36H65-401   |

\* To measure outlet pressure on valves, loosen outlet pressure tap screw one quarter turn and put manometer hose over the top of the outlet pressure tap. See White-Rodgers General Information for capacities of other gases.

NOTE: Not for Standing Pilot.

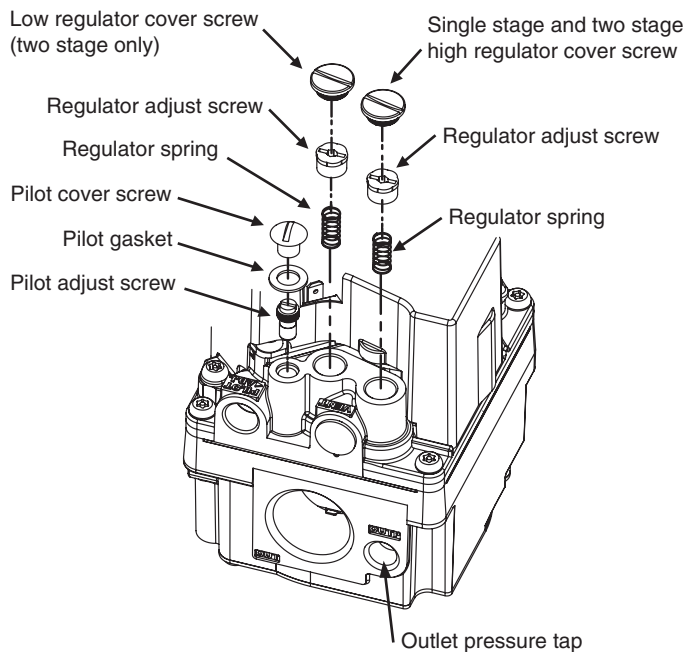
## PARTS AND ACCESSORIES

| IMAGE                                                                             | DESCRIPTION                                                                                                                          | MODEL NUMBER | ITEM NUMBER    |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|
|  | LP to Natural Gas Conversion Kit for Use On Single Stage 36C, D, E, F, G, H, J Valves, Regulation Range 2.5" to 5.0"W.C.             | F92-0656     | F0092 065600S1 |
|  | Natural to Regulated LP Gas Conversion Kit for Use On Single Stage 36C, D, E, F, G, H, J Valves. Regulation Range 7.0 " to 12.0"W.C. | F92-0659     | F0092 065900S1 |

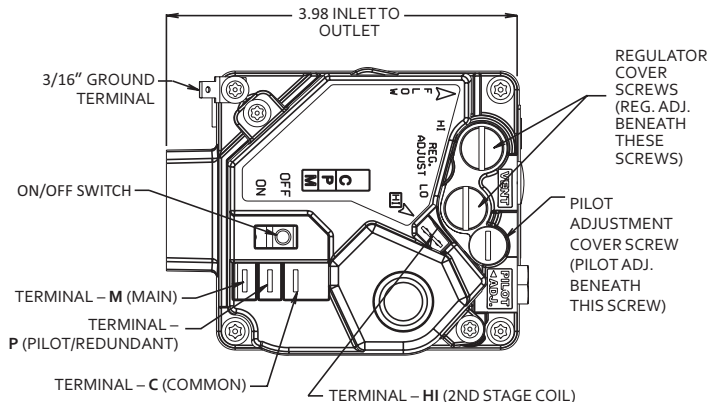
| IMAGE                                                                             | DESCRIPTION                                                                                                                                                 | MODEL NUMBER | ITEM NUMBER  |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------|
|  | Natural to Regulated LP Gas Conversion Kit for Use On Two Stage 36G, H, J, Valves, Regulation Range 4.0" to 10.0"W.C. Low Fire, 6.0" to 12.0"W.C. High Fire | F92-1008     | F0092 100800 |
|  | Regulated LP to Natural Gas Conversion Kit for Use On Two Stage 36G, H, J, Valves, Regulation Range 1.0" to 4.0"W.C. Low Fire, 2.0" to 5.0 "W.C. High Fire  | F92-1011     | F0092 101100 |

## 36H WIRING INFORMATION

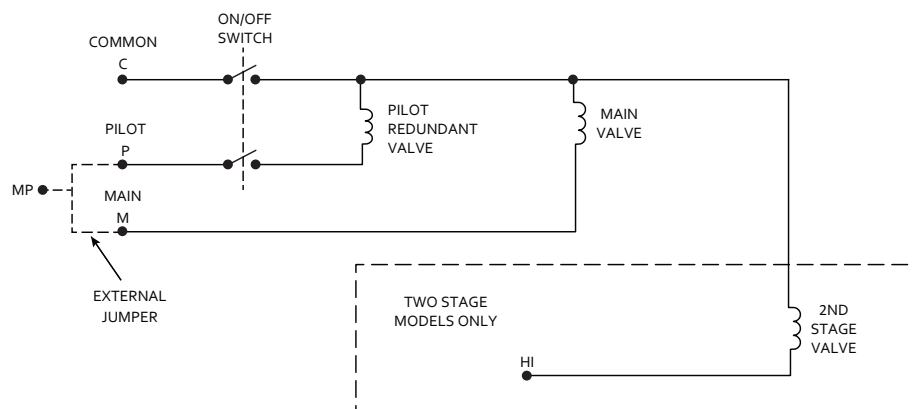
### SIMPLIFIED GAS VALVE INTERNAL WIRING AND TERMINAL IDENTIFICATION



### SINGLE AND TWO STAGE



### FEATURES AND TERMINAL IDENTIFICATION





36G22-254

## 36G / J SERIES HSI / DSI / INTERMITTENT / PROVEN PILOT

Electronic ignition gas valve. The versatile 36G/36J series combination gas valve covers a wide range of applications. Designed for use with common ignition systems (HSI/DSI/Intermittent/Proven Pilot). This series is our most compact footprint combination gas valve.

### FEATURES

- Designed for hot surface, direct spark and intermittent pilot ignition systems and features a compact footprint and versatile range
- Fast open, slow open, single and two stage models
- Electric on-off switch and convenient quick connect coil terminals and built-in pressure taps
- Tamper resistant screws and controlled gasket compression to withstand high inlet pressures
- Mounts in any position including upside down

### SPECIFICATIONS

|                                       |                            |
|---------------------------------------|----------------------------|
| Operating Voltage.....                | 24 VAC 50/60 Hz            |
| Electrical Rating - Single Stage..... | .3 amps                    |
| Electrical Rating - Two Stage.....    | .43 amps                   |
| Ambient Operating Range.....          | -40 to 175°F (-40 to 79°C) |
| Maximum Pressure Rating.....          | 1/2" PSI (14.0" WC)        |
| CSA/CUS Certificate Number.....       | 1175379                    |
|                                       | CE (36J)                   |

| VALVE (STAGES) | PIPE SIZE   | 1" PRESSURE DROP CAPACITY<br>NATURAL GAS .64 SP. GR.<br>(1000 BTU/FT <sup>3</sup> ) | 1" PRESSURE DROP CAPACITY<br>LP GAS 1.53 SP. GR.<br>(2500 BTU/FT <sup>3</sup> ) | RANGE OF REGULATION<br>NATURAL GAS.64 SP. GR.<br>(1000 BTU/FT <sup>3</sup> ) | RANGE OF REGULATION<br>LP GAS 1.53 SP. GR.<br>(2500 BTU/FT <sup>3</sup> ) |
|----------------|-------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------------------------------|---------------------------------------------------------------------------|
| Single         | 1/2" x 1/2" | 140,000                                                                             | 226,800                                                                         | 40,000-210,000                                                               | 60,000-340,000                                                            |
| Two            | 1/2" x 1/2" | 140,000                                                                             | 226,800                                                                         | 20,000 Low-210,000 High                                                      | 32,000 Low-340,000 High                                                   |
| Modulating     | 1/2" x 1/2" | 140,000                                                                             | 226,800                                                                         | 20,000-210,000                                                               | 32,600-340,000                                                            |

### 36G / J SERIES HSI / DSI / INTERMITTENT / PROVEN PILOT

| VOLTAGE           | STAGES / OPENING       | PIPE SIZE   | REGULATOR SETTING | NATURAL GAS ADJ.<br>RANGE (WC) | LP GAS ADJ. RANGE (WC) | LP KIT INCLUDED | REDUCER BUSHING KIT | FLOW DIRECTION | SIDE TAPS | INLET / OUTLET<br>PRESSURE TAP | HSI / DSI | INTERMITTENT<br>/ PROVEN PILOT | FLANGE MOUNT CAPABLE | MODEL<br>NUMBER | ITEM<br>NUMBER |
|-------------------|------------------------|-------------|-------------------|--------------------------------|------------------------|-----------------|---------------------|----------------|-----------|--------------------------------|-----------|--------------------------------|----------------------|-----------------|----------------|
| 24 VAC<br>50/60Hz | 1 - Stage<br>Fast Open | 1/2" X 1/2" | 3.5"              | 2.5"-5.0"                      | 7.0"-12.0"             | No**            | No                  | Str. Thru      | No        | Yes / Yes*                     | Yes       | No                             | No                   | 36G22-254       | 36G22-254      |
| 24 VAC<br>50/60Hz | 1 - Stage<br>Fast Open | 1/2" X 1/2" | 3.5"              | 2.5"-5.0"                      | 7.0"-12.0"             | Yes             | No                  | Str. Thru      | No        | Yes / Yes*<br>NPT & Towers     | Yes       | Yes                            | Yes                  | 36G32-500       | 36G32-500      |
| 24 VAC<br>50/60Hz | 1 - Stage<br>Slow Open | 1/2" X 1/2" | 3.5"              | 2.5"-5.0"                      | 7.0"-12.0"             | Yes             | No                  | Str. Thru      | No        | Yes / Yes*<br>NPT & Towers     | Yes       | Yes                            | Yes                  | 36G33-500       | 36G33-500      |
| 24 VAC<br>50/60Hz | 1 - Stage<br>Fast Open | 1/2" X 1/2" | 3.5"              | 2.5"-5.0"                      | 7.0"-12.0"             | Yes             | Yes                 | Str. Thru      | No        | Yes / Yes                      | Yes       | No                             | No                   | 36J22-214       | 36J22-214      |
| 24 Vac<br>50/60Hz | 1 - Stage<br>Fast Open | 1/2" X 1/2" | 3.5"              | 2.5"-5.0"                      | 7.0"-12.0"             | Yes             | No                  | Str. Thru      | No        | Yes / Yes                      | Yes       | No                             | No                   | 36J22Y-212      | 36J22Y-212     |
| 24 VAC<br>50/60Hz | 1 - Stage<br>Slow Open | 1/2" X 1/2" | 3.5"              | 2.5"-5.0"                      | 7.0"-12.0"             | Yes             | Yes                 | Str. Thru      | No        | Yes / Yes                      | Yes       | No                             | No                   | 36J24-214       | 36J24-214      |

\* NOTE: Not for Standing Pilot.

\*\* To measure outlet pressure on valves, loosen outlet pressure tap screw one quarter turn and put manometer hose over the top of the outlet pressure tap.  
Use F92-0659 to convert to regulated L.P. gas.  
See White-Rodgers General Information for capacities of other gases.

**36G / J SERIES HSI / DSI / INTERMITTENT / PROVEN PILOT <CONT'D>**

| VOLTAGE           | STAGES / OPENING       | PIPE SIZE   | REGULATOR SETTING     | NATURAL GAS ADJ. RANGE (WC)     | LP GAS ADJ. RANGE (WC)            | LP KIT INCLUDED | REDUCER BUSHING KIT | FLOW DIRECTION       | SIDE TAPS | INLET / OUTLET PRESSURE TAP | HSI / DSI | INTERMITTENT / PROVEN PILOT | FLANGE MOUNT CAPABLE | MODEL NUMBER | ITEM NUMBER |
|-------------------|------------------------|-------------|-----------------------|---------------------------------|-----------------------------------|-----------------|---------------------|----------------------|-----------|-----------------------------|-----------|-----------------------------|----------------------|--------------|-------------|
| 24 VAC<br>50/60Hz | Modulating             | 1/2" X 1/2" | 3.5"                  | 0.4"-4.0"                       | 1.3"-11.5"                        | Yes             | Yes                 | Str. Thru            | No        | Yes / Yes                   | Yes       | No                          | No                   | 36J27-554    | 36J27-554   |
| 24 VAC<br>50/60Hz | 2 - Stage<br>Fast Open | 1/2" X 1/2" | 1.5" Low<br>3.5" High | 1.0"-4.0" Low<br>2.0"-5.0" High | 4.0"-10.0" Low<br>6.0"-12.0" High | Yes             | Yes                 | Str. Thru            | No        | Yes / Yes*                  | Yes       | No                          | No                   | 36J54-214    | 36J54-214   |
| 24 VAC<br>50/60Hz | 2 - Stage<br>Slow Open | 1/2" X 1/2" | 1.5" Low<br>3.5" High | 1.0"-4.0" Low<br>2.0"-5.0" High | 4.0"-10.0" Low<br>6.0"-12.0" High | Yes             | Yes                 | Str. Thru            | No        | Yes / Yes*                  | Yes       | No                          | No                   | 36J55-214    | 36J55-214   |
| 24 VAC<br>50/60Hz | 1 - Stage<br>Slow Open | 1/2" X 1/2" | 3.5"                  | 2.5"-5.0"                       | 7.0"-12.0"                        | Yes             | No                  | 90° Bottom<br>Outlet | No        | Yes / Yes*                  | Yes       | No                          | No                   | 36J24-614    | 36J24-614   |
| 24 VAC<br>50/60Hz | 2 - Stage<br>Slow Open | 1/2" X 1/2" | 1.5" Low<br>3.5" High | 1.0"-4.0" Low<br>2.0"-5.0" High | 4.0"-10.0" Low<br>6.0"-12.0" High | Yes             | No                  | 90° Bottom<br>Outlet | No        | Yes / Yes*                  | Yes       | No                          | No                   | 36J55-614    | 36J55-614   |

NOTE: Not for Standing Pilot / Intermittent / Proven Pilot.

See White-Rodgers General Information for capacities of other gases.

\* To measure outlet pressure on valves, loosen outlet pressure tap screw one quarter turn and put manometer hose over the top of the outlet pressure tap.

\*\* Use F92-0659 to convert to regulated L.P. gas.

**PARTS AND ACCESSORIES**

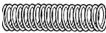
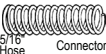
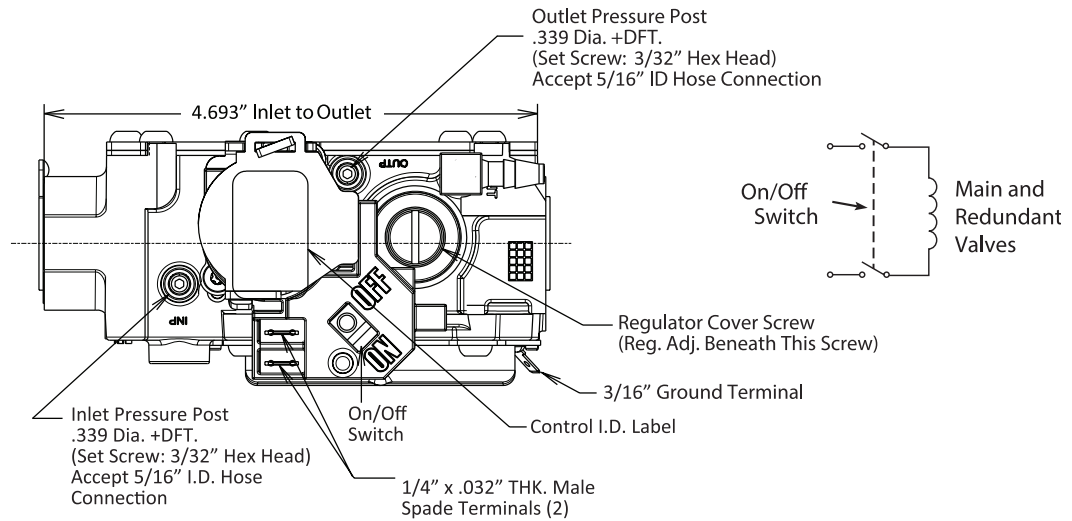
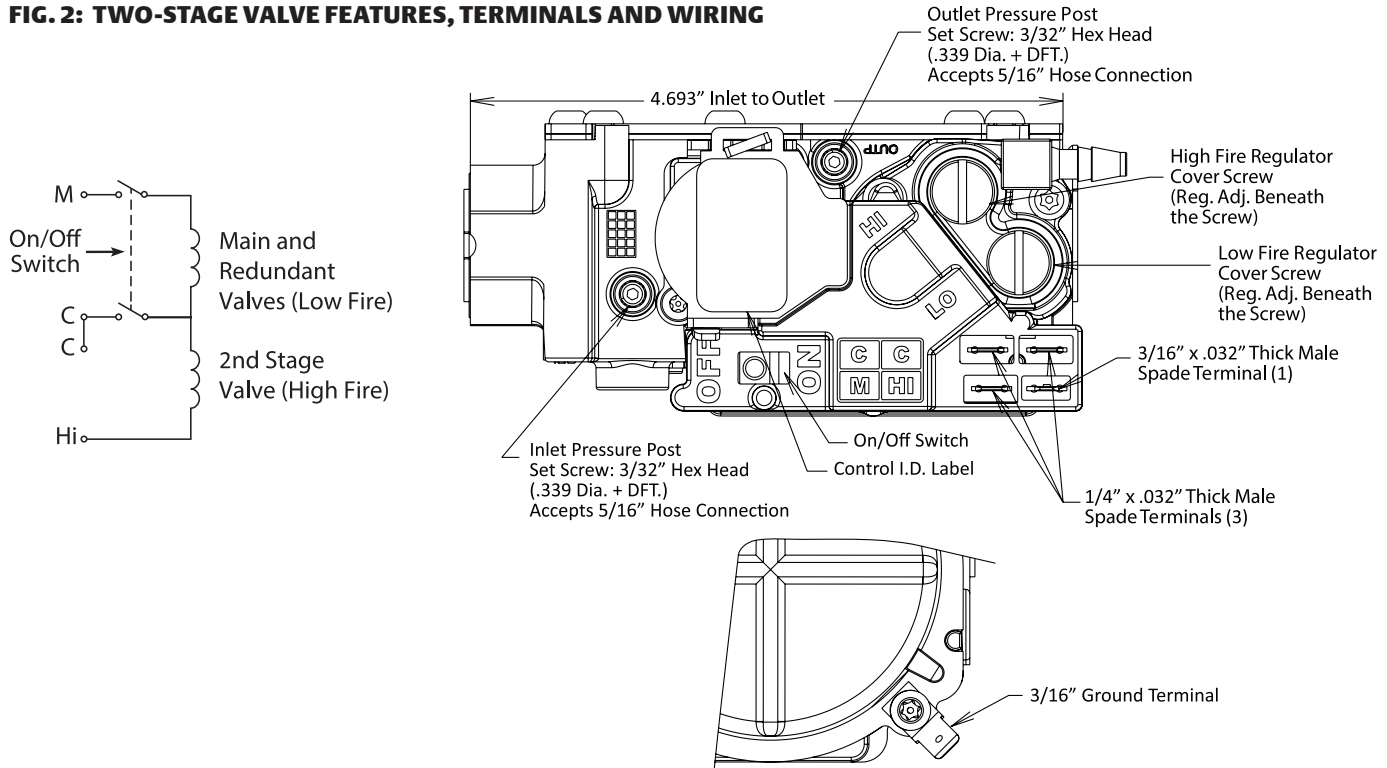
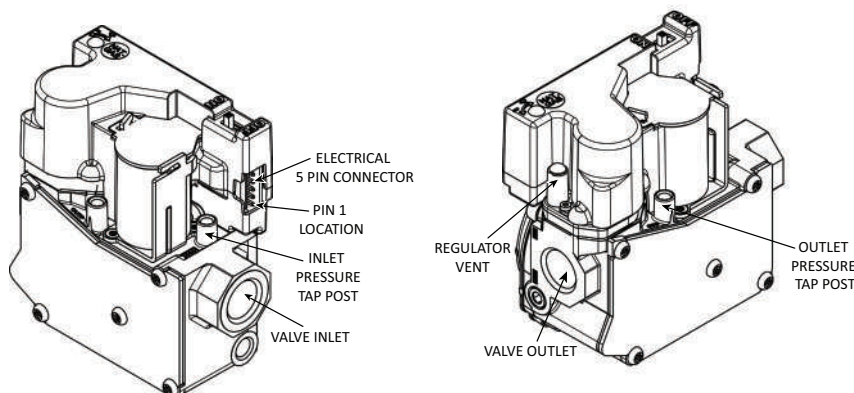
| IMAGE                                                                               | DESCRIPTION                                                                                                                                                 | MODEL NUMBER | ITEM NUMBER    |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|
|  | LP to Natural Gas Conversion Kit for Use On Single Stage 36C, D, E, F, G, H, J Valves, Regulation Range 2.5" to 5.0"W.C.                                    | F92-0656     | F0092 065600S1 |
|  | Natural to Regulated LP Gas Conversion Kit for Use On Single Stage 36C, D, E, F, G, H, J Valves. Regulation Range 7.0" to 12.0"W.C.                         | F92-0659     | F0092 065900S1 |
|  | Adapter Kit for The 36G Gas Valves. Kit Includes: Connector (5/16" to 1/4"Hose Barb), Tube (5/16" O.D.) and Hex Wrench (3/32")                              | F92-1003     | F0092 100300S1 |
|  | Natural to Regulated LP Gas Conversion Kit for Use On Two Stage 36G, H, J, Valves, Regulation Range 4.0" to 10.0"W.C. Low Fire, 6.0" to 12.0"W.C. High Fire | F92-1008     | F0092 100800   |
|  | Regulated LP to Natural Gas Conversion Kit for Use On Two Stage 36G, H, J, Valves, Regulation Range 1.0" to 4.0"W.C. Low Fire, 2.0" to 5.0"W.C. High Fire   | F92-1011     | F0092 101100   |

**FIG. 1: SINGLE STAGE VALVE FEATURES, TERMINALS AND WIRING**

**FIG. 2: TWO-STAGE VALVE FEATURES, TERMINALS AND WIRING**

**FIG. 3: 36J27 MODULATING VALVE FEATURES**


#### Electrical 5 PIN Connector Pin Out

- PIN 5 - TH - Main Valve 24 VAC (top pin, with the cover pointing up)
- PIN 4 - TR - Ground
- PIN 3 - TX - Communication to IFC
- PIN 2 - RX - Communication to Stepper
- PIN 1 - TH - Board 24VAC (bottom pin, with the cover pointing up)



764-702

## 764 GAS PILOT SAFETY FIREPLACE VALVES

*Thermocouple operated control with 100% shut off*

### FEATURES

- Manual on-off knob and thermocouple operated pilot safety
- Inlet screen and inlet pipe stop
- Mounts in any position including upside down

### SPECIFICATIONS

|                                      |                                                             |
|--------------------------------------|-------------------------------------------------------------|
| Operating Voltage .....              | 20-30 mV                                                    |
| Regulator Adjustment Range .....     | Non-regulated                                               |
| Natural Gas @ 1.0" P.D. BTU/HR ..... | Straight Through 124,000 Bottom Inlet 118,000               |
| LP Gas @ 1.0" P.D. BTU/HR .....      | Straight Through 200,880 Bottom Inlet 191,160               |
| Inlet Connection Size .....          | 1/2" NPT                                                    |
| Outlet Connection Size .....         | Main 1/2" NPT, pilot compression fitting for 1/4" OD tubing |
| Flow Direction .....                 | Dual Inlet Straight Through with Optional Bottom Inlet      |
| Maximum Pressure Rating .....        | 1/2 PSI (14.0" W.C.)                                        |
| Swing Radius .....                   | 2.5"                                                        |
| UR/CUR File Number .....             | MP1323                                                      |
| CSA/CUS Certificate Number .....     | 1047800                                                     |

### 764 GAS PILOT SAFETY, FIREPLACE VALVES

| VOLTAGE                  | PIPE SIZE   | FLOW DIRECTION                                      | 1" PRESSURE DROP CAPACITY<br>NATURAL GAS .64 SP. GR.<br>(1000 BTU/FT <sup>3</sup> ) | 1" PRESSURE DROP CAPACITY<br>LP GAS 1.53 SP. GR.<br>(2500 BTU/FT <sup>3</sup> ) | MODEL<br>NUMBER | ITEM<br>NUMBER |
|--------------------------|-------------|-----------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|-----------------|----------------|
| 20 to 30 mV Thermocouple | 1/2" X 1/2" | Str. Thru                                           | 124,000                                                                             | 200,880                                                                         | 764-501         | 764-501        |
| 20 to 30 mV Thermocouple | 1/2" X 1/2" | *Dual Inlet Str. Thru with<br>Optional Bottom Inlet | Side Inlet 124,000,<br>Bottom Inlet 118,000                                         | Side Inlet 200,880,<br>Bottom Inlet 191,160                                     | 764-742         | 07 64 742S1    |

\* Dual Inlet one inlet must be plugged  
See White-Rodgers General Information for capacities of other gases

### PARTS AND ACCESSORIES

| IMAGE                                                                               | DESCRIPTION                           | MODEL NUMBER | ITEM NUMBER    |
|-------------------------------------------------------------------------------------|---------------------------------------|--------------|----------------|
|  | Replacement Knob for 764 Series Valve | F42-0895     | F0042 089500S1 |





25M01A-100

25M GAS DRYER VALVES & COILS

Clothes dryer gas valves combine pressure regulator main and redundant solenoids for hot surface ignition dryers.

FEATURES

- Compact split coil design
- Inlet/outlet screen
- Field-adjustable regulator
- Replaceable operating coils (no gas interruption)
- Outlet pressure tap
- Both models packaged with the most popular main burner orifices to replace many OEM models
- Replacement coils available for most popular models
- Single or complete coil sets

SPECIFICATIONS

Type of Gas .....Natural or LP gas (conversion kit included)  
Pressure Regulator Setting .....Nat. Gas: 2.8" to 5.4"W.C., LP Gas: 8.5" to 12.0"W.C.  
Operating Ambient Temperature.....32° to 155°F  
Max. Pressure Rating ..... 1/2" PSI (14.0" WC)  
Electrical ..... 120 VAC, 60 Hz, .06 amps  
1" P.D. Capacity ..... 40,000 BTU/HR

25M GAS DRYER VALVES & COILS

| COIL VOLTAGE | OUTLET FLOW DIRECTION | INLET/OUTLET SIZE | REGULATOR ADJUSTMENT RANGE                                                           | MOUNTING                                                                                                                | MODEL NUMBER | ITEM NUMBER |
|--------------|-----------------------|-------------------|--------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| 120 VAC      | Right Angle Left      | 3/8" NPT X 11/32" | Nat. Gas: 2.8" to 5.4"W.C.<br>LP Gas: 8.5" to 12.0"W.C.<br>(Conversion Kit Included) | Control may be mounted in the following positions: horizontal, vertical or 90° of horizontal. Do not mount upside down. | 25M01A-100   | 25M01A100   |
| 120 VAC      | Right Angle Right     | 3/8" NPT X 11/32" | Nat. Gas: 2.8" to 5.4"W.C.<br>LP Gas: 8.5" to 12.0"W.C.<br>(Conversion Kit Included) | Control may be mounted in the following positions: horizontal, vertical or 90° of horizontal. Do not mount upside down. | 25M01A-101   | 25M01A101   |



F91-3889



F91-3890

2500 SERIES REPLACEMENT GAS VALVE COILS

FEATURES

- Easy installation of replacement coil assemblies
- Available for most popular models
- Single or complete coil sets

PARTS AND ACCESSORIES

| APPLICATION | DESCRIPTION                                                                                                            | OEM                                            | MODEL NUMBER | ITEM NUMBER    |
|-------------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|--------------|----------------|
| 25M01A-xxx  | 120 VAC Coil Replacement for 25M valve individual pack secondary coil                                                  | Whirlpool, Electrolux, GE, Maytag, Speed Queen | F91-3889     | F0091 388900S1 |
| 25M01A-xxx  | 120 VAC Coil Replacement for 25M valve individual pack booster and holding coil                                        | Whirlpool, Electrolux, GE, Maytag, Speed Queen | F91-3890     | F0091 389000S1 |
| 25M01A-xxx  | Boost/host coil and secondary coil (120 VAC, 60 Hz) for 25M dryer gas valve (includes F91-3889 plus F91-3890 combined) | Whirlpool, Electrolux, GE, Maytag, Speed Queen | F91-4241     | F91-4241       |



21D64-2

# HOTROD™ SERIES UNIVERSAL NITRIDE IGNITOR UPGRADES

120V nitride upgrade kits for conversion of silicon carbide (flat or spiral).

## FEATURES

- HotRod™ replaces over 170 ignitors; HotRod EX™ replaces over 260 ignitor models
- Robust nitride ignitor design for longer life and fewer callbacks – 5-year warranty
- Nitride ignitors with 14.5" and 15.5" lead-stripped ends
- Universal and standard mounting brackets and 2 ceramic wire nuts
- Replaces most silicon carbide ignitors, including many Carborundum™ models

## SPECIFICATIONS

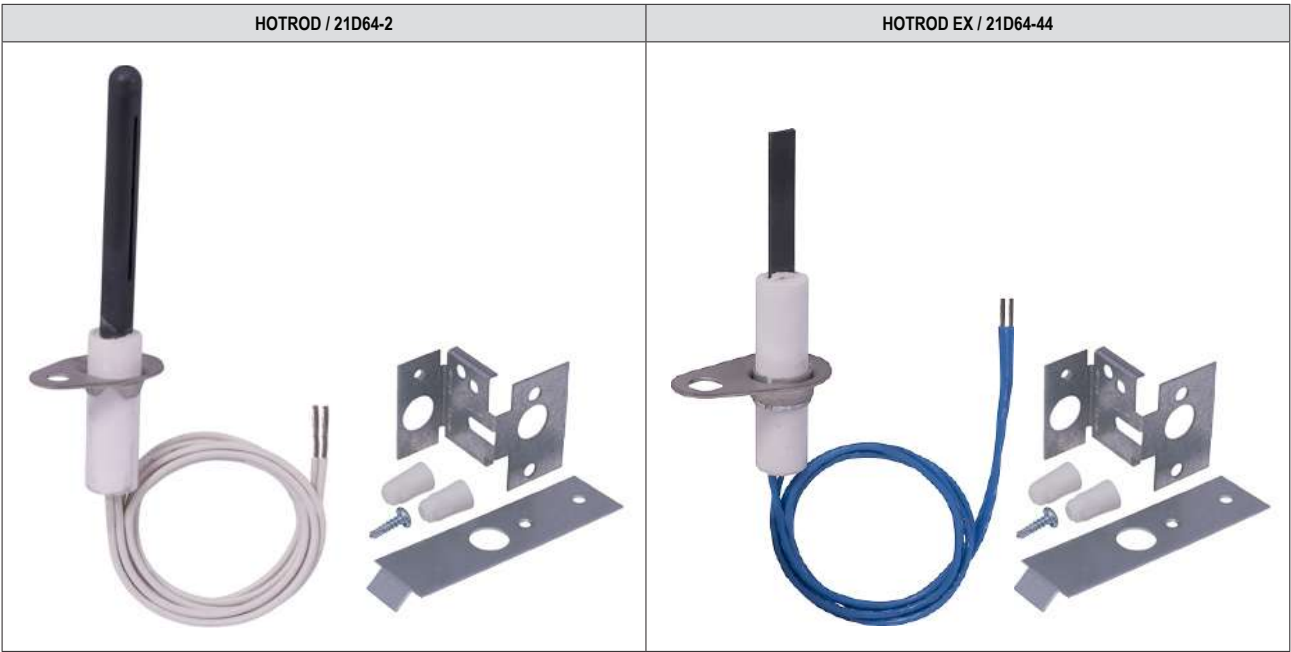
Operating Voltage..... 102-132 VAC, 60 Hz  
Max. Load Current .....3.0 A @ 132 VAC, 25°C  
Warmup Time .....21D64-2: 17 sec. minimum  
.....21D64-44: 8 sec. minimum  
Temperature Rating Lead Insulation ..... 250°C

## HOTROD™ 21D64 SERIES UNIVERSAL IGNITOR UPGRADES

| DESCRIPTION                                                                                                                             | LEAD LENGTH | MODEL NUMBER | ITEM NUMBER |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------|-------------|
| HotRod Kit includes 120V nitride ignitor, 2 brackets (one universal), 15.5" lead-stripped ends, ceramic wire nuts and mounting screw    | 15.5"       | 21D64-2      | 21D64 002   |
| HotRod 5-pack contains 5 single-pack ignitor kits                                                                                       | 15.5"       | 21D64-5PK    | 21D64-5PK   |
| HotRod EX Kit includes 120V nitride ignitor, 2 brackets (one universal), 14.5" lead-stripped ends, ceramic wire nuts and mounting screw | 14.5"       | 21D64-44     | 21D64-44    |

## FLAME SENSOR AND HOT ROD COMBO

| DESCRIPTION                                      | LEAD LENGTH | MODEL NUMBER | ITEM NUMBER |
|--------------------------------------------------|-------------|--------------|-------------|
| HotRod Combo, universal ignitor and flame sensor | 15.5" / 30" | 21D64C-843   | 21D64C-843  |





789A-914A1

## DIRECT OEM REPLACEMENT 80V AND 120V NITRIDE IGNITORS

Direct OEM replacement for 80V and 120V premium silicon nitride ignitor and upgrade kits.

### FEATURES

- OEM replacement Nitride Ignitors for Amana, Carrier, Goodman, Lennox, Nordyne, Rheem, Trane, Thermo Products Equipment and York
- 80V and 120V models
- OEM spec lead length, dimensions and connectors for fast replacement
- White high temperature Teflon™ coated leads
- Insulation 250°C Temperature rating
- Premium Nitride Construction
- 3 Year Warranty

### SPECIFICATIONS

Operating Voltage..... 80 and 120 VAC Models, 60 Hz  
 CSA/CUS Certificate Number ..... 1105159 (768A)  
 ..... 70098928 (789A)

### DIRECT OEM REPLACEMENT 80V AND 120V NITRIDE IGNITORS

| OEM             | OEM MODEL NUMBER       | VOLTAGE | LEAD LENGTH (IN) | ELECTRICAL CONNECTIONS                         | MODEL NUMBER | ITEM NUMBER |
|-----------------|------------------------|---------|------------------|------------------------------------------------|--------------|-------------|
| AMANA           | 11111701               | 80 VAC  | 5.00             | 2 terminal AMP receptacle, .093 female sockets | 768A-842     | 07 68A842S1 |
|                 | 768A-2                 |         |                  |                                                |              |             |
| LENNOX, RHEEM   | 41K5601                | 80 VAC  | 12.00            | 2 terminal AMP receptacle, .084 female sockets | 768A-844     | 07 68A844S1 |
|                 | 768A-4                 |         |                  |                                                |              |             |
| THERMO PRODUCTS | 380650                 | 80 VAC  | 5.00             | 2 terminal AMP receptacle, .084 female sockets | 768A-843     | 07 68A843S1 |
| TRANE           | A341947P01             | 80 VAC  | 5.00             | 2 terminal AMP receptacle, .083 female sockets | 768A-815     | 768A-815    |
|                 | 768A-015               |         |                  |                                                |              |             |
|                 | A341990P01             |         |                  |                                                |              |             |
|                 | IGN00117               |         |                  |                                                |              |             |
|                 | 768A-5                 | 80 VAC  | 5.00             | 2 terminal AMP receptacle, .084 female sockets | 768A-845     | 07 68A845S1 |
|                 | IGN00104               |         |                  |                                                |              |             |
|                 | X13130524010           |         |                  |                                                |              |             |
| CARRIER         | LH33ZG001              | 120 VAC | 9.25             | Molex connector                                | 789A-751A1   | 789A-751A1  |
|                 | LH33ZS001 <sup>1</sup> | 120 VAC | 9.25             | Molex connector                                | 789A-751KT1  | 789A-751KT1 |
|                 | LH33ZS001 <sup>2</sup> | 120 VAC | 9.25             | Molex connector                                | 789A-751KT2  | 789A-751KT2 |
| GOODMAN         | 0130F008               | 120 VAC | 9.25             | Molex connector                                | 789A-707A1   | 789A-707A1  |
|                 | 0130F008S              |         |                  |                                                |              |             |
| LENNOX          | 70W16                  | 120 VAC | 9.25             | Molex connector                                | 789A-801A1   | 789A-801A1  |
|                 | 10053602               |         |                  |                                                |              |             |
|                 | LB-112237B             |         |                  |                                                |              |             |
| NORDYNE         | 1017743S               | 120 VAC | 5.75             | Molex connector                                | 789A-914A1   | 789A-914A1  |
|                 | 921074                 |         |                  |                                                |              |             |
| TRANE           | IGN00152               | 120 VAC | 5.00             | Molex connector                                | 789A-820KT1  | 789A-820KT1 |
|                 | IGN00146               |         |                  |                                                |              |             |
|                 | D156805P01             |         |                  |                                                |              |             |
| YORK            | 025-45231-000          | 120 VAC | 5.25             | Molex connector                                | 789A-956A1   | 789A-956A1  |
|                 | s1-254523100           |         |                  |                                                |              |             |
|                 | s1-025-4523100         |         |                  |                                                |              |             |
|                 | 025-49808-000          |         |                  |                                                |              |             |
|                 | s1-02549808000         |         |                  |                                                |              |             |
|                 | s1-025-49808-000       |         |                  |                                                |              |             |

1 For 33 inch tall furnaces. 2 For 40 inch tall furnaces.

For complete cross reference information, please download the WRmobile app.

80V MODELS

| TRANE / 768A-815                                                                   | AMANA / 768A-842                                                                  | LENNOX, RHEEM / 768A-844                                                           | THERMO PRODUCTS / 768A-843                                                          |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|   |  |  |  |
| TRANE / 768A-845                                                                   |                                                                                   |                                                                                    |                                                                                     |
|  |                                                                                   |                                                                                    |                                                                                     |

120V MODELS

| CARRIER / 789A-751A1                                                                | CARRIER / 789A-751KT1                                                               | CARRIER / 789A-751KT2                                                                | GOODMAN / 789A-707A1                                                                  |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |
| LENNOX / 789A-801A1                                                                 | NORDYNE / 789A-914A1                                                                | TRANE / 789A-820KT1                                                                  | YORK / 789A-956A1                                                                     |
|  |  |  |  |



767A-372

## DIRECT OEM REPLACEMENT 120V CARBIDE IGNITORS

*High volume OEM style carbide direct replacements for a wide range of heating equipment.*

### FEATURES

- Multiple mounting styles
- Works with 15, 17 or 45 second HSI systems
- All models includes ceramic wire nuts for cut and strip connections
- Extensive cross reference information on our website or download the WR Mobile App

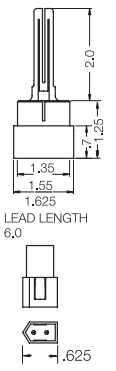
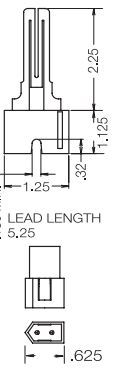
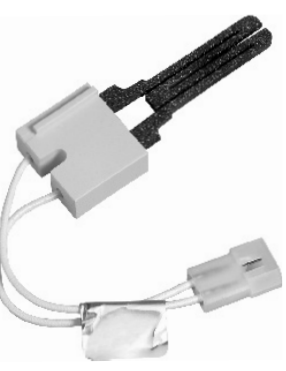
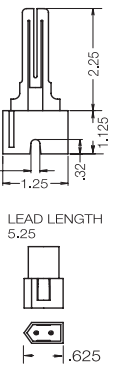
### SPECIFICATIONS

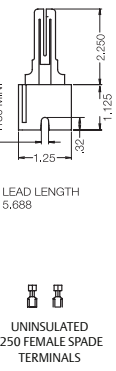
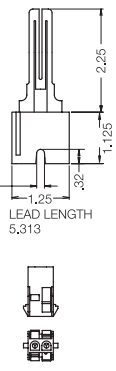
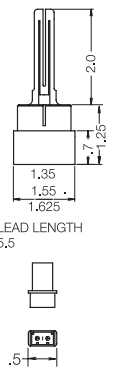
Operating Voltage..... 120 VAC, 60 Hz  
 Lead Insulation Temp. Rating..... 200°C  
 CSA/CUS Certificate Number..... 1018175

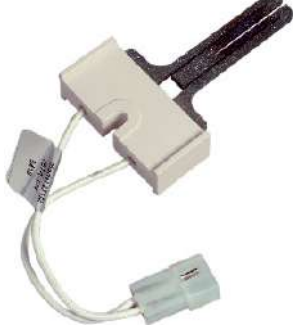
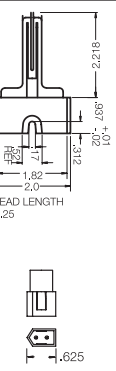
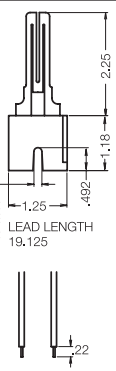
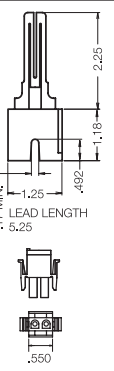
### 767A SERIES CARBIDE DIRECT OEM REPLACEMENT IGNITORS

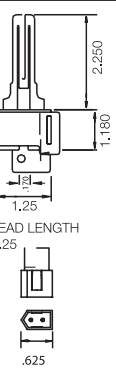
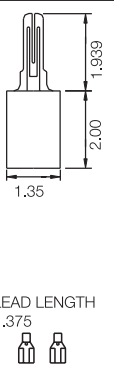
| OEM                                             | VOLTAGE | LEAD LENGTH (IN) | ELECTRICAL CONNECTION                                           | INDUSTRY RECOGNIZED NUMBER | MODEL NUMBER | ITEM NUMBER |
|-------------------------------------------------|---------|------------------|-----------------------------------------------------------------|----------------------------|--------------|-------------|
| AMANA, LENNOX                                   | 120 VAC | 6.00             | Receptacle with .093" Male Pins                                 | 41-401                     | 767A-356     | 07 67A356S1 |
| WHITE-RODGERS                                   | 120 VAC | 5.25             | Receptacle with .093" Male Pins                                 | 41-803                     | 767A-357     | 07 67A357S1 |
| YORK, LENNOX                                    | 120 VAC | 5.25             | Receptacle with .093" Male Pins                                 | 41-405                     | 767A-361     | 07 67A361S1 |
| WHITE-RODGERS                                   | 120 VAC | 5.69             | 1/4" Female Spade Terminals                                     | 41-803                     | 767A-365     | 07 67A365S1 |
| WHITE-RODGERS                                   | 120 VAC | 5.31             | AMP 1-480699-0 Electrical Conn. Receptacle with .093" Male Pins | —                          | 767A-366     | 07 67A366S1 |
| AMANA, LENNOX                                   | 120 VAC | 5.50             | Molex Internally Keyed Connector with .093" Male Pins           | 41-401                     | 767A-369     | 07 67A369   |
| CARRIER, TRANE, RHEEM                           | 120 VAC | 5.25             | Receptacle with .093" Male Pins                                 | 41-409                     | 767A-370     | 07 67A370   |
| GOODMAN, YORK, NORDYNE, TRANE, AMANA, ARMSTRONG | 120 VAC | 19.13            | Stripped Ends                                                   | 41-402                     | 767A-371     | 07 67A371   |
| RHEEM, LENNOX, TRANE                            | 120 VAC | 5.25             | Molex Side Lock Connector with .092" Male Pins                  | 41-408                     | 767A-372     | 07 67A372   |
| GOODMAN, YORK, NORDYNE, TRANE, AMANA, ARMSTRONG | 120 VAC | 5.25             | Receptacle with .093" Male Pins                                 | 41-412                     | 767A-373     | 07 67A373   |
| WHIRLPOOL                                       | 120 VAC | 11.00            | Stripped Ends                                                   | 41-406                     | 767A-374     | 07 67A374   |
| WHITE-RODGERS                                   | 120 VAC | 1.38             | 1/4" Female Spade Terminals                                     | 41-413                     | 767A-375     | 07 67A375   |
| TRANE                                           | 120 VAC | 4.50             | Molex Front Lock Connector with .092" Male Pins                 | 41-407                     | 767A-376     | 07 67A376   |
| TRANE                                           | 120 VAC | 4.50             | Molex Front Lock Connector with .092" Male Pins                 | 41-410                     | 767A-377     | 07 67A377   |
| AMANA                                           | 120 VAC | 5.13             | Electrical Connector matches AMANA #20165702                    | 41-602                     | 767A-378*    | 07 67A378   |
| YORK                                            | 120 VAC | 7.50             | Electrical Connector matches YORK #025-33421-000                | —                          | 767A-379*    | 07 67A379   |
| ARMSTRONG                                       | 120 VAC | 6.13             | Electrical Connector matches ARMSTRONG #44744-2                 | 41-604                     | 767A-380*    | 07 67A380   |
| YORK                                            | 120 VAC | 7.50             | Electrical Connector matches YORK #473-20937-001                | 41-605                     | 767A-381*    | 07 67A381   |
| WEIL MCLAIN                                     | 120 VAC | 5.25             | Receptacle with .093" Male Pins                                 | 41-404                     | 767A-382     | 07 67A382   |
| RHEEM                                           | 120 VAC | 5.25             | Molex Side Lock Connector with .092" Male Pins                  | 41-411                     | 767A-383     | 07 67A383   |
| GOODMAN                                         | 120 VAC | 5.25             | Receptacle with .093" Male Pins                                 | 41-414                     | 767A-384     | 07 67A384   |
| Goodman                                         | 120 VAC | 5.25             | Receptacle with .093" Male Pins                                 | 41-418                     | 767A-385     | 767A-385    |

\* Ceramic composite construction  
 For complete cross reference information, please download the WRmobile app.

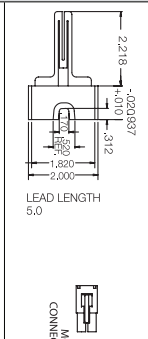
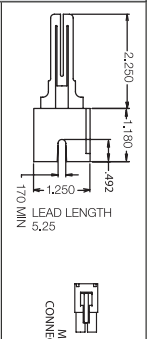
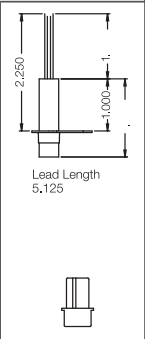
| 767A-356                                                                          |                                                                                                                                                                    | 767A-357                                                                          |                                                                                                                                                                           | 767A-361                                                                            |                                                                                                                                                                            |
|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  <p>2.0<br/>1.25<br/>1.35<br/>1.55<br/>1.625<br/>LEAD LENGTH<br/>6.0<br/>.625</p> |  |  <p>2.25<br/>1.125<br/>1.25<br/>.32<br/>1.80 MIN.<br/>LEAD LENGTH<br/>5.25<br/>.625</p> |  |  <p>2.25<br/>1.125<br/>1.25<br/>.32<br/>1.80 MIN.<br/>LEAD LENGTH<br/>5.25<br/>.625</p> |

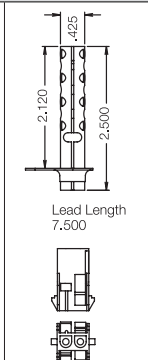
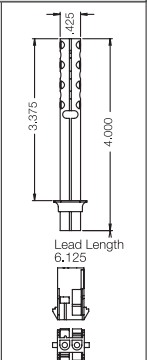
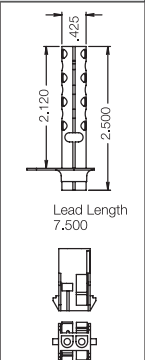
| 767A-365                                                                           |                                                                                                                                                                                                                        | 767A-366                                                                           |                                                                                                                                                                    | 767A-369                                                                             |                                                                                                                                                                     |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  <p>2.250<br/>1.125<br/>1.25<br/>.32<br/>1.80 MIN.<br/>LEAD LENGTH<br/>5.688<br/>UNINSULATED<br/>.250 FEMALE SPADE<br/>TERMINALS</p> |  |  <p>2.25<br/>1.125<br/>1.25<br/>.32<br/>1.80 MIN.<br/>LEAD LENGTH<br/>5.313</p> |  |  <p>2.0<br/>1.25<br/>1.35<br/>1.55<br/>1.625<br/>LEAD LENGTH<br/>5.5<br/>.5</p> |

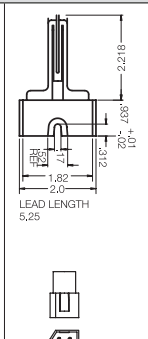
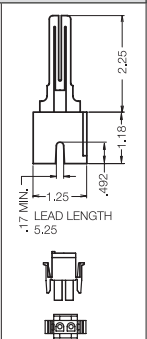
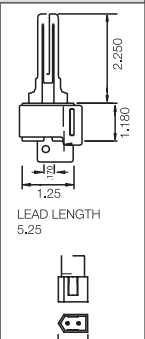
| 767A-370                                                                            |                                                                                                                                                                                 | 767A-371                                                                            |                                                                                                                                                                             | 767A-372                                                                              |                                                                                                                                                                             |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  <p>2.218<br/>1.036<br/>1.25<br/>1.82<br/>2.0<br/>5.18<br/>LEAD LENGTH<br/>5.25<br/>.625</p> |  |  <p>2.25<br/>1.18<br/>1.25<br/>.492<br/>1.7 MIN.<br/>LEAD LENGTH<br/>19.125<br/>.22</p> |  |  <p>2.25<br/>1.18<br/>1.25<br/>.492<br/>1.7 MIN.<br/>LEAD LENGTH<br/>5.25<br/>.550</p> |

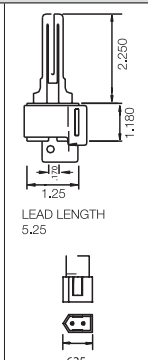
| 767A-373                                                                            |                                                                                                                                                       | 767A-374                                                                            |                                                                                                                                                        | 767A-375                                                                              |                                                                                                                                                |
|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
|  |  <p>2.250<br/>1.180<br/>1.25<br/>LEAD LENGTH<br/>5.25<br/>.625</p> |  |  <p>1.25<br/>2.666<br/>LEAD LENGTH<br/>11.00<br/>2.00<br/>.220</p> |  |  <p>1.939<br/>2.00<br/>1.35<br/>LEAD LENGTH<br/>1.375</p> |



| 767A-376                                                                         |                                                                                   | 767A-377                                                                          |                                                                                   | 767A-378                                                                           |                                                                                     |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |  |  |

| 767A-379                                                                          |                                                                                    | 767A-380                                                                           |                                                                                    | 767A-381                                                                            |                                                                                      |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |  |  |  |  |

| 767A-382                                                                           |                                                                                     | 767A-383                                                                            |                                                                                     | 767A-384                                                                             |                                                                                       |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
|  |  |  |  |  |  |

| 767A-385                                                                           |                                                                                     |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |



H06E-48

# H06 SERIES UNIVERSAL 30 MV THERMOCOUPLES

*Specially designed for universal replacement.*

**FEATURES**

- Stainless steel element construction for long thermocouple life
- Universal adapter fittings included for easy installation of thermocouple in pilot burner
- Available in a variety of 10-packs in desired thermocouple lengths
- Standard thermocouple 11/32" double lead thread
- Replaces Honeywell Q34A, Johnson K19, Robertshaw 1980 and White-Rodgers H06E

**SPECIFICATIONS**

Nominal Voltage Range.....22 - 30 mV  
Maximum Hot Junction Temperature .....1450°F  
Maximum Cold Junction Temperature .....800°F

**H06 SERIES UNIVERSAL 30 MV THERMOCOUPLES**

| DESCRIPTION                                  | MODEL NUMBER | ITEM NUMBER |
|----------------------------------------------|--------------|-------------|
| 18" Thermocouple                             | H06E-18      | H06E018S1   |
| 24" Thermocouple                             | H06E-24      | H06E024S1   |
| 30" Thermocouple                             | H06E-30      | H06E030S1   |
| 36" Thermocouple                             | H06E-36      | H06E036S1   |
| 48" Thermocouple                             | H06E-48      | H06E048S1   |
| 36" Thermocouple with ECO cut-off connection | H06F-36      | H06F036S1   |



G01A-332

750 MV THERMOPILE GENERATORS

Provides power for 750 millivolt control systems.

FEATURES

- For replacement of similar screw-in type generators and E31-12 pilot burners
- G01A-332 has 36 inch armored cable leads with split-spade terminals
- PG9 adapter included with each G01A-332
- 101934F32 / 101934R32 designed for use with PG9

SPECIFICATIONS

Nominal Voltage ..... 750 mV  
Maximum Hot Junction Temperature ..... 1400°F  
Maximum Cold Junction Temperature ..... 650°F

750 MV THERMOPILE GENERATORS

| MV OUTPUT | LENGTH | FIBERGLASS CABLE LEADS | ARMORED CABLE LEADS | PG9 ADAPTER | CLIP INCLUDED | CONNECTOR TYPE   | MODEL NUMBER | ITEM NUMBER |
|-----------|--------|------------------------|---------------------|-------------|---------------|------------------|--------------|-------------|
| 750       | 32     | ✓                      | —                   | —           | —             | R Bushing        | 101934R32    | 101934R32S2 |
| 750       | 36     | —                      | ✓                   | ✓           | ✓             | F Spade Terminal | G01A-332     | G01A332S1   |
| 750       | 36     | —                      | ✓                   | —           | ✓             | F Spade Terminal | G01A-502     | G01A502S1   |
| 750       | 36     | ✓                      | —                   | ✓           | ✓             | F Spade Terminal | G01A-512     | G01A512S1   |
| 750       | 36     | —                      | ✓                   | ✓           | ✓             | F Spade Terminal | G01A-132     | G01A132S1   |
| 750       | 32     | ✓                      | —                   | —           | —             | F Spade Terminal | 101934F32    | 101934F32S2 |
| 750       | 36     | ✓                      | —                   | —           | —             | F Spade Terminal | G01A-501     | G01A501S1   |

✦ Indicates Canadian Model Number: Call 1-800-305-6953 to order.



PG9A27JTL22

PG9 SERIES 750 MV GENERATORS  
& PILOT BURNERS

Provides a pilot flame for igniting gas burners while generating millivolt output to operate gas valves and relays.

FEATURES

- Single blue flame burner for quiet operation and maximum flame stability
- "Snorkel" primary air path incinerates dust eliminating linting problems
- All models provided with orifice base fittings for Natural and LP
- Flame ring surrounding generator ensures high output and extended generator life
- High temperature stainless steel generator cover

PG9 SERIES 750 MV GENERATORS & PILOT BURNERS

| HEAD TYPE    | PORTING                               | ORIFICE | FITTING                                                                   | MODEL NUMBER | ITEM NUMBER   |
|--------------|---------------------------------------|---------|---------------------------------------------------------------------------|--------------|---------------|
| Channel Type | 90° right & 90° left, 3/4" head width | 0.022   | Includes extra base fitting for LP gas application (less ferrule and nut) | PG9A27JTL22  | PG9A27JTL22S2 |
| Cobra        | 90° left                              | 0.020   | Includes extra base fitting for LP gas application (less ferrule and nut) | PG9A41JTL20  | PG9A41JTL20S2 |
| Cobra        | 90° right                             | 0.020   | Includes extra base fitting for LP gas application (less ferrule and nut) | PG9A42JTL20  | PG9A42JTL20S2 |



790-843A1

## 790 SERIES UNIVERSAL FLAME SENSOR

Universal flame sensor for furnaces, or water heaters that use hot surface or spark ignition.

### Features:

- Rod can be bent or cut to replace over 120 part numbers
- High temperature rod withstands 2200°F
- Protective sleeve included for bending the rod with detailed instructions
- 3-year limited warranty
- 30" lead wire with 1/4" quick-connect terminals & 3/16" quick connect terminal included
- Available in a 5-pack box

### Specifications:

Insulation resistance from rod to bracket ..... Must be 500 megaohms at minimum  
 Ceramic material ..... Alumina 95% or better  
 Bracket material ..... Zinc-plated steel or stainless steel  
 Agency ..... CSA

### 790 Series Universal Flame Sensor

| DESCRIPTION                                      | LEAD LENGTH | ELECTRICAL CONNECTION            | MODEL NUMBER | ITEM NUMBER |
|--------------------------------------------------|-------------|----------------------------------|--------------|-------------|
| Universal premium flame sensor                   | 30"         | 1/4" female spade quick terminal | 790-843A1    | 790-843A1   |
| Universal premium flame sensor, 5-pack           | 30"         | 1/4" female spade quick terminal | 790-843A5PK  | 790-843A5PK |
| HotRod Combo, universal ignitor and flame sensor | 15.5" / 30" | 1/4" female spade quick terminal | 21D64C-843   | 21D64C-843  |



790-751A1

## 790 SERIES DIRECT OEM FLAME SENSORS

Drop-in direct OEM replacement flame sensors for Carrier, Goodman, Lennox, Trane and York brands.

### Features:

- Drop-in replacements for OEM brands
- High-temperature rod withstands 2200°F
- OEM-approved construction and material
- 3-year limited warranty

| CARRIER / ICP<br>790-751A1 / 73° BEND | GOODMAN<br>790-707A1 / STRAIGHT ROD | LENNOX<br>790-801A1 / 90° BEND | TRANE<br>790-820A1 / 90° BEND | YORK<br>790-956A1 / STRAIGHT ROD |
|---------------------------------------|-------------------------------------|--------------------------------|-------------------------------|----------------------------------|
|                                       |                                     |                                |                               |                                  |



FLAME SENSORS & ELECTRODES

Hot Surface Ignition and Cycle Pilot Flame Sensors and Electrodes.

FEATURES

- Cycle Pilot Mercury Flame Sensors designed for 36C84 and 36C94 gas valves include adapters for competitive burners
- 30A46 styles designed for Cushioned Power and Silent Knight gas valves with plug-in receptacles
- 760-401 Universal Hot Surface Ignition Flame Sensors can be mounted remotely on multiple burners

SPECIFICATIONS

CSA/CUS Certificate Number ..... 1185540 (760 Series)

760 SERIES FOR HOT SURFACE (HSI) AND CYCLE PILOT IGNITION

| DESCRIPTION                                                                                                                              | LEAD LENGTH | ELECTRICAL CONNECTION                       | MODEL NUMBER | ITEM NUMBER |
|------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------|--------------|-------------|
| Cycle Pilot Ignition Electrode and cable assembly with slip on bracket. Also includes perforated mounting strap for varying applications | 24"         | 1/4" female spade quick disconnect terminal | 760-56       | 07 60 56S1  |
| Standard replacement for Hot Surface (HSI) Ignition. Can be mounted remotely on multiple burners                                         | 30"         | 1/4" female spade terminal                  | 760-401      | 07 60 401S1 |
| Exact OEM model replacement for Hot Surface (HSI) Ignition. Can be mounted remotely on multiple burners                                  | 30"         | 1/4" female spade terminal                  | 760-802      | 07 60 802S1 |

CYCLE PILOT MERCURY FLAME SENSORS

| DESCRIPTION                     | ELEMENT LENGTH | PANEL TYPE | BULB STYLE | MODEL NUMBER | ITEM NUMBER |
|---------------------------------|----------------|------------|------------|--------------|-------------|
| Replaces bulb styles #17 or #18 | 48"            | D          | #20        | 3049-115 ①   | 30 49 115S1 |
| Replaces bulb styles #9 or #13  | 48"            | E          | #19        | 3098-134 ①   | 30 98 134S1 |
| Replaces bulb styles #17 or #18 | 48"            | E          | #20        | 3098-156 ①   | 30 98 156S1 |

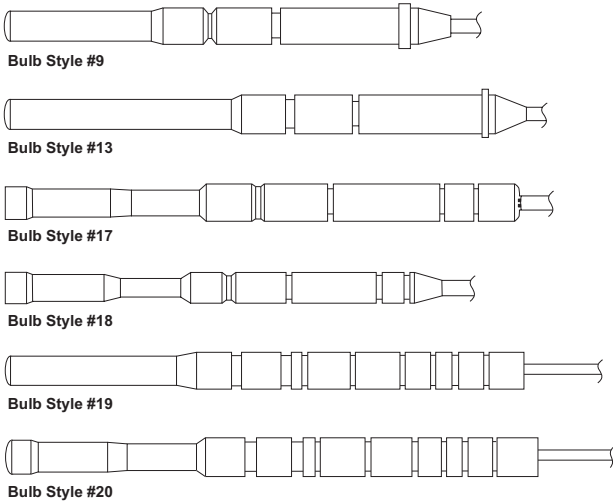
① Includes adapter fittings.

MERCURY FLAME SENSORS

| DESCRIPTION                                                | ELEMENT LENGTH | ELECTRICAL RATING 120 VAC | ELECTRICAL RATING 240 VAC | ELECTRICAL RATING 30 VAC | MODEL NUMBER | ITEM NUMBER |
|------------------------------------------------------------|----------------|---------------------------|---------------------------|--------------------------|--------------|-------------|
| Mercury Flame Sensor with Screw Terminals                  | 48"            | 125 VA                    | 125 VA                    | 90 VA                    | 3046-5       | 30 46 005S1 |
| *Plug-In Flame Sensor Stud mount element                   | 48"            | 125 VA                    | 125 VA                    | 90 VA                    | 30A46-5      | 30A46 005S1 |
| *Plug-In Flame Sensor Sleeve mount element (no stud mount) | 12"            | 125 VA                    | 125 VA                    | 90 VA                    | 30A46-105    | 30A46 105S1 |

\* Plug-In sensors for "Cushioned Power" and "Silent Knight" Gas Valves with Plug-In Receptacle.

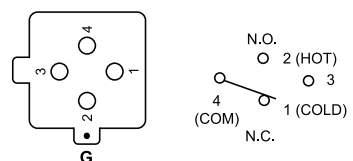
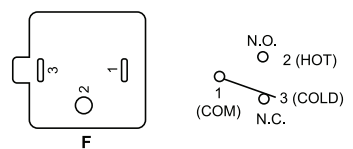
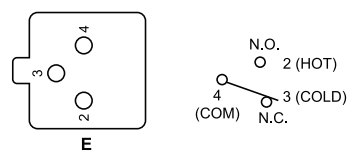
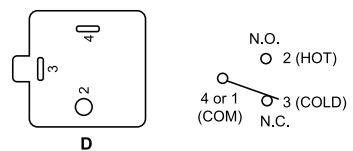
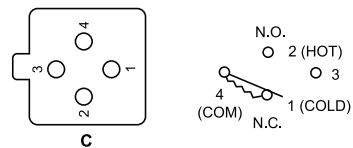
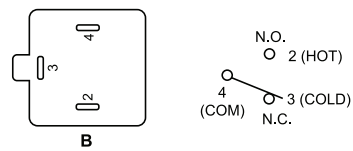
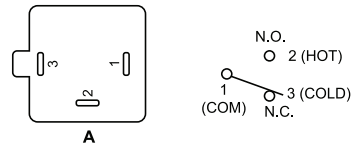
FLAME SENSOR BULB DIAGRAMS



## CONTRACTOR TIP:

Mercury flame sensors can only be replaced by cross referencing the original mercury flame sensor model number. They can not be replaced by gas valve model number.

## TERMINAL PANELS CONFIGURATION



## TYPES WITH SPADE TERMINALS CROSS REFERENCE

| O.E.M. NUMBER | ORIGINAL CAPILLARY LENGTH | ORIGINAL PANEL TYPES ① | SUGGESTED REPLACEMENT |
|---------------|---------------------------|------------------------|-----------------------|
| 3049-52       | 30"                       | B, D                   | 3049-115              |
| 3049-54       | 30"                       | B                      | 3049-115              |
| 3049-55       | 30"                       | A, D                   | 3049-115              |
| 3049-66       | 30"                       | B                      | 3049-115              |
| 3049-68       | 30"                       | B                      | 3049-115              |
| 3049-105      | 42"                       | B                      | 3049-115              |
| 3049-106      | 24"                       | D                      | 3049-115              |
| 3049-107      | 12"                       | B, D                   | 3049-115              |
| 3049-111      | 24"                       | B, D                   | 3049-115              |
| 3049-112      | 18"                       | B, D                   | 3049-115              |
| 3049-114      | 30"                       | D                      | 3049-115              |
| 3049-115      | 48"                       | D                      | 3049-115              |
| 3049-119      | 24"                       | B                      | 3049-115              |
| 3049-120      | 30"                       | B                      | 3049-115              |
| 3049-121      | 18 or 42"                 | B                      | 3049-115              |

## PLUG-IN TYPES CROSS REFERENCE

| O.E.M. NUMBER | ORIGINAL CAPILLARY LENGTH | ORIGINAL PANEL TYPES ① | SUGGESTED REPLACEMENT |
|---------------|---------------------------|------------------------|-----------------------|
| 3098-111      | 30"                       | E                      | 3098-134              |
| 3098-122      | 30"                       | E                      | 3098-156              |
| 3098-126      | 30"                       | E                      | 3098-156              |
| 3098-127      | 24"                       | E                      | 3098-156              |
| 3098-130      | 24"                       | E                      | 3098-156              |
| 3098-131      | 30"                       | E                      | 3098-156              |
| 3098-134      | 48"                       | E                      | 3098-134              |
| 3098-136      | 30"                       | E                      | 3098-134              |
| 3098-141      | 48"                       | E                      | 3098-134              |
| 3098-142      | 30"                       | E                      | 3098-156              |
| 3098-143      | 36"                       | E                      | 3098-156              |
| 3098-147      | 18"                       | E                      | 3098-134              |
| 3098-149      | 24 or 42"                 | E                      | 3098-156              |
| 3098-153      | 24"                       | E                      | 3098-156              |
| 3098-156      | 48"                       | E                      | 3098-156              |
| 3098-161      | 24 or 30"                 | E                      | 3098-134              |
| 3098-165      | 48"                       | E                      | 3098-134              |
| 3098-168      | 48"                       | E                      | 3098-156              |
| 3098-169      | 27"                       | E                      | 3098-134              |
| 3098-171      | 30 or 42"                 | E                      | 3098-156              |
| 3094-174      | 36"                       | E                      | 3098-156              |
| 3098-175      | 18"                       | E                      | 3098-156              |
| 3098-182      | 24 or 42"                 | E                      | 3098-156              |
| 3098-184      | 42"                       | E                      | 3098-134              |

① Suggested replacement type may have different panel configuration. Some controls experienced modification. Determine proper wiring with the aid of panel diagrams A through G.





791P-751KT1

DIRECT OEM REPLACEMENT PREMIUM  
PILOT BURNER ASSEMBLY

Direct OEM replacement 3-wire pilot burner assembly with safety switch for Carrier / ICP brands.

FEATURES

- Made by the only qualified source that manufactures for the OEM
- Utilizes a bi-metal switch to protect against oxidation and scaling
- 3-Wire Assembly designed for use with natural and LP gas
- Reliable design with 100% factory performance testing
- Includes factory-installed electrode
- LP orifice included
- 3-Year Limited Warranty

SPECIFICATIONS

Input Voltage ..... 18-33 VAC, 60Hz  
Input Current..... 1.0 Amp  
Operating Temperature Range ..... -40 to 1225 °F (-40 to 662 °C)  
Lead Wire Length.....9.125”  
Lead Wire Gauge ..... 18 AWG  
Spark GAP (Minimum) .....0.156”  
CSA Certificate Number..... 80080096

DIRECT OEM REPLACEMENT PREMIUM PILOT BURNER ASSEMBLY

| OEM          | OEM<br>MODEL<br>NUMBER | DESCRIPTION                                                | GAS TYPE    | INPUT RATING       | ORIFICE<br>SIZE | REGULATOR<br>SETTING | MODEL<br>NUMBER | ITEM<br>NUMBER |
|--------------|------------------------|------------------------------------------------------------|-------------|--------------------|-----------------|----------------------|-----------------|----------------|
| Carrier, ICP | LH680005               | Premium 3-Wire Pilot Burner Assembly<br>with Safety Switch | Natural Gas | 875 +/- 10% BTU/hr | 0.018"          | 5.00" WC             | 791P-751KT1     | 791P-751KT1    |
|              |                        |                                                            | LP Gas      | 725 +/- 10% BTU/hr | 0.012"          | 11.00" WC            |                 |                |



5D51-35

## 5D51 SERIES PLENUM MOUNT BIMETAL FAN & LIMIT CONTROLS

*For applications with narrow space limitations. Regulates fan or blower operation and acts as high limit safety control.*

### FEATURES

- Includes summer fan switch for ventilation without changing control settings
- Dial has individual pointers for fan cut-in and cut-out settings
- Removable solid copper jumper between fan and limit switches
- Long terminal screws for wiring - Junctions can be made on terminal block

### SPECIFICATIONS

Dimensions .....4.3"H X 2.9"W X 1.6"D  
 UL/CUL File Number ..... MP1228  
 CSA Certificate Number..... LR6246-224

### 5D51 SERIES PLENUM MOUNT BIMETAL FAN & LIMIT CONTROL

| DESCRIPTION | SWITCH ACTION                               | ELEMENT LENGTH | RANGE                                                              | DIFFERENTIAL                                                | MOTOR RATING<br>(FULL LOAD)<br>120 VAC | MOTOR RATING<br>(FULL LOAD)<br>240 VAC | VALVES AND<br>RELAYS<br>24 VAC | MODEL<br>NUMBER | ITEM<br>NUMBER |
|-------------|---------------------------------------------|----------------|--------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------|----------------------------------------|--------------------------------|-----------------|----------------|
| Fan / Limit | Fan - Close on Rise<br>Limit - Open on Rise | 5"             | Fan 50 to 265°F (10 to 129°C),<br>Limit 100 to 300°F (38 to 149°C) | Fan Adjustable 15°F minimum<br>Fixed 25°F, Limit Fixed 25°F | Fan-14.0A<br>Limit-10.0A               | Fan-7.0A<br>Limit-6.0A                 | Fan-5.6A<br>Limit-6.0A         | 5D51-35         | 05D51 035S1    |
| Fan / Limit | Fan - Close on Rise<br>Limit - Open on Rise | 8"             | Fan 50 to 265°F (10 to 129°C),<br>Limit 100 to 300°F (38 to 149°C) | Fan Adjustable 15°F minimum<br>Fixed 25°F, Limit Fixed 25°F | Fan-14.0A<br>Limit-10.0A               | Fan-7.0A<br>Limit-6.0A                 | Fan-5.6A<br>Limit-6.0A         | 5D51-90         | 05D51 090S1    |
| Fan / Limit | Fan - Close on Rise<br>Limit - Open on Rise | 11"            | Fan 50 to 265°F (10 to 129°C),<br>Limit 100 to 300°F (38 to 149°C) | Fan Adjustable 15°F minimum<br>Fixed 25°F, Limit Fixed 25°F | Fan-14.0A<br>Limit-10.0A               | Fan-7.0A<br>Limit-6.0A                 | Fan-5.6A<br>Limit-6.0A         | 5D51-78         | 05D51 078S1    |

See White-Rodgers General Information for full electrical ratings.  
 Fan switches are rated HT, limit switches are rated HTV.



3L09-1

## SNAP DISC FIXED TEMPERATURE BOARD MOUNT LIMITS

*1/2" Automatic reset snap disc thermostats with ranges for all your system needs.*

### FEATURES

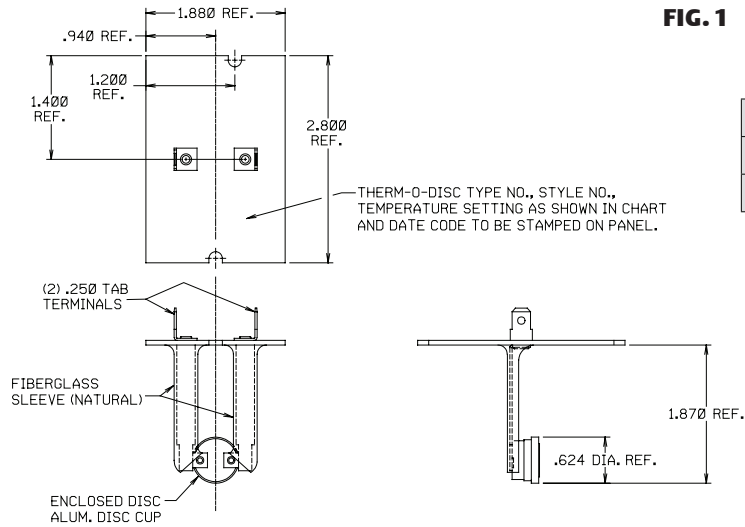
- Proven reliability in a compact, versatile, cost-effective design
- Provides high-speed contact separation

### SPECIFICATIONS

Switch Action ..... SPST Open on Rise  
 Electrical Ratings ..... Resistive 15A @ 120 VAC, 13A @ 240 VAC,  
 ..... Inductive 5.8 FLA, 34.8LRA @ 120 VAC; 2.9FLA, 13.0 LRA @ 240 VAC  
 Pilot Duty ..... 125 VAC  
 Dimensions ..... .37"H X 1.32"W X 1.23"L  
 Weight ..... 0.2 oz.  
 UR/CUR File Number ..... E19279  
 CSA/CUS Certificate Number ..... LR77886/LR109556  
 VDE Lic. .... 118631

### SNAP DISC FIXED TEMPERATURE BOARD MOUNT LIMITS

| APPLICATIONS                                  | CUT-IN        | CUT-OUT       | SWITCH ACTION | TOD TYPE | TOD STYLE | LENGTH (IN) | MODEL NUMBER | ITEM NUMBER |
|-----------------------------------------------|---------------|---------------|---------------|----------|-----------|-------------|--------------|-------------|
| Snap Disc Board Mount Limit - Automatic Reset | 100°F (38°C)  | 140°F (60°C)  | Open on Rise  | 36T01B2  | 612700    | 1.87        | 3L09-1       | 03L09 001S1 |
|                                               | 130°F (54°C)  | 170°F (77°C)  | Open on Rise  | 36T01B2  | 612708    | 1.87        | 3L09-2       | 03L09 002S1 |
|                                               | 110°F (43°C)  | 140°F (60°C)  | Open on Rise  | 36T01B3  | 612701    | 3.12        | 3L09-3       | 03L09 003S1 |
|                                               | 130°F (54°C)  | 150°F (66°C)  | Open on Rise  | 36T01B3  | 612703    | 3.12        | 3L09-4       | 03L09 004S1 |
|                                               | 140°F (60°C)  | 160°F (71°C)  | Open on Rise  | 36T01B3  | 612706    | 3.12        | 3L09-5       | 03L09 005S1 |
|                                               | 130°F (54°C)  | 170°F (77°C)  | Open on Rise  | 36T01B3  | 612710    | 3.12        | 3L09-6       | 03L09 006S1 |
|                                               | 145°F (63°C)  | 175°F (79°C)  | Open on Rise  | 36T01B3  | 612711    | 3.12        | 3L09-7       | 03L09 007S1 |
|                                               | 140°F (60°C)  | 180°F (82°C)  | Open on Rise  | 36T01B3  | 612714    | 3.12        | 3L09-8       | 03L09 008S1 |
|                                               | 170°F (77°C)  | 190°F (88°C)  | Open on Rise  | 36T01B3  | 612715    | 3.12        | 3L09-9       | 03L09 009S1 |
|                                               | 160°F (71°C)  | 200°F (93°C)  | Open on Rise  | 36T01B3  | 612718    | 3.12        | 3L09-10      | 03L09 010S1 |
|                                               | 170°F (77°C)  | 210°F (99°C)  | Open on Rise  | 36T01B3  | 612719    | 3.12        | 3L09-11      | 03L09 011S1 |
|                                               | 180°F (82°C)  | 220°F (104°C) | Open on Rise  | 36T01B3  | 612722    | 3.12        | 3L09-12      | 03L09 012S1 |
|                                               | 210°F (99°C)  | 240°F (116°C) | Open on Rise  | 36T01B3  | 612723    | 3.12        | 3L09-13      | 03L09 013S1 |
|                                               | 210°F (99°C)  | 250°F (121°C) | Open on Rise  | 36T01B3  | 612725    | 3.12        | 3L09-14      | 03L09 014S1 |
|                                               | 230°F (110°C) | 260°F (127°C) | Open on Rise  | 36T01B3  | 612727    | 3.12        | 3L09-15      | 03L09 015S1 |
|                                               | 130°F (54°C)  | 150°F (66°C)  | Open on Rise  | 36T01B3  | 612704    | 3.12        | 3L09-16      | 03L09 016S1 |
|                                               | 225°F (107°C) | 250°F (121°C) | Open on Rise  | 36T01B3  | 612726    | 3.12        | 3L09-17      | 03L09 017S1 |
|                                               | 125°F (52°C)  | 155°F (68°C)  | Open on Rise  | 36T01B3  | 612705    | 7.12        | 3L09-18      | 03L09 018S1 |
|                                               | 145°F (63°C)  | 175°F (79°C)  | Open on Rise  | 36T01B3  | 612712    | 7.12        | 3L09-19      | 03L09 019S1 |
|                                               | 210°F (99°C)  | 240°F (116°C) | Open on Rise  | 36T01B3  | 612724    | 7.12        | 3L09-20      | 03L09 020S1 |
|                                               | 140°F (60°C)  | 160°F (71°C)  | Open on Rise  | 36T01B3  | 612707    | 3.12        | 3L09-22      | 03L09 022S1 |
|                                               | 150°F (66°C)  | 170°F (77°C)  | Open on Rise  | 36T01B3  | 612709    | 3.12        | 3L09-23      | 03L09 023S1 |
|                                               | 170°F (77°C)  | 190°F (88°C)  | Open on Rise  | 36T01B3  | 612716    | 3.12        | 3L09-24      | 03L09 024S1 |
|                                               | 180°F (82°C)  | 200°F (93°C)  | Open on Rise  | 36T01B3  | 612717    | 3.12        | 3L09-25      | 03L09 025S1 |
|                                               | 160°F (71°C)  | 180°F (82°C)  | Open on Rise  | 36T01B3  | 612713    | 1.87        | 3L09-26      | 03L09 026S1 |
|                                               | 200°F (93°C)  | 220°F (104°C) | Open on Rise  | 36T01B3  | 612721    | 1.87        | 3L09-27      | 03L09 027S1 |
|                                               | 180°F (82°C)  | 210°F (99°C)  | Open on Rise  | 36T01B3  | 612720    | 3.12        | 3L09-28      | 03L09 028S1 |



| MODEL NUMBER | TEMP. SETTING ON PANEL | OPEN TEMP. | CLOSE TEMP. |
|--------------|------------------------|------------|-------------|
| 3L09-1       | L140-40                | 140°F±5°   | 100°F±8°    |
| 3L09-2       | L170-40                | 170°F±5°   | 130°F±8°    |

**CONSTRUCTION "A"**

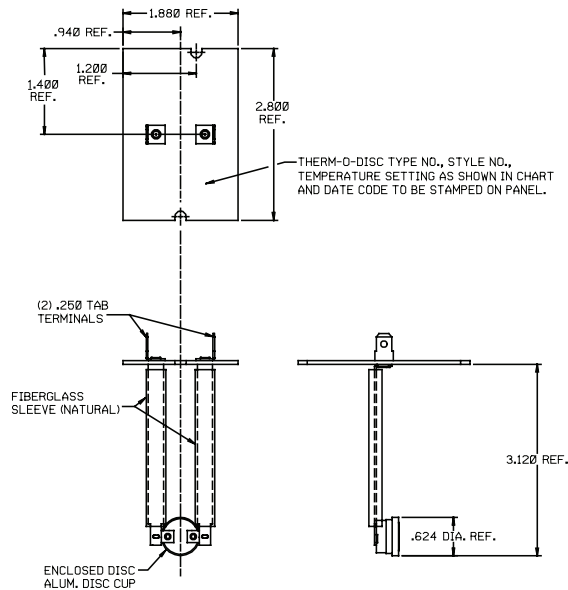
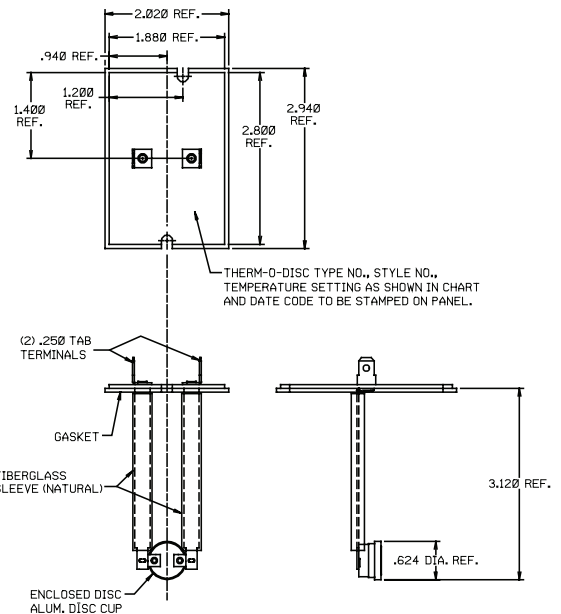
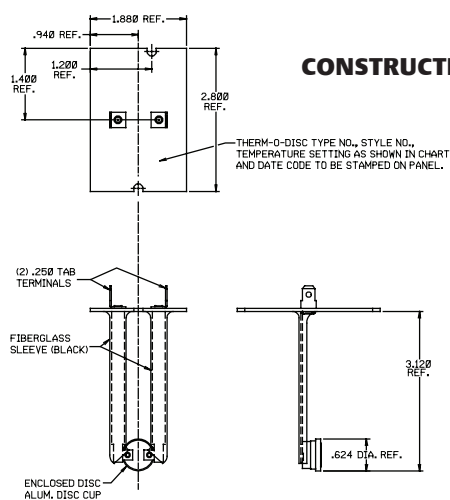


**FIG. 2**

**CONSTRUCTION "B"**



**CONSTRUCTION "C"**



| MODEL NUMBER | CONSTRUCTION | TEMP. SETTING ON PANEL | OPEN TEMP. | CLOSE TEMP. |
|--------------|--------------|------------------------|------------|-------------|
| 3L09-3       | A            | L140-30F               | 140°F±5°   | 110°F±8°    |
| 3L09-4       | C            | L150-20F               | 150°F±5°   | 130°F±8°    |
| 3L09-5       | C            | L160-20F               | 160°F±5°   | 140°F±8°    |
| 3L09-6       | B            | L170-40F               | 170°F±5°   | 130°F±8°    |
| 3L09-7       | A            | L175-30F               | 175°F±5°   | 145°F±8°    |
| 3L09-8       | B            | L180-40F               | 180°F±6°   | 140°F±9°    |
| 3L09-9       | C            | L190-20F               | 190°F±5°   | 170°F±8°    |
| 3L09-10      | B            | L200-40F               | 200°F±6°   | 160°F±9°    |
| 3L09-11      | B            | L210-40F               | 210°F±6°   | 170°F±9°    |
| 3L09-12      | B            | L220-40F               | 220°F±6°   | 180°F±9°    |
| 3L09-13      | A            | L240-30F               | 240°F±6°   | 210°F±10°   |
| 3L09-14      | B            | L250-40F               | 250°F±7°   | 210°F±11°   |
| 3L09-15      | A            | L260-30F               | 260°F±6°   | 230°F±10°   |

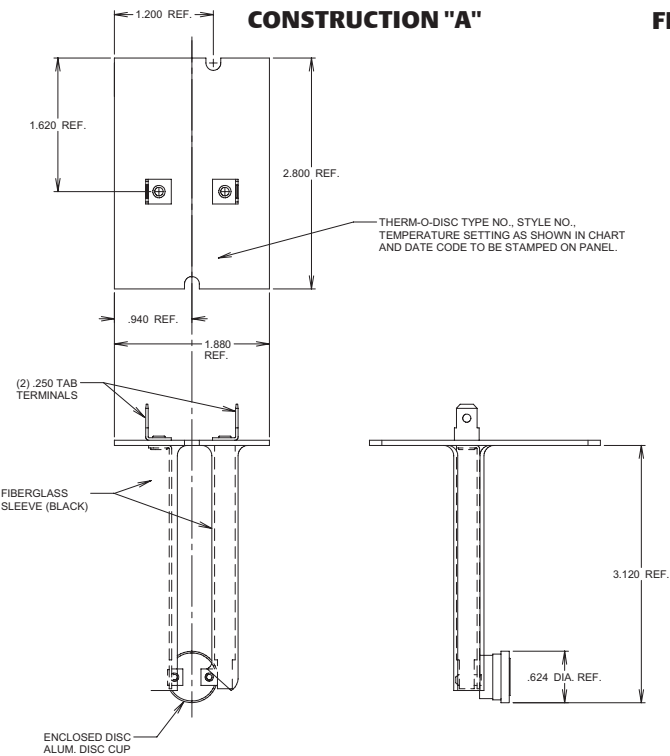
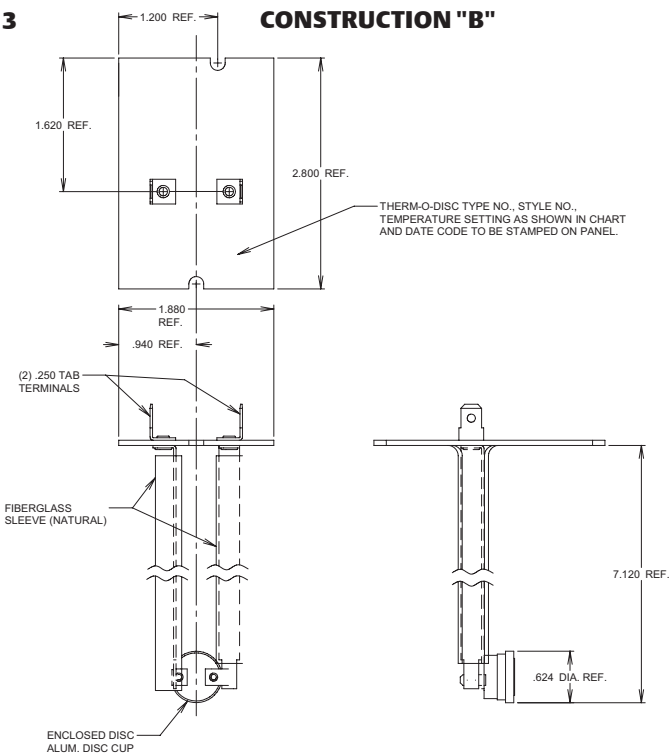


FIG. 3



| MODEL NUMBER | CONSTRUCTION | TEMP. SETTING ON PANEL | OPEN TEMP. | CLOSE TEMP. |
|--------------|--------------|------------------------|------------|-------------|
| 3L09-16      | A            | L150-20F               | 150°F±5°   | 130°F±8°    |
| 3L09-17      | A            | L250-25F               | 250°F±6°   | 225°F±9°    |
| 3L09-18      | B            | L155-30F               | 155°F±5°   | 125°F±8°    |
| 3L09-19      | B            | L175-30F               | 175°F±5°   | 145°F±8°    |
| 3L09-20      | B            | L240-30F               | 240°F±6°   | 210°F±10°   |

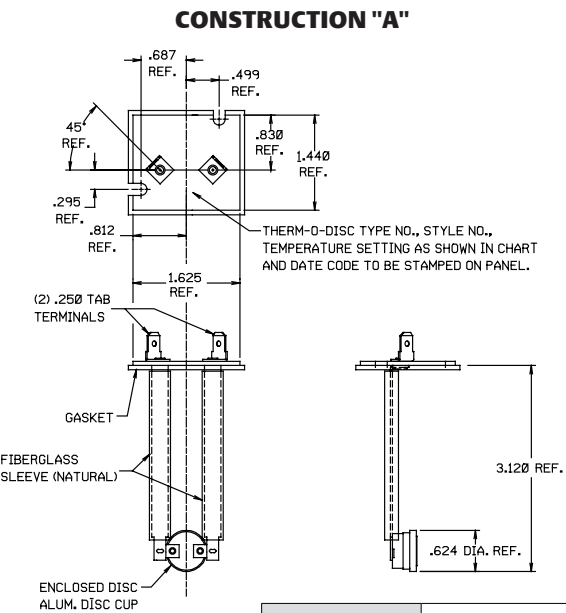
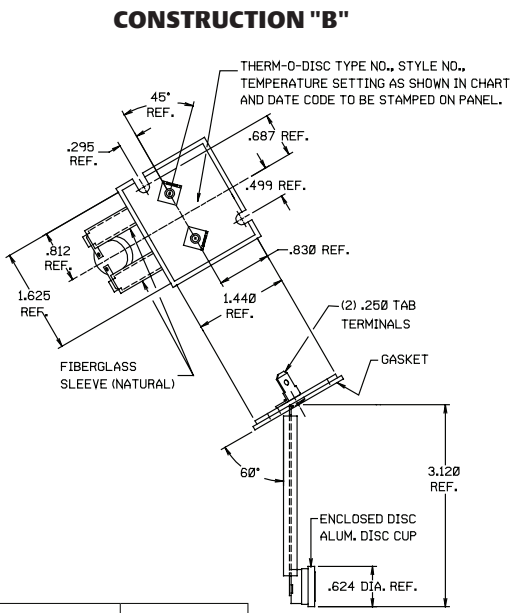
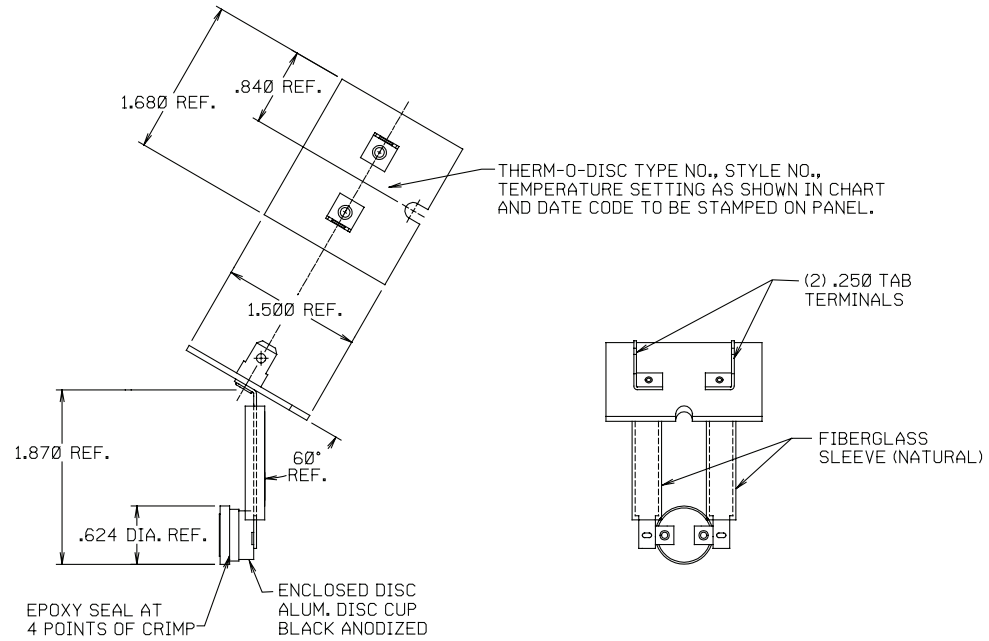


FIG. 4



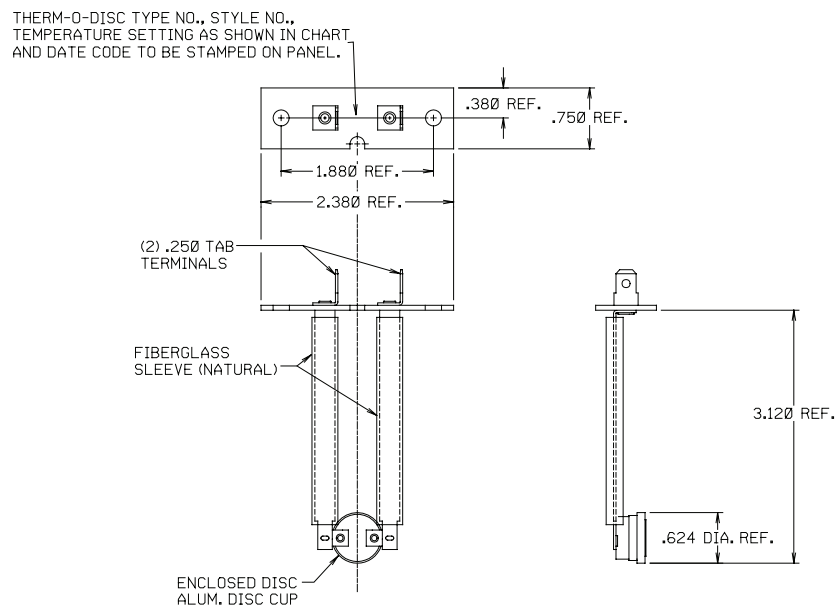
| MODEL NUMBER | CONSTRUCTION | TEMP. SETTING ON PANEL | OPEN TEMP. | CLOSE TEMP. |
|--------------|--------------|------------------------|------------|-------------|
| 3L09-22      | A            | L160-20F               | 160°F±5°   | 140°F±8°    |
| 3L09-23      | A            | L170-20F               | 170°F±5°   | 150°F±8°    |
| 3L09-24      | B            | L190-20F               | 190°F±5°   | 170°F±8°    |
| 3L09-25      | B            | L200-20F               | 200°F±5°   | 180°F±8°    |

**FIG. 5**



| MODEL NUMBER | TEMP. SETTING ON PANEL | OPEN TEMP. | CLOSE TEMP. |
|--------------|------------------------|------------|-------------|
| 3L09-26      | L180-20F               | 180°F±5°   | 160°F±8°    |
| 3L09-27      | L220-20F               | 220°F±5°   | 200°F±8°    |

**FIG. 6**



| MODEL NUMBER | TEMP. SETTING ON PANEL | OPEN TEMP. | CLOSE TEMP. |
|--------------|------------------------|------------|-------------|
| 3L09-28      | L210-30F               | 210°F±5°   | 180°F±8°    |





3L12-130

SNAP DISC MANUAL RESET  
FLAME ROLLOUT LIMITS

Manual reset flame rollout limit switches designed for safety in gas fired furnaces, unit heater and roof-top units.

FEATURES

- Loose ring, stainless steel mounting brackets
- 1/4" quick connect terminals. 90° orientation to mounting hole
- Manual reset
- Stainless steel disc cup

SPECIFICATIONS

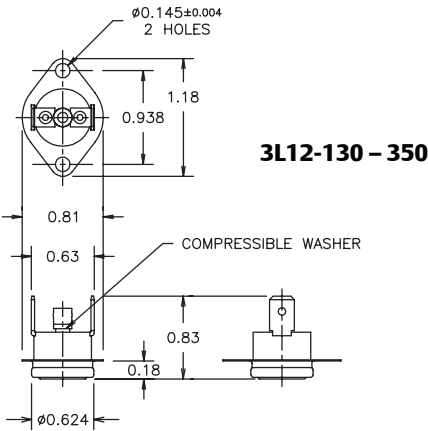
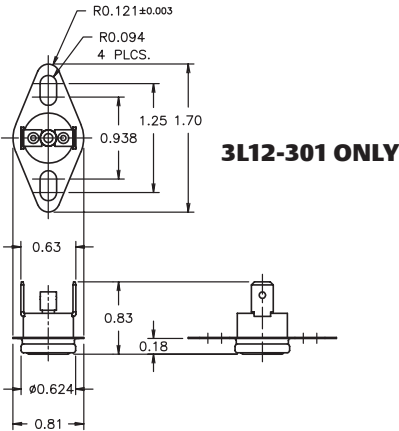
Switch Action ..... SPST Open on Rise  
Electrical Ratings ..... Resistive 15A @ 120 Vac, 10A @ 240 VAC  
..... Inductive 1.5 FLA, 25.0 LRA @ 120 Vac; 1.5 FLA, 6.0LRA @ 240 VAC  
Pilot Duty ..... 125 VA  
Dimensions .....  
3L12-301 ..... .83"H X .81"W X 1.18"L  
Others ..... .83"H X .81"W X 1.70"L  
Weight ..... 0.2 oz.  
UR/CUR File Number ..... E19279  
CSA/CUS Certificate Number ..... LR77886/LR109556  
VDE Lic. .... 118631

SNAP DISC MANUAL RESET FLAME ROLLOUT LIMITS

| APPLICATION                       | FIXED TEMPERATURE<br>SETTINGS CUT-IN | FIXED TEMPERATURE<br>SETTINGS CUT-OUT | SWITCH<br>ACTION | THERM-O-DISC TYPE | THERM-O-DISC STYLE | MODEL NUMBER | ITEM NUMBER |
|-----------------------------------|--------------------------------------|---------------------------------------|------------------|-------------------|--------------------|--------------|-------------|
| Snap Disc Limit -<br>Manual Reset | Manual Reset                         | 130°F (54°C)                          | Open on Rise     | 36TX16            | 611863             | 3L12-130     | 3L12-130    |
|                                   | Manual Reset                         | 135°F (57°C)                          | Open on Rise     | 36TX16            | 611864             | 3L12-135     | 3L12-135    |
|                                   | Manual Reset                         | 220°F (104°C)                         | Open on Rise     | 36TX16            | 611865             | 3L12-220     | 3L12-220    |
|                                   | Manual Reset                         | 230°F (110°C)                         | Open on Rise     | 36TX16            | 611866             | 3L12-230     | 3L12-230    |
|                                   | Manual Reset                         | 240°F (116°C)                         | Open on Rise     | 36TX16            | 611867             | 3L12-240     | 3L12-240    |
|                                   | Manual Reset                         | 250°F (121°C)                         | Open on Rise     | 36TX16            | 611868             | 3L12-250     | 3L12-250    |
|                                   | Manual Reset                         | 260°F (127°C)                         | Open on Rise     | 36TX16            | 611869             | 3L12-260     | 3L12-260    |
|                                   | Manual Reset                         | 300°F (149°C)                         | Open on Rise     | 36TX16            | 611870             | 3L12-300     | 3L12-300    |
|                                   | Manual Reset                         | 350°F (177°C)                         | Open on Rise     | 36TX16            | 611871             | 3L12-350     | 3L12-350    |
|                                   | Manual Reset                         | 300°F (149°C)                         | Open on Rise     | 36TX16            | 611971             | 3L12-301*    | 3L12-301*   |

\* Specifically designed for ICP part #1013102

3L12 SERIES OUTLINE DIAGRAMS





3F01-130

## SNAP DISC FIXED TEMPERATURE FAN LIMITS

*Automatic reset, manual reset and SPDT styles for fans, blowers or high limit cut out.*

### FEATURES

- Loose ring, stainless steel mounting brackets
- Mounting holes match standard 3/4" snap discs
- 1/4" quick connect terminals
- Last three numbers indicate cut-in temperatures on fan controls and cut-out temperatures on limits

### SPECIFICATIONS

Maximum Ambient.....350°F  
 Switch Action ..... SPST Open or Close on Rise  
 Electrical Ratings .....Resistive 25A @ 120 VAC, 25A @ 240 VAC  
 ..... Inductive 10 FLA, 60 LRA @ 120 VAC; .5 FLA, 30 LRA @ 240 VAC  
 3L03: Terminals 1 & 2 Close on Rise .....Resistive 25A @ 120 VAC, 25A @ 240 VAC  
 ..... Inductive 5.8 FLA, 34.8 LRA @ 120 VAC; 2.9 FLA, 17.4 LRA @ 240 VAC  
 3L03: Terminals 1 & 3 Open on Rise .....Resistive 25A @ 120 VAC, 25A @ 240 VAC  
 ..... Inductive 10 FLA, 60 LRA @ 120 VAC; .5 FLA, 30 LRA @ 240 VAC  
 Pilot Duty ..... 125 VA  
 Dimensions ..... .37"H X 1.32"W X 1.23"L  
 Weight ..... 0.2 oz.  
 UR/CUR File Number .....E19279  
 CSA/CUS Certificate Number..... LR77886/LR109556  
 VDE Lic. .... 118631

### SNAP DISC FIXED TEMPERATURE FAN LIMITS

| APPLICATION                            | FIXED TEMPERATURE SETTINGS CUT-IN | FIXED TEMPERATURE SETTINGS CUT-OUT | SWITCH ACTION | THERM-O-DISC TYPE | THERM-O-DISC STYLE | MODEL NUMBER | ITEM NUMBER |
|----------------------------------------|-----------------------------------|------------------------------------|---------------|-------------------|--------------------|--------------|-------------|
| Snap Disc Fan - Automatic Reset SPST   | 110°F (43°C)                      | 90°F (32°C)                        | Close on Rise | 60T12             | 610044             | 3F01-110     | 03F01 110S1 |
|                                        | 120°F (49°C)                      | 110°F (43°C)                       | Close on Rise | 60T12             | 610046             | 3F01-120     | 03F01 120S1 |
|                                        | 130°F (54°C)                      | 115°F (46°C)                       | Close on Rise | 60T12             | 610047             | 3F01-130     | 03F01 130S1 |
|                                        | 140°F (60°C)                      | 120°F (49°C)                       | Close on Rise | 60T12             | 611866             | 3F01-140     | 03F01 140S1 |
|                                        | 150°F (66°C)                      | 130°F (54°C)                       | Close on Rise | 60T12             | 610050             | 3F01-150     | 03F01 150S1 |
|                                        | 160°F (71°C)                      | 140°F (60°C)                       | Close on Rise | 60T12             | 610064             | 3F01-160     | 03F01 160S1 |
|                                        | 180°F (82°C)                      | 160°F (71°C)                       | Close on Rise | 60T12             | 610065             | 3F01-180     | 03F01 180S1 |
|                                        | 200°F (93°C)                      | 180°F (82°C)                       | Close on Rise | 60T12             | 610066             | 3F01-200     | 03F01 200S1 |
|                                        | 350°F (177°C)                     | 320°F (160°C)                      | Close on Rise | 60T12             | 610067             | 3F01-350     | 03F01 350S1 |
| Snap Disc Limit - Automatic Reset SPST | 110°F (43°C)                      | 120°F (49°C)                       | Open on Rise  | 60T11             | 610000             | 3L01-120     | 03L01 120S1 |
|                                        | 115°F (46°C)                      | 130°F (54°C)                       | Open on Rise  | 60T11             | 610002             | 3L01-130*    | 03L01 130S1 |
|                                        | 100°F (38°C)                      | 140°F (60°C)                       | Open on Rise  | 60T11             | 610006             | 3L01-140     | 03L01 140S1 |
|                                        | 110°F (43°C)                      | 150°F (66°C)                       | Open on Rise  | 60T11             | 610009             | 3L01-150     | 03L01 150S1 |
|                                        | 125°F (52°C)                      | 165°F (74°C)                       | Open on Rise  | 60T11             | 610069             | 3L01-165     | 03L01 165S1 |
|                                        | 130°F (54°C)                      | 170°F (77°C)                       | Open on Rise  | 60T11             | 610012             | 3L01-170     | 03L01 170S1 |
|                                        | 140°F (60°C)                      | 180°F (82°C)                       | Open on Rise  | 60T11             | 610013             | 3L01-180     | 03L01 180S1 |
|                                        | 150°F (66°C)                      | 190°F (88°C)                       | Open on Rise  | 60T11             | 610015             | 3L01-190     | 03L01 190S1 |
|                                        | 160°F (71°C)                      | 200°F (93°C)                       | Open on Rise  | 60T11             | 610016             | 3L01-200     | 03L01 200S1 |
|                                        | 190°F (88°C)                      | 230°F (110°C)                      | Open on Rise  | 60T11             | 610021             | 3L01-230     | 03L01 230S1 |
|                                        | 210°F (99°C)                      | 250°F (121°C)                      | Open on Rise  | 60T11             | 610023             | 3L01-250**   | 03L01 250S1 |
|                                        | 250°F (121°C)                     | 300°F (149°C)                      | Open on Rise  | 60T11             | 610026             | 3L01-300*    | 03L01 300S1 |
|                                        | 310°F (154°C)                     | 350°F (177°C)                      | Open on Rise  | 60T11             | 610068             | 3L01-350     | 03L01 350S1 |

SNAP DISC FIXED TEMPERATURE FAN LIMITS (CONTINUED)

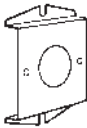
| APPLICATION                         | FIXED TEMPERATURE SETTINGS CUT-IN | FIXED TEMPERATURE SETTINGS CUT-OUT | SWITCH ACTION | THERM-O-DISC TYPE | THERM-O-DISC STYLE | MODEL NUMBER | ITEM NUMBER |
|-------------------------------------|-----------------------------------|------------------------------------|---------------|-------------------|--------------------|--------------|-------------|
| Snap Disc Limit - Manual Reset SPST | Manual Reset                      | 160°F (71°C)                       | Open on Rise  | 60T15             | 330534             | 3L02-160     | 03L02 160S1 |
|                                     | Manual Reset                      | 170°F (77°C)                       | Open on Rise  | 60T15             | 330535             | 3L02-170     | 03L02 170S1 |
|                                     | Manual Reset                      | 180°F (82°C)                       | Open on Rise  | 60T15             | 330536             | 3L02-180     | 03L02 180S1 |
|                                     | Manual Reset                      | 190°F (88°C)                       | Open on Rise  | 60T15             | 330537             | 3L02-190     | 03L02 190S1 |
|                                     | Manual Reset                      | 200°F (93°C)                       | Open on Rise  | 60T15             | 330538             | 3L02-200     | 03L02 200S1 |

\* 3L01-130 and -300 terminals at 30° angle  
\*\* 3L01-250 terminals is perpendicular to bracket

SNAP DISC FIXED TEMPERATURE FAN LIMITS

| APPLICATION                                   | TERMINAL 1 & 3 CUT-IN (CLOSES ON FALL) AT: | TERMINAL 1 & 3 CUT-OUT (OPENS ON RISE) AT: | TERMINAL 1 & 2 CUT-IN (CLOSES ON RISE) AT: | TERMINAL 1 & 2 CUT-OUT (OPEN ON FALL) AT: | SWITCH ACTION | THERM-O-DISC TYPE | THERM-O-DISC STYLE | MODEL NUMBER | ITEM NUMBER |
|-----------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|-------------------------------------------|---------------|-------------------|--------------------|--------------|-------------|
| Snap Disc Fan or Limit - Automatic Reset SPDT | 120°F (49°C)                               | 140°F (60°C)                               | 140°F (60°C)                               | 120°F (49°C)                              | SPDT          | 60T13             | 611015             | 3L03-140     | 03L03 140S1 |
|                                               | 170°F (77°C)                               | 190°F (88°C)                               | 190°F (88°C)                               | 170°F (77°C)                              | SPDT          | 60T13             | 611014             | 3L03-190     | 03L03 190S1 |

PARTS AND ACCESSORIES

| IMAGE                                                                               | DESCRIPTION                                                                                        | MODEL NUMBER | ITEM NUMBER    |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|--------------|----------------|
|  | Fan and limit mounting adapter for 3F01 / 3L01 / 3L02 / 3F02 / 3L03 / 3F05 / 3L05 series controls. | F6-1798      | F0006 179800S1 |



3L05-2

## SNAP DISC ADJUSTABLE TEMPERATURE FAN LIMITS

*3/4" adjustable automatic reset snap disc thermostats allows you to set the temperature set point to match your specific needs.*

### FEATURES

- 1/4" quick connect terminals are standard
- Reduces inventory while providing coverage for a wide range of temperature applications
- Replaces the majority of fixed disc thermostats now on heating equipment and various appliances
- 2 adjustable fan control models replace 7 fixed snap disc models
- 5 adjustable limit control models replace 10 fixed snap disc models

### SPECIFICATIONS

Switch Action ..... SPST Open or Close on Rise  
 Electrical Ratings ..... Resistive 25A @ 120 VAC, 25A @ 240 VAC,  
 ..... Inductive 14 FLA, 72 LRA @ 120 VAC; 10 FLA, 60 LRA @ 240 VAC  
 Pilot Duty ..... 125 VA  
 Dimensions ..... .37"H X 1.32"W X 1.23"L  
 Weight ..... 0.2 oz.  
 UR/CUR File Number ..... E19279  
 CSA/CUS Certificate Number ..... LR77886/LR109556  
 VDE Lic. .... 118631

### SNAP DISC FIXED TEMPERATURE FAN LIMITS

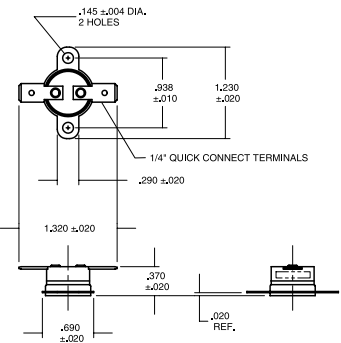
| APPLICATION                                         | TEMPERATURE SETPOINT RANGE      | SWITCH ACTION | DIFFERENTIAL | THERM-O-DISC TYPE | THERM-O-DISC STYLE | MODEL NUMBER | ITEM NUMBER |
|-----------------------------------------------------|---------------------------------|---------------|--------------|-------------------|--------------------|--------------|-------------|
| Snap Disc Fan - Adjustable Setting, Automatic Reset | 90°F (32°C), to 130°F (54°C)    | Close on Rise | 20°F (11°C)  | 74T12             | 310708             | 3F05-1       | 03F05 001S1 |
|                                                     | 140°F (60°C), to 180°F (82°C)   | Close on Rise | 20°F (11°C)  | 74T12             | 310709             | 3F05-2       | 03F05 002S1 |
|                                                     | 135°F (57°C), to 175°F (79°C)   | Open on Rise  | 40°F (22°C)  | 74T11             | 310710             | 3L05-1       | 03L05 001S1 |
|                                                     | 175°F (79°C), to 215°F (102°C)  | Open on Rise  | 40°F (22°C)  | 74T11             | 310711             | 3L05-2       | 03L05 002S1 |
|                                                     | 210°F (99°C), to 250°F (121°C)  | Open on Rise  | 40°F (22°C)  | 74T11             | 310712             | 3L05-3       | 03L05 003S1 |
|                                                     | 135°F (57°C), to 175°F (79°C)   | Open on Rise  | 20°F (11°C)  | 74T11             | 310724             | 3L05-10      | 03L05 010S1 |
|                                                     | 250°F (121°C), to 290°F (143°C) | Open on Rise  | 40°F (22°C)  | 74T11             | 310730             | 3L05-13      | 03L05 013S1 |

### PARTS AND ACCESSORIES

| IMAGE | DESCRIPTION                                                                                        | MODEL NUMBER | ITEM NUMBER    |
|-------|----------------------------------------------------------------------------------------------------|--------------|----------------|
|       | Fan and limit mounting adapter for 3F01 / 3L01 / 3L02 / 3F02 / 3L03 / 3F05 / 3L05 series controls. | F6-1798      | F0006 179800S1 |



3F11-100



SNAP DISC AUTOMATIC RESET FAN LIMITS

1/2" Automatic reset snap disc thermostats for appliance and HVAC.

FEATURES

- Loose ring, stainless steel mounting brackets
- 1/4" quick connect terminals
- Aluminum disc cup
- Last three numbers indicate cut-in temperatures on fan controls and cut-out temperatures on limits

SPECIFICATIONS

Switch Action ..... SPST Open or Close on Rise  
Electrical Ratings .....Resistive 15A @ 120 VAC, 10A @ 240 VAC,  
..... Inductive 3.0 FLA, 12.0LRA @ 120 VAC; 1.5FLA, 6.0LRA @ 240 VAC  
Pilot Duty ..... 125 VA  
Dimensions ..... .37"H X 1.32"W X 1.23"L  
Weight ..... 0.2 oz.  
UR/CUR File Number .....E19279  
CSA/CUS Certificate Number ..... LR77886/LR109556  
VDE Lic. .... 118631

SNAP DISC AUTOMATIC RESET FAN LIMITS

| APPLICATION                       | CUT-IN        | CUT-OUT       | SWITCH ACTION | DIFFERENTIAL | THERM-O-DISC TYPE | THERM-O-DISC STYLE | MODEL NUMBER | ITEM NUMBER |
|-----------------------------------|---------------|---------------|---------------|--------------|-------------------|--------------------|--------------|-------------|
| Snap Disc Fan - Automatic Reset   | 100°F (38°C)  | 70°F (21°C)   | Close on rise | 30°F (17°C)  | 36T22             | 10844              | 3F11-100     | 03F11 100   |
|                                   | 120°F (49°C)  | 90°F (32°C)   | Close on rise | 30°F (17°C)  | 36T22             | 10847              | 3F11-120     | 03F11 120   |
|                                   | 140°F (60°C)  | 110°F (43°C)  | Close on rise | 30°F (17°C)  | 36T22             | 10849              | 3F11-140     | 03F11 140   |
|                                   | 170°F (77°C)  | 140°F (60°C)  | Close on rise | 30°F (17°C)  | 36T22             | 10853              | 3F11-170     | 03F11 170   |
|                                   | 180°F (82°C)  | 150°F (66°C)  | Close on rise | 30°F (17°C)  | 36T22             | 10856              | 3F11-180     | 03F11 180   |
|                                   | 225°F (107°C) | 195°F (91°C)  | Close on rise | 30°F (17°C)  | 36T22             | 10860              | 3F11-225     | 03F11 225   |
|                                   | 240°F (116°C) | 140°F (60°C)  | Close on rise | 100°F (56°C) | 36T22             | 10862              | 3F11-240     | 03F11 240   |
| Snap Disc Limit - Automatic Reset | 40°F (4°C)    | 60°F (16°C)   | Open on rise  | 20°F (12°C)  | 36T21             | 10842              | 3L11-60      | 03L11 060   |
|                                   | 70°F (21°C)   | 85°F (29°C)   | Open on rise  | 15°F (8°C)   | 36T21             | 10843              | 3L11-85      | 03L11 085   |
|                                   | 110°F (43°C)  | 80°F (27°C)   | Open on rise  | 30°F (17°C)  | 36T21             | 10845              | 3L11-110     | 03L11 110   |
|                                   | 90°F (32°C)   | 120°F (49°C)  | Open on rise  | 30°F (17°C)  | 36T21             | 10846              | 3L11-120     | 03L11 120   |
|                                   | 110°F (43°C)  | 140°F (60°C)  | Open on rise  | 30°F (17°C)  | 36T21             | 10848              | 3L11-140     | 03L11 140   |
|                                   | 120°F (49°C)  | 150°F (66°C)  | Open on rise  | 30°F (17°C)  | 36T21             | 10850              | 3L11-150     | 03L11 150   |
|                                   | 130°F (54°C)  | 160°F (71°C)  | Open on rise  | 30°F (17°C)  | 36T21             | 10851              | 3L11-160     | 03L11 160   |
|                                   | 140°F (60°C)  | 170°F (77°C)  | Open on rise  | 30°F (17°C)  | 36T21             | 10852              | 3L11-170     | 03L11 170   |
|                                   | 160°F (71°C)  | 175°F (79°C)  | Open on rise  | 15°F (8°C)   | 36T21             | 10854              | 3L11-175     | 03L11 175   |
|                                   | 150°F (66°C)  | 180°F (82°C)  | Open on rise  | 30°F (17°C)  | 36T21             | 10855              | 3L11-180     | 03L11 180   |
|                                   | 160°F (71°C)  | 190°F (88°C)  | Open on rise  | 30°F (17°C)  | 36T21             | 10857              | 3L11-190     | 03L11 190   |
|                                   | 180°F (82°C)  | 210°F (99°C)  | Open on rise  | 30°F (17°C)  | 36T21             | 10858              | 3L11-210     | 03L11 210   |
|                                   | 190°F (88°C)  | 220°F (104°C) | Open on rise  | 30°F (17°C)  | 36T21             | 10859              | 3L11-220     | 03L11 220   |
|                                   | 200°F (93°C)  | 230°F (110°C) | Open on rise  | 30°F (17°C)  | 36T21             | 10861              | 3L11-230     | 03L11 230   |
|                                   | 220°F (104°C) | 250°F (121°C) | Open on rise  | 30°F (17°C)  | 36T21             | 10863              | 3L11-250     | 03L11 250   |
|                                   | 275°F (135°C) | 325°F (163°C) | Open on rise  | 50°F (28°C)  | 36T21             | 10864              | 3L11-325     | 03L11 325   |



230-22

# 230-22 FAN CONTROL

*Provides regulation of duct temperatures in conjunction with air handling units or control of circulator for indoor-outdoor regulation from a remote point.*

**FEATURES**

- Hydraulic action element - Unaffected by vibration
- Switch case mounts in any position - No leveling required. Includes bulb mounting clip
- High electrical rating permits operation of most equipment without use of relays or motor starters
- Dustproof steel case - Dial visible and can be adjusted through cover. Case has knockouts on top and bottom

**SPECIFICATIONS**

Dimensions ..... 5.75"H X 2.32"W X 2.56"D  
Finish..... Grey  
UR/CUR File Number .....E12615

**230-22 FAN CONTROL**

| SWITCH ACTION          | RANGE                    | DIFFERENTIAL                 | CAPILLARY LENGTH | BULB SIZE    | MOTOR RATING (FULL LOAD) |         | RESISTIVE (NON-INDUCTIVE) |         | MODEL NUMBER | ITEM NUMBER |
|------------------------|--------------------------|------------------------------|------------------|--------------|--------------------------|---------|---------------------------|---------|--------------|-------------|
|                        |                          |                              |                  |              | 120 VAC                  | 240 VAC | 120 VAC                   | 240 VAC |              |             |
| Open on Rise (Heating) | 20 to 120°F (-6 to 49°C) | Adj. 4 to 30°F (2.2 to 17°C) | 8 ft.            | 6-1/4 x 3/8" | 14.0A                    | 7.0A    | 25.0A                     | 22.0A   | 230-22 ①     | 02 30 022S1 |

① U.L. approved adjustable dial stop, factory set at 90°F maximum.  
See White-Rodgers General Information for full electrical ratings.





775-1

775-1 ATTIC FAN CONTROL

Ideal for replacement of similar type controls.

FEATURES

- For use where space is limited
- Small bimetal sensing element
- Snap-Action switch
- Fan control has adjustable range with direct reading temperature dial

SPECIFICATIONS

Dimensions ..... 2.8"H X 3.59"W X 2.02"D

775-1 ATTIC FAN CONTROL

| DESCRIPTION                            | RANGE                      | DIFFERENTIAL     | SWITCH ACTION | MOTOR RATING<br>(FULL LOAD) |         | PILOT<br>DUTY | MODEL NUMBER | ITEM NUMBER |
|----------------------------------------|----------------------------|------------------|---------------|-----------------------------|---------|---------------|--------------|-------------|
|                                        |                            |                  |               | 120 VAC                     | 240 VAC |               |              |             |
| Attic Fan Control with Thermal Limiter | 60 to 120°F ① (15 to 49°C) | Fixed 10°F (6°C) | Close on Rise | 9.0 A                       | —       | —             | 775-1        | 07 75 001S1 |

① Thermal limiter opens at 183°F (84°C)



770-1

770 SERIES DUAL PURPOSE AIR SWITCH

Responds to positive, negative or differential air pressure.

FEATURES

- Design eliminates "fluttering" or malfunction due to shock or vibration normally encountered with "sail switches"
- Furnished with one 12" piece 1/4" O.D. flexible tubing, nuts and ferrules
- Wide operating range
- Can be mounted in any position except upside down
- Enclosed diaphragm

SPECIFICATIONS

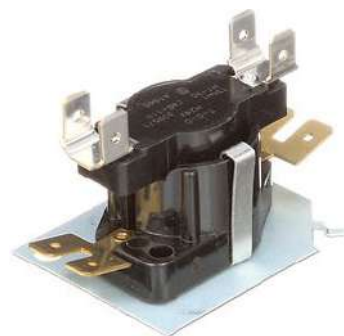
Electrical Rating ..... 1/2 HP @ 125 VAC  
Maximum Pressure ..... 1/2 PSI  
Ambient Temperature ..... -40 to + 180°F  
UL/CUL File Number ..... MP204

770 SERIES DUAL PURPOSE AIR SWITCH

| SWITCH ACTION | ADJUSTABLE<br>OPERATING RANGE | ELECTRICAL RATINGS<br>RESISTIVE<br>(NON-INDUCTIVE) 120 VAC | ELECTRICAL<br>RATINGS RESISTIVE<br>(NON-INDUCTIVE) 240 VAC | ELECTRICAL<br>RATINGS<br>125-277 VAC | MODEL NUMBER | ITEM NUMBER |
|---------------|-------------------------------|------------------------------------------------------------|------------------------------------------------------------|--------------------------------------|--------------|-------------|
| SPDT          | 0.05 to 12.0 W.C.             | 15.0A                                                      | 15.0A                                                      | 300 VA                               | 770-1        | 07 70 001S1 |
| SPDT          | 0.05 to 12.0 W.C.             | 15.0A                                                      | 15.0A                                                      | 300 VA                               | 770-3        | 07 70 00305 |

✳ Indicates Canadian Model Number: Call 1-800-305-6953 to order.





24A34-3

## 24A34 SERIES ELECTRIC HEAT SEQUENCERS

*Direct replacement for most fan and heat sequencing functions.*

### FEATURES

- Replaces Honeywell, MARS, TOD, Gemline, Klixon (Texas Instruments)
- 24V input control
- Multi-poise mounting
- Any contacts (except M1 & M2) can be used as auxiliary contacts
- Double quick-connect terminals for combination loads
- 24A34-15 Used in heat pump air handler applications

### SPECIFICATIONS

Ambient Temperature Rating ..... -50 to +165°F  
UR/CUR File Number ..... E12615

### ELECTRICAL RATINGS – SINGLE LOAD CONTACT RATINGS (All Models)

| INDUCTIVE (MOTOR) FULL LOAD 120 VAC | INDUCTIVE (MOTOR) FULL LOAD 240 VAC | INDUCTIVE (MOTOR) FULL LOAD 480 VAC | INDUCTIVE (MOTOR) LOCKED ROTOR 120 VAC | INDUCTIVE (MOTOR) LOCKED ROTOR 240 VAC | INDUCTIVE (MOTOR) LOCKED ROTOR 480 VAC | RESISTIVE (NON-INDUCTIVE) 120 VAC | RESISTIVE (NON-INDUCTIVE) 240 VAC | RESISTIVE (NON-INDUCTIVE) 480 VAC | PILOT DUTY                         |
|-------------------------------------|-------------------------------------|-------------------------------------|----------------------------------------|----------------------------------------|----------------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|------------------------------------|
| 14.0A                               | 7.0A                                | —                                   | 72.0A                                  | 42.0A                                  | —                                      | 25.0A, 3000W                      | 25.0A, 6000W                      | 12.5A, 6000W                      | 120-240 VAC 125 VA, 480 VAC 480 VA |

### 24A34 SERIES ELECTRIC HEAT SEQUENCERS

| TIMINGS | SWITCHES | TIMINGS – ON |         |       |         |        | TIMINGS – OFF |          |       |         |        | MODEL NUMBER | ITEM NUMBER |
|---------|----------|--------------|---------|-------|---------|--------|---------------|----------|-------|---------|--------|--------------|-------------|
|         |          | M1-M2        | M3-M4   | M5-M6 | M7-M8   | M9-M10 | M1-M2         | M3-M4    | M5-M6 | M7-M8   | M9-M10 |              |             |
| 1       | 1        | 1-20         | —       | —     | —       | —      | 40-110        | —        | —     | —       | —      | 24A34-1      | 24A34 001S1 |
| 1       | 1        | —            | —       | 30-90 | —       | —      | —             | —        | 1-30  | —       | —      | 24A34-2      | 24A34 002S1 |
| 1       | 2        | 1-20         | ◆ 1-20  | —     | —       | —      | 40-110        | ◆ 40-110 | —     | —       | —      | 24A34-3 ①    | 24A34 003S1 |
| 1       | 2        | —            | —       | 30-90 | ◆ 30-90 | —      | —             | —        | 1-30  | ◆ 1-30  | —      | 24A34-4      | 24A34 004S1 |
| 2       | 3        | 1-110        | ◆ 1-110 | 1-110 | —       | —      | 1-110         | ◆ 1-110  | 1-110 | —       | —      | 24A34-5 ①    | 24A34 005S1 |
| 2       | 4        | 1-110        | ◆ 1-110 | 1-110 | ◆ 1-110 | —      | 1-110         | ◆ 1-110  | 1-110 | ◆ 1-110 | —      | 24A34-6 ①    | 24A34 006S1 |
| 4       | 5        | 1-160        | ◆ 1-160 | 1-160 | 1-160   | 1-160  | 1-160         | ◆ 1-160  | 1-160 | 1-160   | 1-160  | 24A34-14 ① ② | 24A34 014S1 |
| 1       | 1        | 1-20         | —       | —     | —       | —      | 1-50          | —        | —     | —       | —      | 24A34-21     | 24A34 021B1 |
| 1       | 1        | 15-45        | —       | —     | —       | —      | 1-30          | —        | —     | —       | —      | 24A34-22     | 24A34 022B1 |
| 1       | 1        | 25-55        | —       | —     | —       | —      | 15-45         | —        | —     | —       | —      | 24A34-23     | 24A34 023B1 |
| 1       | 1        | 30-75        | —       | —     | —       | —      | 1-40          | —        | —     | —       | —      | 24A34-24     | 24A34 024B1 |
| 1       | 1        | 40-90        | —       | —     | —       | —      | 1-30          | —        | —     | —       | —      | 24A34-25     | 24A34 025B1 |
| 2       | 2        | 1-20         | 30-90   | —     | —       | —      | 40-90         | 1-30     | —     | —       | —      | 24A34-26     | 24A34 026B1 |
| 2       | 2        | 1-160        | 1-160   | —     | —       | —      | 1-160         | 1-160    | —     | —       | —      | 24A34-27     | 24A34 027B1 |
| 2       | 2        | 1-160        | 1-160   | —     | —       | —      | 1-160         | 1-160    | —     | —       | —      | 24A34-28 ③   | 24A34 028B1 |
| 1       | 1        | 15-35        | —       | —     | —       | —      | 25-55         | —        | —     | —       | —      | 24A34-29     | 24A34 029B1 |
| 2       | 2        | 1-20         | 30-45   | —     | —       | —      | 45-110        | 1-30     | —     | —       | —      | 24A34-36     | 24A34 036B1 |
| 1       | 1        | 1-110        | —       | —     | —       | —      | 1-110         | —        | —     | —       | —      | 24A34-37     | 24A34 037B1 |

### COMBINED LOAD RATING TABLE (All Models):

30A @ 240 VAC – TOTAL,  
23A Non-Inductive + 7 FLA / 42 LRA Inductive  
ON Time: Elapsed time to make contacts after heater is energized (min. to max.)  
OFF Time: Elapsed time to break contacts after heater is de-energized (min. to max.)

### TABLE NOTES:

- ① M1-M2 and M3-M4 are always first switches to turn ON and last to turn OFF. All other switches are random ON and random OFF  
② 24A34-14 Switch contacts designated F<sub>1</sub> - F<sub>2</sub> instead of M<sub>1</sub> - M<sub>2</sub>  
③ 24A34-28 is 2 pole double throw  
◆ These contacts switch simultaneously  
✱ Indicates Canadian Model Number: Call 1-800-305-6953 to order.

**NOTE:** Underwriters Laboratories requires a fan interlock circuit to insure the blower remains operating whenever more than one sequencer is used. The fan interlock should be the M1 / M2 contacts of the second or third sequencer. All M1 / M2 contacts are wired to the blower motor so that any sequencer that is energized will keep the blower ON.

24A34-15 HEAT PUMP CONTROL

| TIMINGS | SWITCHES | TIMINGS ON 1-3 | TIMINGS OFF 1-3 | MODEL NUMBER | ITEM NUMBER |
|---------|----------|----------------|-----------------|--------------|-------------|
| 1       | 1        | 1-60           | 75-95           | 24A34-15     | 24A34 015S1 |

ELECTRICAL RATINGS – NORMALLY OPEN CONTACTS 1-3

| INDUCTIVE (MOTOR)<br>FULL LOAD<br>120 VAC | INDUCTIVE (MOTOR)<br>FULL LOAD<br>240 VAC | INDUCTIVE (MOTOR)<br>LOCKED ROTOR<br>120 VAC | INDUCTIVE (MOTOR)<br>LOCKED ROTOR<br>240 VAC | RESISTIVE<br>(NON-INDUCTIVE)<br>120 VAC | RESISTIVE<br>(NON-INDUCTIVE) 240<br>VAC | PILOT DUTY                        |
|-------------------------------------------|-------------------------------------------|----------------------------------------------|----------------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------|
| 14.0A                                     | 7.0A                                      | 72.0A                                        | 42.0A                                        | 25.0A, 3000W                            | 5.0A, 6000W                             | 120 VAC 125 VA,<br>240 VAC 125 VA |

ELECTRICAL RATINGS – NORMALLY CLOSED CONTACTS 1-2

| VAC | RESISTIVE (NON-INDUCTIVE) WATTS | RESISTIVE (NON-INDUCTIVE) AMPS | PILOT DUTY |
|-----|---------------------------------|--------------------------------|------------|
| 120 | 1200                            | 10.0                           | 125 VA     |
| 240 | 1200                            | 5.0                            | 125 VA     |



24A01G-3

## LEVEL-TEMP CONTROL FOR ELECTRIC HEAT

*Provides silent operation and narrow differential control for heating or cooling installations.*

### FEATURES

- Level-Temp allows low voltage 2-wire thermostat to control line voltage loads such as baseboard heaters
- Conduit hub or screw mounting
- Ideal for all types of electrical heat
- Non-critical mounting angle. Universal break-off mounting tabs
- Dual Level-Temp capable of controlling two separate loads

### SPECIFICATIONS

|                                      |                                    |
|--------------------------------------|------------------------------------|
| 24A01 and 24A05 Dimensions .....     | 1.88"H X 4.50"W X 2.44"D           |
| 24A06 Dimensions .....               | 3.81"H X 4.81"W X 2.13"D           |
| Switch Action .....                  | SPST Normally Open, Single or Dual |
| Average Time Delay .....             | 45 Seconds                         |
| Dual Ambient temperature range ..... | -20 to +120°F                      |
| UR/CUR File Number .....             | E12615                             |

### SINGLE LEVEL TEMPS – NORMALLY OPEN

| INPUT VOLTAGE / FREQUENCY | THERMOSTAT CURRENT | A. C. RESISTIVE (NON-INDUCTIVE) | INDUCTIVE (MOTOR) FULL LOAD | INDUCTIVE (MOTOR) LOCKED ROTOR | MODEL NUMBER | ITEM NUMBER |
|---------------------------|--------------------|---------------------------------|-----------------------------|--------------------------------|--------------|-------------|
| 240 VAC / 60 Hz           | 0.2A               | 25A, 6000W, 240 VAC             | 12A, 240 VAC                | 72A, 240 VAC                   | 24A01G-3     | 24A01G003S1 |
| 347 VAC / 60 Hz           | 0.2A               | 17A, 5900W, 347 VAC             | —                           | —                              | 24A01Z-10    | 24A01Z010S1 |
| 120 VAC / 60 Hz           | 0.2A               | 25A, 3000W, 120 VAC             | 16A, 120 VAC                | 96A, 120 VAC                   | 24A05A-1     | 24A05A001S1 |
| 208 VAC / 60 Hz           | 0.2A               | 22A, 5200W, 208 VAC             | 12A, 208 VAC                | 72A, 208 VAC                   | 24A05E-1     | 24A05E001S1 |
| 277 VAC / 60 Hz           | 0.2A               | 22A, 6000W, 277 VAC             | —                           | —                              | 24A05Z-1     | 24A05Z001S1 |
| 208 VAC / 60 Hz           | 0.2A               | 25A, 5200W, 208 VAC             | 12A, 208 VAC                | 72A, 208 VAC                   | 24A07E-1     | 24A07E001S1 |
| 240 VAC / 60 Hz           | 0.2A               | 25A, 6000W, 240 VAC             | 12A, 240 VAC                | 72A, 240 VAC                   | 24A07G-1     | 24A07G001S1 |

\* Indicates Canadian Model Number: Call 1-800-305-6953 to order.

### DUAL LEVEL TEMPS CONTROLS TWO INDEPENDENT LOADS – NORMALLY OPEN

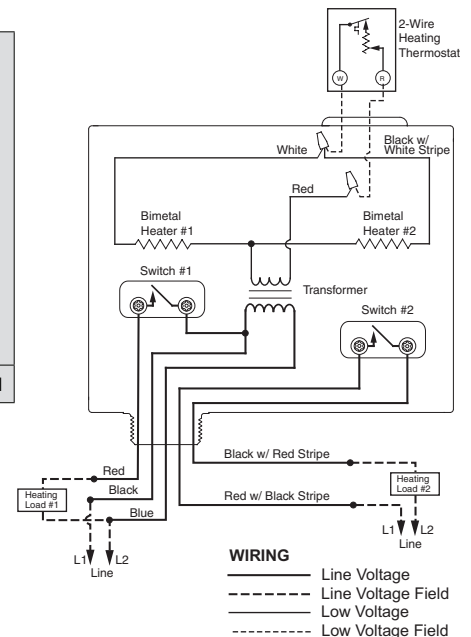
| INPUT VOLTAGE / FREQUENCY | THERMOSTAT CURRENT | A. C. RESISTIVE (NON-INDUCTIVE) ① | INDUCTIVE (MOTOR) FULL LOAD | INDUCTIVE (MOTOR) LOCKED ROTOR | MODEL NUMBER | ITEM NUMBER |
|---------------------------|--------------------|-----------------------------------|-----------------------------|--------------------------------|--------------|-------------|
| 240 VAC / 60 Hz           | 0.2A per switch    | 25A, 6000W, 240 VAC               | 12A, 240 VAC                | 72A, 240 VAC                   | 24A06G-1     | 24A06G001S1 |

① Electrical ratings apply to each switch load

**NOTE:** Delay approximately 30 seconds opening and 60 seconds closing.

Replaces Honeywell R841 Series

### 24A06 DUAL LEVEL TEMP WIRING





754-1

# 750 SERIES ELECTRIC WATER HEATER CONTROLS

Surface mount temperature sensing controls.

**FEATURES**

- High electrical capacity
- Snap-Action contact
- Long life-proven reliability
- Adjustable control or manual reset styles

**SPECIFICATIONS**

Agency..... UL, CSA

**750 SERIES ELECTRIC WATER HEATER CONTROLS**

| DESCRIPTION               | SWITCH ACTION    | RANGE                    | A.C. ELECTRICAL RATINGS (NON-INDUCTIVE) 120 / 240 VAC | A.C. ELECTRICAL RATINGS (NON-INDUCTIVE) 277 VAC | A.C. ELECTRICAL RATINGS (NON-INDUCTIVE) 480 VAC | MODEL NUMBER | ITEM NUMBER |
|---------------------------|------------------|--------------------------|-------------------------------------------------------|-------------------------------------------------|-------------------------------------------------|--------------|-------------|
| DPST limit (manual reset) | Open on Rise     | 170°F fixed (77°C)       | —                                                     | 40.0A                                           | 25.0A                                           | 754-1        | 07 54 001S1 |
| SPST thermostat           | Open on Rise     | 90 to 150°F (32 to 66°C) | 30.0A                                                 | 25.0A                                           | 12.5A                                           | 755-1        | 07 55 001S1 |
| 754-1 + 755-1             | N/A              | N/A                      | 30.0A                                                 | 25.0A                                           | 12.5A                                           | 755-50       | 07 55 050S1 |
| SPDT thermostat           | Open 1-2 on Rise | 90 to 150°F (32 to 66°C) | 30.0A                                                 | 25.0A                                           | 12.5A                                           | 756-1        | 07 56 001S1 |
| 754-1 + 756-1             | N/A              | N/A                      | 30.0A                                                 | 25.0A                                           | 12.5A                                           | 756-50       | 07 56 050S1 |



37C73U-168

## 37C SERIES GAS HOT WATER HEATER CONTROLS

*Replacement for standard gas water heater controls.*

### FEATURES

- Automatic shut-off of main and pilot gas in the event of pilot failure
- Pilot gas cock with safe lighting feature and filter
- Temperature adjustment
- Manifold pressure tap
- Built-In E.C.O. (Energy Cut Off) non-cycling high limit

### SPECIFICATIONS

Inlet Size..... 1/2" NPT  
 Outlet Size..... 1/2" inverted flare  
 Outlet Adapter Fittings ..... 1/2" inverted flare X 3/8" NPT reducer adapter  
 ..... 1/2" X 1/2" inverted flare outlet extension adapter  
 Mounting ..... 3/4" NPT, 4-1/2" bulb insertion length  
 Pilot Connection..... 1/4" compression fitting  
 CSA/CUS Certification Number ..... 1083351

### 37C SERIES GAS HOT WATER HEATER CONTROLS

| FAMILY BRANDS OF EQUIPMENT                           | REPLACES OEM MODEL NUMBER  | GAS TYPE                         | REGULATOR SETTING                 | TEMPERATURE RANGE        | SHANK LENGTH | FITTINGS INCLUDED                                                                                          | MODEL NUMBER | ITEM NUMBER |
|------------------------------------------------------|----------------------------|----------------------------------|-----------------------------------|--------------------------|--------------|------------------------------------------------------------------------------------------------------------|--------------|-------------|
| A. O. Smith, Robertshaw                              | Consult WR Cross Reference | Natural Gas (Right hand threads) | Main 3.5" W.C., Pilot 4.0" W.C.   | 70 to 160°F (21 to 71°C) | 1-1/4"       | Outlet adapter fittings                                                                                    | 37C73U-168   | 37C73U168S1 |
| A. O. Smith, State Industries, American Water Heater | Consult WR Cross Reference | L.P. Gas (Left hand threads)     | Main 10.0" W.C., Pilot 10.0" W.C. | 70 to 160°F (21 to 71°C) | 1-1/4"       | Left hand outlet extension fittings: 1/2" LH x 1/2" LH inverted flare and 1/2" LH x 3/8" LH inverted flare | 37C72U-185   | 37C72U185S1 |
| A. O. Smith                                          | 37C73U-274                 | Natural Gas                      | Main and Pilot 4.0" W.C.          | 70 to 160°F (21 to 71°C) | 2-1/2"       | N/A                                                                                                        | 37C73U-171   | 37C73U-171  |
| A. O. Smith                                          | 37C73U-640                 | Natural Gas                      | Main and Pilot 4.0" W.C.          | 70 to 160°F (21 to 71°C) | 1-1/4"       | N/A                                                                                                        | 37C73U-173   | 37C73U-173  |
| A. O. Smith                                          | 37C73U-641                 | Natural Gas                      | Main and Pilot 4.0" W.C.          | 70 to 160°F (21 to 71°C) | 2-1/4"       | N/A                                                                                                        | 37C73U-172   | 37C73U-172  |
| A. O. Smith                                          | 37C73U-652                 | Natural Gas                      | Main 4.0" W.C., Pilot 5.0" W.C.   | 70 to 160°F (21 to 71°C) | 1-1/4"       | N/A                                                                                                        | 37C73U-174   | 37C73U-174  |
| Rheem                                                | 37C73U-836                 | Natural Gas                      | Main 4.0" W.C., Pilot 4.9" W.C.   | 70 to 160°F (21 to 71°C) | 1"           | N/A                                                                                                        | 37C73U-170   | 37C73U-170  |





37E73A-903

37E SERIES INTELLI-VENT™ CONTROLS

Power vented water heater gas combination control, ignition and thermostat.

FEATURES

- INTELLI-VENT™ combines gas, ignition and thermostat into one control
- Right angle with 1/2" N.P.T. inlet and 1/2" inverted flare outlet
- 70° to 160° range
- Regulation range 20,000 to 150,000 BTU's
- Natural gas only

SPECIFICATIONS

|                                       |                                                                  |
|---------------------------------------|------------------------------------------------------------------|
| Operating Voltage.....                | 120 VAC, 60 HZ                                                   |
| Ignitor Load.....                     | 2 Amps Maximum                                                   |
| Inducer Draft Motor.....              | 3 Amps Full Load, 4 Amps Locked Rotor                            |
| Range of Regulation (BTU / Hr.) ..... | 20000 - 150,000 BTU / Hr.                                        |
| 1.0" Pressure Drop Capacity.....      | 100,000 BTU / Hr.                                                |
| .....                                 | (1000 BTU / FT <sup>3</sup> , 0.64 specific gravity Natural Gas) |
| Maximum Inlet Pressure .....          | 1/2 PSI                                                          |
| Ambient Temperature Rating .....      | 32°F to 160°F (0°C to 70°C)                                      |
| CSA/CUS Certification Number.....     | 1280281                                                          |

37E SERIES INTELLI-VENT CONTROLS

| REPLACES OEM MODEL NUMBER      | ORIGINAL EQUIPMENT MANUFACTURER  | MODEL NUMBER | ITEM NUMBER  |
|--------------------------------|----------------------------------|--------------|--------------|
| 184960, 9003691005, 37E73A-303 | A.O. SMITH, STATE INDUSTRIES     | 37E73A-903   | 37E73A-903B1 |
| 9005964005, 37E73A-306         | STATE INDUSTRIES                 | 37E73A-906   | 37E73A-906B1 |
| 56000152A, 37E73A-318          | GIANT                            | 37E73A-918   | 37E73A-918B1 |
| GSW 64020, 37E73A-321          | GSW                              | 37E73A-921   | 37E73A-921B1 |
| GSW 64021, 64021, 37E73A-322   | GSW (WHITE-RODGERS MODEL NUMBER) | 37E73A-922   | 37E73A-922B1 |
| SP13845D, 37E73A-327           | RHEEM                            | 37E73A-927   | 37E73A-927B1 |



11E79-901

INTEGRATED WATER HEATER CONTROL

Solid state thermostat control for gas fired commercial water heaters.

FEATURES

- Provides relay switched output for damper or inducer fan applications and a "Call for Heat" signal and power to energize a gas valve
- Receives input signals from a temperature probe and Electric Cutoff (ECO)
- Controls temperature with an integrated temperature control knob
- Provides diagnostic LED's to trouble shoot system faults and issues

SPECIFICATIONS

|                                   |                |
|-----------------------------------|----------------|
| Input & Frequency.....            | 120 VAC, 60 Hz |
| XFMR Sec. Current.....            | 1.5 A @ 24 VAC |
| Field Output (DD4, DD2).....      | 1.5A @ 24 VAC  |
| Temperature Set-point Range.....  | 20°F-180°F     |
| CSA/CUS Certification Number..... | 1028064        |

INTEGRATED WATER HEATER CONTROL - Cross Reference Table

| REPLACES OEM MODEL   | TEMPERATURE RANGE | MODEL NUMBER | ITEM NUMBER |
|----------------------|-------------------|--------------|-------------|
| 11E79-101, 11E79-301 | 120 to 180°F      | 11E79-901    | 11E79-901   |



11B79-3

GAS WATER HEATER CONTROL

Commercial water heater control with built in ECO direct replacement for A.O.Smith 192828-000.

FEATURES

- All bulbs are full direct immersion - no immersion well required
- Case element has a bulb for the ECO and thermostat
- Thermostat has a remote bulb with an integral to remote bulb volume ratio of 3:1
- Remote capillary routed through immersion nut for strain relief
- Temperature regulating device for use in applications not exceeding 180°F (82°C)

SPECIFICATIONS

Case Element.....3/4" NPT, 2-3/4" shank, 4.63" beyond thread  
Remote Element.....3/4"NPT, compression fitting on 1-1/2" stud, 5 1/4" beyond stud  
CSA/CUS Certification Number ..... 1070508

GAS WATER HEATER CONTROL

| THERMOSTAT ELECTRICAL RATING                                                  | THERMOSTAT SWITCH ACTION                        | E.C.O. ELECTRICAL RATING                        | E.C.O. SWITCH ACTION                                                  | MODEL NUMBER | ITEM NUMBER |
|-------------------------------------------------------------------------------|-------------------------------------------------|-------------------------------------------------|-----------------------------------------------------------------------|--------------|-------------|
| 24 VAC - 0.75 Amp<br>0.25 to 1.0 VDC - 0.25 Amp 10 F.L.A., 60 L.R.A., 120 VAC | Open on Rise Differential:<br>Fixed 4°F (2.2°C) | 24 VAC - 0.75 Amp<br>0.25 to 1.0 VDC - 0.25 Amp | Open on Rise @ 205°F (96°C)<br>Differential: Non-Cycling Manual Reset | 11B79-3      | 11B79-3     |



1311-102

## 1300 SERIES HYDRONIC ZONE VALVES

1300 Series valves for zoning systems up to 50 PSI operate quietly and efficiently providing years of reliable service.

### FEATURES

- Self-aligning barrel-type valve stem design
- Made of a corrosion-resistant stainless steel
- Motor can be removed from valve assembly without draining system
- Built-in auxiliary contacts to control burner or circulator relay
- Automatic recycling manual operator shows valve position at all times
- Screw terminal wiring panel for added convenience

### SPECIFICATIONS

Electrical Ratings ..... 24 VAC  
 ..... 1311 - 0.4A  
 ..... 1361 - 0.2A  
 ..... Aux Switch - 2.0A

### 3-WIRE, 24V VALVES WITH SCREW TERMINAL WIRING PANEL AND AUXILIARY SWITCH

(See table at bottom for compatible thermostats)

| TUBING SIZE (I.D.) | 24 VAC THERMOSTAT CIRCUIT RATING | TIME CYCLE                            | MAXIMUM DIFFERENTIAL ACROSS VALVE | MAXIMUM WATER TEMP. | MAXIMUM SYSTEM PRESSURE | FLOW CAPACITY CV | FRICTION LOSS EQUIVALENTS FT. OF TUBING | MODEL NUMBER | ITEM NUMBER |
|--------------------|----------------------------------|---------------------------------------|-----------------------------------|---------------------|-------------------------|------------------|-----------------------------------------|--------------|-------------|
| 3/4"               | 0.4A ①                           | Open: 45 seconds<br>Close: 45 seconds | 15 PSI                            | 240°F (116°C)       | 50 PSI                  | 23.5 ③           | 2.5                                     | 1311-102     | 13 11 102S1 |
| 1"                 | 0.4A ①                           | Open: 45 seconds<br>Close: 45 seconds | 15 PSI                            | 240°F (116°C)       | 50 PSI                  | 37.0 ③           | 3.5                                     | 1311-103     | 13 11 103S1 |
| 1-1/4"             | 0.4A ①                           | Open: 45 seconds<br>Close: 45 seconds | 15 PSI                            | 240°F (116°C)       | 50 PSI                  | 42.2 ③           | 6.5                                     | 1311-104     | 13 11 104S1 |

### 2-WIRE, 24V VALVES WITH SCREW TERMINAL WIRING PANEL AND AUXILIARY SWITCH

| TUBING SIZE (I.D.) | 24 VAC THERMOSTAT CIRCUIT RATING | TIME CYCLE                            | MAXIMUM DIFFERENTIAL ACROSS VALVE | MAXIMUM WATER TEMP. | MAXIMUM SYSTEM PRESSURE | FLOW CAPACITY CV | FRICTION LOSS EQUIVALENTS FT. OF TUBING | MODEL NUMBER | ITEM NUMBER |
|--------------------|----------------------------------|---------------------------------------|-----------------------------------|---------------------|-------------------------|------------------|-----------------------------------------|--------------|-------------|
| 3/4"               | 0.2A ②                           | Open: 45 seconds<br>Close: 60 seconds | 15 PSI                            | 240°F (116°C)       | 50 PSI                  | 23.5 ③           | 2.5                                     | 1361-102     | 13 61 102S1 |
| 1"                 | 0.2A ②                           | Open: 45 seconds<br>Close: 60 seconds | 15 PSI                            | 240°F (116°C)       | 50 PSI                  | 37.0 ③           | 3.5                                     | 1361-103     | 13 61 103S1 |
| 1-1/4"             | 0.2A ②                           | Open: 45 seconds<br>Close: 60 seconds | 15 PSI                            | 240°F (116°C)       | 50 PSI                  | 42.2 ③           | 6.5                                     | 1361-104     | 13 61 104S1 |

① Valve current is 0.4A only during opening or closing. For proper anticipation, select thermostat designed for use with a 3-wire zone valve.

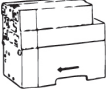
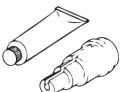
② Valve current is 0.52A when opening but 0.2A when fully open: therefore set anticipator for 0.2A.

③ GPM @ 1 PSI drop.

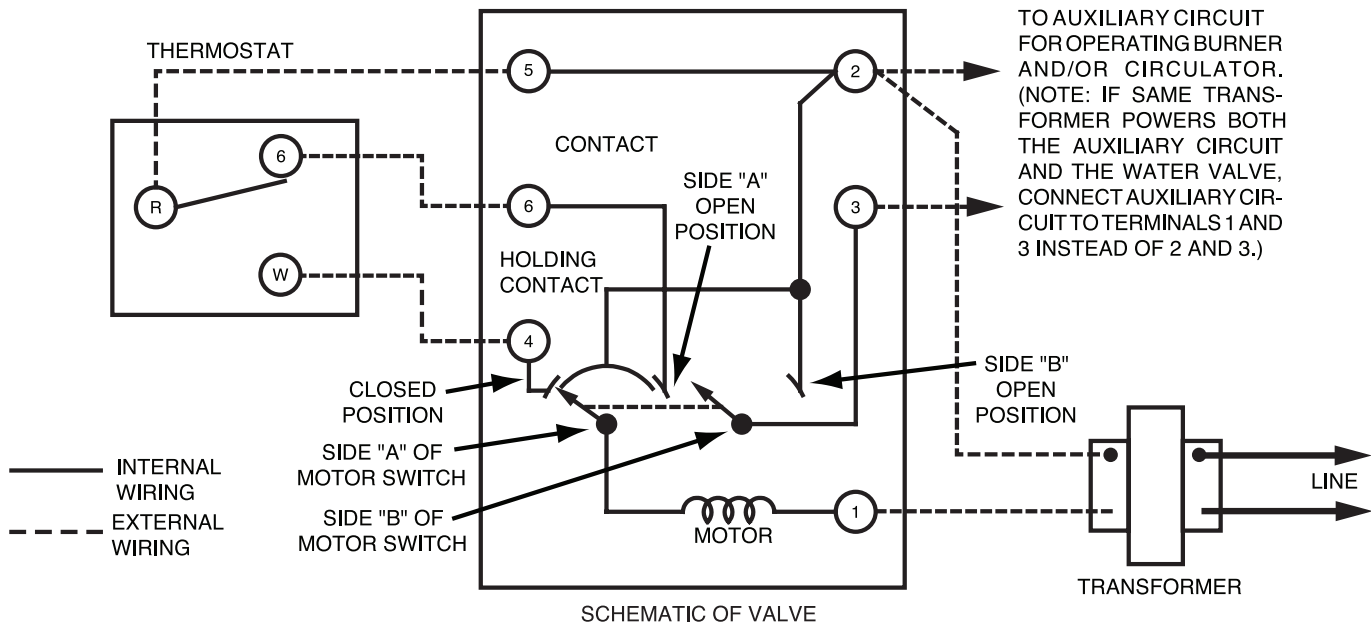
### 1311 COMPATIBLE THERMOSTATS TABLE

| MECHANICAL/ DIGITAL | MODEL NUMBER | ITEM NUMBER | UPGRADE MODEL NUMBER | UPGRADE ITEM NUMBER | MECHANICAL/ DIGITAL |
|---------------------|--------------|-------------|----------------------|---------------------|---------------------|
| Mechanical          | 1E56N-444    | 1E56N-444   | 1F95-0671            | 1F95-0671           | Premium Digital     |
| Mechanical          | 1F56N-444    | 1F56N-444   | 1F95-0680            | 1F95-0680           | Premium Digital     |
| Digital             | 1F85U-22NP   | 1F85U-22NP  | 1F95-1280            | 1F95-1280           | Premium Digital     |
| Digital             | 1F85U-22PR   | 1F85U-22PR  | 1F95-1291            | 1F95-1291           | Premium Digital     |
| Digital             | 1F85U-42NP   | 1F85U-42NP  | 1F95EZ-0671          | 1F95EZ-0671         | Premium Digital     |
| Digital             | 1F85U-42PR   | 1F85U-42PR  | 1F97-1277            | 01F97 1277          | Premium Digital     |

## PARTS AND ACCESSORIES

| IMAGE                                                                               | DESCRIPTION                                                                                                                                                                                  | MODEL NUMBER                     | ITEM NUMBER                                        |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------|
|    | 1300 Hydronic Zone Valve Motor assemblies<br>For 1311-102, -103, -104<br>For 1361-102, -103, -104<br>Water seal replacement kit not included                                                 | F19-0097<br>F19-0104             | F0019 009700S1<br>F0019 010400S1                   |
|    | 1300 Hydronic zone valve assemblies<br>1311-102 and 1361-102 (3/4")<br>1311-103 and 1361-103 (1")<br>1311-104 and 1361-104 (1-1/4")                                                          | F84-0433<br>F84-0434<br>F84-0435 | F0084 043300S1<br>F0084 043400S1<br>F0084 043500S1 |
|    | 1300 Hydronic zone water seal Replacement (Quad ring, "O" ring, Tru-arc ring and cotter pin)<br>1311-102 and 1361-102 (3/4")<br>1311-103 and 1361-103 (1")<br>1311-104 and 1361-104 (1-1/4") | F92-0227<br>F92-0228<br>F92-0229 | F0092 022700S1<br>F0092 022800S1<br>F0092 022900S1 |
|    | 13A00 Hydronic zone power head (includes seal ring) For 2-way zone Valves<br>25 VAC with conduit hub<br>25 VAC with plug-in panel that includes an auxiliary switch                          | F19-0181<br>F19-0187             | F0019 018100S1<br>F0019 018700S1                   |
|    | 13A00 Hydronic zone motor<br>24 VAC motor                                                                                                                                                    | F19-0190                         | F0019 019000S1                                     |
|    | 13A00 Hydronic zone valve disc<br>Contains one disc, spring, E-ring and body seal ring                                                                                                       | F84-1215                         | F0084 121500S1                                     |
|   | Hydronic well adapter for 1100 series bulbs                                                                                                                                                  | F71-0924                         | F0071 092400S1                                     |
|  | Hydronic well heat transfer compound                                                                                                                                                         | F145-0163                        | F0145 016300S1                                     |
|  | Hydronic well adapter and heat transfer compound F71-0924 and F145-0163 packed together                                                                                                      | F145-0650                        | F0145 065000S1                                     |

**1311 THREE-WIRE ZONE VALVE**



**TERMINALS 1, 2 = POWER TO VALVE**

1 = 24 VAC NEUTRAL  
 2 = 24 VAC HOT

**TERMINALS 5, 4, 6 = SPDT THERMOSTAT**

5 = POWER (SAME AS 2 INTERNALLY)  
 4 = OPENS VALVE  
 6 = CLOSURES VALVE

**TERMINALS 2, 3 = AUXILIARY SWITCH**

2, 3 BECOME SAME POINT ON CALL FOR HEAT

**TERMINALS 1, 3 = POWER OUT TO AUXILIARY CIRCUIT**

ON CALL FOR HEAT

**TROUBLESHOOTING:**

1. Attach a voltmeter to terminals 1 and 2. Power (24 volts) should always be present on 1 and 2. If power is interrupted check transformer or power source.

2. With a voltmeter attached as above, jumper terminals 5 and 4 to verify the valve opens. If power is present on 1 and 2 but the valve fails to open check connections. Replace motor assembly (replacement Motor # F19-0097) if condition persists. When the valve opens, break the connection between 5 and 4 and jumper between 5 and 6. The valve should close. If the valve fails to close replace motor assembly.

3. Terminals 2 and 3 (auxiliary circuit) become the same point electrically when the valve opens. Because terminal 2 is 24 volts hot, a voltmeter should read 24 volts between terminal 3 and terminal 1 (neutral) when the valve is open.

**NOTE:** If the auxiliary circuit terminals (2 and 3) are being attached to a control circuit with a separate transformer the transformers must be in phase or one transformer may be damaged. If phasing the transformers is not possible a 24 volt isolation relay can be installed with the coil attached to terminals 1 and 3 and the contacts can be used to operate the control circuit. The relay will energize when the valve opens.

For complete installation instructions visit our website.



✦ ZSW34NCA

## CANADA "Z" SERIES

*Exclusive Canadian Direct-Connect Zone Valves - flare, sweat and NPT models.*

### FEATURES

- Return spring design & stainless steel for long life
- Swing-type ball valve made from EPDM (Ethylene Propylene Polymer) & Rotating design results in less wear on valve & Raised ball design ensures positive valve closure and even surface wear
- Gears made from heavy 14 gauge brass for durable long life
- Not for steam systems

### SPECIFICATIONS

Operating Voltage ..... 24 VAC, 50/60 Hz  
 Connection ..... 1/8" leads  
 Motor Type ..... Electric synchronous, spring return  
 Flow Direction ..... 2-way, straight through

### CANADA "Z" SERIES

| SERIES          | PIPE SIZE | PIPE CONNECTION | FLOW CAPACITY CV | AUXILIARY SWITCH | DE-ENERGIZED POSITION | ΔP     | MAX. SYSTEM PRESSURE | MAX. WATER TEMP. | CANADA ✦ MODEL NUMBER | CANADA ✦ ITEM NUMBER |
|-----------------|-----------|-----------------|------------------|------------------|-----------------------|--------|----------------------|------------------|-----------------------|----------------------|
| Z Series        | 1/2"      | Inv. Flare      | 3.5              | Yes              | NC                    | 20 PSI | 142 PSI              | 110°C            | ZINV12NCA             | ZINV12NCA            |
| Z Series        | 1/2"      | Inv. Flare      | 3.5              | Yes              | NO                    | 20 PSI | 142 PSI              | 110°C            | ZINV12NOA             | ZINV12NOA            |
| Z Series        | 3/8"      | Flare           | 3.5              | No               | NO                    | 20 PSI | 142 PSI              | 110°C            | ZFL38NO               | ZFL38NO              |
| Z Series        | 3/8"      | Flare           | 3.5              | No               | NO                    | 20 PSI | 142 PSI              | 110°C            | ZFL38NO-34AD*         | ZFL38NO-34AD*        |
| Z Series        | 3/8"      | Flare           | 3.5              | No               | NC                    | 20 PSI | 142 PSI              | 110°C            | ZFL38NC               | ZFL38NC              |
| Z Series        | 3/8"      | Flare           | 3.5              | No               | NC                    | 20 PSI | 142 PSI              | 110°C            | ZFL38NC-34AD*         | ZFL38NC-34AD*        |
| Z Series        | 3/8"      | Flare           | 3.5              | Yes              | NC                    | 20 PSI | 142 PSI              | 110°C            | ZFL38NCA              | ZFL38NCA             |
| Z Series        | 1/2"      | Sweat           | 3.5              | Yes              | NC                    | 20 PSI | 142 PSI              | 110°C            | ZSW12NCA              | ZSW12NCA             |
| Z Series        | 3/4"      | Sweat           | 3.5              | Yes              | NC                    | 20 PSI | 142 PSI              | 110°C            | ZSW34NCA              | ZSW34NCA             |
| Z Series        | 3/4"      | Sweat           | 3.5              | No               | NO                    | 20 PSI | 142 PSI              | 110°C            | ZSW34NO               | ZSW34NO              |
| Z Series        | 1"        | Sweat           | 3.5              | Yes              | NC                    | 20 PSI | 142 PSI              | 110°C            | ZSW1NCA               | ZSW1NCA              |
| Z Series        | 1"        | Sweat           | 7.0              | Yes              | NC                    | 20 PSI | 142 PSI              | 110°C            | ZSW1NCA7C             | ZSW1NCA7C            |
| Z Series        | 1/2"      | NPT             | 3.5              | Yes              | NC                    | 20 PSI | 142 PSI              | 110°C            | ZNPT12NCA             | ZNPT12NCA            |
| Z Series        | 1/2"      | NPT             | 3.5              | No               | NO                    | 20 PSI | 142 PSI              | 110°C            | ZNPT12NO              | ZNPT12NO             |
| Z Series        | 3/4"      | NPT             | 3.5              | Yes              | NC                    | 20 PSI | 142 PSI              | 110°C            | ZNPT34NCA             | ZNPT34NCA            |
| Z Series        | 1"        | NPT             | 3.5              | Yes              | NC                    | 20 PSI | 142 PSI              | 110°C            | ZNPT1NCA              | ZNPT1NCA             |
| Z Series        | 1"        | NPT             | 3.5              | Yes              | NC                    | 20 PSI | 142 PSI              | 110°C            | ZNPT1NCA7C            | ZNPT1NCA7C           |
| Z Series EZ-top | 3/8"      | Flare           | 3.5              | Yes              | NC                    | 20 PSI | 142 PSI              | 110°C            | 13FL38NCA             | 13FL38NCA            |
| Z Series EZ-top | 1/2"      | Inv. Flare      | 3.5              | Yes              | NC                    | 20 PSI | 142 PSI              | 110°C            | 13ZINV12NCA           | 13ZINV12NCA          |

✦ Indicates Canadian Model Number: Call 1-800-305-6953 to order.

\* With (2) 3/4" sweat adapters.



752-1

AUTOMATIC CHANGEOVER SWITCH

SPDT control provides automatic change-over of thermostat to operate zone valve on combination hot and chilled water systems.

FEATURES

- Epoxy resin seal protects bimetallic disc and Snap-Action contacts from dust, dirt and corrosion
- Furnished with removable spring clip to attach control to tubing
- SPDT switch connects heating side of thermostat to two-wire zone valve when hot water is circulated through tubing
- SPDT switch connects cooling side of thermostat to two-wire zone valve when chilled water is circulated through tubing
- Curved sensing element provides maximum contact with tubing

SPECIFICATIONS

Connectors ..... 12" red, brown and black leads, 105°C insulated, No. 18 wire  
Temperature Settings..... Red-Black: Open on Rise @ 85°F, Close @ 70°F  
.....Red-Brown: Close on Rise @ 85°F, Open @ 70°F  
Operating Temperature..... 221°F maximum

AUTOMATIC CHANGEOVER SWITCHES - Types for use with 1/2" Tubing (5/8" O.D.)

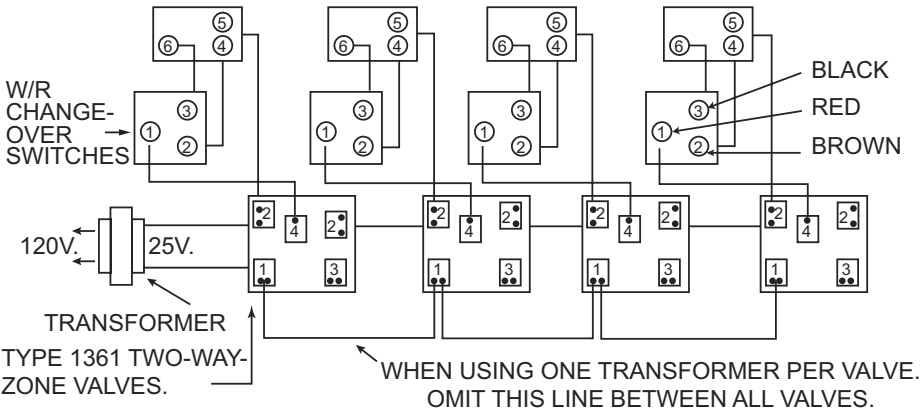
| SWITCH ACTION | TEMPERATURE SETTINGS                                                          | LEADS                                         | AMPS. INDUCTIVE FULL LOAD AT 120 VAC | AMPS. INDUCTIVE FULL LOAD AT 240 VAC | AMPS. INDUCTIVE LOCKED ROTOR AT 120 VAC | AMPS. INDUCTIVE LOCKED ROTOR AT 240 VAC | AMPS. RESISTIVE AT 120 / 240 / 277 VAC | PILOT DUTY                 | CONDUIT CONNECTOR | MODEL NUMBER | ITEM NUMBER |
|---------------|-------------------------------------------------------------------------------|-----------------------------------------------|--------------------------------------|--------------------------------------|-----------------------------------------|-----------------------------------------|----------------------------------------|----------------------------|-------------------|--------------|-------------|
| SPDT          | Red - Black Open at 85° Plus/Minus 6°; Red to Brown Open at 70° Plus/Minus 6° | 12" With Stripped Ends                        | 7.5A                                 | 3.75A                                | 45.0A                                   | 22.5A                                   | 15A                                    | 15A at 120 / 240 / 277 VAC | No                | 752-1        | 07 52 001S1 |
| SPDT          | Red - Black Open at 85° Plus/Minus 6°; Red to Brown Open at 70° Plus/Minus 6° | 12" With Stripped Ends with Conduit Connector | 7.5A                                 | 3.75A                                | 45.0A                                   | 22.5A                                   | 15A                                    | 15A at 120 / 240 / 277 VAC | Yes               | 752-2        | 07 52 002S1 |

CONTRACTOR TIP:

Use with 1361 Zone Valves for heat / cool applications.

AUTOMATIC CHANGE-OVER SWITCH WIRING

Typical diagram using Type 1361 valves (25 volts) with Changeover Switch. Boiler, chiller, and circulator operation are independent of thermostat demand.







11D18-1

## 1100 SERIES WELL IMMERSION TEMPERATURE CONTROLS

Hydronic (hot water) controls for use as high limit, reverse action or SPDT switching action.

### FEATURES

- Extra capillary length for extended shank wells
- Special screw terminals with "ears" that securely hold solid and stranded wires
- Screwdriver-adjustable differential with direct-read indicator
- Knockouts on top and bottom and plenty of wiring room
- Hydraulic action element - fast acting
- May be mounted either horizontal or vertical

### SPECIFICATIONS

Dimensions ..... 5.38"H + 2.32" coil X 2.56"D  
 Finish..... Grey  
 UL/CUL File Number ..... E12615

### CONTRACTOR TIP - TESTING AUTOMATIC TEMPERATURE CONTROLS:

To verify a control is opening and closing properly, disconnect all power before testing. Testing must be performed with the sensing element at a temperature within the setting range of the control. For most hydronic controls with a range of 100 to 240°F, a pan of hot water is sufficient to reach the control range. Attach an ohmmeter or continuity tester across the Open on Rise contacts. Lower the temperature setting dial to the lowest setting. If the lowest setting is below the temperature of the sensing element minus the differential of the control, the contacts should be open. Raise the temperature dial slowly. When the setting is raised above the temperature of the sensor, the contacts should close.

### TYPES WITH BULBS DIRECTLY INTERCHANGEABLE WITH HONEYWELL - (3-9/16" x 3/8") No wells included

| RANGE                      | DIFFERENTIAL          | SWITCH ACTION | MOTOR RATING (FULL LOAD) |         | VALVES AND RELAYS |            | MODEL NUMBER | ITEM NUMBER |
|----------------------------|-----------------------|---------------|--------------------------|---------|-------------------|------------|--------------|-------------|
|                            |                       |               | 120 VAC                  | 240 VAC | 24 VAC            | 0.3-12 VDC |              |             |
| 100 to 240°F (38 to 116°C) | 5 to 45°F (3 to 25°C) | Open on Rise  | 10.0A                    | 6.0A    | 6.0A              | 1.0A       | 11D18-1 ①    | 11D18 001S1 |
| 100 to 240°F (38 to 116°C) | 7 to 45°F (4 to 25°C) | SPDT          | 7.4A                     | 3.7A    | 2.9A              | —          | 11D31-1      | 11D31 001S1 |

### TYPES WITH TAPERED BULBS - (2-7/16" x 7/16") All types include 1/2" standard shank well, unless otherwise specified

| RANGE                      | DIFFERENTIAL          | SWITCH ACTION | MOTOR RATING (FULL LOAD) |         | VALVES AND RELAYS |            | MODEL NUMBER | ITEM NUMBER |
|----------------------------|-----------------------|---------------|--------------------------|---------|-------------------|------------|--------------|-------------|
|                            |                       |               | 120 VAC                  | 240 VAC | 24 VAC            | 0.3-12V DC |              |             |
| 100 to 240°F (38 to 116°C) | 7 to 45°F (4 to 25°C) | SPDT          | 7.4A                     | 3.7A    | 2.9A              | —          | 1131-102 ①   | 11 31 102S1 |
| 100 to 240°F (38 to 116°C) | 5 to 45°F (3 to 25°C) | Open on Rise  | 10.0A                    | 6.0A    | 6.0A              | 1.0A       | 11B18-101 ①  | 11B18 101S1 |

① Has U.L. approved adjustable dial stop, factory set at 150°F maximum.

See White-Rodgers General Information for full electrical ratings. 11D18-1, 11B18-101 are rated at HTV and 11D31-1, 1131-102 are rated at HH.

### PARTS AND ACCESSORIES

| IMAGE | DESCRIPTION                                                                             | MODEL NUMBER | ITEM NUMBER    |
|-------|-----------------------------------------------------------------------------------------|--------------|----------------|
|       | Hydronic well adapter for 1100 series bulbs                                             | F71-0924     | F0071 092400S1 |
|       | Hydronic well heat transfer compound                                                    | F145-0163    | F0145 016300S1 |
|       | Hydronic well adapter and heat transfer compound F71-0924 and F145-0163 packed together | F145-0650    | F0145 065000S1 |



F89-0211

IMMERSION WELLS & PACKING NUTS

1/2" and 3/4" NPT sizes for hydronic element insertion.

FEATURES

- Wells are used where it is desired that the control operates from the temperature of a liquid in a closed system
- The bulb of the control can be removed from an immersion well in the tank wall with out draining the boiler tank
- The packing nut can be used with any of the remote bulb types listed
- Packing nuts permit closer control than wells because the bulb is directly immersed in the liquid

SPECIFICATIONS

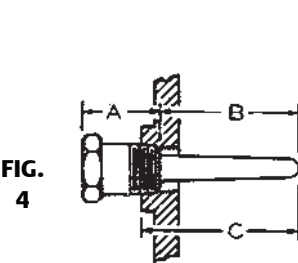
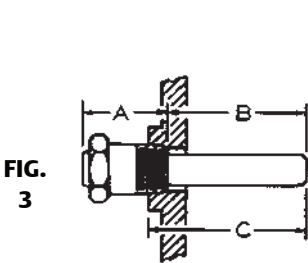
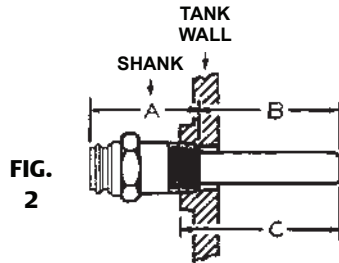
Application Note .....For use in liquids that are not corrosive to brass and copper  
..... Not recommended for use above 100 psi, 250°F (120°C)

UNIVERSALLY INTERCHANGEABLE WELLS

| BASIC TYPES WELL IS USED WITH | BULB SIZE OF CONTROL USED | WELL DESCRIPTION PIPE SIZE NPT | WELL DESCRIPTION SHANK | FIGURE NUMBER | DIMENSIONS A | DIMENSIONS B | DIMENSIONS C | MODEL NUMBER | ITEM NUMBER    |
|-------------------------------|---------------------------|--------------------------------|------------------------|---------------|--------------|--------------|--------------|--------------|----------------|
| All                           | 3-1/2 x 3/8"              | 1/2"                           | Standard               | 2             | 1-13/16"     | 3"           | 3-5/16"      | F89-0211     | F0089 021100S1 |
| All                           | 3-1/2 x 3/8"              | 1/2"                           | Std. Extended          | 2             | 3-5/16"      | 3"           | 3-5/16"      | F89-0212     | F0089 021200S1 |
| All                           | 3-1/2 x 3/8"              | 3/4"                           | Standard               | 2             | 1-13/16"     | 3"           | 3-5/16"      | F89-0213     | F0089 021300S1 |
| All                           | 3-1/2 x 3/8"              | 3/4"                           | Std. Extended          | 2             | 3-5/16"      | 3"           | 3-5/16"      | F89-0214     | F0089 021400S1 |
| All                           | 3-1/2 x 3/8"              | 3/4"                           | Extra Extended         | 2             | 4-13/16"     | 3"           | 3-5/16"      | F89-0215     | F0089 021500S1 |
| 1609, 1629, 2A23              | 5-3/4 x 3/8"              | 1/2"                           | Standard               | 3             | 15/8"        | 6"           | 6-5/16"      | F89-0027     | F0089 002700S1 |
| 11B06, 11B37, 11B2            | 3-1/2 x 7/16"             | 3/4"                           | Standard               | 3             | 15/8"        | 2-13/16"     | 3-1/8"       | F89-0033     | F0089 003300S1 |
| 11B06, 11B37, 11B2            | 3-1/2 x 7/16"             | 1/2"                           | Standard               | 3             | 15/8"        | 2-13/16"     | 3-1/8"       | F89-0036     | F0089 003600S1 |
| All                           | 2-15/16 x 7/16"           | 1/2"                           | Standard               | 3             | 15/8"        | 2-13/16"     | 3-1/2"       | F89-0148     | F0089 014800S1 |
| 11B18, 11B05, 11B55, 1131     | —                         | 1/2"                           | Standard               | 4             | 1-5/8"       | 2-13/16"     | 3-1/8"       | F89-0062     | F0089 006200B1 |
| 11B18, 11B05, 11B55, 1131     | —                         | 3/4"                           | Standard               | 4             | 1-5/8"       | 2-13/16"     | 3-1/8"       | F89-0063     | F0089 006300B1 |

PACKING NUT

| DESCRIPTION                   | FIGURE NUMBER | MODEL NUMBER | ITEM NUMBER    |
|-------------------------------|---------------|--------------|----------------|
| Packing nut with 1/2" threads | 1             | F55-0088     | F0055 008800B1 |





1127-2

## 1100 SERIES STRAP-ON STYLE TEMPERATURE CONTROLS

Attach directly to surface of pipe. For use as high limit, reverse acting or SPDT switching action control.

### FEATURES

- Hydraulic action element can be mounted in any position - no leveling required
- Dustproof steel case
- Special screw terminals with "ears" securely hold solid and stranded wires
- Includes pipe strap and mounting screws

### SPECIFICATIONS

Dimensions ..... 6.88"H (includes plate) X 2.32"W X 3.19"D  
 Finish..... Grey  
 UL/CUL File Number ..... E12615

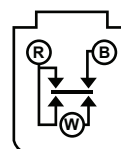
### SPDT CONTACT STRUCTURE

HH Rated Controls

### SWITCH ACTION

R-B Open on Rise

R-W Close on Rise



### 1100 SERIES STRAP-ON STYLE TEMPERATURE CONTROLS

| RANGE                      | DIFFERENTIAL       | SWITCH ACTION | MOTOR RATING (FULL LOAD) 120 VAC | MOTOR RATING (FULL LOAD) 240 VAC | VALVES AND RELAYS 24 VAC | VALVES AND RELAYS 0.3-12 VDC | MODEL NUMBER | ITEM NUMBER |
|----------------------------|--------------------|---------------|----------------------------------|----------------------------------|--------------------------|------------------------------|--------------|-------------|
| 100 to 240°F (38 to 116°C) | Fixed 10°F (5.5°C) | SPDT          | 7.4A                             | 3.7A                             | 2.9A                     | —                            | 1127-2 ①     | 11 27 002S1 |

- ① Has U.L. approved adjustable dial stop, factory set at 150°F maximum.  
 See White-Rodgers General Information for full electrical ratings.



90-113

90-112 THRU 90-130 FAN CONTROL CENTER

Transformer and relay combination for easy installation on a 4" X 4" junction box.

FEATURES

- Line voltage connections pre-wired
- Energy limiting Class II transformer design
- Color coded pre-stripped leads
- Low voltage connections on terminal board

SPECIFICATIONS

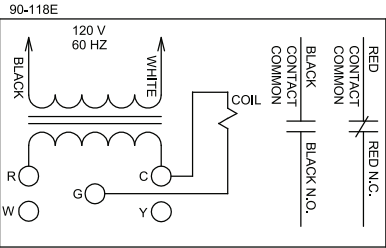
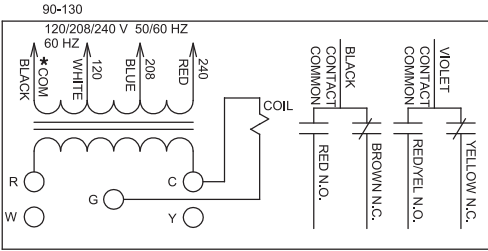
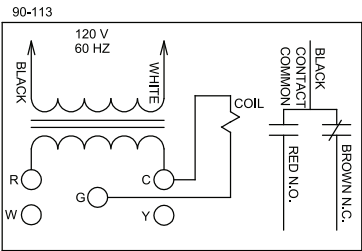
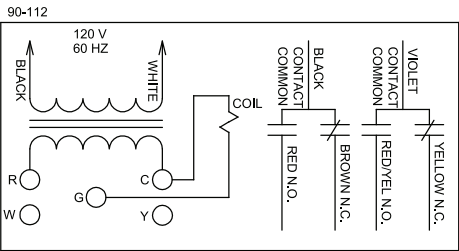
UR/CUR File Number .....E73641

REPLACEMENT RELAY FOR FAN CONTROL CENTER

| REPLACES RELAY ON                               | DESCRIPTION                  | MODEL NUMBER | ITEM NUMBER |
|-------------------------------------------------|------------------------------|--------------|-------------|
| 90-112, 90-113, 90-117, 90-118E, 90-119, 90-130 | DPDT Universal Plug-in Relay | 90-340       | 90 340S1    |

90-112 THRU 90-130 FAN CONTROL CENTER

| MARS<br>NUMBER | TRANSFORMER     |         |                                    |           |    |                                          | RELAY       | CONTACT RATINGS |                 |                |                 | MODEL<br>NUMBER | ITEM<br>NUMBER |
|----------------|-----------------|---------|------------------------------------|-----------|----|------------------------------------------|-------------|-----------------|-----------------|----------------|-----------------|-----------------|----------------|
|                | PRIMARY         |         |                                    | SECONDARY |    |                                          |             | 120 VAC (AMPS)  |                 | 240 VAC (AMPS) |                 |                 |                |
|                | VOLTAGE         | HZ      | CONNECTIONS                        | VOLTAGE   | VA | CONNECTIONS                              |             | FULL<br>LOAD    | LOCKED<br>ROTOR | FULL<br>LOAD   | LOCKED<br>ROTOR |                 |                |
|                |                 |         |                                    |           |    |                                          |             |                 |                 |                |                 |                 |                |
| 24010          | 120             | 60      | Color coded leads,<br>pre-stripped | 24V       | 40 | Terminal board with<br>5 screw terminals | DPDT        | 13.8            | 82.8            | 6.9            | 41.4            | 90-112          | 90 112S1       |
| 24013          |                 |         |                                    |           |    |                                          | SPDT        |                 |                 |                |                 | 90-113          | 90 113S1       |
| 24012          |                 |         |                                    |           |    |                                          | SPNO / SNPC |                 |                 |                |                 | 90-118E         | 90 118ES1      |
| 24010          | 120 / 208 / 240 | 50 / 60 |                                    |           |    |                                          | DPDT        |                 |                 |                |                 | 90-130          | 90 130S1       |



When the fan relay transformer is energized and the thermostat completes the connection from R to G the fan relay coil energizes. Line voltage power applied to contact common path travels to selected blower speed tap. Additional terminal Y and W are isolated tie point terminals to connect thermostat wiring to compressor and furnace (if required).

**NOTE:** Record the lead wire color with its corresponding terminal for future reference. Unused transformer input leads must be insulated.

\* Black is common with respect to transformer winding, not external circuit.



90-340

90-340 THRU 90-342 RELAYS

Two pole double throw semi-enclosed relays.

FEATURES

- Easy to install
- Suited for use in vending machines, appliances, heating and air conditioning applications and general purpose switching
- 90-340 fits fan control centers 90-112, 90-113, 90-118E and 90-119

SPECIFICATIONS

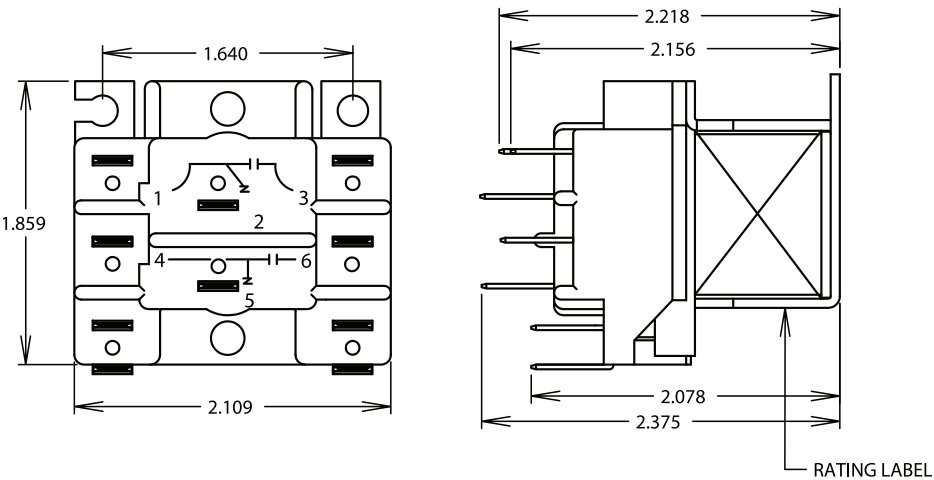
Temperature Range.....-40°F to 130°F  
Mechanical Life (no load)..... 1,000,000 operations, 120 operations/min.  
Electrical Life (rated load)..... 100,000 operations, 6 operations/min.  
..... Load test making inrush ratings (0.4 to 0.5 Power Factor)  
..... Breaking 100% continuous rating (0.65 to 0.8 Power Factor)  
Weight (approximate)..... 6 oz.  
Coils, Frequency..... 50 / 60 Hz  
Coils, Insulation..... Class B  
Coils, Termination..... 1/4" Quick Connect  
Coils, Operate..... 85% of nominal coil voltage; 110% maximum safe operate  
Coils, Duty Cycle..... Continuous  
UR/CUR File Number.....E12139  
CSA/CUS Certificate Number.....LR13360

90-340 THRU 90-342 RELAYS - Two pole double throw (2PDT) fits fan control center receptacles

| COIL VOLTAGE<br>(50 / 60 HZ) | TERMINALS<br>1-2-3 | TERMINALS<br>4-5-6 | COIL DATA<br>DC RES. | COIL DATA MA | COIL DATA<br>NOM. VA | COIL DATA<br>INRUSH VA | MODEL NUMBER | ITEM NUMBER |
|------------------------------|--------------------|--------------------|----------------------|--------------|----------------------|------------------------|--------------|-------------|
| 24                           | Power              | Power              | 17.5                 | 334          | 9.5                  | 22                     | 90-340       | 90 340S1    |
| 120                          | Power              | Power              | 420                  | 66           | 9.5                  | 22                     | 90-341       | 90 341S1    |
| 208 / 240                    | Power              | Power              | 1600                 | 38           | 9.5                  | 22                     | 90-342       | 90 342S1    |

CONTACT RATINGS

12FLA / 60LRA  
125 VAC  
6FLA 35LRA  
240 / 277 VAC  
15A 277 VAC RES  
1/2HP 125 / 250 VAC





8A05A-4

# 8A05A RELAY & TRANSFORMER COMBINATIONS

SPDT relay model enclosed with a transformer capable of powering external loads up to 35VA. Ideal for use on boilers without domestic coil. Equally adaptable for zoned and unzoned systems.

**FEATURES**

- Low voltage screw terminals - color coded, end stripped line voltage leads
- Internal transformer can power up to 35VA external loads
- Mounts to 4" X 4" junction box
- Dustproof steel case

**SPECIFICATIONS**

Transformer..... 35 VA maximum connected external load  
Finish..... Grey  
Dimensions ..... 4.13"H X 4.13"W X 3.13"D  
UL/CUL File Number .....E12615  
..... CSA

**8A05A RELAY & TRANSFORMER COMBINATION**

| INPUT VOLTAGE | SWITCH ACTION | THERMOSTAT CURRENT | CONTACT RATINGS MOTOR 120 VAC FULL LOAD | CONTACT RATINGS MOTOR 120 VAC LOCKED ROTOR | CONTACT RATINGS VALUES & RELAYS TERMINALS V1 & V2 30 VAC | CONTACT RATINGS VALUES & RELAYS TERMINALS V1 & V2 30 VAC 0.3-12 VDC | MODEL NUMBER | ITEM NUMBER |
|---------------|---------------|--------------------|-----------------------------------------|--------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------|--------------|-------------|
| 24 VAC, 60 Hz | SPDT          | 0.17               | 12.0A/12.0A                             | 60.0A/60.0A                                | N/A                                                      | N/A                                                                 | 8A05A-121    | 8A05A-121   |

✦ Indicates Canadian Model Number: Call 1-800-305-6953 to order.



90-293Q

## 90-290Q THRU 90-295Q RELAYS

Used for switching single or two speed fan motors, solenoids, relays, resistive loads and general purpose switching.

### FEATURES

- Compact, totally enclosed design
- For heating and cooling applications and general switching
- Quiet, reliable and economical

### SPECIFICATIONS

Temperature Range ..... -40° to 150°  
 Mechanical Life (no load) ..... 1,000,000 operations, 60 operations/min.  
 Electrical Life (rated load) ..... 100,000 operations, 6 operations/min.  
 ..... Load testing making inrush rating (0.4 to 0.5 P.F.);  
 ..... Breaking 100% continuous rating (0.64 to 0.8 P.F.)  
 Weight ..... 2.5 oz.  
 UR/CUR File Number ..... E12139  
 CSA/CUS Certificate Number ..... LR13360

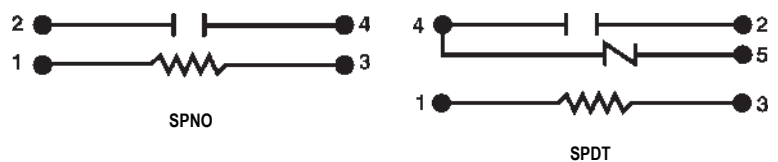
### 90-290Q THRU 90-295Q RELAYS

| COIL VOLTAGE<br>AC (50/60 HZ) | SWITCH ACTION | RES DC OHMS | COIL DATA NOMINAL<br>CURRENT MA | COIL DATA NOMINAL<br>VA SEALED | INRUSH VA | MODEL NUMBER | ITEM NUMBER |
|-------------------------------|---------------|-------------|---------------------------------|--------------------------------|-----------|--------------|-------------|
| 24                            | SPNO          | 90          | 125                             | 3                              | 4         | 90-290Q      | 90 290QS1   |
| 24                            | SPDT          | 90          | 125                             | 3                              | 4         | 90-293Q      | 90 293QS1   |
| 120                           | SPNO          | 2,000       | 25                              | 3                              | 4         | 90-291Q      | 90 291QS1   |
| 120                           | SPDT          | 2,000       | 25                              | 3                              | 4         | 90-294Q      | 90 294QS1   |
| 208/240                       | SPNO          | 7,000       | 12.5                            | 3                              | 4         | 90-292Q      | 90 292QS1   |
| 208/240                       | SPDT          | 7,000       | 12.5                            | 3                              | 4         | 90-295Q      | 90 295QS1   |

### CONTACT RATING 125 / 250 VAC

| INDUCTIVE                         | RESISTIVE | TYPE |
|-----------------------------------|-----------|------|
| 8 Amps Continuous 25 Amps. Inrush | 16        | SPNO |
| 8 Amps Continuous 25 Amps. Inrush | 8         | SPDT |

### WIRING DIAGRAMS







90-380

90-360 THRU 90-486 RELAYS

Heavy-duty general purpose relay operates in any position.

FEATURES

- Compact, totally enclosed design
- For heating and cooling applications and general switching
- Quiet, reliable and economical

SPECIFICATIONS

Temperature Range.....-40°F to 150°F  
Mechanical Life (no load)..... 1,000,000 operations, 120 operations/min.  
Electrical Life (rated load) ..... 100,000 operations, 6 operations/min.  
.....Load test making inrush rating (0.4 to 0.5 P.F.)  
.....Breaking 100% continuous rating (0.65 to 0.8 P.F.)  
Coils, Frequency ..... 50 / 60 Hz  
Coils, Insulation ..... Class B  
Coils, Termination ..... 1/4" Quick Connect  
Coils, Operate..... 85% of nominal coil voltage; 110% maximum safe operate  
Coils, Duty Cycle.....Continuous  
Weight ..... 2.3 oz.  
UR/CUR File Number .....E12139  
CSA/CUS Certificate Number .....LR13360

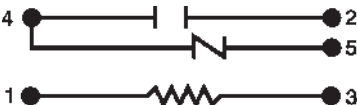
90-360 THRU 90-486 RELAYS

| COIL VOLTAGE AC<br>(50/60 HZ) | SWITCH ACTION | RES DC OHMS | COIL DATA NOM.<br>CURRENT MA | COIL DATA NOMINAL<br>VA SEALED | INRUSH VA | MODEL NUMBER | ITEM NUMBER |
|-------------------------------|---------------|-------------|------------------------------|--------------------------------|-----------|--------------|-------------|
| 24                            | SPNO          | 77          | 125                          | 3                              | 4         | 90-360       | 90 360S1    |
| 24                            | SPDT          | 77          | 125                          | 3                              | 4         | 90-370       | 90 370S1    |
| 24                            | SPNO/SPNC     | 77          | 125                          | 3                              | 4         | 90-380       | 90 380S1    |
| 120                           | SPNO          | 2,000       | 25                           | 3                              | 4         | 90-362       | 90 362S1    |
| 120                           | SPDT          | 2,000       | 25                           | 3                              | 4         | 90-372       | 90 372S1    |
| 208/240                       | SPDT          | 6,050       | 12.5                         | 3                              | 4         | 90-374       | 90 374S1    |
| 208/240                       | SPNO/SPNC     | 6,050       | 12.5                         | 3                              | 4         | 90-384       | 90 384S1    |
| 277                           | SPNO          | 10,300      | 10.8                         | 3                              | 4         | 90-466       | 90 466S1    |
| 277                           | SPDT          | 10300       | 10.8                         | 3                              | 4         | 90-476       | 90 476S1    |
| 277                           | SPNO/SPNC     | 10300       | 10.8                         | 3                              | 4         | 90-486       | 90 486S1    |

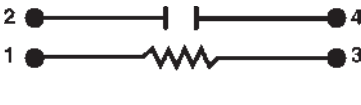
WIRING DIAGRAMS



SPNO / SPNC



SPDT

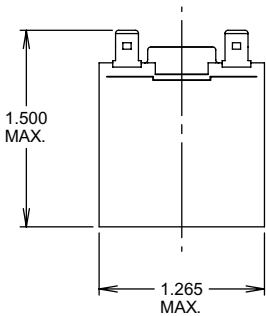
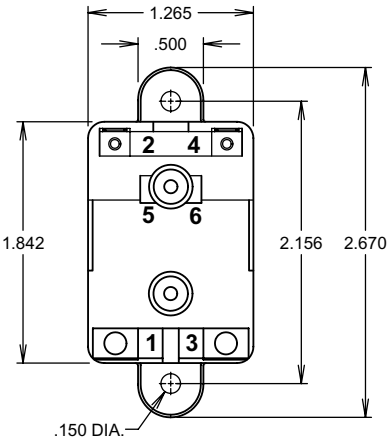


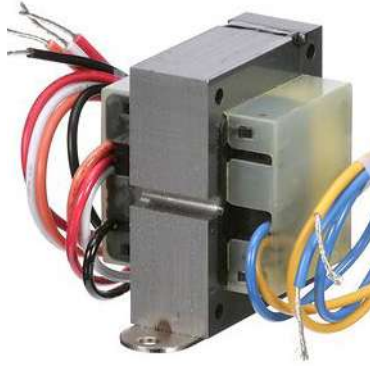
SPNO

90-360 THRU 90-486 RELAYS

Contact Rating

| INDUCTIVE                                         | RESISTIVE                        |
|---------------------------------------------------|----------------------------------|
| 12 Amps. Continuous, 60 Amps.<br>Inrush @ 125 VAC | 18 Amps.<br>Continuous @ 277 VAC |
| 8 Amps. Continuous, 48 Amps.<br>Inrush @ 250 VAC  |                                  |





90-T40F3

## 90-T SERIES ENERGY LIMITING 24 VAC TRANSFORMERS

*For industrial, heating and air conditioning controls applications.*

### FEATURES

- Color coded primary leads
- Color coded secondary leads
- Multi-mount styles available

### SPECIFICATIONS

UR/CUR File Number ..... E507466

#### 90-T SERIES INHERENTLY LIMITED 24 VAC TRANSFORMERS - MULTI-MOUNT WITH PLATE (CLOSED CONSTRUCTION)

| PRIMARY             | SEC.   | VA | HZ    | PRIMARY / SEC. CONNECTIONS | MARS PART NO. | JARD PART NO. | MODEL NUMBER | ITEM NUMBER |
|---------------------|--------|----|-------|----------------------------|---------------|---------------|--------------|-------------|
| 120 VAC             | 24 VAC | 40 | 60    | Leads / Leads              | 50302         | 4011M         | 90-T40M1     | 90-T40M1    |
| 208 / 240 VAC       | 24 VAC | 40 | 50/60 | Leads / Leads              | 50303         | 4021M         | 90-T40M2     | 90-T40M2    |
| 120 / 208 / 240 VAC | 24 VAC | 40 | 60    | Leads / Leads              | 50304         | 4031M         | 90-T40M3     | 90-T40M3    |

#### 90-T SERIES NOT INHERENTLY LIMITED 24 VAC TRANSFORMERS - MULTI-MOUNT WITH PLATE (CLOSED CONSTRUCTION)

| PRIMARY             | SEC.   | VA | HZ | PRIMARY / SEC. CONNECTIONS | MARS PART NO. | JARD PART NO. | MODEL NUMBER | ITEM NUMBER |
|---------------------|--------|----|----|----------------------------|---------------|---------------|--------------|-------------|
| 120 / 208 / 240 VAC | 24 VAC | 50 | 60 | Leads / Leads              | 50314         | 5031M         | 90-T50M3     | 90-T50M3    |

#### 90-T SERIES INHERENTLY LIMITED 24 VAC TRANSFORMERS - FOOT-MOUNT (OPEN CONSTRUCTION)

| PRIMARY             | SEC.   | VA | HZ    | PRIMARY / SEC. CONNECTIONS | MARS PART NO. | JARD PART NO. | MODEL NUMBER | ITEM NUMBER |
|---------------------|--------|----|-------|----------------------------|---------------|---------------|--------------|-------------|
| 120 VAC             | 24 VAC | 40 | 50/60 | Leads / Leads              | 50352         | 4011F         | 90-T40F1     | 90-T40F1    |
| 208 / 240 VAC       | 24 VAC | 40 | 50/60 | Leads / Leads              | 50353         | 4021F         | 90-T40F2     | 90-T40F2    |
| 120 / 208 / 240 VAC | 24 VAC | 40 | 50/60 | Leads / Leads              | 50354         | 4031F         | 90-T40F3     | 90-T40F3    |

#### 90-T SERIES NOT INHERENTLY LIMITED 24 VAC TRANSFORMERS - FOOT-MOUNT (OPEN CONSTRUCTION)

| PRIMARY             | SEC.   | VA | HZ    | PRIMARY / SEC. CONNECTIONS | MARS PART NO. | JARD PART NO. | MODEL NUMBER | ITEM NUMBER |
|---------------------|--------|----|-------|----------------------------|---------------|---------------|--------------|-------------|
| 120 / 208 / 240 VAC | 24 VAC | 50 | 50/60 | Leads / Leads              | 50308         | 5031F         | 90-T50F3     | 90-T50F3    |

#### 90-T SERIES NOT INHERENTLY LIMITED 24 VAC TRANSFORMERS - FOOT-MOUNT (MANUAL RESET, OPEN CONSTRUCTION)

| PRIMARY               | SEC.   | VA  | HZ    | PRIMARY / SEC. CONNECTIONS | MARS PART NO. | JARD PART NO. | MODEL NUMBER | ITEM NUMBER |
|-----------------------|--------|-----|-------|----------------------------|---------------|---------------|--------------|-------------|
| 120 / 208 / 240 VAC   | 24 VAC | 50  | 50/60 | Leads / Leads              | 50327         | 5041C         | 90-T50C3     | 90-T50C3    |
| 120 / 208 / 240 VAC   | 24 VAC | 60  | 50/60 | Leads / Leads              | 50327         | 6041C         | 90-T60C3     | 90-T60C3    |
| 120 / 208 / 240 VAC   | 24 VAC | 75  | 50/60 | Leads / Leads              | 50321         | 7541C         | 90-T75C3     | 90-T75C3    |
| 120 / 208 / 240 / 480 | 24 VAC | 100 | 50/60 | Leads / Leads              | 50540         | 10041C        | 90-T100C4    | 90-T100C4   |



S84-11

## S82 & S84 ENERGY LIMITING 24 VAC TRANSFORMERS

*Various standard configurations of step down transformers designed to power 24 VAC control systems*

### FEATURES

- Energy limiting design, unaffected by momentary short circuit
- Continued short circuit of secondary will cause primary winding to open in 1 to 2 minutes without creating a fire hazard
- Maximum ambient temperature is 150°F

### SPECIFICATIONS

UR/CUR File Number ..... E507466  
 ..... CE Approved (S84-11, S84Z-90, S84A-410)

### S84 SERIES INHERENTLY LIMITED 24 VAC TRANSFORMERS - UNIVERSAL MOUNTING MODELS - Plate, Foot or Hub Mount

| PRIMARY             | SEC.   | VA    | HZ | PRIMARY / SEC. CONNECTIONS | MODEL NUMBER | ITEM NUMBER |
|---------------------|--------|-------|----|----------------------------|--------------|-------------|
| 120 VAC             | 24 VAC | 40 VA | 60 | Leads / Screw Terminals    | S84-11       | S84 011S1   |
| 120 / 208 / 240 VAC | 24 VAC | 40 VA | 60 | Leads / Screw terminals    | S84Z-90      | S84Z090S1   |

### S84 SERIES INHERENTLY LIMITED 24 VAC TRANSFORMERS - Plate Mounted

| PRIMARY | SEC.   | VA    | HZ | TERMINATIONS LINE       | MODEL NUMBER | ITEM NUMBER |
|---------|--------|-------|----|-------------------------|--------------|-------------|
| 120 VAC | 24 VAC | 40 VA | 60 | Leads / Screw Terminals | S84A-410     | S84A410S1   |

### S82 SERIES INHERENTLY LIMITED 24 VAC TRANSFORMERS - HUB MOUNT - Class 2 Not Wet / Class 3 Wet (C.S.A. Certified and U.L. Listed E11592)

| PRIMARY | SEC.   | VA    | HZ | PRIMARY / SEC. CONNECTIONS      | MODEL NUMBER | ITEM NUMBER |
|---------|--------|-------|----|---------------------------------|--------------|-------------|
| 120 VAC | 25 VAC | 20 VA | —  | Leads / Screw - Spade Terminals | S82A-310     | S82A310S1   |



### S84 SERIES INHERENTLY LIMITED 24 VAC TRANSFORMERS - UNIVERSAL MOUNTED TYPE - Plate, Foot Or Hub Mount, Class 2 Not Wet / Class 3 Wet (C.S.A. Certified and U.L. Listed)

| PRIMARY | SEC.   | VA    | HZ | PRIMARY / SEC. CONNECTIONS      | MODEL NUMBER | ITEM NUMBER |
|---------|--------|-------|----|---------------------------------|--------------|-------------|
| 120 VAC | 25 VAC | 40 VA | 60 | Leads / Screw - Spade Terminals | S84A-310     | S84A310S1   |



✱ Indicates Canadian Model Number: Call 1-800-305-6953 to order.



70-111224

## TYPE 70 SERIES D.C. POWER SOLENOIDS

*Single pole normally open contact, case is dust resistant and isolated from ground.*

### FEATURES

- DC Power Solenoid designed to be utilized in multiple applications
- Dust resistant case
- Case is isolated from ground
- SPNO contacts
- Versatile mounting and termination

### SPECIFICATIONS

Dimensions ..... 2.40"H X 3.48"W X 2.47"D  
 Weight ..... 14 oz.  
 Temperature Range ..... -40° to +122°F  
 Terminations, Contacts ..... 5/16"-24 UNF-2A thread  
 Terminations, Coil ..... #10-32 UNF-2A thread  
 Recommended Mounting..... Plunger vertical with cap down  
 Hardware Torque, Contact Terminal ..... 45-55 in. lbs.  
 Hardware Torque, Coil Terminal..... 12-18 in. lbs.  
 UL File Number ..... AU2138

### WARNING – FIRE HAZARD

Must be installed in a dry and protected place. Failure to protect solenoid from water and other contaminants could result in fire, property damage, Serious personal injury, or death.

### TYPE 70 SERIES D.C. POWER SOLENOIDS

| DUTY CYCLE | TERMINAL TYPE                    | BRACKET STYLE | COIL VOLTAGE D.C. | COIL RESISTANCE IN OHMS @ 25°C | CONTACT MATERIAL | CONTACT RATING (AMPS) – INDUCTIVE LOAD NORMALLY OPEN CONTINUOUS | CONTACT RATING (AMPS) – INDUCTIVE LOAD NORMALLY OPEN INRUSH | MODEL NUMBER | ITEM NUMBER |
|------------|----------------------------------|---------------|-------------------|--------------------------------|------------------|-----------------------------------------------------------------|-------------------------------------------------------------|--------------|-------------|
| Continuous | 3A (Coil Grounded to Case, SPNO) | Standard      | 12                | 16                             | Copper           | 80                                                              | 150                                                         | 70-111225    | 70 111225S1 |
| Continuous | 4 (Isolated Coil, SPNO)          | Standard      | 12                | 16                             | Copper           | 80                                                              | 150                                                         | 70-111224    | 70 111224S1 |
| Continuous | 4 (Isolated Coil, SPNO)          | Standard      | 24                | 60                             | Copper           | 50                                                              | 50                                                          | 70-117224    | 70 117224S1 |
| Continuous | 4 (Isolated Coil, SPNO)          | Standard      | 36                | 114                            | Copper           | 50                                                              | 50                                                          | 70-120224    | 70 120224S1 |



120 105711S1

TYPE 120 SERIES D.C. POWER SOLENOIDS

Single pole normally open contact, dust resistant, water resistant and case is isolated from bracket.

FEATURES

- Water resistant
- Capable of handling low and high current requirements
- Versatile mounting and termination

SPECIFICATIONS

Dimensions ..... 3.09"H X 2.88"W X 2.13"D  
Dimensions ..... 3.03"H X 3.00"W X 2.50"D L-Shaped Bracket)  
Weight ..... 6.0 oz.  
Temperature Range, Intermittent Duty ..... -20° to +150°F  
Temperature Range, Continuous Duty..... -20° to +120°F  
Terminations, Contacts ..... 5/16"-24 studs, .495" min. length  
Terminations, Coil ..... #10-32, .451&#8221; min. length  
Recommended Mounting..... Coil terminals up or horizontal  
Hardware Torque, Contact Terminal ..... 45-55 in. lbs.  
Hardware Torque, Coil Terminal..... 12-18 in. lbs.  
UR File Number .....AU2138

WARNING

Must be used in coil selection for use in 12 volt systems where battery charging may expose coil to continuous, higher-than-rated voltage. 14 volt coils are recommended. White-Rodgers will not be responsible for consequences of misapplied solenoids.

TYPE 120 SERIES D.C. POWER SOLENOIDS

| DUTY CYCLE                                                 | TERMINAL TYPE          | BRACKET STYLE | COIL VOLTAGE D.C. | COIL RESISTANCE IN OHMS @ 25°C | CONTACT MATERIAL | CONTACT RATING (AMPS) – INDUCTIVE LOAD NORMALLY OPEN CONTINUOUS | CONTACT RATING (AMPS) – INDUCTIVE LOAD NORMALLY OPEN INRUSH | MODEL NUMBER | ITEM NUMBER  |
|------------------------------------------------------------|------------------------|---------------|-------------------|--------------------------------|------------------|-----------------------------------------------------------------|-------------------------------------------------------------|--------------|--------------|
| Continuous                                                 | 4 (Isolated Coil, SPNO | Standard      | 12                | 16                             | Silver Alloy     | 100                                                             | 400                                                         | 120-105711   | 120 105711S1 |
| Continuous                                                 | 3A                     | Standard      | 12                | 6                              | Silver Alloy     | 100                                                             | 400                                                         | 120-105851   | 120 105851S1 |
| Intermittent (30 seconds "ON" maximum and 6 minutes "OFF") | 4 (Isolated Coil, SPNO | Standard      | 12                | 6                              | Copper           | 80                                                              | 400                                                         | 120-106131   | 120 106131S1 |
| Intermittent (30 seconds "ON" maximum and 6 minutes "OFF") | 4 (Isolated Coil, SPNO | L             | 12                | 6                              | Copper           | 80                                                              | 400                                                         | 120-106132   | 120 106132S1 |
| Continuous                                                 | 4 (Isolated Coil, SPNO | L             | 14                | 26                             | Silver Alloy     | 100                                                             | 400                                                         | 120-107112   | 120 107112S1 |



124-105111

## TYPE 124 SERIES D.C. POWER SOLENOIDS

Single pole normally open, or single pole double throw contacts. Dust resistant and endcaps are isolated from bracket.

### FEATURES

- Double-make or double-break contacts
- Steel enclosure
- Offers high and low current capabilities
- Isolated or grounded coils

### SPECIFICATIONS

Dimensions: 124-105111, -114111, -117111 ..... 2.19"H X 3.13"W X 3.56"D  
 Dimensions: 124-305111, -314111, 317111 ..... 2.19"H X 3.13"W X 4.69"D  
 Weight: 124-105111, -114111, -117111 ..... 16.0 oz.  
 Weight: 124-305111, -314111, 317111 ..... 19.0 oz.  
 Temperature Range ..... -40° to +149°F  
 Terminations, Contacts ..... 5/16"-24 UNF-2A thread  
 Terminations, Coil ..... #10-32 UNF-2A thread  
 Recommended Mounting ..... Vertical plane with coil terminals up  
 Hardware Torque, Contact Terminal ..... 60 in. lbs. max.  
 Hardware Torque, Coil Terminal ..... 12-18 in. lbs.

### TYPE 124 SERIES D.C. POWER SOLENOIDS

| DUTY CYCLE | TERMINAL TYPE           | BRACKET STYLE | COIL VOLTAGE D.C. | COIL RESISTANCE IN OHMS @ 25°C | CONTACT MATERIAL | CONTACT RATING (AMPS) – INDUCTIVE LOAD NORMALLY OPEN CONTINUOUS | CONTACT RATING (AMPS) – INDUCTIVE LOAD NORMALLY OPEN INRUSH | CONTACT RATING (AMPS) – INDUCTIVE LOAD NORMALLY CLOSED CONTINUOUS | CONTACT RATING (AMPS) – INDUCTIVE LOAD NORMALLY CLOSED INRUSH | MODEL NUMBER | ITEM NUMBER  |
|------------|-------------------------|---------------|-------------------|--------------------------------|------------------|-----------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------|--------------|--------------|
| Continuous | 4 (Isolated Coil, SPNO) | Standard      | 12                | 13.2                           | Silver Alloy     | 100                                                             | 400                                                         | —                                                                 | —                                                             | 124-105111   | 124 105111S1 |
| Continuous | 6 (Isolated Coil, SPDT) | Standard      | 12                | 13.2                           | Silver Alloy     | 100                                                             | 400                                                         | 50                                                                | 200                                                           | 124-305111   | 124 305111S1 |
| Continuous | 4 (Isolated Coil, SPNO) | Standard      | 24                | 53.0                           | Silver Alloy     | 100                                                             | 400                                                         | —                                                                 | —                                                             | 124-114111   | 124 114111S1 |
| Continuous | 6 (Isolated Coil, SPDT) | Standard      | 24                | 53.0                           | Silver Alloy     | 100                                                             | 400                                                         | 50                                                                | 100                                                           | 124-314111   | 124 314111S1 |
| Continuous | 4 (Isolated Coil, SPNO) | Standard      | 36                | 120.0                          | Silver Alloy     | 100                                                             | 400                                                         | —                                                                 | —                                                             | 124-117111   | 124 117111S1 |
| Continuous | 6 (Isolated Coil, SPDT) | Standard      | 36                | 120.0                          | Silver Alloy     | 100                                                             | 400                                                         | 50                                                                | 100                                                           | 124-317111   | 124 317111S1 |



586-120111

## TYPE 586 SERIES D.C. POWER SOLENOIDS

*Single pole normally open, or single pole double throw contacts. Water resistant and case is isolated from bracket.*

### FEATURES

- Single pole normally open contacts
- DC power solenoid designed to be utilized in multiple applications
- Versatile mounting and termination
- Water & dust resistant case design

### SPECIFICATIONS

Dimensions, 586-105111, -106111, -114111, -117111, -120111 2.90"H X 3.30"W X 3.69"D  
 Dimensions, 586-314111, -317111 ..... 2.90"H X 3.30"W X 4.61"D  
 Weight, 586-105111, -106111, -114111, -117111, -120111 ..... 24.0 oz.  
 Weight, 586-314111, -317111 ..... 26.0 oz.  
 Temperature Range..... -40° to +149°F  
 Terminations, Contacts ..... 5/16"-24 UNF-2A thread  
 Terminations, Coil ..... #10-32 UNF-2A thread  
 Recommended Mounting..... Vertical plane with coil terminals up  
 Hardware Torque, Contact Terminal ..... 60 in. lbs. max.  
 Hardware Torque, Coil Terminal..... 12-18 in. lbs.  
 UR File Number .....AU2138

### WARNING

Must be used in coil selection for use in 12 volt systems where battery charging may expose coil to continuous, higher-than-rated voltage. 15 volt coils are recommended. White-Rodgers will not be responsible for consequences of misapplied solenoids.

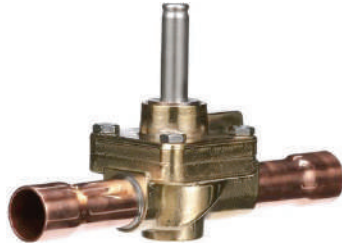
### TYPE 586 SERIES D.C. POWER SOLENOIDS

| DUTY CYCLE | TERMINAL TYPE           | BRACKET STYLE | COIL VOLTAGE D.C. | COIL RESISTANCE IN OHMS @ 25°C | CONTACT MATERIAL | CONTACT RATING (AMPS) – INDUCTIVE LOAD NORMALLY OPEN CONTINUOUS | CONTACT RATING (AMPS) – INDUCTIVE LOAD NORMALLY OPEN INRUSH | CONTACT RATING (AMPS) – INDUCTIVE LOAD NORMALLY CLOSED CONTINUOUS | CONTACT RATING (AMPS) – INDUCTIVE LOAD NORMALLY CLOSED INRUSH | MODEL NUMBER            | ITEM NUMBER  |
|------------|-------------------------|---------------|-------------------|--------------------------------|------------------|-----------------------------------------------------------------|-------------------------------------------------------------|-------------------------------------------------------------------|---------------------------------------------------------------|-------------------------|--------------|
| Continuous | 4 (Isolated Coil, SPNO) | Standard      | 12                | 21.0                           | Silver Alloy     | 200                                                             | 600                                                         | —                                                                 | —                                                             | 586-105111              | 586 105111S1 |
| Continuous | 4 (Isolated Coil, SPNO) | Standard      | 15                | 32.8                           | Silver Alloy     | 200                                                             | 600                                                         | —                                                                 | —                                                             | 586-108111 <sup>1</sup> | 586 108111S1 |
| Continuous | 4 (Isolated Coil, SPNO) | Standard      | 24                | 84.0                           | Silver Alloy     | 200                                                             | 600                                                         | —                                                                 | —                                                             | 586-114111              | 586 114111S1 |
| Continuous | 4 (Isolated Coil, SPNO) | Standard      | 36                | 189.0                          | Silver Alloy     | 200                                                             | 600                                                         | —                                                                 | —                                                             | 586-117111              | 586 117111S1 |
| Continuous | 4 (Isolated Coil, SPNO) | Standard      | 48                | 336.0                          | Silver Alloy     | 200                                                             | 600                                                         | —                                                                 | —                                                             | 586-120111              | 586 120111S1 |
| Continuous | 6 (Isolated Coil, SPDT) | Standard      | 24                | 53.0                           | Silver Alloy     | 200                                                             | 600                                                         | 100                                                               | 200                                                           | 586-314111              | 586 314111S1 |
| Continuous | 6 (Isolated Coil, SPDT) | Standard      | 36                | 120                            | Silver Alloy     | 200                                                             | 600                                                         | 100                                                               | 200                                                           | 586-317111              | 586 317111S1 |

Inrush Current: Current applied within the first 1/2 second of contact closure

<sup>1</sup> Ideal for 12V charging systems





250RA 12T9VLC-01

## 250RA SERIES REFRIGERANT SOLENOID VALVES

The 250RA is a 2-way, normally closed diaphragm valve used for liquid, suction, and hot gas service. It is applied in various commercial air-conditioning and refrigeration systems.

### FEATURES

- Single coil family fits all sizes
- Can be brazed into the line without disassembly
- Compatible with all common A1 and A2L class refrigerants
- PTFE upgraded diaphragm design for high temperature and pressure applications
- Extended ends for easy installation (standard)
- Mounting stud models can be field converted to manual stem

### SPECIFICATIONS

Maximum Fluid Temperature..... A1: 250° F (121° C)  
 .....A2L: 221° F (105° C)  
 Maximum Working Pressure..... 680 psig (47 bar)  
 Maximum Operating Pressure Differential ..... 300 psig (21 bar)  
 UL/CUL File Number ..... MP604

### MODEL NUMBER NOMENCLATURE - Example: 250RA 12T9VLC-01

| VALVE SERIES                                       | DESIGN SERIES    | PORT SIZE | CONNECTION TYPE         | CONNECTION SIZE | VALVE CONFIGURATION                                                     | *COIL                                                                                              | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                                | PACK TYPE                                        |
|----------------------------------------------------|------------------|-----------|-------------------------|-----------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------|--------------------------------------------------|
| 250R                                               | A                | 12        | T                       | 9               | M                                                                       | VLC                                                                                                |                       |                                                 |                                                  |
| Normally Closed Solenoid Valves with increased MWP | Diaphragm Design | In 1/16"  | T = ODF<br>Extended End | In 1/8"         | M = Manual Opening Stem<br>T = Mounting Stud<br><br>(Omit for Standard) | VLC = Valve Less Coil<br><br>For Valves with Coil<br>See Coil Nomenclature<br>on Coil Catalog Page | -01 Thru -99          | G = Customer Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

\* Valves in catalog are shipped without solenoid coils (VLC = Valve Less Coil). See Coil pages for coil selection and a complete list of voltage options.

### 250RA SERIES REFRIGERANT SOLENOID VALVES

| VALVE CONFIG.       | PORT SIZE (IN) | CONN. SIZE & TYPE | NOMINAL LIQUID CAPACITY - TONS (KW) |         |         |              |         |         |         |               |               |         |               | MODEL NUMBER       | ITEM NUMBER |
|---------------------|----------------|-------------------|-------------------------------------|---------|---------|--------------|---------|---------|---------|---------------|---------------|---------|---------------|--------------------|-------------|
|                     |                |                   | R134a                               | R22     | R32     | R404A / R507 | R407A   | R407C   | R410A   | R448A / R449A | R450A / R513A | R-454A  | R454B / R452B |                    |             |
| Standard Valve      | 1/2            | 5/8 ODF           |                                     |         |         |              |         |         |         |               |               |         |               | 250RA 8T5VLC-01    | 1838403     |
| Mounting Stud       |                | 5/8 ODF           | 12.1                                | 15.6    | 21.2    | 10.3         | 11.0    | 14.8    | 14.6    | 15.7          | 10.8          | 14.5    | 14.1          | 250RA 8T5TVLC-01   | 1838391     |
| Manual Opening Stem |                | 5/8 ODF           | (42.6)                              | (54.9)  | (74.6)  | (36.2)       | (38.8)  | (52.1)  | (51.2)  | (55.1)        | (37.8)        | (51.0)  | (49.6)        | 250RA 8T5MVLC-01   | 1840052     |
| Manual Opening Stem |                | 7/8 ODF           |                                     |         |         |              |         |         |         |               |               |         |               | 250RA 8T7MVLC-01   | 1840061     |
| Standard Valve      | 9/16           | 7/8 ODF           |                                     |         |         |              |         |         |         |               |               |         |               | 250RA 9T7VLC-01    | 1838420     |
| Mounting Stud       |                | 7/8 ODF           | 21.0                                | 30.5    | 41.5    | 20.1         | 21.6    | 29.0    | 28.5    | 30.6          | 21.0          | 28.3    | 27.6          | 250RA 9T7TVLC-01   | 1838411     |
| Manual Opening Stem |                | 5/8 ODF           | (74.0)                              | (107.3) | (145.9) | (70.7)       | (75.9)  | (102.0) | (100.2) | (107.7)       | (74.0)        | (99.6)  | (97.0)        | 250RA 9T5MVLC-01   | 1840079     |
| Manual Opening Stem |                | 7/8 ODF           |                                     |         |         |              |         |         |         |               |               |         |               | 250RA 9T7MVLC-01   | 1840087     |
| Standard Valve      | 3/4            | 1-1/8 ODF         |                                     |         |         |              |         |         |         |               |               |         |               | 250RA 12T9VLC-01   | 1838340     |
| Mounting Stud       |                | 1-1/8 ODF         | 27.1                                | 34.9    | 47.5    | 23.0         | 24.7    | 33.2    | 32.6    | 29.0          | 24.1          | 32.4    | 31.5          | 250RA 12T9TVLC-01  | 1838331     |
| Manual Opening Stem |                | 7/8 ODF           | (95.3)                              | (122.7) | (166.9) | (80.9)       | (86.9)  | (116.8) | (114.6) | (102.0)       | (84.6)        | (114.0) | (111.0)       | 250RA 12T7MVLC-01  | 1839991     |
| Manual Opening Stem |                | 1-1/8 ODF         |                                     |         |         |              |         |         |         |               |               |         |               | 250RA 12T9MVLC-01  | 1840001     |
| Standard Valve      | 1              | 1-3/8 ODF         |                                     |         |         |              |         |         |         |               |               |         |               | 250RA 16T11VLC-01  | 1838366     |
| Mounting Stud       |                | 1-3/8 ODF         | 45.0                                | 58.0    | 78.9    | 38.3         | 41.1    | 55.2    | 54.2    | 58.2          | 40.0          | 53.9    | 52.4          | 250RA 16T11TVLC-01 | 1838358     |
| Manual Opening Stem |                | 1-1/8 ODF         | (158.3)                             | (203.9) | (277.4) | (134.7)      | (144.4) | (194.1) | (190.5) | (204.8)       | (140.6)       | (189.4) | (184.4)       | 250RA 16T9MVLC-01  | 1840028     |
| Manual Opening Stem |                | 1-3/8 ODF         |                                     |         |         |              |         |         |         |               |               |         |               | 250RA 16T11MVLC-01 | 1840010     |
| Standard Valve      | 1-1/4          | 1-5/8 ODF         |                                     |         |         |              |         |         |         |               |               |         |               | 250RA 20T13VLC-01  | 1838382     |
| Mounting Stud       |                | 1-5/8 ODF         | 70.9                                | 95.4    | 129.7   | 65.7         | 67.5    | 90.8    | 89.1    | 95.8          | 65.8          | 88.6    | 86.2          | 250RA 20T13TVLC-01 | 1838374     |
| Manual Opening Stem |                | 1-3/8 ODF         | (249.4)                             | (335.5) | (456.3) | (231.1)      | (237.5) | (319.3) | (313.4) | (336.8)       | (231.3)       | (311.6) | (303.3)       | 250RA 20T11MVLC-01 | 1840036     |
| Manual Opening Stem |                | 1-5/8 ODF         |                                     |         |         |              |         |         |         |               |               |         |               | 250RA 20T13MVLC-01 | 1840044     |

Capacities based on 100°F liquid and 40°F saturated evaporator per AHRI standard 760. All ratings are based on largest connection size.

EXPLODED VIEW & PARTS KIT DATA

250RA SERIES PART KITS

| DESCRIPTION                                                                                                                                      | MODEL NUMBER  | ITEM NUMBER |
|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|
| Repair Kits                                                                                                                                      |               |             |
| 250RA 8 Solenoid Valve Repair Kit (K)                                                                                                            | KS-30401      | 1838462     |
| 250RA 9 Solenoid Valve Repair Kit (K)                                                                                                            | KS-30402      | 1838471     |
| 250RA 12 Solenoid Valve Repair Kit (K)                                                                                                           | KS-30403      | 1838489     |
| 250RA 16 Solenoid Valve Repair Kit (K)                                                                                                           | KS-30404      | 1838497     |
| 240RA, 250RA 20 Solenoid Valve Complete Kit (K)                                                                                                  | KS-30325      | 060630      |
| Manual Opener Kits                                                                                                                               |               |             |
| 240RA, 250RA 8 Solenoid Valve Manual Opener Kit (M)                                                                                              | KS-30066      | 044657      |
| 240RA, 250RA 9 and 12 Solenoid Valve Manual Opener Kit (M)                                                                                       | KS-30067      | 044658      |
| 240RA, 250RA 16 Solenoid Valve Manual Opener Kit (M)                                                                                             | KS-30068      | 044491      |
| 240RA, 250RA 20 Solenoid Valve Manual Opener Kit (M)                                                                                             | KS-30098      | 047723      |
| Gasket Kits                                                                                                                                      |               |             |
| 240RA, 250RA, 540RA Gasket Kit (G)                                                                                                               | KG-10028      | 054356      |
| Tool Kits                                                                                                                                        |               |             |
| Magnetic Solenoid Tool opens a normally closed solenoid valve in the de-energized state and provides an orifice to manually adjust opening stem. | SOLENOID TOOL | 066019      |

VALVE REPAIR KIT

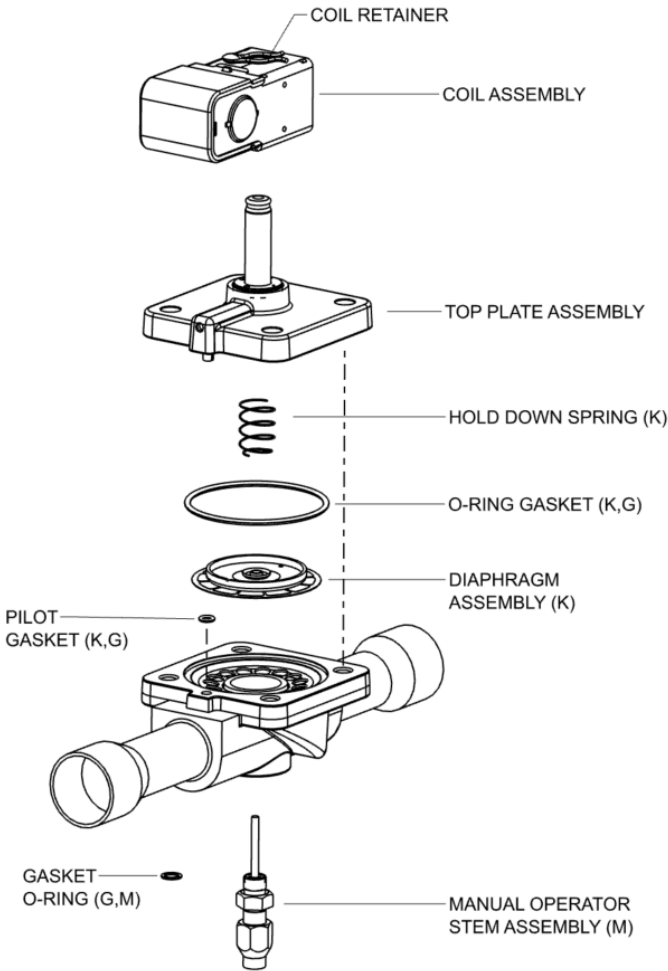
(K) indicates part is supplied in valve repair kit.

MANUAL STEM KIT

(M) indicates part is supplied in manual stem kit

GASKET KIT

(G) indicates gasket is supplied in gasket kit.



EXPLODED VIEW & PARTS KIT DATA

240RA SERIES PART KITS

| DESCRIPTION                                                                                                                                                                                                                                        | MODEL NUMBER  | ITEM NUMBER |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|
| Complete Kits                                                                                                                                                                                                                                      |               |             |
| 200RA 8 Solenoid Valve Complete Kit (K)                                                                                                                                                                                                            | KS-30321      | 060626      |
| 200RA 9 Solenoid Valve Complete Kit (K)                                                                                                                                                                                                            | KS-30322      | 060627      |
| 240RA 12 Solenoid Valve Complete Kit (K)                                                                                                                                                                                                           | KS-30323      | 060628      |
| 240RA 16 Solenoid Valve Complete Kit (K)                                                                                                                                                                                                           | KS-30324      | 060629      |
| 240RA 20 Solenoid Valve Complete Kit (K)                                                                                                                                                                                                           | KS-30325      | 060630      |
| Manual Opener Kits                                                                                                                                                                                                                                 |               |             |
| 240RA 8 Solenoid Valve Manual Opener Kit (M)                                                                                                                                                                                                       | KS-30066      | 044657      |
| 240RA 9 and 240RA 12 Solenoid Valve Manual Opener Kit (M)                                                                                                                                                                                          | KS-30067      | 044658      |
| 240RA 16 Solenoid Valve Manual Opener Kit (M)                                                                                                                                                                                                      | KS-30068      | 044491      |
| 240RA 20 Solenoid Valve Manual Opener Kit (M)                                                                                                                                                                                                      | KS-30098      | 047723      |
| Gasket Kits                                                                                                                                                                                                                                        |               |             |
| 240RA and 540RA Gasket Kit (G)                                                                                                                                                                                                                     | KG-10028      | 054356      |
| Tool Kits                                                                                                                                                                                                                                          |               |             |
| 100RB, 240RA and 540RA Solenoid Valve Universal (2/3 hole) Spanner Wrench (Included in complete valve kit)                                                                                                                                         | X-11981-1     | 027451      |
| Magnetic Solenoid Tool opens a normally closed solenoid valve in the de-energized state, incorporates a spanner wrench for easy disassembly of solenoid valve series 100RB, 200RB, 240RA, and provides an orifice to manually adjust opening stem. | SOLENOID TOOL | 066019      |

VALVE REPAIR KIT

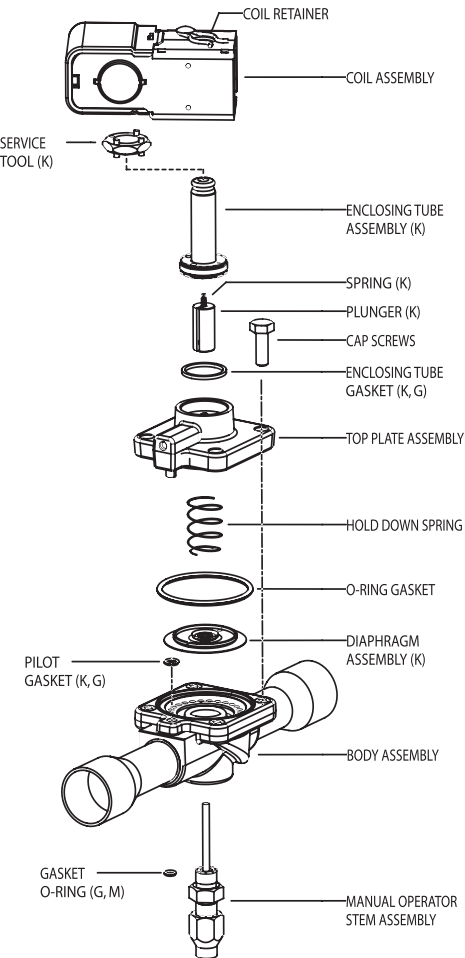
(K) indicates part is supplied in valve repair kit.

MANUAL STEM KIT

(M) indicates part is supplied in manual stem kit

GASKET KIT

(G) indicates gasket is supplied in gasket kit.



## FR – FILTER REPLACEMENTS

| CFM  | RECOMMENDED CFM | A/C TONNAGE | INPUT RANGE   | MERV | DIMENSION                | MODEL NUMBER | ITEM NUMBER |
|------|-----------------|-------------|---------------|------|--------------------------|--------------|-------------|
| 1400 | 1000-1600       | up to 4.0   | up to 160,000 | 8    | 20"H X 24"W X 4.38"D     | FR1400U-108  | FR1400U108  |
| 2000 | 1600-2200       | up to 5.5   | up to 220,000 | 8    | 20"H X 24-1/2"W X 4.38"D | FR2000U-108  | FR2000U108  |

## MEDIA FILTER CROSS REFERENCE

| NOMINAL SIZE      | CFM  | FILTER MANUFACTURER    | FILTER MODEL | CABINET MODEL | MODEL NUMBER (MERV 8) | ITEM NUMBER (MERV 8) |
|-------------------|------|------------------------|--------------|---------------|-----------------------|----------------------|
| 16"H X 25"W X 5"D | 1400 | Aprilaire (Space-Gard) | 401          | —             | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Aprilaire (Space-Gard) | —            | 2400          | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Carrier                | ACBCM1       | —             | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Carrier                | —            | FILBBFTC0016  | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Carrier                | —            | FILCCFTC0016  | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Carrier                | —            | FILBBCAR0016  | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Carrier                | —            | FILCCCAR0016  | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Honeywell              | FC100A1029   | —             | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Honeywell              | FC100C1009   | —             | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Honeywell              | FC200E1029   | —             | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Honeywell              | —            | F100F2002     | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Honeywell              | —            | F100F1012     | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Honeywell              | —            | F100B1016     | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Honeywell              | —            | F150E1026     | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Honeywell              | —            | F200E1029     | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Lennox                 | X0582        | —             | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Lennox                 | X0583        | —             | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Lennox                 | X0584        | —             | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Lennox                 | —            | BMAC-14C      | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Trion                  | 255649-102   | —             | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | Trion                  | —            | 455602-119    | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | White-Rodgers          | FR1400U-108  | —             | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | White-Rodgers          | —            | ACM1400U-108  | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | White-Rodgers          | FR1400-100   | —             | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | White-Rodgers          | —            | ACM1400-101   | FR1400U-108           | FR1400U108           |
| 16"H X 25"W X 5"D | 1400 | White-Rodgers          | —            | ACB1400-101   | FR1400U-108           | FR1400U108           |
| 20"H X 25"W X 5"D | 2000 | Aprilaire (Space-Gard) | 201          | —             | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Aprilaire (Space-Gard) | —            | 2250          | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Carrier                | ACBCM2       | —             | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Carrier                | —            | FILBBFTC0020  | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Carrier                | —            | FILBBCAR0020  | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Carrier                | —            | FILCCFTC0020  | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Carrier                | —            | FILCCCAR0020  | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Honeywell              | FC100A1037   | —             | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Honeywell              | FC200E1037   | —             | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Honeywell              | —            | F100F2010     | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Honeywell              | —            | F100F1038     | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Honeywell              | —            | F100B1024     | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Honeywell              | —            | F150E1034     | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Honeywell              | —            | F200E1037     | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Lennox                 | X0586        | —             | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Lennox                 | X0587        | —             | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Lennox                 | —            | BMAC-20C      | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Trion                  | 255649-102   | —             | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | Trion                  | —            | 455602-019    | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | White-Rodgers          | FR2000U-108  | —             | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | White-Rodgers          | FR2000U-110  | —             | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | White-Rodgers          | —            | ACM2000U-108  | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | White-Rodgers          | —            | ACM2000U-110  | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | White-Rodgers          | FR2000-100   | —             | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | White-Rodgers          | —            | ACM2000-101   | FR2000U-108           | FR2000U108           |
| 20"H X 25"W X 5"D | 2000 | White-Rodgers          | —            | ACB2000-101   | FR2000U-108           | FR2000U108           |

# COOLING CONTROLS

**BEST  
IN CLASS**  
BY THE  
**NUMBERS**

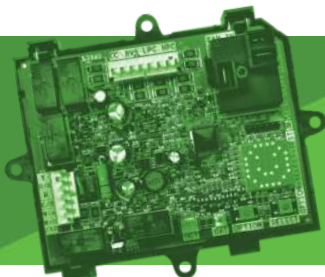
## EK FILTER DRIERS

BEST PROTECTION AGAINST MOISTURE & DEBRIS



## TXV CONNECT KITS

BEST PERFORMANCE ON THE MARKET



## HEAT PUMP DEFROST CONTROL

BEST VERSATILITY WITH THE INDUSTRY'S  
FIRST UNIVERSAL OPTION



## SURESWITCH™

BEST SOLUTION WITH THE ONLY  
COMPLETELY SEALED OPTION





## THE WHITE-RODGERS MOBILE APP:

Answers at your fingertips, with your smartphone or tablet.

- ✓ Latest cross reference
- ✓ Installation instructions
- ✓ Spec sheets
- ✓ Product selection





47D01U-843

## UNIVERSAL HEAT PUMP DEFROST CONTROL

*Universal upgrade for single stage heat pump systems with a PSC fan motor.*

### FEATURES

- Universal replacement for over 400 single stage part numbers
- Selectable demand or timed defrost modes
- Reversing valve can be energized in heat or cool (O/B)
- One-button configuration to any OEM system
- Integrated outdoor thermostat eliminates need for additional components
- Includes outdoor sensors
- Test mode to verify installation and trouble shoot
- Access setup and diagnostic menus from any orientation
- Brownout and short-cycle protection plus hi/low pressure inputs

### HEAT PUMP DEFROST CONTROL

| REPLACEMENT TYPE | STAGES | DESCRIPTION     | INPUT VOLTAGE   | LINE VOLTAGE | OUTDOOR CONDENSER FAN MOTOR | MOUNTING | OPERATING TEMPERATURE RANGE | DIMENSIONS               | MODEL NUMBER | ITEM NUMBER |
|------------------|--------|-----------------|-----------------|--------------|-----------------------------|----------|-----------------------------|--------------------------|--------------|-------------|
| Universal        | Single | Defrost Control | 24 VAC, 50/60Hz | 208/240 VAC  | PSC                         | Tray     | -40 to 150°F (-40 to 65°C)  | 1.75"H X 4.72"W X 5.75"D | 47D01U-843   | 47D01U-843  |



47D40-801

## A/C, HEAT PUMP AND DEMAND DEFROST CONTROLS

*Direct OEM replacements for AC/heat pump and demand defrost controls.*

### FEATURES

- Direct drop-in replacements for Goodman and Rheem brands.

### A/C & DEMAND DEFROST CONTROLS

| DIRECT OEM REPLACEMENT | STAGES    | DESCRIPTION             | INPUT VOLTAGE     | LINE VOLTAGE | OUTDOOR CONDENSER FAN MOTOR | MOUNTING         | OPERATING TEMPERATURE RANGE | DIMENSIONS                | MODEL NUMBER | ITEM NUMBER |
|------------------------|-----------|-------------------------|-------------------|--------------|-----------------------------|------------------|-----------------------------|---------------------------|--------------|-------------|
| Goodman                | Two-Stage | AC or Heat Pump Control | 24 VAC, 60Hz      | 240 VAC      | PSC or ECM                  | Standoff         | -40 to 175°F (-40 to 80°C)  | 3.69"H X 11.56"W X 6.86"D | 49S25-707    | 49S25-707   |
| Rheem                  | Single    | Demand Defrost Control  | 24 VAC, 50 / 60Hz | 208/240 VAC  | PSC                         | Metal Standoff   | -40 to 150°F (-40 to 65°C)  | 1.24"H X 3.38"W X 3.63"D  | 47D40-801    | 47D40-801   |
| Rheem                  | Single    | Demand Defrost Control  | 24 VAC, 50 / 60Hz | 208/240 VAC  | PSC or ECM                  | Plastic Standoff | -40 to 150°F (-40 to 65°C)  | 5.51"H X 3.50"W X 1.13"D  | 47D43-811    | 47D43-811   |





49M11-843

SURESWITCH™ MULTI-VOLT UNIVERSAL CONTACTOR

Universal electronic upgrade for mechanical compressor contactors with 5x contactor life and completely sealed to keep out ants and debris.

FEATURES

- Multi-volt coil replaces all common coil voltages
- 5x traditional contactor life
- Totally sealed switch keeps out ants, pests and debris
- Microprocessor control inhibits arcing that cause welding and pitting
- Line voltage brownout protection and short cycle timer provide compressor protection
- Heavy-duty lug connectors
- Zero chatter latching relay
- Tri-color LED displays
- 5-year limited warranty
- Four-hole mounting matches mechanical contactors
- Compressor test and cycle count by pushbutton

SPECIFICATIONS

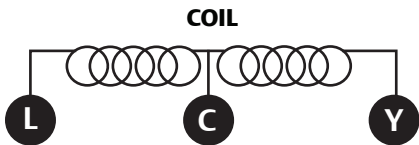
Line Voltage Input ..... 120/208/240 VAC, 50/60 Hz  
Control (Coil) Voltage.....(Y-C) 24 VAC, 50/60 Hz  
.....(Line-C) 120/208/240VAC, 50/60 Hz  
Full Load Amperes ..... 40A  
Locked Rotor Amperes ..... 200A  
Anti-Short-Cycle Delay.....0s or 180s (selectable) at 60 Hz, 0s or 216s (selectable) at 50 Hz  
Compressor Test .....5s at 60 Hz, 6s at 50 Hz  
Operating Temperature Range ..... -40° to 158°F (-40 to 70°C)  
Coil Terminals..... 1/4” male QC’s accepting #12-24 AWG wire  
Dimensions ..... 2.75”W X 2.38”H X 3.88”L  
UL Recognized to..... UL60730-1

SURESWITCH™ MULTI-VOLT CONTACTOR

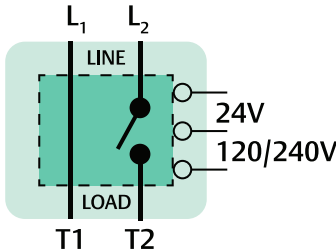
| COIL               | LINE VOLTAGE INPUT | AMP RATING      | POLES*   | MODEL NUMBER | ITEM NUMBER |
|--------------------|--------------------|-----------------|----------|--------------|-------------|
| 24/120/208/240 VAC | 120/208/240 Vac    | 40 FLA, 200 LRA | 1 or 1.5 | 49M11-843    | 49M11-843   |

\* 2 pole applications if local electrical codes are met

TERMINAL DESIGNATIONS:



LUGS



COIL DETAILS:

For voltage over 100 VAC: Connect line level control voltage to “Line”, connect neutral or opposite leg to “Common.”

For class 2 24VAC: Connect 24V control voltage to “Y”, connect 24V ground to “Common.”

1/4” QUICK CONNECT FOR ACCESSORIES

- Hard Start
- Crank case heater
- Capacitor
- Fan Common

LED FLASH CODES

|                  |                  |
|------------------|------------------|
| Slow Green       | Standby          |
| Solid Green      | Normal           |
| Fast Green       | Delay            |
| Green/Red        | Low Line Voltage |
| Green/Yellow/Red | Test             |



94-388

## 94 SERIES 1.5 POLE MECHANICAL CONTACTORS

*Straight-through wiring, replaces 1-1/2 pole devices used primarily in residential central air conditioning.*

### FEATURES

- Replaces many contactors used by OEM's
- Universal style mounting bracket fits existing mounting holes
- Screw terminals and 1/4" quick connect terminals for easy installation

### SPECIFICATIONS

Approximate Overall Dimensions ..... 2.50"H X 2.00"W X 3.38"D  
 Temperature Range.....-40°F to 150°F  
 Mechanical / Electrical Life.....Conforms to UL and ARI specifications  
 Coil Voltage / Frequency / Insulation .....24, 120 VAC / 50-60 Hz / Class B (130°C)  
 Termination.....Screw and Double 1/4" Q.C.  
 Operate.....85% - 110% of nominal coil voltage  
 Duty Cycle.....Continuous  
 Weight (approximate) ..... 7 oz.  
 UR/CUR File Number ..... E310181  
 CE Approved

### 94 SERIES 1.5 POLE MECHANICAL CONTACTORS - COIL DATA

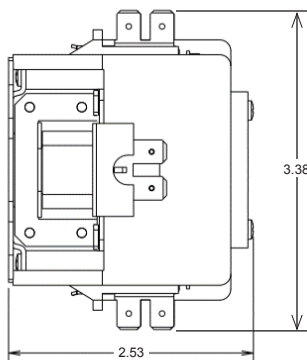
| MODEL  | RES DC OHMS | CURRENT MA | NOMINAL VA | MAX. INRUSH VA | MODEL NUMBER | ITEM NUMBER |
|--------|-------------|------------|------------|----------------|--------------|-------------|
| 30 AMP | 19.5        | 208        | 5          | 28             | 94-388       | 94 388S1    |
| 40 AMP | 19.5        | 208        | 5          | 28             | 94-394       | 94 394S1    |
| 30 AMP | 505         | 42         | 5          | 28             | 94-389       | 94 389S1    |
| 40 AMP | 505         | 42         | 5          | 28             | 94-395       | 94 395S1    |

\* 30 amp models have no cover on top as in line drawing below

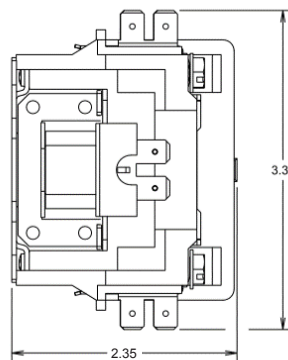
\*\* 40 amp models have cover on top as in picture above

### 94 SERIES 1.5 POLE MECHANICAL CONTACTORS - COIL DATA

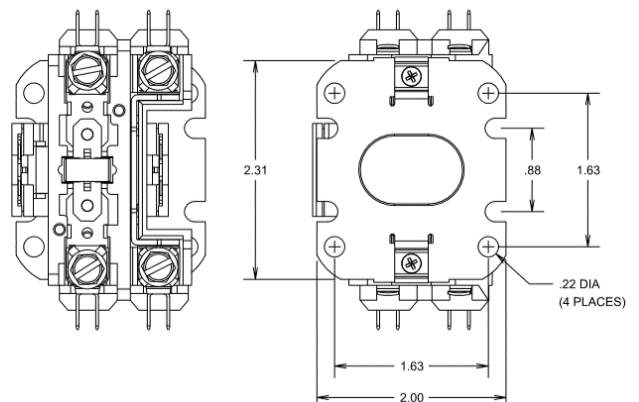
| VOLTAGE AC | FLA | LRA | RES | MODEL NUMBER       |
|------------|-----|-----|-----|--------------------|
| 240/277    | 30  | 180 | 40  | 94-388 thru 94-389 |
| 480        | 30  | 125 | 40  | 94-388 thru 94-389 |
| 600        | 30  | 100 | 40  | 94-388 thru 94-389 |
| 240/277    | 40  | 240 | 50  | 94-394 thru 94-395 |
| 480        | 40  | 200 | 50  | 94-394 thru 94-395 |
| 600        | 40  | 160 | 50  | 94-394 thru 94-395 |

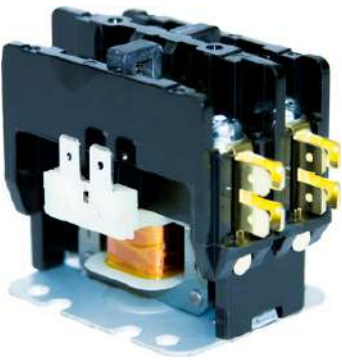


40 AMP MODEL (WITH COVER)



30 AMP MODEL (NO COVER)





94-244

# 90 SERIES 2 POLE MECHANICAL CONTACTORS

Designed for air conditioning and heating equipment.

### FEATURES

- Low VA coil for cooler operation and increased life
- Quiet operation
- Universal style mounting bracket fits existing mounting holes
- Double break contacts ensure positive make and break
- Screw terminals or lugs and quad 1/4" quick connects provided on all models for easy installation

### SPECIFICATIONS

|                                            |                                                    |
|--------------------------------------------|----------------------------------------------------|
| Approximate Overall Dimensions .....       | 2.50"H X 2.00"W X 3.38"D                           |
| Temperature Range.....                     | -40°F to 150°F                                     |
| Mechanical / Electrical Life.....          | Conforms to UL and ARI specifications              |
| Coil Voltage / Frequency / Insulation..... | 24, 120, 208, 240 VAC / 50-60 Hz / Class B (130°C) |
| Termination.....                           | Screw terminals or lugs and double 1/4" Q.C.       |
| Operate .....                              | 85% - 110% of nominal coil voltage                 |
| Duty Cycle .....                           | Continuous                                         |
| Weight (approximate) .....                 | 9.5 oz.                                            |
| UR/CUR File Number .....                   | E310181                                            |
| .....                                      | CE Approved                                        |

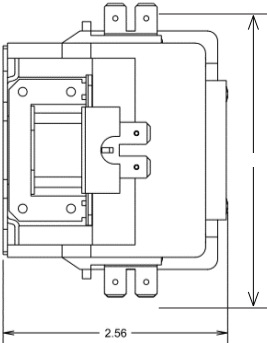
### 90 SERIES 2 POLE MECHANICAL CONTACTORS - COIL DATA

| VOLTAGE AC | MODEL  | RES DC OHMS | CURRENT MA | NOMINAL VA | MAX. INRUSH VA | MODEL NUMBER | ITEM NUMBER |
|------------|--------|-------------|------------|------------|----------------|--------------|-------------|
| 24         | 30 AMP | 11.5        | 270        | 6.5        | 30             | 90-244       | 90 244S1    |
| 24         | 40 AMP | 11.5        | 270        | 6.5        | 30             | 90-247       | 90 247S1    |
| 120        | 30 AMP | 295         | 54         | 6.5        | 30             | 90-245       | 90 245S1    |
| 120        | 40 AMP | 295         | 54         | 6.5        | 30             | 90-248       | 90 248S1    |
| 208 / 240  | 30 AMP | 995         | 27         | 6.5        | 30             | 90-246       | 90 246S1    |
| 208 / 240  | 40 AMP | 995         | 27         | 6.5        | 30             | 90-249       | 90 249S1    |

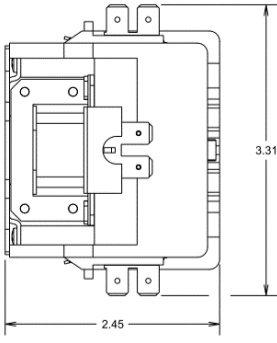
\* 30 amp models have no cover on top  
\*\* 40 amp models have cover on top

### 90 SERIES 2 POLE MECHANICAL CONTACTORS - CONTACT RATINGS

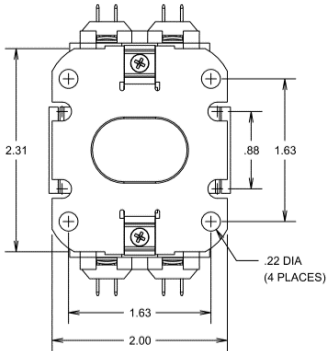
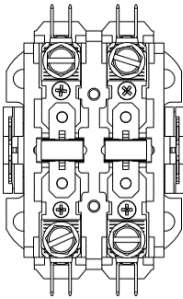
| VOLTAGE AC | FLA | LRA | RES | MODEL NUMBER       |
|------------|-----|-----|-----|--------------------|
| 240 / 277  | 30  | 180 | 40  | 90-244 thru 90-246 |
| 480        | 30  | 125 | 40  | 90-244 thru 90-246 |
| 600        | 30  | 100 | 40  | 90-244 thru 90-246 |
| 240 / 277  | 40  | 240 | 50  | 90-247 thru 90-249 |
| 480        | 40  | 200 | 50  | 90-247 thru 90-249 |
| 600        | 40  | 160 | 50  | 90-247 thru 90-249 |



40 AMP MODEL (WITH COVER)



30 AMP MODEL (NO COVER)





90-163

# 90 SERIES 3 POLE MECHANICAL CONTACTORS

*Designed for air conditioning and heating equipment.*

## FEATURES

- Any position mounting
- Interchangeable mounting plate
- Low wattage coil
- Double break contacts ensure positive make and break

## SPECIFICATIONS

Approximate Overall Dimensions ..... 3.00"H X 2.38"W X 3.75"D  
 Temperature Range.....-40°F to 150°F  
 Mechanical / Electrical Life..... Conforms to UL and ARI specifications  
 Coil Voltage / Frequency / Insulation..... 24, 120, 208, 240 VAC / 50-60 Hz / Class B (130°C)  
 Termination.....Screw terminals or lugs and double 1/4" Q.C.  
 Operate ..... 85% - 110% of nominal coil voltage  
 Duty Cycle .....Continuous  
 Weight (approximate) ..... 16 oz.  
 UR/CUR File Number ..... E310181  
 ..... CE Approved

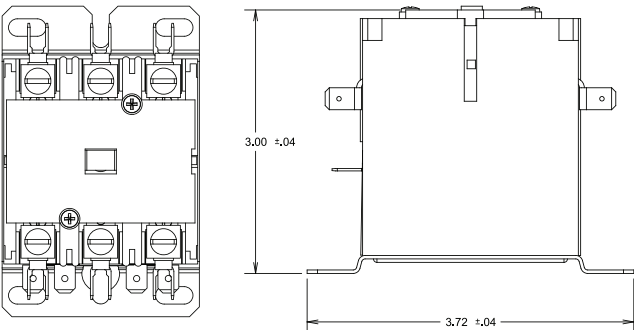
## 90 SERIES 3 POLE MECHANICAL CONTACTORS - COIL DATA

| VOLTAGE AC | MODEL  | RES DC OHMS | CURRENT MA | NOMINAL VA | MAX. INRUSH VA | MODEL NUMBER | ITEM NUMBER |
|------------|--------|-------------|------------|------------|----------------|--------------|-------------|
| 24         | 30 AMP | 7.0         | 208        | 5.0        | 60             | 90-163       | 90 163S1    |
| 24         | 40 AMP | 7.0         | 208        | 5.0        | 60             | 90-170       | 90 170S1    |
| 120        | 30 AMP | 175         | 42         | 5.0        | 60             | 90-164       | 90 164S1    |
| 120        | 40 AMP | 175         | 42         | 5.0        | 60             | 90-171       | 90 171S1    |
| 208 / 240  | 30 AMP | 665         | 21         | 5.0        | 60             | 90-165       | 90 165S1    |
| 208 / 240  | 40 AMP | 665         | 21         | 5.0        | 60             | 90-172       | 90 172S1    |

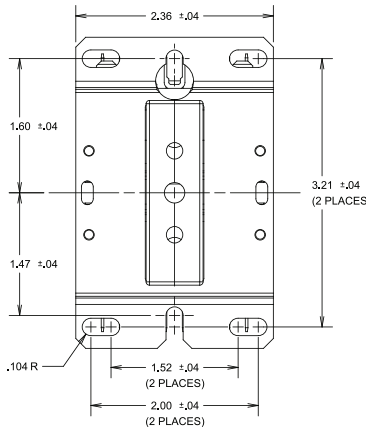
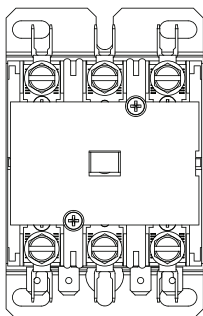
## 90 SERIES 2 POLE MECHANICAL CONTACTORS - CONTACT RATINGS

| VOLTAGE AC | FLA | LRA | RES | TYPE               |
|------------|-----|-----|-----|--------------------|
| 240 / 277  | 30  | 180 | 40  | 90-163 thru 90-165 |
| 480        | 30  | 150 | 40  | 90-163 thru 90-165 |
| 600        | 30  | 120 | 40  | 90-163 thru 90-165 |
| 240 / 277  | 40  | 240 | 50  | 90-170 thru 90-172 |
| 480        | 40  | 200 | 50  | 90-170 thru 90-172 |
| 600        | 40  | 160 | 50  | 90-170 thru 90-172 |

### 40 AMP WITH LUGS



### 30 AMP WITH SCREW TERMINALS





1F51N-619

EVAPORATIVE COOLING THERMOSTAT AND CONTROL

Functions as a switching device for the thermostat to provide an even level of cooling plus a choice of high and low speed control of the fan on evaporative coolers

FEATURES

- Grey plastic case is lightweight, weather-resistant and meets all code requirements
- Fully automatic, system designed with a fan delay (approximately 60 seconds) to pre-wet the cooler pads before the fan start
- Separate fan and pump relays. High or low fan speed selection
- Relay panel is removable from enclosure to facilitate field wiring
- Integral transformer 120/240 VAC to 24 VAC 60 Hz

SPECIFICATIONS

1F51N-619 Electrical Rating ..... 24 VAC (30 VAC maximum) fixed anticipator  
1F51N-619 Dimensions ..... 3.25"H X 4.50"W X 1.63"D  
8A18Z-2 Dimensions ..... 8.00"H X 6.00"W X 3.00"D

EVAPORATIVE COOLING THERMOSTAT AND CONTROL

| PACKAGE CONSISTS OF: | MODEL NUMBER | ITEM NUMBER |
|----------------------|--------------|-------------|
| 1F51N-619 / 8A18Z-2  | 21D28-6      | 21D28 006   |

EVAPORATIVE COOLING THERMOSTAT

| COLOR         | RANGE                                       | DIFFERENTIAL | SYSTEM SWITCH POSITION | FAN SWITCH POSITION | MODEL NUMBER | ITEM NUMBER |
|---------------|---------------------------------------------|--------------|------------------------|---------------------|--------------|-------------|
| Classic White | Scale 1-2-3-4-5 (55 to 95°F) No thermometer | 1°F          | Off, Cool, Vent        | Hi, Lo              | 1F51N-619    | 1F51N-619   |

EVAPORATIVE COOLING CONTROL

| INPUT VOLTAGE    | COMBINED RELAY LOADS FULL LOAD | COMBINED RELAY LOADS LOCKED ROTOR | PUMP RELAY FULL LOAD | PUMP RELAY LOCKED ROTOR | FAN RELAY FULL LOAD | FAN RELAY LOCKED ROTOR | AGENCY      | MODEL NUMBER | ITEM NUMBER |
|------------------|--------------------------------|-----------------------------------|----------------------|-------------------------|---------------------|------------------------|-------------|--------------|-------------|
| 120 VAC, 240 VAC | 16.0A, 8.0A                    | 96.0A, 48.0A                      | 10.0A, 5.0A          | 60.0A, 30.0A            | 12.0A, 6.0A         | 72.0A, 36.0A           | U.L. Listed | 8A18Z-2      | 08A18Z002S1 |

## EXPANSION VALVES QUICK SELECTION GUIDE

| TONNAGE    |                              |            |                              |                    |                    |           |                    |            | VALVE SERIES    | PORT                  |          | INTERNAL CHECK<br>(OPTIONAL) | FIELD SERVICEABLE |
|------------|------------------------------|------------|------------------------------|--------------------|--------------------|-----------|--------------------|------------|-----------------|-----------------------|----------|------------------------------|-------------------|
| R-410A     | R-22 /<br>R-407A /<br>R-407C | R-134A     | R-404A /<br>R-502 /<br>R-507 | R-448A /<br>R-449A | R-513A /<br>R-450A | R-32      | R-454B /<br>R-452B | R-290      |                 | CONVENTIONAL          | BALANCED |                              |                   |
| 1 to 5     | 1/4 to 5                     | 1/8 to 3   | 1/8 to 3                     | 1/5 to 5.5         | 1/8 to 3           | —         | —                  | 1/5 to 1.5 | A               | √                     |          | √                            |                   |
| 1/2 to 15  | —                            | —          | —                            | —                  | —                  | 0.9 to 22 | 0.6 to 16          | —          | NXT             |                       | √        | √                            |                   |
| 1.5 to 5   | 1.5 to 5                     | —          | —                            | —                  | —                  | —         | —                  | —          | TXV Connect Kit |                       | √        | √                            |                   |
| —          | 1/4 to 20                    | 1/4 to 14  | 1/8 to 10                    | 1/4 to 8.5         | 1/5 to 11.5        | —         | —                  | 1/4 to 5.5 | HF              |                       | √        |                              | √                 |
| —          | 1/2 to 20                    | 1/3 to 12  | 1/3 to 14                    | —                  | —                  | —         | —                  | —          | TI              | √                     |          |                              |                   |
| —          | 1/2 to 12                    | 1/4 to 9   | 1/4 to 8                     | —                  | —                  | —         | —                  | —          | TCL             | √                     |          |                              | √                 |
| —          | 11 to 14                     | 9 to 11    | 7 to 9                       | —                  | —                  | —         | —                  | —          | TJL             | √                     |          |                              | √                 |
| —          | 14 to 18                     | 11 to 13   | 9 to 12                      | —                  | —                  | —         | —                  | —          | TJR             | √                     |          |                              | √                 |
| —          | 22 to 45                     | 16 to 31   | 14 to 27                     | —                  | —                  | —         | —                  | —          | TER             |                       | √        |                              | √                 |
| —          | 55                           | 45         | 37                           | —                  | —                  | —         | —                  | —          | TIR             |                       | √        |                              | √                 |
| —          | 55 to 85                     | 45 to 68   | 37 to 60                     | —                  | —                  | —         | —                  | —          | THR             |                       | √        |                              | √                 |
| —          | 100                          | 68         | 60                           | —                  | —                  | —         | —                  | —          | TMR             |                       | √        |                              | √                 |
| —          | 10 to 40                     | 22 to 30   | 14 to 20                     | —                  | —                  | —         | —                  | —          | TRAE+           |                       | √        |                              | √                 |
| —          | 50 to 70                     | 40         | 35                           | —                  | —                  | —         | —                  | —          | TRAE            |                       | √        |                              |                   |
| 20 to 50   | 7 to 40                      | 4 to 24    | —                            | —                  | 3-3/4 to 21        | 12 to 68  | —                  | —          | TX7             |                       | √        |                              |                   |
| —          | 1/2 to 5.5                   | 1/3 to 4   | 1/3 to 3.5                   | —                  | —                  | —         | —                  | —          | ACP             | √                     |          |                              |                   |
| —          | 3/4 to 30                    | —          | 3/4 to 29                    | —                  | —                  | —         | —                  | —          | ZZ              | √                     |          |                              | √                 |
| —          | 1/2 to 12                    | 1/4 to 7.5 | 1/4 to 8                     | —                  | —                  | —         | —                  | —          | LA / LCL        | √                     |          |                              | √                 |
| 1/5 to 292 | 1/2 to 250                   | 1/3 to 193 | 1/3 to 174                   | —                  | —                  | —         | —                  | —          | EX              | Linear Flow           |          |                              |                   |
| 0.2 to 4.5 | 0.1 to 3.8                   | 0.1 to 2.8 | 0.1 to 2.5                   | 0.1 to 3.6         | 0.1 to 2.9         | —         | —                  | —          | PM (PWM)        | Pulse Width Modulated |          |                              |                   |



AAE 1BA-01

## A-SERIES THERMOSTATIC EXPANSION VALVES

The A-Series is used for heat pump, air conditioning, food service and commercial refrigeration applications.

### FEATURES

- Stainless steel power element prevents corrosion and valve failure
- Hermetic, leak-free construction
- Compact size allows installation in limited spaces
- Mass spectrometer tested to ensure less than 0.10 oz/year external leakage rate
- ODF connections standard - SAE, Chatleff or Aeroquip also available
- External or internal equalizer
- Internal check available for heat pump applications
- Bleed type for pressure equalization available

### SPECIFICATIONS

Maximum Working Pressure..... 700 psig (48 bar)  
 UR/CUR File Number ..... SA5312  
 Canadian CRN ..... 0C21506.513467890YTN

### MODEL NUMBER NOMENCLATURE - Example: AAE 2BA-01

| SERIES          | SUPERHEAT ADJUSTMENT                 | INTERNAL CHECK VALVE                                                                                 | EQUALIZER                               | BLEED HOLE                                     | CAPACITY               | SYSTEM REFRIGERANT CODE                                                                                                                                              | CHARGE CODE                                                                                                                  | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                                | PACK TYPE                                        |
|-----------------|--------------------------------------|------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------|--------------------------------------------------|
| A               | A                                    |                                                                                                      | E                                       |                                                | 2                      | B                                                                                                                                                                    | A                                                                                                                            | -01                   |                                                 |                                                  |
| Hermetic Design | A = Adjustable<br>N = Non-Adjustable | C = Internal Check Valve for Reverse Flow Bypass (Heat Pump) Applications<br><br>(Omit for No Check) | E = External<br><br>(Omit for Internal) | B = Bleed Hole<br><br>(Omit for No Bleed Hole) | Nominal Rating in Tons | B = R-448A/R-449A/R-452A<br>D = R-450A/R-513A<br>F = R-12<br>H = R-22/R-407A<br>M = R-134a<br>N = R-407C<br>P = R-507<br>R = R-502<br>S = R-404A/R-407H<br>T = R-290 | A = Medium & Low Temp.<br>AA = Wide Range<br>C = Medium Temp.<br>CA = Heat Pump<br>W(MOP) = Press. Limiting<br>Z = Low Temp. | -01 Thru -99          | G = Customer Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

### A-SERIES THERMOSTATIC EXPANSION VALVES (Body Style Straight Thru)

| SYSTEM REFRIGERANT CODE | CAPACITY (NOMINAL TONNAGE) | CHARGE CODE        | INLET X OUTLET CONNECTION | ADJUSTABLE SUPERHEAT | INTERNAL CHECK | EQUALIZER | BLEED | CAP LENGTH | MODEL NUMBER   | ITEM NUMBER |
|-------------------------|----------------------------|--------------------|---------------------------|----------------------|----------------|-----------|-------|------------|----------------|-------------|
| B (R-448A, R-449A)      | 1/5                        | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | Yes                  | No             | Internal  | No    | 30 In.     | AA 1/5BA-01    | 066885      |
|                         | 1/4                        | A (Med./Low Temp.) | 1/4" X 3/8" ODF           | Yes                  | No             | Internal  | No    | 30 In.     | AA 1/4BA-02    | 067033      |
|                         | 1/4                        | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | Yes                  | No             | Internal  | No    | 30 In.     | AA 1/4BA-01    | 066886      |
|                         | 1/2                        | A (Med./Low Temp.) | 1/4" X 3/8" ODF           | Yes                  | No             | Internal  | No    | 30 In.     | AA 1/2BA-02    | 067035      |
|                         | 1/2                        | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | Yes                  | No             | Internal  | No    | 30 In.     | AA 1/2BA-01    | 066887      |
|                         | 1/2                        | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 30 In.     | AAE 1/2BA-02   | 066922      |
|                         | 1                          | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | Yes                  | No             | Internal  | No    | 30 In.     | AA 1BA-01      | 066888      |
|                         | 1                          | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 30 In.     | AAE 1BA-03     | 066923      |
|                         | 1                          | A (Med./Low Temp.) | 1/2" X 5/8" ODF           | Yes                  | No             | External  | No    | 30 In.     | AAE 1BA-04     | 066931      |
|                         | 1-1/2                      | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 30 In.     | AAE 1-1/2BA-01 | 066889      |
|                         | 1-1/2                      | A (Med./Low Temp.) | 1/2" X 5/8" ODF           | Yes                  | No             | External  | No    | 30 In.     | AAE 1-1/2BA-04 | 066928      |
|                         | 2                          | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 30 In.     | AAE 2BA-01     | 066890      |
|                         | 2                          | A (Med./Low Temp.) | 1/2" X 5/8" ODF           | Yes                  | No             | External  | No    | 30 In.     | AAE 2BA-05     | 066925      |
|                         | 2                          | A (Med./Low Temp.) | 5/8" X 7/8" ODF           | Yes                  | No             | External  | No    | 30 In.     | AAE 2BA-06     | 066932      |
|                         | 2-1/2                      | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 30 In.     | AAE 2-1/2BA-01 | 066891      |
|                         | 2-1/2                      | A (Med./Low Temp.) | 1/2" X 5/8" ODF           | Yes                  | No             | External  | No    | 30 In.     | AAE 2-1/2BA-06 | 066926      |
|                         | 2-1/2                      | A (Med./Low Temp.) | 5/8" X 7/8" ODF           | Yes                  | No             | External  | No    | 30 In.     | AAE 2-1/2BA-07 | 066929      |



| SYSTEM<br>REFRIGERANT<br>CODE | CAPACITY<br>(NOMINAL<br>TONNAGE) | CHARGE CODE        | INLET X<br>OUTLET<br>CONNECTION | ADJUSTABLE<br>SUPERHEAT | INTERNAL<br>CHECK | EQUALIZER | BLEED | CAP<br>LENGTH | MODEL NUMBER      | ITEM NUMBER |
|-------------------------------|----------------------------------|--------------------|---------------------------------|-------------------------|-------------------|-----------|-------|---------------|-------------------|-------------|
| B (R-448A,<br>R-449A)         | 3-1/2                            | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 3-1/2BA-01    | 066892      |
|                               | 3-1/2                            | A (Med./Low Temp.) | 1/2" X 5/8" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 3-1/2BA-04    | 066927      |
|                               | 3-1/2                            | A (Med./Low Temp.) | 5/8" X 7/8" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 3-1/2BA-05    | 066930      |
|                               | 4                                | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 4BA-01        | 066893      |
|                               | 5-1/2                            | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 5-1/2BA-01    | 066894      |
| D (R-450A,<br>R-513A)         | 1/8                              | A (Med./Low Temp.) | 1/4" X 3/8" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/8DA-01       | 067057      |
|                               | 1/8                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/8DA-02       | 067040      |
|                               | 1/8                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 1/8DA-01      | 067045      |
|                               | 1/5                              | A (Med./Low Temp.) | 1/4" X 3/8" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/5DA-01       | 067058      |
|                               | 1/5                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/5DA-02       | 067041      |
|                               | 1/5                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 1/5DA-01      | 067046      |
|                               | 1/4                              | A (Med./Low Temp.) | 1/4" X 3/8" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/4DA-01       | 067059      |
|                               | 1/4                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/4DA-02       | 067042      |
|                               | 1/4                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 1/4DA-01      | 067047      |
|                               | 1/2                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/2DA-01       | 067043      |
|                               | 1/2                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 1/2DA-01      | 067048      |
|                               | 3/4                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 3/4DA-01       | 067044      |
|                               | 3/4                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 3/4DA-01      | 067049      |
|                               | 1                                | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 1DA-01        | 067050      |
|                               | 1-1/2                            | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 1-1/2DA-01    | 067051      |
|                               | 2                                | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 2DA-01        | 067052      |
|                               | 2-1/2                            | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 2-1/2DA-01    | 067053      |
|                               | 3                                | A (Med./Low Temp.) | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 3DA-01        | 067054      |
| H (R-22)<br>*R-407C           | 1/4                              | C (Med. Temp.)     | 1/4" X 3/8" ODF                 | Yes                     | No                | Internal  | No    | 5 Ft.         | AA 1/4HC-02       | 056315      |
|                               | 1/4                              | C (Med. Temp.)     | 1/4" X 1/2" ODF                 | Yes                     | No                | Internal  | No    | 5 Ft.         | AA 1/4HC-01       | 055932      |
|                               | 1/2                              | C (Med. Temp.)     | 1/4" X 1/2" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 1/2HC-02      | 065632      |
|                               | 1/2                              | C (Med. Temp.)     | 1/4" X 1/2" ODF                 | Yes                     | No                | Internal  | No    | 5 Ft.         | AA 1/2HC-03       | 065626      |
|                               | 1/2                              | C (Med. Temp.)     | 3/8" X 3/8" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/2HC-01       | 056547      |
|                               | 1/2                              | C (Med. Temp.)     | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 1/2HC-03      | 065633      |
|                               | 1/2                              | C (Med. Temp.)     | 3/8" X 1/2" SAE                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 1/2HC-01      | 057987      |
|                               | 1/2                              | C (Med. Temp.)     | 3/8" X 1/2" SAE                 | Yes                     | No                | Internal  | No    | 5 Ft.         | AA 1/2HC-02       | 057828      |
|                               | 1                                | C (Med. Temp.)     | 1/4" X 3/8" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 1HC-02        | 059582      |
|                               | 1                                | C (Med. Temp.)     | 1/4" X 1/2" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 1HC-05        | 065634      |
|                               | 1                                | C (Med. Temp.)     | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 1HC-06        | 065635      |
|                               | 1                                | CA (Heat Pump)     | 3/8" X 1/2" ODF                 | Yes                     | Yes               | External  | No    | 30 In.        | AACE 1HCA-01      | 063795      |
|                               | 1-1/2                            | C (Med. Temp.)     | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 1-1/2HC-04    | 064424      |
|                               | 1-1/2                            | CA (Heat Pump)     | 3/8" X 1/2" ODF                 | Yes                     | Yes               | External  | No    | 5 Ft.         | AACE 1-1/2HCA-01  | 058923      |
|                               | 1-1/2                            | CA (Heat Pump)     | 3/8" X 1/2" ODF                 | Yes                     | Yes               | External  | Yes   | 30 In.        | AACEB 1-1/2HCA-01 | 065842      |
|                               | 2                                | C (Med. Temp.)     | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 2HC-05        | 064425      |
|                               | 2                                | CA (Heat Pump)     | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 2HCA-01       | 049632      |
|                               | 2                                | CA (Heat Pump)     | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | Yes   | 30 In.        | AAEB 2HCA-02      | 059616      |
|                               | 2                                | CA (Heat Pump)     | 3/8" X 1/2" ODF                 | Yes                     | Yes               | External  | No    | 30 In.        | AACE 2HCA-02      | 063676      |
|                               | 2                                | CA (Heat Pump)     | 3/8" X 1/2" ODF                 | Yes                     | Yes               | External  | Yes   | 30 In.        | AACEB 2HCA-02     | 065959      |
|                               | 2-1/2                            | AA (Wide Range)    | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 2-1/2HAA-02   | 063648      |
|                               | 2-1/2                            | AA (Wide Range)    | 3/8" X 1/2" ODF                 | Yes                     | Yes               | External  | No    | 30 In.        | AACE 2-1/2HAA-03  | 064102      |
|                               | 2-1/2                            | AA (Wide Range)    | Chatleff                        | Yes                     | No                | External  | No    | 30 In.        | AAE 2-1/2HAA-01G  | 013938      |
|                               | 2-1/2                            | AA (Wide Range)    | Chatleff                        | Yes                     | Yes               | External  | No    | 30 In.        | AACE 2-1/2HAA-01G | 014091      |
|                               | 2-1/2                            | CA (Heat Pump)     | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 2-1/2HCA-01   | 049633      |
|                               | 3                                | C (Med. Temp.)     | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 3HC-03        | 062376      |
|                               | 3                                | C (Med. Temp.)     | 3/8" X 1/2" SAE                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 3HC-01        | 056686      |
|                               | 3                                | CA (Heat Pump)     | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 3HCA-03       | 049634      |
|                               | 3                                | CA (Heat Pump)     | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | Yes   | 30 In.        | AAEB 3HCA-02      | 059603      |
|                               | 3                                | CA (Heat Pump)     | 3/8" X 1/2" ODF                 | Yes                     | Yes               | External  | No    | 5 Ft.         | AACE 3HCA-05      | 065868      |
|                               | 3                                | CA (Heat Pump)     | 3/8" X 1/2" ODF                 | Yes                     | Yes               | External  | Yes   | 30 In.        | AACEB 3HCA-02     | 065941      |

| SYSTEM<br>REFRIGERANT<br>CODE  | CAPACITY<br>(NOMINAL<br>TONNAGE) | CHARGE CODE     | INLET X<br>OUTLET<br>CONNECTION | ADJUSTABLE<br>SUPERHEAT | INTERNAL<br>CHECK | EQUALIZER | BLEED | CAP<br>LENGTH | MODEL NUMBER   | ITEM NUMBER |
|--------------------------------|----------------------------------|-----------------|---------------------------------|-------------------------|-------------------|-----------|-------|---------------|----------------|-------------|
| H (R-22)<br>*R-407C            | 3                                | CA (Heat Pump)  | 3/8" X 5/8" ODF                 | Yes                     | Yes               | External  | No    | 30 In.        | AACE 3HCA-03   | 064428      |
|                                | 3                                | CA (Heat Pump)  | 1/2" X 5/8" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 3HCA-04    | 060643      |
|                                | 3                                | CA (Heat Pump)  | 1/2" X 5/8" ODF                 | Yes                     | Yes               | External  | No    | 5 Ft.         | AACE 3HCA-04   | 065797      |
|                                | 3                                | W100 (MOP)      | 3/8" X 5/8" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 3HW100-03  | 062412      |
|                                | 4                                | C (Med. Temp.)  | 1/2" X 5/8" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 4HC-02     | 061960      |
|                                | 4                                | CA (Heat Pump)  | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 4HCA-04    | 049638      |
|                                | 4                                | CA (Heat Pump)  | 3/8" X 1/2" ODF                 | Yes                     | Yes               | External  | No    | 5 Ft.         | AACE 4HCA-03   | 065869      |
|                                | 4                                | CA (Heat Pump)  | 3/8" X 5/8" ODF                 | Yes                     | Yes               | External  | Yes   | 30 In.        | AACEB 4HCA-01  | 065844      |
|                                | 4                                | CA (Heat Pump)  | 1/2" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 4HCA-06    | 061247      |
|                                | 4                                | CA (Heat Pump)  | 1/2" X 1/2" ODF                 | Yes                     | No                | External  | Yes   | 30 In.        | AAEB 4HCA-05   | 059605      |
|                                | 5                                | AA (Wide Range) | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 5HAA-07    | 063649      |
|                                | 5                                | AA (Wide Range) | 3/8" X 1/2" ODF                 | Yes                     | Yes               | External  | No    | 30 In.        | AACE 5HAA-04   | 064103      |
|                                | 5                                | AA (Wide Range) | 1/2" X 5/8" ODF                 | Yes                     | Yes               | External  | No    | 5 Ft.         | AACE 5HAA-05   | 065863      |
|                                | 5                                | AA (Wide Range) | Chatleff                        | Yes                     | No                | External  | No    | 30 In.        | AAE 5HAA-01G   | 013939      |
|                                | 5                                | AA (Wide Range) | Chatleff                        | Yes                     | Yes               | External  | No    | 30 In.        | AACE 5HAA-01G  | 014092      |
|                                | 5                                | C (Med. Temp.)  | 1/2" X 5/8" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 5HC-04     | 059565      |
|                                | 5                                | C (Med. Temp.)  | 5/8" X 7/8" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 5HC-05     | 061805      |
|                                | 5                                | CA (Heat Pump)  | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 5HCA-03    | 054024      |
|                                | 5                                | CA (Heat Pump)  | 1/2" X 1/2" ODF                 | Yes                     | No                | External  | Yes   | 30 In.        | AAEB 5HCA-04   | 059607      |
|                                | 5                                | CA (Heat Pump)  | 1/2" X 1/2" ODF                 | Yes                     | Yes               | External  | No    | 30 In.        | AACE 5HCA-03   | 063811      |
|                                | 5                                | CA (Heat Pump)  | 1/2" X 5/8" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 5HCA-04    | 059683      |
|                                | 5                                | W100 (MOP)      | 3/8" X 5/8" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 5HW100-05  | 062088      |
| M (R-134a)<br>*R-12            | 1/8                              | C (Med. Temp.)  | 1/4" X 3/8" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/8MC-03    | 066030      |
|                                | 1/8                              | C (Med. Temp.)  | 1/4" X 1/2" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/8MC-02    | 065821      |
|                                | 1/4                              | C (Med. Temp.)  | 1/4" X 3/8" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 1/4MC-01   | 066486      |
|                                | 1/4                              | C (Med. Temp.)  | 1/4" X 3/8" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/4MC-05    | 062051      |
|                                | 1/4                              | C (Med. Temp.)  | 1/4" X 1/2" ODF                 | Yes                     | No                | Internal  | No    | 5 Ft.         | AA 1/4MC-08    | 065623      |
|                                | 1/2                              | C (Med. Temp.)  | 1/4" X 3/8" SAE                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/2MC-03    | 058985      |
|                                | 1/2                              | C (Med. Temp.)  | 1/4" X 1/2" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 1/2MC-04   | 065630      |
|                                | 1/2                              | C (Med. Temp.)  | 1/4" X 1/2" ODF                 | Yes                     | No                | Internal  | No    | 5 Ft.         | AA 1/2MC-07    | 065624      |
|                                | 1/2                              | Z (Low Temp.)   | 1/4" X 3/8" SAE                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/2MZ-01    | 058986      |
|                                | 1                                | C (Med. Temp.)  | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 1MC-03     | 065631      |
|                                | 1                                | C (Med. Temp.)  | 3/8" X 1/2" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1MC-02      | 065776      |
| S (R-404A)<br>*R-502<br>*R-507 | 1/8                              | C (Med. Temp.)  | 1/4" X 3/8" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/8SC-03    | 065921      |
|                                | 1/4                              | C (Med. Temp.)  | 1/4" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 1/4SC-04   | 066422      |
|                                | 1/4                              | C (Med. Temp.)  | 1/4" X 1/2" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/4SC-03    | 063503      |
|                                | 1/4                              | W45 (MOP)       | 1/4" X 3/8" ODF                 | Yes                     | No                | Internal  | No    | 5 Ft.         | AA 1/4SW45-02  | 065676      |
|                                | 1/4                              | W45 (MOP)       | 1/4" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 1/4SW45-01 | 066508      |
|                                | 1/4                              | Z (Low Temp.)   | 1/4" X 3/8" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/4SZ-05    | 065202      |
|                                | 1/4                              | Z (Low Temp.)   | 1/4" X 3/8" ODF                 | Yes                     | No                | Internal  | No    | 5 Ft.         | AA 1/4SZ-06    | 065675      |
|                                | 1/4                              | Z (Low Temp.)   | 1/4" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 1/4SZ-01   | 066435      |
|                                | 1/2                              | C (Med. Temp.)  | 1/4" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 1/2SC-04   | 066423      |
|                                | 1/2                              | C (Med. Temp.)  | 1/4" X 1/2" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/2SC-02    | 063504      |
|                                | 1/2                              | C (Med. Temp.)  | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 1/2SC-03   | 066085      |
|                                | 1/2                              | W45 (MOP)       | 1/4" X 1/2" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 1/2SW45-01 | 065636      |
|                                | 1/2                              | W45 (MOP)       | 1/4" X 1/2" ODF                 | Yes                     | No                | Internal  | No    | 5 Ft.         | AA 1/2SW45-01  | 065685      |
|                                | 1/2                              | W45 (MOP)       | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 1/2SW45-02 | 065688      |
|                                | 1/2                              | Z (Low Temp.)   | 1/4" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 1/2SZ-04   | 066436      |
|                                | 1/2                              | Z (Low Temp.)   | 1/4" X 1/2" ODF                 | Yes                     | No                | Internal  | No    | 5 Ft.         | AA 1/2SZ-06    | 065682      |
|                                | 1/2                              | Z (Low Temp.)   | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 1/2SZ-02   | 065687      |
|                                | 1/2                              | Z (Low Temp.)   | 3/8" X 1/2" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 1/2SZ-05    | 063925      |
|                                | 3/4                              | C (Med. Temp.)  | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 5 Ft.         | AAE 3/4SC-02   | 066086      |
|                                | 3/4                              | C (Med. Temp.)  | 3/8" X 1/2" ODF                 | Yes                     | No                | Internal  | No    | 30 In.        | AA 3/4SC-01    | 066200      |
|                                | 3/4                              | W45 (MOP)       | 3/8" X 1/2" ODF                 | Yes                     | No                | External  | No    | 30 In.        | AAE 3/4SW45-01 | 066509      |

| SYSTEM REFRIGERANT CODE        | CAPACITY (NOMINAL TONNAGE) | CHARGE CODE        | INLET X OUTLET CONNECTION | ADJUSTABLE SUPERHEAT | INTERNAL CHECK | EQUALIZER | BLEED | CAP LENGTH | MODEL NUMBER     | ITEM NUMBER |
|--------------------------------|----------------------------|--------------------|---------------------------|----------------------|----------------|-----------|-------|------------|------------------|-------------|
| S (R-404A)<br>*R-502<br>*R-507 | 3/4                        | W45 (MOP)          | 3/8" X 1/2" ODF           | Yes                  | No             | Internal  | No    | 30 In.     | AA 3/4SW45-01    | 065686      |
|                                | 3/4                        | Z (Low Temp.)      | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 30 In.     | AAE 3/4SZ-02     | 066437      |
|                                | 3/4                        | Z (Low Temp.)      | 3/8" X 1/2" ODF           | Yes                  | No             | Internal  | No    | 30 In.     | AA 3/4SZ-02      | 065149      |
|                                | 1                          | C (Med. Temp.)     | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 1SC-03       | 066087      |
|                                | 1                          | C (Med. Temp.)     | 3/8" X 1/2" ODF           | Yes                  | No             | Internal  | No    | 30 In.     | AA 1SC-03        | 066201      |
|                                | 1                          | W 45 (MOP)         | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 1SW45-01     | 065637      |
|                                | 1                          | Z (Low Temp.)      | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 1SZ-02       | 065183      |
|                                | 1-1/4                      | C (Med. Temp.)     | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 1-1/4SC-03   | 066081      |
|                                | 1-1/4                      | W45 (MOP)          | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 1-1/4SW45-01 | 066079      |
|                                | 1-1/4                      | Z (Low Temp.)      | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 1-1/4SZ-02   | 066080      |
|                                | 1-1/2                      | C (Med. Temp.)     | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 1-1/2SC-01   | 066448      |
|                                | 1-1/2                      | W45 (MOP)          | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 1-1/2SW45-01 | 065698      |
|                                | 1-1/2                      | Z (Low Temp.)      | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 1-1/2SZ-01   | 065697      |
|                                | 2                          | C (Med. Temp.)     | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 30 In.     | AAE 2SC-03       | 065330      |
|                                | 2                          | W45 (MOP)          | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 2SW45-01     | 065690      |
|                                | 2                          | Z (Low Temp.)      | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 2SZ-03       | 065689      |
|                                | 2-1/4                      | C (Med. Temp.)     | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 2-1/4SC-02   | 066084      |
|                                | 2-1/4                      | W45 (MOP)          | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 2-1/4SW45-01 | 066082      |
|                                | 2-1/4                      | Z (Low Temp.)      | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 2-1/4SZ-01   | 066083      |
|                                | 2-1/2                      | W45 (MOP)          | 1/2" X 5/8" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 2-1/2SW45-01 | 065148      |
|                                | 2-1/2                      | Z (Low Temp.)      | 1/2" X 5/8" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 2-1/2SZ-01   | 065691      |
| T (R-290)                      | 3                          | C (Med. Temp.)     | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 3SC-01       | 066510      |
|                                | 3                          | W45 (MOP)          | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 3SW45-01     | 065693      |
|                                | 3                          | Z (Low Temp.)      | 3/8" X 1/2" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | AAE 3SZ-01       | 065692      |
|                                | 1/5                        | A (Med./Low Temp.) | 1/4" X 3/8" ODF           | Yes                  | No             | Internal  | No    | 30 In.     | AA 1/5TA-02      | 066987      |
|                                | 1/5                        | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | Yes                  | No             | Internal  | No    | 30 In.     | AA 1/5TA-01      | 066941      |
|                                | 1/4                        | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | Yes                  | No             | Internal  | No    | 30 In.     | AA 1/4TA-01      | 066942      |
|                                | 1/2                        | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | Yes                  | No             | Internal  | No    | 30 In.     | AA 1/2TA-01      | 066943      |
|                                | 1                          | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | Yes                  | No             | Internal  | No    | 30 In.     | AA 1TA-01        | 066944      |
|                                | 1-1/2                      | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | Yes                  | No             | Internal  | No    | 30 In.     | AA 1-1/2TA-01    | 066945      |

\* Valve capacity is for the first refrigerant listed. To determine the capacity for additional refrigerants listed, consult the Nominal Capacity Tables for Interchangeable Refrigerants.

## A-SERIES PARTS LIST

| DESCRIPTION                                               | MODEL NUMBER | ITEM NUMBER |
|-----------------------------------------------------------|--------------|-------------|
| A-Series Thermostatic Expansion Valve Chatleff Gasket Kit | KG-10045     | 066031      |

## NOMINAL CAPACITY TABLE FOR INTERCHANGEABLE REFRIGERANTS IN TONS (KW)

| R-134a      | R-12        | R-404A / R-507 | R-502       | R-22 / R-290 | R-407C / R-407A |
|-------------|-------------|----------------|-------------|--------------|-----------------|
| 1/8 (0.4)   | —           | 1/8 (0.4)      | —           | 1/5 (0.7)    | 1/5 (0.7)       |
| 1/4 (0.9)   | 1/8 (0.4)   | 1/4 (0.9)      | 1/8 (0.4)   | 1/4 (0.9)    | 1/4 (0.9)       |
| 1/2 (1.8)   | 1/4 (0.9)   | 1/2 (1.8)      | 1/4 (0.9)   | 1/2 (1.8)    | 1/2 (1.8)       |
| 3/4 (2.6)   | 1/2 (1.8)   | 3/4 (2.6)      | 1/2 (1.8)   | 1 (3.5)      | 1 (3.5)         |
| 1 (3.5)     | 1 (3.5)     | 1 (3.5)        | 1 (3.5)     | 1-1/2 (5.3)  | 1-1/4 (4.4)     |
| 1-1/2 (5.3) | —           | 1-1/4 (4.4)    | —           | 2 (7)        | 2 (7)           |
| 2 (7)       | 1-1/2 (5.3) | 2 (7)          | 1-1/2 (5.3) | 2-1/2 (8.8)  | 2-1/2 (8.8)     |
| 2-1/2 (8.8) | 2 (7)       | 2-1/4 (7.2)    | 2 (7)       | 3 (10.6)     | 3-1/4 (11.4)    |
| 3 (10.6)    | 2-1/2 (8.8) | 2-1/2 (8.8)    | 2-1/2 (8.8) | 4 (14.1)     | 4 (14.1)        |
| 4 (14.1)    | 3 (10.6)    | 3-1/2 (12.3)   | 3 (10.6)    | 5 (17.6)     | 5-1/4 (18.5)    |

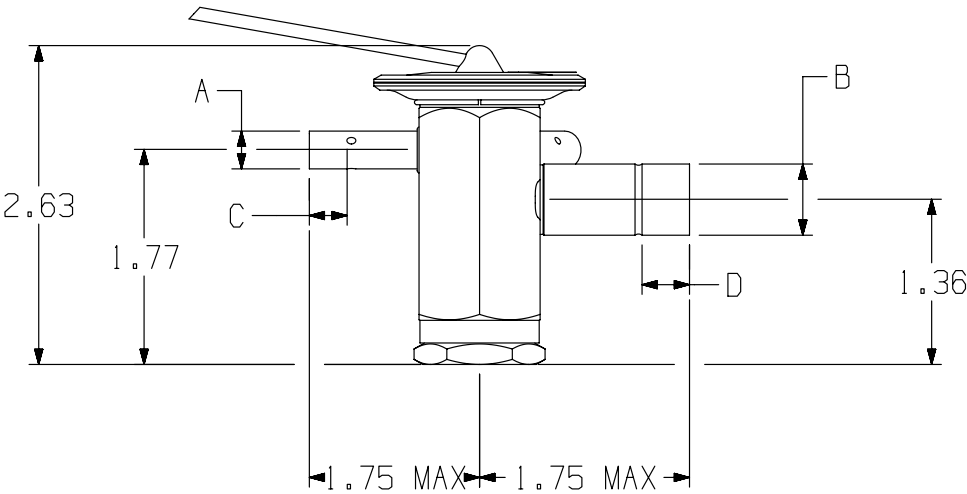
All capacities shown are at 100°F condensing, 40°F evaporator temperature.  
See Extended Capacity Tables for ratings at a wide range of conditions per AHRI standard 750.

DIMENSIONAL DATA (IN)

| CONNECTION SIZE |         | A ± .002 | B ± .002 | C MIN | D MIN | E    | F    |
|-----------------|---------|----------|----------|-------|-------|------|------|
| INLET           | OUTLET  |          |          |       |       |      |      |
| 1/4 ODF         | 3/8 ODF | 0.25     | 0.38     | 0.32  | 0.32  | 1.70 | 1.73 |
| 3/8 ODF         | 3/8 ODF | 0.38     | 0.38     | 0.32  | 0.32  | 1.70 | 1.73 |
| 3/8 ODF         | 1/2 ODF | 0.38     | 0.50     | 0.32  | 0.38  | 1.73 | 1.73 |
| 1/2 ODF         | 1/2 ODF | 0.50     | 0.50     | 0.38  | 0.38  | 1.73 | 1.73 |
| 1/2 ODF         | 5/8 ODF | 0.63     | 0.61     | 0.38  | 0.50  | 1.75 | 1.75 |

For adjustable valves, add 0.78 to body length.

DIMENSIONAL DIAGRAM



Capacity  
Tables (Tons)



AFAE 1/4SC-01

## AFA SERIES THERMOSTATIC EXPANSION VALVES

The AFA Series is designed for air conditioning and commercial refrigeration applications. It is ideal for applications requiring compact size combined with stable and accurate control over wide load and evaporator temperature ranges.

### FEATURES

- Stainless steel power element prevents corrosion and valve failure
- External superheat adjustment
- Replaceable inlet strainer
- Angle configuration SAE connections only
- Wrench flats on inlet and outlet
- External or internal equalizer

### SPECIFICATIONS

Maximum Working Pressure..... 700 psig (48 bar)  
 UR/CUR File Number ..... SA5312  
 Canadian CRN ..... 0C21506.513467890YTN

### MODEL NUMBER NOMENCLATURE - Example: AFAE 1/2HC-01

| SERIES                             | SUPERHEAT ADJUSTMENT | EQUALIZER                           | CAPACITY               | SYSTEM REFRIGERANT CODE                                                                                | CHARGE CODE                                                                                        | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|------------------------------------|----------------------|-------------------------------------|------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| AF                                 | A                    | E                                   | 1/2                    | H                                                                                                      | C                                                                                                  | -01                   |                                             |                                              |
| Hermetic Design, Flare Connections | A = Adjustable       | E = External<br>(Omit for Internal) | Nominal Rating in Tons | F = R-12<br>H = R-22<br>M = R-134a<br>N = R-407C<br>P = R-507<br>R = R-502<br>S = R-404A<br>Z = R-410A | AA = Wide Range<br>C = Medium Temp.<br>CA = Heat Pump<br>W(MOP) = Press. Limiting<br>Z = Low Temp. | -01 Thru -99          | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### AFA SERIES THERMOSTATIC EXPANSION VALVES (Body Style Angle 90°)

| SYSTEM REFRIGERANT CODE | CAPACITY (NOMINAL TONNAGE) | CHARGE CODE    | INLET X OUTLET CONNECTION | ADJUSTABLE SUPERHEAT | EQUALIZER | CAP LENGTH | MODEL NUMBER    | ITEM NUMBER |
|-------------------------|----------------------------|----------------|---------------------------|----------------------|-----------|------------|-----------------|-------------|
| F (R-12)<br>*R-134a     | 1/4                        | W15(MOP)       | 1/4" X 3/8"-1/2" SAE      | Yes                  | Internal  | 5 Ft.      | AFA 1/4FW15-01  | 049373      |
|                         | 1/4                        | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE      | Yes                  | External  | 5 Ft.      | AFAE 1/4FC-01   | 054240      |
|                         | 1/4                        | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE      | Yes                  | Internal  | 30 In.     | AFA 1/4FC-03    | 057047      |
|                         | 1/4                        | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE      | Yes                  | Internal  | 5 Ft.      | AFA 1/4FC-01    | 047753      |
|                         | 1/4                        | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE      | Yes                  | Internal  | 5 Ft.      | AFA 1/4FC-02    | 054258      |
|                         | 1/2                        | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE      | Yes                  | External  | 30 In.     | AFAE 1/2FC-03   | 057023      |
|                         | 1/2                        | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE      | Yes                  | Internal  | 30 In.     | AFA 1/2FC-04    | 057028      |
|                         | 1/2                        | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE      | Yes                  | Internal  | 5 Ft.      | AFA 1/2FC-01    | 047752      |
|                         | 1/2                        | Z (Low Temp.)  | 1/4" X 3/8"-1/2" SAE      | Yes                  | Internal  | 5 Ft.      | AFA 1/2FZ-01    | 048685      |
|                         | 1/2                        | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE      | Yes                  | Internal  | 30 In.     | AFA 1/2FC-03    | 057027      |
|                         | 1/2                        | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE      | Yes                  | Internal  | 5 Ft.      | AFA 1/2FC-02    | 054226      |
|                         | 1                          | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE      | Yes                  | External  | 5 Ft.      | AFAE 1FC-02     | 059563      |
|                         | 1                          | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE      | Yes                  | External  | 30 In.     | AFAE 1FC-01     | 057048      |
|                         | 1                          | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE      | Yes                  | Internal  | 30 In.     | AFA 1FC-02      | 057029      |
|                         | 1                          | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE      | Yes                  | Internal  | 5 Ft.      | AFA 1FC-01      | 047758      |
|                         | 1-1/2                      | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE      | Yes                  | External  | 30 In.     | AFAE 1-1/2FC-02 | 061152      |
|                         | 1-1/2                      | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE      | Yes                  | External  | 5 Ft.      | AFAE 1-1/2FC-01 | 052715      |

| SYSTEM<br>REFRIGERANT<br>CODE  | CAPACITY<br>(NOMINAL<br>TONNAGE) | CHARGE CODE    | INLET X OUTLET<br>CONNECTION | ADJUSTABLE<br>SUPERHEAT | EQUALIZER | CAP<br>LENGTH | MODEL NUMBER      | ITEM<br>NUMBER |
|--------------------------------|----------------------------------|----------------|------------------------------|-------------------------|-----------|---------------|-------------------|----------------|
| H (R-22)<br>*R-407C            | 1/4                              | C (Med. Temp.) | 1/4" X 3/8-1/2" SAE          | Yes                     | Internal  | 5 Ft.         | AFA 1/4HC-02      | 056441         |
|                                | 1/4                              | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE         | Yes                     | Internal  | 30 In.        | AFA 1/4HC-03      | 057261         |
|                                | 1/4                              | Z (Low Temp.)  | 1/4" X 3/8"-1/2" SAE         | Yes                     | Internal  | 30 In.        | AFA 1/4HZ-01      | 059575         |
|                                | 1/2                              | C (Med. Temp.) | 1/4" X 3/8-1/2" SAE          | Yes                     | Internal  | 5 Ft.         | AFA 1/2HC-01      | 054228         |
|                                | 1/2                              | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE         | Yes                     | External  | 5 Ft.         | AFAE 1/2HC-01     | 054243         |
|                                | 1/2                              | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE         | Yes                     | Internal  | 30 In.        | AFA 1/2HC-03      | 057260         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | Internal  | 5 Ft.         | AFA 1/2HC-02      | 054229         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | Internal  | 5 Ft.         | AFAE 1/2HC-02     | 054244         |
|                                | 1                                | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE         | Yes                     | External  | 5 Ft.         | AFAE 1HC-01       | 054245         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | External  | 5 Ft.         | AFAE 1HC-02       | 054246         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | Internal  | 5 Ft.         | AFA 1HC-01        | 054231         |
|                                | 1                                | Z (Low Temp.)  | 3/8" X 3/8"-1/2" SAE         | Yes                     | External  | 5 Ft.         | AFAE 1HZ-01       | 057163         |
|                                | 1                                | Z (Low Temp.)  | 3/8" X 3/8"-1/2" SAE         | Yes                     | Internal  | 5 Ft.         | AFA 1HZ-01        | 057555         |
|                                | 1-1/2                            | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | External  | 5 Ft.         | AFAE 1-1/2HC-01   | 054247         |
|                                | 1-1/2                            | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | Internal  | 5 Ft.         | AFA 1-1/2HC-01    | 054232         |
|                                | 1-1/2                            | Z (Low Temp.)  | 3/8" X 3/8"-1/2" SAE         | Yes                     | External  | 5 Ft.         | AFAE 1-1/2HZ-01   | 057950         |
|                                | 2                                | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | External  | 5 Ft.         | AFAE 2HC-01       | 054248         |
|                                | 2                                | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | Internal  | 5 Ft.         | AFA 2HC-01        | 054233         |
|                                | 2                                | Z (Low Temp.)  | 3/8" X 3/8"-1/2" SAE         | Yes                     | External  | 5 Ft.         | AFAE 2HZ-01       | 057951         |
|                                | 3                                | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | External  | 5 Ft.         | AFAE 3HC-01       | 054249         |
|                                | 3                                | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | Internal  | 5 Ft.         | AFA 3HC-01        | 054234         |
|                                | 3                                | Z (Low Temp.)  | 3/8" X 3/8"-1/2" SAE         | Yes                     | External  | 5 Ft.         | AFAE 3HZ-01       | 057556         |
|                                | 5                                | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | External  | 5 Ft.         | AFAE 5HC-01       | 054250         |
|                                | 5                                | Z (Low Temp.)  | 3/8" X 3/8"-1/2" SAE         | Yes                     | External  | 5 Ft.         | AFAE 5HZ-01       | 058484         |
| M (R-134a)<br>*R-12            | 1/4                              | W55 (MOP)      | 1/4" X 3/8-1/2" SAE          | Yes                     | Internal  | 30 In.        | AFA 1/4MW55-01    | 058913         |
|                                | 1/4                              | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE         | Yes                     | Internal  | 30 In.        | AFA 1/4MC-01      | 057607         |
|                                | 1/4                              | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE         | Yes                     | Internal  | 5 Ft.         | AFA 1/4MC-02      | 058536         |
|                                | 1/4                              | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | External  | 30 In.        | AFAE 1/4MC-01     | 063898         |
|                                | 1/2                              | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE         | Yes                     | External  | 30 In.        | AFAE 1/2MC-01     | 057853         |
|                                | 1/2                              | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE         | Yes                     | Internal  | 30 In.        | AFA 1/2MC-01      | 057606         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | External  | 30 In.        | AFAE 1/2MC-02     | 061904         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | Internal  | 30 In.        | AFA 1/2MC-02      | 059625         |
|                                | 1                                | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE         | Yes                     | Internal  | 30 In.        | AFA 1MC-01        | 057605         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | External  | 30 In.        | AFAE 1MC-01       | 057613         |
|                                | 1-1/2                            | C (Med. Temp.) | 3/8" X 3/8-1/2" SAE          | Yes                     | Internal  | 5 Ft.         | AFA 1-1/2MC-01    | 062156         |
|                                | 1-1/2                            | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | External  | 30 In.        | AFAE 1-1/2MC-01   | 060865         |
|                                | 2                                | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | External  | 30 In.        | AFAE 2MC-01       | 061906         |
|                                | 3                                | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE         | Yes                     | External  | 30 In.        | AFAE 3MC-01       | 061908         |
| R (R-502)<br>*R-404A<br>*R-507 | 1/4                              | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE         | Yes                     | Internal  | 5 Ft.         | AFA 1/4RC-01      | 049871         |
|                                | 1/2                              | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE         | Yes                     | Internal  | 5 Ft.         | AFA 1/2RC-01      | 048431         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 3/8-1/2" SAE          | Yes                     | External  | 5 Ft.         | AFAE 1/2RC-01     | 054254         |
|                                | 1/2                              | W45 (MOP)      | 3/8" X 3/8-1/2" SAE          | Yes                     | External  | 30 In.        | AFAE 1/2RW45-01   | 058925         |
|                                | 1-1/2                            | C (Med. Temp.) | 3/8" X 3/8-1/2" SAE          | Yes                     | External  | 5 Ft.         | AFAE 1-1/2RC-01   | 054255         |
|                                | 1-1/2                            | W45 (MOP)      | 3/8" X 3/8-1/2" SAE          | Yes                     | External  | 5 Ft.         | AFAE 1-1/2RW45-01 | 049257         |
|                                | 1-1/2                            | Z (Low Temp.)  | 3/8" X 3/8-1/2" SAE          | Yes                     | External  | 5 Ft.         | AFAE 1-1/2RZ-01   | 049360         |
| S (R-404A)<br>*R-502<br>*R-507 | 1/4                              | C (Med. Temp.) | 1/4" X 3/8-1/2" SAE          | Yes                     | External  | 30 In.        | AFAE 1/4SC-01     | 066427         |
|                                | 1/4                              | C (Med. Temp.) | 1/4" X 3/8"-1/2" SAE         | Yes                     | Internal  | 5 Ft.         | AFA 1/4SC-01      | 064072         |
|                                | 1/4                              | W45 (MOP)      | 1/4" X 3/8"-1/2" SAE         | Yes                     | External  | 30 In.        | AFAE 1/4SW45-01   | 066502         |
|                                | 1/4                              | W45 (MOP)      | 1/4" X 3/8"-1/2" SAE         | Yes                     | Internal  | 30 In.        | AFA 1/4SW45-01    | 066498         |
|                                | 1/4                              | Z (Low Temp.)  | 1/4" X 3/8"-1/2" SAE         | Yes                     | External  | 30 In.        | AFAE 1/4SZ-01     | 066442         |
|                                | 1/4                              | Z (Low Temp.)  | 1/4" X 3/8"-1/2" SAE         | Yes                     | Internal  | 30 In.        | AFA 1/4SZ-01      | 066438         |
|                                | 1/2                              | C (Med. Temp.) | 1/4" X 3/8-1/2" SAE          | Yes                     | External  | 30 In.        | AFAE 1/2SC-02     | 066428         |
|                                | 1/2                              | C (Med. Temp.) | 1/4" X 3/8-1/2" SAE          | Yes                     | Internal  | 30 In.        | AFA 1/2SC-01      | 066424         |
|                                | 1/2                              | W45 (MOP)      | 1/4" X 3/8"-1/2" SAE         | Yes                     | Internal  | 30 In.        | AFA 1/2SW45-01    | 066499         |



| SYSTEM REFRIGERANT CODE        | CAPACITY (NOMINAL TONNAGE) | CHARGE CODE    | INLET X OUTLET CONNECTION | ADJUSTABLE SUPERHEAT | EQUALIZER | CAP LENGTH | MODEL NUMBER    | ITEM NUMBER |
|--------------------------------|----------------------------|----------------|---------------------------|----------------------|-----------|------------|-----------------|-------------|
| S (R-404A)<br>*R-502<br>*R-507 | 1/2                        | W45 (MOP)      | 3/8" X 3/8"-1/2" SAE      | Yes                  | External  | 30 In.     | AFAE 1/2SW45-01 | 066453      |
|                                | 1/2                        | W45 (MOP)      | 1/4" X 3/8-1/2" SAE       | Yes                  | External  | 30 In.     | AFAE 1/2SW45-02 | 066503      |
|                                | 1/2                        | Z (Low Temp.)  | 1/4" X 3/8"-1/2" SAE      | Yes                  | External  | 30 In.     | AFAE 1/2SZ-02   | 066443      |
|                                | 1/2                        | Z (Low Temp.)  | 1/4" X 3/8"-1/2" SAE      | Yes                  | Internal  | 30 In.     | AFA 1/2SZ-01    | 066439      |
|                                | 3/4                        | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE      | Yes                  | Internal  | 30 In.     | AFA 3/4SC-01    | 066425      |
|                                | 3/4                        | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE      | Yes                  | External  | 30 In.     | AFAE 3/4SC-01   | 061911      |
|                                | 3/4                        | W45 (MOP)      | 3/8" X 3/8"-1/2" SAE      | Yes                  | External  | 30 In.     | AFAE 3/4SW45-01 | 066504      |
|                                | 3/4                        | W45 (MOP)      | 3/8" X 3/8"-1/2" SAE      | Yes                  | Internal  | 30 In.     | AFA 3/4SW45-01  | 066500      |
|                                | 3/4                        | Z (Low Temp.)  | 1/4" X 3/8"-1/2" SAE      | Yes                  | External  | 30 In.     | AFAE 3/4SZ-01   | 066444      |
|                                | 3/4                        | Z (Low Temp.)  | 3/8" X 3/8"-1/2" SAE      | Yes                  | Internal  | 30 In.     | AFA 3/4SZ-01    | 066440      |
|                                | 1                          | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE      | Yes                  | Internal  | 30 In.     | AFA 1SC-01      | 066426      |
|                                | 1                          | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE      | Yes                  | External  | 30 In.     | AFAE 1SC-01     | 061912      |
|                                | 1                          | W45 (MOP)      | 3/8" X 3/8"-1/2" SAE      | Yes                  | External  | 30 In.     | AFAE 1SW45-01   | 066452      |
|                                | 1                          | W45 (MOP)      | 3/8" X 3/8"-1/2" SAE      | Yes                  | Internal  | 5 Ft.      | AFA 1SW45-01    | 066501      |
|                                | 1                          | Z (Low Temp.)  | 1/4" X 3/8"-1/2" SAE      | Yes                  | External  | 30 In.     | AFAE 1SZ-02     | 066445      |
|                                | 1                          | Z (Low Temp.)  | 3/8" X 3/8"-1/2" SAE      | Yes                  | External  | 5 Ft.      | AFAE 1SZ-01     | 063464      |
|                                | 1                          | Z (Low Temp.)  | 3/8" X 3/8"-1/2" SAE      | Yes                  | Internal  | 30 In.     | AFA 1SZ-01      | 066441      |
|                                | 1-1/2                      | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE      | Yes                  | External  | 5 Ft.      | AFAE 1-1/2SC-01 | 066454      |
|                                | 1-1/2                      | Z (Low Temp.)  | 3/8" X 3/8"-1/2" SAE      | Yes                  | External  | 5 Ft.      | AFAE 1-1/2SZ-01 | 063465      |
|                                | 2                          | C (Med. Temp.) | 3/8" X 3/8"-1/2" SAE      | Yes                  | External  | 30 In.     | AFAE 2SC-01     | 061914      |
|                                | 2                          | W45 (MOP)      | 3/8" X 3/8"-1/2" SAE      | Yes                  | External  | 5 Ft.      | AFAE 2SW45-01   | 066505      |
|                                | 2                          | Z (Low Temp.)  | 3/8" X 3/8"-1/2" SAE      | Yes                  | External  | 5 Ft.      | AFAE 2SZ-01     | 061646      |

\* Valve capacity is for the first refrigerant listed. To determine the capacity for additional refrigerants listed, consult the Nominal Capacity Tables for Interchangeable Refrigerants.

### NOMINAL CAPACITY TABLE FOR INTERCHANGEABLE REFRIGERANTS IN TONS (KW)

| R-134a      | R-12        | R-404 / R-507 | R-502       | R-22        | R-407C       |
|-------------|-------------|---------------|-------------|-------------|--------------|
| 1/8 (0.4)   | —           | 1/8 (0.4)     | —           | 1/5 (0.7)   | 1/5 (0.7)    |
| 1/4 (0.9)   | 1/8 (0.4)   | 1/4 (0.9)     | 1/8 (0.4)   | 1/4 (0.9)   | 1/4 (0.9)    |
| 1/2 (1.8)   | 1/4 (0.9)   | 1/2 (1.8)     | 1/4 (0.9)   | 1/2 (1.8)   | 1/2 (1.8)    |
| 3/4 (2.6)   | 1/2 (1.8)   | 3/4 (2.6)     | 1/2 (1.8)   | 1 (3.5)     | 1 (3.5)      |
| 1 (3.5)     | 1 (3.5)     | 1 (3.5)       | 1 (3.5)     | 1-1/2 (5.3) | 1-1/4 (4.4)  |
| 1-1/2 (5.3) | —           | 1-1/4 (4.4)   | —           | 2 (7)       | 2 (7)        |
| 2 (7)       | 1-1/2 (5.3) | 2 (7)         | 1-1/2 (5.3) | 2-1/2 (8.8) | 2-1/2 (8.8)  |
| 2-1/2 (8.8) | 2 (7)       | 2-1/4 (7.2)   | 2 (7)       | 3 (10.6)    | 3-1/4 (11.4) |
| 3 (10.6)    | 2-1/2 (8.8) | 2-1/2 (8.8)   | 2-1/2 (8.8) | 4 (14.1)    | 4 (14.1)     |
| 4 (14.1)    | 3 (10.6)    | 3-1/2 (12.3)  | 3 (10.6)    | 5 (17.6)    | 5-1/4 (18.5) |

All capacities shown are at 100°F condensing, 40°F evaporator temperature.  
See Extended Capacity Tables for ratings at a wide range of conditions per AHRI standard 750.



Capacity  
Tables (Tons)





## NXT SERIES THERMOSTATIC EXPANSION VALVES

The Copeland NXT Series is a balanced ported valve designed for high efficiency R-410A air conditioning and heat pump applications. NXT Series valves operate over a wide range of conditions and applications offering excellent performance, superior reliability, and unparalleled valve life.

### FEATURES

- Precision superheat control optimized for R-410A systems
- Stainless steel sensing bulb and capillary tubing prevents corrosion and provides durability
- Enhanced power element design offers extended life
- Laser etched identification markings for permanent legibility
- Hermetic leak-free construction of all joints
- Internal check models provide bi-directional capability for heat pump applications
- Balanced port construction
- External equalizer is standard, other configurations available
- Optional screens on ODF inlet connections
- Available in adjustable or non-adjustable superheat

### SPECIFICATIONS

Maximum Working Pressure..... 700 psig (48 bar)  
 R-410A Operating Range..... -20°F to +50°F (-29° to 10°C)  
 UR/CUR File Number ..... SA5312  
 Canadian CRN ..... 0C20308.5C

### MODEL NUMBER NOMENCLATURE - Example: NAE 3ZAA-17

| SERIES                         | BODY TYPE                                                                                                                                                                                                                    | EQUALIZER                 | CAPACITY                     | SYSTEM REFRIGERANT CODE | CHARGE CODE     | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                             | PACK TYPE                                           |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|------------------------------|-------------------------|-----------------|-----------------------|----------------------------------------------|-----------------------------------------------------|
| N                              | A                                                                                                                                                                                                                            | E                         | 3                            | Z                       | AA              | -17                   |                                              |                                                     |
| NXT Series<br>Balanced<br>Port | A = Adjustable Superheat, With Check, Straight-Thru<br>B = Adjustable Superheat, No Check, Straight-Thru<br>C = Non-Adjustable Superheat, With Check, Straight-Thru<br>D = Non-Adjustable Superheat, No Check, Straight-Thru | E = External<br>Equalizer | Nominal<br>Rating in<br>Tons | Z = R-410A              | AA = Wide Range | -01 Thru -999         | G = Cust. Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for<br>Individual Pack) |

### NXT SERIES THERMOSTATIC EXPANSION VALVES (Body Style Straight Thru)

| SYSTEM REFRIGERANT CODE | CAPACITY (NOMINAL TONNAGE) | CHARGE CODE     | INLET X OUTLET CONNECTION | ADJUSTABLE SUPERHEAT | INTERNAL CHECK | EQUALIZER          | BLEED | CAP LENGTH | MODEL NUMBER    | ITEM NUMBER |
|-------------------------|----------------------------|-----------------|---------------------------|----------------------|----------------|--------------------|-------|------------|-----------------|-------------|
| Z(R-410A)               | 1/2                        | AA (Wide Range) | 3/8" X 3/8" ODF           | Yes                  | No             | 30" With Angle Cut | 15%   | 30 In.     | NBE 1/2ZAA-05   | 091065      |
|                         | 1/2                        | AA (Wide Range) | 3/8" X 3/8" ODF           | Yes                  | No             | 1/8" Cap           | No    | 30 In.     | NBE 1/2ZAA-04   | 091064      |
|                         | 1/2                        | AA (Wide Range) | 3/8" X 1/2" ODF           | Yes                  | No             | 1/4" ODF           | No    | 30 In.     | NBE 1/2ZAA-06   | 091066      |
|                         | 1                          | AA (Wide Range) | Chatleff                  | Yes                  | Yes            | 5 Ft.*             | No    | 5 Ft.      | NAE 1ZAA-07     | 091002      |
|                         | 1                          | AA (Wide Range) | 3/8" X 1/2" ODF           | Yes                  | Yes            | 1/4" ODF           | 15%   | 5 Ft.      | NAE 1ZAA-06     | 091001      |
|                         | 1                          | AA (Wide Range) | 3/8" X 1/2" ODF           | Yes                  | No             | 1/4" ODF           | 15%   | 5 Ft.      | NBE 1ZAA-09     | 091005      |
|                         | 1                          | AA (Wide Range) | 3/8" X 1/2" ODF           | Yes                  | Yes            | 1/4" ODF           | No    | 5 Ft.      | NAE 1ZAA-05     | 091000      |
|                         | 1                          | AA (Wide Range) | 3/8" X 1/2" ODF           | Yes                  | No             | 1/4" ODF           | No    | 5 Ft.      | NBE 1ZAA-08     | 091004      |
|                         | 1-1/2                      | AA (Wide Range) | Chatleff                  | Yes                  | Yes            | 5 Ft.*             | No    | 5 Ft.      | NAE 1-1/2ZAA-11 | 091008      |
|                         | 1-1/2                      | AA (Wide Range) | 3/8" X 1/2" ODF           | Yes                  | Yes            | 1/4" ODF           | 15%   | 5 Ft.      | NAE 1-1/2ZAA-10 | 091007      |
|                         | 1-1/2                      | AA (Wide Range) | 3/8" X 1/2" ODF           | Yes                  | No             | 1/4" ODF           | 15%   | 5 Ft.      | NBE 1-1/2ZAA-13 | 091011      |
|                         | 1-1/2                      | AA (Wide Range) | 3/8" X 1/2" ODF           | Yes                  | Yes            | 1/4" ODF           | No    | 5 Ft.      | NAE 1-1/2ZAA-09 | 091006      |
|                         | 1-1/2                      | AA (Wide Range) | 3/8" X 1/2" ODF           | Yes                  | No             | 1/4" ODF           | No    | 5 Ft.      | NBE 1-1/2ZAA-12 | 091010      |
|                         | 2                          | AA (Wide Range) | Chatleff                  | Yes                  | Yes            | 5 Ft.*             | No    | 5 Ft.      | NAE 2ZAA-12     | 091014      |
|                         | 2                          | AA (Wide Range) | 3/8" X 1/2" ODF           | Yes                  | Yes            | 1/4" ODF           | 15%   | 5 Ft.      | NAE 2ZAA-11     | 091013      |

## NXT SERIES THERMOSTATIC EXPANSION VALVES (CONTINUED)

| SYSTEM<br>REFRIGERANT<br>CODE | CAPACITY<br>(NOMINAL<br>TONNAGE) | CHARGE CODE     | INLET<br>X OUTLET<br>CONNECTION | ADJUSTABLE<br>SUPERHEAT | INTERNAL<br>CHECK | EQUALIZER | BLEED | CAP<br>LENGTH | MODEL NUMBER | ITEM NUMBER |
|-------------------------------|----------------------------------|-----------------|---------------------------------|-------------------------|-------------------|-----------|-------|---------------|--------------|-------------|
| Z(R-410A)                     | 2                                | AA (Wide Range) | 3/8" X 1/2" ODF                 | Yes                     | No                | 1/4" ODF  | 15%   | 5 Ft.         | NBE 2ZAA-05  | 091017      |
|                               | 2                                | AA (Wide Range) | 3/8" X 1/2" ODF                 | Yes                     | Yes               | 1/4" ODF  | No    | 5 Ft.         | NAE 2ZAA-10  | 091012      |
|                               | 2                                | AA (Wide Range) | 3/8" X 1/2" ODF                 | Yes                     | No                | 1/4" ODF  | No    | 5 Ft.         | NBE 2ZAA-04  | 091016      |
|                               | 3                                | AA (Wide Range) | Chatleff                        | Yes                     | Yes               | 5 Ft.*    | No    | 5 Ft.         | NAE 3ZAA-17  | 091020      |
|                               | 3                                | AA (Wide Range) | 3/8" X 1/2" ODF                 | Yes                     | Yes               | 1/4" ODF  | 15%   | 5 Ft.         | NAE 3ZAA-16  | 091019      |
|                               | 3                                | AA (Wide Range) | 3/8" X 1/2" ODF                 | Yes                     | No                | 1/4" ODF  | 15%   | 5 Ft.         | NBE 3ZAA-12  | 091023      |
|                               | 3                                | AA (Wide Range) | 3/8" X 1/2" ODF                 | Yes                     | Yes               | 1/4" ODF  | No    | 5 Ft.         | NAE 3ZAA-15  | 091018      |
|                               | 3                                | AA (Wide Range) | 3/8" X 1/2" ODF                 | Yes                     | No                | 1/4" ODF  | No    | 5 Ft.         | NBE 3ZAA-11  | 091022      |
|                               | 4                                | AA (Wide Range) | Chatleff                        | Yes                     | Yes               | 5 Ft.*    | No    | 5 Ft.         | NAE 4ZAA-19  | 091026      |
|                               | 4                                | AA (Wide Range) | 3/8" X 1/2" ODF                 | Yes                     | Yes               | 1/4" ODF  | 15%   | 5 Ft.         | NAE 4ZAA-18  | 091025      |
|                               | 4                                | AA (Wide Range) | 3/8" X 1/2" ODF                 | Yes                     | No                | 1/4" ODF  | 15%   | 5 Ft.         | NBE 4ZAA-09  | 091029      |
|                               | 4                                | AA (Wide Range) | 3/8" X 1/2" ODF                 | Yes                     | Yes               | 1/4" ODF  | No    | 5 Ft.         | NAE 4ZAA-17  | 091024      |
|                               | 4                                | AA (Wide Range) | 3/8" X 1/2" ODF                 | Yes                     | No                | 1/4" ODF  | No    | 5 Ft.         | NBE 4ZAA-08  | 091028      |
|                               | 5                                | AA (Wide Range) | Chatleff                        | Yes                     | Yes               | 5 Ft.*    | No    | 5 Ft.         | NAE 5ZAA-31  | 091032      |
|                               | 5                                | AA (Wide Range) | 3/8" X 1/2" ODF                 | Yes                     | Yes               | 1/4" ODF  | No    | 5 Ft.         | NAE 5ZAA-33  | 091063      |
|                               | 5                                | AA (Wide Range) | 1/2" X 5/8" ODF                 | Yes                     | Yes               | 1/4" ODF  | 15%   | 5 Ft.         | NAE 5ZAA-30  | 091031      |
|                               | 5                                | AA (Wide Range) | 1/2" X 5/8" ODF                 | Yes                     | No                | 1/4" ODF  | 15%   | 5 Ft.         | NBE 5ZAA-12  | 091035      |
|                               | 5                                | AA (Wide Range) | 1/2" X 5/8" ODF                 | Yes                     | No                | 1/4" ODF  | No    | 5 Ft.         | NBE 5ZAA-11  | 091034      |
|                               | 6                                | AA (Wide Range) | Chatleff                        | Yes                     | Yes               | 5 Ft.*    | No    | 5 Ft.         | NAE 6ZAA-07  | 091038      |
|                               | 6                                | AA (Wide Range) | 1/2" X 5/8" ODF                 | Yes                     | Yes               | 1/4" ODF  | 15%   | 5 Ft.         | NAE 6ZAA-06  | 091037      |
|                               | 6                                | AA (Wide Range) | 1/2" X 5/8" ODF                 | Yes                     | No                | 1/4" ODF  | 15%   | 5 Ft.         | NBE 6ZAA-09  | 091041      |
|                               | 6                                | AA (Wide Range) | 1/2" X 5/8" ODF                 | Yes                     | Yes               | 1/4" ODF  | No    | 5 Ft.         | NAE 6ZAA-05  | 091036      |
|                               | 6                                | AA (Wide Range) | 1/2" X 5/8" ODF                 | Yes                     | No                | 1/4" ODF  | No    | 5 Ft.         | NBE 6ZAA-08  | 091040      |
|                               | 7                                | AA (Wide Range) | Chatleff                        | Yes                     | Yes               | 5 Ft.*    | No    | 5 Ft.         | NAE 7ZAA-09  | 091044      |
|                               | 7                                | AA (Wide Range) | 5/8" X 7/8" ODF                 | Yes                     | Yes               | 1/4" ODF  | 15%   | 5 Ft.         | NAE 7ZAA-08  | 091043      |
|                               | 7                                | AA (Wide Range) | 5/8" X 7/8" ODF                 | Yes                     | No                | 1/4" ODF  | 15%   | 5 Ft.         | NBE 7ZAA-08  | 091047      |
|                               | 7                                | AA (Wide Range) | 5/8" X 7/8" ODF                 | Yes                     | Yes               | 1/8" Cap  | No    | 5 Ft.         | NAE 7ZAA-10  | 091045      |
|                               | 7                                | AA (Wide Range) | 5/8" X 7/8" ODF                 | Yes                     | No                | 1/4" ODF  | No    | 5 Ft.         | NBE 7ZAA-07  | 091046      |
|                               | 8                                | AA (Wide Range) | 5/8" X 7/8" ODF                 | Yes                     | No                | 1/4" ODF  | 15%   | 5 Ft.         | NBE 8ZAA-03  | 091049      |
|                               | 8                                | AA (Wide Range) | 5/8" X 7/8" ODF                 | Yes                     | No                | 1/4" ODF  | No    | 5 Ft.         | NBE 8ZAA-02  | 091048      |
|                               | 10                               | AA (Wide Range) | 5/8" X 7/8" ODF                 | Yes                     | No                | 1/4" ODF  | 15%   | 5 Ft.         | NBE 10ZAA-04 | 091051      |
|                               | 10                               | AA (Wide Range) | 5/8" X 7/8" ODF                 | Yes                     | No                | 1/4" ODF  | No    | 5 Ft.         | NBE 10ZAA-03 | 091050      |
|                               | 12                               | AA (Wide Range) | 1/2" X 5/8" ODF                 | Yes                     | No                | 1/4" ODF  | No    | 5 Ft.         | NBE 12ZAA-09 | 091060      |
|                               | 12                               | AA (Wide Range) | 5/8" X 7/8" ODF                 | Yes                     | No                | 1/4" ODF  | 15%   | 5 Ft.         | NBE 12ZAA-06 | 091053      |
|                               | 12                               | AA (Wide Range) | 5/8" X 7/8" ODF                 | Yes                     | No                | 1/4" ODF  | No    | 5 Ft.         | NBE 12ZAA-05 | 091052      |
|                               | 12                               | AA (Wide Range) | 5/8" X 1-1/8" ODF               | Yes                     | No                | 1/4" ODF  | No    | 5 Ft.         | NBE 12ZAA-07 | 091054      |
|                               | 12                               | AA (Wide Range) | 7/8" X 1-1/8" ODF               | Yes                     | No                | 1/4" ODF  | No    | 5 Ft.         | NBE 12ZAA-08 | 091055      |
|                               | 15                               | AA (Wide Range) | 5/8" X 7/8" ODF                 | Yes                     | No                | 1/4" ODF  | No    | 5 Ft.         | NBE 15ZAA-06 | 091056      |
|                               | 15                               | AA (Wide Range) | 5/8" X 1-1/8" ODF               | Yes                     | No                | 1/4" ODF  | No    | 5 Ft.         | NBE 15ZAA-08 | 091058      |
|                               | 15                               | AA (Wide Range) | 7/8" X 1-1/8" ODF               | Yes                     | No                | 1/4" ODF  | No    | 5 Ft.         | NBE 15ZAA-09 | 091059      |

\* External equalizer has a stainless steel tube and copper flare with 1/4" SAE flare nut



## TXV CONNECT KITS THERMOSTATIC EXPANSION VALVES

*Copeland TXV Connect kits provide a universal retrofit and service solution. Adapters are available for Chatleff and Aeroquip connections, and an external equalizer connector makes installation easy for all residential air conditioning systems.*

### FEATURES

- ODF TXVs with internal check, Chatleff and Aeroquip adapters, external equalizer connector and bulb strap
- Fits all systems regardless of manufacturer
- R-410A and R-22 kits in multiple capacities
- R-410A valve offers stainless steel power assembly for durability
- Adapters have extended ends for ease of installation
- Easy field replacement of fixed orifice for increased efficiency

### SPECIFICATIONS

Maximum Working Pressure ..... 700 psig (48 bar)  
 UL/CUL File Number (Valves) ..... SA5312  
 Canadian CRN for R-22 ..... 0C21506.513467890YTN  
 Canadian CRN for R-410A ..... 0C20308.5C

### TXV CONNECT KITS THERMOSTATIC EXPANSION VALVES (Body Style Straight Thru)

| SYSTEM<br>REFRIGERANT CODE | CAPACITY<br>(NOMINAL TONNAGE) | INLET X OUTLET<br>CONNECTION | ADJUSTABLE<br>SUPERHEAT | EQUALIZER | CAP<br>LENGTH | MODEL NUMBER             | ITEM NUMBER |
|----------------------------|-------------------------------|------------------------------|-------------------------|-----------|---------------|--------------------------|-------------|
| H (R-22)                   | 1-1/2 to 3                    | 3/8" X 1/2" ODF              | Yes                     | External  | 30 In.        | TXV+CONNECT 2-1/2TR-22   | 066657      |
|                            | 3-1/2 to 5                    | 3/8" X 1/2" ODF              | Yes                     | External  | 30 In.        | TXV+CONNECT 5TR-22       | 066658      |
| Z (R-410A)                 | 1-1/2                         | 3/8" X 1/2" ODF              | Yes                     | External  | 5 Ft.         | TXV+CONNECT 1-1/2TR-410A | 066660      |
|                            | 2                             | 3/8" X 1/2" ODF              | Yes                     | External  | 5 Ft.         | TXV+CONNECT 2TR-410A     | 066661      |
|                            | 3                             | 3/8" X 1/2" ODF              | Yes                     | External  | 5 Ft.         | TXV+CONNECT 3TR-410A     | 066662      |
|                            | 4                             | 3/8" X 1/2" ODF              | Yes                     | External  | 5 Ft.         | TXV+CONNECT 4TR-410A     | 066663      |
|                            | 5                             | 3/8" X 1/2" ODF              | Yes                     | External  | 5 Ft.         | TXV+CONNECT 5TR-410A     | 066664      |

### TXV CONNECT KITS ADAPTERS

| DESCRIPTION                                                     | MODEL NUMBER | ITEM NUMBER |
|-----------------------------------------------------------------|--------------|-------------|
| Chatleff Adapter Assembly, 1/2" ODF X Chatleff                  | KT-30036-1   | 066653      |
| Chatleff Adapter Assembly Standard, Short, 1/2" ODF X Chatleff* | KT-30036-3   | 066679      |
| Aeroquip Adapter Assembly, 1/2" ODF X Aeroquip*                 | KT-30037-1   | 066654      |

\* Included in kit but also available for individual purchase.



HFES 1/2FC-01

## HF SERIES THERMOSTATIC EXPANSION VALVES

The HF Series is a balanced ported valve designed for refrigeration, air conditioning and heat pump applications.

### FEATURES

- Stainless steel replaceable power assembly eliminates corrosion and prevents valve failure
- Two body sizes provide capacities from 1/8 to 13 tons for R-404A
- Bodies, cages and power assemblies can be ordered separately or in pre-packaged Service kits
- Bi-directional capability up to 3-1/2 tons for R-22 on one valve superheat control in cooling and heating
- Optional removable inlet strainer (ODF only)
- Available in straight-through or angle flow configurations
- Available with internal or external equalizer
- Available in ODF or SAE connections

### SPECIFICATIONS

Maximum Working Pressure..... 450 psig (31 bar)  
 UR/CUR File Number ..... SA5312  
 Canadian CRN ..... 0C21506.513467890YTN

### MODEL NUMBER NOMENCLATURE - Example: HFE 1/2FC-01

| SERIES               | SUPERHEAT ADJUSTMENT                            | EQUALIZER                               | CONNECTION TYPE                        | REMOVABLE INLET STRAINER             | BLEED HOLE                                     | CAPACITY               | SYSTEM REFRIGERANT CODE                                                                                                                                              | CHARGE CODE                                                                                                                  | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                             | PACK TYPE                                        |
|----------------------|-------------------------------------------------|-----------------------------------------|----------------------------------------|--------------------------------------|------------------------------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------|--------------------------------------------------|
| HF                   |                                                 | E                                       |                                        |                                      |                                                | 1/2                    | F                                                                                                                                                                    | C                                                                                                                            | -01                   | G                                            |                                                  |
| Balanced Port Design | N = Non-adjustable<br><br>(Omit For Adjustable) | E = External<br><br>(Omit For Internal) | S = Solder<br><br>(Omit For SAE Flare) | C = Inlet Strainer<br><br>(ODF Only) | B = Bleed Hole<br><br>(Omit For No Bleed Hole) | Nominal Rating in Tons | B = R-448A/R-449A/R-452A<br>D = R-450A/R-513A<br>F = R-12<br>H = R-22/R-407A<br>M = R-134a<br>N = R-407C<br>P = R-507<br>R = R-502<br>S = R-404A/R-407H<br>T = R-290 | A = Medium & Low Temp.<br>AA = Wide Range<br>C = Medium Temp.<br>CA = Heat Pump<br>W(MOP) = Press. Limiting<br>Z = Low Temp. | -01 Thru -999         | G = Cust. Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

### HF SERIES THERMOSTATIC EXPANSION VALVES (Adjustable Superheat Models)

| SYSTEM REFRIGERANT CODE | CAPACITY (NOMINAL TONNAGE) | CHARGE CODE        | INLET X OUTLET CONNECTION | EQUALIZER | BLEED | CAP LENGTH | BODY DESIGN   | STRAINER | MODEL NUMBER     | ITEM NUMBER |
|-------------------------|----------------------------|--------------------|---------------------------|-----------|-------|------------|---------------|----------|------------------|-------------|
| B (R-448A, R-449A)      | 1/4                        | A (Med./Low Temp.) | 1/4" X 1/2" ODF           | External  | No    | 5 Ft.      | Straight Thru | No       | HFES 1/4BA-01    | 067018      |
|                         | 1/4                        | A (Med./Low Temp.) | 1/4" X 1/2" ODF           | External  | No    | 5 Ft.      | Angle         | Yes      | HFESC 1/4BA-01   | 067016      |
|                         | 1/2                        | A (Med./Low Temp.) | 1/4" X 1/2" ODF           | External  | No    | 5 Ft.      | Straight Thru | No       | HFES 1/2BA-01    | 067019      |
|                         | 1/2                        | A (Med./Low Temp.) | 1/4" X 1/2" ODF           | External  | No    | 5 Ft.      | Angle         | Yes      | HFESC 1/2BA-01   | 067017      |
|                         | 1/2                        | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | External  | No    | 5 Ft.      | Angle         | Yes      | HFESC 1/2BA-02   | 066979      |
|                         | 1                          | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | External  | No    | 5 Ft.      | Straight Thru | No       | HFES 1BA-01      | 067008      |
|                         | 1                          | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | External  | No    | 5 Ft.      | Angle         | Yes      | HFESC 1BA-01     | 066980      |
|                         | 1-1/2                      | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | External  | No    | 5 Ft.      | Straight Thru | No       | HFES 1-1/2BA-01  | 067009      |
|                         | 1-1/2                      | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | External  | No    | 5 Ft.      | Angle         | Yes      | HFESC 1-1/2BA-01 | 066981      |
|                         | 2                          | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | External  | No    | 5 Ft.      | Straight Thru | No       | HFES 2BA-01      | 067010      |
|                         | 2                          | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | External  | No    | 5 Ft.      | Angle         | Yes      | HFESC 2BA-01     | 066982      |
|                         | 2-1/2                      | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | External  | No    | 5 Ft.      | Straight Thru | No       | HFES 2-1/2BA-01  | 067011      |
|                         | 2-1/2                      | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | External  | No    | 5 Ft.      | Angle         | Yes      | HFESC 2-1/2BA-01 | 066983      |
|                         | 3-1/2                      | A (Med./Low Temp.) | 3/8" X 1/2" ODF           | External  | No    | 5 Ft.      | Straight Thru | No       | HFES 3-1/2BA-01  | 067012      |

All capacities shown are at 100°F condensing, 40°F evaporator temperature.

Valve capacity is for the first refrigerant listed. To determine the capacity for additional refrigerants listed, consult the nominal capacity tables for interchangeable refrigerants.

| SYSTEM<br>REFRIGERANT<br>CODE | CAPACITY<br>(NOMINAL<br>TONNAGE) | CHARGE CODE        | INLET X OUTLET<br>CONNECTION | EQUALIZER | BLEED | CAP<br>LENGTH | BODY<br>DESIGN | STRAINER | MODEL<br>NUMBER  | ITEM<br>NUMBER |
|-------------------------------|----------------------------------|--------------------|------------------------------|-----------|-------|---------------|----------------|----------|------------------|----------------|
| B (R-448A, R-449A)            | 3-1/2                            | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 3-1/2BA-01 | 066984         |
|                               | 6                                | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 6BA-01     | 066985         |
|                               | 6                                | A (Med./Low Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFESC 6BA-01     | 067013         |
|                               | 6                                | A (Med./Low Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 6BA-02     | 067014         |
|                               | 8-1/2                            | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 8-1/2BA-01 | 066986         |
|                               | 8-1/2                            | A (Med./Low Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 8-1/2BA-02 | 067015         |
| D (R-450A, R-513A)            | 1/5                              | A (Med./Low Temp.) | 1/4" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | No       | HFS 1/5DA-01     | 096856         |
|                               | 1/5                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1/5DA-01    | 096840         |
|                               | 1/5                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/5DA-01   | 096851         |
|                               | 1/5                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/5DA-01   | 096858         |
|                               | 1/4                              | A (Med./Low Temp.) | 1/4" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | No       | HFS 1/4DA-01     | 096855         |
|                               | 1/4                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1/4DA-01    | 096839         |
|                               | 1/4                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/4DA-01   | 096850         |
|                               | 1/4                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1/4DA-01    | 096857         |
|                               | 1/2                              | A (Med./Low Temp.) | 1/4" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | No       | HFS 1/2DA-01     | 096854         |
|                               | 1/2                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1/2DA-01    | 096838         |
|                               | 1/2                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/2DA-01   | 096849         |
|                               | 3/4                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 3/4DA-01    | 096845         |
|                               | 3/4                              | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 3/4DA-01   | 096853         |
|                               | 1                                | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1DA-01      | 096842         |
|                               | 1                                | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1DA-01     | 096852         |
|                               | 1-1/2                            | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1-1/2DA-01  | 096837         |
|                               | 2                                | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 2DA-01      | 096843         |
|                               | 3-1/2                            | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 3-1/2DA-01  | 096844         |
|                               | 4-1/2                            | A (Med./Low Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 4-1/2DA-01  | 096846         |
|                               | 6                                | A (Med./Low Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 6DA-01      | 096847         |
|                               | 9                                | A (Med./Low Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 9DA-01      | 096848         |
|                               | 11-1/2                           | A (Med./Low Temp.) | 7/8" X 1-1/8" ODF            | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 11-1/2DA-01 | 096841         |
| F (R-12)<br>*R-134a           | 1/4                              | C (Med. Temp.)     | 1/4" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/4FC-01      | 009811         |
|                               | 1/4                              | C (Med. Temp.)     | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/4FC-01     | 054360         |
|                               | 1/4                              | C (Med. Temp.)     | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/4FC-02      | 054134         |
|                               | 1/2                              | C (Med. Temp.)     | 1/4" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/2FC-01     | 009955         |
|                               | 1/2                              | C (Med. Temp.)     | 1/4" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/2FC-01      | 009810         |
|                               | 1/2                              | C (Med. Temp.)     | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/2FC-02     | 054895         |
|                               | 1/2                              | C (Med. Temp.)     | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1/2FC-01    | 056021         |
|                               | 1/2                              | C (Med. Temp.)     | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/2FC-01   | 057397         |
|                               | 1/2                              | C (Med. Temp.)     | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/2FC-02      | 054892         |
|                               | 1/2                              | C (Med. Temp.)     | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1/2FC-01     | 056013         |
|                               | 1/2                              | C (Med. Temp.)     | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | No       | HFS 1/2FC-02     | 056063         |
|                               | 1                                | C (Med. Temp.)     | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1FC-01       | 054909         |
|                               | 1                                | C (Med. Temp.)     | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1FC-01      | 055993         |
|                               | 1                                | C (Med. Temp.)     | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1FC-02      | 056151         |
|                               | 1                                | C (Med. Temp.)     | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1FC-01     | 057398         |
|                               | 1                                | C (Med. Temp.)     | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1FC-01        | 054905         |
|                               | 1                                | C (Med. Temp.)     | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1FC-01       | 056119         |
|                               | 1                                | Z (Low Temp.)      | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1FZ-01       | 054910         |
|                               | 1-1/2                            | C (Med. Temp.)     | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1-1/2FC-01   | 054917         |
|                               | 1-1/2                            | C (Med. Temp.)     | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1-1/2FC-01  | 055994         |
|                               | 1-1/2                            | C (Med. Temp.)     | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1-1/2FC-01 | 057399         |
|                               | 1-1/2                            | C (Med. Temp.)     | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1-1/2FC-01    | 054914         |
|                               | 2                                | C (Med. Temp.)     | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 2FC-01       | 053069         |
|                               | 2                                | C (Med. Temp.)     | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 2FC-01     | 057400         |
|                               | 2                                | C (Med. Temp.)     | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 2FC-01        | 053060         |
|                               | 3-1/2                            | C (Med. Temp.)     | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 3-1/2FC-01   | 054138         |
| H (R-22)<br>*R-407C           | 1/4                              | C (Med. Temp.)     | 1/4" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/4HC-03      | 058430         |
|                               | 1/4                              | C (Med. Temp.)     | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/4HC-01     | 054924         |



| SYSTEM<br>REFRIGERANT<br>CODE | CAPACITY<br>(NOMINAL<br>TONNAGE) | CHARGE CODE    | INLET X OUTLET<br>CONNECTION | EQUALIZER | BLEED | CAP<br>LENGTH | BODY<br>DESIGN | STRAINER | MODEL<br>NUMBER  | ITEM<br>NUMBER |
|-------------------------------|----------------------------------|----------------|------------------------------|-----------|-------|---------------|----------------|----------|------------------|----------------|
| H (R-22)<br>*R-407C           | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1/4HC-01    | 055927         |
|                               | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/4HC-01   | 057409         |
|                               | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/4HC-01      | 054921         |
|                               | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | No       | HFS 1/4HC-01     | 055493         |
|                               | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1/4HC-02     | 055633         |
|                               | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1/4HC-01    | 057467         |
|                               | 1/4                              | Z (Low Temp.)  | 1/4" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/4HZ-01      | 059653         |
|                               | 1/4                              | Z (Low Temp.)  | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/4HZ-01     | 054925         |
|                               | 1/4                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/4HZ-01   | 057428         |
|                               | 1/4                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1/4HZ-01     | 056169         |
|                               | 1/2                              | C (Med. Temp.) | 1/4" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/2HC-02     | 059079         |
|                               | 1/2                              | C (Med. Temp.) | 1/4" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/2HC-01      | 009812         |
|                               | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/2HC-01     | 054361         |
|                               | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1/2HC-01    | 054838         |
|                               | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1/2HC-02    | 055827         |
|                               | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/2HC-01   | 057291         |
|                               | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/2HC-02      | 054135         |
|                               | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1/2HC-02     | 054136         |
|                               | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | No       | HFS 1/2HC-03     | 054723         |
|                               | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1/2HC-01    | 057293         |
|                               | 1/2                              | W35 (MOP)      | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/2HW35-01    | 054362         |
|                               | 1/2                              | Z (Low Temp.)  | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/2HZ-01     | 054365         |
|                               | 1/2                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1/2HZ-01    | 055889         |
|                               | 1/2                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/2HZ-01   | 057429         |
|                               | 1/2                              | Z (Low Temp.)  | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/2HZ-01      | 054364         |
|                               | 1/2                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1/2HZ-01    | 057482         |
|                               | 1                                | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1HC-01       | 054930         |
|                               | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1HC-01      | 055494         |
|                               | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1HC-02      | 055708         |
|                               | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1HC-01     | 057410         |
|                               | 1                                | C (Med. Temp.) | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1HC-01        | 054927         |
|                               | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | No       | HFS 1HC-01       | 055702         |
|                               | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1HC-02       | 055928         |
|                               | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1HC-01      | 057468         |
|                               | 1                                | W35 (MOP)      | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1HW35-01     | 054932         |
|                               | 1                                | Z (Low Temp.)  | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1HZ-01       | 054931         |
|                               | 1                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1HZ-01     | 057430         |
|                               | 1                                | Z (Low Temp.)  | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1HZ-01        | 054928         |
|                               | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1-1/2HC-01   | 054936         |
|                               | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1-1/2HC-01  | 055495         |
|                               | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1-1/2HC-02  | 055863         |
|                               | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1-1/2HC-01 | 057292         |
|                               | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1-1/2HC-01    | 054933         |
|                               | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | No       | HFS 1-1/2HC-01   | 055969         |
|                               | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1-1/2HC-02   | 056018         |
|                               | 1-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1-1/2HZ-01   | 054937         |
|                               | 1-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1-1/2HZ-01  | 055870         |
|                               | 1-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1-1/2HZ-01 | 057321         |
|                               | 2                                | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 2HC-01       | 054942         |
|                               | 2                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 2HC-01      | 054946         |
|                               | 2                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 2HC-02      | 055706         |
|                               | 2                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 2HC-01     | 057294         |
|                               | 2                                | C (Med. Temp.) | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 2HC-01        | 054939         |
|                               | 2                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 2HC-01      | 057470         |
|                               | 2                                | CA (Heat Pump) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 2HCA-01     | 059670         |
|                               | 2                                | Z (Low Temp.)  | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 2HZ-01       | 054943         |

| SYSTEM<br>REFRIGERANT<br>CODE | CAPACITY<br>(NOMINAL<br>TONNAGE) | CHARGE CODE    | INLET X OUTLET<br>CONNECTION | EQUALIZER | BLEED | CAP<br>LENGTH | BODY<br>DESIGN | STRAINER | MODEL<br>NUMBER  | ITEM<br>NUMBER |
|-------------------------------|----------------------------------|----------------|------------------------------|-----------|-------|---------------|----------------|----------|------------------|----------------|
| H (R-22)<br>*R-407C           | 2                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 2HZ-01     | 057433         |
|                               | 2                                | Z (Low Temp.)  | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 2HZ-01        | 054940         |
|                               | 2-1/2                            | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 2-1/2HC-01   | 054950         |
|                               | 2-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 2-1/2HC-01  | 055931         |
|                               | 2-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 2-1/2HC-02  | 056042         |
|                               | 2-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 2-1/2HC-01 | 057411         |
|                               | 2-1/2                            | C (Med. Temp.) | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 2-1/2HC-01    | 054947         |
|                               | 2-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 2-1/2HZ-01 | 057434         |
|                               | 3                                | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 3HC-01       | 053317         |
|                               | 3                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 3HC-01      | 053916         |
|                               | 3                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 3HC-02      | 054756         |
|                               | 3                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 3HC-01     | 057412         |
|                               | 3                                | C (Med. Temp.) | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 3HC-01        | 053316         |
|                               | 3                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 3HC-01       | 053915         |
|                               | 3                                | CA (Heat Pump) | 1/2" X 5/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 3HCA-01     | 061730         |
|                               | 3                                | Z (Low Temp.)  | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 3HZ-01       | 053191         |
|                               | 3                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 3HZ-01     | 057748         |
|                               | 3                                | Z (Low Temp.)  | 1/2" X 5/8" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 3HZ-02      | 064761         |
|                               | 5-1/2                            | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 5-1/2HC-01   | 054140         |
|                               | 5-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 5-1/2HC-01  | 054141         |
|                               | 5-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 5-1/2HC-01 | 057781         |
|                               | 5-1/2                            | C (Med. Temp.) | 1/2" X 5/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 5-1/2HC-02  | 054778         |
|                               | 5-1/2                            | C (Med. Temp.) | 1/2" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 5-1/2HC-04  | 055187         |
|                               | 5-1/2                            | C (Med. Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 5-1/2HC-03  | 054779         |
|                               | 5-1/2                            | CA (Heat Pump) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 5-1/2HCA-03 | 065649         |
|                               | 5-1/2                            | CA (Heat Pump) | 1/2" X 5/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 5-1/2HCA-02 | 057378         |
|                               | 5-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 5-1/2HZ-01   | 054777         |
|                               | 5-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 5-1/2HZ-02  | 054780         |
|                               | 8                                | C (Med. Temp.) | 1/2" X 5/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 8HC-01      | 057312         |
|                               | 8                                | C (Med. Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 8HC-02      | 057313         |
|                               | 8                                | C (Med. Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 8HC-01     | 058609         |
|                               | 8                                | CA (Heat Pump) | 1/2" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 8HCA-04     | 056818         |
|                               | 8                                | CA (Heat Pump) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 8HCA-05     | 056819         |
|                               | 8                                | W100 (MOP)     | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 8HW100-01   | 057354         |
|                               | 10                               | C (Med. Temp.) | 1/2" X 5/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 10HC-02     | 057315         |
|                               | 10                               | C (Med. Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 10HC-01     | 057256         |
|                               | 10                               | C (Med. Temp.) | 7/8" X 1-1/8" ODF            | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 10HC-03     | 057316         |
|                               | 10                               | CA (Heat Pump) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 10HCA-05    | 056820         |
|                               | 10                               | CA (Heat Pump) | 5/8" X 1-1/8" ODF            | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 10HCA-06    | 056821         |
|                               | 10                               | W100 (MOP)     | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 10HW100-01  | 058159         |
|                               | 12                               | C (Med. Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 12HC-01     | 062737         |
|                               | 15                               | C (Med. Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 15HC-01     | 057317         |
|                               | 15                               | C (Med. Temp.) | 7/8" X 1-1/8" ODF            | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 15HC-02     | 057318         |
|                               | 15                               | CA (Heat Pump) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 15HCA-07    | 056823         |
|                               | 15                               | CA (Heat Pump) | 5/8" X 1-1/8" ODF            | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 15HCA-08    | 056824         |
|                               | 15                               | CA (Heat Pump) | 7/8" X 1-1/8" ODF            | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 15HCA-09    | 056825         |
|                               | 20                               | C (Med. Temp.) | 7/8" X 1-1/8" ODF            | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 20HC-01     | 062055         |
|                               | 20                               | CA (Heat Pump) | 7/8" X 1-1/8" ODF            | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 20HCA-04    | 058490         |
|                               | 20                               | CA (Heat Pump) | 7/8" X 1-3/8" ODF            | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 20HCA-05    | 060646         |
| M (R-134a)<br>*R-12           | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 30 In.        | Angle          | No       | HFE 1/4MC-01     | 057860         |
|                               | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/4MC-01   | 057572         |
|                               | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/4MC-01      | 057618         |
|                               | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | No       | HFS 1/4MC-01     | 058545         |
|                               | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1/4MC-01    | 057573         |
|                               | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/2MC-01     | 057616         |
|                               | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1/2MC-01    | 065645         |



| SYSTEM<br>REFRIGERANT<br>CODE  | CAPACITY<br>(NOMINAL<br>TONNAGE) | CHARGE CODE    | INLET X OUTLET<br>CONNECTION | EQUALIZER | BLEED | CAP<br>LENGTH | BODY<br>DESIGN | STRAINER | MODEL<br>NUMBER  | ITEM<br>NUMBER |
|--------------------------------|----------------------------------|----------------|------------------------------|-----------|-------|---------------|----------------|----------|------------------|----------------|
| M (R-134a)<br>*R-12            | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/2MC-01   | 058069         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/2MC-01      | 057620         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1/2MC-01     | 058100         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1/2MC-01    | 058067         |
|                                | 3/4                              | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 30 In.        | Angle          | No       | HFE 3/4MC-01     | 057861         |
|                                | 3/4                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 3/4MC-01    | 057784         |
|                                | 3/4                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 3/4MC-02    | 059422         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1MC-01       | 057617         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1MC-01      | 058546         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1MC-02      | 065646         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1MC-01     | 057570         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1MC-01        | 057619         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1MC-01       | 065641         |
|                                | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1-1/2MC-01   | 057895         |
|                                | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1-1/2MC-01 | 057568         |
|                                | 1-3/4                            | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1-3/4MC-01   | 057896         |
|                                | 1-3/4                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1-3/4MC-01  | 058152         |
|                                | 1-3/4                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1-3/4MC-02  | 065647         |
|                                | 2-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 2-1/2MC-01 | 058421         |
|                                | 4                                | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 4MC-01       | 057897         |
|                                | 4                                | C (Med. Temp.) | 1/2" X 5/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 4MC-01      | 058680         |
|                                | 6                                | C (Med. Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 6MC-01      | 057903         |
|                                | 7-1/2                            | C (Med. Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 7-1/2MC-01  | 057904         |
|                                | 11                               | C (Med. Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 11MC-02     | 057906         |
|                                | 11                               | C (Med. Temp.) | 7/8" X 1-1/8" ODF            | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 11MC-03     | 058681         |
|                                | 14                               | C (Med. Temp.) | 7/8" X 1-3/8" ODF            | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 14MC-02     | 064000         |
| R (R-502)<br>*R-404A<br>*R-507 | 1/4                              | C (Med. Temp.) | 1/4" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/4RC-02      | 059304         |
|                                | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/4RC-01     | 054366         |
|                                | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1/4RC-01    | 055092         |
|                                | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/4RC-01   | 057436         |
|                                | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/4RC-01      | 054137         |
|                                | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | No       | HFS 1/4RC-01     | 055490         |
|                                | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1/4RC-01    | 057487         |
|                                | 1/4                              | W45 (MOP)      | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/4RW45-01   | 054963         |
|                                | 1/4                              | Z (Low Temp.)  | 1/4" X 3/8" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1/4RZ-01     | 055792         |
|                                | 1/4                              | Z (Low Temp.)  | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/4RZ-01     | 054370         |
|                                | 1/4                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1/4RZ-01    | 055491         |
|                                | 1/4                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/4RZ-01   | 057454         |
|                                | 1/4                              | Z (Low Temp.)  | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/4RZ-01      | 054369         |
|                                | 1/4                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1/4RZ-02     | 056228         |
|                                | 1/4                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1/4RZ-01    | 057484         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/2RC-01     | 054967         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1/2RC-01    | 055992         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1/2RC-02    | 056022         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/2RC-01   | 057437         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/2RC-01      | 054964         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1/2RC-01    | 057488         |
|                                | 1/2                              | W45 (MOP)      | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/2RW45-01   | 054969         |
|                                | 1/2                              | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1/2RW45-01  | 055996         |
|                                | 1/2                              | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/2RW45-01 | 057443         |
|                                | 1/2                              | W45 (MOP)      | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/2RW45-01    | 054966         |
|                                | 1/2                              | Z (Low Temp.)  | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/2RZ-01     | 054968         |
|                                | 1/2                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1/2RZ-01    | 055497         |
|                                | 1/2                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1/2RZ-02    | 056024         |
|                                | 1/2                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/2RZ-01   | 057455         |
|                                | 1/2                              | Z (Low Temp.)  | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/2RZ-01      | 054965         |

| SYSTEM<br>REFRIGERANT<br>CODE  | CAPACITY<br>(NOMINAL<br>TONNAGE) | CHARGE CODE    | INLET X OUTLET<br>CONNECTION | EQUALIZER | BLEED | CAP<br>LENGTH | BODY<br>DESIGN | STRAINER | MODEL<br>NUMBER    | ITEM<br>NUMBER |
|--------------------------------|----------------------------------|----------------|------------------------------|-----------|-------|---------------|----------------|----------|--------------------|----------------|
| R (R-502)<br>*R-404A<br>*R-507 | 1/2                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | No       | HFS 1/2RZ-01       | 055874         |
|                                | 1/2                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1/2RZ-02       | 056008         |
|                                | 1/2                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1/2RZ-01      | 057485         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1RC-01         | 054979         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1RC-01        | 054983         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1RC-02        | 056029         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1RC-01       | 057438         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1RC-01          | 054976         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1RC-01        | 057489         |
|                                | 1                                | W45 (MOP)      | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1RW45-01       | 054981         |
|                                | 1                                | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1RW45-01      | 055948         |
|                                | 1                                | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1RW45-01     | 057446         |
|                                | 1                                | W45 (MOP)      | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1RW45-01        | 054978         |
|                                | 1                                | Z (Low Temp.)  | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1RZ-01         | 054980         |
|                                | 1                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1RZ-01        | 055496         |
|                                | 1                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1RZ-02        | 056225         |
|                                | 1                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1RZ-01       | 057456         |
|                                | 1                                | Z (Low Temp.)  | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1RZ-01          | 054977         |
|                                | 1                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1RZ-01        | 057486         |
|                                | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1-1/2RC-01     | 054988         |
|                                | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1-1/2RC-01    | 055657         |
|                                | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1-1/2RC-02    | 056031         |
|                                | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1-1/2RC-01   | 057439         |
|                                | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1-1/2RC-01      | 054984         |
|                                | 1-1/2                            | W45 (MOP)      | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1-1/2RW45-01   | 054990         |
|                                | 1-1/2                            | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1-1/2RW45-01  | 055991         |
|                                | 1-1/2                            | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1-1/2RW45-02  | 056032         |
|                                | 1-1/2                            | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1-1/2RW45-01 | 057448         |
|                                | 1-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1-1/2RZ-01     | 054989         |
|                                | 1-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1-1/2RZ-01    | 055498         |
|                                | 1-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1-1/2RZ-02    | 055878         |
|                                | 1-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1-1/2RZ-01   | 057322         |
|                                | 1-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1-1/2RZ-01      | 054986         |
|                                | 2                                | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 2RC-01         | 053070         |
|                                | 2                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 2RC-02        | 053270         |
|                                | 2                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 2RC-03        | 054768         |
|                                | 2                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 2RC-01       | 057440         |
|                                | 2                                | C (Med. Temp.) | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 2RC-01          | 053061         |
|                                | 2                                | W45 (MOP)      | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 2RW45-01       | 054992         |
|                                | 2                                | Z (Low Temp.)  | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 2RZ-01         | 053071         |
|                                | 2                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 2RZ-01        | 053271         |
|                                | 2                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 2RZ-02        | 054844         |
|                                | 2                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 2RZ-01       | 057457         |
|                                | 3-1/2                            | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 3-1/2RC-01     | 054142         |
|                                | 3-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 3-1/2RC-01    | 054143         |
|                                | 3-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 3-1/2RC-01   | 057441         |
|                                | 3-1/2                            | C (Med. Temp.) | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 3-1/2RC-01      | 055936         |
|                                | 3-1/2                            | C (Med. Temp.) | 1/2" X 5/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 3-1/2RC-02    | 054783         |
|                                | 3-1/2                            | W 45 (MOP)     | 1/2" X 5/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 3-1/2RW45-01  | 058907         |
|                                | 3-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 3-1/2RZ-01     | 054145         |
|                                | 3-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 3-1/2RZ-01    | 054784         |
|                                | 3-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 3-1/2RZ-01   | 057458         |
|                                | 3-1/2                            | Z (Low Temp.)  | 1/2" X 5/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 3-1/2RZ-02    | 054785         |
|                                | 5                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 5RC-02        | 058875         |
|                                | 5                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 5RC-01       | 058595         |
|                                | 5                                | C (Med. Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 5RC-01        | 058608         |

# THERMOSTATIC EXPANSION VALVES

# HF SERIES

| SYSTEM<br>REFRIGERANT<br>CODE  | CAPACITY<br>(NOMINAL<br>TONNAGE) | CHARGE CODE    | INLET X OUTLET<br>CONNECTION | EQUALIZER | BLEED | CAP<br>LENGTH | BODY<br>DESIGN | STRAINER | MODEL<br>NUMBER  | ITEM<br>NUMBER |
|--------------------------------|----------------------------------|----------------|------------------------------|-----------|-------|---------------|----------------|----------|------------------|----------------|
| R (R-502)<br>*R-404A<br>*R-507 | 5                                | W45 (MOP)      | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 5RW45-01    | 058305         |
|                                | 5                                | Z (Low Temp.)  | 1/2" X 5/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 5RZ-02      | 061196         |
|                                | 5                                | Z (Low Temp.)  | 1/2" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 5RZ-01      | 059624         |
|                                | 5                                | Z (Low Temp.)  | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 5RZ-01     | 059654         |
|                                | 7                                | C (Med. Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 7RC-01      | 058607         |
|                                | 7                                | W45 (MOP)      | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 7RW45-01    | 059291         |
| S (R-404A)<br>*R-502<br>*R-507 | 10                               | C (Med. Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 10RC-01     | 058808         |
|                                | 1/8                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1/8SC-01    | 058248         |
|                                | 1/8                              | W45 (MOP)      | 1/4" X 1/2" ODF              | Internal  | No    | 30 In.        | Angle          | Yes      | HFSC 1/8SW45-01  | 066552         |
|                                | 1/8                              | Z (Low Temp.)  | 1/4" X 1/2" ODF              | Internal  | No    | 30 In.        | Angle          | Yes      | HFSC 1/8SZ-01    | 066553         |
|                                | 1/4                              | C (Med. Temp.) | 1/4" X 1/2" ODF              | Internal  | No    | 30 In.        | Straight Thru  | No       | HFS 1/4SC-01     | 066516         |
|                                | 1/4                              | C (Med. Temp.) | 1/4" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/4SC-01      | 066039         |
|                                | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 30 In.        | Straight Thru  | No       | HFES 1/4SC-01    | 066533         |
|                                | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 30 In.        | Angle          | Yes      | HFESC 1/4SC-02   | 066539         |
|                                | 1/4                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1/4SC-01    | 058249         |
|                                | 1/4                              | W45 (MOP)      | 1/4" X 1/2" ODF              | External  | No    | 30 In.        | Angle          | Yes      | HFESC 1/4SW45-01 | 066540         |
|                                | 1/4                              | W45 (MOP)      | 1/4" X 1/2" ODF              | Internal  | No    | 30 In.        | Straight Thru  | No       | HFS 1/4SW45-01   | 066517         |
|                                | 1/4                              | W45 (MOP)      | 1/4" X 1/2" ODF              | Internal  | No    | 30 In.        | Angle          | Yes      | HFSC 1/4SW45-01  | 066554         |
|                                | 1/4                              | W45 (MOP)      | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/4SW45-01   | 066623         |
|                                | 1/4                              | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1/4SW45-01  | 065734         |
|                                | 1/4                              | Z (Low Temp.)  | 1/4" X 1/2" ODF              | External  | No    | 30 In.        | Angle          | Yes      | HFESC 1/4SZ-02   | 066542         |
|                                | 1/4                              | Z (Low Temp.)  | 1/4" X 1/2" ODF              | Internal  | No    | 30 In.        | Straight Thru  | No       | HFS 1/4SZ-02     | 066518         |
|                                | 1/4                              | Z (Low Temp.)  | 1/4" X 1/2" ODF              | Internal  | No    | 30 In.        | Angle          | Yes      | HFSC 1/4SZ-01    | 066555         |
|                                | 1/4                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1/4SZ-01    | 065733         |
|                                | 1/4                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/4SZ-01   | 058194         |
|                                | 1/2                              | C (Med. Temp.) | 1/4" X 1/2" ODF              | External  | No    | 30 In.        | Angle          | Yes      | HFESC 1/2SC-03   | 066543         |
|                                | 1/2                              | C (Med. Temp.) | 1/4" X 1/2" ODF              | Internal  | No    | 30 In.        | Straight Thru  | No       | HFS 1/2SC-01     | 066519         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/2SC-01     | 062147         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1/2SC-01    | 058975         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/2SC-02   | 058141         |
|                                | 1/2                              | W45 (MOP)      | 1/4" X 1/2" ODF              | External  | No    | 30 In.        | Angle          | Yes      | HFESC 1/2SW45-02 | 066544         |
|                                | 1/2                              | W45 (MOP)      | 1/4" X 1/2" ODF              | Internal  | No    | 30 In.        | Straight Thru  | No       | HFS 1/2SW45-01   | 066520         |
|                                | 1/2                              | W45 (MOP)      | 1/4" X 1/2" ODF              | Internal  | No    | 30 In.        | Angle          | Yes      | HFSC 1/2SW45-01  | 066556         |
|                                | 1/2                              | W45 (MOP)      | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1/2SW45-01   | 066040         |
|                                | 1/2                              | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1/2SW45-01  | 065736         |
|                                | 1/2                              | Z (Low Temp.)  | 1/4" X 1/2" ODF              | External  | No    | 30 In.        | Angle          | Yes      | HFESC 1/2SZ-02   | 066545         |
|                                | 1/2                              | Z (Low Temp.)  | 1/4" X 1/2" ODF              | Internal  | No    | 30 In.        | Straight Thru  | No       | HFS 1/2SZ-01     | 066521         |
|                                | 1/2                              | Z (Low Temp.)  | 1/4" X 1/2" ODF              | Internal  | No    | 30 In.        | Angle          | Yes      | HFSC 1/2SZ-01    | 066557         |
|                                | 1/2                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1/2SZ-01    | 058995         |
|                                | 1/2                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1/2SZ-02    | 065735         |
|                                | 1/2                              | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1/2SZ-01   | 058147         |
|                                | 1/2                              | Z (Low Temp.)  | 3/8" X 1/2" SAE              | Internal  | No    | 5 Ft.         | Angle          | No       | HF 1/2SZ-01      | 066037         |
|                                | 1/2                              | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1/2SC-01    | 058250         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1SC-01       | 062148         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1SC-01      | 058976         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1SC-02      | 065650         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1SC-01     | 058135         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1SC-01      | 058251         |
|                                | 1                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1SC-01       | 065643         |
|                                | 1                                | W45 (MOP)      | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1SW45-01     | 066624         |
|                                | 1                                | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1SW45-01    | 059086         |
|                                | 1                                | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1SW45-02    | 065651         |
|                                | 1                                | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1SW45-01   | 058157         |
|                                | 1                                | W45 (MOP)      | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1SW45-01     | 066522         |
|                                | 1                                | W45 (MOP)      | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1SW45-01    | 066558         |
|                                | 1                                | Z (Low Temp.)  | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1SZ-01       | 058363         |

| SYSTEM<br>REFRIGERANT<br>CODE  | CAPACITY<br>(NOMINAL<br>TONNAGE) | CHARGE CODE    | INLET X OUTLET<br>CONNECTION | EQUALIZER | BLEED | CAP<br>LENGTH | BODY<br>DESIGN | STRAINER | MODEL<br>NUMBER    | ITEM<br>NUMBER |
|--------------------------------|----------------------------------|----------------|------------------------------|-----------|-------|---------------|----------------|----------|--------------------|----------------|
| S (R-404A)<br>*R-502<br>*R-507 | 1                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1SZ-01        | 064289         |
|                                | 1                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1SZ-01       | 058118         |
|                                | 1                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1SZ-01         | 066523         |
|                                | 1                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1SZ-01        | 066559         |
|                                | 1-1/4                            | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1-1/4SC-01     | 062149         |
|                                | 1-1/4                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | No       | HFES 1-1/4SC-01    | 058977         |
|                                | 1-1/4                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1-1/4SC-01   | 058206         |
|                                | 1-1/4                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1-1/4SC-01    | 058252         |
|                                | 1-1/4                            | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1-1/4SW45-01  | 057976         |
|                                | 1-1/4                            | W45 (MOP)      | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1-1/4SW45-01  | 066560         |
|                                | 1-1/4                            | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1-1/4SZ-01    | 065737         |
|                                | 1-1/4                            | Z (Low Temp.)  | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Angle          | Yes      | HFSC 1-1/4SZ-01    | 066561         |
|                                | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1-1/2SC-01     | 058309         |
|                                | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1-1/2SC-01    | 057974         |
|                                | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1-1/2SC-01   | 058119         |
|                                | 1-1/2                            | W45 (MOP)      | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 1-1/2SW45-01   | 066625         |
|                                | 1-1/2                            | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1-1/2SW45-01  | 065738         |
|                                | 1-1/2                            | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1-1/2SW45-01 | 058136         |
|                                | 1-1/2                            | W45 (MOP)      | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1-1/2SW45-01   | 066525         |
|                                | 1-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 1-1/2SZ-01    | 064290         |
|                                | 1-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 1-1/2SZ-01   | 058121         |
|                                | 1-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1-1/2SC-01     | 066524         |
|                                | 1-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 1-1/2SZ-01     | 066526         |
|                                | 2                                | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 2SC-01         | 062150         |
|                                | 2                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 2SC-01        | 057958         |
|                                | 2                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 2SC-01       | 058122         |
|                                | 2                                | W45 (MOP)      | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 2SW45-01       | 066627         |
|                                | 2                                | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 2SW45-01      | 065740         |
|                                | 2                                | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 2SW45-01     | 058212         |
|                                | 2                                | W45 (MOP)      | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 2SW45-01       | 066528         |
|                                | 2                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 2SZ-01        | 065739         |
|                                | 2                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 2SZ-01       | 058214         |
|                                | 2                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 2SC-01         | 066527         |
|                                | 2                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 2SZ-01         | 066529         |
|                                | 3-1/2                            | C (Med. Temp.) | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 3-1/2SC-01     | 058310         |
|                                | 3-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 3-1/2SC-02    | 065652         |
|                                | 3-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 3-1/2SC-01   | 058071         |
|                                | 3-1/2                            | C (Med. Temp.) | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 3-1/2SC-01     | 066530         |
|                                | 3-1/2                            | C (Med. Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 3-1/2SC-01    | 062151         |
|                                | 3-1/2                            | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 3-1/2SW45-01 | 066547         |
|                                | 3-1/2                            | W45 (MOP)      | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 3-1/2SW45-01   | 066531         |
|                                | 3-1/2                            | W45 (MOP)      | 1/2" X 5/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 3-1/2SW45-01  | 061694         |
|                                | 3-1/2                            | W45 (MOP)      | 1/2" X 5/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 3-1/2SW45-02  | 066534         |
|                                | 3-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" SAE              | External  | No    | 5 Ft.         | Angle          | No       | HFE 3-1/2SZ-01     | 063493         |
|                                | 3-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 3-1/2SZ-01    | 063492         |
|                                | 3-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 3-1/2SZ-01   | 066548         |
|                                | 3-1/2                            | Z (Low Temp.)  | 3/8" X 1/2" ODF              | Internal  | No    | 5 Ft.         | Straight Thru  | No       | HFS 3-1/2SZ-01     | 066532         |
|                                | 5                                | C (Med. Temp.) | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 5SC-02       | 058220         |
|                                | 5                                | C (Med. Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 5SC-01        | 066535         |
|                                | 5                                | W45 (MOP)      | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 5SW45-01     | 058221         |
|                                | 5                                | W45 (MOP)      | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 5SW45-01      | 064170         |
|                                | 5                                | Z (Low Temp.)  | 3/8" X 1/2" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 5SZ-01       | 066549         |
|                                | 5                                | Z (Low Temp.)  | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 5SZ-01        | 058451         |
|                                | 7                                | C (Med. Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 7SC-02        | 066536         |
|                                | 7                                | C (Med. Temp.) | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Angle          | Yes      | HFESC 7SC-01       | 065458         |
|                                | 7                                | W45 (MOP)      | 5/8" X 7/8" ODF              | External  | No    | 5 Ft.         | Straight Thru  | No       | HFES 7SW45-01      | 066537         |

| SYSTEM REFRIGERANT CODE        | CAPACITY (NOMINAL TONNAGE) | CHARGE CODE        | INLET X OUTLET CONNECTION | EQUALIZER | BLEED | CAP LENGTH | BODY DESIGN   | STRAINER | MODEL NUMBER     | ITEM NUMBER |
|--------------------------------|----------------------------|--------------------|---------------------------|-----------|-------|------------|---------------|----------|------------------|-------------|
| S (R-404A)<br>*R-502<br>*R-507 | 7                          | W45 (MOP)          | 5/8" X 7/8" ODF           | External  | No    | 5 Ft.      | Angle         | Yes      | HFESC 7SW45-02   | 066550      |
|                                | 7                          | Z (Low Temp.)      | 5/8" X 7/8" ODF           | External  | No    | 5 Ft.      | Straight Thru | No       | HFES 7SZ-01      | 064291      |
|                                | 7                          | Z (Low Temp.)      | 5/8" X 7/8" ODF           | External  | No    | 5 Ft.      | Angle         | Yes      | HFESC 7SZ-01     | 064058      |
|                                | 10                         | C (Med. Temp.)     | 5/8" X 7/8" ODF           | External  | No    | 5 Ft.      | Straight Thru | No       | HFES 10SC-02     | 066538      |
|                                | 10                         | C (Med. Temp.)     | 5/8" X 7/8" ODF           | External  | No    | 5 Ft.      | Angle         | Yes      | HFESC 10SC-01    | 064219      |
|                                | 10                         | W45 (MOP)          | 5/8" X 7/8" ODF           | External  | No    | 5 Ft.      | Straight Thru | No       | HFES 10SW45-01   | 064195      |
|                                | 10                         | W45 (MOP)          | 5/8" X 7/8" ODF           | External  | No    | 5 Ft.      | Angle         | Yes      | HFESC 10SW45-01  | 066551      |
|                                | 10                         | Z (Low Temp.)      | 5/8" X 7/8" ODF           | External  | No    | 5 Ft.      | Straight Thru | No       | HFES 10SZ-01     | 062828      |
| T (R-290)                      | 1/4                        | A (Med./Low Temp.) | 1/4 X 1/2" ODF            | Internal  | No    | 5 Ft.      | Angle         | No       | HFES 1/4TA-01    | 096830      |
|                                | 1/4                        | A (Med./Low Temp.) | 3/8 X 1/2" ODF            | External  | No    | 5 Ft.      | Straight Thru | No       | HFES 1/4TA-01    | 096818      |
|                                | 1/4                        | A (Med./Low Temp.) | 3/8 X 1/2" ODF            | External  | No    | 5 Ft.      | Angle         | Yes      | HFESC 1/4TA-01   | 096825      |
|                                | 1/4                        | A (Med./Low Temp.) | 3/8 X 1/2" ODF            | Internal  | No    | 5 Ft.      | Angle         | Yes      | HFESC 1/4TA-01   | 096833      |
|                                | 1/2                        | A (Med./Low Temp.) | 1/4 X 1/2" ODF            | Internal  | No    | 5 Ft.      | Angle         | No       | HFS 1/2TA-01     | 096831      |
|                                | 1/2                        | A (Med./Low Temp.) | 3/8 X 1/2" ODF            | External  | No    | 5 Ft.      | Straight Thru | No       | HFES 1/2TA-01    | 096817      |
|                                | 1/2                        | A (Med./Low Temp.) | 3/8 X 1/2" ODF            | External  | No    | 5 Ft.      | Angle         | Yes      | HFESC 1/2TA-01   | 096826      |
|                                | 1/2                        | A (Med./Low Temp.) | 3/8 X 1/2" ODF            | Internal  | No    | 5 Ft.      | Angle         | Yes      | HFESC 1/2TA-01   | 096834      |
|                                | 3/4                        | A (Med./Low Temp.) | 1/4 X 1/2" ODF            | Internal  | No    | 5 Ft.      | Angle         | No       | HFS 3/4TA-01     | 096832      |
|                                | 3/4                        | A (Med./Low Temp.) | 3/8 X 1/2" ODF            | External  | No    | 5 Ft.      | Straight Thru | No       | HFES 3/4TA-01    | 096819      |
|                                | 3/4                        | A (Med./Low Temp.) | 3/8 X 1/2" ODF            | External  | No    | 5 Ft.      | Angle         | Yes      | HFESC 3/4TA-01   | 096827      |
|                                | 1-1/4                      | A (Med./Low Temp.) | 3/8 X 1/2" ODF            | External  | No    | 5 Ft.      | Straight Thru | No       | HFES 1-1/4TA-01  | 096820      |
|                                | 1-1/4                      | A (Med./Low Temp.) | 3/8 X 1/2" ODF            | External  | No    | 5 Ft.      | Angle         | Yes      | HFESC 1-1/4TA-01 | 096828      |
|                                | 1-3/4                      | A (Med./Low Temp.) | 3/8 X 1/2" ODF            | External  | No    | 5 Ft.      | Angle         | Yes      | HFESC 1-3/4TA-01 | 096829      |
|                                | 2-1/4                      | A (Med./Low Temp.) | 3/8 X 1/2" ODF            | External  | No    | 5 Ft.      | Straight Thru | Yes      | HFES 2-1/4TA-01  | 096822      |
|                                | 3                          | A (Med./Low Temp.) | 3/8 X 1/2" ODF            | External  | No    | 5 Ft.      | Straight Thru | No       | HFES 3TA-01      | 096823      |
|                                | 5-1/2                      | A (Med./Low Temp.) | 3/8 X 1/2" ODF            | External  | No    | 5 Ft.      | Straight Thru | No       | HFES 5-1/2TA-01  | 096824      |

\* Valve capacity is for the first refrigerant listed. To determine the capacity for additional refrigerants listed, consult the nominal capacity tables for interchangeable refrigerants.

### NOMINAL CAPACITY TABLES FOR INTERCHANGEABLE REFRIGERANTS IN TONS (kW): Standard Body (1/8 to 5-1/2 Tons)

| R-134a      | R-12         | R-404A / R-507 / R-502 | R-22 / R-407C |
|-------------|--------------|------------------------|---------------|
| 1/4 (0.9)   | 1/8 (0.4)    | 1/8 (0.4)              | 1/4 (0.9)     |
| 1/2 (1.8)   | 1/4 (0.9)    | 1/4 (0.9)              | 1/2 (1.8)     |
| 3/4 (2.6)   | 1/2 (1.8)    | 1/2 (1.8)              | 1 (3.5)       |
| 1 (3.5)     | 1 (3.5)      | 1 (3.5)                | 1-1/2 (5.3)   |
| 1-1/2 (5.3) | 1-1/4 (4.4)  | 1-1/4 (4.4)            | 2 (7)         |
| 1-3/4 (6.2) | 1-1/2 (5.3)  | 1-1/2 (5.3)            | 2-1/2 (8.8)   |
| 2-1/2 (8.8) | 2 (7)        | 2 (7)                  | 3 (10.6)      |
| 4 (14.1)    | 3-1/2 (12.3) | 3-1/2 (12.3)           | 5-1/2 (19.3)  |

### NOMINAL CAPACITY TABLES FOR INTERCHANGEABLE REFRIGERANTS IN TONS (kW): Extended Body (8 to 20 Tons)

| R-134a       | R-12      | R-404A / R-507 / R-502 | R-22 / R-407C |
|--------------|-----------|------------------------|---------------|
| 6 (21.1)     | 5 (17.6)  | 5 (17.6)               | 8 (28.1)      |
| 7-1/2 (26.4) | 6 (21.1)  | 7 (24.6)               | 10 (35.2)     |
| 11 (38.7)    | 9 (31.7)  | 10 (35.2)              | 15 (52.8)     |
| 14 (49.2)    | 12 (42.2) | 13 (45.7)              | 20 (70.3)     |

All capacities shown are at 100°F condensing, 40°F evaporator temperature. See Extended Capacity Tables for ratings at a wide range of conditions per AHRI standard 750.

### POWER ASSEMBLY MODEL NOMENCLATURE - Example: X-26300-BA-1

| SERIES                  | SYSTEM REFRIGERANT CODE                                            |                                       | CHARGE CODE                                                                                          | CAPILLARY TUBE LENGTH CODE            |
|-------------------------|--------------------------------------------------------------------|---------------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------|
| X-26300                 | B                                                                  |                                       | A                                                                                                    | 1                                     |
| X-26300 = Power Element | B = R-448A / R-449A<br>D = R-450A / R-513A<br>F = R-12<br>H = R-22 | M = R-134a<br>S = R-404A<br>T = R-290 | A = Med/Low Temp.<br>C = Medium Temp.<br>CA = Heat Pump<br>W(MOP) = Press. Limiting<br>Z = Low Temp. | 1 = 5 Ft.<br>2 = 10 Ft.<br>3 = 15 Ft. |



## HF SERIES POWER ASSEMBLIES

| SYSTEM REFRIGERANT CODE | CHARGE CODE       | CAP LENGTH | MODEL NUMBER   | ITEM NUMBER |
|-------------------------|-------------------|------------|----------------|-------------|
| B (R-448A/R-449A)       | A (Med/Low Temp.) | 5 Ft.      | X-26300BA-1    | 066990      |
| D (R-450, R-513A)       | A (Med/Low Temp.) | 5 Ft.      | X-26300DA-1    | 096859      |
| F (R-12, R-134a)        | C (Med Temp.)     | 5 Ft.      | X-26300FC-1    | 053763      |
| F (R-12, R-134a)        | W15 (MOP)         | 5 Ft.      | X-26300FW15-1  | 053769      |
| F (R-12, R-134a)        | W55 (MOP)         | 5 Ft.      | X-26300FW55-1  | 063869      |
| F (R-12, R-134a)        | W35 (MOP)         | 5 Ft.      | X-26300FW35-1  | 054798      |
| F (R-12, R-134a)        | Z (Low Temp.)     | 5 Ft.      | X-26300FZ-1    | 053766      |
| H (R-22, R-407C)        | C (Med Temp.)     | 5 Ft.      | X-26300HC-1    | 053764      |
| H (R-22, R-407C)        | CA (Heat Pump)    | 5 Ft.      | X-26300HCA-1   | 057834      |
| H (R-22, R-407C)        | W100 (MOP)        | 5 Ft.      | X-26300HW100-1 | 057764      |
| H (R-22, R-407C)        | W35 (MOP)         | 5 Ft.      | X-26300HW35-1  | 053770      |
| H (R-22, R-407C)        | Z (Low Temp.)     | 5 Ft.      | X-26300HZ-1    | 053767      |
| M (R-134a, R-12)        | C (Med Temp.)     | 5 Ft.      | X-26300MC-1    | 058074      |
| M (R-134a, R-12)        | Z (Low Temp.)     | 5 Ft.      | X-26300MZ-1    | 058076      |
| S (R-404A, R-502 )      | C (Med Temp.)     | 5 Ft.      | X-26300SC-1    | 058083      |
| S (R-404A, R-502 )      | W45 (MOP)         | 5 Ft.      | X-26300SW45-1  | 058085      |
| S (R-404A, R-502 )      | Z (Low Temp.)     | 5 Ft.      | X-26300SZ-1    | 058082      |
| T (R-290)               | A (Med/Low Temp.) | 5 Ft.      | X-26300TA-1    | 096835      |

## HF SERIES VALVE CAGE KITS

If HF body is stamped HFK then the cage is replaceable.

| CAGE CODE | R-12  | R-22  | R-134a | R-290 | R-404A | R-448A / R-449A | R-450A / R-513A | R-507 | R-502 | MODEL NUMBER | ITEM NUMBER |
|-----------|-------|-------|--------|-------|--------|-----------------|-----------------|-------|-------|--------------|-------------|
| 0         | 1/8   | 1/4   | 1/4    | 1/4   | 1/8    | 1/4             | 1/5             | 1/8   | 1/8   | KT-20299-0   | 064868      |
| 1         | 1/4   | 1/2   | 1/2    | 1/2   | 1/4    | 1/2             | 1/4             | 1/4   | 1/4   | KT-20299-1   | 064869      |
| 2         | 1/2   | 1     | 3/4    | 3/4   | 1/2    | 1               | 1/2             | 1/2   | 1/2   | KT-20299-2   | 064870      |
| 3         | 1     | 1-1/2 | 1      | 1-1/4 | 1      | 1-1/2           | 3/4             | 1     | 1     | KT-20299-3   | 064871      |
| 4         | 1-1/4 | 2     | 1-1/2  | 1-3/4 | 1-1/4  | 2               | 1               | 1-1/4 | 1-1/4 | KT-20299-4   | 064872      |
| 5         | 1-1/2 | 2-1/2 | 1-3/4  | 2-1/4 | 1-1/2  | 2-1/2           | 1-1/4           | 1-1/2 | 1-1/2 | KT-20299-5   | 064873      |
| 6         | 2     | 3     | 2-1/2  | 3     | 2      | 3-1/2           | 1-3/4           | 2     | 2     | KT-20299-6   | 064874      |
| 7         | 3-1/2 | 5-1/2 | 4      | 5-1/2 | 3-1/2  | 6               | 3               | 3-1/2 | 3-1/2 | KT-20299-7   | 064875      |

All capacities shown are at 100°F condensing, 40°F evaporator temperature.  
See Extended Capacity Tables for ratings at a wide range of conditions per ARI standard 750.

## HFK SERIES BODY KITS

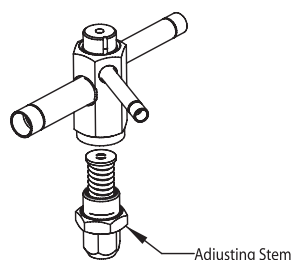
If HF body is stamped HFK then the cage is replaceable.

| VALVE TYPE      | CONNECTIONS     | BODY STYLE                | EXTERNAL EQUALIZER | MODEL NUMBER | ITEM NUMBER |
|-----------------|-----------------|---------------------------|--------------------|--------------|-------------|
| HFK Body Kit    | 1/4" X 1/2" SAE | Angle                     | No                 | KT-20298-1   | 064881      |
| HFK Body Kit    | 3/8" X 1/2" SAE | Angle                     | No                 | KT-20298-2   | 064882      |
| HFKE Body Kit   | 1/4" X 1/2" SAE | Angle                     | Yes                | KT-20298-3   | 064883      |
| HFKE Body Kit   | 3/8" X 1/2" SAE | Angle                     | Yes                | KT-20298-4   | 064884      |
| HFKSC Body Kit  | 3/8" X 1/2" ODF | Angle, Removable Strainer | No                 | KT-20298-5   | 064885      |
| HFKESC Body Kit | 3/8" X 1/2" ODF | Angle, Removable Strainer | Yes                | KT-20298-6   | 064886      |
| HFKS Body Kit   | 3/8" X 1/2" ODF | Straight Through          | No                 | KT-20298-7   | 064887      |
| HFKS Body Kit   | 3/8" X 5/8" ODF | Straight Through          | No                 | KT-20298-8   | 064888      |
| HFKS Body Kit   | 1/2" X 5/8" ODF | Straight Through          | No                 | KT-20298-9   | 064889      |
| HFKS Body Kit   | 1/2" X 7/8" ODF | Straight Through          | No                 | KT-20298-10  | 064890      |
| HFKES Body Kit  | 3/8" X 1/2" ODF | Straight Through          | Yes                | KT-20298-11  | 064891      |
| HFKES Body Kit  | 3/8" X 5/8" ODF | Straight Through          | Yes                | KT-20298-12  | 064892      |
| HFKES Body Kit  | 1/2" X 5/8" ODF | Straight Through          | Yes                | KT-20298-13  | 064895      |
| HFKES Body Kit  | 1/2" X 7/8" ODF | Straight Through          | Yes                | KT-20298-14  | 064896      |

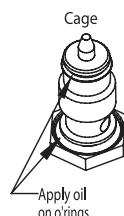
## HF SERIES SERVICE KITS AND PARTS

| DESCRIPTION                   | MODEL NUMBER       | ITEM NUMBER |
|-------------------------------|--------------------|-------------|
| 3/8" Inlet Filter Screen      | X-11176-1          | 027385      |
| 1/4" Inlet Filter Screen      | X-11176-7          | 048638      |
| SAE Inlet Nut Seal            | 27676-1            | 058707      |
| HFSC/HFESC Parts Kit          | KT-20264           | 057686      |
| HFK Cage Box (Empty)          | KT-20303           | 064897      |
| HFK Cage Insertion Tool       | KT-20304           | 064898      |
| HFK Oil Bottle                | Oil Bottle for HFK | 064899      |
| HFK Cage Gasket Kit (12 sets) | KT-20305           | 065203      |
| HFK and HFKE SAE/ODF Kit      | KT-20300-5         | 065135      |
| HF Cage Kit                   | KT-20301-1         | 064879      |

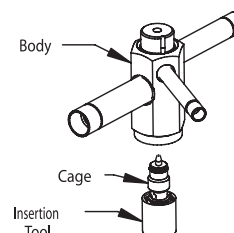
## HFK ASSEMBLY PROCEDURE



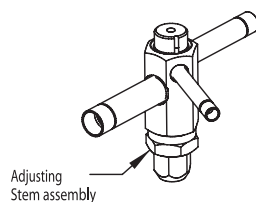
1. Remove adjusting stem assembly from body with 15/16" wrench.



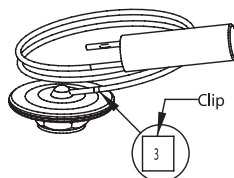
2. Lubricate both o-rings on cage.



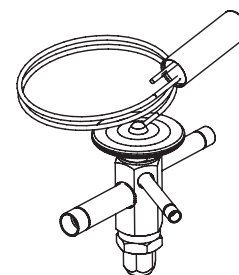
3. Insert cage into body with driver and insertion tool and hand tighten (do not over-tighten).



4. Replace adjustment stem assembly to body and hand tighten. Use the 15/16" wrench to tighten adjustment stem assembly 60° or one wrench flat (300-360 inch lbs. - Do not over-tighten).



5. Attach cage identification clip on power element cap tube.



6. Screw power element to top of valve body and hand tighten. Use the 1" wrench to tighten power element 60° or one wrench flat. (300-360 inch lbs. - Do not over-tighten)



Capacity  
Tables (Tons)





TX7-N07 806860

## TX7 SERIES THERMOSTATIC EXPANSION VALVES

*The Copeland TX7 Series is a balanced ported valve designed for air conditioning, heat pumps, close control and industrial process cooling applications. It is ideal for applications requiring a hermetic compact design with stable and accurate control over wide load and evaporation temperature ranges.*

### FEATURES

- Hermetic, leak-free construction
- Available for applications up to 47 ton (R-410A)
- Enhanced power element design offers extended valve life
- Laser welded stainless steel power element prevents corrosion
- Bi-directional flow capability allows one valve to control superheat for close-coupled or packaged heat pump applications
- Only available with adjustable superheat
- External equalizer with 1/4 ODF connection
- Balanced port construction

### SPECIFICATIONS

Maximum Working Pressure..... 667 psig (46 bar)  
 Refrigerant Temperature Range..... -13°F to 158°F (-11° to 70°C)  
 Storage Temperature ..... -22°F to 158°F (-30° to 70°C)  
 Connections..... Copper ODF  
 UL/CUL File Number ..... SA5312

### TEMPERATURE RANGES

| SYSTEM REFRIGERANT   | CHARGE          | RECOMMENDED EVAPORATING TEMPERATURE RANGE (°F) | MAXIMUM BULB TEMPERATURE (°F) |
|----------------------|-----------------|------------------------------------------------|-------------------------------|
| R-410A/R-32          | Z1 MOP 175 psig | -40 to 57                                      | 248                           |
| R-134a/R-450A/R-513A | M0              | -13 to 86                                      | 190                           |
| R-407C/R-22          | N0              | -13 to 68                                      | 160                           |

### MODEL NUMBER NOMENCLATURE - Example: TX7-Z16 806816

| SERIES                        | SYSTEM REFRIGERANT CODE                                       | PRESSURE LIMITING               | ORIFICE           | UNIQUE IDENTIFIER |
|-------------------------------|---------------------------------------------------------------|---------------------------------|-------------------|-------------------|
| TX7                           | Z                                                             | 1                               | 6                 | 806816            |
| Hermetic Balanced Port Design | M = R-134a/R450A/R-513A<br>N = R-407C/R-22<br>Z = R-410A/R-32 | 0 = Without MOP<br>1 = With MOP | Sizes 3 Through 9 |                   |

### TX7 SERIES THERMOSTATIC EXPANSION VALVES (Body Style Straight Thru)

| SYSTEM REFRIGERANT CODE          | CAPACITY (NOMINAL TONNAGE) | PRESSURE LIMITING | INLET X OUTLET CONNECTION | ADJUSTABLE SUPERHEAT | INTERNAL CHECK | EQUALIZER | BLEED | CAP LENGTH | MODEL NUMBER   | ITEM NUMBER |
|----------------------------------|----------------------------|-------------------|---------------------------|----------------------|----------------|-----------|-------|------------|----------------|-------------|
| M (R-134a)<br>*R-450A<br>*R-513A | 4                          | No                | 1/2" X 5/8" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | TX7-M03 806824 | 806824      |
|                                  | 5                          | No                | 5/8" X 7/8" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | TX7-M04 806826 | 806826      |
|                                  | 6-1/2                      | No                | 5/8" X 7/8" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | TX7-M05 806828 | 806828      |
|                                  | 10-1/2                     | No                | 7/8" X 1-1/8" ODF         | Yes                  | No             | External  | No    | 5 Ft.      | TX7-M06 806830 | 806830      |
|                                  | 13                         | No                | 7/8" X 1-1/8" ODF         | Yes                  | No             | External  | No    | 5 Ft.      | TX7-M07 806832 | 806832      |
|                                  | 17                         | No                | 7/8" X 1-1/8" ODF         | Yes                  | No             | External  | No    | 5 Ft.      | TX7-M08 806834 | 806834      |
|                                  | 24                         | No                | 7/8" X 1-1/8" ODF         | Yes                  | No             | External  | No    | 5 Ft.      | TX7-M09 806836 | 806836      |

**TX7 SERIES THERMOSTATIC EXPANSION VALVES (CONTINUED)** (Body Style Straight Thru)

| SYSTEM REFRIGERANT CODE | CAPACITY (NOMINAL TONNAGE) | PRESSURE LIMITING | INLET X OUTLET CONNECTION | ADJUSTABLE SUPERHEAT | INTERNAL CHECK | EQUALIZER | BLEED | CAP LENGTH | MODEL NUMBER   | ITEM NUMBER |
|-------------------------|----------------------------|-------------------|---------------------------|----------------------|----------------|-----------|-------|------------|----------------|-------------|
| N (R-407C)<br>*R-22     | 6-1/2                      | No                | 1/2" X 5/8" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | TX7-N03 806852 | 806852      |
|                         | 8                          | No                | 5/8" X 7/8" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | TX7-N04 806854 | 806854      |
|                         | 10                         | No                | 5/8" X 7/8" ODF           | Yes                  | No             | External  | No    | 5 Ft.      | TX7-N05 806856 | 806856      |
|                         | 16                         | No                | 7/8" X 1-1/8" ODF         | Yes                  | No             | External  | No    | 5 Ft.      | TX7-N06 806858 | 806858      |
|                         | 20                         | No                | 7/8" X 1-1/8" ODF         | Yes                  | No             | External  | No    | 5 Ft.      | TX7-N07 806860 | 806860      |
|                         | 26                         | No                | 7/8" X 1-1/8" ODF         | Yes                  | No             | External  | No    | 5 Ft.      | TX7-N08 806862 | 806862      |
|                         | 37                         | No                | 7/8" X 1-1/8" ODF         | Yes                  | No             | External  | No    | 5 Ft.      | TX7-N09 806864 | 806864      |
| Z (R-410A)<br>*R-32     | 20                         | 175 (MOP)         | 7/8" X 1-1/8" ODF         | Yes                  | No             | External  | No    | 5 Ft.      | TX7-Z16 806816 | 806816      |
|                         | 25                         | 175 (MOP)         | 7/8" X 1-1/8" ODF         | Yes                  | No             | External  | No    | 5 Ft.      | TX7-Z17 806818 | 806818      |
|                         | 33                         | 175 (MOP)         | 7/8" X 1-1/8" ODF         | Yes                  | No             | External  | No    | 5 Ft.      | TX7-Z18 806820 | 806820      |
|                         | 47                         | 175 (MOP)         | 7/8" X 1-1/8" ODF         | Yes                  | No             | External  | No    | 5 Ft.      | TX7-Z19 806822 | 806822      |

\* Valve capacity is for the first refrigerant listed. To determine the capacity for additional refrigerants listed, consult the Nominal Capacity Tables for Interchangeable Refrigerants.

**NOMINAL CAPACITY TABLES FOR INTERCHANGEABLE REFRIGERANTS IN TONS (KW)**

| ORIFICE SIZE | R-134a        | R-450A    | R-513A        | R-407C       | R-22          | R-410a     | R-32       |
|--------------|---------------|-----------|---------------|--------------|---------------|------------|------------|
| 3            | 4 (14.7)      | 4 (13.7)  | 3-3/4 (13.1)  | 6-1/2 (22.6) | 7 (24.2)      | —          | 12 (41.7)  |
| 4            | 5 (18.3)      | 5 (17.0)  | 4-1/2 (16.2)  | 8 (28.1)     | 8-1/2 (30.0)  | —          | 15 (51.9)  |
| 5            | 6-1/2 (22.4)  | 6 (20.9)  | 5-1/2 (19.9)  | 10 (34.4)    | 10-1/2 (36.8) | —          | 18 (63.6)  |
| 6            | 10-1/2 (37.0) | 10 (34.5) | 9-1/2 (32.9)  | 16 (56.9)    | 17 (60.8)     | 20 (71.7)  | 30 (105.0) |
| 7            | 13 (45.6)     | 12 (42.5) | 11-1/2 (40.5) | 20 (70.1)    | 21 (74.9)     | 25 (88.3)  | 37 (129.4) |
| 8            | 17 (60.1)     | 16 (55.9) | 15 (53.3)     | 26 (92.3)    | 28 (98.6)     | 33 (116.3) | 48 (170.4) |
| 9            | 24 (84.2)     | 22 (78.4) | 21 (74.7)     | 37 (129.3)   | 40 (138.2)    | 47 (163.0) | 68 (238.8) |

All capacities shown are at 100°F condensing, 40°F evaporator temperature.  
See Extended Capacity Tables for ratings at a wide range of conditions per AHRI standard 750.



TRAЕ+20HC-01



TRAЕ 50HC-02

## TRAЕ SERIES THERMOSTATIC EXPANSION VALVES

The TRAЕ Series is a large capacity valve designed for refrigeration, air conditioning, heat pump and chiller applications.

### FEATURES

- Suitable for heat pump bi-directional applications
- External superheat adjustment
- Integral body with straight thru connections
- Balanced port construction
- Solid copper connections
- Large diaphragm provides superior stability
- Replaceable power element and cage assembly for full serviceability on TRAЕ+ models
- Stainless steel power element for TRAЕ+
- Permanent inlet strainer

### SPECIFICATIONS

Maximum Working Pressure..... 450 psig (31 bar)  
 UR/CUR File Number ..... SA5312  
 Canadian CRN ..... 0C21506.513467890YTN

### MODEL NUMBER NOMENCLATURE - Example: TRAЕ+ 30HC-01

| SERIES                      | EQUALIZER             | REPLACEABLE COMPONENTS  | CAPACITY               | SYSTEM REFRIGERANT CODE                                                                  | CHARGE CODE                                                                                        | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                                | PACK TYPE                                        |
|-----------------------------|-----------------------|-------------------------|------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------|--------------------------------------------------|
| TRA                         | E                     | +                       | 30                     | H                                                                                        | C                                                                                                  | -01                   |                                                 |                                                  |
| Double Balanced Port Design | E = External 1/4" SAE | Cage and Power Assembly | Nominal Rating in Tons | F = R-12<br>H = R-22<br>M = R-134a<br>N = R-407C<br>P = R-507<br>R = R-502<br>S = R-404A | AA = Wide Range<br>C = Medium Temp.<br>CA = Heat Pump<br>W(MOP) = Press. Limiting<br>Z = Low Temp. | -01 Thru -999         | G = Customer Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

### TRAЕ SERIES THERMOSTATIC EXPANSION VALVES (Body Style Straight Thru)

| REFRIGERANT CODE    | CAPACITY (NOMINAL TONNAGE) | CHARGE CODE    | INLET X OUTLET CONNECTION | CAP LENGTH | MODEL NUMBER     | ITEM NUMBER |
|---------------------|----------------------------|----------------|---------------------------|------------|------------------|-------------|
| H (R-22)<br>*R-407C | 10                         | C (Med. Temp.) | 5/8" X 7/8" ODF           | 5 Ft.      | TRAЕ+ 10HC-01    | 062718      |
|                     | 10                         | C (Med. Temp.) | 7/8" X 1-1/8" ODF         | 15 Ft.     | TRAЕ+ 10HC-02    | 063100      |
|                     | 10                         | CA (Heat Pump) | 5/8" X 7/8" ODF           | 10 Ft.     | TRAЕ+ 10HCA-05   | 063138      |
|                     | 10                         | CA (Heat Pump) | 7/8" X 1-1/8" ODF         | 10 Ft.     | TRAЕ+ 10HCA-07   | 063554      |
|                     | 15                         | C (Med. Temp.) | 5/8" X 7/8" ODF           | 10 Ft.     | TRAЕ+ 15HC-04    | 063139      |
|                     | 15                         | C (Med. Temp.) | 7/8" X 1-1/8" ODF         | 10 Ft.     | TRAЕ+ 15HC-02    | 062721      |
|                     | 15                         | CA (Heat Pump) | 5/8" X 7/8" ODF           | 10 Ft.     | TRAЕ+ 15HCA-05   | 063510      |
|                     | 15                         | CA (Heat Pump) | 7/8" X 1-1/8" ODF         | 10 Ft.     | TRAЕ+ 15HCA-03   | 062722      |
|                     | 15                         | CA (Heat Pump) | 7/8" X 1-3/8" ODF         | 10 Ft.     | TRAЕ+ 15HCA-04   | 063141      |
|                     | 15                         | W100 (MOP)     | 5/8" X 7/8" ODF           | 5 Ft.      | TRAЕ+ 15HW100-02 | 063103      |
|                     | 15                         | W100 (MOP)     | 7/8" X 1-1/8" ODF         | 10 Ft.     | TRAЕ+ 15HW100-01 | 062723      |
|                     | 20                         | C (Med. Temp.) | 7/8" X 1-1/8" ODF         | 10 Ft.     | TRAЕ+ 20HC-01    | 062724      |
|                     | 20                         | C (Med. Temp.) | 7/8" X 1-3/8" ODF         | 10 Ft.     | TRAЕ+ 20HC-03    | 063650      |
|                     | 20                         | CA (Heat Pump) | 7/8" X 1-1/8" ODF         | 10 Ft.     | TRAЕ+ 20HCA-04   | 062725      |

| REFRIGERANT CODE               | CAPACITY<br>(NOMINAL TONNAGE) | CHARGE CODE    | INLET X OUTLET CONNECTION | CAP LENGTH | MODEL NUMBER     | ITEM NUMBER |
|--------------------------------|-------------------------------|----------------|---------------------------|------------|------------------|-------------|
| H (R-22)<br>*R-407C            | 20                            | CA (Heat Pump) | 1-1/8" X 1-1/8" ODF       | 10 Ft.     | TRAE+ 20HCA-10   | 064581      |
|                                | 20                            | W100 (MOP)     | 7/8" X 1-1/8" ODF         | 10 Ft.     | TRAE+ 20HW100-01 | 062726      |
|                                | 20                            | W90 (MOP)      | 7/8" X 1-1/8" ODF         | 15 Ft.     | TRAE+ 20HW90-05  | 064018      |
|                                | 30                            | C (Med. Temp.) | 7/8" X 1-1/8" ODF         | 10 Ft.     | TRAE+ 30HC-03    | 062727      |
|                                | 30                            | C (Med. Temp.) | 1-1/8" X 1-3/8" ODF       | 10 Ft.     | TRAE+ 30HC-04    | 062728      |
|                                | 30                            | CA (Heat Pump) | 1-1/8" X 1-3/8" ODF       | 10 Ft.     | TRAE+ 30HCA-07   | 062730      |
|                                | 30                            | W100 (MOP)     | 7/8" X 1-3/8" ODF         | 5 Ft.      | TRAE+ 30HW100-04 | 063425      |
|                                | 30                            | W85 (MOP)      | 7/8" X 1-1/8" ODF         | 15 Ft.     | TRAE+ 30HW85-01  | 063109      |
|                                | 40                            | C (Med. Temp.) | 1-1/8" X 1-3/8" ODF       | 10 Ft.     | TRAE+ 40HC-02    | 062733      |
|                                | 40                            | C (Med. Temp.) | 1-1/8" X 1-3/8" ODF       | 15 Ft.     | TRAE+ 40HC-03    | 063153      |
|                                | 40                            | CA (Heat Pump) | 1-1/8" X 1-3/8" ODF       | 10 Ft.     | TRAE+ 40HCA-04   | 062734      |
|                                | 50                            | C (Med. Temp.) | 1-1/8" X 1-3/8" ODF       | 10 Ft.     | TRAE 50HC-02     | 061700      |
|                                | 60                            | C (Med. Temp.) | 1-1/8" X 1-3/8" ODF       | 10 Ft.     | TRAE 60HC-03     | 061865      |
|                                | 60                            | C (Med. Temp.) | 1-3/8" X 1-3/8" ODF       | 20 Ft.     | TRAE 60HC-01     | 058657      |
|                                | 70                            | C (Med. Temp.) | 1-1/8" X 1-3/8" ODF       | 10 Ft.     | TRAE 70HC-03     | 061866      |
| M (R-134a)<br>*R-12            | 22                            | C (Med. Temp.) | 7/8" X 1-1/8" ODF         | 10 Ft.     | TRAE+ 22MC-02    | 063462      |
|                                | 30                            | C (Med. Temp.) | 1-1/8" X 1-3/8" ODF       | 10 Ft.     | TRAE+ 30MC-01    | 064001      |
|                                | 40                            | C (Med. Temp.) | 1-1/8" X 1-3/8" ODF       | 15 Ft.     | TRAE 40MC-01     | 063941      |
| S (R-404A)<br>*R-502<br>*R-507 | 14                            | C (Med. Temp.) | 1-1/8" X 1-1/8" ODF       | 10 Ft.     | TRAE+ 14SC-01    | 064407      |
|                                | 20                            | C (Med. Temp.) | 7/8" X 1-1/8" ODF         | 10 Ft.     | TRAE+ 20SC-02    | 063461      |
|                                | 20                            | Z (Low Temp.)  | 5/8" X 7/8" ODF           | 10 Ft.     | TRAE+ 20SZ-01    | 064923      |
|                                | 35                            | C (Med. Temp.) | 1-1/8" X 1-3/8" ODF       | 10 Ft.     | TRAE 35SC-01     | 064217      |

\* Valve capacity is for the first refrigerant listed. To determine the capacity for additional refrigerants listed, consult the Nominal Capacity Tables for Interchangeable Refrigerants.

#### NOMINAL CAPACITY TABLES FOR INTERCHANGEABLE REFRIGERANTS IN TONS (kW): TRAE+ 10-40 Ton

| R-134a     | R-12         | R-404A / R-502 | R-507     | R-22 / R-407C |
|------------|--------------|----------------|-----------|---------------|
| 9 (31.7)   | 7-1/2 (26.4) | 8 (28.1)       | 8 (28.1)  | 10 (35.2)     |
| 13 (45.7)  | 10 (35.2)    | 12 (42.2)      | 12 (42.2) | 15 (52.8)     |
| 14 (49.2)  | 12 (42.2)    | 14 (49.2)      | 14 (49.2) | 20 (70.3)     |
| 22 (77.4)  | 18 (63.3)    | 20 (70.3)      | 20 (70.3) | 30 (105.5)    |
| 30 (105.5) | 25 (87.9)    | 30 (105.5)     | 28 (98.5) | 40 (140.8)    |

#### NOMINAL CAPACITY TABLES FOR INTERCHANGEABLE REFRIGERANTS IN TONS (kW): TRAE 40-70 Ton

| R-134a     | R-12       | R-404A / R-507 / R-502 | R-22 / R-407C |
|------------|------------|------------------------|---------------|
| 40 (140.8) | 30 (105.5) | 35 (123.1)             | 50 (175.8)    |
| 45 (158.3) | 35 (123.1) | 40 (140.8)             | 60 (211.0)    |
| 50 (175.8) | 40 (140.8) | 50 (175.8)             | 70 (246.2)    |

All capacities shown are at 100°F condensing, 40°F evaporator temperature.  
See Extended Capacity Tables for ratings at a wide range of conditions per AHRI standard 750.

TRAE+ POWER ASSEMBLY MODEL NOMENCLATURE - Example: X-28458HCA-2

| PRINT REFERENCE          | SYSTEM REFRIGERANT CODE                           | CHARGE CODE                                                                                                 | CAPILLARY TUBE LENGTH CODE            |
|--------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------|---------------------------------------|
| X-28458                  | H                                                 | CA                                                                                                          | 2                                     |
| X-28458 = Drawing Number | H = R-22<br>M = R-134a<br>R = R-502<br>S = R-404A | C = Medium Temp.<br>CA = Heat Pump<br>G(MOP) = Press. Limiting<br>W(MOP) = Press. Limiting<br>Z = Low Temp. | 1 = 5 Ft.<br>2 = 10 Ft.<br>3 = 15 Ft. |

TRAE+ POWER ASSEMBLIES

| PRINT REFERENCE | SYSTEM REFRIGERANT CODE  | CHARGE CODE      | CAP LENGTH | MODEL NUMBER   | ITEM NUMBER |
|-----------------|--------------------------|------------------|------------|----------------|-------------|
| X-28458         | H (R-22, R-407C)         | CA (Heat Pump)   | 10 Ft.     | X-28458HCA-2   | 063414      |
| X-28458         | H (R-22, R-407C)         | W100 (MOP)       | 10 Ft.     | X-28458HW100-2 | 063416      |
| X-28458         | S (R-404A, R-502, R-507) | C (Med. Temp.)   | 10 Ft.     | X-28458SC-2    | 065439      |
| X-28458         | S (R-404A, R-502, R-507) | W45 (MOP)        | 10 Ft.     | X-28458SW45-2  | 065298      |
| X-28458         | M (R-134a)               | C (Medium Temp.) | 15 Ft.     | X-28458MC-3    | 063593      |

TRAE+ CAGE KITS

Cage kits are cross referenced by capacity and tonnage in the table below. Each cage kit consists of a replacement cage and cage removal wrench. In addition, the cage removal wrench (KT-20294) can be ordered as a separate item.

| NOMINAL CAPACITY - TONS |               |                        | MODEL NUMBER | ITEM NUMBER |
|-------------------------|---------------|------------------------|--------------|-------------|
| R-22                    | R-12 / R-134a | R-507 / R-404A / R-502 |              |             |
| 10                      | 9             | 8                      | KT-20289     | 063387      |
| 15                      | 13            | 12                     | KT-20290     | 063388      |
| 20                      | 14            | 14                     | KT-20291     | 063389      |
| 30                      | 22            | 20                     | KT-20292     | 063390      |
| 40                      | 30            | 30                     | KT-20293     | 063391      |

Capacities shown are at 100° F condensing and 40° F evaporator temperature.  
See Extended Capacity Tables for ratings at a wide range of conditions.

TRAE+ PARTS LIST

| DESCRIPTION             | MODEL NUMBER | ITEM NUMBER |
|-------------------------|--------------|-------------|
| TRAE Series Cage Wrench | KT-20294     | 063392      |
| Nut Seal                | 27676-1      | 058707      |





## T-SERIES TAKE-APART THERMOSTATIC EXPANSION VALVES

*T-Series take-apart valves with adjustable superheat and replaceable, interchangeable components are ideal for air conditioning, heat pump, and refrigeration applications.*

### FEATURES

- Take-apart construction for easy field service
- External superheat adjustment
- Bi-directional capability
- Stainless steel power assembly up to 18 tons
- Interchangeable replaceable cages, body flanges, power assemblies
- 1/4 to 100 Tons Capacity

### SPECIFICATIONS

Maximum Working Pressure..... 450 psig (31 bar)  
Torque Bolts ..... 300 In. Lbs

### MODEL NUMBER NOMENCLATURE - Example: **TCLC 3FC-03**

| SERIES                          | TYPE                                                                                                                          | NAVY                               | EQUALIZER                                                                                                | BLEED HOLE                                     | CAPACITY               | SYSTEM REFRIGERANT CODE                                                                  | CHARGE CODE                                                                                        | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                             | PACK TYPE                                        |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------------------------|------------------------|------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------|--------------------------------------------------|
| T                               | CL                                                                                                                            |                                    | E                                                                                                        |                                                | 3                      | F                                                                                        | C                                                                                                  | -03                   |                                              |                                                  |
| Take-Apart Adjustable Superheat | CL, JL, JR = Small Capacity (1/2 to 18 Tons R-22)<br><br>ER, IR, HR, MR = Large Capacity, Balanced Port (22 to 100 Tons R-22) | N= Navy<br><br>(Omit for Standard) | E = External<br><br>(Omit for Internal and Omit on Externally Equalized TCLN, TER, THR, TIR, TMR Models) | B = Bleed Hole<br><br>(Omit for No Bleed Hole) | Nominal Rating in Tons | F = R-12<br>H = R-22<br>M = R-134a<br>N = R-407C<br>P = R-507<br>R = R-502<br>S = R-404A | AA = Wide Range<br>C = Medium Temp.<br>CA = Heat Pump<br>W(MOP) = Press. Limiting<br>Z = Low Temp. | -01 Thru -999         | G = Cust. Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

### STEP 1: Select small capacity cage kit

### T-SERIES SMALL CAPACITY CAGE KITS

| VALVE TYPE | NOMINAL CAPACITY - TONS |        |       |                |        |       |           | MODEL NUMBER | ITEM NUMBER |
|------------|-------------------------|--------|-------|----------------|--------|-------|-----------|--------------|-------------|
|            | R-12                    | R-134a | R-22  | R-404A / R-507 | R-407C | R-502 | EQUALIZER |              |             |
| TCL TCLE   | 1/4                     | 1/4    | 1/2   | 1/4            | 1/2    | 1/4   | Internal  | X-22440-B1A  | 037034      |
|            | 1/4                     | 1/4    | 1/2   | 1/4            | 1/2    | 1/4   | External  | X-22440-B1B  | 037035      |
|            | 1/2                     | 3/4    | 1     | 1/2            | 1      | 1/2   | Internal  | X-22440-B2A  | 037036      |
|            | 1/2                     | 3/4    | 1     | 1/2            | 1      | 1/2   | External  | X-22440-B2B  | 037037      |
|            | 1                       | 1-1/5  | 2     | 1              | 2      | 1     | Internal  | X-22440-B3A  | 037038      |
|            | 1                       | 1-1/2  | 2     | 1              | 2      | 1     | External  | X-22440-B3B  | 037039      |
|            | 2                       | 2-1/2  | 3     | 2              | 3      | 2     | Internal  | X-22440-B4A  | 037040      |
|            | 2                       | 2-1/2  | 3     | 2              | 3      | 2     | External  | X-22440-B4B  | 037041      |
|            | 3                       | 3-1/2  | 5     | 3              | 5      | 3     | External  | X-22440-B5B  | 037043      |
|            | 4                       | 5-1/2  | 7-1/2 | 4-1/2          | 7-1/2  | 4-1/2 | External  | X-22440-B6B  | 037045      |
| TJLE       | 6-1/2                   | 7-1/2  | 10    | 7              | 10     | 7     | External  | X-22440-B7B  | 037047      |
|            | 7-1/2                   | 9      | 12    | 8              | 12     | 8     | External  | X-22440-B8B  | 037049      |
| TJR        | 7                       | 9      | 11    | 7              | 11     | 7     | External  | XC-724-B4B   | 093343      |
|            | 8                       | 11     | 14    | 9              | 14     | 9     | External  | XC-724-B5B   | 038699      |
| TJR        | 8                       | 11     | 14    | 9              | 14     | 9     | External  | X-11873-B4B  | 088837      |
|            | 11                      | 13     | 18    | 12             | 18     | 12    | External  | X-11873-B5B  | 089058      |

Gasket strip X13455-1 (ITEM NUMBER 027579) replaces all older T-Series Gasket kits.



**STEP 2:** Select Small Capacity Flange**T-SERIES SMALL CAPACITY FLANGES**

| VALVE TYPE | CONFIGURATION | INLET CONNECTION       | OUTLET CONNECTION      | MODEL NUMBER | ITEM NUMBER |
|------------|---------------|------------------------|------------------------|--------------|-------------|
| TCL, TCLE  | Angle         | 3/8" SAE               | 1/2" SAE               | C-500-4      | 056932      |
| TCL, TCLE  | Angle         | 3/8" SAE               | 5/8" SAE               | C-500-5      | 057153      |
| TCL, TCLE  | Angle         | 1/2" SAE               | 5/8" SAE               | C-500-6      | 056294      |
| TCL, TCLE  | Angle         | 3/8" ODF               | 1/2" ODF               | C-501-4      | 065527      |
| TCL, TCLE  | Angle         | 3/8" ODF               | 5/8" ODF               | C-501-5      | 065748      |
| TCL, TCLE  | Angle         | 1/2" ODF               | 5/8" ODF               | C-501-7      | 065861      |
| TCL, TCLE  | Angle         | 5/8" ODF or 7/8" ODM   | 7/8" ODF or 1-1/8" ODM | A576         | 027764      |
| TCL, TCLE  | Straight Thru | 3/8" SAE               | 1/2" SAE               | X-6669-4     | 051176      |
| TCL, TCLE  | Straight Thru | 3/8" SAE               | 5/8" SAE               | X-6669-1     | 050563      |
| TCL, TCLE  | Straight Thru | 1/2" SAE               | 1/2" SAE               | X-6669-5     | 083378      |
| TCL, TCLE  | Straight Thru | 1/2" SAE               | 5/8" SAE               | X-6669-2     | 050842      |
| TCL, TCLE  | Straight Thru | 3/8" ODF               | 1/2" ODF               | 9761-5       | 027769      |
| TCL, TCLE  | Straight Thru | 3/8" ODF               | 5/8" ODF               | 9761-3       | 027771      |
| TCL, TCLE  | Straight Thru | 1/2" ODF               | 1/2" ODF               | 9761-9       | 027766      |
| TCL, TCLE  | Straight Thru | 1/2" ODF               | 5/8" ODF               | 9761-4       | 027268      |
| TCL, TCLE  | Straight Thru | 1/2" ODF               | 7/8" ODF               | 9761-2       | 027770      |
| TCL, TCLE  | Straight Thru | 5/8" ODF               | 5/8" ODF               | X-6346-16    | 044733      |
| TCL, TCLE  | Straight Thru | 5/8" ODF               | 7/8" ODF               | X-6346-17    | 044846      |
| TCL, TCLE  | Straight Thru | 5/8" ODF               | 1-1/8" ODF             | X-6346-18    | 094038      |
| TCL, TCLE  | Straight Thru | 7/8" ODF               | 1-1/8" ODF             | X-6346-34    | 071757      |
| TJLE       | Angle         | 5/8" ODF or 7/8" ODM   | 7/8" ODF or 1-1/8" ODM | B504         | 044984      |
| TJLE       | Straight Thru | 5/8" ODF               | 1-1/8" ODF             | X-6347-2     | 094289      |
| TJLE       | Straight Thru | 7/8" ODF               | 1-1/8" ODF             | X-6347-6     | 057210      |
| TJLE       | Straight Thru | 7/8" ODF               | 1-3/8" ODF             | X-6347-7     | 057323      |
| TJR        | Angle         | 7/8" ODF or 1-1/8" ODM | 7/8" ODF or 1-1/8" ODM | 10331        | 029411      |
| TJR        | Straight Thru | 7/8" ODF or 1-1/8" ODM | 7/8" ODF or 1-1/8" ODM | 10332        | 032988      |

**STEP 3:** Select Power Assembly**POWER ASSEMBLY MODEL NOMENCLATURE** - Example: XB-1019FC-1A

| PRINT REFERENCE          | SYSTEM REFRIGERANT CODE                                                                  | CHARGE CODE                                                                                                                  | CAPILLARY TUBE LENGTH CODE            | EQUALIZER                    |
|--------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|------------------------------|
| XB-1019                  | F                                                                                        | C                                                                                                                            | 1                                     | A                            |
| XB-1019 = Drawing Number | F = R-12<br>H = R-22<br>M = R-134a<br>N = R-407C<br>P = R-507<br>R = R-502<br>S = R-404A | A = Medium & Low Temp.<br>AA = Wide Range<br>C = Medium Temp.<br>CA = Heat Pump<br>W(MOP) = Press. Limiting<br>Z = Low Temp. | 1 = 5 Ft.<br>2 = 10 Ft.<br>3 = 15 Ft. | A = Internal<br>B = External |

**T-SERIES SMALL POWER ASSEMBLIES**

| VALVE TYPE           | SYSTEM REFRIGERANT CODE | CHARGE CODE    | CAP LENGTH | EQUALIZER | MODEL NUMBER    | ITEM NUMBER |
|----------------------|-------------------------|----------------|------------|-----------|-----------------|-------------|
| TCL, TCLE, TJLE, TJR | F (R-12)                | W15 (MOP)      | 5 Ft.      | External  | XB-1019FW15-1B  | 077063      |
|                      | F (R-12)                | W35 (MOP)      | 5 Ft.      | External  | XB-1019FW35-1B  | 079346      |
|                      | F (R-12)                | W55 (MOP)      | 10 Ft.     | External  | XB-1019FW55-2B  | 050981      |
|                      | F (R-12)                | W55 (MOP)      | 5 Ft.      | External  | XB-1019FW55-1B  | 057432      |
|                      | F (R-12)                | C (Med. Temp.) | 10 Ft.     | Internal  | XB-1019FC-2A    | 032374      |
|                      | F (R-12)                | C (Med. Temp.) | 10 Ft.     | External  | XB-1019FC-2B    | 052954      |
|                      | F (R-12)                | C (Med. Temp.) | 15 Ft.     | External  | XB-1019FC-3B    | 058569      |
|                      | F (R-12)                | C (Med. Temp.) | 5 Ft.      | Internal  | XB-1019FC-1A    | 052951      |
|                      | F (R-12)                | C (Med. Temp.) | 5 Ft.      | External  | XB-1019FC-1B    | 049881      |
|                      | H (R-22)                | W100 (MOP)     | 10 Ft.     | External  | XB-1019HW100-2B | 062658      |
|                      | H (R-22)                | W100 (MOP)     | 5 Ft.      | External  | XB-1019HW100-1B | 062437      |

## T-SERIES SMALL POWER ASSEMBLIES (CONTINUED)

| VALVE TYPE           | SYSTEM REFRIGERANT CODE | CHARGE CODE    | CAP LENGTH | EQUALIZER | MODEL NUMBER    | ITEM NUMBER |
|----------------------|-------------------------|----------------|------------|-----------|-----------------|-------------|
| TCL, TCLE, TJLE, TJR | H (R-22)                | W35 (MOP)      | 5 Ft.      | External  | XB-1019HW35-1B  | 089975      |
|                      | H (R-22)                | W55 (MOP)      | 5 Ft.      | External  | XB-1019HW55-1B  | 039152      |
|                      | H (R-22)                | W65 (MOP)      | 5 Ft.      | External  | XB-1019HW65-1B  | 089445      |
|                      | H (R-22)                | CA (Heat Pump) | 5 Ft.      | External  | XB-1019HCA-1B   | 056039      |
|                      | H (R-22)                | Z (Low Temp.)  | 10 Ft.     | External  | XB-1019HZ-2B    | 054105      |
|                      | H (R-22)                | Z (Low Temp.)  | 5 Ft.      | External  | XB-1019HZ-1B    | 040568      |
|                      | H (R-22)                | C (Med. Temp.) | 10 Ft.     | External  | XB-1019HC-2B    | 054390      |
|                      | H (R-22)                | C (Med. Temp.) | 20 Ft.     | External  | XB-1019HW-4B    | 055703      |
|                      | H (R-22)                | C (Med. Temp.) | 5 Ft.      | Internal  | XB-1019HC-1A    | 062078      |
|                      | H (R-22)                | C (Med. Temp.) | 5 Ft.      | External  | XB-1019HC-1B    | 053416      |
|                      | M (R-134a)              | W55 (MOP)      | 5 Ft.      | External  | XB-1019MW55-1B  | 057370      |
|                      | M (R-134a)              | Z (Low Temp.)  | 5 Ft.      | External  | XB-1019MZ-1B    | 061946      |
|                      | M (R-134a)              | C (Med. Temp.) | 10 Ft.     | External  | XB-1019MC-2B    | 059548      |
|                      | M (R-134a)              | C (Med. Temp.) | 5 Ft.      | External  | XB-1019MC-1B    | 057878      |
|                      | N (R-407C)              | W100 (MOP)     | 5 Ft.      | External  | XB-1019NW100-1B | 063069      |
|                      | N (R-407C)              | C (Med. Temp.) | 5 Ft.      | External  | XB-1019NC-1B    | 064837      |
|                      | P (R-507)               | W40 (MOP)      | 5 Ft.      | External  | XB-1019PW40-1B  | 064200      |
|                      | P (R-507)               | Z (Low Temp.)  | 5 Ft.      | External  | XB-1019PZ-1B    | 061951      |
|                      | P (R-507)               | C (Med. Temp.) | 5 Ft.      | External  | XB-1019PC-1B    | 061949      |
|                      | R (R-502)               | W15 (MOP)      | 5 Ft.      | External  | XB-1019RW15-1B  | 070346      |
|                      | R (R-502)               | W35 (MOP)      | 5 Ft.      | External  | XB-1019RW35-1B  | 063644      |
|                      | R (R-502)               | W45 (MOP)      | 10 Ft.     | External  | XB-1019RW45-2B  | 055704      |
|                      | R (R-502)               | W45 (MOP)      | 5 Ft.      | External  | XB-1019RW45-1B  | 055881      |
|                      | R (R-502)               | W65 (MOP)      | 5 Ft.      | External  | XB-1019RW65-1B  | 063114      |
|                      | R (R-502)               | Z (Low Temp.)  | 10 Ft.     | External  | XB-1019RZ-2B    | 047358      |
|                      | R (R-502)               | Z (Low Temp.)  | 5 Ft.      | External  | XB-1019RZ-1B    | 046474      |
|                      | R (R-502)               | C (Med. Temp.) | 10 Ft.     | External  | XB-1019RC-2B    | 054415      |
|                      | R (R-502)               | C (Med. Temp.) | 5 Ft.      | External  | XB-1019RC-1B    | 052955      |
|                      | S (R-404A)              | W40 (MOP)      | 5 Ft.      | External  | XB-1019SW40-1B  | 059130      |
|                      | S (R-404A)              | W65 (MOP)      | 5 Ft.      | External  | XB-1019SW65-1B  | 063541      |
|                      | S (R-404A)              | Z (Low Temp.)  | 10 Ft.     | External  | XB-1019SZ-2B    | 061948      |
|                      | S (R-404A)              | C (Med. Temp.) | 5 Ft.      | External  | XB-1019SC-1B    | 059189      |

## STEP 1: Select Large Capacity Cage Kit

## T-SERIES LARGE CAPACITY CAGE KITS

| VALVE TYPE | NOMINAL CAPACITY - TONS |        |      |                |        |       |           | MODEL NUMBER | ITEM NUMBER |
|------------|-------------------------|--------|------|----------------|--------|-------|-----------|--------------|-------------|
|            | R-12                    | R-134a | R-22 | R-404A / R-507 | R-407C | R-502 | EQUALIZER |              |             |
| TER        | 13                      | 16     | 22   | 14             | 22     | 14    | External  | X-9117-B6B   | 077896      |
| TER        | 15                      | 19     | 26   | 16             | 26     | 16    | External  | X-9117-B7B   | 078117      |
| TER        | 20                      | 25     | 35   | 21             | 35     | 21    | External  | X-9117-B8B   | 071155      |
| TER        | 25                      | 31     | 45   | 27             | 45     | 27    | External  | X-9117-B9B   | 029429      |
| TIR        | 35                      | 45     | 55   | 37             | 55     | 37    | External  | X-9166-B10B  | 070738      |
| THR        | 35                      | 45     | 55   | 37             | 55     | 37    | External  | X-9144-B10B  | 071238      |
| THR        | 45                      | 55     | 75   | 48             | 70     | 48    | External  | X-9144-B11B  | 020846      |
| THR        | 55                      | 68     | 85   | 60             | 85     | 60    | External  | X-9144-B13B  | 021067      |
| TMR        | 55                      | 68     | 100  | 60             | 100    | —     | External  | X-9144-B14B  | 065123      |



Capacity  
Tables (Tons)

**STEP 2: Select Large Capacity Flange****T-SERIES LARGE CAPACITY FLANGES**

| VALVE TYPE | CONFIGURATION | INLET CONNECTION       | OUTLET CONNECTION      | MODEL NUMBER | ITEM NUMBER |
|------------|---------------|------------------------|------------------------|--------------|-------------|
| TER        | Angle         | 7/8" ODF or 1-1/8" ODM | 7/8" ODF or 1-1/8" ODM | 9153         | 027919      |
| TER        | Straight Thru | 7/8" ODF or 1-1/8" ODM | 7/8" ODF or 1-1/8" ODM | 9152         | 027918      |
| TIR        | Angle         | 7/8" ODF or 1-1/8" ODM | 7/8" ODF or 1-1/8" ODM | 9151         | 027926      |
| TIR        | Straight Thru | 7/8" ODF or 1-1/8" ODM | 7/8" ODF or 1-1/8" ODM | 9150         | 028849      |
| THR        | Angle         | 1-1/8" ODM             | 1-1/8" ODM             | 9149         | 028030      |
| THR        | Straight Thru | 1-1/8" ODM             | 1-1/8" ODM             | 9148         | 028032      |
| TMR        | Angle         | 1-1/8" ODM             | 1-1/8" ODM             | 9149-1       | 065124      |
| TMR        | Straight Thru | 1-1/8" ODM             | 1-1/8" ODM             | 9148-1       | 065125      |

**STEP 3: Select Power Assembly****POWER ASSEMBLY MODEL NOMENCLATURE** - Example: XB-1019FC-1A

| PRINT REFERENCE          | SYSTEM REFRIGERANT CODE                                                                  | CHARGE CODE                                                                        | CAPILLARY TUBE LENGTH CODE            | EQUALIZER                    |
|--------------------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|---------------------------------------|------------------------------|
| XB-1019                  | F                                                                                        | C                                                                                  | 1                                     | A                            |
| XB-1019 = Drawing Number | F = R-12<br>H = R-22<br>M = R-134a<br>N = R-407C<br>P = R-507<br>R = R-502<br>S = R-404A | C = Medium Temp.<br>CA = Heat Pump<br>W(MOP) = Press.<br>Limiting<br>Z = Low Temp. | 1 = 5 Ft.<br>2 = 10 Ft.<br>3 = 15 Ft. | A = Internal<br>B = External |

**T-SERIES LARGE POWER ASSEMBLIES**

| VALVE TYPE         | SYSTEM REFRIGERANT CODE | CHARGE CODE    | CAPILLARY TUBE | EQUALIZER | MODEL NUMBER   | ITEM NUMBER |
|--------------------|-------------------------|----------------|----------------|-----------|----------------|-------------|
| TER, TIR, THR, TMR | F (R-12)                | W55 (MOP)      | 10 Ft.         | External  | XC-726FW55-2B  | 035000      |
|                    | F (R-12)                | C (Med. Temp.) | 10 Ft.         | External  | XC-726FC-2B    | 052957      |
|                    | H (R-22)                | W100 (MOP)     | 10 Ft.         | External  | XC-726HW100-2B | 036750      |
|                    | H (R-22)                | W35 (MOP)      | 10 Ft.         | External  | XC-726HW35-2B  | 024511      |
|                    | H (R-22)                | W65 (MOP)      | 10 Ft.         | External  | XC-726HW65-2B  | 025011      |
|                    | H (R-22)                | CA (Heat Pump) | 10Ft.          | External  | XC-726HCA-2B   | 059333      |
|                    | H (R-22)                | Z (Low Temp.)  | 10 Ft.         | External  | XC-726HZ-2B    | 040569      |
|                    | H (R-22)                | C (Med. Temp.) | 10 Ft.         | External  | XC-726HC-2B    | 056421      |
|                    | M (R-134a)              | M55 (MOP)      | 10 Ft.         | External  | XC-726MW55-2B  | 057372      |
|                    | M (R-134a)              | Z (Low Temp.)  | 10 Ft.         | External  | XC-726MZ-2B    | 063075      |
|                    | M (R-134a)              | C (Med. Temp.) | 10 Ft.         | External  | XC-726MC-2B    | 057235      |
|                    | R (R-502)               | W15 (MOP)      | 10 Ft.         | External  | XC-726RW15-2B  | 023351      |
|                    | R (R-502)               | W35 (MOP)      | 10 Ft.         | External  | XC-726RW35-2B  | 070866      |
|                    | R (R-502)               | W65 (MOP)      | 10 Ft.         | External  | XC-726RW65-2B  | 071421      |
|                    | R (R-502)               | Z (Low Temp.)  | 10 Ft.         | External  | XC-726RZ-2B    | 046692      |
|                    | R (R-502)               | C (Med. Temp.) | 10 Ft.         | External  | XC-726RC-2B    | 052958      |
|                    | S (R-404A)              | W40 (MOP)      | 10 Ft.         | External  | XC-726SW40-2B  | 063127      |
|                    | S (R-404A)              | W65 (MOP)      | 10 Ft.         | External  | XC-726SW65-2B  | 061692      |
|                    | S (R-404A)              | Z (Low Temp.)  | 10 Ft.         | External  | XC-726SZ-2B    | 063974      |
|                    | S (R-404A)              | C (Med. Temp.) | 10 Ft.         | External  | XC-726SC-2B    | 062303      |
| TCLE, TJLE, TJRE   | R-12                    | Rapid Response | 5 Ft.          | External  | X-8019FWS-1B   | 031654      |
|                    | R-22                    | Rapid Response | 10 Ft.         | External  | X-8019HWS-2B   | 055873      |
|                    | R-22                    | Rapid Response | 5 Ft.          | External  | X-8019HWS-1B   | 055652      |
|                    | R-502                   | Rapid Response | 10 Ft.         | External  | X-8019RWS-2B   | 042426      |
|                    | R-502                   | Rapid Response | 5 Ft.          | Internal  | X-8019RWS-1A   | 032131      |

NOTE: Nominal capacities shown here are based on 40°F evaporator temperature and 100°F vapor-free liquid refrigerant entering the valve. R-12 and R-134a rated at 60 PSID. All other refrigerants rated at 100 PSID.

## T-SERIES THERMOSTATIC EXPANSION VALVES (Less Flange)

| SYSTEM<br>REFRIGERANT CODE | CAPACITY<br>(NOMINAL TONNAGE) | CHARGE CODE    | EQUALIZER | CAP LENGTH | MODEL NUMBER       | ITEM NUMBER |
|----------------------------|-------------------------------|----------------|-----------|------------|--------------------|-------------|
| F (R-12)                   | 1/2                           | C (Med. Temp.) | External  | 5 Ft.      | TCLE 1/2FC-01      | 054413      |
|                            | 1                             | C (Med. Temp.) | External  | 5 Ft.      | TCLE 1FC-01        | 052940      |
|                            | 2                             | C (Med. Temp.) | External  | 5 Ft.      | TCLE 2FC-03        | 052941      |
|                            | 3                             | C (Med. Temp.) | External  | 5 Ft.      | TCLE 3FC-03        | 052942      |
|                            | 4                             | C (Med. Temp.) | External  | 5 Ft.      | TCLE 4FC-03        | 052943      |
|                            | 6-1/2                         | C (Med. Temp.) | External  | 5 Ft.      | TCLE 6-1/2FC-02    | 052944      |
|                            | 7-1/2                         | C (Med. Temp.) | External  | 5 Ft.      | TCLE 7-1/2FC-03    | 052945      |
|                            | 8                             | C (Med. Temp.) | External  | 5 Ft.      | TJLE 8FC-01        | 055104      |
|                            | 11                            | C (Med. Temp.) | External  | 5 Ft.      | TJRE 11FC-01       | 055105      |
|                            | 20                            | C (Med. Temp.) | External  | 10 Ft.     | TER 20FC-01        | 055109      |
|                            | 25                            | C (Med. Temp.) | External  | 10 Ft.     | TER 25FC-01        | 055111      |
| H (R-22)                   | 1                             | C (Med. Temp.) | External  | 5 Ft.      | TCLE 1HC-01        | 062884      |
|                            | 2                             | C (Med. Temp.) | External  | 5 Ft.      | TCLE 2HC-03        | 061724      |
|                            | 3                             | C (Med. Temp.) | External  | 5 Ft.      | TCLE 3HC-05        | 054395      |
|                            | 3                             | W100 (MOP)     | External  | 5 Ft.      | TCLE 3HW100-05     | 089943      |
|                            | 5                             | C (Med. Temp.) | External  | 5 Ft.      | TCLE 5HC-02        | 054399      |
|                            | 7-1/2                         | C (Med. Temp.) | External  | 5 Ft.      | TCLE 7-1/2HC-02    | 054401      |
|                            | 7-1/2                         | W100 (MOP)     | External  | 5 Ft.      | TCLE 7-1/2HW100-08 | 054079      |
|                            | 10                            | C (Med. Temp.) | External  | 5 Ft.      | TCLE 10HC-03       | 054404      |
|                            | 10                            | W 100 (MOP)    | External  | 5 Ft.      | TCLE 10HW100-07    | 059076      |
|                            | 11                            | C (Med. Temp.) | External  | 5 Ft.      | TJLE 11HC-01       | 060855      |
|                            | 12                            | C (Med. Temp.) | External  | 5 Ft.      | TCLE 12HC-05       | 060854      |
|                            | 14                            | C (Med. Temp.) | External  | 5 Ft.      | TJLE 14HC-04       | 060856      |
|                            | 14                            | C (Med. Temp.) | External  | 5 Ft.      | TJRE 14HC-02       | 060857      |
|                            | 18                            | C (Med. Temp.) | External  | 5 Ft.      | TJRE 18HC-05       | 060858      |
|                            | 22                            | C (Med. Temp.) | External  | 10 Ft.     | TER 22HC-04        | 061673      |
|                            | 22                            | W100 MOP       | External  | 10 Ft.     | TER 22HW100-04     | 058582      |
|                            | 26                            | C (Med. Temp.) | External  | 10 Ft.     | TER 26HC-05        | 061674      |
|                            | 35                            | C (Med. Temp.) | External  | 10 Ft.     | TER 35HC-04        | 061675      |
|                            | 35                            | W 100 (MOP)    | External  | 10 Ft.     | TER 35HW100-02     | 058038      |
|                            | 45                            | C (Med. Temp.) | External  | 10 Ft.     | TER 45HC-05        | 061676      |
|                            | 75                            | C (Med. Temp.) | External  | 10 Ft.     | THR 75HC-04        | 064961      |
|                            | 100                           | C (Med. Temp.) | External  | 10 Ft.     | THR 100HC-03       | 062036      |
|                            | 100                           | W 100 (MOP)    | External  | 10 Ft.     | THR 100HW100-07    | 052912      |
| R (R-502)                  | 2                             | C (Med. Temp.) | External  | 5 Ft.      | TCLE 2RC-01        | 061215      |
|                            | 3                             | C (Med. Temp.) | External  | 5 Ft.      | TCLE 3RC-01        | 055501      |
|                            | 8                             | C (Med. Temp.) | External  | 5 Ft.      | TCLE 8RC-01        | 063501      |
|                            | 14                            | C (Med. Temp.) | External  | 10 Ft.     | TER 14RC-01        | 060788      |

## T-SERIES PARTS LIST

| VALVE TYPE   | DESCRIPTION                                       | MODEL NUMBER | ITEM NUMBER |
|--------------|---------------------------------------------------|--------------|-------------|
| TLE          | Packing Nut Wrench                                | E-642        | 039862      |
| LCL, TLE, ZZ | Take-Apart Gasket Set                             | X-13455-1    | 027579      |
| T-Series     | Superheat Plug                                    | X-28124-1    | 058336      |
| TCL, TLE     | Replacement Capscrews, 10 Pcs of Screw # PS-286-5 | KT-30021     | 054569      |
| TJR, TER     | Replacement Capscrews 10 Pcs of Screw # PS-259    | KT-30023     | 054571      |
| TJLE, ANG    | Replacement Capscrews 10 Pcs of Screw # PS-514-5  | KT-30025     | 054573      |
| TJLE         | Replacement Capscrews 10 Pcs of Screw # PS-517-5  | KT-30026     | 054574      |
| TMR          | Straight Thru                                     | 9148-1       | 065125      |



TLE 3HW75-01

## TLE SERIES THERMOSTATIC EXPANSION VALVES

The TLE Series is designed for air conditioning, heat pumps, transportation and commercial refrigeration. Take-apart construction improves serviceability with replaceable/interchangeable parts.

### FEATURES

- Stainless steel power element eliminates corrosion and prevents valve failure
- Non-adjustable superheat
- Bi-directional capability for heat pump applications (external equalizer required)
- Take-Apart construction for easy field service
- Interchangeable capacity cages, power assemblies and flanges available

### SPECIFICATIONS

Maximum Working Pressure..... 450 psig (31 bar)  
Capscrew Torque..... 300 In. lbs.

### MODEL NUMBER NOMENCLATURE - Example: TLE 5HW-01

| SERIES     | EQUALIZER                                                                          | BLEED HOLE                                     | CAPACITY               | SYSTEM REFRIGERANT CODE                                                                  | CHARGE CODE                                                                                             | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                                | PACK TYPE                                        |
|------------|------------------------------------------------------------------------------------|------------------------------------------------|------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------|--------------------------------------------------|
| TL         | E                                                                                  |                                                | 5                      | H                                                                                        | W                                                                                                       | -01                   |                                                 |                                                  |
| Take-Apart | E = External<br>1/4" SAE Standard<br>1/4" ODF Available<br><br>(Omit for Internal) | B = Bleed Hole<br><br>(Omit for no Bleed Hole) | Nominal Rating in Tons | F = R-12<br>H = R-22<br>M = R-134a<br>N = R-407C<br>P = R-507<br>R = R-502<br>S = R-404A | AA = Wide Range<br>C or W = Medium Temp.<br>CA = Heat Pump<br>W(MOP) = Press. Limiting<br>Z = Low Temp. | -01 Thru -999         | G = Customer Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

### TLE SERIES THERMOSTATIC EXPANSION VALVES

| SYSTEM REFRIGERANT CODE | CAPACITY (NOMINAL TONNAGE) | CHARGE CODE    | INLET X OUTLET CONNECTION       | EQUALIZER | BLEED | CAP LENGTH | MODEL NUMBER  | ITEM NUMBER |
|-------------------------|----------------------------|----------------|---------------------------------|-----------|-------|------------|---------------|-------------|
| H (R-22)<br>*R-407C     | 3                          | W (Med. Temp.) | Valve Less Flange               | External  | No    | 5 Ft.      | TLE 3HW-01    | 041734      |
|                         | 3                          | W100 (MOP)     | Valve Less Flange               | External  | No    | 5 Ft.      | TLE 3HW100-02 | 053363      |
|                         | 3                          | W75 (MOP)      | 5/8" X 7/8" ODF (Straight-Thru) | External  | No    | 5 Ft.      | TLE 3HW75-01  | 041931      |
|                         | 5                          | W (Med. Temp)  | Valve Less Flange               | External  | No    | 5 Ft.      | TLE 5HW-01    | 054793      |
|                         | 10                         | W (Med. Temp)  | Valve Less Flange               | External  | No    | 5 Ft.      | TLE 10HW-01   | 055125      |

### TLE SERIES POWER ASSEMBLY NOMENCLATURE - Example: XB-1033HC-1B

| PRINT REFERENCE          | SYSTEM REFRIGERANT CODE                                                                  | CHARGE CODE                                                                     | CAPILLARY TUBE LENGTH CODE                           | EQUALIZER                    |
|--------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------|------------------------------------------------------|------------------------------|
| XB-1033                  | H                                                                                        | C                                                                               | 1                                                    | B                            |
| XB-1033 = Drawing Number | F = R-12<br>H = R-22<br>M = R-134a<br>N = R-407C<br>P = R-507<br>R = R-502<br>S = R-404A | C = Medium Temp.<br>CA = Heat Pump<br>W(MOP) = Press. Limiting<br>Z = Low Temp. | 1 = 5 Ft.<br>2 = 10 Ft.<br>3 = 15 Ft.<br>15 = 30 In. | A = Internal<br>B = External |

## TLE SERIES POWER ASSEMBLIES

| PRINT REFERENCE | SYSTEM REFRIGERANT CODE | CHARGE CODE    | CAP LENGTH | EQUALIZER | MODEL NUMBER     | ITEM NUMBER |
|-----------------|-------------------------|----------------|------------|-----------|------------------|-------------|
| XB-1033         | F (R-12)                | W25 (MOP)      | 5 Ft.      | External  | XB-1033FW25-1B   | 083765      |
| XB-1033         | H (R-22)                | C (Med. Temp.) | 5 Ft.      | External  | XB-1033HC-1B     | 061760      |
| XB-1033         | H (R-22)                | W (Wide Range) | 30 In.     | Internal  | XB-1033HW-15A    | 077201      |
| XB-1033         | H (R-22)                | W75 (MOP)      | 5 Ft.      | External  | XB-1033HW75-1B   | 089748      |
| XB-1033         | H (R-22)                | W100 (MOP)     | 30 In.     | External  | XB-1033HW100-15B | 095534      |
| XB-1033         | H (R-22)                | W100 (MOP)     | 5 Ft.      | External  | XB-1033HW100-1B  | 095813      |
| XB-1033         | H (R-22)                | W90 (MOP)      | 5 Ft.      | External  | XB-1033HW90-1B   | 090082      |

## TLE SERIES CAGE KITS

| R-12  | R-134a | R-22 / R-407C | R-404A / R-507 / R-502 | MODEL NUMBER | ITEM NUMBER |
|-------|--------|---------------|------------------------|--------------|-------------|
| 1/4   | 1/4    | 1/2           | 1/4                    | X-22517-B1B  | 041551      |
| 1     | 1-1/2  | 2             | 1                      | X-22517-B3B  | 041556      |
| 2     | 2-1/2  | 3             | 2                      | X-22517-B4A  | 041560      |
| 2     | 2-1/2  | 3             | 2                      | X-22517-B4B  | 041558      |
| 3     | 3-1/2  | 5             | 3                      | X-22517-B5B  | 041562      |
| 4     | 5-1/2  | 7-1/2         | 4-1/2                  | X-22517-B6B  | 041564      |
| 6-1/2 | 7-1/2  | 10            | 7                      | X-22517-B7B  | 041566      |

Capacities shown are at 100°F condensing and 40°F evaporator temperature. See Extended Capacity Tables for ratings at a wide range of conditions.

## TLE SERIES FLANGES

| CONFIGURATION | INLET CONNECTION | OUTLET CONNECTION | MODEL NUMBER | ITEM NUMBER |
|---------------|------------------|-------------------|--------------|-------------|
| Angle         | 1/2" ODF         | 5/8" ODF          | C-501-7      | 065861      |
| Angle         | 1/2" SAE         | 5/8" SAE          | C-500-6      | 056294      |
| Angle         | 3/8" ODF         | 1/2" ODF          | C-501-4      | 065527      |
| Angle         | 3/8" ODF         | 5/8" ODF          | C-501-5      | 065748      |
| Angle         | 3/8" SAE         | 1/2" SAE          | C-500-4      | 056932      |
| Angle         | 3/8" SAE         | 5/8" SAE          | C-500-5      | 057153      |
| Straight Thru | 1/2" ODF         | 1/2" ODF          | 9761-9       | 027766      |
| Straight Thru | 1/2" ODF         | 5/8" ODF          | 9761-4       | 027268      |
| Straight Thru | 1/2" ODF         | 7/8" ODF          | 9761-2       | 027770      |
| Straight Thru | 1/2" SAE         | 1/2" SAE          | X-6669-5     | 083378      |
| Straight Thru | 1/2" SAE         | 5/8" SAE          | X-6669-2     | 050842      |
| Straight Thru | 3/8" ODF         | 1/2" ODF          | 9761-5       | 027769      |
| Straight Thru | 3/8" ODF         | 5/8" ODF          | 9761-3       | 027771      |
| Straight Thru | 3/8" SAE         | 1/2" SAE          | X-6669-4     | 051176      |
| Straight Thru | 3/8" SAE         | 5/8" SAE          | X-6669-1     | 050563      |
| Straight Thru | 5/8" ODF         | 1-1/8" ODF        | X-6346-18    | 094038      |
| Straight Thru | 5/8" ODF         | 5/8" ODF          | X-6346-16    | 044733      |
| Straight Thru | 5/8" ODF         | 7/8" ODF          | X-6346-17    | 044846      |
| Straight Thru | 7/8" ODF         | 1-1/8" ODF        | X-6346-34    | 071757      |





TIE SW 802460

## TI SERIES THERMOSTATIC EXPANSION VALVES

The TI Series has interchangeable cages capable of changing valve capacity in the field.

### FEATURES

- Stainless steel power element eliminates corrosion and prevents valve failure
- Wrench flats on inlet and outlet
- Forged brass valve body
- Inlet strainer assembly

### SPECIFICATIONS

Inlet Connection Size ..... 3/8" SAE, Outlet 1/2" SAE  
 Maximum Working Pressure ..... 652 psig (45 bar)  
 Maximum Bulb Temperature ..... 165°F (74°C)

### TI SERIES CAGES

| CAGE SIZE | NOMINAL CAPACITY (kW) |             |                | MODEL NUMBER   | ITEM NUMBER |
|-----------|-----------------------|-------------|----------------|----------------|-------------|
|           | R-134a                | R-22/R-407C | R-404A / R-507 |                |             |
| 00        | 0.3                   | 0.5         | 0.4            | TIO-00X 800532 | 065087      |
| 0         | 0.8                   | 1.3         | 1              | TIO-000 800533 | 065088      |
| 1         | 1.9                   | 3.2         | 2.3            | TIO-001 800534 | 065090      |
| 2         | 3.1                   | 5.3         | 3.9            | TIO-002 800535 | 065091      |
| 3         | 5                     | 8.5         | 6.2            | TIO-003 800536 | 065092      |
| 4         | 8.3                   | 13.9        | 10.1           | TIO-004 800537 | 065093      |
| 5         | 10.1                  | 16.9        | 12.3           | TIO-005 800538 | 065094      |
| 6         | 11.7                  | 19.5        | 14.2           | TIO-006 800539 | 065095      |

NOTE: Nominal capacities in this section are based on European standards of +38°C condensing temperature, +4°C evaporating temperature and 1°K liquid subcooling at the inlet of the expansion valve. This methodology varies from the rest of the capacity tables in the TXV product offering.

### MODEL NUMBER NOMENCLATURE BODIES

| SERIES                          | EQUALIZER                           | SYSTEM REFRIGERANT CODE                                       | CHARGE CODE                                       | UNIQUE IDENTIFIER |
|---------------------------------|-------------------------------------|---------------------------------------------------------------|---------------------------------------------------|-------------------|
| TI                              | E                                   | H                                                             | W                                                 | 800533            |
| Interchangeable Cage Capacities | E = External<br>(Omit for Internal) | F = R-12<br>H = R-22<br>M = R-134a<br>P = R-507<br>S = R-404A | C or W= Medium Temp.<br>W (MOP) = Press. Limiting |                   |

### TI SERIES BODIES - Flare Type

| EQUALIZER | SYSTEM REFRIGERANT CODE | CHARGE CODE     | INLET X OUTLET SIZE | MODEL NUMBER  | ITEM NUMBER |
|-----------|-------------------------|-----------------|---------------------|---------------|-------------|
| External  | H (R-22/R-407C)         | W ( Med. Temp.) | 3/8" X 1/2" SAE     | TIE-HW 802421 | 066390      |
| External  | M (R-134a)              | W ( Med. Temp.) | 3/8" X 1/2" SAE     | TIE-MW 802446 | 066388      |
| External  | S (R-404A/R-507)        | W ( Med. Temp.) | 3/8" X 1/2" SAE     | TIE-SW 802460 | 066392      |
| Internal  | H (R-22/R-407C)         | W ( Med. Temp.) | 3/8" X 1/2" SAE     | TI-HW 802420  | 066389      |
| Internal  | M (R-134a)              | W ( Med. Temp.) | 3/8" X 1/2" SAE     | TI-MW 802445  | 066387      |
| Internal  | S (R-404A/R-507)        | W ( Med. Temp.) | 3/8" X 1/2" SAE     | TI-SW 802459  | 066391      |

NOTE: Evaporating temperature range -10°F to 40°F.



## ZZ SERIES THERMOSTATIC EXPANSION VALVES

The ZZ series is designed for ultra low temperature applications such as environmental test chambers and other applications where the desired evaporator temperature is below -40°F.

### FEATURES

- Take-apart construction for easy field service
- Improved internal construction extends valve life
- External equalizer standard
- Exclusive cage bellows eliminates friction at low temperatures
- External superheat adjustment
- Interchangeable cages, power assemblies and flanges

### SPECIFICATIONS

Maximum Working Pressure..... 450 psig (31 bar)

### ZZ SERIES CAGE KITS

| VALVE                            | MODEL NUMBER | ITEM NUMBER |
|----------------------------------|--------------|-------------|
| ZZC1BG, ZC3/4RHW, ZC3/4RW        | X-10110-B1B  | 021288      |
| ZZC2-1/2BG, ZC2-1/2HW, ZC2-1/2RW | X-10110-B2B  | 020871      |
| ZZC4BG, ZC2-1/2HW, ZC2-1/2RW     | X-10110-B3B  | 096091      |
| ZZC6BG, ZC4HW, ZC3-1/2RW         | X-10110-B4B  | 096312      |
| ZZC9BG, ZC6HW, ZC5RW             | X-10110-B5B  | 096425      |
| ZZC13BG, ZC8HW, ZC8RW            | X-10110-B6B  | 096646      |
| ZZER6BG, ZZER4HW, ZC3-1/2RW      | X-10059-B4B  | 045362      |
| ZZER9BG, ZZER6HW, ZZER5RW        | X-10059-B5B  | 033697      |
| ZZER20BG, ZZER12HW, ZZER11RW     | X-10059-B6B  | 030071      |
| ZZER21BG, ZZER13HW, ZZER13RW     | X-10059-B7B  | 025100      |
| ZZER29BG, ZZER18HW, ZZER18RW     | X-10059-B8B  | 025101      |
| ZZIR48BG, ZZIR30HW, ZZIR29RW     | X-10060-B10B | 025090      |
| ZZJR16BG, ZZJR10HW, ZZJR9RW      | X-10111-B5B  | 089306      |

### ZZ-SERIES FLANGES

| CONFIGURATION | INLET CONNECTION | OUTLET CONNECTION | MODEL NUMBER | ITEM NUMBER |
|---------------|------------------|-------------------|--------------|-------------|
| Straight Thru | 1/2" ODF         | 7/8" ODF          | 9761-2       | 027770      |
| Straight Thru | 3/8" ODF         | 5/8" ODF          | 9761-3       | 027771      |
| Straight Thru | 1/2" ODF         | 5/8" ODF          | 9761-4       | 027268      |
| Straight Thru | 3/8" ODF         | 1/2" ODF          | 9761-5       | 027769      |
| Straight Thru | 1/2" ODF         | 1/2" ODF          | 9761-9       | 027766      |
| Angle         | 3/8" SAE         | 1/2" SAE          | C-500-4      | 056932      |
| Angle         | 3/8" SAE         | 5/8" SAE          | C-500-5      | 057153      |
| Angle         | 1/2" SAE         | 5/8" SAE          | C-500-6      | 056294      |
| Angle         | 3/8" SAE         | 1/2" ODF          | C-501-4      | 065527      |
| Angle         | 3/8" SAE         | 5/8" ODF          | C-501-5      | 065748      |
| Angle         | 1/2" SAE         | 5/8" ODF          | C-501-7      | 065861      |

ZZ SERIES POWER ASSEMBLY MODEL NOMENCLATURE - Example: XC-726BG30-2B

| PRINT REFERENCE         | SYSTEM REFRIGERANT CODE                | CHARGE CODE                                                           | CAPILLARY TUBE LENGTH CODE            | EQUALIZER    |
|-------------------------|----------------------------------------|-----------------------------------------------------------------------|---------------------------------------|--------------|
| XC-726                  | B                                      | G30                                                                   | 2                                     | B            |
| XC-726 = Drawing Number | B = R-13/R-23<br>H = R-22<br>R = R-502 | G(MOP) = Press. Limiting<br>W(MOP) = Press. Limiting<br>Z = Low Temp. | 1 = 5 Ft.<br>2 = 10 Ft.<br>3 = 15 Ft. | B = External |

ZZ SERIES POWER ASSEMBLIES

| PRINT REFERENCE | SYSTEM REFRIGERANT CODE | CHARGE CODE   | CAPILLARY TUBE | EQUALIZER | MODEL NUMBER   | ITEM NUMBER |
|-----------------|-------------------------|---------------|----------------|-----------|----------------|-------------|
| XC-726          | B (R-13, R-23)          | G30 (MOP)     | 10 Ft.         | External  | XC-726BG30-2B  | 094594      |
| XC-726          | B (R-13, R-23)          | G125 (MOP)    | 10 Ft.         | External  | XC-726BG125-2B | 039130      |
| XC-726          | H (R-22)                | W35 (MOP)     | 10 Ft.         | External  | XC-726HW35-2B  | 024511      |
| XC-726          | H (R-22)                | W65 (MOP)     | 10 Ft.         | External  | XC-726HW65-2B  | 025011      |
| XC-726          | H (R-22)                | W85 (MOP)     | 15 Ft.         | External  | XC-726HW85-3B  | 023357      |
| XC-726          | H (R-22)                | W100 (MOP)    | 10 Ft.         | External  | XC-726HW100-2B | 036750      |
| XC-726          | H (R-22)                | Z (Low Temp.) | 10 Ft.         | External  | XC-726HZ-2B    | 040569      |

REPLACEMENT GASKET SET

| MODEL NUMBER | ITEM NUMBER |
|--------------|-------------|
| X-13455-1    | 027579      |

Gasket Set includes necessary body flange gasket & seat gasket.



## LCL SERIES DESUPERHEATING VALVES

The LCL take-apart Series is a de-superheating (liquid injection) valve used in conjunction with hot gas bypass to prevent excessive suction line superheat. LCL valves can be used for interstage cooling in compound systems.

### FEATURES

- Stainless steel power element prevents corrosion and valve failure
- Take-apart construction for easy field service
- Interchangeable cages, body flanges, and power assemblies for versatility
- External superheat adjustment

### SPECIFICATIONS

Maximum Working Pressure..... 450 psig (31 bar)

### MODEL NUMBER NOMENCLATURE - Example: LCLE 1A-02

| VALVE SERIES                     | EQUALIZER                                    | VALVE SIZE                                              | CHARGE CODE                                        | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|----------------------------------|----------------------------------------------|---------------------------------------------------------|----------------------------------------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| LCL                              | E                                            | 1                                                       | A                                                  | -02                   |                                             |                                              |
| De-Superheating Liquid Injection | E = External 1/4" SAE<br>(Omit for Internal) | Valve Size<br>(Contact application engineer for sizing) | See Charge Codes Table for Selection of A, B, or C | -01 Thru -99          | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### LCL SERIES THERMOSTATIC EXPANSION VALVES

| VALVE SIZE | CHARGE CODE | INLET X OUTLET CONNECTION | EQUALIZER | CAP LENGTH | MODEL NUMBER | ITEM NUMBER |
|------------|-------------|---------------------------|-----------|------------|--------------|-------------|
| 1          | A           | Valve Less Flange         | External  | 5 Ft.      | LCLE 1A-02   | 055096      |
| 1          | A           | Valve Less Flange         | Internal  | 5 Ft.      | LCL 1A-01    | 022018      |
| 1          | B           | Valve Less Flange         | Internal  | 5 Ft.      | LCL 1B-01    | 022017      |
| 2          | A           | Valve Less Flange         | External  | 5 Ft.      | LCLE 2A-01   | 022003      |
| 2          | A           | Valve Less Flange         | Internal  | 5 Ft.      | LCL 2A-01    | 022005      |
| 2          | B           | Valve Less Flange         | External  | 5 Ft.      | LCLE 2B-01   | 021997      |
| 2          | B           | Valve Less Flange         | Internal  | 5 Ft.      | LCL 2B-01    | 021996      |
| 2          | C           | 1/2" X 5/8" ODF ANG       | External  | 5 Ft.      | LCLE 2C-01   | 064297      |
| 2          | C           | Valve Less Flange         | Internal  | 5 Ft.      | LCL 2C-01    | 045527      |
| 3          | A           | Valve Less Flange         | External  | 5 Ft.      | LCLE 3A-01   | 021991      |
| 3          | A           | Valve Less Flange         | Internal  | 5 Ft.      | LCL 3A-02    | 055093      |
| 3          | B           | Valve Less Flange         | External  | 5 Ft.      | LCLE 3B-01   | 021985      |
| 3          | B           | Valve Less Flange         | Internal  | 5 Ft.      | LCL 3B-01    | 021987      |
| 4          | A           | Valve Less Flange         | External  | 5 Ft.      | LCLE 4A-01   | 062885      |
| 4          | B           | Valve Less Flange         | External  | 5 Ft.      | LCLE 4B-01   | 061054      |
| 4          | C           | Valve Less Flange         | External  | 5 Ft.      | LCLE 4C-01   | 055097      |
| 6          | A           | Valve Less Flange         | Internal  | 5 Ft.      | LCL 6A-01    | 047759      |
| 6          | B           | Valve Less Flange         | Internal  | 5 Ft.      | LCL 6B-01    | 021961      |

## LCL SERIES CHARGE CODES

| SATURATED SUCTION | REFRIGERANT          |      |                      |      |                      |      |
|-------------------|----------------------|------|----------------------|------|----------------------|------|
|                   | R-22                 |      | R-134a               |      | R-404a / R-507       |      |
|                   | REQUIRED SUCTION GAS |      | REQUIRED SUCTION GAS |      | REQUIRED SUCTION GAS |      |
| TEMPERATURE       | 45°F                 | 65°F | 45°F                 | 65°F | 45°F                 | 65°F |
| 40°F              | —                    | A    | —                    | B    | —                    | —    |
| 30°F              | —                    | A    | B                    | B    | —                    | A    |
| 20°F              | A                    | B    | B                    | C    | —                    | A    |
| 10°F              | B                    | B    | B                    | C    | A                    | B    |
| 0°F               | B                    | B    | C                    | C    | A                    | B    |
| -10°F             | B                    | C    | C                    | C    | B                    | B    |
| -20°F             | B                    | C    | C                    | C    | B                    | C    |
| -30°F             | C                    | C    | C                    | C    | B                    | C    |
| -40°F             | C                    | C    | C                    | C    | B                    | C    |

## LCL SERIES CAGE KITS

| VALVE      | CAPACITY RANGE<br>REFERENCE (TONS) | R-12  | R-22  | R-134a | R-404A /<br>R-507 | R-502 | R-407C | EQUALIZER | MODEL NUMBER | ITEM NUMBER |
|------------|------------------------------------|-------|-------|--------|-------------------|-------|--------|-----------|--------------|-------------|
| TCL, LCL   | 1/4 to 1/2                         | 1/4   | 1/2   | 1/4    | 1/4               | 1/4   | 1/2    | Internal  | X-22440-B1A  | 037034      |
| TCLE, LCLE | 1/4 to 1/2                         | 1/4   | 1/2   | 1/4    | 1/4               | 1/4   | 1/2    | External  | X-22440-B1B  | 037035      |
| TCL, LCL   | 1/2 to 1                           | 1/2   | 1     | 3/4    | 1/2               | 1/2   | 1      | Internal  | X-22440-B2A  | 037036      |
| TCLE, LCLE | 1/2 to 1                           | 1/2   | 1     | 3/4    | 1/2               | 1/2   | 1      | External  | X-22440-B2B  | 037037      |
| TCL, LCL   | 1 to 2                             | 1     | 2     | 1-1/2  | 1                 | 1     | 2      | Internal  | X-22440-B3A  | 037038      |
| TCLE, LCLE | 1 to 2                             | 1     | 2     | 1-1/2  | 1                 | 1     | 2      | External  | X-22440-B3B  | 037039      |
| TCL, LCL   | 2 to 3                             | 2     | 3     | 2-1/2  | 2                 | 2     | 3      | Internal  | X-22440-B4A  | 037040      |
| TCLE, LCLE | 2 to 3                             | 2     | 3     | 2-1/2  | 2                 | 2     | 3      | External  | X-22440-B4B  | 037041      |
| TCLE, LCLE | 3 to 5                             | 3     | 4     | 3-1/2  | 3                 | 3     | 5      | External  | X-22440-B5B  | 037043      |
| TCLE, LCLE | 4 to 7-1/2                         | 4     | 7-1/2 | 5-1/2  | 4-1/2             | 4-1/2 | 7-1/2  | External  | X-22440-B6B  | 037045      |
| TCLE, LCLE | 6-1/2 to 10                        | 6-1/2 | 10    | 7-1/2  | 7                 | 7     | 10     | External  | X-22440-B7B  | 037047      |
| TCLE, LCLE | 7-1/2 to 12                        | 7-1/2 | 12    | 9      | 8                 | 8     | 12     | External  | X-22440-B8B  | 037049      |

## LCL SERIES FLANGES

| VALVE SERIES | CONFIGURATION | INLET CONNECTION     | OUTLET CONNECTION      | MODEL NUMBER | ITEM NUMBER |
|--------------|---------------|----------------------|------------------------|--------------|-------------|
| LCL,LCLE     | Angle         | 3/8" SAE             | 1/2" SAE               | C-500-4      | 056932      |
| LCL,LCLE     | Angle         | 3/8" SAE             | 5/8" SAE               | C-500-5      | 057153      |
| LCL,LCLE     | Angle         | 1/2" SAE             | 5/8" SAE               | C-500-6      | 056294      |
| LCL,LCLE     | Angle         | 3/8" ODF             | 1/2" ODF               | C-501-4      | 065527      |
| LCL,LCLE     | Angle         | 3/8" ODF             | 5/8" ODF               | C-501-5      | 065748      |
| LCL,LCLE     | Angle         | 1/2" ODF             | 5/8" ODF               | C-501-7      | 065861      |
| LCL,LCLE     | Angle         | 5/8" ODF or 7/8" ODM | 7/8" ODF or 1-1/8" ODM | A-576        | 027764      |
| LCL,LCLE     | Straight Thru | 3/8" SAE             | 1/2" SAE               | X-6669-4     | 051176      |
| LCL,LCLE     | Straight Thru | 3/8" SAE             | 5/8" SAE               | X-6669-1     | 050563      |
| LCL,LCLE     | Straight Thru | 1/2" SAE             | 1/2" SAE               | X-6669-5     | 083378      |
| LCL,LCLE     | Straight Thru | 1/2" SAE             | 5/8" SAE               | X-6669-2     | 050842      |
| LCL,LCLE     | Straight Thru | 3/8" ODF             | 1/2" ODF               | 9761-5       | 027769      |
| LCL,LCLE     | Straight Thru | 3/8" ODF             | 5/8" ODF               | 9761-3       | 027771      |
| LCL,LCLE     | Straight Thru | 1/2" ODF             | 1/2" ODF               | 9761-9       | 027766      |
| LCL,LCLE     | Straight Thru | 1/2" ODF             | 5/8" ODF               | 9761-4       | 027268      |
| LCL,LCLE     | Straight Thru | 1/2" ODF             | 7/8" ODF               | 9761-2       | 027770      |
| LCL,LCLE     | Straight Thru | 5/8" ODF             | 5/8" ODF               | X-6346-16    | 044733      |
| LCL,LCLE     | Straight Thru | 5/8" ODF             | 7/8" ODF               | X-6346-17    | 044846      |
| LCL,LCLE     | Straight Thru | 5/8" ODF             | 1-1/8" ODF             | X-6346-18    | 094038      |
| LCL,LCLE     | Straight Thru | 7/8" ODF             | 1-1/8" ODF             | X-6346-34    | 071757      |

**LCL SERIES POWER ASSEMBLY MODEL NOMENCLATURE** - Example: XB-1019A-1A

| PRINT REFERENCE          | CHARGE CODE                                                                                 | CAPILLARY TUBE LENGTH | EQUALIZER                    |
|--------------------------|---------------------------------------------------------------------------------------------|-----------------------|------------------------------|
| XB-1019                  | A                                                                                           | 1                     | A                            |
| XB-1019 = Drawing Number | A<br>B<br>C<br><br>See LCL Series Charge Code Table for Suction Gas Temperature by Gas Type | 1 = 5 Ft.             | A = Internal<br>B = External |

**LCL SERIES POWER ASSEMBLIES**

| PRINT REFERENCE | CHARGE CODE | CAPILLARY TUBE | EQUALIZER | MODEL NUMBER | ITEM NUMBER |
|-----------------|-------------|----------------|-----------|--------------|-------------|
| XB-1019         | A           | 5 Ft.          | Internal  | XB-1019A-1A  | 037389      |
| XB-1019         | A           | 5 Ft.          | External  | XB-1019A-1B  | 034803      |
| XB-1019         | B           | 5 Ft.          | External  | XB-1019B-1B  | 032207      |
| XB-1019         | C           | 5 Ft.          | External  | XB-1019C-1B  | 035162      |

**REPLACEMENT GASKET SET**

| MODEL NUMBER | ITEM NUMBER |
|--------------|-------------|
| X-13455-1    | 027579      |

Gasket Set includes necessary body flange gasket & seat gasket.



ACP 4-07

## ACP AUTOMATIC VALVES

ACP valves are designed for small units where heat load is reasonably constant. ACP's are ideal for room air conditioners, refrigerators, drink dispensers, coolers, freezers and ice makers.

### FEATURES

- Friction-free floating design
- Hermetic, leak-free construction
- Can be used as a small capacity hot gas bypass valve
- Mass spectrometer tested to ensure less than 0.10 oz/year external leakage rate
- Fully adjustable from 0-80 psig (factory setting 40 psig)
- Available with internal or external equalizer
- SAE or ODF connections available

### SPECIFICATIONS

Maximum Working Pressure..... 500 psig (35 bar)  
 Maximum Working Temperature..... 300°F (149°C)  
 UR/CUR File Number ..... SA5312  
 Canadian CRN ..... 0C21506.513467890YTN

### MODEL NUMBER NOMENCLATURE - Example: ACPE 4-02

| SERIES       | EQUALIZER                           | PORT DIAMETER                                                                                                   | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|--------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| ACP          | E                                   | 4                                                                                                               | -01                   | G                                           |                                              |
| Valve Series | E = External<br>(Omit for Internal) | 1 = 0.05"<br>2 = 0.06"<br>3 = 0.1"<br>4 = 0.11"<br>5 = 0.13"<br>6 = 0.14"<br>7 = 0.17"<br>8 = 0.2"<br>9 = 0.23" | -01 Thru -99          | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### NOMINAL CAPACITY TABLES FOR INTERCHANGEABLE REFRIGERANTS IN TONS (kW)

| VALVE   | PORT DIAMETER (IN) | R-12/R-134a                      | R-407C/R-22 | R-502/R-404A/R-507 |
|---------|--------------------|----------------------------------|-------------|--------------------|
|         |                    | PRESSURE DROP ACROSS VALVE - PSI |             |                    |
|         |                    | 60                               | 100         | 100                |
| ACP(E)1 | 0.05               | 0.31                             | 0.44        | 0.29               |
| ACP(E)2 | 0.06               | 0.41                             | 0.57        | 0.38               |
| ACP(E)3 | 0.10               | 0.65                             | 0.91        | 0.61               |
| ACP(E)4 | 0.11               | 0.90                             | 1.30        | 0.87               |
| ACP(E)5 | 0.13               | 1.40                             | 1.96        | 1.31               |
| ACP(E)6 | 0.14               | 1.90                             | 2.67        | 1.78               |
| ACP(E)7 | 0.17               | 2.30                             | 3.28        | 2.19               |
| ACP(E)8 | 0.20               | 2.70                             | 3.75        | 2.50               |
| ACP(E)9 | 0.23               | 3.80                             | 5.32        | 3.55               |

All capacities shown are at 100°F condensing, 40°F evaporator temperature.  
 See Extended Capacity Tables for ratings at a wide range of conditions per AHRI standard 750.



## ACP AUTOMATIC VALVES

| ACP TYPE | EQUALIZER | EQUALIZER TYPE | PORT REFERENCE | BODY STYLE    | INLET X OUTLET CONNECTION | MODEL NUMBER | ITEM NUMBER |
|----------|-----------|----------------|----------------|---------------|---------------------------|--------------|-------------|
| ACP      | Internal  | —              | 1              | Straight Thru | 1/4" X 3/8" ODF           | ACP 1-12     | 057233      |
| ACP      | Internal  | —              | 1              | Angle         | 1/4" X 3/8" ODF           | ACP 1-13     | 047680      |
| ACP      | Internal  | —              | 1              | Angle         | 1/4" X 3/8-1/2" SAE       | ACP 1-14     | 046838      |
| ACP      | Internal  | —              | 1              | Angle         | 1/4" X 3/8" SAE           | ACP 1-15     | 056240      |
| ACPE     | External  | 1/4" SAE       | 1              | Straight Thru | 1/4" X 3/8" SAE           | ACPE 1-03    | 047280      |
| ACP      | Internal  | —              | 2              | Angle         | 1/4" X 3/8" SAE           | ACP 2-14     | 046839      |
| ACP      | Internal  | —              | 2              | Angle         | 1/4" X 3/8" ODF           | ACP 2-15     | 047651      |
| ACP      | Internal  | —              | 3              | Angle         | 1/4" X 3/8" SAE           | ACP 3-12     | 046840      |
| ACP      | Internal  | —              | 3              | Angle         | 1/4" X 3/8" ODF           | ACP 3-13     | 047283      |
| ACP      | Internal  | —              | 4              | Angle         | 1/4" X 3/8" SAE           | ACP 4-06     | 047101      |
| ACP      | Internal  | —              | 4              | Angle         | 1/4" X 3/8" ODF           | ACP 4-07     | 047105      |
| ACPE     | External  | 1/4" SAE       | 4              | Angle         | 1/4" X 3/8" ODF           | ACPE 4-02    | 053231      |
| ACP      | Internal  | —              | 5              | Angle         | 1/4" X 3/8" SAE           | ACP 5-11     | 047332      |
| ACP      | Internal  | —              | 5              | Angle         | 1/4" X 3/8" ODF           | ACP 5-12     | 047284      |
| ACP      | Internal  | —              | 5              | Angle         | 3/8" X 3/8" ODF           | ACP 5-13     | 053374      |
| ACP      | Internal  | —              | 5              | Angle         | 3/8" X 3/8-1/2" SAE       | ACP 5-14     | 049204      |
| ACP      | Internal  | —              | 6              | Angle         | 1/4" X 3/8" SAE           | ACP 6-05     | 047653      |
| ACP      | Internal  | —              | 6              | Angle         | 1/4" X 3/8" ODF           | ACP 6-06     | 047652      |
| ACP      | Internal  | —              | 6              | Angle         | 3/8" X 3/8" ODF           | ACP 6-07     | 065922      |
| ACP      | Internal  | —              | 7              | Angle         | 3/8" X 1/2" ODF           | ACP 7-09     | 047654      |
| ACP      | Internal  | —              | 7              | Angle         | 3/8" X 3/8-1/2" SAE       | ACP 7-10     | 047285      |
| ACPE     | External  | 1/4" SAE       | 7              | Angle         | 3/8" X 1/2" ODF           | ACPE 7-02    | 047790      |
| ACP      | Internal  | —              | 8              | Angle         | 3/8" X 1/2" ODF           | ACP 8-06     | 047655      |
| ACP      | Internal  | —              | 9              | Angle         | 1/2" X 5/8" ODF           | ACP 9-11     | 057771      |
| ACP      | Internal  | —              | 9              | Angle         | 3/8" X 1/2" ODF           | ACP 9-12     | 047657      |
| ACP      | Internal  | —              | 9              | Straight Thru | 3/8" X 3/8" SAE           | ACP 9-13     | 057327      |
| ACP      | Internal  | —              | 9              | Angle         | 3/8" X 3/8" ODF           | ACP 9-14     | 057209      |
| ACP      | Internal  | —              | 9              | Angle         | 3/8" X 3/8-1/2" SAE       | ACP 9-15     | 047658      |
| ACP      | Internal  | —              | 9              | Angle         | 1/4" X 3/8" ODF           | ACP 9-16     | 052773      |
| ACPE     | External  | 1/4" SAE       | 9              | Straight Thru | 1/2" X 5/8" ODF           | ACPE 9-09    | 058674      |
| ACPE     | External  | 1/4" ODF       | 9              | Angle         | 3/8" X 1/2" ODF           | ACPE 9-10    | 057017      |
| ACPE     | External  | 1/4" SAE       | 9              | Straight Thru | 3/8" X 1/2" ODF           | ACPE 9-11    | 048657      |

Capacity  
Tables (kW)

CONVENTIONAL PORTED VALVE CAPACITY TABLES

R-12 CONVENTIONAL PORTED VALVES (TONS) – A SERIES AND T SERIES

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |       |       |       |       |                                  |      |       |       |       |       |                                  |      |       |       |       |       |
|-------------------|----------------|----------------------------------|------|-------|-------|-------|-------|----------------------------------|------|-------|-------|-------|-------|----------------------------------|------|-------|-------|-------|-------|
|                   |                | 50°F                             |      |       |       |       |       | 40°F                             |      |       |       |       |       | 20°F                             |      |       |       |       |       |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |      |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |      |       |       |       |       |
|                   |                | 60                               | 80   | 100   | 125   | 150   | 175   | 60                               | 80   | 100   | 125   | 150   | 175   | 60                               | 80   | 100   | 125   | 150   | 175   |
| AA/AN/AAC/ANC/AFA | 1/8            | 0.20                             | 0.23 | 0.26  | 0.29  | 0.32  | 0.34  | 0.20                             | 0.23 | 0.26  | 0.29  | 0.32  | 0.34  | 0.19                             | 0.22 | 0.25  | 0.27  | 0.30  | 0.32  |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.35                             | 0.40 | 0.45  | 0.51  | 0.55  | 0.60  | 0.34                             | 0.39 | 0.44  | 0.49  | 0.54  | 0.58  | 0.33                             | 0.38 | 0.43  | 0.48  | 0.52  | 0.56  |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.56                             | 0.65 | 0.72  | 0.81  | 0.89  | 0.96  | 0.55                             | 0.64 | 0.71  | 0.79  | 0.87  | 0.94  | 0.53                             | 0.61 | 0.68  | 0.76  | 0.84  | 0.91  |
| AA/AN/AAC/ANC/AFA | 1              | 0.80                             | 0.92 | 1.03  | 1.15  | 1.26  | 1.37  | 0.79                             | 0.91 | 1.02  | 1.14  | 1.25  | 1.35  | 0.76                             | 0.88 | 0.98  | 1.10  | 1.20  | 1.30  |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 1.66                             | 1.92 | 2.14  | 2.40  | 2.62  | 2.83  | 1.63                             | 1.88 | 2.10  | 2.35  | 2.58  | 2.78  | 1.58                             | 1.80 | 2.01  | 2.25  | 2.47  | 2.66  |
| AA/AN/AAC/ANC/AFA | 2              | 2.04                             | 2.36 | 2.63  | 2.94  | 3.23  | 3.48  | 2.00                             | 2.31 | 2.58  | 2.89  | 3.16  | 3.42  | 1.92                             | 2.22 | 2.48  | 2.77  | 3.04  | 3.28  |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 2.42                             | 2.79 | 3.12  | 3.49  | 3.83  | 4.13  | 2.37                             | 2.74 | 3.06  | 3.42  | 3.75  | 4.05  | 2.28                             | 2.63 | 2.94  | 3.29  | 3.60  | 3.89  |
| AA/AN/AAC/ANC/AFA | 3              | 3.31                             | 3.82 | 4.27  | 4.78  | 5.23  | 5.65  | 3.24                             | 3.74 | 4.18  | 4.68  | 5.12  | 5.53  | 3.11                             | 3.59 | 4.01  | 4.49  | 4.92  | 5.31  |
| TCLE              | 1/4            | 0.30                             | 0.35 | 0.38  | 0.43  | 0.47  | 0.51  | 0.30                             | 0.35 | 0.39  | 0.43  | 0.47  | 0.51  | 0.28                             | 0.32 | 0.36  | 0.40  | 0.44  | 0.48  |
| TCLE              | 1/2            | 0.57                             | 0.66 | 0.74  | 0.82  | 0.90  | 0.97  | 0.56                             | 0.65 | 0.72  | 0.81  | 0.89  | 0.96  | 0.53                             | 0.61 | 0.68  | 0.76  | 0.84  | 0.91  |
| TCLE              | 1              | 1.15                             | 1.33 | 1.48  | 1.66  | 1.82  | 1.96  | 1.13                             | 1.30 | 1.48  | 1.63  | 1.79  | 1.93  | 1.08                             | 1.25 | 1.39  | 1.56  | 1.71  | 1.84  |
| TCLE              | 2              | 2.12                             | 2.45 | 2.74  | 3.06  | 3.35  | 3.62  | 2.08                             | 2.40 | 2.69  | 3.00  | 3.29  | 3.55  | 1.99                             | 2.30 | 2.57  | 2.07  | 3.15  | 3.40  |
| TCLE              | 3              | 3.09                             | 3.57 | 3.99  | 4.46  | 4.89  | 5.28  | 3.03                             | 3.50 | 3.91  | 4.37  | 4.79  | 5.17  | 2.90                             | 3.35 | 3.74  | 4.19  | 4.59  | 4.95  |
| TCLE              | 4              | 4.48                             | 5.17 | 5.78  | 6.47  | 7.08  | 7.65  | 4.39                             | 5.07 | 5.67  | 6.34  | 6.94  | 7.50  | 4.21                             | 4.86 | 5.44  | 6.08  | 6.66  | 7.19  |
| TCLE              | 6-1/2          | 6.17                             | 7.12 | 7.97  | 8.91  | 9.76  | 10.54 | 6.05                             | 6.99 | 7.81  | 8.73  | 9.57  | 10.33 | 5.80                             | 6.70 | 7.49  | 8.37  | 9.17  | 9.91  |
| TCLE              | 7-1/2          | 7.44                             | 8.59 | 9.60  | 10.74 | 11.76 | 12.71 | 7.30                             | 8.43 | 9.42  | 10.54 | 11.54 | 12.47 | 7.00                             | 8.08 | 9.04  | 10.10 | 11.07 | 11.95 |
| TJL               | 7              | 6.59                             | 7.51 | 8.51  | 9.51  | 10.42 | 11.25 | 6.47                             | 7.47 | 8.35  | 9.34  | 10.23 | 11.05 | 6.20                             | 7.16 | 8.00  | 8.95  | 9.80  | 10.59 |
| TJL               | 8              | 8.41                             | 9.71 | 10.86 | 12.14 | 13.30 | 14.36 | 8.25                             | 9.53 | 10.65 | 11.91 | 13.04 | 14.09 | 7.91                             | 9.13 | 10.21 | 11.42 | 12.51 | 13.51 |

NOTE: Standard capacity is rated at 100F liquid inlet and 40F evaporator temperature; with 60 psi pressure drop across the TXV per ARI 750-2001.

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |       |       |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|-------|-------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 0°F                              |      |      |      |       |       | -20°F                            |      |      |      |      |      | -40°F                            |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |       |       | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100  | 125  | 150   | 175   | 80                               | 100  | 125  | 150  | 175  | 200  | 80                               | 100  | 125  | 150  | 175  | 200  |
| AA/AN/AAC/ANC/AFA | 1/8            | 0.17                             | 0.2  | 0.22 | 0.25 | 0.27  | 0.29  | 0.13                             | 0.15 | 0.16 | 0.18 | 0.19 | 0.21 | 0.08                             | 0.09 | 0.1  | 0.11 | 0.12 | 0.13 |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.29                             | 0.33 | 0.37 | 0.42 | 0.46  | 0.5   | 0.23                             | 0.26 | 0.29 | 0.31 | 0.34 | 0.36 | 0.15                             | 0.17 | 0.19 | 0.21 | 0.22 | 0.24 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.47                             | 0.54 | 0.61 | 0.68 | 0.74  | 0.8   | 0.37                             | 0.41 | 0.46 | 0.51 | 0.55 | 0.59 | 0.24                             | 0.27 | 0.3  | 0.33 | 0.35 | 0.38 |
| AA/AN/AAC/ANC/AFA | 1              | 0.67                             | 0.77 | 0.86 | 0.97 | 1.06  | 1.14  | 0.53                             | 0.59 | 0.66 | 0.73 | 0.78 | 0.84 | 0.34                             | 0.38 | 0.43 | 0.47 | 0.5  | 0.54 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 1.39                             | 1.61 | 1.79 | 2.01 | 2.2   | 2.37  | 1.09                             | 1.22 | 1.36 | 1.49 | 1.61 | 1.72 | 0.71                             | 0.79 | 0.89 | 0.97 | 1.05 | 1.12 |
| AA/AN/AAC/ANC/AFA | 2              | 1.7                              | 1.96 | 2.19 | 2.45 | 2.69  | 2.9   | 1.33                             | 1.49 | 1.66 | 1.82 | 1.97 | 2.1  | 0.87                             | 0.97 | 1.09 | 1.19 | 1.29 | 1.38 |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 2.02                             | 2.33 | 2.61 | 2.92 | 3.19  | 3.45  | 1.58                             | 1.77 | 1.98 | 2.16 | 2.34 | 2.50 | 1.03                             | 1.15 | 1.29 | 1.41 | 1.52 | 1.63 |
| AA/AN/AAC/ANC/AFA | 3              | 2.76                             | 3.19 | 3.56 | 3.98 | 4.36  | 4.71  | 2.16                             | 2.41 | 2.7  | 2.96 | 3.19 | 3.42 | 1.4                              | 1.57 | 1.75 | 1.92 | 2.07 | 2.21 |
| TCLE              | 1/4            | 0.25                             | 0.29 | 0.32 | 0.36 | 0.4   | 0.43  | 0.2                              | 0.22 | 0.25 | 0.27 | 0.3  | 0.32 | 0.13                             | 0.15 | 0.16 | 0.18 | 0.19 | 0.21 |
| TCLE              | 1/2            | 0.47                             | 0.54 | 0.61 | 0.68 | 0.74  | 0.8   | 0.37                             | 0.41 | 0.46 | 0.51 | 0.55 | 0.59 | 0.24                             | 0.27 | 0.3  | 0.33 | 0.35 | 0.38 |
| TCLE              | 1              | 0.96                             | 1.11 | 1.24 | 1.39 | 1.52  | 1.64  | 0.75                             | 0.84 | 0.94 | 1.03 | 1.11 | 1.19 | 0.49                             | 0.55 | 0.61 | 0.67 | 0.72 | 0.77 |
| TCLE              | 2              | 1.76                             | 2.03 | 2.27 | 2.54 | 2.78  | 3.01  | 1.38                             | 1.54 | 1.73 | 1.89 | 2.04 | 2.18 | 0.9                              | 1.01 | 1.13 | 1.23 | 1.33 | 1.42 |
| TCLE              | 3              | 2.57                             | 2.97 | 3.32 | 3.71 | 4.06  | 4.39  | 2.01                             | 2.25 | 2.51 | 2.75 | 2.97 | 3.18 | 1.31                             | 1.46 | 1.64 | 1.79 | 1.94 | 2.07 |
| TCLE              | 4              | 3.73                             | 4.31 | 4.82 | 5.38 | 5.9   | 6.37  | 2.92                             | 3.26 | 3.65 | 4    | 4.32 | 4.62 | 1.9                              | 2.12 | 2.38 | 2.6  | 2.81 | 3    |
| TCLE              | 6-1/2          | 5.14                             | 5.94 | 6.64 | 7.42 | 8.13  | 8.78  | 4.03                             | 4.51 | 5.04 | 5.52 | 5.96 | 6.37 | 2.62                             | 2.93 | 3.28 | 3.59 | 3.88 | 4.14 |
| TCLE              | 7-1/2          | 6.2                              | 7.16 | 8    | 8.95 | 9.8   | 10.59 | 4.86                             | 5.43 | 6.08 | 6.65 | 7.19 | 7.68 | 3.16                             | 3.53 | 3.95 | 4.33 | 4.67 | 5    |
| TJL               | 7              | 5.49                             | 6.34 | 7.09 | 7.92 | 8.68  | 9.38  | 4.3                              | 4.81 | 5.38 | 5.89 | 6.36 | 6.8  | 2.8                              | 3.13 | 3.5  | 3.83 | 4.14 | 4.43 |
| TJL               | 8              | 7                                | 8.08 | 9.04 | 10.1 | 11.07 | 11.95 | 5.49                             | 6.14 | 6.86 | 7.52 | 8.12 | 8.68 | 3.57                             | 3.99 | 4.46 | 4.89 | 5.28 | 5.64 |

REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

# TXV EXTENDED CAPACITY TABLES

# R-22 CONVENTIONAL

## R-22 CONVENTIONAL PORTED VALVES (TONS) A SERIES / AFA SERIES / T SERIES

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|-------------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|                   |                | 50°F                             |       |       |       |       |       | 40°F                             |       |       |       |       |       | 20°F                             |       |       |       |       |       |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|                   |                | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   |
| AA/AN/AFA         | 1/5            | 0.15                             | 0.17  | 0.19  | 0.22  | 0.24  | 0.26  | 0.15                             | 0.17  | 0.19  | 0.21  | 0.23  | 0.25  | 0.14                             | 0.16  | 0.18  | 0.20  | 0.22  | 0.24  |
| AA/AN/AAC/ANC     | 1/4            | 0.26                             | 0.30  | 0.34  | 0.38  | 0.41  | 0.44  | 0.26                             | 0.30  | 0.33  | 0.37  | 0.40  | 0.44  | 0.25                             | 0.29  | 0.32  | 0.36  | 0.40  | 0.43  |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.46                             | 0.53  | 0.59  | 0.66  | 0.73  | 0.79  | 0.45                             | 0.52  | 0.58  | 0.65  | 0.71  | 0.77  | 0.44                             | 0.51  | 0.57  | 0.64  | 0.70  | 0.75  |
| AA/AN/AAC/ANC/AFA | 1              | 0.73                             | 0.84  | 0.94  | 1.05  | 1.15  | 1.25  | 0.72                             | 0.83  | 0.93  | 1.04  | 1.14  | 1.23  | 0.70                             | 0.81  | 0.90  | 1.01  | 1.11  | 1.20  |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 1.05                             | 1.21  | 1.36  | 1.52  | 1.66  | 1.79  | 1.03                             | 1.19  | 1.33  | 1.49  | 1.63  | 1.76  | 1.01                             | 1.17  | 1.30  | 1.46  | 1.60  | 1.72  |
| AA/AN/AAC/ANC/AFA | 2              | 1.54                             | 1.78  | 1.99  | 2.22  | 2.43  | 2.63  | 1.52                             | 1.75  | 1.96  | 2.19  | 2.40  | 2.59  | 1.48                             | 1.71  | 1.91  | 2.14  | 2.34  | 2.53  |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 2.16                             | 2.49  | 2.79  | 3.12  | 3.42  | 3.69  | 2.13                             | 2.46  | 2.75  | 3.07  | 3.37  | 3.64  | 2.08                             | 2.40  | 2.69  | 3.00  | 3.29  | 3.55  |
| AA/AN/AAC/ANC/AFA | 3              | 2.65                             | 3.06  | 3.42  | 3.82  | 4.19  | 4.53  | 2.61                             | 3.01  | 3.37  | 3.77  | 4.13  | 4.46  | 2.55                             | 2.94  | 3.29  | 3.68  | 4.03  | 4.35  |
| AA/AN/AAC/ANC/AFA | 4              | 3.14                             | 3.63  | 4.05  | 4.53  | 4.96  | 5.36  | 3.10                             | 3.58  | 4.00  | 4.47  | 4.90  | 5.29  | 3.03                             | 3.50  | 3.91  | 4.37  | 4.79  | 5.17  |
| AA/AN/AAC/ANC/AFA | 5              | 4.30                             | 4.97  | 5.55  | 6.21  | 6.80  | 7.34  | 4.24                             | 4.89  | 5.47  | 6.12  | 6.70  | 7.24  | 4.14                             | 4.78  | 5.34  | 5.98  | 6.55  | 7.07  |
| TCLE              | 1/2            | 0.39                             | 0.45  | 0.50  | 0.56  | 0.62  | 0.67  | 0.39                             | 0.45  | 0.50  | 0.56  | 0.61  | 0.66  | 0.38                             | 0.44  | 0.49  | 0.55  | 0.60  | 0.65  |
| TCLE              | 1              | 0.74                             | 0.85  | 0.96  | 1.07  | 1.17  | 1.26  | 0.73                             | 0.84  | 0.94  | 1.05  | 1.15  | 1.24  | 0.71                             | 0.82  | 0.92  | 1.02  | 1.12  | 1.21  |
| TCLE              | 2              | 1.49                             | 1.72  | 1.92  | 2.15  | 2.36  | 2.54  | 1.47                             | 1.70  | 1.90  | 2.12  | 2.33  | 2.51  | 1.44                             | 1.66  | 1.86  | 2.08  | 2.28  | 2.46  |
| TCLE              | 3              | 2.75                             | 3.18  | 3.55  | 3.97  | 4.35  | 4.70  | 2.71                             | 3.13  | 3.50  | 3.91  | 4.29  | 4.63  | 2.65                             | 3.06  | 3.42  | 3.82  | 4.19  | 4.53  |
| TCLE              | 5              | 4.01                             | 4.63  | 5.18  | 5.79  | 6.34  | 6.85  | 3.95                             | 4.56  | 5.10  | 5.70  | 6.25  | 6.75  | 3.86                             | 4.46  | 4.98  | 5.57  | 6.10  | 6.59  |
| TCLE              | 7-1/2          | 5.82                             | 6.72  | 7.51  | 8.40  | 9.20  | 9.94  | 5.75                             | 6.64  | 7.42  | 8.30  | 9.09  | 9.82  | 5.60                             | 6.47  | 7.23  | 8.08  | 8.85  | 9.56  |
| TCLE              | 10             | 8.02                             | 9.26  | 10.35 | 11.58 | 12.68 | 13.70 | 7.92                             | 9.15  | 10.23 | 11.44 | 12.53 | 13.53 | 7.72                             | 8.91  | 9.97  | 11.14 | 12.21 | 13.18 |
| TCLE              | 12             | 9.67                             | 11.17 | 12.48 | 13.96 | 15.29 | 16.51 | 9.55                             | 11.03 | 12.33 | 13.79 | 15.10 | 16.31 | 9.31                             | 10.75 | 12.02 | 13.44 | 14.72 | 15.90 |
| TJL               | 11             | 8.57                             | 9.90  | 11.06 | 12.37 | 13.55 | 14.64 | 8.47                             | 9.78  | 10.93 | 12.22 | 13.39 | 14.46 | 8.25                             | 9.53  | 10.65 | 11.91 | 13.04 | 14.09 |
| TJL               | 14             | 10.92                            | 12.61 | 14.10 | 15.76 | 17.27 | 18.65 | 10.80                            | 12.47 | 13.94 | 15.59 | 17.07 | 18.44 | 10.52                            | 12.15 | 13.58 | 15.18 | 16.63 | 17.97 |

NOTE: Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 100 psi pressure drop across the TXV per ARI 750-2001.

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |      |      |       |       |       |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|------|------|-------|-------|-------|----------------------------------|------|------|------|------|------|
|                   |                | 0°F                              |       |       |       |       |       | -20°F                            |      |      |       |       |       | -40°F                            |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |      |      |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80    | 100   | 125   | 150   | 175   | 80                               | 100  | 125  | 150   | 175   | 200   | 80                               | 100  | 125  | 150  | 175  | 200  |
| AA/AN/AFA         | 1/5            | 0.13                             | 0.15  | 0.17  | 0.19  | 0.21  | 0.22  | 0.10                             | 0.11 | 0.13 | 0.14  | 0.15  | 0.16  | 0.07                             | 0.08 | 0.09 | 0.10 | 0.10 | 0.11 |
| AA/AN/AAC/ANC     | 1/4            | 0.23                             | 0.27  | 0.30  | 0.33  | 0.36  | 0.39  | 0.18                             | 0.20 | 0.23 | 0.25  | 0.27  | 0.28  | 0.12                             | 0.13 | 0.15 | 0.16 | 0.18 | 0.19 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.40                             | 0.46  | 0.52  | 0.58  | 0.63  | 0.68  | 0.32                             | 0.36 | 0.40 | 0.44  | 0.47  | 0.51  | 0.21                             | 0.23 | 0.26 | 0.29 | 0.31 | 0.33 |
| AA/AN/AAC/ANC/AFA | 1              | 0.64                             | 0.74  | 0.83  | 0.92  | 1.01  | 1.09  | 0.51                             | 0.57 | 0.64 | 0.70  | 0.75  | 0.81  | 0.34                             | 0.38 | 0.43 | 0.47 | 0.50 | 0.54 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 0.91                             | 1.05  | 1.17  | 1.31  | 1.44  | 1.55  | 0.73                             | 0.82 | 0.91 | 1.00  | 1.08  | 1.15  | 0.48                             | 0.54 | 0.60 | 0.66 | 0.71 | 0.76 |
| AA/AN/AAC/ANC/AFA | 2              | 1.35                             | 1.56  | 1.74  | 1.95  | 2.13  | 2.31  | 1.07                             | 1.20 | 1.34 | 1.47  | 1.58  | 1.69  | 0.71                             | 0.79 | 0.89 | 0.97 | 1.05 | 1.12 |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 1.89                             | 2.18  | 2.44  | 2.73  | 2.99  | 3.23  | 1.51                             | 1.69 | 1.89 | 2.07  | 2.23  | 2.39  | 0.99                             | 1.11 | 1.24 | 1.36 | 1.46 | 1.57 |
| AA/AN/AAC/ANC/AFA | 3              | 2.31                             | 2.67  | 2.98  | 3.33  | 3.65  | 3.95  | 1.85                             | 2.07 | 2.31 | 2.53  | 2.74  | 2.93  | 1.22                             | 1.36 | 1.53 | 1.67 | 1.80 | 1.93 |
| AA/AN/AAC/ANC/AFA | 4              | 2.75                             | 3.18  | 3.55  | 3.97  | 4.35  | 4.70  | 2.19                             | 2.45 | 2.74 | 3.00  | 3.24  | 3.46  | 1.44                             | 1.61 | 1.80 | 1.97 | 2.13 | 2.28 |
| AA/AN/AAC/ANC/AFA | 5              | 3.75                             | 4.33  | 4.84  | 5.41  | 5.93  | 6.40  | 3.00                             | 3.35 | 3.75 | 4.11  | 4.44  | 4.74  | 1.97                             | 2.20 | 2.46 | 2.70 | 2.91 | 3.11 |
| TCLE              | 1/2            | 0.34                             | 0.39  | 0.44  | 0.49  | 0.54  | 0.58  | 0.27                             | 0.30 | 0.34 | 0.37  | 0.40  | 0.43  | 0.18                             | 0.20 | 0.23 | 0.25 | 0.27 | 0.28 |
| TCLE              | 1              | 0.65                             | 0.75  | 0.84  | 0.94  | 1.03  | 1.11  | 0.52                             | 0.58 | 0.65 | 0.71  | 0.77  | 0.82  | 0.34                             | 0.38 | 0.43 | 0.47 | 0.50 | 0.54 |
| TCLE              | 2              | 1.30                             | 1.50  | 1.68  | 1.88  | 2.06  | 2.22  | 1.04                             | 1.16 | 1.30 | 1.42  | 1.54  | 1.64  | 0.69                             | 0.77 | 0.86 | 0.94 | 1.02 | 1.09 |
| TCLE              | 3              | 2.40                             | 2.77  | 3.10  | 3.46  | 3.79  | 4.10  | 1.92                             | 2.15 | 2.40 | 2.63  | 2.84  | 3.04  | 1.26                             | 1.41 | 1.58 | 1.73 | 1.86 | 1.99 |
| TCLE              | 5              | 3.50                             | 4.04  | 4.52  | 5.05  | 5.53  | 5.98  | 2.79                             | 3.12 | 3.49 | 3.82  | 4.13  | 4.41  | 1.84                             | 2.06 | 2.30 | 2.52 | 2.72 | 2.91 |
| TCLE              | 7-1/2          | 5.08                             | 5.87  | 6.56  | 7.33  | 8.03  | 8.68  | 4.05                             | 4.53 | 5.06 | 5.55  | 5.99  | 6.40  | 2.67                             | 2.99 | 3.34 | 3.66 | 3.95 | 4.22 |
| TCLE              | 10             | 7.00                             | 8.08  | 9.04  | 10.10 | 11.07 | 11.95 | 5.59                             | 6.25 | 6.99 | 7.65  | 8.27  | 8.84  | 3.68                             | 4.11 | 4.60 | 5.04 | 5.44 | 5.82 |
| TCLE              | 12             | 8.44                             | 9.75  | 10.90 | 12.18 | 13.34 | 14.41 | 6.74                             | 7.54 | 8.43 | 9.23  | 9.97  | 10.66 | 4.44                             | 4.96 | 5.55 | 6.08 | 6.57 | 7.02 |
| TJL               | 11             | 7.48                             | 8.64  | 9.66  | 10.80 | 11.83 | 12.77 | 5.97                             | 6.67 | 7.46 | 8.17  | 8.83  | 9.44  | 3.93                             | 4.39 | 4.91 | 5.38 | 5.81 | 6.21 |
| TJL               | 14             | 9.54                             | 11.02 | 12.32 | 13.77 | 15.08 | 16.29 | 7.62                             | 8.52 | 9.53 | 10.43 | 11.27 | 12.05 | 5.02                             | 5.61 | 6.28 | 6.87 | 7.42 | 7.94 |

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## R-134A CONVENTIONAL PORTED VALVES (TONS) A SERIES / AFA SERIES / T SERIES

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|-------------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|                   |                | 50°F                             |       |       |       |       |       | 40°F                             |       |       |       |       |       | 20°F                             |       |       |       |       |       |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|                   |                | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   |
| AA/AN/AFA         | 1/8            | 0.14                             | 0.16  | 0.18  | 0.20  | 0.22  | 0.24  | 0.14                             | 0.16  | 0.18  | 0.20  | 0.22  | 0.24  | 0.13                             | 0.15  | 0.17  | 0.19  | 0.21  | 0.22  |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.25                             | 0.29  | 0.32  | 0.36  | 0.40  | 0.43  | 0.24                             | 0.28  | 0.31  | 0.35  | 0.38  | 0.41  | 0.23                             | 0.27  | 0.30  | 0.33  | 0.36  | 0.39  |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.43                             | 0.50  | 0.56  | 0.62  | 0.68  | 0.73  | 0.43                             | 0.50  | 0.56  | 0.62  | 0.68  | 0.73  | 0.41                             | 0.47  | 0.53  | 0.59  | 0.65  | 0.70  |
| AA/AN/AAC/ANC/AFA | 3/4            | 0.70                             | 0.81  | 0.90  | 1.01  | 1.11  | 1.20  | 0.68                             | 0.79  | 0.88  | 0.98  | 1.08  | 1.16  | 0.65                             | 0.75  | 0.84  | 0.94  | 1.03  | 1.11  |
| AA/AN/AAC/ANC/AFA | 1              | 1.00                             | 1.15  | 1.29  | 1.44  | 1.58  | 1.71  | 0.98                             | 1.13  | 1.27  | 1.41  | 1.55  | 1.67  | 0.93                             | 1.07  | 1.20  | 1.34  | 1.47  | 1.59  |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 1.47                             | 1.70  | 1.90  | 2.12  | 2.32  | 2.51  | 1.44                             | 1.66  | 1.86  | 2.08  | 2.28  | 2.46  | 1.38                             | 1.59  | 1.78  | 1.99  | 2.18  | 2.36  |
| AA/AN/AAC/ANC/AFA | 2              | 2.06                             | 2.38  | 2.66  | 2.97  | 3.26  | 3.52  | 2.02                             | 2.33  | 2.61  | 2.92  | 3.19  | 3.45  | 1.93                             | 2.23  | 2.49  | 2.79  | 3.05  | 3.30  |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 2.53                             | 2.92  | 3.27  | 3.65  | 4.00  | 4.32  | 2.47                             | 2.85  | 3.19  | 3.57  | 3.91  | 4.22  | 2.37                             | 2.74  | 3.06  | 3.42  | 3.75  | 4.05  |
| AA/AN/AAC/ANC/AFA | 3              | 3.00                             | 3.46  | 3.87  | 4.33  | 4.74  | 5.12  | 2.94                             | 3.39  | 3.80  | 4.24  | 4.65  | 5.02  | 2.81                             | 3.24  | 3.63  | 4.06  | 4.44  | 4.80  |
| AA/AN/AAC/ANC/AFA | 4              | 4.10                             | 4.73  | 5.29  | 5.92  | 6.48  | 7.00  | 4.02                             | 4.64  | 5.19  | 5.80  | 6.36  | 6.87  | 3.84                             | 4.43  | 4.96  | 5.54  | 6.07  | 6.56  |
| TCLE              | 1/4            | 0.37                             | 0.43  | 0.48  | 0.53  | 0.59  | 0.63  | 0.37                             | 0.43  | 0.48  | 0.53  | 0.59  | 0.63  | 0.35                             | 0.40  | 0.45  | 0.51  | 0.55  | 0.60  |
| TCLE              | 3/4            | 0.70                             | 0.81  | 0.90  | 1.01  | 1.11  | 1.20  | 0.69                             | 0.80  | 0.89  | 1.00  | 1.09  | 1.18  | 0.66                             | 0.76  | 0.85  | 0.95  | 1.04  | 1.13  |
| TCLE              | 1-1/2          | 1.42                             | 1.64  | 1.83  | 2.05  | 2.25  | 2.43  | 1.39                             | 1.61  | 1.79  | 2.01  | 2.20  | 2.37  | 1.33                             | 1.54  | 1.72  | 1.92  | 2.10  | 2.27  |
| TCLE              | 2-1/2          | 2.62                             | 3.03  | 3.38  | 3.78  | 4.14  | 4.47  | 2.57                             | 2.97  | 3.32  | 3.71  | 4.06  | 4.39  | 2.46                             | 2.84  | 3.18  | 3.55  | 3.89  | 4.20  |
| TCLE              | 3-1/2          | 3.82                             | 4.41  | 4.93  | 5.51  | 6.04  | 6.52  | 3.74                             | 4.32  | 4.83  | 5.40  | 5.91  | 6.39  | 3.58                             | 4.13  | 4.62  | 5.17  | 5.66  | 6.11  |
| TCLE              | 5-1/2          | 5.55                             | 6.41  | 7.17  | 8.01  | 8.78  | 9.48  | 5.43                             | 6.27  | 7.01  | 7.84  | 8.59  | 9.27  | 5.20                             | 6.00  | 6.71  | 7.51  | 8.22  | 8.88  |
| TCLE              | 7-1/2          | 7.65                             | 8.83  | 9.88  | 11.04 | 12.10 | 13.06 | 7.49                             | 8.65  | 9.67  | 10.81 | 11.84 | 12.79 | 7.16                             | 8.27  | 9.24  | 10.33 | 11.32 | 12.23 |
| TCLE              | 9              | 9.22                             | 10.65 | 11.90 | 13.31 | 14.58 | 15.75 | 9.03                             | 10.43 | 11.66 | 13.03 | 14.28 | 15.42 | 8.64                             | 9.98  | 11.15 | 12.47 | 13.66 | 14.76 |
| TJL               | 9              | 8.17                             | 9.43  | 10.55 | 11.79 | 12.92 | 13.95 | 8.00                             | 9.24  | 10.33 | 11.55 | 12.65 | 13.66 | 7.65                             | 8.83  | 9.88  | 11.04 | 12.10 | 13.06 |
| TJL               | 11             | 10.42                            | 12.03 | 13.45 | 15.04 | 16.48 | 17.80 | 10.20                            | 11.78 | 13.17 | 14.72 | 16.13 | 17.42 | 9.76                             | 11.27 | 12.60 | 14.09 | 15.43 | 16.67 |

NOTE: Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 60 psi pressure drop across the TXV per ARI 750-2001.

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |       |       |       |       |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|-------|-------|-------|-------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 0°F                              |      |       |       |       |       | -20°F                            |      |      |      |      |      | -40°F                            |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100   | 125   | 150   | 175   | 80                               | 100  | 125  | 150  | 175  | 200  | 80                               | 100  | 125  | 150  | 175  | 200  |
| AA/AN/AFA         | 1/8            | 0.11                             | 0.13 | 0.14  | 0.16  | 0.17  | 0.19  | 0.08                             | 0.09 | 0.10 | 0.11 | 0.12 | 0.13 | 0.05                             | 0.06 | 0.06 | 0.07 | 0.07 | 0.08 |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.19                             | 0.22 | 0.25  | 0.27  | 0.30  | 0.32  | 0.14                             | 0.16 | 0.18 | 0.19 | 0.21 | 0.22 | 0.09                             | 0.10 | 0.11 | 0.12 | 0.13 | 0.14 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.34                             | 0.39 | 0.44  | 0.49  | 0.54  | 0.58  | 0.25                             | 0.28 | 0.31 | 0.34 | 0.37 | 0.40 | 0.15                             | 0.17 | 0.19 | 0.21 | 0.22 | 0.24 |
| AA/AN/AAC/ANC/AFA | 3/4            | 0.54                             | 0.62 | 0.70  | 0.78  | 0.85  | 0.92  | 0.40                             | 0.45 | 0.50 | 0.55 | 0.59 | 0.63 | 0.25                             | 0.28 | 0.31 | 0.34 | 0.37 | 0.40 |
| AA/AN/AAC/ANC/AFA | 1              | 0.77                             | 0.89 | 0.99  | 1.11  | 1.22  | 1.32  | 0.57                             | 0.64 | 0.71 | 0.78 | 0.84 | 0.90 | 0.35                             | 0.39 | 0.44 | 0.48 | 0.52 | 0.55 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 1.13                             | 1.30 | 1.46  | 1.63  | 1.79  | 1.93  | 0.85                             | 0.95 | 1.06 | 1.16 | 1.26 | 1.34 | 0.52                             | 0.58 | 0.65 | 0.71 | 0.77 | 0.82 |
| AA/AN/AAC/ANC/AFA | 2              | 1.59                             | 1.84 | 2.05  | 2.29  | 2.51  | 2.72  | 1.19                             | 1.33 | 1.49 | 1.63 | 1.76 | 1.88 | 0.73                             | 0.82 | 0.91 | 1.00 | 1.08 | 1.15 |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 1.95                             | 2.25 | 2.52  | 2.81  | 3.08  | 3.33  | 1.45                             | 1.62 | 1.81 | 1.99 | 2.14 | 2.29 | 0.89                             | 1.00 | 1.11 | 1.22 | 1.32 | 1.41 |
| AA/AN/AAC/ANC/AFA | 3              | 2.31                             | 2.67 | 2.98  | 3.33  | 3.65  | 3.95  | 1.72                             | 1.92 | 2.15 | 2.36 | 2.54 | 2.72 | 1.06                             | 1.19 | 1.33 | 1.45 | 1.57 | 1.68 |
| AA/AN/AAC/ANC/AFA | 4              | 3.16                             | 3.65 | 4.08  | 4.56  | 5.00  | 5.40  | 2.36                             | 2.64 | 2.95 | 3.23 | 3.49 | 3.73 | 1.45                             | 1.62 | 1.81 | 1.99 | 2.14 | 2.29 |
| TCLE              | 1/4            | 0.29                             | 0.33 | 0.37  | 0.42  | 0.46  | 0.50  | 0.22                             | 0.25 | 0.28 | 0.30 | 0.33 | 0.35 | 0.13                             | 0.15 | 0.16 | 0.18 | 0.19 | 0.21 |
| TCLE              | 3/4            | 0.54                             | 0.62 | 0.70  | 0.78  | 0.85  | 0.92  | 0.41                             | 0.46 | 0.51 | 0.56 | 0.61 | 0.65 | 0.25                             | 0.28 | 0.31 | 0.34 | 0.37 | 0.40 |
| TCLE              | 1-1/2          | 1.10                             | 1.27 | 1.42  | 1.59  | 1.74  | 1.88  | 0.82                             | 0.92 | 1.03 | 1.12 | 1.21 | 1.30 | 0.50                             | 0.56 | 0.63 | 0.68 | 0.74 | 0.79 |
| TCLE              | 2-1/2          | 2.02                             | 2.33 | 2.61  | 2.92  | 3.19  | 3.45  | 1.51                             | 1.69 | 1.89 | 2.07 | 2.23 | 2.39 | 0.93                             | 1.04 | 1.16 | 1.27 | 1.38 | 1.47 |
| TCLE              | 3-1/2          | 2.95                             | 3.41 | 3.81  | 4.26  | 4.66  | 5.04  | 2.20                             | 2.46 | 2.75 | 3.01 | 3.25 | 3.48 | 1.35                             | 1.51 | 1.69 | 1.85 | 2.00 | 2.13 |
| TCLE              | 5-1/2          | 4.28                             | 4.94 | 5.53  | 6.18  | 6.77  | 7.31  | 3.19                             | 3.57 | 3.99 | 4.37 | 4.72 | 5.04 | 1.96                             | 2.19 | 2.45 | 2.68 | 2.90 | 3.10 |
| TCLE              | 7-1/2          | 5.90                             | 6.81 | 7.62  | 8.52  | 9.33  | 10.08 | 4.40                             | 4.92 | 5.50 | 6.02 | 6.51 | 6.96 | 2.70                             | 3.02 | 3.38 | 3.70 | 3.99 | 4.27 |
| TCLE              | 9              | 7.11                             | 8.21 | 9.18  | 10.26 | 11.24 | 12.14 | 5.30                             | 5.93 | 6.63 | 7.26 | 7.84 | 8.38 | 3.26                             | 3.64 | 4.08 | 4.46 | 4.82 | 5.15 |
| TJL               | 9              | 6.30                             | 7.27 | 8.13  | 9.09  | 9.96  | 10.76 | 4.70                             | 5.25 | 5.88 | 6.44 | 6.95 | 7.43 | 2.89                             | 3.23 | 3.61 | 3.96 | 4.27 | 4.57 |
| TJL               | 11             | 8.03                             | 9.27 | 10.37 | 11.59 | 12.70 | 13.71 | 5.99                             | 6.70 | 7.49 | 8.20 | 8.86 | 9.47 | 3.68                             | 4.11 | 4.60 | 5.04 | 5.44 | 5.82 |

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## R-290 CONVENTIONAL PORTED VALVES (TONS) A SERIES

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 50°F                             |      |      |      |      |      | 40°F                             |      |      |      |      |      | 20°F                             |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  |
| AA/AN/AFA         | 1/5            | 0.14                             | 0.16 | 0.18 | 0.20 | 0.22 | 0.24 | 0.14                             | 0.16 | 0.18 | 0.20 | 0.21 | 0.23 | 0.13                             | 0.15 | 0.17 | 0.19 | 0.21 | 0.22 |
| AA/AN/AAC/ANC     | 1/4            | 0.24                             | 0.28 | 0.31 | 0.35 | 0.38 | 0.41 | 0.24                             | 0.27 | 0.30 | 0.34 | 0.37 | 0.40 | 0.23                             | 0.26 | 0.29 | 0.33 | 0.36 | 0.38 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.42                             | 0.49 | 0.55 | 0.61 | 0.67 | 0.72 | 0.41                             | 0.48 | 0.53 | 0.60 | 0.66 | 0.71 | 0.40                             | 0.46 | 0.51 | 0.57 | 0.63 | 0.68 |
| AA/AN/AAC/ANC/AFA | 1              | 0.68                             | 0.78 | 0.88 | 0.98 | 1.07 | 1.16 | 0.66                             | 0.77 | 0.86 | 0.96 | 1.05 | 1.13 | 0.64                             | 0.73 | 0.82 | 0.92 | 1.00 | 1.08 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 0.97                             | 1.12 | 1.25 | 1.40 | 1.53 | 1.66 | 0.95                             | 1.10 | 1.23 | 1.37 | 1.50 | 1.62 | 0.91                             | 1.05 | 1.17 | 1.31 | 1.44 | 1.55 |
| AA/AN/AAC/ANC/AFA | 2              | 1.43                             | 1.65 | 1.85 | 2.06 | 2.26 | 2.44 | 1.40                             | 1.62 | 1.81 | 2.02 | 2.21 | 2.39 | 1.34                             | 1.55 | 1.73 | 1.93 | 2.12 | 2.29 |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 2.01                             | 2.32 | 2.59 | 2.90 | 3.17 | 3.43 | 1.96                             | 2.27 | 2.54 | 2.84 | 3.11 | 3.36 | 1.88                             | 2.17 | 2.42 | 2.71 | 2.97 | 3.21 |
| AA/AN/AAC/ANC/AFA | 3              | 2.46                             | 2.84 | 3.17 | 3.55 | 3.89 | 4.20 | 2.41                             | 2.78 | 3.11 | 3.48 | 3.81 | 4.11 | 2.30                             | 2.66 | 2.97 | 3.32 | 3.64 | 3.93 |
| AA/AN/AAC/ANC/AFA | 4              | 2.92                             | 3.37 | 3.77 | 4.21 | 4.61 | 4.98 | 2.86                             | 3.30 | 3.69 | 4.12 | 4.52 | 4.88 | 2.73                             | 3.15 | 3.53 | 3.94 | 4.32 | 4.67 |
| AA/AN/AAC/ANC/AFA | 5              | 3.99                             | 4.61 | 5.15 | 5.76 | 6.31 | 6.82 | 3.91                             | 4.51 | 5.04 | 5.64 | 6.18 | 6.67 | 3.74                             | 4.31 | 4.82 | 5.39 | 5.91 | 6.38 |

Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 100 psi pressure drop across the TXV per ARI 750-2001.

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 0°F                              |      |      |      |      |      | -20°F                            |      |      |      |      |      | -40°F                            |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100  | 125  | 150  | 175  | 80                               | 100  | 125  | 150  | 175  | 200  | 80                               | 100  | 125  | 150  | 175  | 200  |
| AA/AN/AFA         | 1/5            | 0.11                             | 0.12 | 0.14 | 0.15 | 0.17 | 0.18 | 0.08                             | 0.10 | 0.11 | 0.12 | 0.13 | 0.13 | 0.06                             | 0.06 | 0.07 | 0.08 | 0.08 | 0.09 |
| AA/AN/AAC/ANC     | 1/4            | 0.18                             | 0.21 | 0.24 | 0.26 | 0.29 | 0.31 | 0.15                             | 0.17 | 0.18 | 0.20 | 0.22 | 0.23 | 0.10                             | 0.11 | 0.12 | 0.14 | 0.15 | 0.16 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.32                             | 0.37 | 0.42 | 0.47 | 0.51 | 0.55 | 0.26                             | 0.29 | 0.32 | 0.36 | 0.38 | 0.41 | 0.17                             | 0.19 | 0.22 | 0.24 | 0.26 | 0.27 |
| AA/AN/AAC/ANC/AFA | 1              | 0.52                             | 0.60 | 0.67 | 0.75 | 0.82 | 0.88 | 0.42                             | 0.47 | 0.52 | 0.57 | 0.62 | 0.66 | 0.28                             | 0.31 | 0.35 | 0.38 | 0.41 | 0.44 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 0.74                             | 0.85 | 0.95 | 1.07 | 1.17 | 1.26 | 0.59                             | 0.67 | 0.74 | 0.81 | 0.88 | 0.94 | 0.40                             | 0.45 | 0.50 | 0.55 | 0.59 | 0.63 |
| AA/AN/AAC/ANC/AFA | 2              | 1.09                             | 1.26 | 1.41 | 1.57 | 1.72 | 1.86 | 0.88                             | 0.98 | 1.10 | 1.20 | 1.30 | 1.39 | 0.59                             | 0.66 | 0.73 | 0.80 | 0.87 | 0.93 |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 1.53                             | 1.76 | 1.97 | 2.20 | 2.42 | 2.61 | 1.23                             | 1.38 | 1.54 | 1.68 | 1.82 | 1.95 | 0.82                             | 0.92 | 1.03 | 1.13 | 1.22 | 1.30 |
| AA/AN/AAC/ANC/AFA | 3              | 1.87                             | 2.16 | 2.42 | 2.70 | 2.96 | 3.20 | 1.51                             | 1.69 | 1.88 | 2.06 | 2.23 | 2.38 | 1.01                             | 1.13 | 1.26 | 1.38 | 1.49 | 1.60 |
| AA/AN/AAC/ANC/AFA | 4              | 2.22                             | 2.57 | 2.87 | 3.21 | 3.51 | 3.79 | 1.79                             | 2.00 | 2.24 | 2.45 | 2.65 | 2.83 | 1.20                             | 1.34 | 1.50 | 1.64 | 1.77 | 1.89 |
| AA/AN/AAC/ANC/AFA | 5              | 3.04                             | 3.51 | 3.92 | 4.39 | 4.80 | 5.19 | 2.45                             | 2.74 | 3.06 | 3.35 | 3.62 | 3.87 | 1.64                             | 1.83 | 2.05 | 2.24 | 2.42 | 2.59 |

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## R-404A / R-507 CONVENTIONAL PORTED VALVES (TONS) A-SERIES / AFA SERIES / T SERIES

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|-------------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|                   |                | 50°F                             |       |       |       |       |       | 40°F                             |       |       |       |       |       | 20°F                             |       |       |       |       |       |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|                   |                | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   |
| AA/AN/AFA         | 1/8            | 0.14                             | 0.16  | 0.18  | 0.20  | 0.22  | 0.24  | 0.14                             | 0.16  | 0.18  | 0.20  | 0.22  | 0.24  | 0.13                             | 0.15  | 0.17  | 0.19  | 0.21  | 0.22  |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.25                             | 0.29  | 0.32  | 0.36  | 0.40  | 0.43  | 0.24                             | 0.28  | 0.31  | 0.35  | 0.38  | 0.41  | 0.23                             | 0.27  | 0.30  | 0.33  | 0.36  | 0.39  |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.43                             | 0.50  | 0.56  | 0.62  | 0.68  | 0.73  | 0.43                             | 0.50  | 0.56  | 0.62  | 0.68  | 0.73  | 0.41                             | 0.47  | 0.53  | 0.59  | 0.65  | 0.70  |
| AA/AN/AAC/ANC/AFA | 3/4            | 0.70                             | 0.81  | 0.90  | 1.01  | 1.11  | 1.20  | 0.68                             | 0.79  | 0.88  | 0.98  | 1.08  | 1.16  | 0.65                             | 0.75  | 0.84  | 0.94  | 1.03  | 1.11  |
| AA/AN/AAC/ANC/AFA | 1              | 1.00                             | 1.15  | 1.29  | 1.44  | 1.58  | 1.71  | 0.98                             | 1.13  | 1.27  | 1.41  | 1.55  | 1.67  | 0.93                             | 1.07  | 1.20  | 1.34  | 1.47  | 1.59  |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 1.47                             | 1.70  | 1.90  | 2.12  | 2.32  | 2.51  | 1.44                             | 1.66  | 1.86  | 2.08  | 2.28  | 2.46  | 1.38                             | 1.59  | 1.78  | 1.99  | 2.18  | 2.36  |
| AA/AN/AAC/ANC/AFA | 2              | 2.06                             | 2.38  | 2.66  | 2.97  | 3.26  | 3.52  | 2.02                             | 2.33  | 2.61  | 2.92  | 3.19  | 3.45  | 1.93                             | 2.23  | 2.49  | 2.79  | 3.05  | 3.30  |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 2.53                             | 2.92  | 3.27  | 3.65  | 4.00  | 4.32  | 2.47                             | 2.85  | 3.19  | 3.57  | 3.91  | 4.22  | 2.37                             | 2.74  | 3.06  | 3.42  | 3.75  | 4.05  |
| AA/AN/AAC/ANC/AFA | 3              | 3.00                             | 3.46  | 3.87  | 4.33  | 4.74  | 5.12  | 2.94                             | 3.39  | 3.80  | 4.24  | 4.65  | 5.02  | 2.81                             | 3.24  | 3.63  | 4.06  | 4.44  | 4.80  |
| AA/AN/AAC/ANC/AFA | 4              | 4.10                             | 4.73  | 5.29  | 5.92  | 6.48  | 7.00  | 4.02                             | 4.64  | 5.19  | 5.80  | 6.36  | 6.87  | 3.84                             | 4.43  | 4.96  | 5.54  | 6.07  | 6.56  |
| TCLE              | 1/4            | 0.37                             | 0.43  | 0.48  | 0.53  | 0.59  | 0.63  | 0.37                             | 0.43  | 0.48  | 0.53  | 0.59  | 0.63  | 0.35                             | 0.40  | 0.45  | 0.51  | 0.55  | 0.60  |
| TCLE              | 3/4            | 0.70                             | 0.81  | 0.90  | 1.01  | 1.11  | 1.20  | 0.69                             | 0.80  | 0.89  | 1.00  | 1.09  | 1.18  | 0.66                             | 0.76  | 0.85  | 0.95  | 1.04  | 1.13  |
| TCLE              | 1-1/2          | 1.42                             | 1.64  | 1.83  | 2.05  | 2.25  | 2.43  | 1.39                             | 1.61  | 1.79  | 2.01  | 2.20  | 2.37  | 1.33                             | 1.54  | 1.72  | 1.92  | 2.10  | 2.27  |
| TCLE              | 2-1/2          | 2.62                             | 3.03  | 3.38  | 3.78  | 4.14  | 4.47  | 2.57                             | 2.97  | 3.32  | 3.71  | 4.06  | 4.39  | 2.46                             | 2.84  | 3.18  | 3.55  | 3.89  | 4.20  |
| TCLE              | 3-1/2          | 3.82                             | 4.41  | 4.93  | 5.51  | 6.04  | 6.52  | 3.74                             | 4.32  | 4.83  | 5.40  | 5.91  | 6.39  | 3.58                             | 4.13  | 4.62  | 5.17  | 5.66  | 6.11  |
| TCLE              | 5-1/2          | 5.55                             | 6.41  | 7.17  | 8.01  | 8.78  | 9.48  | 5.43                             | 6.27  | 7.01  | 7.84  | 8.59  | 9.27  | 5.20                             | 6.00  | 6.71  | 7.51  | 8.22  | 8.88  |
| TCLE              | 7-1/2          | 7.65                             | 8.83  | 9.88  | 11.04 | 12.10 | 13.06 | 7.49                             | 8.65  | 9.67  | 10.81 | 11.84 | 12.79 | 7.16                             | 8.27  | 9.24  | 10.33 | 11.32 | 12.23 |
| TCLE              | 9              | 9.22                             | 10.65 | 11.90 | 13.31 | 14.58 | 15.75 | 9.03                             | 10.43 | 11.66 | 13.03 | 14.28 | 15.42 | 8.64                             | 9.98  | 11.15 | 12.47 | 13.66 | 14.76 |
| TJL               | 9              | 8.17                             | 9.43  | 10.55 | 11.79 | 12.92 | 13.95 | 8.00                             | 9.24  | 10.33 | 11.55 | 12.65 | 13.66 | 7.65                             | 8.83  | 9.88  | 11.04 | 12.10 | 13.06 |
| TJL               | 11             | 10.42                            | 12.03 | 13.45 | 15.04 | 16.48 | 17.80 | 10.20                            | 11.78 | 13.17 | 14.72 | 16.13 | 17.42 | 9.76                             | 11.27 | 12.60 | 14.09 | 15.43 | 16.67 |

NOTE: Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 100 psi pressure drop across the TXV per ARI 750-2001.

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |       |       |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|-------|-------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 0°F                              |      |      |      |       |       | -20°F                            |      |      |      |      |      | -40°F                            |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |       |       | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100  | 125  | 150   | 175   | 80                               | 100  | 125  | 150  | 175  | 200  | 80                               | 100  | 125  | 150  | 175  | 200  |
| AA/AN/AFA         | 1/8            | 0.09                             | 0.10 | 0.12 | 0.13 | 0.14  | 0.15  | 0.07                             | 0.08 | 0.09 | 0.10 | 0.10 | 0.11 | 0.05                             | 0.06 | 0.06 | 0.07 | 0.07 | 0.08 |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.16                             | 0.18 | 0.21 | 0.23 | 0.25  | 0.27  | 0.12                             | 0.13 | 0.15 | 0.16 | 0.18 | 0.19 | 0.08                             | 0.09 | 0.10 | 0.11 | 0.12 | 0.13 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.28                             | 0.32 | 0.36 | 0.40 | 0.44  | 0.48  | 0.22                             | 0.25 | 0.28 | 0.30 | 0.33 | 0.35 | 0.14                             | 0.16 | 0.18 | 0.19 | 0.21 | 0.22 |
| AA/AN/AAC/ANC/AFA | 3/4            | 0.44                             | 0.51 | 0.57 | 0.64 | 0.70  | 0.75  | 0.35                             | 0.39 | 0.44 | 0.48 | 0.52 | 0.55 | 0.23                             | 0.26 | 0.29 | 0.31 | 0.34 | 0.36 |
| AA/AN/AAC/ANC/AFA | 1              | 0.63                             | 0.73 | 0.81 | 0.91 | 1.00  | 1.08  | 0.50                             | 0.56 | 0.63 | 0.68 | 0.74 | 0.79 | 0.32                             | 0.36 | 0.40 | 0.44 | 0.47 | 0.51 |
| AA/AN/AAC/ANC/AFA | 1-1/4          | 0.93                             | 1.07 | 1.20 | 1.34 | 1.47  | 1.59  | 0.73                             | 0.82 | 0.91 | 1.00 | 1.08 | 1.15 | 0.48                             | 0.54 | 0.60 | 0.66 | 0.71 | 0.76 |
| AA/AN/AAC/ANC/AFA | 2              | 1.31                             | 1.51 | 1.69 | 1.89 | 2.07  | 2.24  | 1.03                             | 1.15 | 1.29 | 1.41 | 1.52 | 1.63 | 0.67                             | 0.75 | 0.84 | 0.92 | 0.99 | 1.06 |
| AA/AN/AAC/ANC/AFA | 2-1/4          | 1.61                             | 1.86 | 2.08 | 2.32 | 2.55  | 2.75  | 1.26                             | 1.41 | 1.58 | 1.73 | 1.86 | 1.99 | 0.82                             | 0.92 | 1.03 | 1.12 | 1.21 | 1.30 |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 1.91                             | 2.21 | 2.47 | 2.76 | 3.02  | 3.26  | 1.50                             | 1.68 | 1.88 | 2.05 | 2.22 | 2.37 | 0.98                             | 1.10 | 1.23 | 1.34 | 1.45 | 1.55 |
| AA/AN/AAC/ANC/AFA | 3-1/2          | 2.61                             | 3.01 | 3.37 | 3.77 | 4.13  | 4.46  | 2.04                             | 2.28 | 2.55 | 2.79 | 3.02 | 3.23 | 1.34                             | 1.50 | 1.68 | 1.83 | 1.98 | 2.12 |
| TCLE              | 1/4            | 0.24                             | 0.28 | 0.31 | 0.35 | 0.38  | 0.41  | 0.19                             | 0.21 | 0.24 | 0.26 | 0.28 | 0.30 | 0.12                             | 0.13 | 0.15 | 0.16 | 0.18 | 0.19 |
| TCLE              | 1/2            | 0.45                             | 0.52 | 0.58 | 0.65 | 0.71  | 0.77  | 0.35                             | 0.39 | 0.44 | 0.48 | 0.52 | 0.55 | 0.23                             | 0.26 | 0.29 | 0.31 | 0.34 | 0.36 |
| TCLE              | 1              | 0.91                             | 1.05 | 1.17 | 1.31 | 1.44  | 1.55  | 0.71                             | 0.79 | 0.89 | 0.97 | 1.05 | 1.12 | 0.46                             | 0.51 | 0.58 | 0.63 | 0.68 | 0.73 |
| TCLE              | 2              | 1.67                             | 1.93 | 2.16 | 2.41 | 2.64  | 2.85  | 1.31                             | 1.46 | 1.64 | 1.79 | 1.94 | 2.07 | 0.86                             | 0.96 | 1.08 | 1.18 | 1.27 | 1.36 |
| TCLE              | 3              | 2.43                             | 2.81 | 3.14 | 3.51 | 3.84  | 4.15  | 1.91                             | 2.14 | 2.39 | 2.62 | 2.82 | 3.02 | 1.25                             | 1.40 | 1.56 | 1.71 | 1.85 | 1.98 |
| TCLE              | 4-1/2          | 3.53                             | 4.08 | 4.56 | 5.10 | 5.58  | 6.03  | 2.77                             | 3.10 | 3.46 | 3.79 | 4.10 | 4.38 | 1.81                             | 2.02 | 2.26 | 2.48 | 2.68 | 2.86 |
| TCLE              | 7              | 4.86                             | 5.61 | 6.27 | 7.01 | 7.68  | 8.30  | 3.81                             | 4.26 | 4.76 | 5.22 | 5.64 | 6.02 | 2.49                             | 2.78 | 3.11 | 3.41 | 3.68 | 3.94 |
| TCLE              | 8              | 5.86                             | 6.77 | 7.57 | 8.46 | 9.27  | 10.01 | 4.60                             | 5.14 | 5.75 | 6.30 | 6.80 | 7.27 | 3.01                             | 3.37 | 3.76 | 4.12 | 4.45 | 4.76 |
| TJL               | 7              | 5.19                             | 5.99 | 6.70 | 7.49 | 8.21  | 8.86  | 4.07                             | 4.55 | 5.09 | 5.57 | 6.02 | 6.44 | 2.66                             | 2.97 | 3.33 | 3.64 | 3.93 | 4.21 |
| TJL               | 9              | 6.62                             | 7.64 | 8.55 | 9.56 | 10.47 | 11.31 | 5.20                             | 5.81 | 6.50 | 7.12 | 7.69 | 8.22 | 3.40                             | 3.80 | 4.25 | 4.66 | 5.03 | 5.38 |

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.



## R-407A CONVENTIONAL PORTED VALVES (TONS) A SERIES / AFA SERIES

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 50°F                             |      |      |      |      |      | 40°F                             |      |      |      |      |      | 20°F                             |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  |
| AA/AN/AFA         | 1/8            | 0.15                             | 0.17 | 0.19 | 0.22 | 0.24 | 0.25 | 0.15                             | 0.17 | 0.19 | 0.21 | 0.23 | 0.25 | 0.14                             | 0.16 | 0.18 | 0.20 | 0.22 | 0.24 |
| AA/AN/AAC/ANC     | 1/4            | 0.26                             | 0.30 | 0.33 | 0.37 | 0.41 | 0.44 | 0.25                             | 0.29 | 0.33 | 0.37 | 0.40 | 0.43 | 0.25                             | 0.28 | 0.32 | 0.35 | 0.39 | 0.42 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.46                             | 0.53 | 0.59 | 0.66 | 0.72 | 0.78 | 0.45                             | 0.52 | 0.58 | 0.65 | 0.71 | 0.76 | 0.43                             | 0.50 | 0.56 | 0.62 | 0.68 | 0.74 |
| AA/AN/AAC/ANC/AFA | 1              | 0.73                             | 0.84 | 0.94 | 1.05 | 1.15 | 1.25 | 0.72                             | 0.83 | 0.93 | 1.04 | 1.13 | 1.23 | 0.69                             | 0.80 | 0.89 | 1.00 | 1.09 | 1.18 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 1.04                             | 1.21 | 1.35 | 1.51 | 1.65 | 1.78 | 1.03                             | 1.19 | 1.32 | 1.48 | 1.62 | 1.75 | 0.99                             | 1.14 | 1.28 | 1.43 | 1.56 | 1.69 |
| AA/AN/AAC/ANC/AFA | 2              | 1.54                             | 1.78 | 1.99 | 2.22 | 2.43 | 2.63 | 1.51                             | 1.75 | 1.95 | 2.18 | 2.39 | 2.58 | 1.46                             | 1.68 | 1.88 | 2.10 | 2.30 | 2.49 |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 2.16                             | 2.49 | 2.79 | 3.11 | 3.41 | 3.69 | 2.12                             | 2.45 | 2.74 | 3.06 | 3.36 | 3.62 | 2.04                             | 2.36 | 2.64 | 2.95 | 3.23 | 3.49 |
| AA/AN/AAC/ANC/AFA | 3-1/2          | 2.64                             | 3.05 | 3.41 | 3.82 | 4.18 | 4.52 | 2.60                             | 3.00 | 3.36 | 3.75 | 4.11 | 4.44 | 2.51                             | 2.89 | 3.23 | 3.62 | 3.96 | 4.28 |
| AA/AN/AAC/ANC/AFA | 4              | 3.14                             | 3.62 | 4.05 | 4.53 | 4.96 | 5.36 | 3.09                             | 3.56 | 3.98 | 4.46 | 4.88 | 5.27 | 2.97                             | 3.43 | 3.84 | 4.29 | 4.70 | 5.08 |
| AA/AN/AAC/ANC/AFA | 5-1/2          | 4.29                             | 4.96 | 5.54 | 6.20 | 6.79 | 7.33 | 4.22                             | 4.87 | 5.45 | 6.09 | 6.67 | 7.21 | 4.07                             | 4.70 | 5.25 | 5.87 | 6.43 | 6.94 |

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 0°F                              |      |      |      |      |      | -20°F                            |      |      |      |      |      | -40°F                            |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100  | 125  | 150  | 175  | 80                               | 100  | 125  | 150  | 175  | 200  | 80                               | 100  | 125  | 150  | 175  | 200  |
| AA/AN/AFA         | 1/8            | 0.13                             | 0.15 | 0.17 | 0.19 | 0.20 | 0.22 | 0.10                             | 0.11 | 0.12 | 0.14 | 0.15 | 0.16 | 0.06                             | 0.07 | 0.08 | 0.09 | 0.09 | 0.10 |
| AA/AN/AAC/ANC     | 1/4            | 0.22                             | 0.26 | 0.29 | 0.32 | 0.35 | 0.38 | 0.17                             | 0.19 | 0.22 | 0.24 | 0.26 | 0.27 | 0.11                             | 0.12 | 0.14 | 0.15 | 0.16 | 0.17 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.39                             | 0.46 | 0.51 | 0.57 | 0.62 | 0.67 | 0.30                             | 0.34 | 0.38 | 0.42 | 0.45 | 0.48 | 0.19                             | 0.21 | 0.24 | 0.26 | 0.28 | 0.30 |
| AA/AN/AAC/ANC/AFA | 1              | 0.63                             | 0.73 | 0.82 | 0.91 | 1.00 | 1.08 | 0.49                             | 0.54 | 0.61 | 0.67 | 0.72 | 0.77 | 0.31                             | 0.34 | 0.39 | 0.42 | 0.46 | 0.49 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 0.90                             | 1.04 | 1.17 | 1.31 | 1.43 | 1.55 | 0.70                             | 0.78 | 0.87 | 0.95 | 1.03 | 1.10 | 0.44                             | 0.49 | 0.55 | 0.60 | 0.65 | 0.70 |
| AA/AN/AAC/ANC/AFA | 2              | 1.33                             | 1.54 | 1.72 | 1.92 | 2.11 | 2.28 | 1.03                             | 1.15 | 1.28 | 1.40 | 1.52 | 1.62 | 0.65                             | 0.73 | 0.81 | 0.89 | 0.96 | 1.03 |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 1.87                             | 2.16 | 2.42 | 2.70 | 2.96 | 3.20 | 1.44                             | 1.61 | 1.80 | 1.97 | 2.13 | 2.27 | 0.91                             | 1.02 | 1.14 | 1.25 | 1.35 | 1.44 |
| AA/AN/AAC/ANC/AFA | 3-1/2          | 2.29                             | 2.65 | 2.96 | 3.31 | 3.63 | 3.92 | 1.76                             | 1.97 | 2.20 | 2.41 | 2.61 | 2.79 | 1.12                             | 1.25 | 1.40 | 1.53 | 1.65 | 1.77 |
| AA/AN/AAC/ANC/AFA | 4              | 2.72                             | 3.14 | 3.51 | 3.93 | 4.30 | 4.65 | 2.09                             | 2.34 | 2.62 | 2.87 | 3.10 | 3.31 | 1.33                             | 1.48 | 1.66 | 1.81 | 1.96 | 2.10 |
| AA/AN/AAC/ANC/AFA | 5-1/2          | 3.72                             | 4.30 | 4.80 | 5.37 | 5.88 | 6.36 | 2.86                             | 3.20 | 3.58 | 3.92 | 4.23 | 4.52 | 1.81                             | 2.03 | 2.27 | 2.48 | 2.68 | 2.87 |

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.



R-407C CONVENTIONAL

TXV EXTENDED CAPACITY TABLES

R-407C CONVENTIONAL PORTED VALVES (TONS) A SERIES | AFA SERIES | T SERIES

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|-------------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|                   |                | 50°F                             |       |       |       |       |       | 40°F                             |       |       |       |       |       | 20°F                             |       |       |       |       |       |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|                   |                | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   |
| AA/AN/AFA         | 1/5            | 0.14                             | 0.16  | 0.18  | 0.20  | 0.22  | 0.24  | 0.14                             | 0.16  | 0.18  | 0.20  | 0.22  | 0.24  | 0.14                             | 0.16  | 0.18  | 0.20  | 0.22  | 0.24  |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.25                             | 0.29  | 0.32  | 0.36  | 0.40  | 0.43  | 0.24                             | 0.28  | 0.31  | 0.35  | 0.38  | 0.41  | 0.23                             | 0.27  | 0.30  | 0.33  | 0.36  | 0.39  |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.44                             | 0.51  | 0.57  | 0.64  | 0.70  | 0.75  | 0.43                             | 0.50  | 0.56  | 0.62  | 0.68  | 0.73  | 0.41                             | 0.47  | 0.53  | 0.59  | 0.65  | 0.70  |
| AA/AN/AAC/ANC/AFA | 1              | 0.70                             | 0.81  | 0.90  | 1.01  | 1.11  | 1.20  | 0.69                             | 0.80  | 0.89  | 1.00  | 1.09  | 1.18  | 0.66                             | 0.76  | 0.85  | 0.95  | 1.04  | 1.13  |
| AA/AN/AAC/ANC/AFA | 1-1/4          | 1.00                             | 1.15  | 1.29  | 1.44  | 1.58  | 1.71  | 0.98                             | 1.13  | 1.27  | 1.41  | 1.55  | 1.67  | 0.95                             | 1.10  | 1.23  | 1.37  | 1.50  | 1.62  |
| AA/AN/AAC/ANC/AFA | 2              | 1.48                             | 1.71  | 1.91  | 2.14  | 2.34  | 2.53  | 1.45                             | 1.67  | 1.87  | 2.09  | 2.29  | 2.48  | 1.39                             | 1.61  | 1.79  | 2.01  | 2.20  | 2.37  |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 2.07                             | 2.39  | 2.67  | 2.99  | 3.27  | 3.54  | 2.04                             | 2.36  | 2.63  | 2.94  | 3.23  | 3.48  | 1.95                             | 2.25  | 2.52  | 2.81  | 3.08  | 3.33  |
| AA/AN/AAC/ANC/AFA | 3-1/4          | 2.54                             | 2.93  | 3.28  | 3.67  | 4.02  | 4.34  | 2.49                             | 2.88  | 3.21  | 3.59  | 3.94  | 4.25  | 2.39                             | 2.76  | 3.09  | 3.45  | 3.78  | 4.08  |
| AA/AN/AAC/ANC/AFA | 4              | 3.02                             | 3.49  | 3.90  | 4.36  | 4.78  | 5.16  | 2.96                             | 3.42  | 3.82  | 4.27  | 4.68  | 5.06  | 2.84                             | 3.28  | 3.67  | 4.10  | 4.49  | 4.85  |
| AA/AN/AAC/ANC/AFA | 5-1/4          | 4.12                             | 4.76  | 5.32  | 5.95  | 6.51  | 7.04  | 4.05                             | 4.68  | 5.23  | 5.85  | 6.40  | 6.92  | 3.89                             | 4.49  | 5.02  | 5.61  | 6.15  | 6.64  |
| TCLE              | 1/2            | 0.38                             | 0.44  | 0.49  | 0.55  | 0.60  | 0.65  | 0.37                             | 0.43  | 0.48  | 0.53  | 0.59  | 0.63  | 0.36                             | 0.42  | 0.46  | 0.52  | 0.57  | 0.61  |
| TCLE              | 1              | 0.71                             | 0.82  | 0.92  | 1.02  | 1.12  | 1.21  | 0.70                             | 0.81  | 0.90  | 1.01  | 1.11  | 1.20  | 0.67                             | 0.77  | 0.86  | 0.97  | 1.06  | 1.14  |
| TCLE              | 2              | 1.43                             | 1.65  | 1.85  | 2.06  | 2.26  | 2.44  | 1.41                             | 1.63  | 1.82  | 2.04  | 2.23  | 2.41  | 1.35                             | 1.56  | 1.74  | 1.95  | 2.13  | 2.31  |
| TCLE              | 3              | 2.64                             | 3.05  | 3.41  | 3.81  | 4.17  | 4.51  | 2.59                             | 2.99  | 3.34  | 3.74  | 4.10  | 4.42  | 2.49                             | 2.88  | 3.21  | 3.59  | 3.94  | 4.25  |
| TCLE              | 5              | 3.85                             | 4.45  | 4.97  | 5.56  | 6.09  | 6.58  | 3.77                             | 4.35  | 4.87  | 5.44  | 5.96  | 6.44  | 3.62                             | 4.18  | 4.67  | 5.23  | 5.72  | 6.18  |
| TCLE              | 7-1/2          | 5.58                             | 6.44  | 7.20  | 8.05  | 8.82  | 9.53  | 5.48                             | 6.33  | 7.07  | 7.91  | 8.66  | 9.36  | 5.26                             | 6.07  | 6.79  | 7.59  | 8.32  | 8.98  |
| TCLE              | 10             | 7.69                             | 8.88  | 9.93  | 11.10 | 12.16 | 13.13 | 7.55                             | 8.72  | 9.75  | 10.90 | 11.94 | 12.89 | 7.25                             | 8.37  | 9.36  | 10.46 | 11.46 | 12.38 |
| TCLE              | 12             | 9.27                             | 10.70 | 11.97 | 13.38 | 14.66 | 15.83 | 9.10                             | 10.51 | 11.75 | 13.13 | 14.39 | 15.54 | 8.74                             | 10.09 | 11.28 | 12.62 | 13.82 | 14.93 |
| TJL               | 11             | 8.22                             | 9.49  | 10.61 | 11.86 | 13.00 | 14.04 | 8.07                             | 9.32  | 10.42 | 11.65 | 12.76 | 13.78 | 7.75                             | 8.95  | 10.01 | 11.19 | 12.25 | 13.24 |
| TJL               | 14             | 10.48                            | 12.10 | 13.53 | 15.13 | 16.57 | 17.90 | 10.29                            | 11.88 | 13.28 | 14.85 | 16.27 | 17.57 | 9.88                             | 11.41 | 12.76 | 14.26 | 15.62 | 16.87 |

NOTE: Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 100 psi pressure drop across the TXV per ARI 750-2001.

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |       |       |       |       |                                  |      |      |      |      |       |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|-------|-------|-------|-------|----------------------------------|------|------|------|------|-------|----------------------------------|------|------|------|------|------|
|                   |                | 0°F                              |      |       |       |       |       | -20°F                            |      |      |      |      |       | -40°F                            |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |       | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100   | 125   | 150   | 175   | 80                               | 100  | 125  | 150  | 175  | 200   | 80                               | 100  | 125  | 150  | 175  | 200  |
| AA/AN/AFA         | 1/5            | 0.11                             | 0.13 | 0.14  | 0.16  | 0.17  | 0.19  | 0.09                             | 0.10 | 0.11 | 0.12 | 0.13 | 0.14  | 0.05                             | 0.06 | 0.06 | 0.07 | 0.07 | 0.08 |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.20                             | 0.23 | 0.26  | 0.29  | 0.32  | 0.34  | 0.15                             | 0.17 | 0.19 | 0.21 | 0.22 | 0.24  | 0.09                             | 0.10 | 0.11 | 0.12 | 0.13 | 0.14 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.35                             | 0.40 | 0.45  | 0.51  | 0.55  | 0.60  | 0.26                             | 0.29 | 0.33 | 0.36 | 0.38 | 0.41  | 0.17                             | 0.19 | 0.21 | 0.23 | 0.25 | 0.27 |
| AA/AN/AAC/ANC/AFA | 1              | 0.56                             | 0.65 | 0.72  | 0.81  | 0.89  | 0.96  | 0.42                             | 0.47 | 0.53 | 0.58 | 0.62 | 0.66  | 0.27                             | 0.30 | 0.34 | 0.37 | 0.40 | 0.43 |
| AA/AN/AAC/ANC/AFA | 1-1/4          | 0.80                             | 0.92 | 1.03  | 1.15  | 1.26  | 1.37  | 0.61                             | 0.68 | 0.76 | 0.84 | 0.90 | 0.96  | 0.38                             | 0.42 | 0.48 | 0.52 | 0.56 | 0.60 |
| AA/AN/AAC/ANC/AFA | 2              | 1.18                             | 1.36 | 1.52  | 1.70  | 1.87  | 2.02  | 0.90                             | 1.01 | 1.13 | 1.23 | 1.33 | 1.42  | 0.56                             | 0.63 | 0.70 | 0.77 | 0.83 | 0.89 |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 1.65                             | 1.91 | 2.13  | 2.38  | 2.61  | 2.82  | 1.26                             | 1.41 | 1.58 | 1.73 | 1.86 | 1.99  | 0.79                             | 0.88 | 0.99 | 1.08 | 1.17 | 1.25 |
| AA/AN/AAC/ANC/AFA | 3-1/4          | 2.02                             | 2.33 | 2.61  | 2.92  | 3.19  | 3.45  | 1.54                             | 1.72 | 1.93 | 2.11 | 2.28 | 2.43  | 0.97                             | 1.08 | 1.21 | 1.33 | 1.43 | 1.53 |
| AA/AN/AAC/ANC/AFA | 4              | 2.40                             | 2.77 | 3.10  | 3.46  | 3.79  | 4.10  | 1.83                             | 2.05 | 2.29 | 2.51 | 2.71 | 2.89  | 1.15                             | 1.29 | 1.44 | 1.57 | 1.70 | 1.82 |
| AA/AN/AAC/ANC/AFA | 5-1/4          | 3.28                             | 3.79 | 4.23  | 4.73  | 5.19  | 5.60  | 2.50                             | 2.80 | 3.13 | 3.42 | 3.70 | 3.95  | 1.57                             | 1.76 | 1.96 | 2.15 | 2.32 | 2.48 |
| TCLE              | 1/2            | 0.30                             | 0.35 | 0.39  | 0.43  | 0.47  | 0.51  | 0.23                             | 0.26 | 0.29 | 0.31 | 0.34 | 0.36  | 0.14                             | 0.16 | 0.18 | 0.19 | 0.21 | 0.22 |
| TCLE              | 1              | 0.56                             | 0.65 | 0.72  | 0.81  | 0.89  | 0.96  | 0.43                             | 0.48 | 0.54 | 0.59 | 0.64 | 0.68  | 0.27                             | 0.30 | 0.34 | 0.37 | 0.40 | 0.43 |
| TCLE              | 2              | 1.14                             | 1.32 | 1.47  | 1.65  | 1.80  | 1.95  | 0.87                             | 0.97 | 1.09 | 1.19 | 1.29 | 1.38  | 0.55                             | 0.61 | 0.69 | 0.75 | 0.81 | 0.87 |
| TCLE              | 3              | 2.10                             | 2.42 | 2.71  | 3.03  | 3.32  | 3.59  | 1.60                             | 1.79 | 2.00 | 2.19 | 2.37 | 2.53  | 1.01                             | 1.13 | 1.26 | 1.38 | 1.49 | 1.60 |
| TCLE              | 5              | 3.06                             | 3.53 | 3.95  | 4.42  | 4.84  | 5.23  | 2.33                             | 2.61 | 2.91 | 3.19 | 3.45 | 3.68  | 1.47                             | 1.64 | 1.84 | 2.01 | 2.17 | 2.32 |
| TCLE              | 7-1/2          | 4.44                             | 5.13 | 5.73  | 6.41  | 7.02  | 7.58  | 3.38                             | 3.78 | 4.23 | 4.63 | 5.00 | 5.34  | 2.13                             | 2.38 | 2.66 | 2.92 | 3.15 | 3.37 |
| TCLE              | 10             | 6.12                             | 7.07 | 7.90  | 8.83  | 9.68  | 10.45 | 4.66                             | 5.21 | 5.83 | 6.38 | 6.89 | 7.37  | 2.93                             | 3.28 | 3.66 | 4.01 | 4.33 | 4.63 |
| TCLE              | 12             | 7.38                             | 8.52 | 9.53  | 10.65 | 11.67 | 12.60 | 5.62                             | 6.28 | 7.03 | 7.70 | 8.31 | 8.89  | 3.54                             | 3.96 | 4.43 | 4.85 | 5.24 | 5.60 |
| TJL               | 11             | 6.54                             | 7.55 | 8.44  | 9.44  | 10.34 | 11.17 | 4.98                             | 5.57 | 6.23 | 6.82 | 7.37 | 7.87  | 3.13                             | 3.50 | 3.91 | 4.29 | 4.63 | 4.95 |
| TJL               | 14             | 8.34                             | 9.63 | 10.77 | 12.04 | 13.19 | 14.24 | 6.35                             | 7.10 | 7.94 | 8.70 | 9.39 | 10.04 | 4.00                             | 4.47 | 5.00 | 5.48 | 5.92 | 6.32 |

REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## R-407H CONVENTIONAL PORTED VALVES (TONS) A SERIES

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 50°F                             |      |      |      |      |      | 40°F                             |      |      |      |      |      | 20°F                             |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  |
| AA/AN/AFA         | 1/4            | 0.18                             | 0.20 | 0.23 | 0.25 | 0.28 | 0.30 | 0.17                             | 0.20 | 0.22 | 0.25 | 0.27 | 0.30 | 0.17                             | 0.19 | 0.22 | 0.24 | 0.27 | 0.29 |
| AA/AN/AAC/ANC     | 1/2            | 0.31                             | 0.35 | 0.40 | 0.44 | 0.48 | 0.52 | 0.30                             | 0.35 | 0.39 | 0.44 | 0.48 | 0.52 | 0.29                             | 0.34 | 0.38 | 0.42 | 0.46 | 0.50 |
| AA/AN/AAC/ANC/AFA | 3/4            | 0.54                             | 0.62 | 0.69 | 0.78 | 0.85 | 0.92 | 0.53                             | 0.61 | 0.68 | 0.77 | 0.84 | 0.91 | 0.51                             | 0.59 | 0.66 | 0.74 | 0.81 | 0.88 |
| AA/AN/AAC/ANC/AFA | 1              | 0.86                             | 1.00 | 1.11 | 1.24 | 1.36 | 1.47 | 0.85                             | 0.98 | 1.10 | 1.23 | 1.34 | 1.45 | 0.82                             | 0.95 | 1.06 | 1.19 | 1.30 | 1.41 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 1.23                             | 1.42 | 1.59 | 1.78 | 1.95 | 2.11 | 1.22                             | 1.40 | 1.57 | 1.76 | 1.92 | 2.08 | 1.18                             | 1.36 | 1.52 | 1.70 | 1.86 | 2.01 |
| AA/AN/AAC/ANC/AFA | 2-1/4          | 1.82                             | 2.10 | 2.35 | 2.62 | 2.87 | 3.10 | 1.79                             | 2.07 | 2.31 | 2.59 | 2.83 | 3.06 | 1.74                             | 2.01 | 2.24 | 2.51 | 2.75 | 2.97 |
| AA/AN/AAC/ANC/AFA | 3-1/4          | 2.55                             | 2.94 | 3.29 | 3.68 | 4.03 | 4.35 | 2.51                             | 2.90 | 3.25 | 3.63 | 3.98 | 4.29 | 2.44                             | 2.82 | 3.15 | 3.52 | 3.86 | 4.16 |
| AA/AN/AAC/ANC/AFA | 4              | 3.12                             | 3.61 | 4.03 | 4.51 | 4.94 | 5.34 | 3.08                             | 3.56 | 3.98 | 4.45 | 4.87 | 5.26 | 2.99                             | 3.45 | 3.86 | 4.31 | 4.73 | 5.10 |
| AA/AN/AAC/ANC/AFA | 4-3/4          | 3.71                             | 4.28 | 4.79 | 5.35 | 5.86 | 6.33 | 3.66                             | 4.22 | 4.72 | 5.28 | 5.78 | 6.25 | 3.55                             | 4.10 | 4.58 | 5.12 | 5.61 | 6.06 |
| AA/AN/AAC/ANC/AFA | 6-1/2          | 5.07                             | 5.86 | 6.55 | 7.32 | 8.02 | 8.66 | 5.00                             | 5.78 | 6.46 | 7.22 | 7.91 | 8.54 | 4.85                             | 5.60 | 6.26 | 7.00 | 7.67 | 8.28 |

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 0°F                              |      |      |      |      |      | -20°F                            |      |      |      |      |      | -40°F                            |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100  | 125  | 150  | 175  | 80                               | 100  | 125  | 150  | 175  | 200  | 80                               | 100  | 125  | 150  | 175  | 200  |
| AA/AN/AFA         | 1/4            | 0.15                             | 0.17 | 0.19 | 0.22 | 0.24 | 0.26 | 0.12                             | 0.13 | 0.14 | 0.16 | 0.17 | 0.18 | 0.07                             | 0.08 | 0.09 | 0.10 | 0.11 | 0.12 |
| AA/AN/AAC/ANC     | 1/2            | 0.26                             | 0.30 | 0.34 | 0.38 | 0.41 | 0.45 | 0.20                             | 0.23 | 0.25 | 0.28 | 0.30 | 0.32 | 0.13                             | 0.14 | 0.16 | 0.18 | 0.19 | 0.20 |
| AA/AN/AAC/ANC/AFA | 3/4            | 0.46                             | 0.53 | 0.59 | 0.66 | 0.72 | 0.78 | 0.35                             | 0.40 | 0.44 | 0.48 | 0.52 | 0.56 | 0.23                             | 0.25 | 0.28 | 0.31 | 0.33 | 0.36 |
| AA/AN/AAC/ANC/AFA | 1              | 0.74                             | 0.85 | 0.95 | 1.06 | 1.16 | 1.26 | 0.57                             | 0.63 | 0.71 | 0.78 | 0.84 | 0.90 | 0.36                             | 0.40 | 0.45 | 0.49 | 0.53 | 0.57 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 1.05                             | 1.21 | 1.36 | 1.52 | 1.66 | 1.80 | 0.81                             | 0.91 | 1.01 | 1.11 | 1.20 | 1.28 | 0.52                             | 0.58 | 0.65 | 0.71 | 0.76 | 0.82 |
| AA/AN/AAC/ANC/AFA | 2-1/4          | 1.55                             | 1.79 | 2.00 | 2.24 | 2.45 | 2.65 | 1.20                             | 1.34 | 1.49 | 1.64 | 1.77 | 1.89 | 0.76                             | 0.85 | 0.95 | 1.04 | 1.12 | 1.20 |
| AA/AN/AAC/ANC/AFA | 3-1/4          | 2.17                             | 2.51 | 2.81 | 3.14 | 3.44 | 3.71 | 1.68                             | 1.88 | 2.10 | 2.30 | 2.48 | 2.65 | 1.07                             | 1.19 | 1.33 | 1.46 | 1.58 | 1.69 |
| AA/AN/AAC/ANC/AFA | 4              | 2.66                             | 3.08 | 3.44 | 3.84 | 4.21 | 4.55 | 2.06                             | 2.30 | 2.57 | 2.81 | 3.04 | 3.25 | 1.31                             | 1.46 | 1.63 | 1.79 | 1.93 | 2.07 |
| AA/AN/AAC/ANC/AFA | 4-3/4          | 3.16                             | 3.65 | 4.08 | 4.56 | 5.00 | 5.40 | 2.44                             | 2.73 | 3.05 | 3.34 | 3.61 | 3.86 | 1.55                             | 1.74 | 1.94 | 2.13 | 2.30 | 2.45 |
| AA/AN/AAC/ANC/AFA | 6-1/2          | 4.32                             | 4.99 | 5.58 | 6.24 | 6.84 | 7.38 | 3.34                             | 3.73 | 4.17 | 4.57 | 4.94 | 5.28 | 2.12                             | 2.37 | 2.65 | 2.91 | 3.14 | 3.36 |

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## R-410A CONVENTIONAL PORTED VALVES (TONS) A SERIES / AFA SERIES

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 50°F                             |      |      |      |      |      | 40°F                             |      |      |      |      |      | 20°F                             |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 110                              | 140  | 160  | 210  | 245  | 285  | 110                              | 140  | 160  | 210  | 245  | 285  | 110                              | 140  | 160  | 210  | 245  | 285  |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.34                             | 0.38 | 0.41 | 0.47 | 0.51 | 0.55 | 0.34                             | 0.38 | 0.41 | 0.47 | 0.51 | 0.55 | 0.33                             | 0.37 | 0.40 | 0.46 | 0.49 | 0.53 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.60                             | 0.68 | 0.72 | 0.83 | 0.90 | 0.97 | 0.59                             | 0.67 | 0.71 | 0.82 | 0.88 | 0.95 | 0.58                             | 0.65 | 0.70 | 0.80 | 0.87 | 0.93 |
| AA/AN/AAC/ANC/AFA | 1              | 0.96                             | 1.08 | 1.16 | 1.33 | 1.43 | 1.55 | 0.95                             | 1.07 | 1.15 | 1.31 | 1.42 | 1.53 | 0.93                             | 1.05 | 1.12 | 1.28 | 1.39 | 1.50 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 1.38                             | 1.56 | 1.66 | 1.91 | 2.06 | 2.22 | 1.36                             | 1.53 | 1.64 | 1.88 | 2.03 | 2.19 | 1.33                             | 1.50 | 1.60 | 1.84 | 1.98 | 2.14 |
| AA/AN/AAC/ANC/AFA | 2              | 2.03                             | 2.29 | 2.45 | 2.80 | 3.03 | 3.27 | 2.01                             | 2.27 | 2.42 | 2.78 | 3.00 | 3.24 | 1.96                             | 2.21 | 2.36 | 2.71 | 2.93 | 3.15 |
| AA/AN/AAC/ANC/AFA | 3              | 2.85                             | 3.22 | 3.44 | 3.94 | 4.25 | 4.59 | 2.82                             | 3.18 | 3.40 | 3.90 | 4.21 | 4.54 | 2.74                             | 3.09 | 3.30 | 3.79 | 4.09 | 4.41 |
| AA/AN/AAC/ANC/AFA | 4              | 3.49                             | 3.94 | 4.21 | 4.82 | 5.21 | 5.62 | 3.45                             | 3.89 | 4.16 | 4.77 | 5.15 | 5.55 | 3.36                             | 3.79 | 4.05 | 4.64 | 5.01 | 5.41 |
| AA/AN/AAC/ANC/AFA | 5              | 4.14                             | 4.67 | 4.99 | 5.72 | 6.18 | 6.66 | 4.10                             | 4.63 | 4.94 | 5.66 | 6.12 | 6.60 | 3.99                             | 4.50 | 4.81 | 5.51 | 5.95 | 6.42 |

Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 100 psi pressure drop across the TXV per ARI 750-2001.

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 0°F                              |      |      |      |      |      | -20°F                            |      |      |      |      |      | -40°F                            |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 140                              | 160  | 210  | 245  | 285  | 330  | 140                              | 160  | 210  | 245  | 285  | 330  | 140                              | 160  | 210  | 245  | 285  | 330  |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.34                             | 0.36 | 0.42 | 0.45 | 0.49 | 0.52 | 0.24                             | 0.26 | 0.29 | 0.32 | 0.34 | 0.37 | 0.16                             | 0.17 | 0.20 | 0.21 | 0.23 | 0.25 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.60                             | 0.64 | 0.73 | 0.79 | 0.86 | 0.92 | 0.41                             | 0.44 | 0.50 | 0.54 | 0.58 | 0.63 | 0.27                             | 0.29 | 0.33 | 0.36 | 0.39 | 0.41 |
| AA/AN/AAC/ANC/AFA | 1              | 0.95                             | 1.02 | 1.16 | 1.26 | 1.36 | 1.46 | 0.66                             | 0.71 | 0.81 | 0.87 | 0.94 | 1.01 | 0.44                             | 0.47 | 0.54 | 0.58 | 0.63 | 0.68 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 1.36                             | 1.45 | 1.67 | 1.80 | 1.94 | 2.09 | 0.95                             | 1.02 | 1.16 | 1.26 | 1.36 | 1.46 | 0.63                             | 0.67 | 0.77 | 0.83 | 0.90 | 0.97 |
| AA/AN/AAC/ANC/AFA | 2              | 2.01                             | 2.15 | 2.46 | 2.66 | 2.87 | 3.09 | 1.40                             | 1.50 | 1.71 | 1.85 | 2.00 | 2.15 | 0.93                             | 0.99 | 1.14 | 1.23 | 1.33 | 1.43 |
| AA/AN/AAC/ANC/AFA | 3              | 2.82                             | 3.01 | 3.45 | 3.73 | 4.02 | 4.33 | 1.96                             | 2.10 | 2.40 | 2.59 | 2.80 | 3.01 | 1.30                             | 1.39 | 1.59 | 1.72 | 1.85 | 2.00 |
| AA/AN/AAC/ANC/AFA | 4              | 3.46                             | 3.70 | 4.24 | 4.58 | 4.94 | 5.31 | 2.40                             | 2.57 | 2.94 | 3.17 | 3.42 | 3.68 | 1.60                             | 1.71 | 1.96 | 2.12 | 2.28 | 2.46 |
| AA/AN/AAC/ANC/AFA | 5              | 4.10                             | 4.38 | 5.02 | 5.42 | 5.85 | 6.29 | 2.85                             | 3.05 | 3.49 | 3.77 | 4.07 | 4.38 | 1.89                             | 2.02 | 2.31 | 2.50 | 2.70 | 2.90 |

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |  |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|--|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |  |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |  |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |  |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |  |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |  |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |  |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## R-448A / R-449A CONVENTIONAL PORTED VALVES (TONS) A SERIES / AFA SERIES

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 50°F                             |      |      |      |      |      | 40°F                             |      |      |      |      |      | 20°F                             |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  |
| AA/AN/AAC/ANC/AFA | 1/5            | 0.15                             | 0.18 | 0.20 | 0.22 | 0.24 | 0.26 | 0.15                             | 0.17 | 0.19 | 0.22 | 0.24 | 0.26 | 0.15                             | 0.17 | 0.19 | 0.21 | 0.23 | 0.25 |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.27                             | 0.31 | 0.34 | 0.38 | 0.42 | 0.45 | 0.26                             | 0.30 | 0.34 | 0.38 | 0.41 | 0.45 | 0.26                             | 0.30 | 0.33 | 0.37 | 0.40 | 0.44 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.47                             | 0.54 | 0.60 | 0.67 | 0.74 | 0.80 | 0.46                             | 0.53 | 0.60 | 0.67 | 0.73 | 0.79 | 0.45                             | 0.52 | 0.58 | 0.65 | 0.71 | 0.77 |
| AA/AN/AAC/ANC/AFA | 1              | 0.75                             | 0.86 | 0.96 | 1.08 | 1.18 | 1.28 | 0.74                             | 0.85 | 0.95 | 1.07 | 1.17 | 1.26 | 0.72                             | 0.83 | 0.93 | 1.04 | 1.14 | 1.23 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 1.07                             | 1.23 | 1.38 | 1.54 | 1.69 | 1.82 | 1.06                             | 1.22 | 1.36 | 1.53 | 1.67 | 1.81 | 1.03                             | 1.19 | 1.33 | 1.49 | 1.63 | 1.76 |
| AA/AN/AAC/ANC/AFA | 2              | 1.57                             | 1.82 | 2.03 | 2.27 | 2.49 | 2.69 | 1.56                             | 1.80 | 2.01 | 2.25 | 2.46 | 2.66 | 1.52                             | 1.76 | 1.96 | 2.20 | 2.40 | 2.60 |
| AA/AN/AAC/ANC/AFA | 2-3/4          | 2.21                             | 2.55 | 2.85 | 3.19 | 3.49 | 3.77 | 2.19                             | 2.52 | 2.82 | 3.16 | 3.46 | 3.73 | 2.13                             | 2.46 | 2.75 | 3.08 | 3.37 | 3.64 |
| AA/AN/AAC/ANC/AFA | 3-1/2          | 2.71                             | 3.13 | 3.49 | 3.91 | 4.28 | 4.62 | 2.68                             | 3.09 | 3.46 | 3.87 | 4.24 | 4.57 | 2.61                             | 3.02 | 3.38 | 3.77 | 4.13 | 4.47 |
| AA/AN/AAC/ANC/AFA | 4              | 3.21                             | 3.71 | 4.15 | 4.64 | 5.08 | 5.49 | 3.18                             | 3.67 | 4.10 | 4.59 | 5.03 | 5.43 | 3.10                             | 3.58 | 4.01 | 4.48 | 4.91 | 5.30 |
| AA/AN/AAC/ANC/AFA | 5-1/2          | 4.39                             | 5.07 | 5.67 | 6.34 | 6.95 | 7.50 | 4.35                             | 5.02 | 5.61 | 6.28 | 6.87 | 7.43 | 4.24                             | 4.90 | 5.48 | 6.13 | 6.71 | 7.25 |

NOTE: Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 100 psi pressure drop across the TXV.

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 0°F                              |      |      |      |      |      | -20°F                            |      |      |      |      |      | -40°F                            |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100  | 125  | 150  | 175  | 80                               | 100  | 125  | 150  | 175  | 200  | 80                               | 100  | 125  | 150  | 175  | 200  |
| AA/AN/AAC/ANC/AFA | 1/5            | 0.14                             | 0.17 | 0.19 | 0.21 | 0.23 | 0.24 | 0.13                             | 0.15 | 0.16 | 0.18 | 0.19 | 0.21 | 0.09                             | 0.10 | 0.11 | 0.12 | 0.13 | 0.14 |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.25                             | 0.29 | 0.32 | 0.36 | 0.39 | 0.43 | 0.23                             | 0.25 | 0.28 | 0.31 | 0.34 | 0.36 | 0.15                             | 0.17 | 0.19 | 0.21 | 0.23 | 0.24 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.44                             | 0.51 | 0.57 | 0.63 | 0.69 | 0.75 | 0.40                             | 0.45 | 0.50 | 0.55 | 0.59 | 0.63 | 0.27                             | 0.30 | 0.34 | 0.37 | 0.40 | 0.43 |
| AA/AN/AAC/ANC/AFA | 1              | 0.70                             | 0.81 | 0.91 | 1.01 | 1.11 | 1.20 | 0.64                             | 0.72 | 0.80 | 0.88 | 0.95 | 1.01 | 0.43                             | 0.48 | 0.54 | 0.59 | 0.64 | 0.68 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 1.00                             | 1.16 | 1.30 | 1.45 | 1.59 | 1.71 | 0.92                             | 1.02 | 1.15 | 1.26 | 1.36 | 1.45 | 0.62                             | 0.69 | 0.77 | 0.85 | 0.92 | 0.98 |
| AA/AN/AAC/ANC/AFA | 2              | 1.48                             | 1.71 | 1.91 | 2.14 | 2.34 | 2.53 | 1.35                             | 1.51 | 1.69 | 1.85 | 2.00 | 2.14 | 0.91                             | 1.02 | 1.14 | 1.25 | 1.35 | 1.44 |
| AA/AN/AAC/ANC/AFA | 2-3/4          | 2.08                             | 2.40 | 2.68 | 3.00 | 3.28 | 3.54 | 1.90                             | 2.12 | 2.37 | 2.60 | 2.80 | 3.00 | 1.28                             | 1.43 | 1.60 | 1.75 | 1.89 | 2.02 |
| AA/AN/AAC/ANC/AFA | 3-1/2          | 2.54                             | 2.94 | 3.28 | 3.67 | 4.02 | 4.34 | 2.32                             | 2.60 | 2.90 | 3.18 | 3.44 | 3.67 | 1.57                             | 1.75 | 1.96 | 2.15 | 2.32 | 2.48 |
| AA/AN/AAC/ANC/AFA | 4              | 3.02                             | 3.49 | 3.90 | 4.36 | 4.77 | 5.16 | 2.76                             | 3.08 | 3.45 | 3.77 | 4.08 | 4.36 | 1.86                             | 2.08 | 2.33 | 2.55 | 2.75 | 2.94 |
| AA/AN/AAC/ANC/AFA | 5-1/2          | 4.13                             | 4.77 | 5.33 | 5.96 | 6.53 | 7.05 | 3.77                             | 4.21 | 4.71 | 5.16 | 5.58 | 5.96 | 2.55                             | 2.85 | 3.18 | 3.49 | 3.76 | 4.02 |

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## R-450A / R-513A CONVENTIONAL PORTED VALVES (TONS) A SERIES / AFA SERIES

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 50°F                             |      |      |      |      |      | 40°F                             |      |      |      |      |      | 20°F                             |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  |
| AA/AN/AAC/ANC/AFA | 1/8            | 0.11                             | 0.13 | 0.15 | 0.16 | 0.18 | 0.19 | 0.11                             | 0.13 | 0.14 | 0.16 | 0.17 | 0.19 | 0.10                             | 0.12 | 0.13 | 0.15 | 0.16 | 0.18 |
| AA/AN/AAC/ANC/AFA | 1/5            | 0.19                             | 0.22 | 0.25 | 0.28 | 0.30 | 0.33 | 0.19                             | 0.22 | 0.24 | 0.27 | 0.30 | 0.32 | 0.18                             | 0.21 | 0.23 | 0.26 | 0.28 | 0.31 |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.35                             | 0.40 | 0.45 | 0.50 | 0.55 | 0.59 | 0.34                             | 0.39 | 0.44 | 0.49 | 0.53 | 0.58 | 0.32                             | 0.37 | 0.41 | 0.46 | 0.51 | 0.55 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.55                             | 0.63 | 0.70 | 0.79 | 0.86 | 0.93 | 0.53                             | 0.62 | 0.69 | 0.77 | 0.84 | 0.91 | 0.51                             | 0.58 | 0.65 | 0.73 | 0.80 | 0.86 |
| AA/AN/AAC/ANC/AFA | 3/4            | 0.79                             | 0.91 | 1.02 | 1.14 | 1.24 | 1.34 | 0.77                             | 0.89 | 0.99 | 1.11 | 1.21 | 1.31 | 0.73                             | 0.84 | 0.94 | 1.05 | 1.15 | 1.25 |
| AA/AN/AAC/ANC/AFA | 1              | 1.16                             | 1.33 | 1.49 | 1.67 | 1.83 | 1.97 | 1.13                             | 1.30 | 1.46 | 1.63 | 1.78 | 1.93 | 1.07                             | 1.24 | 1.38 | 1.55 | 1.70 | 1.83 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 1.62                             | 1.87 | 2.09 | 2.34 | 2.56 | 2.77 | 1.58                             | 1.83 | 2.04 | 2.29 | 2.50 | 2.70 | 1.50                             | 1.74 | 1.94 | 2.17 | 2.38 | 2.57 |
| AA/AN/AAC/ANC/AFA | 2              | 1.98                             | 2.29 | 2.56 | 2.86 | 3.14 | 3.39 | 1.94                             | 2.24 | 2.50 | 2.79 | 3.06 | 3.31 | 1.84                             | 2.12 | 2.37 | 2.65 | 2.91 | 3.14 |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 2.36                             | 2.73 | 3.05 | 3.41 | 3.73 | 4.03 | 2.30                             | 2.66 | 2.97 | 3.33 | 3.64 | 3.94 | 2.19                             | 2.53 | 2.83 | 3.16 | 3.46 | 3.74 |
| AA/AN/AAC/ANC/AFA | 3              | 3.23                             | 3.73 | 4.17 | 4.66 | 5.10 | 5.51 | 3.15                             | 3.64 | 4.07 | 4.55 | 4.98 | 5.38 | 2.99                             | 3.46 | 3.86 | 4.32 | 4.73 | 5.11 |

Standard Capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 60 psi pressure drop across the TXV.

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 0°F                              |      |      |      |      |      | -20°F                            |      |      |      |      |      | -40°F                            |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100  | 125  | 150  | 175  | 80                               | 100  | 125  | 150  | 175  | 200  | 80                               | 100  | 125  | 150  | 175  | 200  |
| AA/AN/AAC/ANC/AFA | 1/8            | 0.08                             | 0.09 | 0.10 | 0.11 | 0.12 | 0.13 | 0.06                             | 0.06 | 0.07 | 0.08 | 0.08 | 0.09 | 0.03                             | 0.04 | 0.04 | 0.04 | 0.05 | 0.05 |
| AA/AN/AAC/ANC/AFA | 1/5            | 0.13                             | 0.15 | 0.17 | 0.19 | 0.21 | 0.22 | 0.10                             | 0.11 | 0.12 | 0.13 | 0.15 | 0.16 | 0.06                             | 0.06 | 0.07 | 0.08 | 0.08 | 0.09 |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.23                             | 0.27 | 0.30 | 0.34 | 0.37 | 0.40 | 0.18                             | 0.20 | 0.22 | 0.24 | 0.26 | 0.28 | 0.10                             | 0.11 | 0.13 | 0.14 | 0.15 | 0.16 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.37                             | 0.42 | 0.47 | 0.53 | 0.58 | 0.63 | 0.28                             | 0.31 | 0.35 | 0.38 | 0.41 | 0.44 | 0.16                             | 0.18 | 0.20 | 0.22 | 0.24 | 0.25 |
| AA/AN/AAC/ANC/AFA | 3/4            | 0.53                             | 0.61 | 0.68 | 0.76 | 0.84 | 0.90 | 0.40                             | 0.45 | 0.50 | 0.55 | 0.59 | 0.63 | 0.23                             | 0.26 | 0.29 | 0.31 | 0.34 | 0.36 |
| AA/AN/AAC/ANC/AFA | 1              | 0.78                             | 0.90 | 1.00 | 1.12 | 1.23 | 1.33 | 0.59                             | 0.66 | 0.74 | 0.81 | 0.87 | 0.93 | 0.34                             | 0.38 | 0.42 | 0.46 | 0.50 | 0.53 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 1.09                             | 1.26 | 1.41 | 1.58 | 1.73 | 1.86 | 0.83                             | 0.93 | 1.03 | 1.13 | 1.22 | 1.31 | 0.47                             | 0.53 | 0.59 | 0.65 | 0.70 | 0.75 |
| AA/AN/AAC/ANC/AFA | 2              | 1.33                             | 1.54 | 1.72 | 1.93 | 2.11 | 2.28 | 1.01                             | 1.13 | 1.26 | 1.39 | 1.50 | 1.60 | 0.58                             | 0.65 | 0.72 | 0.79 | 0.85 | 0.91 |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 1.59                             | 1.83 | 2.05 | 2.29 | 2.51 | 2.71 | 1.20                             | 1.35 | 1.51 | 1.65 | 1.78 | 1.90 | 0.69                             | 0.77 | 0.86 | 0.94 | 1.02 | 1.09 |
| AA/AN/AAC/ANC/AFA | 3              | 2.17                             | 2.51 | 2.80 | 3.14 | 3.44 | 3.71 | 1.65                             | 1.84 | 2.06 | 2.25 | 2.44 | 2.60 | 0.94                             | 1.05 | 1.17 | 1.29 | 1.39 | 1.49 |

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## R-452A CONVENTIONAL PORTED VALVES (TONS) - A SERIES

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 50°F                             |      |      |      |      |      | 40°F                             |      |      |      |      |      | 20°F                             |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  |
| AA/AN/AAC/ANC/AFA | 1/5            | 0.11                             | 0.13 | 0.15 | 0.16 | 0.18 | 0.19 | 0.11                             | 0.13 | 0.14 | 0.16 | 0.18 | 0.19 | 0.11                             | 0.12 | 0.14 | 0.15 | 0.17 | 0.18 |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.20                             | 0.23 | 0.26 | 0.29 | 0.31 | 0.34 | 0.19                             | 0.22 | 0.25 | 0.28 | 0.31 | 0.33 | 0.18                             | 0.21 | 0.24 | 0.26 | 0.29 | 0.31 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.35                             | 0.40 | 0.45 | 0.50 | 0.55 | 0.59 | 0.34                             | 0.39 | 0.44 | 0.49 | 0.54 | 0.58 | 0.32                             | 0.37 | 0.42 | 0.46 | 0.51 | 0.55 |
| AA/AN/AAC/ANC/AFA | 1              | 0.56                             | 0.64 | 0.72 | 0.80 | 0.88 | 0.95 | 0.54                             | 0.63 | 0.70 | 0.79 | 0.86 | 0.93 | 0.52                             | 0.60 | 0.67 | 0.74 | 0.82 | 0.88 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 0.80                             | 0.92 | 1.03 | 1.15 | 1.26 | 1.36 | 0.78                             | 0.90 | 1.00 | 1.12 | 1.23 | 1.33 | 0.74                             | 0.85 | 0.95 | 1.07 | 1.17 | 1.26 |
| AA/AN/AAC/ANC/AFA | 2              | 1.17                             | 1.36 | 1.52 | 1.70 | 1.86 | 2.01 | 1.15                             | 1.32 | 1.48 | 1.66 | 1.81 | 1.96 | 1.09                             | 1.26 | 1.40 | 1.57 | 1.72 | 1.86 |
| AA/AN/AAC/ANC/AFA | 2-3/4          | 1.65                             | 1.90 | 2.13 | 2.38 | 2.61 | 2.81 | 1.61                             | 1.86 | 2.08 | 2.32 | 2.54 | 2.75 | 1.53                             | 1.76 | 1.97 | 2.20 | 2.41 | 2.61 |
| AA/AN/AAC/ANC/AFA | 3-1/2          | 2.02                             | 2.33 | 2.61 | 2.91 | 3.19 | 3.45 | 1.97                             | 2.28 | 2.55 | 2.85 | 3.12 | 3.37 | 1.87                             | 2.16 | 2.41 | 2.70 | 2.96 | 3.19 |
| AA/AN/AAC/ANC/AFA | 4              | 2.40                             | 2.77 | 3.09 | 3.46 | 3.79 | 4.09 | 2.34                             | 2.70 | 3.02 | 3.38 | 3.70 | 4.00 | 2.22                             | 2.56 | 2.86 | 3.20 | 3.51 | 3.79 |
| AA/AN/AAC/ANC/AFA | 5-1/2          | 3.28                             | 3.78 | 4.23 | 4.73 | 5.18 | 5.60 | 3.20                             | 3.70 | 4.13 | 4.62 | 5.06 | 5.47 | 3.03                             | 3.50 | 3.92 | 4.38 | 4.80 | 5.18 |

Standard capacity is rated at 100F liquid inlet and 40F evaporator temperature; with 100 psi pressure drop across the TXV.

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 0°F                              |      |      |      |      |      | -20°F                            |      |      |      |      |      | -40°F                            |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100  | 125  | 150  | 175  | 80                               | 100  | 125  | 150  | 175  | 200  | 80                               | 100  | 125  | 150  | 175  | 200  |
| AA/AN/AAC/ANC/AFA | 1/5            | 0.10                             | 0.11 | 0.13 | 0.14 | 0.16 | 0.17 | 0.08                             | 0.09 | 0.10 | 0.11 | 0.12 | 0.13 | 0.05                             | 0.06 | 0.06 | 0.07 | 0.08 | 0.08 |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.17                             | 0.20 | 0.22 | 0.25 | 0.27 | 0.29 | 0.14                             | 0.16 | 0.17 | 0.19 | 0.21 | 0.22 | 0.09                             | 0.10 | 0.11 | 0.12 | 0.13 | 0.14 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.30                             | 0.35 | 0.39 | 0.44 | 0.48 | 0.52 | 0.25                             | 0.27 | 0.31 | 0.34 | 0.36 | 0.39 | 0.16                             | 0.17 | 0.20 | 0.21 | 0.23 | 0.25 |
| AA/AN/AAC/ANC/AFA | 1              | 0.49                             | 0.56 | 0.63 | 0.70 | 0.77 | 0.83 | 0.39                             | 0.44 | 0.49 | 0.54 | 0.58 | 0.62 | 0.25                             | 0.28 | 0.31 | 0.34 | 0.37 | 0.40 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 0.69                             | 0.80 | 0.90 | 1.00 | 1.10 | 1.19 | 0.56                             | 0.63 | 0.70 | 0.77 | 0.83 | 0.89 | 0.36                             | 0.40 | 0.45 | 0.49 | 0.53 | 0.57 |
| AA/AN/AAC/ANC/AFA | 2              | 1.02                             | 1.18 | 1.32 | 1.48 | 1.62 | 1.75 | 0.83                             | 0.93 | 1.04 | 1.13 | 1.23 | 1.31 | 0.53                             | 0.59 | 0.66 | 0.72 | 0.78 | 0.83 |
| AA/AN/AAC/ANC/AFA | 2-3/4          | 1.44                             | 1.66 | 1.86 | 2.07 | 2.27 | 2.45 | 1.16                             | 1.30 | 1.45 | 1.59 | 1.72 | 1.84 | 0.74                             | 0.83 | 0.93 | 1.01 | 1.10 | 1.17 |
| AA/AN/AAC/ANC/AFA | 3-1/2          | 1.76                             | 2.03 | 2.27 | 2.54 | 2.78 | 3.01 | 1.42                             | 1.59 | 1.78 | 1.95 | 2.11 | 2.25 | 0.91                             | 1.01 | 1.13 | 1.24 | 1.34 | 1.43 |
| AA/AN/AAC/ANC/AFA | 4              | 2.09                             | 2.41 | 2.70 | 3.02 | 3.30 | 3.57 | 1.69                             | 1.89 | 2.11 | 2.32 | 2.50 | 2.67 | 1.08                             | 1.20 | 1.35 | 1.47 | 1.59 | 1.70 |
| AA/AN/AAC/ANC/AFA | 5-1/2          | 2.86                             | 3.30 | 3.69 | 4.13 | 4.52 | 4.88 | 2.31                             | 2.59 | 2.89 | 3.17 | 3.42 | 3.66 | 1.47                             | 1.65 | 1.84 | 2.02 | 2.18 | 2.33 |

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## R-502 CONVENTIONAL PORTED VALVES (TONS) A SERIES / AFA SERIES / T SERIES

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |       |       |       |                                  |      |      |       |       |       |                                  |      |      |      |       |       |
|-------------------|----------------|----------------------------------|------|------|-------|-------|-------|----------------------------------|------|------|-------|-------|-------|----------------------------------|------|------|------|-------|-------|
|                   |                | 50°F                             |      |      |       |       |       | 40°F                             |      |      |       |       |       | 20°F                             |      |      |      |       |       |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |      |      |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |       |       |
|                   |                | 60                               | 80   | 100  | 125   | 150   | 175   | 60                               | 80   | 100  | 125   | 150   | 175   | 60                               | 80   | 100  | 125  | 150   | 175   |
| AA/AN/AAC/ANC/AFA | 1/8            | 0.17                             | 0.20 | 0.22 | 0.25  | 0.27  | 0.29  | 0.17                             | 0.20 | 0.22 | 0.25  | 0.27  | 0.29  | 0.16                             | 0.18 | 0.21 | 0.23 | 0.25  | 0.27  |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.30                             | 0.35 | 0.39 | 0.43  | 0.47  | 0.51  | 0.29                             | 0.33 | 0.37 | 0.42  | 0.46  | 0.50  | 0.28                             | 0.32 | 0.36 | 0.40 | 0.44  | 0.48  |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.48                             | 0.55 | 0.62 | 0.69  | 0.76  | 0.82  | 0.47                             | 0.54 | 0.61 | 0.68  | 0.74  | 0.80  | 0.45                             | 0.52 | 0.58 | 0.65 | 0.71  | 0.77  |
| AA/AN/AAC/ANC/AFA | 1              | 0.68                             | 0.79 | 0.88 | 0.98  | 1.08  | 1.16  | 0.67                             | 0.77 | 0.86 | 0.97  | 1.06  | 1.14  | 0.64                             | 0.74 | 0.83 | 0.92 | 1.01  | 1.09  |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 1.41                             | 1.63 | 1.82 | 2.04  | 2.23  | 2.41  | 1.38                             | 1.59 | 1.78 | 1.99  | 2.18  | 2.36  | 1.32                             | 1.52 | 1.70 | 1.91 | 2.09  | 2.25  |
| AA/AN/AAC/ANC/AFA | 2              | 1.73                             | 2.00 | 2.23 | 2.50  | 2.74  | 2.95  | 1.69                             | 1.95 | 2.18 | 2.44  | 2.67  | 2.89  | 1.62                             | 1.87 | 2.09 | 2.34 | 2.56  | 2.77  |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 2.05                             | 2.37 | 2.65 | 2.96  | 3.24  | 3.50  | 2.01                             | 2.32 | 2.59 | 2.90  | 3.18  | 3.43  | 1.92                             | 2.22 | 2.48 | 2.77 | 3.04  | 3.28  |
| AA/AN/AAC/ANC/AFA | 3              | 2.81                             | 3.24 | 3.63 | 4.06  | 4.44  | 4.80  | 2.75                             | 3.18 | 3.55 | 3.97  | 4.35  | 4.70  | 2.62                             | 3.03 | 3.38 | 3.78 | 4.14  | 4.47  |
| TCLE              | 1/4            | 0.26                             | 0.30 | 0.34 | 0.38  | 0.41  | 0.44  | 0.25                             | 0.29 | 0.32 | 0.36  | 0.40  | 0.43  | 0.24                             | 0.28 | 0.31 | 0.35 | 0.38  | 0.41  |
| TCLE              | 1/2            | 0.48                             | 0.55 | 0.62 | 0.69  | 0.76  | 0.82  | 0.47                             | 0.54 | 0.61 | 0.68  | 0.74  | 0.80  | 0.45                             | 0.52 | 0.58 | 0.65 | 0.71  | 0.77  |
| TCLE              | 1              | 0.97                             | 1.12 | 1.25 | 1.40  | 1.53  | 1.66  | 0.95                             | 1.10 | 1.23 | 1.37  | 1.50  | 1.62  | 0.91                             | 1.05 | 1.17 | 1.31 | 1.44  | 1.55  |
| TCLE              | 2              | 1.80                             | 2.08 | 2.32 | 2.60  | 2.85  | 3.07  | 1.76                             | 2.03 | 2.27 | 2.54  | 2.78  | 3.01  | 1.68                             | 1.94 | 2.17 | 2.42 | 2.66  | 2.87  |
| TCLE              | 3              | 2.62                             | 3.03 | 3.38 | 3.78  | 4.14  | 4.47  | 2.56                             | 2.96 | 3.30 | 3.70  | 4.05  | 4.37  | 2.44                             | 2.82 | 3.15 | 3.52 | 3.86  | 4.17  |
| TCLE              | 4-1/2          | 3.80                             | 4.39 | 4.91 | 5.48  | 6.01  | 6.49  | 3.72                             | 4.30 | 4.80 | 5.37  | 5.88  | 6.35  | 3.55                             | 4.10 | 4.58 | 5.12 | 5.61  | 6.06  |
| TCLE              | 7              | 5.23                             | 6.04 | 6.75 | 7.55  | 8.27  | 8.93  | 5.12                             | 5.91 | 6.61 | 7.39  | 8.10  | 8.74  | 4.89                             | 5.65 | 6.31 | 7.06 | 7.73  | 8.35  |
| TCLE              | 8              | 6.31                             | 7.29 | 8.15 | 9.11  | 9.98  | 10.78 | 6.18                             | 7.14 | 7.98 | 8.92  | 9.77  | 10.55 | 5.90                             | 6.81 | 7.62 | 8.52 | 9.33  | 10.08 |
| TJL               | 7              | 5.59                             | 6.45 | 7.22 | 8.07  | 8.84  | 9.55  | 5.47                             | 6.32 | 7.06 | 7.90  | 8.65  | 9.34  | 5.22                             | 6.03 | 6.74 | 7.53 | 8.25  | 8.91  |
| TJL               | 9              | 7.13                             | 8.23 | 9.20 | 10.29 | 11.27 | 12.18 | 6.98                             | 8.06 | 9.01 | 10.07 | 11.04 | 11.92 | 6.66                             | 7.69 | 8.60 | 9.61 | 10.53 | 11.37 |

Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 100 psi pressure drop across the TXV per ARI 750-2001.

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |       |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|------|-------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 0°F                              |      |      |      |      |       | -20°F                            |      |      |      |      |      | -40°F                            |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |       | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100  | 125  | 150  | 175   | 80                               | 100  | 125  | 150  | 175  | 200  | 80                               | 100  | 125  | 150  | 175  | 200  |
| AA/AN/AAC/ANC/AFA | 1/8            | 0.15                             | 0.17 | 0.19 | 0.22 | 0.24 | 0.26  | 0.11                             | 0.12 | 0.14 | 0.15 | 0.16 | 0.17 | 0.07                             | 0.08 | 0.09 | 0.10 | 0.10 | 0.11 |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.26                             | 0.30 | 0.34 | 0.38 | 0.41 | 0.44  | 0.20                             | 0.22 | 0.25 | 0.27 | 0.30 | 0.32 | 0.13                             | 0.15 | 0.16 | 0.18 | 0.19 | 0.21 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.41                             | 0.47 | 0.53 | 0.59 | 0.65 | 0.70  | 0.32                             | 0.36 | 0.40 | 0.44 | 0.47 | 0.51 | 0.21                             | 0.23 | 0.26 | 0.29 | 0.31 | 0.33 |
| AA/AN/AAC/ANC/AFA | 1              | 0.59                             | 0.68 | 0.76 | 0.85 | 0.93 | 1.01  | 0.46                             | 0.51 | 0.58 | 0.63 | 0.68 | 0.73 | 0.29                             | 0.32 | 0.36 | 0.40 | 0.43 | 0.46 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 1.21                             | 1.40 | 1.56 | 1.75 | 1.91 | 2.07  | 0.96                             | 1.07 | 1.20 | 1.31 | 1.42 | 1.52 | 0.61                             | 0.68 | 0.76 | 0.84 | 0.90 | 0.96 |
| AA/AN/AAC/ANC/AFA | 2              | 1.49                             | 1.72 | 1.92 | 2.15 | 2.36 | 2.54  | 1.17                             | 1.31 | 1.46 | 1.60 | 1.73 | 1.85 | 0.75                             | 0.84 | 0.94 | 1.03 | 1.11 | 1.19 |
| AA/AN/AAC/ANC/AFA | 2-1/2          | 1.76                             | 2.03 | 2.27 | 2.54 | 2.78 | 3.01  | 1.39                             | 1.55 | 1.74 | 1.90 | 2.06 | 2.20 | 0.89                             | 1.00 | 1.11 | 1.22 | 1.32 | 1.41 |
| AA/AN/AAC/ANC/AFA | 3              | 2.41                             | 2.78 | 3.11 | 3.48 | 3.81 | 4.12  | 1.90                             | 2.12 | 2.38 | 2.60 | 2.81 | 3.00 | 1.21                             | 1.35 | 1.51 | 1.66 | 1.79 | 1.91 |
| TCLE              | 1/4            | 0.22                             | 0.25 | 0.28 | 0.32 | 0.35 | 0.38  | 0.17                             | 0.19 | 0.21 | 0.23 | 0.25 | 0.27 | 0.11                             | 0.12 | 0.14 | 0.15 | 0.16 | 0.17 |
| TCLE              | 1/2            | 0.41                             | 0.47 | 0.53 | 0.59 | 0.65 | 0.70  | 0.33                             | 0.37 | 0.41 | 0.45 | 0.49 | 0.52 | 0.21                             | 0.23 | 0.26 | 0.29 | 0.31 | 0.33 |
| TCLE              | 1              | 0.84                             | 0.97 | 1.08 | 1.21 | 1.33 | 1.43  | 0.66                             | 0.74 | 0.83 | 0.90 | 0.98 | 1.04 | 0.42                             | 0.47 | 0.53 | 0.58 | 0.62 | 0.66 |
| TCLE              | 2              | 1.54                             | 1.78 | 1.99 | 2.22 | 2.43 | 2.63  | 1.22                             | 1.36 | 1.53 | 1.67 | 1.80 | 1.93 | 0.78                             | 0.87 | 0.98 | 1.07 | 1.15 | 1.23 |
| TCLE              | 3              | 2.25                             | 2.60 | 2.90 | 3.25 | 3.56 | 3.84  | 1.78                             | 1.99 | 2.23 | 2.44 | 2.63 | 2.81 | 1.13                             | 1.26 | 1.41 | 1.55 | 1.67 | 1.79 |
| TCLE              | 4-1/2          | 3.26                             | 3.76 | 4.21 | 4.71 | 5.15 | 5.57  | 2.58                             | 2.88 | 3.23 | 3.53 | 3.82 | 4.08 | 1.64                             | 1.83 | 2.05 | 2.25 | 2.43 | 2.59 |
| TCLE              | 7              | 4.50                             | 5.20 | 5.81 | 6.50 | 7.12 | 7.69  | 3.55                             | 3.97 | 4.44 | 4.86 | 5.25 | 5.61 | 2.26                             | 2.53 | 2.83 | 3.09 | 3.34 | 3.57 |
| TCLE              | 8              | 5.42                             | 6.26 | 7.00 | 7.82 | 8.57 | 9.26  | 4.28                             | 4.79 | 5.35 | 5.86 | 6.33 | 6.77 | 2.73                             | 3.05 | 3.41 | 3.74 | 4.04 | 4.32 |
| TJL               | 7              | 4.81                             | 5.55 | 6.21 | 6.94 | 7.61 | 8.21  | 3.80                             | 4.25 | 4.75 | 5.20 | 5.62 | 6.01 | 2.42                             | 2.71 | 3.03 | 3.31 | 3.58 | 3.83 |
| TJL               | 9              | 6.13                             | 7.08 | 7.91 | 8.85 | 9.69 | 10.47 | 4.84                             | 5.41 | 6.05 | 6.63 | 7.16 | 7.65 | 3.08                             | 3.44 | 3.85 | 4.22 | 4.56 | 4.87 |

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.



## R-1234yf CONVENTIONAL PORTED VALVES (TONS) A SERIES

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 50°F                             |      |      |      |      |      | 40°F                             |      |      |      |      |      | 20°F                             |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  |
| AA/AN/AFA         | 1/14           | 0.06                             | 0.07 | 0.07 | 0.08 | 0.09 | 0.10 | 0.06                             | 0.06 | 0.07 | 0.08 | 0.09 | 0.09 | 0.04                             | 0.05 | 0.05 | 0.06 | 0.07 | 0.07 |
| AA/AN/AAC/ANC     | 1/8            | 0.10                             | 0.11 | 0.13 | 0.14 | 0.16 | 0.17 | 0.10                             | 0.11 | 0.12 | 0.14 | 0.15 | 0.16 | 0.07                             | 0.09 | 0.10 | 0.11 | 0.12 | 0.13 |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.17                             | 0.20 | 0.22 | 0.25 | 0.28 | 0.30 | 0.17                             | 0.20 | 0.22 | 0.24 | 0.27 | 0.29 | 0.13                             | 0.15 | 0.17 | 0.19 | 0.21 | 0.22 |
| AA/AN/AAC/ANC/AFA | 3/8            | 0.28                             | 0.32 | 0.36 | 0.40 | 0.44 | 0.48 | 0.27                             | 0.31 | 0.35 | 0.39 | 0.43 | 0.46 | 0.21                             | 0.24 | 0.27 | 0.30 | 0.33 | 0.36 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.40                             | 0.46 | 0.52 | 0.58 | 0.63 | 0.68 | 0.39                             | 0.45 | 0.50 | 0.56 | 0.61 | 0.66 | 0.30                             | 0.34 | 0.38 | 0.43 | 0.47 | 0.51 |
| AA/AN/AAC/ANC/AFA | 3/4            | 0.59                             | 0.68 | 0.76 | 0.85 | 0.93 | 1.01 | 0.57                             | 0.66 | 0.74 | 0.82 | 0.90 | 0.98 | 0.44                             | 0.51 | 0.57 | 0.63 | 0.69 | 0.75 |
| AA/AN/AAC/ANC/AFA | 1              | 0.83                             | 0.95 | 1.07 | 1.19 | 1.31 | 1.41 | 0.80                             | 0.93 | 1.03 | 1.16 | 1.27 | 1.37 | 0.62                             | 0.71 | 0.80 | 0.89 | 0.97 | 1.05 |
| AA/AN/AAC/ANC/AFA | 3 1/4          | 1.01                             | 1.17 | 1.31 | 1.46 | 1.60 | 1.73 | 0.98                             | 1.13 | 1.27 | 1.42 | 1.55 | 1.68 | 0.75                             | 0.87 | 0.97 | 1.09 | 1.19 | 1.29 |
| AA/AN/AAC/ANC/AFA | 1 1/2          | 1.20                             | 1.39 | 1.55 | 1.73 | 1.90 | 2.05 | 1.17                             | 1.35 | 1.50 | 1.68 | 1.84 | 1.99 | 0.90                             | 1.03 | 1.16 | 1.29 | 1.42 | 1.53 |
| AA/AN/AAC/ANC/AFA | 2              | 1.64                             | 1.90 | 2.12 | 2.37 | 2.60 | 2.81 | 1.59                             | 1.84 | 2.06 | 2.30 | 2.52 | 2.72 | 1.23                             | 1.41 | 1.58 | 1.77 | 1.94 | 2.09 |

| VALVE TYPE        | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|-------------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|                   |                | 0°F                              |      |      |      |      |      | -20°F                            |      |      |      |      |      | -40°F                            |      |      |      |      |      |
|                   |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|                   |                | 60                               | 80   | 100  | 125  | 150  | 175  | 80                               | 100  | 125  | 150  | 175  | 200  | 80                               | 100  | 125  | 150  | 175  | 200  |
| AA/AN/AFA         | 1/14           | 0.03                             | 0.03 | 0.04 | 0.04 | 0.05 | 0.05 | 0.02                             | 0.02 | 0.03 | 0.03 | 0.03 | 0.03 | 0.01                             | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| AA/AN/AAC/ANC     | 1/8            | 0.05                             | 0.06 | 0.06 | 0.07 | 0.08 | 0.09 | 0.04                             | 0.04 | 0.05 | 0.05 | 0.06 | 0.06 | 0.02                             | 0.03 | 0.03 | 0.03 | 0.03 | 0.04 |
| AA/AN/AAC/ANC/AFA | 1/4            | 0.09                             | 0.10 | 0.11 | 0.13 | 0.14 | 0.15 | 0.07                             | 0.07 | 0.08 | 0.09 | 0.10 | 0.10 | 0.04                             | 0.05 | 0.05 | 0.06 | 0.06 | 0.06 |
| AA/AN/AAC/ANC/AFA | 3/8            | 0.14                             | 0.16 | 0.18 | 0.20 | 0.22 | 0.24 | 0.11                             | 0.12 | 0.13 | 0.15 | 0.16 | 0.17 | 0.07                             | 0.07 | 0.08 | 0.09 | 0.10 | 0.10 |
| AA/AN/AAC/ANC/AFA | 1/2            | 0.20                             | 0.23 | 0.26 | 0.29 | 0.32 | 0.35 | 0.15                             | 0.17 | 0.19 | 0.21 | 0.22 | 0.24 | 0.09                             | 0.11 | 0.12 | 0.13 | 0.14 | 0.15 |
| AA/AN/AAC/ANC/AFA | 3/4            | 0.30                             | 0.34 | 0.38 | 0.43 | 0.47 | 0.51 | 0.22                             | 0.25 | 0.28 | 0.31 | 0.33 | 0.35 | 0.14                             | 0.15 | 0.17 | 0.19 | 0.20 | 0.22 |
| AA/AN/AAC/ANC/AFA | 1              | 0.42                             | 0.48 | 0.54 | 0.60 | 0.66 | 0.71 | 0.31                             | 0.35 | 0.39 | 0.43 | 0.46 | 0.50 | 0.19                             | 0.22 | 0.24 | 0.27 | 0.29 | 0.31 |
| AA/AN/AAC/ANC/AFA | 3-1/4          | 0.51                             | 0.59 | 0.66 | 0.74 | 0.81 | 0.88 | 0.39                             | 0.43 | 0.48 | 0.53 | 0.57 | 0.61 | 0.24                             | 0.27 | 0.30 | 0.33 | 0.35 | 0.38 |
| AA/AN/AAC/ANC/AFA | 1-1/2          | 0.61                             | 0.70 | 0.79 | 0.88 | 0.96 | 1.04 | 0.46                             | 0.51 | 0.57 | 0.63 | 0.68 | 0.72 | 0.28                             | 0.32 | 0.35 | 0.39 | 0.42 | 0.45 |
| AA/AN/AAC/ANC/AFA | 2              | 0.83                             | 0.96 | 1.07 | 1.20 | 1.32 | 1.42 | 0.62                             | 0.70 | 0.78 | 0.86 | 0.92 | 0.99 | 0.39                             | 0.43 | 0.48 | 0.53 | 0.57 | 0.61 |

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## BALANCED PORTED VALVE CAPACITY TABLES

## R-12 BALANCED PORTED VALVES (TONS) B / HF / TRAE / T SERIES

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |        |                                  |       |       |       |       |        |                                  |       |       |       |       |       |
|------------|----------------|----------------------------------|-------|-------|-------|-------|--------|----------------------------------|-------|-------|-------|-------|--------|----------------------------------|-------|-------|-------|-------|-------|
|            |                | 50°F                             |       |       |       |       |        | 40°F                             |       |       |       |       |        | 20°F                             |       |       |       |       |       |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |        | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |        | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175    | 60                               | 80    | 100   | 125   | 150   | 175    | 60                               | 80    | 100   | 125   | 150   | 175   |
| BA/BN      | 1/4            | 0.30                             | 0.35  | 0.39  | 0.43  | 0.47  | 0.51   | 0.30                             | 0.35  | 0.39  | 0.43  | 0.47  | 0.51   | 0.28                             | 0.32  | 0.36  | 0.40  | 0.44  | 0.48  |
| BA/BN      | 1/2            | 0.57                             | 0.66  | 0.74  | 0.82  | 0.90  | 0.97   | 0.56                             | 0.65  | 0.72  | 0.81  | 0.89  | 0.96   | 0.54                             | 0.62  | 0.70  | 0.78  | 0.85  | 0.92  |
| BA/BN      | 1              | 0.90                             | 1.04  | 1.16  | 1.30  | 1.42  | 1.54   | 0.88                             | 1.02  | 1.14  | 1.27  | 1.39  | 1.50   | 0.84                             | 0.97  | 1.08  | 1.21  | 1.33  | 1.43  |
| BA/BN      | 1-1/4          | 1.20                             | 1.39  | 1.55  | 1.73  | 1.90  | 2.05   | 1.17                             | 1.35  | 1.51  | 1.69  | 1.85  | 2.00   | 1.13                             | 1.30  | 1.46  | 1.63  | 1.79  | 1.93  |
| BA/BN      | 1-1/2          | 1.51                             | 1.74  | 1.95  | 2.18  | 2.39  | 2.58   | 1.48                             | 1.71  | 1.91  | 2.14  | 2.34  | 2.53   | 1.42                             | 1.64  | 1.83  | 2.05  | 2.25  | 2.43  |
| BA/BN      | 2              | 1.83                             | 2.11  | 2.36  | 2.64  | 2.89  | 3.13   | 1.80                             | 2.08  | 2.32  | 2.60  | 2.85  | 3.07   | 1.72                             | 1.99  | 2.22  | 2.48  | 2.72  | 2.94  |
| BA/BN      | 2-1/2          | 2.37                             | 2.74  | 3.06  | 3.42  | 3.75  | 4.05   | 2.33                             | 2.69  | 3.01  | 3.36  | 3.68  | 3.98   | 2.23                             | 2.57  | 2.88  | 3.22  | 3.53  | 3.81  |
| BA/BN      | 3              | 3.00                             | 3.46  | 3.87  | 4.33  | 4.74  | 5.12   | 2.94                             | 3.39  | 3.80  | 4.24  | 4.65  | 5.02   | 2.82                             | 3.26  | 3.64  | 4.07  | 4.46  | 4.82  |
| BA/BN      | 3-1/2          | 3.73                             | 4.31  | 4.82  | 5.38  | 5.90  | 6.37   | 3.66                             | 4.23  | 4.73  | 5.28  | 5.79  | 6.25   | 3.51                             | 4.05  | 4.53  | 5.07  | 5.55  | 5.99  |
| HF         | 1/8            | 0.17                             | 0.20  | 0.22  | 0.25  | 0.27  | 0.29   | 0.17                             | 0.20  | 0.22  | 0.25  | 0.27  | 0.29   | 0.16                             | 0.18  | 0.21  | 0.23  | 0.25  | 0.27  |
| HF         | 1/4            | 0.32                             | 0.37  | 0.41  | 0.46  | 0.51  | 0.55   | 0.31                             | 0.36  | 0.40  | 0.45  | 0.49  | 0.53   | 0.30                             | 0.35  | 0.39  | 0.43  | 0.47  | 0.51  |
| HF         | 1/2            | 0.57                             | 0.66  | 0.74  | 0.82  | 0.90  | 0.97   | 0.56                             | 0.65  | 0.72  | 0.81  | 0.89  | 0.96   | 0.54                             | 0.62  | 0.70  | 0.78  | 0.85  | 0.92  |
| HF         | 1              | 0.88                             | 1.02  | 1.14  | 1.27  | 1.39  | 1.50   | 0.86                             | 0.99  | 1.11  | 1.24  | 1.36  | 1.47   | 0.82                             | 0.95  | 1.06  | 1.18  | 1.30  | 1.40  |
| HF         | 1-1/4          | 1.18                             | 1.36  | 1.52  | 1.70  | 1.87  | 2.02   | 1.16                             | 1.34  | 1.50  | 1.67  | 1.83  | 1.98   | 1.11                             | 1.28  | 1.43  | 1.60  | 1.76  | 1.90  |
| HF         | 1-1/2          | 1.51                             | 1.74  | 1.95  | 2.18  | 2.39  | 2.58   | 1.48                             | 1.71  | 1.91  | 2.14  | 2.34  | 2.53   | 1.42                             | 1.64  | 1.83  | 2.05  | 2.25  | 2.43  |
| HF         | 2              | 2.00                             | 2.31  | 2.58  | 2.89  | 3.16  | 3.42   | 1.96                             | 2.26  | 2.53  | 2.83  | 3.10  | 3.35   | 1.88                             | 2.17  | 2.43  | 2.71  | 2.97  | 3.21  |
| HF         | 3-1/2          | 3.55                             | 4.10  | 4.58  | 5.12  | 5.61  | 6.06   | 3.48                             | 4.02  | 4.49  | 5.02  | 5.50  | 5.94   | 3.34                             | 3.86  | 4.31  | 4.82  | 5.28  | 5.70  |
| HF         | 5              | 4.94                             | 5.70  | 6.38  | 7.13  | 7.81  | 8.44   | 4.85                             | 5.60  | 6.26  | 7.00  | 7.67  | 8.28   | 4.65                             | 5.37  | 6.00  | 6.71  | 7.35  | 7.94  |
| HF         | 6              | 6.26                             | 7.23  | 8.08  | 9.04  | 9.90  | 10.69  | 6.13                             | 7.08  | 7.91  | 8.85  | 9.69  | 10.47  | 5.88                             | 6.79  | 7.59  | 8.49  | 9.30  | 10.04 |
| HF         | 9              | 9.28                             | 10.72 | 11.98 | 13.39 | 14.67 | 15.85  | 9.10                             | 10.51 | 11.75 | 13.13 | 14.39 | 15.54  | 8.73                             | 10.08 | 11.27 | 12.60 | 13.80 | 14.91 |
| HF         | 12             | 12.22                            | 14.11 | 15.78 | 17.64 | 19.32 | 20.87  | 11.98                            | 13.83 | 15.47 | 17.29 | 18.94 | 20.46  | 11.49                            | 13.27 | 14.83 | 16.58 | 18.17 | 19.62 |
| TRAE+      | 7-1/2          | 7.14                             | 8.24  | 9.22  | 10.31 | 11.29 | 12.19  | 7.00                             | 8.08  | 9.04  | 10.10 | 11.07 | 11.95  | 6.71                             | 7.75  | 8.66  | 9.69  | 10.61 | 11.46 |
| TRAE+      | 10             | 10.41                            | 12.02 | 13.44 | 15.03 | 16.46 | 17.78  | 10.20                            | 11.78 | 13.17 | 14.72 | 16.13 | 17.42  | 9.78                             | 11.29 | 12.63 | 14.12 | 15.46 | 16.70 |
| TRAE+      | 12             | 11.62                            | 13.42 | 15.00 | 16.77 | 18.37 | 19.84  | 11.39                            | 13.15 | 14.70 | 16.44 | 18.01 | 19.45  | 10.92                            | 12.61 | 14.10 | 15.76 | 17.27 | 18.65 |
| TRAE+      | 18             | 17.61                            | 20.33 | 22.73 | 25.42 | 27.84 | 30.07  | 17.26                            | 19.93 | 22.28 | 24.91 | 27.29 | 29.48  | 16.55                            | 19.11 | 21.37 | 23.89 | 26.17 | 28.26 |
| TRAE+      | 25             | 24.20                            | 27.94 | 31.24 | 34.93 | 38.26 | 41.33  | 23.73                            | 27.40 | 30.64 | 34.25 | 37.52 | 40.53  | 22.75                            | 26.27 | 29.37 | 32.84 | 35.97 | 38.85 |
| TRAE       | 30             | 32.67                            | 37.72 | 42.18 | 47.16 | 51.66 | 55.79  | 32.03                            | 36.99 | 41.35 | 46.23 | 50.64 | 54.70  | 30.72                            | 35.47 | 39.66 | 44.34 | 48.57 | 52.46 |
| TRAE       | 35             | 35.64                            | 41.15 | 46.01 | 51.44 | 56.35 | 60.87  | 34.94                            | 40.35 | 45.11 | 50.43 | 55.24 | 59.67  | 33.51                            | 38.69 | 43.26 | 48.37 | 52.98 | 57.23 |
| TRAE       | 40             | 42.41                            | 48.97 | 54.75 | 61.21 | 67.06 | 72.43  | 41.58                            | 48.01 | 53.68 | 60.02 | 65.74 | 71.01  | 39.88                            | 46.05 | 51.48 | 57.56 | 63.06 | 68.11 |
| TJR        | 8              | 8.89                             | 10.27 | 11.48 | 12.83 | 14.06 | 15.18  | 8.72                             | 10.07 | 11.26 | 12.59 | 13.79 | 14.89  | 8.36                             | 9.65  | 10.79 | 12.07 | 13.22 | 14.28 |
| TJR        | 11             | 10.65                            | 12.30 | 13.75 | 15.37 | 16.84 | 18.19  | 10.44                            | 12.06 | 13.48 | 15.07 | 16.51 | 17.83  | 10.01                            | 11.56 | 12.92 | 14.45 | 15.83 | 17.10 |
| TER        | 13             | 13.31                            | 15.37 | 17.18 | 19.21 | 21.04 | 22.73  | 13.05                            | 15.07 | 16.85 | 18.84 | 20.63 | 22.29  | 12.51                            | 14.45 | 16.15 | 18.06 | 19.78 | 21.36 |
| TER        | 15             | 15.73                            | 18.16 | 20.31 | 22.70 | 24.87 | 26.86  | 15.42                            | 17.81 | 19.91 | 22.26 | 24.38 | 26.33  | 14.79                            | 17.08 | 19.09 | 21.35 | 23.39 | 25.26 |
| TER        | 20             | 21.18                            | 24.46 | 27.34 | 30.57 | 33.49 | 36.17  | 20.76                            | 23.97 | 26.80 | 29.96 | 32.82 | 35.45  | 19.91                            | 22.99 | 25.70 | 28.74 | 31.48 | 34.00 |
| TER        | 25             | 27.23                            | 31.44 | 35.15 | 39.30 | 43.05 | 46.50  | 26.69                            | 30.82 | 34.46 | 38.52 | 42.20 | 45.58  | 25.60                            | 29.56 | 33.05 | 36.95 | 40.48 | 43.72 |
| TIR        | 35             | 31.29                            | 36.13 | 40.40 | 45.16 | 49.47 | 53.44  | 23.63                            | 27.29 | 30.51 | 34.11 | 37.36 | 40.36  | 31.29                            | 36.13 | 40.40 | 45.16 | 49.47 | 53.44 |
| THR        | 45             | 42.35                            | 48.90 | 54.67 | 61.13 | 66.96 | 72.33  | 41.52                            | 47.94 | 53.60 | 59.93 | 65.65 | 70.91  | 39.82                            | 45.98 | 51.41 | 57.48 | 62.96 | 68.01 |
| THR        | 55             | 51.43                            | 59.39 | 66.40 | 74.23 | 81.32 | 87.83  | 50.42                            | 58.22 | 65.09 | 72.78 | 79.72 | 86.11  | 48.35                            | 55.83 | 62.42 | 69.79 | 76.45 | 82.57 |
| TMR        | 55             | 60.50                            | 69.86 | 78.11 | 87.32 | 95.66 | 103.32 | 59.32                            | 68.50 | 76.58 | 85.62 | 93.79 | 101.31 | 56.89                            | 65.69 | 73.44 | 82.11 | 89.95 | 97.16 |

NOTE: Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 60 psi pressure drop across the TXV per ARI 750-2001.

Capacity  
Tables (kW)

## R-12 BALANCED PORTED VALVES (TONS) B / HF / TRAE / T SERIES (CONTINUED)

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|            |                | 50°F                             |      |      |      |      |      | 40°F                             |      |      |      |      |      | 20°F                             |      |      |      |      |      |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|            |                | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  |
| BA/BN      | 1/4            | 0.25                             | 0.29 | 0.32 | 0.36 | 0.40 | 0.43 | 0.20                             | 0.22 | 0.25 | 0.27 | 0.30 | 0.32 | 0.13                             | 0.15 | 0.16 | 0.18 | 0.19 | 0.21 |
| BA/BN      | 1/2            | 0.48                             | 0.55 | 0.62 | 0.69 | 0.76 | 0.82 | 0.38                             | 0.42 | 0.48 | 0.52 | 0.56 | 0.60 | 0.24                             | 0.27 | 0.30 | 0.33 | 0.35 | 0.38 |
| BA/BN      | 1              | 0.75                             | 0.87 | 0.97 | 1.08 | 1.19 | 1.28 | 0.58                             | 0.65 | 0.73 | 0.79 | 0.86 | 0.92 | 0.38                             | 0.42 | 0.48 | 0.52 | 0.56 | 0.60 |
| BA/BN      | 1-1/4          | 1.00                             | 1.15 | 1.29 | 1.44 | 1.58 | 1.71 | 0.78                             | 0.87 | 0.98 | 1.07 | 1.15 | 1.23 | 0.51                             | 0.57 | 0.64 | 0.70 | 0.75 | 0.81 |
| BA/BN      | 1-1/2          | 1.26                             | 1.45 | 1.63 | 1.82 | 1.99 | 2.15 | 0.99                             | 1.11 | 1.24 | 1.36 | 1.46 | 1.57 | 0.64                             | 0.72 | 0.80 | 0.88 | 0.95 | 1.01 |
| BA/BN      | 2              | 1.53                             | 1.77 | 1.98 | 2.21 | 2.42 | 2.61 | 1.20                             | 1.34 | 1.50 | 1.64 | 1.77 | 1.90 | 0.78                             | 0.87 | 0.98 | 1.07 | 1.15 | 1.23 |
| BA/BN      | 2-1/2          | 1.98                             | 2.29 | 2.56 | 2.86 | 3.13 | 3.38 | 1.55                             | 1.73 | 1.94 | 2.12 | 2.29 | 2.45 | 1.01                             | 1.13 | 1.26 | 1.38 | 1.49 | 1.60 |
| BA/BN      | 3              | 2.50                             | 2.89 | 3.23 | 3.61 | 3.95 | 4.27 | 1.96                             | 2.19 | 2.45 | 2.68 | 2.90 | 3.10 | 1.27                             | 1.42 | 1.59 | 1.74 | 1.88 | 2.01 |
| BA/BN      | 3-1/2          | 3.11                             | 3.59 | 4.01 | 4.49 | 4.92 | 5.31 | 2.44                             | 2.73 | 3.05 | 3.34 | 3.61 | 3.86 | 1.58                             | 1.77 | 1.98 | 2.16 | 2.34 | 2.50 |
| HF         | 1/8            | 0.14                             | 0.16 | 0.18 | 0.20 | 0.22 | 0.24 | 0.11                             | 0.12 | 0.14 | 0.15 | 0.16 | 0.17 | 0.07                             | 0.08 | 0.09 | 0.10 | 0.10 | 0.11 |
| HF         | 1/4            | 0.27                             | 0.31 | 0.35 | 0.39 | 0.43 | 0.46 | 0.21                             | 0.23 | 0.26 | 0.29 | 0.31 | 0.33 | 0.14                             | 0.16 | 0.18 | 0.19 | 0.21 | 0.22 |
| HF         | 1/2            | 0.48                             | 0.55 | 0.62 | 0.69 | 0.76 | 0.82 | 0.38                             | 0.42 | 0.48 | 0.52 | 0.56 | 0.60 | 0.24                             | 0.27 | 0.30 | 0.33 | 0.35 | 0.38 |
| HF         | 1              | 0.73                             | 0.84 | 0.94 | 1.05 | 1.15 | 1.25 | 0.57                             | 0.64 | 0.71 | 0.78 | 0.84 | 0.90 | 0.37                             | 0.41 | 0.46 | 0.51 | 0.55 | 0.59 |
| HF         | 1-1/4          | 0.98                             | 1.13 | 1.27 | 1.41 | 1.55 | 1.67 | 0.77                             | 0.86 | 0.96 | 1.05 | 1.14 | 1.22 | 0.50                             | 0.56 | 0.63 | 0.68 | 0.74 | 0.79 |

Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 60 psi pressure drop across the TXV per ARI 750-2001.

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## R-22 BALANCED PORTED VALVES (TONS) B / HF / TFE / TRAE / T SERIES

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |        |        |        |        |                                  |       |        |        |        |        |                                  |       |       |        |        |        |
|------------|----------------|----------------------------------|-------|--------|--------|--------|--------|----------------------------------|-------|--------|--------|--------|--------|----------------------------------|-------|-------|--------|--------|--------|
|            |                | 50°F                             |       |        |        |        |        | 40°F                             |       |        |        |        |        | 20°F                             |       |       |        |        |        |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |        |        |        |        | PRESSURE DROP ACROSS VALVE (PSI) |       |        |        |        |        | PRESSURE DROP ACROSS VALVE (PSI) |       |       |        |        |        |
|            |                | 60                               | 80    | 100    | 125    | 150    | 175    | 60                               | 80    | 100    | 125    | 150    | 175    | 60                               | 80    | 100   | 125    | 150    | 175    |
| BA/BN      | 1/2            | 0.39                             | 0.45  | 0.50   | 0.56   | 0.62   | 0.67   | 0.39                             | 0.45  | 0.50   | 0.56   | 0.61   | 0.66   | 0.38                             | 0.44  | 0.49  | 0.55   | 0.60   | 0.65   |
| BA/BN      | 1              | 0.75                             | 0.87  | 0.97   | 1.08   | 1.19   | 1.28   | 0.74                             | 0.85  | 0.95   | 1.06   | 1.16   | 1.26   | 0.72                             | 0.83  | 0.93  | 1.04   | 1.14   | 1.23   |
| BA/BN      | 1-1/2          | 1.16                             | 1.34  | 1.50   | 1.67   | 1.83   | 1.98   | 1.15                             | 1.32  | 1.48   | 1.65   | 1.81   | 1.96   | 1.12                             | 1.29  | 1.45  | 1.62   | 1.77   | 1.91   |
| BA/BN      | 2              | 1.56                             | 1.80  | 2.01   | 2.25   | 2.47   | 2.66   | 1.53                             | 1.77  | 1.98   | 2.21   | 2.42   | 2.62   | 1.50                             | 1.73  | 1.94  | 2.17   | 2.37   | 2.56   |
| BA/BN      | 2-1/2          | 1.96                             | 2.26  | 2.53   | 2.83   | 3.10   | 3.35   | 1.94                             | 2.24  | 2.50   | 2.80   | 3.06   | 3.31   | 1.89                             | 2.18  | 2.44  | 2.73   | 2.99   | 3.23   |
| BA/BN      | 3              | 2.38                             | 2.75  | 3.07   | 3.44   | 3.76   | 4.06   | 2.35                             | 2.71  | 3.03   | 3.39   | 3.71   | 4.01   | 2.29                             | 2.64  | 2.96  | 3.31   | 3.62   | 3.91   |
| BA/BN      | 4              | 3.08                             | 3.56  | 3.98   | 4.45   | 4.87   | 5.26   | 3.04                             | 3.51  | 3.92   | 4.38   | 4.80   | 5.19   | 2.97                             | 3.43  | 3.83  | 4.29   | 4.70   | 5.07   |
| BA/BN      | 5              | 3.90                             | 4.50  | 5.03   | 5.63   | 6.17   | 6.66   | 3.85                             | 4.45  | 4.97   | 5.56   | 6.09   | 6.57   | 3.75                             | 4.33  | 4.84  | 5.41   | 5.93   | 6.40   |
| BA/BN      | 6              | 4.85                             | 5.60  | 6.26   | 7.00   | 7.67   | 8.28   | 4.78                             | 5.52  | 6.17   | 6.90   | 7.56   | 8.16   | 4.67                             | 5.39  | 6.03  | 6.74   | 7.38   | 7.98   |
| HF         | 1/4            | 0.22                             | 0.25  | 0.28   | 0.32   | 0.35   | 0.38   | 0.22                             | 0.25  | 0.28   | 0.31   | 0.34   | 0.37   | 0.21                             | 0.24  | 0.27  | 0.30   | 0.33   | 0.36   |
| HF         | 1/2            | 0.42                             | 0.48  | 0.54   | 0.61   | 0.66   | 0.72   | 0.41                             | 0.47  | 0.53   | 0.59   | 0.65   | 0.70   | 0.40                             | 0.46  | 0.52  | 0.58   | 0.63   | 0.68   |
| HF         | 1              | 0.75                             | 0.87  | 0.97   | 1.08   | 1.19   | 1.28   | 0.74                             | 0.85  | 0.95   | 1.06   | 1.16   | 1.26   | 0.72                             | 0.83  | 0.93  | 1.04   | 1.14   | 1.23   |
| HF         | 1-1/2          | 1.14                             | 1.32  | 1.47   | 1.65   | 1.80   | 1.95   | 1.12                             | 1.30  | 1.45   | 1.62   | 1.78   | 1.92   | 1.10                             | 1.27  | 1.42  | 1.59   | 1.74   | 1.88   |
| HF         | 2              | 1.53                             | 1.77  | 1.98   | 2.21   | 2.42   | 2.61   | 1.52                             | 1.75  | 1.96   | 2.19   | 2.40   | 2.59   | 1.48                             | 1.71  | 1.91  | 2.14   | 2.34   | 2.53   |
| HF         | 2-1/2          | 1.96                             | 2.26  | 2.53   | 2.83   | 3.10   | 3.35   | 1.94                             | 2.25  | 2.51   | 2.81   | 3.07   | 3.32   | 1.89                             | 2.18  | 2.44  | 2.73   | 2.99   | 3.23   |
| HF         | 3              | 2.59                             | 2.99  | 3.34   | 3.74   | 4.10   | 4.42   | 2.56                             | 2.96  | 3.31   | 3.70   | 4.05   | 4.38   | 2.50                             | 2.89  | 3.23  | 3.61   | 3.95   | 4.27   |
| HF         | 5-1/2          | 4.61                             | 5.32  | 5.95   | 6.65   | 7.29   | 7.87   | 4.56                             | 5.27  | 5.89   | 6.59   | 7.21   | 7.79   | 4.44                             | 5.13  | 5.73  | 6.41   | 7.02   | 7.58   |
| HF         | 8              | 6.42                             | 7.41  | 8.29   | 9.27   | 10.15  | 10.96  | 6.34                             | 7.33  | 8.19   | 9.16   | 10.03  | 10.83  | 6.18                             | 7.14  | 7.98  | 8.92   | 9.77   | 10.55  |
| HF         | 10             | 8.13                             | 9.39  | 10.50  | 11.73  | 12.85  | 13.88  | 8.06                             | 9.30  | 10.40  | 11.63  | 12.74  | 13.76  | 7.83                             | 9.04  | 10.11 | 11.30  | 12.38  | 13.37  |
| HF         | 15             | 12.05                            | 13.91 | 15.56  | 17.39  | 19.05  | 20.58  | 11.91                            | 13.77 | 15.40  | 17.22  | 18.86  | 20.37  | 11.61                            | 13.41 | 14.99 | 16.76  | 18.36  | 19.83  |
| HF         | 20             | 15.87                            | 18.33 | 20.49  | 22.91  | 25.09  | 27.10  | 15.68                            | 18.07 | 20.20  | 22.58  | 24.74  | 26.72  | 15.28                            | 17.64 | 19.73 | 22.05  | 24.16  | 26.10  |
| TFE        | 8              | 6.30                             | 7.27  | 8.13   | 9.09   | 9.96   | 10.76  | 6.23                             | 7.19  | 8.04   | 8.99   | 9.85   | 10.64  | 6.07                             | 7.01  | 7.84  | 8.76   | 9.60   | 10.37  |
| TFE        | 10             | 8.63                             | 9.97  | 11.14  | 12.46  | 13.65  | 14.74  | 8.53                             | 9.85  | 11.01  | 12.31  | 13.48  | 14.56  | 8.31                             | 9.60  | 10.73 | 11.99  | 13.14  | 14.19  |
| TFE        | 12             | 10.71                            | 12.37 | 13.83  | 15.46  | 16.93  | 18.29  | 10.59                            | 12.23 | 13.67  | 15.28  | 16.74  | 18.08  | 10.32                            | 11.92 | 13.32 | 14.90  | 16.32  | 17.62  |
| TFE        | 20             | 16.35                            | 18.88 | 21.11  | 23.60  | 25.85  | 27.92  | 16.17                            | 18.67 | 20.87  | 23.33  | 25.56  | 27.61  | 15.75                            | 18.19 | 20.33 | 22.73  | 24.90  | 26.90  |
| TRAE+      | 10             | 9.27                             | 10.70 | 11.97  | 13.38  | 14.66  | 15.83  | 9.16                             | 10.58 | 11.83  | 13.23  | 14.49  | 15.65  | 8.93                             | 10.31 | 11.53 | 12.89  | 14.12  | 15.25  |
| TRAE+      | 15             | 13.52                            | 15.61 | 17.45  | 19.51  | 21.38  | 23.09  | 13.36                            | 15.43 | 17.25  | 19.29  | 21.13  | 22.82  | 13.02                            | 15.03 | 16.81 | 18.79  | 20.59  | 22.24  |
| TRAE+      | 20             | 15.09                            | 17.42 | 19.48  | 21.78  | 23.86  | 25.77  | 14.91                            | 17.22 | 19.25  | 21.52  | 23.58  | 25.47  | 14.53                            | 16.78 | 18.76 | 20.97  | 22.97  | 24.81  |
| TRAE+      | 30             | 22.87                            | 26.41 | 29.53  | 33.01  | 36.16  | 39.06  | 22.60                            | 26.10 | 29.18  | 32.62  | 35.74  | 38.60  | 22.02                            | 25.43 | 28.43 | 31.78  | 34.82  | 37.61  |
| TRAE+      | 40             | 31.43                            | 36.29 | 40.58  | 45.37  | 49.70  | 53.68  | 31.07                            | 35.88 | 40.11  | 44.84  | 49.12  | 53.06  | 30.27                            | 34.95 | 39.08 | 43.69  | 47.86  | 51.70  |
| TRAE       | 50             | 42.43                            | 48.99 | 54.78  | 61.24  | 67.09  | 72.46  | 41.94                            | 48.42 | 54.14  | 60.53  | 66.31  | 71.62  | 40.87                            | 47.19 | 52.76 | 58.99  | 64.62  | 69.80  |
| TRAE       | 60             | 46.28                            | 53.44 | 59.75  | 66.80  | 73.18  | 79.04  | 45.75                            | 52.82 | 59.06  | 66.03  | 72.33  | 78.13  | 44.58                            | 51.48 | 57.55 | 64.35  | 70.49  | 76.13  |
| TRAE       | 70             | 55.09                            | 63.61 | 71.12  | 79.52  | 87.10  | 94.08  | 54.45                            | 62.87 | 70.29  | 78.59  | 86.09  | 92.98  | 53.06                            | 61.27 | 68.50 | 76.59  | 83.90  | 90.62  |
| TJR        | 14             | 11.55                            | 13.34 | 14.91  | 16.67  | 18.26  | 19.73  | 11.42                            | 13.18 | 14.74  | 16.48  | 18.05  | 19.50  | 11.13                            | 12.85 | 14.37 | 16.06  | 17.60  | 19.01  |
| TJR        | 18             | 13.83                            | 15.97 | 17.85  | 19.96  | 21.87  | 23.62  | 13.67                            | 15.79 | 17.65  | 19.73  | 21.62  | 23.35  | 13.32                            | 15.38 | 17.20 | 19.23  | 21.06  | 22.75  |
| TER        | 22             | 17.29                            | 19.96 | 22.32  | 24.96  | 27.34  | 29.53  | 17.09                            | 19.73 | 22.06  | 24.66  | 27.02  | 29.18  | 16.65                            | 19.23 | 21.50 | 24.03  | 26.33  | 28.44  |
| TER        | 26             | 20.43                            | 23.59 | 26.38  | 29.49  | 32.30  | 34.89  | 20.19                            | 23.32 | 26.07  | 29.15  | 31.93  | 34.49  | 19.68                            | 22.72 | 25.41 | 28.41  | 31.12  | 33.61  |
| TER        | 35             | 27.50                            | 31.75 | 35.50  | 39.69  | 43.48  | 46.97  | 27.18                            | 31.39 | 35.09  | 39.23  | 42.98  | 46.42  | 26.49                            | 30.59 | 34.20 | 38.24  | 41.88  | 45.24  |
| TER        | 45             | 35.36                            | 40.83 | 45.65  | 51.04  | 55.91  | 60.39  | 34.95                            | 40.36 | 45.12  | 50.45  | 55.26  | 59.69  | 34.06                            | 39.33 | 43.97 | 49.16  | 53.85  | 58.17  |
| TIR        | 55             | 43.22                            | 49.91 | 55.80  | 62.38  | 68.34  | 73.81  | 42.72                            | 49.33 | 55.15  | 61.66  | 67.54  | 72.96  | 41.63                            | 48.07 | 53.74 | 60.09  | 65.82  | 71.10  |
| THR        | 75             | 55.01                            | 63.52 | 71.02  | 79.40  | 86.98  | 93.95  | 54.37                            | 62.78 | 70.19  | 78.47  | 85.96  | 92.85  | 52.98                            | 61.18 | 68.40 | 76.47  | 83.77  | 90.48  |
| THR        | 85             | 66.79                            | 77.12 | 86.23  | 96.40  | 105.60 | 114.07 | 66.02                            | 76.23 | 85.23  | 95.29  | 104.39 | 112.75 | 64.33                            | 74.28 | 83.05 | 92.85  | 101.71 | 109.86 |
| TMR        | 100            | 78.58                            | 90.74 | 101.45 | 113.42 | 124.25 | 134.20 | 77.67                            | 89.68 | 100.27 | 112.11 | 122.81 | 132.64 | 75.69                            | 87.40 | 97.72 | 109.25 | 119.68 | 129.27 |

Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 60 psi pressure drop across the TXV per ARI 750-2001.

## R-22 BALANCED PORTED VALVES (TONS) B / HF / TFE / TRAE / T SERIES (CONTINUED)

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |        |        |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|------------|----------------|----------------------------------|-------|-------|-------|--------|--------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|            |                | 0°F                              |       |       |       |        |        | -20°F                            |       |       |       |       |       | -40°F                            |       |       |       |       |       |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |        |        | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|            |                | 60                               | 80    | 100   | 125   | 150    | 175    | 80                               | 100   | 125   | 150   | 175   | 200   | 80                               | 100   | 125   | 150   | 175   | 200   |
| BA/BN      | 1/2            | 0.34                             | 0.39  | 0.44  | 0.49  | 0.54   | 0.58   | 0.27                             | 0.30  | 0.34  | 0.37  | 0.40  | 0.43  | 0.18                             | 0.20  | 0.23  | 0.25  | 0.27  | 0.28  |
| BA/BN      | 1              | 0.65                             | 0.75  | 0.84  | 0.94  | 1.03   | 1.11   | 0.52                             | 0.58  | 0.65  | 0.71  | 0.77  | 0.82  | 0.34                             | 0.38  | 0.43  | 0.47  | 0.50  | 0.54  |
| BA/BN      | 1-1/2          | 1.02                             | 1.18  | 1.32  | 1.47  | 1.61   | 1.74   | 0.81                             | 0.91  | 1.01  | 1.11  | 1.20  | 1.28  | 0.53                             | 0.59  | 0.66  | 0.73  | 0.78  | 0.84  |
| BA/BN      | 2              | 1.36                             | 1.57  | 1.76  | 1.96  | 2.15   | 2.32   | 1.08                             | 1.21  | 1.35  | 1.48  | 1.60  | 1.71  | 0.71                             | 0.79  | 0.89  | 0.97  | 1.05  | 1.12  |
| BA/BN      | 2-1/2          | 1.72                             | 1.99  | 2.22  | 2.48  | 2.72   | 2.94   | 1.37                             | 1.53  | 1.71  | 1.88  | 2.03  | 2.17  | 0.90                             | 1.01  | 1.13  | 1.23  | 1.33  | 1.42  |
| BA/BN      | 3              | 2.08                             | 2.40  | 2.69  | 3.00  | 3.29   | 3.55   | 1.66                             | 1.86  | 2.08  | 2.27  | 2.46  | 2.62  | 1.09                             | 1.22  | 1.36  | 1.49  | 1.61  | 1.72  |
| BA/BN      | 4              | 2.69                             | 3.11  | 3.47  | 3.88  | 4.25   | 4.59   | 2.15                             | 2.40  | 2.69  | 2.94  | 3.18  | 3.40  | 1.41                             | 1.58  | 1.76  | 1.93  | 2.09  | 2.23  |
| BA/BN      | 5              | 3.40                             | 3.93  | 4.39  | 4.91  | 5.38   | 5.81   | 2.72                             | 3.04  | 3.40  | 3.72  | 4.02  | 4.30  | 1.79                             | 2.00  | 2.24  | 2.45  | 2.65  | 2.83  |
| BA/BN      | 6              | 4.23                             | 4.88  | 5.46  | 6.11  | 6.69   | 7.22   | 3.38                             | 3.78  | 4.23  | 4.63  | 5.00  | 5.34  | 2.23                             | 2.49  | 2.79  | 3.05  | 3.30  | 3.53  |
| HF         | 1/4            | 0.19                             | 0.22  | 0.25  | 0.27  | 0.30   | 0.32   | 0.15                             | 0.17  | 0.19  | 0.21  | 0.22  | 0.24  | 0.10                             | 0.11  | 0.13  | 0.14  | 0.15  | 0.16  |
| HF         | 1/2            | 0.36                             | 0.42  | 0.46  | 0.52  | 0.57   | 0.61   | 0.29                             | 0.32  | 0.36  | 0.40  | 0.43  | 0.46  | 0.19                             | 0.21  | 0.24  | 0.26  | 0.28  | 0.30  |
| HF         | 1              | 0.65                             | 0.75  | 0.84  | 0.94  | 1.03   | 1.11   | 0.52                             | 0.58  | 0.65  | 0.71  | 0.77  | 0.82  | 0.34                             | 0.38  | 0.43  | 0.47  | 0.50  | 0.54  |
| HF         | 1-1/2          | 1.00                             | 1.15  | 1.29  | 1.44  | 1.58   | 1.71   | 0.79                             | 0.88  | 0.99  | 1.08  | 1.17  | 1.25  | 0.52                             | 0.58  | 0.65  | 0.71  | 0.77  | 0.82  |
| HF         | 2              | 1.34                             | 1.55  | 1.73  | 1.93  | 2.12   | 2.29   | 1.07                             | 1.20  | 1.34  | 1.47  | 1.58  | 1.69  | 0.70                             | 0.78  | 0.88  | 0.96  | 1.04  | 1.11  |
| HF         | 2-1/2          | 1.72                             | 1.99  | 2.22  | 2.48  | 2.72   | 2.94   | 1.37                             | 1.53  | 1.71  | 1.88  | 2.03  | 2.17  | 0.90                             | 1.01  | 1.13  | 1.23  | 1.33  | 1.42  |
| HF         | 3              | 2.26                             | 2.61  | 2.92  | 3.26  | 3.57   | 3.86   | 1.81                             | 2.02  | 2.26  | 2.48  | 2.68  | 2.86  | 1.19                             | 1.33  | 1.49  | 1.63  | 1.76  | 1.88  |
| HF         | 5-1/2          | 4.03                             | 4.65  | 5.20  | 5.82  | 6.37   | 6.88   | 3.22                             | 3.60  | 4.03  | 4.41  | 4.76  | 5.09  | 2.12                             | 2.37  | 2.65  | 2.90  | 3.14  | 3.35  |
| HF         | 8              | 5.61                             | 6.48  | 7.24  | 8.10  | 8.87   | 9.58   | 4.48                             | 5.01  | 5.60  | 6.13  | 6.63  | 7.08  | 2.95                             | 3.30  | 3.69  | 4.04  | 4.36  | 4.66  |
| HF         | 10             | 7.10                             | 8.20  | 9.17  | 10.25 | 11.23  | 12.13  | 5.67                             | 6.34  | 7.09  | 7.76  | 8.39  | 8.97  | 3.73                             | 4.17  | 4.66  | 5.11  | 5.52  | 5.90  |
| HF         | 15             | 10.53                            | 12.16 | 13.59 | 15.20 | 16.65  | 17.98  | 8.40                             | 9.39  | 10.50 | 11.50 | 12.42 | 13.28 | 5.53                             | 6.18  | 6.91  | 7.57  | 8.18  | 8.74  |
| HF         | 20             | 13.86                            | 16.00 | 17.89 | 20.01 | 21.91  | 23.67  | 11.06                            | 12.37 | 13.83 | 15.14 | 16.36 | 17.49 | 7.28                             | 8.14  | 9.10  | 9.97  | 10.77 | 11.51 |
| TFE        | 8              | 5.50                             | 6.35  | 7.10  | 7.94  | 8.70   | 9.39   | 4.39                             | 4.91  | 5.49  | 6.01  | 6.49  | 6.94  | 2.89                             | 3.23  | 3.61  | 3.96  | 4.27  | 4.57  |
| TFE        | 10             | 7.54                             | 8.71  | 9.73  | 10.88 | 11.92  | 12.88  | 6.02                             | 6.73  | 7.53  | 8.24  | 8.90  | 9.52  | 3.96                             | 4.43  | 4.95  | 5.42  | 5.86  | 6.26  |
| TFE        | 12             | 9.35                             | 10.80 | 12.07 | 13.50 | 14.78  | 15.97  | 7.47                             | 8.35  | 9.34  | 10.23 | 11.05 | 11.81 | 4.92                             | 5.50  | 6.15  | 6.74  | 7.28  | 7.78  |
| TFE        | 20             | 14.28                            | 16.49 | 18.44 | 20.61 | 22.58  | 24.39  | 11.40                            | 12.75 | 14.25 | 15.61 | 16.86 | 18.02 | 7.51                             | 8.40  | 9.39  | 10.28 | 11.11 | 11.87 |
| TRAE+      | 10             | 8.10                             | 9.35  | 10.46 | 11.69 | 12.81  | 13.83  | 6.47                             | 7.23  | 8.09  | 8.86  | 9.57  | 10.23 | 4.26                             | 4.76  | 5.33  | 5.83  | 6.30  | 6.74  |
| TRAE+      | 15             | 11.80                            | 13.63 | 15.23 | 17.03 | 18.66  | 20.15  | 9.42                             | 10.53 | 11.78 | 12.90 | 13.93 | 14.89 | 6.21                             | 6.94  | 7.76  | 8.50  | 9.18  | 9.82  |
| TRAE+      | 20             | 13.18                            | 15.22 | 17.02 | 19.02 | 20.84  | 22.51  | 10.52                            | 11.76 | 13.15 | 14.41 | 15.56 | 16.63 | 6.93                             | 7.75  | 8.66  | 9.49  | 10.25 | 10.96 |
| TRAE+      | 30             | 19.97                            | 23.06 | 25.78 | 28.82 | 31.58  | 34.11  | 15.94                            | 17.82 | 19.93 | 21.83 | 23.58 | 25.20 | 10.50                            | 11.74 | 13.13 | 14.38 | 15.53 | 16.60 |
| TRAE+      | 40             | 27.45                            | 31.70 | 35.44 | 39.62 | 43.40  | 46.88  | 21.92                            | 24.51 | 27.40 | 30.02 | 32.42 | 34.66 | 14.43                            | 16.13 | 18.04 | 19.76 | 21.34 | 22.82 |
| TRAE       | 50             | 37.06                            | 42.79 | 47.84 | 53.49 | 58.60  | 63.29  | 29.59                            | 33.08 | 36.99 | 40.52 | 43.76 | 46.79 | 19.48                            | 21.78 | 24.35 | 26.67 | 28.81 | 30.80 |
| TRAE       | 60             | 40.42                            | 46.67 | 52.18 | 58.34 | 63.91  | 69.03  | 32.27                            | 36.08 | 40.34 | 44.19 | 47.73 | 51.02 | 21.25                            | 23.76 | 26.56 | 29.10 | 31.43 | 33.60 |
| TRAE       | 70             | 48.11                            | 55.55 | 62.11 | 69.44 | 76.07  | 82.16  | 38.41                            | 42.94 | 48.01 | 52.60 | 56.81 | 60.73 | 25.29                            | 28.28 | 31.61 | 34.63 | 37.40 | 39.99 |
| TJR        | 14             | 10.09                            | 11.65 | 13.03 | 14.56 | 15.95  | 17.23  | 8.05                             | 9.00  | 10.06 | 11.02 | 11.91 | 12.73 | 5.30                             | 5.93  | 6.63  | 7.26  | 7.84  | 8.38  |
| TJR        | 18             | 12.08                            | 13.95 | 15.60 | 17.44 | 19.10  | 20.63  | 9.64                             | 10.78 | 12.05 | 13.20 | 14.26 | 15.24 | 6.35                             | 7.10  | 7.94  | 8.70  | 9.39  | 10.04 |
| TER        | 22             | 15.10                            | 17.44 | 19.49 | 21.79 | 23.88  | 25.79  | 12.05                            | 13.47 | 15.06 | 16.50 | 17.82 | 19.05 | 7.94                             | 8.88  | 9.93  | 10.87 | 11.74 | 12.55 |
| TER        | 26             | 17.84                            | 20.60 | 23.03 | 25.75 | 28.21  | 30.47  | 14.25                            | 15.93 | 17.81 | 19.51 | 21.08 | 22.53 | 9.38                             | 10.49 | 11.73 | 12.84 | 13.87 | 14.83 |
| TER        | 35             | 24.02                            | 27.74 | 31.01 | 34.67 | 37.98  | 41.02  | 19.18                            | 21.44 | 23.98 | 26.26 | 28.37 | 30.33 | 12.63                            | 14.12 | 15.79 | 17.29 | 18.68 | 19.97 |
| TER        | 45             | 30.88                            | 35.66 | 39.87 | 44.57 | 48.83  | 52.74  | 24.66                            | 27.57 | 30.83 | 33.77 | 36.47 | 38.99 | 16.24                            | 18.16 | 20.30 | 22.24 | 24.02 | 25.68 |
| TIR        | 55             | 37.75                            | 43.59 | 48.74 | 54.49 | 59.69  | 64.47  | 30.13                            | 33.69 | 37.66 | 41.26 | 44.56 | 47.64 | 19.84                            | 22.18 | 24.80 | 27.17 | 29.34 | 31.37 |
| THR        | 75             | 48.04                            | 55.47 | 62.02 | 69.34 | 75.96  | 82.04  | 38.35                            | 42.88 | 47.94 | 52.51 | 56.72 | 60.64 | 25.26                            | 28.24 | 31.58 | 34.59 | 37.36 | 39.94 |
| THR        | 85             | 58.33                            | 67.35 | 75.30 | 84.19 | 92.23  | 99.62  | 46.57                            | 52.07 | 58.21 | 63.77 | 68.88 | 73.63 | 30.67                            | 34.29 | 38.34 | 42.00 | 45.36 | 48.49 |
| TMR        | 100            | 68.63                            | 79.25 | 88.60 | 99.06 | 108.51 | 117.21 | 54.79                            | 61.26 | 68.49 | 75.02 | 81.04 | 86.63 | 36.08                            | 40.34 | 45.10 | 49.40 | 53.36 | 57.05 |

Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 60 psi pressure drop across the TXV per ARI 750-2001.

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## R-134a BALANCED PORTED VALVES (TONS) B / HF / TFE / TRAE / T SERIES

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |        |        |        |                                  |       |       |        |        |        |                                  |       |       |        |        |        |
|------------|----------------|----------------------------------|-------|-------|--------|--------|--------|----------------------------------|-------|-------|--------|--------|--------|----------------------------------|-------|-------|--------|--------|--------|
|            |                | 50°F                             |       |       |        |        |        | 40°F                             |       |       |        |        |        | 20°F                             |       |       |        |        |        |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |        |        |        | PRESSURE DROP ACROSS VALVE (PSI) |       |       |        |        |        | PRESSURE DROP ACROSS VALVE (PSI) |       |       |        |        |        |
|            |                | 60                               | 80    | 100   | 125    | 150    | 175    | 60                               | 80    | 100   | 125    | 150    | 175    | 60                               | 80    | 100   | 125    | 150    | 175    |
| BA/BN      | 1/2            | 0.37                             | 0.43  | 0.48  | 0.53   | 0.59   | 0.63   | 0.37                             | 0.43  | 0.48  | 0.53   | 0.59   | 0.63   | 0.35                             | 0.40  | 0.45  | 0.51   | 0.55   | 0.60   |
| BA/BN      | 3/4            | 0.71                             | 0.82  | 0.92  | 1.02   | 1.12   | 1.21   | 0.70                             | 0.81  | 0.90  | 1.01   | 1.11   | 1.20   | 0.67                             | 0.77  | 0.86  | 0.97   | 1.06   | 1.14   |
| BA/BN      | 1              | 1.11                             | 1.28  | 1.43  | 1.60   | 1.76   | 1.90   | 1.09                             | 1.26  | 1.41  | 1.57   | 1.72   | 1.86   | 1.04                             | 1.20  | 1.34  | 1.50   | 1.64   | 1.78   |
| BA/BN      | 1-1/2          | 1.48                             | 1.71  | 1.91  | 2.14   | 2.34   | 2.53   | 1.45                             | 1.67  | 1.87  | 2.09   | 2.29   | 2.48   | 1.39                             | 1.61  | 1.79  | 2.01   | 2.20   | 2.37   |
| BA/BN      | 2              | 1.87                             | 2.16  | 2.41  | 2.70   | 2.96   | 3.19   | 1.84                             | 2.12  | 2.38  | 2.66   | 2.91   | 3.14   | 1.76                             | 2.03  | 2.27  | 2.54   | 2.78   | 3.01   |
| BA/BN      | 2-1/4          | 2.27                             | 2.62  | 2.93  | 3.28   | 3.59   | 3.88   | 2.22                             | 2.56  | 2.87  | 3.20   | 3.51   | 3.79   | 2.13                             | 2.46  | 2.75  | 3.07   | 3.37   | 3.64   |
| BA/BN      | 3              | 2.94                             | 3.39  | 3.80  | 4.24   | 4.65   | 5.02   | 2.88                             | 3.33  | 3.72  | 4.16   | 4.55   | 4.92   | 2.75                             | 3.18  | 3.55  | 3.97   | 4.35   | 4.70   |
| BA/BN      | 3-1/2          | 3.72                             | 4.30  | 4.80  | 5.37   | 5.88   | 6.35   | 3.64                             | 4.20  | 4.70  | 5.25   | 5.76   | 6.22   | 3.48                             | 4.02  | 4.49  | 5.02   | 5.50   | 5.94   |
| BA/BN      | 4-1/4          | 4.62                             | 5.33  | 5.96  | 6.67   | 7.30   | 7.89   | 4.53                             | 5.23  | 5.85  | 6.54   | 7.16   | 7.74   | 4.33                             | 5.00  | 5.59  | 6.25   | 6.85   | 7.39   |
| HF         | 1/4            | 0.21                             | 0.24  | 0.27  | 0.30   | 0.33   | 0.36   | 0.21                             | 0.24  | 0.27  | 0.30   | 0.33   | 0.36   | 0.20                             | 0.23  | 0.26  | 0.29   | 0.32   | 0.34   |
| HF         | 1/2            | 0.40                             | 0.46  | 0.52  | 0.58   | 0.63   | 0.68   | 0.39                             | 0.45  | 0.50  | 0.56   | 0.62   | 0.67   | 0.37                             | 0.43  | 0.48  | 0.53   | 0.59   | 0.63   |
| HF         | 3/4            | 0.71                             | 0.82  | 0.92  | 1.02   | 1.12   | 1.21   | 0.70                             | 0.81  | 0.90  | 1.01   | 1.11   | 1.20   | 0.67                             | 0.77  | 0.86  | 0.97   | 1.06   | 1.14   |
| HF         | 1              | 1.09                             | 1.26  | 1.41  | 1.57   | 1.72   | 1.86   | 1.06                             | 1.22  | 1.37  | 1.53   | 1.68   | 1.81   | 1.02                             | 1.18  | 1.32  | 1.47   | 1.61   | 1.74   |
| HF         | 1-1/2          | 1.46                             | 1.69  | 1.88  | 2.11   | 2.31   | 2.49   | 1.43                             | 1.65  | 1.85  | 2.06   | 2.26   | 2.44   | 1.37                             | 1.58  | 1.77  | 1.98   | 2.17   | 2.34   |
| HF         | 1-3/4          | 1.87                             | 2.16  | 2.41  | 2.70   | 2.96   | 3.19   | 1.84                             | 2.12  | 2.38  | 2.66   | 2.91   | 3.14   | 1.76                             | 2.03  | 2.27  | 2.54   | 2.78   | 3.01   |
| HF         | 2-1/2          | 2.47                             | 2.85  | 3.19  | 3.57   | 3.91   | 4.22   | 2.42                             | 2.79  | 3.12  | 3.49   | 3.83   | 4.13   | 2.32                             | 2.68  | 3.00  | 3.35   | 3.67   | 3.96   |
| HF         | 4              | 4.40                             | 5.08  | 5.68  | 6.35   | 6.96   | 7.51   | 4.31                             | 4.98  | 5.56  | 6.22   | 6.81   | 7.36   | 4.12                             | 4.76  | 5.32  | 5.95   | 6.51   | 7.04   |
| HF         | 6              | 6.12                             | 7.07  | 7.90  | 8.83   | 9.68   | 10.45  | 6.00                             | 6.93  | 7.75  | 8.66   | 9.49   | 10.25  | 5.74                             | 6.63  | 7.41  | 8.28   | 9.08   | 9.80   |
| HF         | 7-1/2          | 7.75                             | 8.95  | 10.01 | 11.19  | 12.25  | 13.24  | 7.59                             | 8.76  | 9.80  | 10.96  | 12.00  | 12.96  | 7.26                             | 8.38  | 9.37  | 10.48  | 11.48  | 12.40  |
| HF         | 11             | 11.50                            | 13.28 | 14.85 | 16.60  | 18.18  | 19.64  | 11.26                            | 13.00 | 14.54 | 16.25  | 17.80  | 19.23  | 10.77                            | 12.44 | 13.90 | 15.55  | 17.03  | 18.39  |
| HF         | 14             | 15.13                            | 17.47 | 19.53 | 21.84  | 23.92  | 25.84  | 14.82                            | 17.11 | 19.13 | 21.39  | 23.43  | 25.31  | 14.18                            | 16.37 | 18.31 | 20.47  | 22.42  | 24.22  |
| TFE        | 6              | 6.01                             | 6.94  | 7.76  | 8.67   | 9.50   | 10.26  | 5.89                             | 6.80  | 7.60  | 8.50   | 9.31   | 10.06  | 5.63                             | 6.50  | 7.27  | 8.13   | 8.90   | 9.62   |
| TFE        | 8              | 8.23                             | 9.50  | 10.62 | 11.88  | 13.01  | 14.06  | 8.06                             | 9.31  | 10.41 | 11.63  | 12.74  | 13.77  | 7.71                             | 8.90  | 9.95  | 11.13  | 12.19  | 13.17  |
| TFE        | 10             | 10.22                            | 11.80 | 13.19 | 14.75  | 16.16  | 17.45  | 10.01                            | 11.56 | 12.92 | 14.45  | 15.83  | 17.10  | 9.57                             | 11.05 | 12.35 | 13.81  | 15.13  | 16.34  |
| TFE        | 15             | 15.60                            | 18.01 | 20.14 | 22.52  | 24.67  | 26.64  | 15.28                            | 17.64 | 19.73 | 22.05  | 24.16  | 26.10  | 14.61                            | 16.87 | 18.86 | 21.09  | 23.10  | 24.95  |
| TRAE+      | 9              | 8.84                             | 10.21 | 11.41 | 12.76  | 13.98  | 15.10  | 8.66                             | 10.00 | 11.18 | 12.50  | 13.69  | 14.79  | 8.29                             | 9.57  | 10.70 | 11.97  | 13.11  | 14.16  |
| TRAE+      | 13             | 12.89                            | 14.88 | 16.64 | 18.61  | 20.38  | 22.01  | 12.63                            | 14.58 | 16.31 | 18.23  | 19.97  | 21.57  | 12.08                            | 13.95 | 15.60 | 17.44  | 19.10  | 20.63  |
| TRAE+      | 14             | 14.39                            | 16.62 | 18.58 | 20.77  | 22.75  | 24.58  | 14.09                            | 16.27 | 18.19 | 20.34  | 22.28  | 24.06  | 13.48                            | 15.57 | 17.40 | 19.46  | 21.31  | 23.02  |
| TRAE+      | 22             | 21.81                            | 25.18 | 28.16 | 31.48  | 34.48  | 37.25  | 21.36                            | 24.66 | 27.58 | 30.83  | 33.77  | 36.48  | 20.43                            | 23.59 | 26.38 | 29.49  | 32.30  | 34.89  |
| TRAE+      | 30             | 29.98                            | 34.62 | 38.70 | 43.27  | 47.40  | 51.20  | 29.36                            | 33.90 | 37.90 | 42.38  | 46.42  | 50.14  | 28.09                            | 32.44 | 36.26 | 40.54  | 44.41  | 47.97  |
| TRAE       | 40             | 40.48                            | 46.74 | 52.26 | 58.43  | 64.00  | 69.13  | 39.64                            | 45.77 | 51.18 | 57.22  | 62.68  | 67.70  | 37.92                            | 43.79 | 48.95 | 54.73  | 59.96  | 64.76  |
| TRAE       | 45             | 44.15                            | 50.98 | 57.00 | 63.73  | 69.81  | 75.40  | 43.24                            | 49.93 | 55.82 | 62.41  | 68.37  | 73.85  | 41.36                            | 47.76 | 53.40 | 59.70  | 65.40  | 70.64  |
| TRAE       | 50             | 52.54                            | 60.67 | 67.83 | 75.83  | 83.07  | 89.73  | 51.46                            | 59.42 | 66.43 | 74.28  | 81.37  | 87.88  | 49.22                            | 56.83 | 63.54 | 71.04  | 77.82  | 84.06  |
| TJR        | 11             | 11.02                            | 12.72 | 14.23 | 15.91  | 17.42  | 18.82  | 10.79                            | 12.46 | 13.93 | 15.57  | 17.06  | 18.43  | 10.32                            | 11.92 | 13.32 | 14.90  | 16.32  | 17.62  |
| TJR        | 13             | 13.19                            | 15.23 | 17.03 | 19.04  | 20.86  | 22.53  | 12.92                            | 14.92 | 16.68 | 18.65  | 20.43  | 22.07  | 12.36                            | 14.27 | 15.96 | 17.84  | 19.54  | 21.11  |
| TER        | 16             | 16.49                            | 19.04 | 21.29 | 23.80  | 26.07  | 28.16  | 16.15                            | 18.65 | 20.85 | 23.31  | 25.54  | 27.58  | 15.45                            | 17.84 | 19.95 | 22.30  | 24.43  | 26.39  |
| TER        | 19             | 19.49                            | 22.51 | 25.16 | 28.13  | 30.82  | 33.29  | 19.09                            | 22.04 | 24.65 | 27.55  | 30.18  | 32.60  | 18.26                            | 21.08 | 23.57 | 26.36  | 28.87  | 31.18  |
| TER        | 25             | 26.23                            | 30.29 | 33.86 | 37.86  | 41.47  | 44.80  | 25.69                            | 29.66 | 33.17 | 37.08  | 40.62  | 43.87  | 24.58                            | 28.38 | 31.73 | 35.48  | 38.86  | 41.98  |
| TER        | 31             | 33.73                            | 38.95 | 43.55 | 48.69  | 53.33  | 57.60  | 33.03                            | 38.14 | 42.64 | 47.67  | 52.23  | 56.41  | 31.60                            | 36.49 | 40.80 | 45.61  | 49.96  | 53.97  |
| TIR        | 45             | 41.23                            | 47.61 | 53.23 | 59.51  | 65.19  | 70.41  | 40.37                            | 46.62 | 52.12 | 58.27  | 63.83  | 68.94  | 38.62                            | 44.59 | 49.86 | 55.74  | 61.06  | 65.96  |
| THR        | 55             | 52.47                            | 60.59 | 67.74 | 75.73  | 82.96  | 89.61  | 51.38                            | 59.33 | 66.33 | 74.16  | 81.24  | 87.75  | 49.15                            | 56.75 | 63.45 | 70.94  | 77.71  | 83.94  |
| THR        | 68             | 63.71                            | 73.57 | 82.25 | 91.96  | 100.73 | 108.81 | 62.40                            | 72.05 | 80.56 | 90.07  | 98.66  | 106.57 | 59.69                            | 68.92 | 77.06 | 86.16  | 94.38  | 101.94 |
| TMR        | 68             | 74.95                            | 86.54 | 96.76 | 108.18 | 118.51 | 128.00 | 73.41                            | 84.77 | 94.77 | 105.96 | 116.07 | 125.37 | 70.22                            | 81.08 | 90.65 | 101.35 | 111.03 | 119.92 |

Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 60 psi pressure drop across the TXV per ARI 750-2001.

## R-134a BALANCED PORTED VALVES (TONS) B / HF / TFE / TRAE / T SERIES (CONTINUED)

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|            |                | 0°F                              |       |       |       |       |       | -20°F                            |       |       |       |       |       | -40°F                            |       |       |       |       |       |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175   | 80                               | 100   | 125   | 150   | 175   | 200   | 80                               | 100   | 125   | 150   | 175   | 200   |
| BA/BN      | 1/2            | 0.29                             | 0.33  | 0.37  | 0.42  | 0.46  | 0.50  | 0.22                             | 0.25  | 0.28  | 0.30  | 0.33  | 0.35  | 0.13                             | 0.15  | 0.16  | 0.18  | 0.19  | 0.21  |
| BA/BN      | 3/4            | 0.55                             | 0.64  | 0.71  | 0.79  | 0.87  | 0.94  | 0.41                             | 0.46  | 0.51  | 0.56  | 0.61  | 0.65  | 0.25                             | 0.28  | 0.31  | 0.34  | 0.37  | 0.40  |
| BA/BN      | 1              | 0.86                             | 0.99  | 1.11  | 1.24  | 1.36  | 1.47  | 0.64                             | 0.72  | 0.80  | 0.88  | 0.95  | 1.01  | 0.39                             | 0.44  | 0.49  | 0.53  | 0.58  | 0.62  |
| BA/BN      | 1-1/2          | 1.14                             | 1.32  | 1.47  | 1.65  | 1.80  | 1.95  | 0.85                             | 0.95  | 1.06  | 1.16  | 1.26  | 1.34  | 0.52                             | 0.58  | 0.65  | 0.71  | 0.77  | 0.82  |
| BA/BN      | 2              | 1.44                             | 1.66  | 1.86  | 2.08  | 2.28  | 2.46  | 1.08                             | 1.21  | 1.35  | 1.48  | 1.60  | 1.71  | 0.66                             | 0.74  | 0.83  | 0.90  | 0.98  | 1.04  |
| BA/BN      | 2-1/4          | 1.75                             | 2.02  | 2.26  | 2.53  | 2.77  | 2.99  | 1.31                             | 1.46  | 1.64  | 1.79  | 1.94  | 2.07  | 0.80                             | 0.89  | 1.00  | 1.10  | 1.18  | 1.26  |
| BA/BN      | 3              | 2.27                             | 2.62  | 2.93  | 3.28  | 3.59  | 3.88  | 1.69                             | 1.89  | 2.11  | 2.31  | 2.50  | 2.67  | 1.04                             | 1.16  | 1.30  | 1.42  | 1.54  | 1.64  |
| BA/BN      | 3-1/2          | 2.87                             | 3.31  | 3.71  | 4.14  | 4.54  | 4.90  | 2.14                             | 2.39  | 2.68  | 2.93  | 3.17  | 3.38  | 1.31                             | 1.46  | 1.64  | 1.79  | 1.94  | 2.07  |
| BA/BN      | 4-1/4          | 3.57                             | 4.12  | 4.61  | 5.15  | 5.64  | 6.10  | 2.66                             | 2.97  | 3.33  | 3.64  | 3.93  | 4.21  | 1.63                             | 1.82  | 2.04  | 2.23  | 2.41  | 2.58  |
| HF         | 1/4            | 0.16                             | 0.18  | 0.21  | 0.23  | 0.25  | 0.27  | 0.12                             | 0.13  | 0.15  | 0.16  | 0.18  | 0.19  | 0.07                             | 0.08  | 0.09  | 0.10  | 0.10  | 0.11  |
| HF         | 1/2            | 0.31                             | 0.36  | 0.40  | 0.45  | 0.49  | 0.53  | 0.23                             | 0.26  | 0.29  | 0.31  | 0.34  | 0.36  | 0.14                             | 0.16  | 0.18  | 0.19  | 0.21  | 0.22  |
| HF         | 3/4            | 0.55                             | 0.64  | 0.71  | 0.79  | 0.87  | 0.94  | 0.41                             | 0.46  | 0.51  | 0.56  | 0.61  | 0.65  | 0.25                             | 0.28  | 0.31  | 0.34  | 0.37  | 0.40  |
| HF         | 1              | 0.84                             | 0.97  | 1.08  | 1.21  | 1.33  | 1.43  | 0.63                             | 0.70  | 0.79  | 0.86  | 0.93  | 1.00  | 0.38                             | 0.42  | 0.48  | 0.52  | 0.56  | 0.60  |
| HF         | 1-1/2          | 1.13                             | 1.30  | 1.46  | 1.63  | 1.79  | 1.93  | 0.84                             | 0.94  | 1.05  | 1.15  | 1.24  | 1.33  | 0.52                             | 0.58  | 0.65  | 0.71  | 0.77  | 0.82  |
| HF         | 1-3/4          | 1.44                             | 1.66  | 1.86  | 2.08  | 2.28  | 2.46  | 1.08                             | 1.21  | 1.35  | 1.48  | 1.60  | 1.71  | 0.66                             | 0.74  | 0.83  | 0.90  | 0.98  | 1.04  |
| HF         | 2-1/2          | 1.91                             | 2.21  | 2.47  | 2.76  | 3.02  | 3.26  | 1.42                             | 1.59  | 1.78  | 1.94  | 2.10  | 2.25  | 0.87                             | 0.97  | 1.09  | 1.19  | 1.29  | 1.38  |
| HF         | 4              | 3.39                             | 3.91  | 4.38  | 4.89  | 5.36  | 5.79  | 2.53                             | 2.83  | 3.16  | 3.46  | 3.74  | 4.00  | 1.55                             | 1.73  | 1.94  | 2.12  | 2.29  | 2.45  |
| HF         | 6              | 4.72                             | 5.45  | 6.09  | 6.81  | 7.46  | 8.06  | 3.52                             | 3.94  | 4.40  | 4.82  | 5.21  | 5.57  | 2.16                             | 2.41  | 2.70  | 2.96  | 3.19  | 3.42  |
| HF         | 7-1/2          | 5.98                             | 6.91  | 7.72  | 8.63  | 9.46  | 10.21 | 4.46                             | 4.99  | 5.58  | 6.11  | 6.60  | 7.05  | 2.74                             | 3.06  | 3.43  | 3.75  | 4.05  | 4.33  |
| HF         | 11             | 8.87                             | 10.24 | 11.45 | 12.80 | 14.02 | 15.15 | 6.62                             | 7.40  | 8.28  | 9.06  | 9.79  | 10.47 | 4.06                             | 4.54  | 5.08  | 5.56  | 6.00  | 6.42  |
| HF         | 14             | 11.67                            | 13.48 | 15.07 | 16.84 | 18.45 | 19.93 | 8.71                             | 9.74  | 10.89 | 11.93 | 12.88 | 13.77 | 5.34                             | 5.97  | 6.68  | 7.31  | 7.90  | 8.44  |
| TFE        | 6              | 4.64                             | 5.36  | 5.99  | 6.70  | 7.34  | 7.92  | 3.46                             | 3.87  | 4.33  | 4.74  | 5.12  | 5.47  | 2.12                             | 2.37  | 2.65  | 2.90  | 3.14  | 3.35  |
| TFE        | 8              | 6.35                             | 7.33  | 8.20  | 9.17  | 10.04 | 10.84 | 4.74                             | 5.30  | 5.93  | 6.49  | 7.01  | 7.49  | 2.91                             | 3.25  | 3.64  | 3.98  | 4.30  | 4.60  |
| TFE        | 10             | 7.88                             | 9.10  | 10.17 | 11.37 | 12.46 | 13.46 | 5.88                             | 6.57  | 7.35  | 8.05  | 8.70  | 9.30  | 3.61                             | 4.04  | 4.51  | 4.94  | 5.34  | 5.71  |
| TFE        | 15             | 12.03                            | 13.89 | 15.53 | 17.36 | 19.02 | 20.55 | 8.97                             | 10.03 | 11.21 | 12.28 | 13.27 | 14.18 | 5.51                             | 6.16  | 6.89  | 7.54  | 8.15  | 8.71  |
| TRAE+      | 9              | 6.82                             | 7.88  | 8.80  | 9.84  | 10.78 | 11.65 | 5.09                             | 5.69  | 6.36  | 6.97  | 7.53  | 8.05  | 3.12                             | 3.49  | 3.90  | 4.27  | 4.61  | 4.93  |
| TRAE+      | 13             | 9.94                             | 11.48 | 12.83 | 14.35 | 15.72 | 16.98 | 7.42                             | 8.30  | 9.28  | 10.16 | 10.97 | 11.73 | 4.55                             | 5.09  | 5.69  | 6.23  | 6.73  | 7.19  |
| TRAE+      | 14             | 11.1                             | 12.82 | 14.33 | 16.02 | 17.55 | 18.96 | 8.28                             | 9.26  | 10.35 | 11.34 | 12.25 | 13.09 | 5.08                             | 5.68  | 6.35  | 6.96  | 7.51  | 8.03  |
| TRAE+      | 22             | 16.82                            | 19.42 | 21.71 | 24.28 | 26.59 | 28.73 | 12.55                            | 14.03 | 15.69 | 17.18 | 18.56 | 19.84 | 7.70                             | 8.61  | 9.63  | 10.54 | 11.39 | 12.17 |
| TRAE+      | 30             | 23.12                            | 26.70 | 29.85 | 33.37 | 36.56 | 39.48 | 17.25                            | 19.29 | 21.56 | 23.62 | 25.51 | 27.27 | 10.59                            | 11.84 | 13.24 | 14.50 | 15.66 | 16.74 |
| TRAE       | 40             | 31.21                            | 36.04 | 40.29 | 45.05 | 49.35 | 53.30 | 23.29                            | 26.04 | 29.11 | 31.89 | 34.45 | 36.82 | 14.29                            | 15.98 | 17.86 | 19.57 | 21.14 | 22.59 |
| TRAE       | 45             | 34.04                            | 39.31 | 43.95 | 49.13 | 53.82 | 58.13 | 25.40                            | 28.40 | 31.75 | 34.78 | 37.57 | 40.16 | 15.59                            | 17.43 | 19.49 | 21.35 | 23.06 | 24.65 |
| TRAE       | 50             | 40.52                            | 46.79 | 52.31 | 58.49 | 64.07 | 69.20 | 30.23                            | 33.80 | 37.79 | 41.39 | 44.71 | 47.80 | 18.55                            | 20.74 | 23.19 | 25.40 | 27.44 | 29.33 |
| TJR        | 11             | 8.50                             | 9.81  | 10.97 | 12.27 | 13.44 | 14.52 | 6.34                             | 7.09  | 7.93  | 8.68  | 9.38  | 10.02 | 3.89                             | 4.35  | 4.86  | 5.33  | 5.75  | 6.15  |
| TJR        | 13             | 10.17                            | 11.74 | 13.13 | 14.68 | 16.08 | 17.37 | 7.59                             | 8.49  | 9.49  | 10.39 | 11.23 | 12.00 | 4.66                             | 5.21  | 5.83  | 6.38  | 6.89  | 7.37  |
| TER        | 16             | 12.72                            | 14.69 | 16.42 | 18.36 | 20.11 | 21.72 | 9.49                             | 10.61 | 11.86 | 12.99 | 14.04 | 15.01 | 5.82                             | 6.51  | 7.28  | 7.97  | 8.61  | 9.20  |
| TER        | 19             | 15.03                            | 17.36 | 19.40 | 21.69 | 23.76 | 25.67 | 11.21                            | 12.53 | 14.01 | 15.35 | 16.58 | 17.72 | 6.88                             | 7.69  | 8.60  | 9.42  | 10.18 | 10.88 |
| TER        | 25             | 20.23                            | 23.36 | 26.12 | 29.20 | 31.99 | 34.55 | 15.09                            | 16.87 | 18.86 | 20.66 | 22.32 | 23.86 | 9.26                             | 10.35 | 11.58 | 12.68 | 13.70 | 14.64 |
| TER        | 31             | 26.01                            | 30.03 | 33.58 | 37.54 | 41.13 | 44.42 | 19.41                            | 21.70 | 24.26 | 26.58 | 28.71 | 30.69 | 11.91                            | 13.32 | 14.89 | 16.31 | 17.62 | 18.83 |
| TIR        | 45             | 31.79                            | 36.71 | 41.04 | 45.88 | 50.26 | 54.29 | 23.72                            | 26.52 | 29.65 | 32.48 | 35.08 | 37.50 | 14.56                            | 16.28 | 18.20 | 19.94 | 21.53 | 23.02 |
| THR        | 55             | 40.46                            | 46.72 | 52.23 | 58.40 | 63.97 | 69.10 | 30.19                            | 33.75 | 37.74 | 41.34 | 44.65 | 47.73 | 18.53                            | 20.72 | 23.16 | 25.37 | 27.41 | 29.30 |
| THR        | 68             | 49.13                            | 56.73 | 63.43 | 70.91 | 77.68 | 83.91 | 36.66                            | 40.99 | 45.83 | 50.20 | 54.22 | 57.96 | 22.50                            | 25.16 | 28.13 | 30.81 | 33.28 | 35.58 |
| TMR        | 68             | 57.80                            | 66.74 | 74.62 | 83.43 | 91.39 | 98.71 | 43.12                            | 48.21 | 53.90 | 59.04 | 63.78 | 68.18 | 26.47                            | 29.59 | 33.09 | 36.25 | 39.15 | 41.85 |

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.



R-290 BALANCED PORTEDTXV EXTENDED CAPACITY TABLES

R-290 BALANCED PORTED VALVES (TONS) B SERIES AND H SERIES

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|            |                | 50°F                             |       |       |       |       |       | 40°F                             |       |       |       |       |       | 20°F                             |       |       |       |       |       |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   |
| BA/BN      | 1/2            | 0.36                             | 0.42  | 0.47  | 0.53  | 0.58  | 0.62  | 0.36                             | 0.41  | 0.46  | 0.52  | 0.56  | 0.61  | 0.34                             | 0.39  | 0.44  | 0.49  | 0.54  | 0.58  |
| BA/BN      | 3/4            | 0.69                             | 0.80  | 0.89  | 1.00  | 1.10  | 1.18  | 0.68                             | 0.78  | 0.88  | 0.98  | 1.07  | 1.16  | 0.65                             | 0.75  | 0.84  | 0.94  | 1.03  | 1.11  |
| BA/BN      | 1-1/4          | 1.08                             | 1.25  | 1.39  | 1.56  | 1.71  | 1.84  | 1.06                             | 1.22  | 1.36  | 1.53  | 1.67  | 1.81  | 1.01                             | 1.17  | 1.30  | 1.46  | 1.60  | 1.73  |
| BA/BN      | 1-3/4          | 1.44                             | 1.67  | 1.87  | 2.09  | 2.28  | 2.47  | 1.41                             | 1.63  | 1.83  | 2.04  | 2.24  | 2.42  | 1.35                             | 1.56  | 1.75  | 1.95  | 2.14  | 2.31  |
| BA/BN      | 2-1/4          | 1.82                             | 2.11  | 2.35  | 2.63  | 2.88  | 3.12  | 1.79                             | 2.06  | 2.31  | 2.58  | 2.82  | 3.05  | 1.71                             | 1.97  | 2.20  | 2.46  | 2.70  | 2.92  |
| BA/BN      | 2-3/4          | 2.21                             | 2.55  | 2.85  | 3.19  | 3.50  | 3.78  | 2.16                             | 2.50  | 2.79  | 3.12  | 3.42  | 3.70  | 2.07                             | 2.39  | 2.67  | 2.99  | 3.27  | 3.53  |
| BA/BN      | 3-1/2          | 2.86                             | 3.30  | 3.69  | 4.13  | 4.52  | 4.88  | 2.80                             | 3.23  | 3.62  | 4.04  | 4.43  | 4.78  | 2.68                             | 3.09  | 3.46  | 3.86  | 4.23  | 4.57  |
| BA/BN      | 4-1/2          | 3.63                             | 4.19  | 4.68  | 5.23  | 5.73  | 6.19  | 3.55                             | 4.10  | 4.58  | 5.12  | 5.61  | 6.06  | 3.39                             | 3.92  | 4.38  | 4.90  | 5.37  | 5.80  |
| BA/BN      | 5-3/4          | 4.50                             | 5.20  | 5.81  | 6.50  | 7.12  | 7.69  | 4.41                             | 5.09  | 5.69  | 6.36  | 6.97  | 7.53  | 4.21                             | 4.87  | 5.44  | 6.08  | 6.66  | 7.20  |
| HF         | 1/4            | 0.20                             | 0.24  | 0.26  | 0.29  | 0.32  | 0.35  | 0.20                             | 0.23  | 0.26  | 0.29  | 0.32  | 0.34  | 0.19                             | 0.22  | 0.25  | 0.28  | 0.30  | 0.33  |
| HF         | 1/2            | 0.39                             | 0.45  | 0.50  | 0.56  | 0.61  | 0.66  | 0.38                             | 0.44  | 0.49  | 0.55  | 0.60  | 0.65  | 0.36                             | 0.42  | 0.47  | 0.52  | 0.57  | 0.62  |
| HF         | 3/4            | 0.69                             | 0.80  | 0.89  | 1.00  | 1.10  | 1.18  | 0.68                             | 0.78  | 0.88  | 0.98  | 1.07  | 1.16  | 0.65                             | 0.75  | 0.84  | 0.94  | 1.03  | 1.11  |
| HF         | 1              | 1.06                             | 1.22  | 1.37  | 1.53  | 1.67  | 1.81  | 1.04                             | 1.20  | 1.34  | 1.50  | 1.64  | 1.77  | 0.99                             | 1.14  | 1.28  | 1.43  | 1.57  | 1.69  |
| HF         | 1-1/2          | 1.43                             | 1.65  | 1.85  | 2.06  | 2.26  | 2.44  | 1.40                             | 1.62  | 1.81  | 2.02  | 2.21  | 2.39  | 1.34                             | 1.55  | 1.73  | 1.93  | 2.12  | 2.29  |
| HF         | 2              | 1.83                             | 2.11  | 2.36  | 2.64  | 2.90  | 3.13  | 1.79                             | 2.07  | 2.31  | 2.59  | 2.84  | 3.06  | 1.71                             | 1.98  | 2.21  | 2.47  | 2.71  | 2.93  |
| HF         | 2-1/2          | 2.42                             | 2.79  | 3.12  | 3.49  | 3.82  | 4.12  | 2.36                             | 2.73  | 3.05  | 3.41  | 3.74  | 4.04  | 2.26                             | 2.61  | 2.92  | 3.26  | 3.57  | 3.86  |
| HF         | 4-1/2          | 4.30                             | 4.96  | 5.55  | 6.20  | 6.80  | 7.34  | 4.21                             | 4.86  | 5.43  | 6.07  | 6.65  | 7.19  | 4.02                             | 4.64  | 5.19  | 5.81  | 6.36  | 6.87  |
| HF         | 6-1/2          | 5.98                             | 6.90  | 7.71  | 8.63  | 9.45  | 10.21 | 5.85                             | 6.76  | 7.55  | 8.45  | 9.25  | 9.99  | 5.59                             | 6.46  | 7.22  | 8.07  | 8.84  | 9.55  |
| HF         | 8              | 7.59                             | 8.76  | 9.80  | 10.95 | 12.00 | 12.96 | 7.43                             | 8.58  | 9.59  | 10.72 | 11.75 | 12.69 | 7.10                             | 8.20  | 9.17  | 10.25 | 11.23 | 12.13 |
| HF         | 12             | 11.24                            | 12.97 | 14.51 | 16.22 | 17.77 | 19.19 | 11.00                            | 12.70 | 14.20 | 15.88 | 17.40 | 18.79 | 10.52                            | 12.14 | 13.58 | 15.18 | 16.63 | 17.96 |
| HF         | 16             | 14.74                            | 17.02 | 19.03 | 21.27 | 23.30 | 25.17 | 14.43                            | 16.66 | 18.63 | 20.83 | 22.82 | 24.65 | 13.79                            | 15.93 | 17.81 | 19.91 | 21.81 | 23.56 |

Standard capacity is rated at 100F liquid inlet and 40°F evaporator temperature; with 100 psi pressure drop across the TXV.

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |      |      |      |      |      |
|------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|------|------|------|------|------|
|            |                | 0°F                              |       |       |       |       |       | -20°F                            |       |       |       |       |       | -40°F                            |      |      |      |      |      |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175   | 80                               | 100   | 125   | 150   | 175   | 200   | 80                               | 100  | 125  | 150  | 175  | 200  |
| BA/BN      | 1/2            | 0.28                             | 0.32  | 0.36  | 0.40  | 0.44  | 0.47  | 0.22                             | 0.25  | 0.28  | 0.31  | 0.33  | 0.35  | 0.15                             | 0.17 | 0.19 | 0.20 | 0.22 | 0.24 |
| BA/BN      | 3/4            | 0.53                             | 0.61  | 0.68  | 0.76  | 0.83  | 0.90  | 0.42                             | 0.48  | 0.53  | 0.58  | 0.63  | 0.67  | 0.28                             | 0.32 | 0.36 | 0.39 | 0.42 | 0.45 |
| BA/BN      | 1-1/4          | 0.82                             | 0.95  | 1.06  | 1.19  | 1.30  | 1.40  | 0.66                             | 0.74  | 0.83  | 0.91  | 0.98  | 1.05  | 0.44                             | 0.50 | 0.55 | 0.61 | 0.66 | 0.70 |
| BA/BN      | 1-3/4          | 1.10                             | 1.27  | 1.42  | 1.59  | 1.74  | 1.88  | 0.89                             | 0.99  | 1.11  | 1.21  | 1.31  | 1.40  | 0.59                             | 0.66 | 0.74 | 0.81 | 0.88 | 0.94 |
| BA/BN      | 2-1/4          | 1.39                             | 1.60  | 1.79  | 2.00  | 2.20  | 2.37  | 1.12                             | 1.25  | 1.40  | 1.53  | 1.65  | 1.77  | 0.75                             | 0.84 | 0.94 | 1.02 | 1.11 | 1.18 |
| BA/BN      | 2-3/4          | 1.68                             | 1.94  | 2.17  | 2.43  | 2.66  | 2.87  | 1.36                             | 1.52  | 1.69  | 1.86  | 2.00  | 2.14  | 0.91                             | 1.01 | 1.13 | 1.24 | 1.34 | 1.43 |
| BA/BN      | 3-1/2          | 2.18                             | 2.51  | 2.81  | 3.14  | 3.44  | 3.72  | 1.75                             | 1.96  | 2.19  | 2.40  | 2.59  | 2.77  | 1.17                             | 1.31 | 1.47 | 1.61 | 1.74 | 1.86 |
| BA/BN      | 4-1/2          | 2.76                             | 3.19  | 3.56  | 3.98  | 4.37  | 4.72  | 2.22                             | 2.49  | 2.78  | 3.04  | 3.29  | 3.52  | 1.49                             | 1.66 | 1.86 | 2.04 | 2.20 | 2.35 |
| BA/BN      | 5-3/4          | 3.43                             | 3.96  | 4.42  | 4.95  | 5.42  | 5.85  | 2.76                             | 3.09  | 3.45  | 3.78  | 4.08  | 4.36  | 1.85                             | 2.07 | 2.31 | 2.53 | 2.73 | 2.92 |
| HF         | 1/4            | 0.16                             | 0.18  | 0.20  | 0.22  | 0.25  | 0.27  | 0.13                             | 0.14  | 0.16  | 0.17  | 0.19  | 0.20  | 0.08                             | 0.09 | 0.10 | 0.11 | 0.12 | 0.13 |
| HF         | 1/2            | 0.29                             | 0.34  | 0.38  | 0.42  | 0.47  | 0.50  | 0.24                             | 0.27  | 0.30  | 0.32  | 0.35  | 0.37  | 0.16                             | 0.18 | 0.20 | 0.22 | 0.23 | 0.25 |
| HF         | 3/4            | 0.53                             | 0.61  | 0.68  | 0.76  | 0.83  | 0.90  | 0.42                             | 0.48  | 0.53  | 0.58  | 0.63  | 0.67  | 0.28                             | 0.32 | 0.36 | 0.39 | 0.42 | 0.45 |
| HF         | 1              | 0.81                             | 0.93  | 1.04  | 1.16  | 1.27  | 1.38  | 0.65                             | 0.73  | 0.81  | 0.89  | 0.96  | 1.03  | 0.43                             | 0.49 | 0.54 | 0.59 | 0.64 | 0.69 |
| HF         | 1-1/2          | 1.09                             | 1.26  | 1.41  | 1.57  | 1.72  | 1.86  | 0.88                             | 0.98  | 1.10  | 1.20  | 1.30  | 1.39  | 0.59                             | 0.66 | 0.73 | 0.80 | 0.87 | 0.93 |
| HF         | 2              | 1.39                             | 1.61  | 1.80  | 2.01  | 2.20  | 2.38  | 1.12                             | 1.26  | 1.40  | 1.54  | 1.66  | 1.78  | 0.75                             | 0.84 | 0.94 | 1.03 | 1.11 | 1.19 |
| HF         | 2-1/2          | 1.84                             | 2.12  | 2.37  | 2.65  | 2.91  | 3.14  | 1.48                             | 1.66  | 1.85  | 2.03  | 2.19  | 2.34  | 0.99                             | 1.11 | 1.24 | 1.36 | 1.47 | 1.57 |
| HF         | 4-1/2          | 3.27                             | 3.78  | 4.22  | 4.72  | 5.17  | 5.59  | 2.63                             | 2.95  | 3.29  | 3.61  | 3.90  | 4.17  | 1.76                             | 1.97 | 2.20 | 2.41 | 2.61 | 2.79 |
| HF         | 6-1/2          | 4.55                             | 5.25  | 5.87  | 6.57  | 7.19  | 7.77  | 3.66                             | 4.10  | 4.58  | 5.02  | 5.42  | 5.79  | 2.45                             | 2.74 | 3.07 | 3.36 | 3.63 | 3.88 |
| HF         | 8              | 5.78                             | 6.67  | 7.46  | 8.34  | 9.13  | 9.87  | 4.65                             | 5.20  | 5.82  | 6.37  | 6.88  | 7.36  | 3.11                             | 3.48 | 3.89 | 4.26 | 4.61 | 4.92 |
| HF         | 12             | 8.55                             | 9.88  | 11.04 | 12.35 | 13.53 | 14.61 | 6.89                             | 7.70  | 8.61  | 9.43  | 10.19 | 10.89 | 4.61                             | 5.16 | 5.76 | 6.31 | 6.82 | 7.29 |
| HF         | 16             | 11.22                            | 12.96 | 14.49 | 16.20 | 17.74 | 19.16 | 9.04                             | 10.10 | 11.29 | 12.37 | 13.36 | 14.29 | 6.05                             | 6.76 | 7.56 | 8.28 | 8.95 | 9.56 |

REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|       | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|       | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-290 | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.22 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## R-404A/R-507 BALANCED PORTED VALVES (TONS) B / HF / TFE / TRAE / T SERIES

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|            |                | 0°F                              |       |       |       |       |       | -20°F                            |       |       |       |       |       | -40°F                            |       |       |       |       |       |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175   | 80                               | 100   | 125   | 150   | 175   | 200   | 80                               | 100   | 125   | 150   | 175   | 200   |
| BA/BN      | 1/2            | 0.29                             | 0.33  | 0.37  | 0.42  | 0.46  | 0.50  | 0.22                             | 0.25  | 0.28  | 0.30  | 0.33  | 0.35  | 0.13                             | 0.15  | 0.16  | 0.18  | 0.19  | 0.21  |
| BA/BN      | 3/4            | 0.55                             | 0.64  | 0.71  | 0.79  | 0.87  | 0.94  | 0.41                             | 0.46  | 0.51  | 0.56  | 0.61  | 0.65  | 0.25                             | 0.28  | 0.31  | 0.34  | 0.37  | 0.40  |
| BA/BN      | 1              | 0.86                             | 0.99  | 1.11  | 1.24  | 1.36  | 1.47  | 0.64                             | 0.72  | 0.80  | 0.88  | 0.95  | 1.01  | 0.39                             | 0.44  | 0.49  | 0.53  | 0.58  | 0.62  |
| BA/BN      | 1-1/2          | 1.14                             | 1.32  | 1.47  | 1.65  | 1.80  | 1.95  | 0.85                             | 0.95  | 1.06  | 1.16  | 1.26  | 1.34  | 0.52                             | 0.58  | 0.65  | 0.71  | 0.77  | 0.82  |
| BA/BN      | 2              | 1.44                             | 1.66  | 1.86  | 2.08  | 2.28  | 2.46  | 1.08                             | 1.21  | 1.35  | 1.48  | 1.60  | 1.71  | 0.66                             | 0.74  | 0.83  | 0.90  | 0.98  | 1.04  |
| BA/BN      | 2-1/4          | 1.75                             | 2.02  | 2.26  | 2.53  | 2.77  | 2.99  | 1.31                             | 1.46  | 1.64  | 1.79  | 1.94  | 2.07  | 0.80                             | 0.89  | 1.00  | 1.10  | 1.18  | 1.26  |
| BA/BN      | 3              | 2.27                             | 2.62  | 2.93  | 3.28  | 3.59  | 3.88  | 1.69                             | 1.89  | 2.11  | 2.31  | 2.50  | 2.67  | 1.04                             | 1.16  | 1.30  | 1.42  | 1.54  | 1.64  |
| BA/BN      | 3-1/2          | 2.87                             | 3.31  | 3.71  | 4.14  | 4.54  | 4.90  | 2.14                             | 2.39  | 2.68  | 2.93  | 3.17  | 3.38  | 1.31                             | 1.46  | 1.64  | 1.79  | 1.94  | 2.07  |
| BA/BN      | 4-1/4          | 3.57                             | 4.12  | 4.61  | 5.15  | 5.64  | 6.10  | 2.66                             | 2.97  | 3.33  | 3.64  | 3.93  | 4.21  | 1.63                             | 1.82  | 2.04  | 2.23  | 2.41  | 2.58  |
| HF         | 1/4            | 0.16                             | 0.18  | 0.21  | 0.23  | 0.25  | 0.27  | 0.12                             | 0.13  | 0.15  | 0.16  | 0.18  | 0.19  | 0.07                             | 0.08  | 0.09  | 0.10  | 0.10  | 0.11  |
| HF         | 1/2            | 0.31                             | 0.36  | 0.40  | 0.45  | 0.49  | 0.53  | 0.23                             | 0.26  | 0.29  | 0.31  | 0.34  | 0.36  | 0.14                             | 0.16  | 0.18  | 0.19  | 0.21  | 0.22  |
| HF         | 3/4            | 0.55                             | 0.64  | 0.71  | 0.79  | 0.87  | 0.94  | 0.41                             | 0.46  | 0.51  | 0.56  | 0.61  | 0.65  | 0.25                             | 0.28  | 0.31  | 0.34  | 0.37  | 0.40  |
| HF         | 1              | 0.84                             | 0.97  | 1.08  | 1.21  | 1.33  | 1.43  | 0.63                             | 0.70  | 0.79  | 0.86  | 0.93  | 1.00  | 0.38                             | 0.42  | 0.48  | 0.52  | 0.56  | 0.60  |
| HF         | 1-1/2          | 1.13                             | 1.30  | 1.46  | 1.63  | 1.79  | 1.93  | 0.84                             | 0.94  | 1.05  | 1.15  | 1.24  | 1.33  | 0.52                             | 0.58  | 0.65  | 0.71  | 0.77  | 0.82  |
| HF         | 1-3/4          | 1.44                             | 1.66  | 1.86  | 2.08  | 2.28  | 2.46  | 1.08                             | 1.21  | 1.35  | 1.48  | 1.60  | 1.71  | 0.66                             | 0.74  | 0.83  | 0.90  | 0.98  | 1.04  |
| HF         | 2-1/2          | 1.91                             | 2.21  | 2.47  | 2.76  | 3.02  | 3.26  | 1.42                             | 1.59  | 1.78  | 1.94  | 2.10  | 2.25  | 0.87                             | 0.97  | 1.09  | 1.19  | 1.29  | 1.38  |
| HF         | 4              | 3.39                             | 3.91  | 4.38  | 4.89  | 5.36  | 5.79  | 2.53                             | 2.83  | 3.16  | 3.46  | 3.74  | 4.00  | 1.55                             | 1.73  | 1.94  | 2.12  | 2.29  | 2.45  |
| HF         | 6              | 4.72                             | 5.45  | 6.09  | 6.81  | 7.46  | 8.06  | 3.52                             | 3.94  | 4.40  | 4.82  | 5.21  | 5.57  | 2.16                             | 2.41  | 2.70  | 2.96  | 3.19  | 3.42  |
| HF         | 7-1/2          | 5.98                             | 6.91  | 7.72  | 8.63  | 9.46  | 10.21 | 4.46                             | 4.99  | 5.58  | 6.11  | 6.60  | 7.05  | 2.74                             | 3.06  | 3.43  | 3.75  | 4.05  | 4.33  |
| HF         | 11             | 8.87                             | 10.24 | 11.45 | 12.80 | 14.02 | 15.15 | 6.62                             | 7.40  | 8.28  | 9.06  | 9.79  | 10.47 | 4.06                             | 4.54  | 5.08  | 5.56  | 6.00  | 6.42  |
| HF         | 14             | 11.67                            | 13.48 | 15.07 | 16.84 | 18.45 | 19.93 | 8.71                             | 9.74  | 10.89 | 11.93 | 12.88 | 13.77 | 5.34                             | 5.97  | 6.68  | 7.31  | 7.90  | 8.44  |
| TFE        | 6              | 4.64                             | 5.36  | 5.99  | 6.70  | 7.34  | 7.92  | 3.46                             | 3.87  | 4.33  | 4.74  | 5.12  | 5.47  | 2.12                             | 2.37  | 2.65  | 2.90  | 3.14  | 3.35  |
| TFE        | 8              | 6.35                             | 7.33  | 8.20  | 9.17  | 10.04 | 10.84 | 4.74                             | 5.30  | 5.93  | 6.49  | 7.01  | 7.49  | 2.91                             | 3.25  | 3.64  | 3.98  | 4.30  | 4.60  |
| TFE        | 10             | 7.88                             | 9.10  | 10.17 | 11.37 | 12.46 | 13.46 | 5.88                             | 6.57  | 7.35  | 8.05  | 8.70  | 9.30  | 3.61                             | 4.04  | 4.51  | 4.94  | 5.34  | 5.71  |
| TFE        | 15             | 12.03                            | 13.89 | 15.53 | 17.36 | 19.02 | 20.55 | 8.97                             | 10.03 | 11.21 | 12.28 | 13.27 | 14.18 | 5.51                             | 6.16  | 6.89  | 7.54  | 8.15  | 8.71  |
| TRAE+      | 9              | 6.82                             | 7.88  | 8.80  | 9.84  | 10.78 | 11.65 | 5.09                             | 5.69  | 6.36  | 6.97  | 7.53  | 8.05  | 3.12                             | 3.49  | 3.90  | 4.27  | 4.61  | 4.93  |
| TRAE+      | 13             | 9.94                             | 11.48 | 12.83 | 14.35 | 15.72 | 16.98 | 7.42                             | 8.30  | 9.28  | 10.16 | 10.97 | 11.73 | 4.55                             | 5.09  | 5.69  | 6.23  | 6.73  | 7.19  |
| TRAE+      | 14             | 11.1                             | 12.82 | 14.33 | 16.02 | 17.55 | 18.96 | 8.28                             | 9.26  | 10.35 | 11.34 | 12.25 | 13.09 | 5.08                             | 5.68  | 6.35  | 6.96  | 7.51  | 8.03  |
| TRAE+      | 22             | 16.82                            | 19.42 | 21.71 | 24.28 | 26.59 | 28.73 | 12.55                            | 14.03 | 15.69 | 17.18 | 18.56 | 19.84 | 7.70                             | 8.61  | 9.63  | 10.54 | 11.39 | 12.17 |
| TRAE+      | 30             | 23.12                            | 26.70 | 29.85 | 33.37 | 36.56 | 39.48 | 17.25                            | 19.29 | 21.56 | 23.62 | 25.51 | 27.27 | 10.59                            | 11.84 | 13.24 | 14.50 | 15.66 | 16.74 |
| TRAE       | 40             | 31.21                            | 36.04 | 40.29 | 45.05 | 49.35 | 53.30 | 23.29                            | 26.04 | 29.11 | 31.89 | 34.45 | 36.82 | 14.29                            | 15.98 | 17.86 | 19.57 | 21.14 | 22.59 |
| TRAE       | 45             | 34.04                            | 39.31 | 43.95 | 49.13 | 53.82 | 58.13 | 25.40                            | 28.40 | 31.75 | 34.78 | 37.57 | 40.16 | 15.59                            | 17.43 | 19.49 | 21.35 | 23.06 | 24.65 |
| TRAE       | 50             | 40.52                            | 46.79 | 52.31 | 58.49 | 64.07 | 69.20 | 30.23                            | 33.80 | 37.79 | 41.39 | 44.71 | 47.80 | 18.55                            | 20.74 | 23.19 | 25.40 | 27.44 | 29.33 |
| TJR        | 11             | 8.50                             | 9.81  | 10.97 | 12.27 | 13.44 | 14.52 | 6.34                             | 7.09  | 7.93  | 8.68  | 9.38  | 10.02 | 3.89                             | 4.35  | 4.86  | 5.33  | 5.75  | 6.15  |
| TJR        | 13             | 10.17                            | 11.74 | 13.13 | 14.68 | 16.08 | 17.37 | 7.59                             | 8.49  | 9.49  | 10.39 | 11.23 | 12.00 | 4.66                             | 5.21  | 5.83  | 6.38  | 6.89  | 7.37  |
| TER        | 16             | 12.72                            | 14.69 | 16.42 | 18.36 | 20.11 | 21.72 | 9.49                             | 10.61 | 11.86 | 12.99 | 14.04 | 15.01 | 5.82                             | 6.51  | 7.28  | 7.97  | 8.61  | 9.20  |
| TER        | 19             | 15.03                            | 17.36 | 19.40 | 21.69 | 23.76 | 25.67 | 11.21                            | 12.53 | 14.01 | 15.35 | 16.58 | 17.72 | 6.88                             | 7.69  | 8.60  | 9.42  | 10.18 | 10.88 |
| TER        | 25             | 20.23                            | 23.36 | 26.12 | 29.20 | 31.99 | 34.55 | 15.09                            | 16.87 | 18.86 | 20.66 | 22.32 | 23.86 | 9.26                             | 10.35 | 11.58 | 12.68 | 13.70 | 14.64 |
| TER        | 31             | 26.01                            | 30.03 | 33.58 | 37.54 | 41.13 | 44.42 | 19.41                            | 21.70 | 24.26 | 26.58 | 28.71 | 30.69 | 11.91                            | 13.32 | 14.89 | 16.31 | 17.62 | 18.83 |
| TIR        | 45             | 31.79                            | 36.71 | 41.04 | 45.88 | 50.26 | 54.29 | 23.72                            | 26.52 | 29.65 | 32.48 | 35.08 | 37.50 | 14.56                            | 16.28 | 18.20 | 19.94 | 21.53 | 23.02 |
| THR        | 55             | 40.46                            | 46.72 | 52.23 | 58.40 | 63.97 | 69.10 | 30.19                            | 33.75 | 37.74 | 41.34 | 44.65 | 47.73 | 18.53                            | 20.72 | 23.16 | 25.37 | 27.41 | 29.30 |
| THR        | 68             | 49.13                            | 56.73 | 63.43 | 70.91 | 77.68 | 83.91 | 36.66                            | 40.99 | 45.83 | 50.20 | 54.22 | 57.96 | 22.50                            | 25.16 | 28.13 | 30.81 | 33.28 | 35.58 |
| TMR        | 68             | 57.80                            | 66.74 | 74.62 | 83.43 | 91.39 | 98.71 | 43.12                            | 48.21 | 53.90 | 59.04 | 63.78 | 68.18 | 26.47                            | 29.59 | 33.09 | 36.25 | 39.15 | 41.85 |

Note: Standard capacity is rated at 100F liquid inlet and 40F evaporator temperature; with 100 Psi pressure drop across the TXV per ARI 750-2001.

## R-404A/R-507 BALANCED PORTED VALVES (TONS) B / HF / TFE / TRAE / T SERIES (CONTINUED)

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|            |                | 0°F                              |       |       |       |       |       | -20°F                            |       |       |       |       |       | -40°F                            |       |       |       |       |       |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175   | 80                               | 100   | 125   | 150   | 175   | 200   | 80                               | 100   | 125   | 150   | 175   | 200   |
| BA/BN      | 1/4            | 0.24                             | 0.28  | 0.31  | 0.35  | 0.38  | 0.41  | 0.19                             | 0.21  | 0.24  | 0.26  | 0.28  | 0.30  | 0.12                             | 0.13  | 0.15  | 0.16  | 0.18  | 0.19  |
| BA/BN      | 1/2            | 0.45                             | 0.52  | 0.58  | 0.65  | 0.71  | 0.77  | 0.36                             | 0.40  | 0.45  | 0.49  | 0.53  | 0.57  | 0.23                             | 0.26  | 0.29  | 0.31  | 0.34  | 0.36  |
| BA/BN      | 1              | 0.71                             | 0.82  | 0.92  | 1.02  | 1.12  | 1.21  | 0.55                             | 0.61  | 0.69  | 0.75  | 0.81  | 0.87  | 0.36                             | 0.40  | 0.45  | 0.49  | 0.53  | 0.57  |
| BA/BN      | 1-1/4          | 0.94                             | 1.09  | 1.21  | 1.36  | 1.49  | 1.61  | 0.74                             | 0.83  | 0.93  | 1.01  | 1.09  | 1.17  | 0.48                             | 0.54  | 0.60  | 0.66  | 0.71  | 0.76  |
| BA/BN      | 1-1/2          | 1.19                             | 1.37  | 1.54  | 1.72  | 1.88  | 2.03  | 0.93                             | 1.04  | 1.16  | 1.27  | 1.38  | 1.47  | 0.61                             | 0.68  | 0.76  | 0.84  | 0.90  | 0.96  |
| BA/BN      | 2              | 1.44                             | 1.66  | 1.86  | 2.08  | 2.28  | 2.46  | 1.13                             | 1.26  | 1.41  | 1.55  | 1.67  | 1.79  | 0.74                             | 0.83  | 0.93  | 1.01  | 1.09  | 1.17  |
| BA/BN      | 2-1/2          | 1.87                             | 2.16  | 2.41  | 2.70  | 2.96  | 3.19  | 1.47                             | 1.64  | 1.84  | 2.01  | 2.17  | 2.32  | 0.96                             | 1.07  | 1.20  | 1.31  | 1.42  | 1.52  |
| BA/BN      | 3              | 2.36                             | 2.73  | 3.05  | 3.41  | 3.73  | 4.03  | 1.85                             | 2.07  | 2.31  | 2.53  | 2.74  | 2.93  | 1.21                             | 1.35  | 1.51  | 1.66  | 1.79  | 1.91  |
| BA/BN      | 4              | 2.94                             | 3.39  | 3.80  | 4.24  | 4.65  | 5.02  | 2.31                             | 2.58  | 2.89  | 3.16  | 3.42  | 3.65  | 1.51                             | 1.69  | 1.89  | 2.07  | 2.23  | 2.39  |
| HF         | 1/8            | 0.13                             | 0.15  | 0.17  | 0.19  | 0.21  | 0.22  | 0.10                             | 0.11  | 0.13  | 0.14  | 0.15  | 0.16  | 0.07                             | 0.08  | 0.09  | 0.10  | 0.10  | 0.11  |
| HF         | 1/4            | 0.25                             | 0.29  | 0.32  | 0.36  | 0.40  | 0.43  | 0.20                             | 0.22  | 0.25  | 0.27  | 0.30  | 0.32  | 0.13                             | 0.15  | 0.16  | 0.18  | 0.19  | 0.21  |
| HF         | 1/2            | 0.45                             | 0.52  | 0.58  | 0.65  | 0.71  | 0.77  | 0.36                             | 0.40  | 0.45  | 0.49  | 0.53  | 0.57  | 0.23                             | 0.26  | 0.29  | 0.31  | 0.34  | 0.36  |
| HF         | 1              | 0.69                             | 0.80  | 0.89  | 1.00  | 1.09  | 1.18  | 0.54                             | 0.60  | 0.68  | 0.74  | 0.80  | 0.85  | 0.35                             | 0.39  | 0.44  | 0.48  | 0.52  | 0.55  |
| HF         | 1-1/4          | 0.93                             | 1.07  | 1.20  | 1.34  | 1.47  | 1.59  | 0.73                             | 0.82  | 0.91  | 1.00  | 1.08  | 1.15  | 0.48                             | 0.54  | 0.60  | 0.66  | 0.71  | 0.76  |
| HF         | 1-1/2          | 1.19                             | 1.37  | 1.54  | 1.72  | 1.88  | 2.03  | 0.93                             | 1.04  | 1.16  | 1.27  | 1.38  | 1.47  | 0.61                             | 0.68  | 0.76  | 0.84  | 0.90  | 0.96  |
| HF         | 2              | 1.57                             | 1.81  | 2.03  | 2.27  | 2.48  | 2.68  | 1.23                             | 1.38  | 1.54  | 1.68  | 1.82  | 1.94  | 0.81                             | 0.91  | 1.01  | 1.11  | 1.20  | 1.28  |
| HF         | 3-1/2          | 2.80                             | 3.23  | 3.61  | 4.04  | 4.43  | 4.78  | 2.19                             | 2.45  | 2.74  | 3.00  | 3.24  | 3.46  | 1.43                             | 1.60  | 1.79  | 1.96  | 2.11  | 2.26  |
| HF         | 5              | 3.89                             | 4.49  | 5.02  | 5.61  | 6.15  | 6.64  | 3.05                             | 3.41  | 3.81  | 4.18  | 4.51  | 4.82  | 2.00                             | 2.24  | 2.50  | 2.74  | 2.96  | 3.16  |
| HF         | 7              | 4.93                             | 5.69  | 6.36  | 7.12  | 7.80  | 8.42  | 3.87                             | 4.33  | 4.84  | 5.30  | 5.72  | 6.12  | 2.53                             | 2.83  | 3.16  | 3.46  | 3.74  | 4.00  |
| HF         | 10             | 7.31                             | 8.44  | 9.44  | 10.55 | 11.56 | 12.48 | 5.73                             | 6.41  | 7.16  | 7.85  | 8.47  | 9.06  | 3.75                             | 4.19  | 4.69  | 5.13  | 5.55  | 5.93  |
| HF         | 13             | 9.62                             | 11.11 | 12.42 | 13.89 | 15.21 | 16.43 | 7.55                             | 8.44  | 9.44  | 10.34 | 11.17 | 11.94 | 4.93                             | 5.51  | 6.16  | 6.75  | 7.29  | 7.80  |
| TFE        | 5              | 3.82                             | 4.41  | 4.93  | 5.51  | 6.04  | 6.52  | 3.00                             | 3.35  | 3.75  | 4.11  | 4.44  | 4.74  | 1.96                             | 2.19  | 2.45  | 2.68  | 2.90  | 3.10  |
| TFE        | 7              | 5.23                             | 6.04  | 6.75  | 7.55  | 8.27  | 8.93  | 4.10                             | 4.58  | 5.13  | 5.61  | 6.06  | 6.48  | 2.68                             | 3.00  | 3.35  | 3.67  | 3.96  | 4.24  |
| TFE        | 9              | 6.50                             | 7.51  | 8.39  | 9.38  | 10.28 | 11.10 | 5.10                             | 5.70  | 6.38  | 6.98  | 7.54  | 8.06  | 3.33                             | 3.72  | 4.16  | 4.56  | 4.93  | 5.27  |
| TFE        | 14             | 9.92                             | 11.45 | 12.81 | 14.32 | 15.68 | 16.94 | 7.78                             | 8.70  | 9.73  | 10.65 | 11.51 | 12.30 | 5.08                             | 5.68  | 6.35  | 6.96  | 7.51  | 8.03  |
| TRAE+      | 8              | 5.62                             | 6.49  | 7.26  | 8.11  | 8.89  | 9.60  | 4.41                             | 4.93  | 5.51  | 6.04  | 6.52  | 6.97  | 2.88                             | 3.22  | 3.60  | 3.94  | 4.26  | 4.55  |
| TRAE+      | 12             | 8.20                             | 9.47  | 10.59 | 11.84 | 12.97 | 14.00 | 6.43                             | 7.19  | 8.04  | 8.80  | 9.51  | 10.17 | 4.20                             | 4.70  | 5.25  | 5.75  | 6.21  | 6.64  |
| TRAE+      | 14             | 9.15                             | 10.57 | 11.81 | 13.21 | 14.47 | 15.63 | 7.18                             | 8.03  | 8.98  | 9.83  | 10.62 | 11.35 | 4.69                             | 5.24  | 5.86  | 6.42  | 6.94  | 7.42  |
| TRAE+      | 20             | 13.87                            | 16.02 | 17.91 | 20.02 | 21.93 | 23.69 | 10.88                            | 12.16 | 13.60 | 14.90 | 16.09 | 17.20 | 7.11                             | 7.95  | 8.89  | 9.74  | 10.52 | 11.24 |
| TRAE+      | 30             | 19.06                            | 22.01 | 24.61 | 27.51 | 30.14 | 32.55 | 14.95                            | 16.71 | 18.69 | 20.47 | 22.11 | 23.64 | 9.77                             | 10.92 | 12.21 | 13.38 | 14.45 | 15.45 |
| TRAE       | 35             | 25.73                            | 29.71 | 33.22 | 37.14 | 40.68 | 43.94 | 20.19                            | 22.57 | 25.24 | 27.65 | 29.86 | 31.92 | 13.19                            | 14.75 | 16.49 | 18.06 | 19.51 | 20.86 |
| TRAE       | 40             | 28.07                            | 32.41 | 36.24 | 40.52 | 44.38 | 47.94 | 22.02                            | 24.62 | 27.53 | 30.15 | 32.57 | 34.82 | 14.39                            | 16.09 | 17.99 | 19.70 | 21.28 | 22.75 |
| TRAE       | 50             | 33.41                            | 38.58 | 43.13 | 48.22 | 52.83 | 57.06 | 26.20                            | 29.29 | 32.75 | 35.88 | 38.75 | 41.43 | 17.13                            | 19.15 | 21.41 | 23.46 | 25.34 | 27.08 |
| TJR        | 9              | 7.01                             | 8.09  | 9.05  | 10.12 | 11.08 | 11.97 | 5.50                             | 6.15  | 6.88  | 7.53  | 8.13  | 8.70  | 3.59                             | 4.01  | 4.49  | 4.92  | 5.31  | 5.68  |
| TJR        | 12             | 8.39                             | 9.69  | 10.83 | 12.11 | 13.27 | 14.33 | 6.58                             | 7.36  | 8.23  | 9.01  | 9.73  | 10.40 | 4.30                             | 4.81  | 5.38  | 5.89  | 6.36  | 6.80  |
| TER        | 14             | 10.48                            | 12.10 | 13.53 | 15.13 | 16.57 | 17.90 | 8.22                             | 9.19  | 10.28 | 11.26 | 12.16 | 13.00 | 5.30                             | 5.93  | 6.63  | 7.26  | 7.84  | 8.38  |
| TER        | 16             | 12.39                            | 14.31 | 16.00 | 17.88 | 19.59 | 21.16 | 9.72                             | 10.87 | 12.15 | 13.31 | 14.38 | 15.37 | 6.35                             | 7.10  | 7.94  | 8.70  | 9.39  | 10.04 |
| TER        | 21             | 16.68                            | 19.26 | 21.53 | 24.08 | 26.37 | 28.49 | 13.08                            | 14.62 | 16.35 | 17.91 | 19.35 | 20.68 | 8.55                             | 9.56  | 10.69 | 11.71 | 12.65 | 13.52 |
| TER        | 27             | 21.45                            | 24.77 | 27.69 | 30.96 | 33.92 | 36.63 | 16.82                            | 18.81 | 21.03 | 23.03 | 24.88 | 26.59 | 11.00                            | 12.30 | 13.75 | 15.06 | 16.27 | 17.39 |
| TIR        | 37             | 26.21                            | 30.26 | 33.84 | 37.83 | 41.44 | 44.76 | 20.56                            | 22.99 | 25.70 | 28.15 | 30.41 | 32.51 | 13.44                            | 15.03 | 16.80 | 18.40 | 19.88 | 21.25 |
| THR        | 48             | 33.36                            | 38.52 | 43.07 | 48.15 | 52.75 | 56.97 | 26.17                            | 29.26 | 32.71 | 35.83 | 38.71 | 41.38 | 17.10                            | 19.12 | 21.38 | 23.42 | 25.29 | 27.04 |
| THR        | 60             | 40.51                            | 46.78 | 52.30 | 58.47 | 64.05 | 69.18 | 31.77                            | 35.52 | 39.71 | 43.50 | 46.99 | 50.23 | 20.77                            | 23.22 | 25.96 | 28.44 | 30.72 | 32.84 |
| TMR        | 60             | 47.66                            | 55.03 | 61.53 | 68.79 | 75.36 | 81.39 | 37.38                            | 41.79 | 46.73 | 51.18 | 55.29 | 59.10 | 24.43                            | 27.31 | 30.54 | 33.45 | 36.13 | 38.63 |

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## R-407A BALANCE PORTED VALVES (TONS) B SERIES AND H SERIES

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|            |                | 50°F                             |       |       |       |       |       | 40°F                             |       |       |       |       |       | 20°F                             |       |       |       |       |       |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   |
| BA/BN      | 1/2            | 0.39                             | 0.45  | 0.51  | 0.57  | 0.62  | 0.67  | 0.39                             | 0.45  | 0.50  | 0.56  | 0.61  | 0.66  | 0.37                             | 0.43  | 0.48  | 0.54  | 0.59  | 0.63  |
| BA/BN      | 1              | 0.75                             | 0.86  | 0.96  | 1.08  | 1.18  | 1.27  | 0.73                             | 0.85  | 0.95  | 1.06  | 1.16  | 1.25  | 0.71                             | 0.81  | 0.91  | 1.02  | 1.12  | 1.21  |
| BA/BN      | 1-1/2          | 1.16                             | 1.34  | 1.50  | 1.68  | 1.84  | 1.98  | 1.14                             | 1.32  | 1.47  | 1.65  | 1.81  | 1.95  | 1.10                             | 1.27  | 1.42  | 1.59  | 1.74  | 1.88  |
| BA/BN      | 2              | 1.55                             | 1.79  | 2.01  | 2.24  | 2.46  | 2.65  | 1.53                             | 1.76  | 1.97  | 2.21  | 2.42  | 2.61  | 1.47                             | 1.70  | 1.90  | 2.12  | 2.33  | 2.51  |
| BA/BN      | 2-1/2          | 1.96                             | 2.27  | 2.53  | 2.83  | 3.10  | 3.35  | 1.93                             | 2.23  | 2.49  | 2.78  | 3.05  | 3.29  | 1.86                             | 2.14  | 2.40  | 2.68  | 2.94  | 3.17  |
| BA/BN      | 3              | 2.38                             | 2.75  | 3.07  | 3.43  | 3.76  | 4.06  | 2.34                             | 2.70  | 3.02  | 3.37  | 3.70  | 3.99  | 2.25                             | 2.60  | 2.91  | 3.25  | 3.56  | 3.84  |
| BA/BN      | 4              | 3.08                             | 3.55  | 3.97  | 4.44  | 4.87  | 5.26  | 3.02                             | 3.49  | 3.91  | 4.37  | 4.78  | 5.17  | 2.91                             | 3.36  | 3.76  | 4.20  | 4.60  | 4.97  |
| BA/BN      | 5              | 3.90                             | 4.51  | 5.04  | 5.63  | 6.17  | 6.66  | 3.84                             | 4.43  | 4.95  | 5.54  | 6.06  | 6.55  | 3.69                             | 4.26  | 4.77  | 5.33  | 5.84  | 6.30  |
| BA/BN      | 6              | 4.84                             | 5.59  | 6.25  | 6.99  | 7.66  | 8.27  | 4.76                             | 5.50  | 6.15  | 6.87  | 7.53  | 8.13  | 4.58                             | 5.29  | 5.92  | 6.61  | 7.25  | 7.83  |
| HF         | 1/4            | 0.22                             | 0.25  | 0.28  | 0.32  | 0.35  | 0.38  | 0.22                             | 0.25  | 0.28  | 0.31  | 0.34  | 0.37  | 0.21                             | 0.24  | 0.27  | 0.30  | 0.33  | 0.36  |
| HF         | 1/2            | 0.42                             | 0.48  | 0.54  | 0.60  | 0.66  | 0.71  | 0.41                             | 0.47  | 0.53  | 0.59  | 0.65  | 0.70  | 0.39                             | 0.45  | 0.51  | 0.57  | 0.62  | 0.67  |
| HF         | 1              | 0.75                             | 0.86  | 0.96  | 1.08  | 1.18  | 1.27  | 0.73                             | 0.85  | 0.95  | 1.06  | 1.16  | 1.25  | 0.71                             | 0.81  | 0.91  | 1.02  | 1.12  | 1.21  |
| HF         | 1-1/2          | 1.14                             | 1.31  | 1.47  | 1.64  | 1.80  | 1.94  | 1.12                             | 1.29  | 1.44  | 1.62  | 1.77  | 1.91  | 1.08                             | 1.24  | 1.39  | 1.55  | 1.70  | 1.84  |
| HF         | 2              | 1.54                             | 1.78  | 1.99  | 2.22  | 2.43  | 2.63  | 1.51                             | 1.75  | 1.95  | 2.18  | 2.39  | 2.58  | 1.46                             | 1.68  | 1.88  | 2.10  | 2.30  | 2.49  |
| HF         | 2-1/2          | 1.97                             | 2.28  | 2.54  | 2.84  | 3.12  | 3.37  | 1.94                             | 2.24  | 2.50  | 2.80  | 3.06  | 3.31  | 1.86                             | 2.15  | 2.41  | 2.69  | 2.95  | 3.18  |
| HF         | 3              | 2.60                             | 3.00  | 3.35  | 3.75  | 4.11  | 4.44  | 2.55                             | 2.95  | 3.30  | 3.69  | 4.04  | 4.36  | 2.46                             | 2.84  | 3.17  | 3.55  | 3.89  | 4.20  |
| HF         | 6              | 4.62                             | 5.34  | 5.97  | 6.67  | 7.31  | 7.90  | 4.55                             | 5.25  | 5.87  | 6.56  | 7.19  | 7.76  | 4.37                             | 5.05  | 5.65  | 6.31  | 6.92  | 7.47  |
| HF         | 8              | 6.43                             | 7.42  | 8.30  | 9.28  | 10.17 | 10.98 | 6.32                             | 7.30  | 8.16  | 9.12  | 9.99  | 10.79 | 6.08                             | 7.02  | 7.85  | 8.78  | 9.62  | 10.39 |
| HF         | 10             | 8.16                             | 9.43  | 10.54 | 11.78 | 12.91 | 13.94 | 8.03                             | 9.27  | 10.36 | 11.58 | 12.69 | 13.71 | 7.72                             | 8.92  | 9.97  | 11.15 | 12.21 | 13.19 |
| HF         | 15             | 12.09                            | 13.96 | 15.61 | 17.45 | 19.12 | 20.65 | 11.88                            | 13.72 | 15.34 | 17.15 | 18.79 | 20.30 | 11.44                            | 13.21 | 14.77 | 16.51 | 18.09 | 19.54 |
| HF         | 20             | 15.86                            | 18.31 | 20.47 | 22.89 | 25.07 | 27.08 | 15.59                            | 18.00 | 20.12 | 22.50 | 24.65 | 26.62 | 15.00                            | 17.32 | 19.37 | 21.66 | 23.72 | 25.62 |

Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 100 psi pressure drop across the TXV.

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |      |      |      |      |       |
|------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|------|------|------|------|-------|
|            |                | 0°F                              |       |       |       |       |       | -20°F                            |       |       |       |       |       | -40°F                            |      |      |      |      |       |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |       |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175   | 80                               | 100   | 125   | 150   | 175   | 200   | 80                               | 100  | 125  | 150  | 175  | 200   |
| BA/BN      | 1/2            | 0.34                             | 0.39  | 0.44  | 0.49  | 0.54  | 0.58  | 0.26                             | 0.29  | 0.33  | 0.36  | 0.39  | 0.41  | 0.17                             | 0.19 | 0.21 | 0.23 | 0.25 | 0.27  |
| BA/BN      | 1              | 0.65                             | 0.74  | 0.83  | 0.93  | 1.02  | 1.10  | 0.50                             | 0.55  | 0.62  | 0.68  | 0.73  | 0.78  | 0.32                             | 0.36 | 0.40 | 0.44 | 0.47 | 0.51  |
| BA/BN      | 1-1/2          | 1.01                             | 1.16  | 1.30  | 1.45  | 1.59  | 1.72  | 0.77                             | 0.86  | 0.96  | 1.06  | 1.14  | 1.22  | 0.50                             | 0.56 | 0.63 | 0.68 | 0.74 | 0.79  |
| BA/BN      | 2              | 1.34                             | 1.55  | 1.74  | 1.94  | 2.13  | 2.30  | 1.03                             | 1.15  | 1.29  | 1.41  | 1.53  | 1.63  | 0.67                             | 0.75 | 0.84 | 0.92 | 0.99 | 1.06  |
| BA/BN      | 2-1/2          | 1.70                             | 1.96  | 2.19  | 2.45  | 2.68  | 2.90  | 1.30                             | 1.46  | 1.63  | 1.79  | 1.93  | 2.06  | 0.84                             | 0.94 | 1.06 | 1.16 | 1.25 | 1.34  |
| BA/BN      | 3              | 2.06                             | 2.38  | 2.66  | 2.97  | 3.25  | 3.51  | 1.58                             | 1.77  | 1.98  | 2.16  | 2.34  | 2.50  | 1.02                             | 1.14 | 1.28 | 1.40 | 1.51 | 1.62  |
| BA/BN      | 4              | 2.66                             | 3.07  | 3.44  | 3.84  | 4.21  | 4.55  | 2.04                             | 2.29  | 2.56  | 2.80  | 3.02  | 3.23  | 1.32                             | 1.48 | 1.66 | 1.81 | 1.96 | 2.09  |
| BA/BN      | 5              | 3.37                             | 3.90  | 4.36  | 4.87  | 5.34  | 5.76  | 2.59                             | 2.90  | 3.24  | 3.55  | 3.83  | 4.10  | 1.68                             | 1.88 | 2.10 | 2.30 | 2.48 | 2.66  |
| BA/BN      | 6              | 4.19                             | 4.84  | 5.41  | 6.05  | 6.62  | 7.16  | 3.22                             | 3.60  | 4.02  | 4.41  | 4.76  | 5.09  | 2.08                             | 2.33 | 2.61 | 2.85 | 3.08 | 3.30  |
| HF         | 1/4            | 0.19                             | 0.22  | 0.25  | 0.27  | 0.30  | 0.32  | 0.15                             | 0.16  | 0.18  | 0.20  | 0.22  | 0.23  | 0.09                             | 0.10 | 0.12 | 0.13 | 0.14 | 0.15  |
| HF         | 1/2            | 0.36                             | 0.42  | 0.46  | 0.52  | 0.57  | 0.61  | 0.28                             | 0.31  | 0.35  | 0.38  | 0.41  | 0.44  | 0.17                             | 0.20 | 0.22 | 0.24 | 0.26 | 0.28  |
| HF         | 1              | 0.65                             | 0.74  | 0.83  | 0.93  | 1.02  | 1.10  | 0.50                             | 0.55  | 0.62  | 0.68  | 0.73  | 0.78  | 0.31                             | 0.35 | 0.39 | 0.43 | 0.46 | 0.50  |
| HF         | 1-1/2          | 0.98                             | 1.14  | 1.27  | 1.42  | 1.56  | 1.68  | 0.76                             | 0.85  | 0.95  | 1.04  | 1.12  | 1.20  | 0.48                             | 0.53 | 0.60 | 0.65 | 0.71 | 0.76  |
| HF         | 2              | 1.33                             | 1.54  | 1.72  | 1.92  | 2.10  | 2.27  | 1.02                             | 1.14  | 1.28  | 1.40  | 1.51  | 1.62  | 0.65                             | 0.72 | 0.81 | 0.89 | 0.96 | 1.02  |
| HF         | 2-1/2          | 1.70                             | 1.97  | 2.20  | 2.46  | 2.70  | 2.91  | 1.31                             | 1.46  | 1.64  | 1.79  | 1.94  | 2.07  | 0.83                             | 0.93 | 1.03 | 1.13 | 1.22 | 1.31  |
| HF         | 3-1/2          | 2.25                             | 2.60  | 2.90  | 3.24  | 3.55  | 3.84  | 1.73                             | 1.93  | 2.16  | 2.36  | 2.55  | 2.73  | 1.09                             | 1.22 | 1.36 | 1.50 | 1.61 | 1.73  |
| HF         | 6              | 4.00                             | 4.62  | 5.16  | 5.77  | 6.32  | 6.83  | 3.07                             | 3.43  | 3.84  | 4.21  | 4.54  | 4.86  | 1.94                             | 2.17 | 2.43 | 2.66 | 2.87 | 3.07  |
| HF         | 8-1/2          | 5.56                             | 6.42  | 7.18  | 8.03  | 8.79  | 9.50  | 4.27                             | 4.78  | 5.34  | 5.85  | 6.32  | 6.75  | 2.70                             | 3.02 | 3.38 | 3.70 | 4.00 | 4.27  |
| HF         | 10-1/2         | 7.06                             | 8.15  | 9.12  | 10.19 | 11.17 | 12.06 | 5.42                             | 6.06  | 6.78  | 7.43  | 8.02  | 8.58  | 3.43                             | 3.84 | 4.29 | 4.70 | 5.07 | 5.42  |
| HF         | 16             | 10.46                            | 12.08 | 13.50 | 15.09 | 16.54 | 17.86 | 8.03                             | 8.98  | 10.04 | 11.00 | 11.88 | 12.70 | 5.08                             | 5.68 | 6.35 | 6.96 | 7.51 | 8.03  |
| HF         | 10             | 13.72                            | 15.84 | 17.71 | 19.80 | 21.69 | 23.43 | 10.54                            | 11.78 | 13.17 | 14.43 | 15.58 | 16.66 | 6.66                             | 7.45 | 8.33 | 9.12 | 9.86 | 10.54 |

## REFRIGERANT LIQUID TEMPERATURE CORRECTION FACTORS

| REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|                                   | 0    | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-407A                            | 1.78 | 1.70 | 1.63 | 1.55 | 1.47 | 1.40 | 1.32 | 1.24 | 1.16 | 1.08 | 1.00 | 0.92 | 0.83 | 0.75 | 0.66 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## R-407C BALANCED PORTED VALVES (TONS) B / HF / TFE / TRAE / T SERIES

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |        |        |        |                                  |       |       |        |        |        |                                  |       |       |        |        |        |
|------------|----------------|----------------------------------|-------|-------|--------|--------|--------|----------------------------------|-------|-------|--------|--------|--------|----------------------------------|-------|-------|--------|--------|--------|
|            |                | 50°F                             |       |       |        |        |        | 40°F                             |       |       |        |        |        | 20°F                             |       |       |        |        |        |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |        |        |        | PRESSURE DROP ACROSS VALVE (PSI) |       |       |        |        |        | PRESSURE DROP ACROSS VALVE (PSI) |       |       |        |        |        |
|            |                | 60                               | 80    | 100   | 125    | 150    | 175    | 60                               | 80    | 100   | 125    | 150    | 175    | 60                               | 80    | 100   | 125    | 150    | 175    |
| BA/BN      | 1/2            | 0.38                             | 0.44  | 0.49  | 0.55   | 0.60   | 0.65   | 0.37                             | 0.43  | 0.48  | 0.53   | 0.59   | 0.63   | 0.36                             | 0.42  | 0.46  | 0.52   | 0.57   | 0.61   |
| BA/BN      | 1              | 0.72                             | 0.83  | 0.93  | 1.04   | 1.14   | 1.23   | 0.70                             | 0.81  | 0.90  | 1.01   | 1.11   | 1.20   | 0.68                             | 0.79  | 0.88  | 0.98   | 1.08   | 1.16   |
| BA/BN      | 1-1/2          | 1.12                             | 1.29  | 1.45  | 1.62   | 1.77   | 1.91   | 1.10                             | 1.27  | 1.42  | 1.59   | 1.74   | 1.88   | 1.05                             | 1.21  | 1.36  | 1.52   | 1.66   | 1.79   |
| BA/BN      | 2              | 1.49                             | 1.72  | 1.92  | 2.15   | 2.36   | 2.54   | 1.47                             | 1.70  | 1.90  | 2.12   | 2.32   | 2.51   | 1.41                             | 1.63  | 1.82  | 2.04   | 2.23   | 2.41   |
| BA/BN      | 2-1/2          | 1.88                             | 2.17  | 2.43  | 2.71   | 2.97   | 3.21   | 1.85                             | 2.14  | 2.39  | 2.67   | 2.93   | 3.16   | 1.78                             | 2.06  | 2.30  | 2.57   | 2.81   | 3.04   |
| BA/BN      | 3              | 2.28                             | 2.63  | 2.94  | 3.29   | 3.60   | 3.89   | 2.24                             | 2.59  | 2.89  | 3.23   | 3.54   | 3.83   | 2.15                             | 2.48  | 2.78  | 3.10   | 3.40   | 3.67   |
| BA/BN      | 4              | 2.96                             | 3.42  | 3.82  | 4.27   | 4.68   | 5.06   | 2.90                             | 3.35  | 3.74  | 4.19   | 4.59   | 4.95   | 2.79                             | 3.22  | 3.60  | 4.03   | 4.41   | 4.76   |
| BA/BN      | 5              | 3.74                             | 4.32  | 4.83  | 5.40   | 5.91   | 6.39   | 3.67                             | 4.24  | 4.74  | 5.30   | 5.80   | 6.27   | 3.52                             | 4.06  | 4.54  | 5.08   | 5.57   | 6.01   |
| BA/BN      | 6              | 4.65                             | 5.37  | 6.00  | 6.71   | 7.35   | 7.94   | 4.57                             | 5.28  | 5.90  | 6.60   | 7.23   | 7.80   | 4.38                             | 5.06  | 5.65  | 6.32   | 6.93   | 7.48   |
| HF         | 1/4            | 0.21                             | 0.24  | 0.27  | 0.30   | 0.33   | 0.36   | 0.21                             | 0.24  | 0.27  | 0.30   | 0.33   | 0.36   | 0.20                             | 0.23  | 0.26  | 0.29   | 0.32   | 0.34   |
| HF         | 1/2            | 0.40                             | 0.46  | 0.52  | 0.58   | 0.63   | 0.68   | 0.39                             | 0.45  | 0.50  | 0.56   | 0.62   | 0.67   | 0.38                             | 0.44  | 0.49  | 0.55   | 0.60   | 0.65   |
| HF         | 1              | 0.72                             | 0.83  | 0.93  | 1.04   | 1.14   | 1.23   | 0.70                             | 0.81  | 0.90  | 1.01   | 1.11   | 1.20   | 0.68                             | 0.79  | 0.88  | 0.98   | 1.08   | 1.16   |
| HF         | 1-1/2          | 1.09                             | 1.26  | 1.41  | 1.57   | 1.72   | 1.86   | 1.07                             | 1.24  | 1.38  | 1.54   | 1.69   | 1.83   | 1.03                             | 1.19  | 1.33  | 1.49   | 1.63   | 1.76   |
| HF         | 2              | 1.47                             | 1.70  | 1.90  | 2.12   | 2.32   | 2.51   | 1.44                             | 1.66  | 1.86  | 2.08   | 2.28   | 2.46   | 1.39                             | 1.61  | 1.79  | 2.01   | 2.20   | 2.37   |
| HF         | 2-1/2          | 1.88                             | 2.17  | 2.43  | 2.71   | 2.97   | 3.21   | 1.85                             | 2.14  | 2.39  | 2.67   | 2.93   | 3.16   | 1.78                             | 2.06  | 2.30  | 2.57   | 2.81   | 3.04   |
| HF         | 3              | 2.49                             | 2.88  | 3.21  | 3.59   | 3.94   | 4.25   | 2.44                             | 2.82  | 3.15  | 3.52   | 3.86   | 4.17   | 2.35                             | 2.71  | 3.03  | 3.39   | 3.72   | 4.01   |
| HF         | 5-1/2          | 4.43                             | 5.12  | 5.72  | 6.39   | 7.00   | 7.57   | 4.34                             | 5.01  | 5.60  | 6.26   | 6.86   | 7.41   | 4.17                             | 4.82  | 5.38  | 6.02   | 6.59   | 7.12   |
| HF         | 8              | 6.16                             | 7.11  | 7.95  | 8.89   | 9.74   | 10.52  | 6.05                             | 6.99  | 7.81  | 8.73   | 9.57   | 10.33  | 5.81                             | 6.71  | 7.50  | 8.39   | 9.19   | 9.92   |
| HF         | 10             | 7.80                             | 9.01  | 10.07 | 11.26  | 12.33  | 13.32  | 7.65                             | 8.83  | 9.88  | 11.04  | 12.10  | 13.06  | 7.35                             | 8.49  | 9.49  | 10.61  | 11.62  | 12.55  |
| HF         | 15             | 11.57                            | 13.36 | 14.94 | 16.70  | 18.29  | 19.76  | 11.35                            | 13.11 | 14.65 | 16.38  | 17.95  | 19.38  | 10.90                            | 12.59 | 14.07 | 15.73  | 17.23  | 18.62  |
| HF         | 20             | 15.22                            | 17.57 | 19.65 | 21.97  | 24.06  | 25.99  | 14.94                            | 17.25 | 19.29 | 21.56  | 23.62  | 25.51  | 14.35                            | 16.57 | 18.53 | 20.71  | 22.69  | 24.51  |
| TFE        | 8              | 6.05                             | 6.99  | 7.81  | 8.73   | 9.57   | 10.33  | 5.94                             | 6.86  | 7.67  | 8.57   | 9.39   | 10.14  | 5.70                             | 6.58  | 7.36  | 8.23   | 9.01   | 9.73   |
| TFE        | 10             | 8.28                             | 9.56  | 10.69 | 11.95  | 13.09  | 14.14  | 8.13                             | 9.39  | 10.50 | 11.73  | 12.85  | 13.88  | 7.80                             | 9.01  | 10.07 | 11.26  | 12.33  | 13.32  |
| TFE        | 12             | 10.28                            | 11.87 | 13.27 | 14.84  | 16.25  | 17.56  | 10.09                            | 11.65 | 13.03 | 14.56  | 15.95  | 17.23  | 9.69                             | 11.19 | 12.51 | 13.99  | 15.32  | 16.55  |
| TFE        | 20             | 15.69                            | 18.12 | 20.26 | 22.65  | 24.81  | 26.80  | 15.40                            | 17.78 | 19.88 | 22.23  | 24.35  | 26.30  | 14.79                            | 17.08 | 19.09 | 21.35  | 23.39  | 25.26  |
| TRAE+      | 10             | 8.90                             | 10.28 | 11.49 | 12.85  | 14.07  | 15.20  | 8.73                             | 10.08 | 11.27 | 12.60  | 13.80  | 14.91  | 8.39                             | 9.69  | 10.83 | 12.11  | 13.27  | 14.33  |
| TRAE+      | 15             | 12.97                            | 14.98 | 16.74 | 18.72  | 20.51  | 22.15  | 12.73                            | 14.70 | 16.43 | 18.37  | 20.13  | 21.74  | 12.22                            | 14.11 | 15.78 | 17.64  | 19.32  | 20.87  |
| TRAE+      | 20             | 14.48                            | 16.72 | 18.69 | 20.90  | 22.89  | 24.73  | 14.21                            | 16.41 | 18.35 | 20.51  | 22.47  | 24.27  | 13.64                            | 15.75 | 17.61 | 19.69  | 21.57  | 23.29  |
| TRAE+      | 30             | 21.94                            | 25.33 | 28.32 | 31.67  | 34.69  | 37.47  | 21.45                            | 24.77 | 27.69 | 30.96  | 33.92  | 36.63  | 20.68                            | 23.88 | 26.70 | 29.85  | 32.70  | 35.32  |
| TRAE+      | 40             | 30.16                            | 34.83 | 38.94 | 43.53  | 47.69  | 51.51  | 29.60                            | 34.18 | 38.21 | 42.72  | 46.80  | 50.55  | 28.43                            | 32.83 | 36.70 | 41.04  | 44.95  | 48.55  |
| TRAE       | 50             | 40.71                            | 47.01 | 52.56 | 58.76  | 64.37  | 69.53  | 39.97                            | 46.15 | 51.60 | 57.69  | 63.20  | 68.26  | 38.37                            | 44.31 | 49.54 | 55.38  | 60.67  | 65.53  |
| TRAE       | 60             | 44.41                            | 51.28 | 57.33 | 64.10  | 70.22  | 75.84  | 43.59                            | 50.33 | 56.27 | 62.92  | 68.92  | 74.44  | 41.86                            | 48.34 | 54.04 | 60.42  | 66.19  | 71.49  |
| TRAE       | 70             | 52.85                            | 61.03 | 68.23 | 76.28  | 83.56  | 90.26  | 51.88                            | 59.91 | 66.98 | 74.88  | 82.03  | 88.60  | 49.82                            | 57.53 | 64.32 | 71.91  | 78.77  | 85.08  |
| TJR        | 14             | 11.08                            | 12.79 | 14.30 | 15.99  | 17.52  | 18.92  | 10.88                            | 12.56 | 14.05 | 15.70  | 17.20  | 18.58  | 10.45                            | 12.07 | 13.49 | 15.08  | 16.52  | 17.85  |
| TJR        | 18             | 13.27                            | 15.32 | 17.13 | 19.15  | 20.98  | 22.66  | 13.03                            | 15.05 | 16.82 | 18.81  | 20.60  | 22.25  | 12.51                            | 14.45 | 16.15 | 18.06  | 19.78  | 21.36  |
| TER        | 22             | 16.59                            | 19.16 | 21.42 | 23.95  | 26.23  | 28.33  | 16.28                            | 18.80 | 21.02 | 23.50  | 25.74  | 27.80  | 15.63                            | 18.05 | 20.18 | 22.56  | 24.71  | 26.69  |
| TER        | 26             | 19.60                            | 22.63 | 25.30 | 28.29  | 30.99  | 33.47  | 19.24                            | 22.22 | 24.84 | 27.77  | 30.42  | 32.86  | 18.48                            | 21.34 | 23.86 | 26.67  | 29.22  | 31.56  |
| TER        | 35             | 26.39                            | 30.47 | 34.07 | 38.09  | 41.73  | 45.07  | 25.90                            | 29.91 | 33.44 | 37.38  | 40.95  | 44.23  | 24.87                            | 28.72 | 32.11 | 35.90  | 39.32  | 42.47  |
| TER        | 45             | 33.93                            | 39.18 | 43.80 | 48.97  | 53.65  | 57.95  | 33.30                            | 38.45 | 42.99 | 48.06  | 52.65  | 56.87  | 31.98                            | 36.93 | 41.29 | 46.16  | 50.56  | 54.62  |
| TIR        | 55             | 41.47                            | 47.89 | 53.54 | 59.86  | 65.57  | 70.82  | 40.71                            | 47.01 | 52.56 | 58.76  | 64.37  | 69.53  | 39.08                            | 45.13 | 50.45 | 56.41  | 61.79  | 66.74  |
| THR        | 75             | 52.78                            | 60.95 | 68.14 | 76.18  | 83.45  | 90.14  | 51.81                            | 59.83 | 66.89 | 74.78  | 81.92  | 88.48  | 49.74                            | 57.43 | 64.21 | 71.79  | 78.65  | 84.95  |
| THR        | 100            | 64.08                            | 73.99 | 82.73 | 92.49  | 101.32 | 109.44 | 62.91                            | 72.64 | 81.22 | 90.80  | 99.47  | 107.44 | 60.40                            | 69.74 | 77.98 | 87.18  | 95.50  | 103.15 |
| TMR        | 100            | 75.39                            | 87.05 | 97.33 | 108.82 | 119.20 | 128.75 | 74.01                            | 85.46 | 95.55 | 106.82 | 117.02 | 126.40 | 71.06                            | 82.05 | 91.74 | 102.57 | 112.36 | 121.36 |

Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 100 psi pressure drop across the TXV per ARI 750-2001.

# TXV EXTENDED CAPACITY TABLES

# R-407C BALANCED PORTED

## R-407C BALANCED PORTED VALVES (TONS) B / HF/ TFE / TRAE / T SERIES (CONTINUED)

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |        |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|------------|----------------|----------------------------------|-------|-------|-------|-------|--------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|            |                | 0°F                              |       |       |       |       |        | -20°F                            |       |       |       |       |       | -40°F                            |       |       |       |       |       |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |        | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175    | 80                               | 100   | 125   | 150   | 175   | 200   | 80                               | 100   | 125   | 150   | 175   | 200   |
| BA/BN      | 1/2            | 0.30                             | 0.35  | 0.39  | 0.43  | 0.47  | 0.51   | 0.23                             | 0.26  | 0.29  | 0.31  | 0.34  | 0.36  | 0.14                             | 0.16  | 0.18  | 0.19  | 0.21  | 0.22  |
| BA/BN      | 1              | 0.57                             | 0.66  | 0.74  | 0.82  | 0.90  | 0.97   | 0.43                             | 0.48  | 0.54  | 0.59  | 0.64  | 0.68  | 0.27                             | 0.30  | 0.34  | 0.37  | 0.40  | 0.43  |
| BA/BN      | 1-1/2          | 0.89                             | 1.03  | 1.15  | 1.28  | 1.41  | 1.52   | 0.68                             | 0.76  | 0.85  | 0.93  | 1.01  | 1.08  | 0.43                             | 0.48  | 0.54  | 0.59  | 0.64  | 0.68  |
| BA/BN      | 2              | 1.19                             | 1.37  | 1.54  | 1.72  | 1.88  | 2.03   | 0.90                             | 1.01  | 1.13  | 1.23  | 1.33  | 1.42  | 0.57                             | 0.64  | 0.71  | 0.78  | 0.84  | 0.90  |
| BA/BN      | 2-1/2          | 1.50                             | 1.73  | 1.94  | 2.17  | 2.37  | 2.56   | 1.14                             | 1.27  | 1.43  | 1.56  | 1.69  | 1.80  | 0.72                             | 0.80  | 0.90  | 0.99  | 1.06  | 1.14  |
| BA/BN      | 3              | 1.82                             | 2.10  | 2.35  | 2.63  | 2.88  | 3.11   | 1.38                             | 1.54  | 1.73  | 1.89  | 2.04  | 2.18  | 0.87                             | 0.97  | 1.09  | 1.19  | 1.29  | 1.38  |
| BA/BN      | 4              | 2.35                             | 2.71  | 3.03  | 3.39  | 3.72  | 4.01   | 1.79                             | 2.00  | 2.24  | 2.45  | 2.65  | 2.83  | 1.13                             | 1.26  | 1.41  | 1.55  | 1.67  | 1.79  |
| BA/BN      | 5              | 2.98                             | 3.44  | 3.85  | 4.30  | 4.71  | 5.09   | 2.27                             | 2.54  | 2.84  | 3.11  | 3.36  | 3.59  | 1.43                             | 1.60  | 1.79  | 1.96  | 2.11  | 2.26  |
| BA/BN      | 6              | 3.70                             | 4.27  | 4.78  | 5.34  | 5.85  | 6.32   | 2.82                             | 3.15  | 3.53  | 3.86  | 4.17  | 4.46  | 1.77                             | 1.98  | 2.21  | 2.42  | 2.62  | 2.80  |
| HF         | 1/4            | 0.17                             | 0.20  | 0.22  | 0.25  | 0.27  | 0.29   | 0.13                             | 0.15  | 0.16  | 0.18  | 0.19  | 0.21  | 0.08                             | 0.09  | 0.10  | 0.11  | 0.12  | 0.13  |
| HF         | 1/2            | 0.32                             | 0.37  | 0.41  | 0.46  | 0.51  | 0.55   | 0.24                             | 0.27  | 0.30  | 0.33  | 0.35  | 0.38  | 0.15                             | 0.17  | 0.19  | 0.21  | 0.22  | 0.24  |
| HF         | 1              | 0.57                             | 0.66  | 0.74  | 0.82  | 0.90  | 0.97   | 0.43                             | 0.48  | 0.54  | 0.59  | 0.64  | 0.68  | 0.27                             | 0.30  | 0.34  | 0.37  | 0.40  | 0.43  |
| HF         | 1-1/2          | 0.87                             | 1.00  | 1.12  | 1.26  | 1.38  | 1.49   | 0.66                             | 0.74  | 0.83  | 0.90  | 0.98  | 1.04  | 0.42                             | 0.47  | 0.53  | 0.58  | 0.62  | 0.66  |
| HF         | 2              | 1.17                             | 1.35  | 1.51  | 1.69  | 1.85  | 2.00   | 0.89                             | 1.00  | 1.11  | 1.22  | 1.32  | 1.41  | 0.56                             | 0.63  | 0.70  | 0.77  | 0.83  | 0.89  |
| HF         | 2-1/2          | 1.50                             | 1.73  | 1.94  | 2.17  | 2.37  | 2.56   | 1.14                             | 1.27  | 1.43  | 1.56  | 1.69  | 1.80  | 0.72                             | 0.80  | 0.90  | 0.99  | 1.06  | 1.14  |
| HF         | 3              | 1.98                             | 2.29  | 2.56  | 2.86  | 3.13  | 3.38   | 1.51                             | 1.69  | 1.89  | 2.07  | 2.23  | 2.39  | 0.95                             | 1.06  | 1.19  | 1.30  | 1.41  | 1.50  |
| HF         | 5-1/2          | 3.52                             | 4.06  | 4.54  | 5.08  | 5.57  | 6.01   | 2.68                             | 3.00  | 3.35  | 3.67  | 3.96  | 4.24  | 1.69                             | 1.89  | 2.11  | 2.31  | 2.50  | 2.67  |
| HF         | 8              | 4.90                             | 5.66  | 6.33  | 7.07  | 7.75  | 8.37   | 3.73                             | 4.17  | 4.66  | 5.11  | 5.52  | 5.90  | 2.35                             | 2.63  | 2.94  | 3.22  | 3.48  | 3.72  |
| HF         | 10             | 6.20                             | 7.16  | 8.00  | 8.95  | 9.80  | 10.59  | 4.72                             | 5.28  | 5.90  | 6.46  | 6.98  | 7.46  | 2.97                             | 3.32  | 3.71  | 4.07  | 4.39  | 4.70  |
| HF         | 15             | 9.20                             | 10.62 | 11.88 | 13.28 | 14.55 | 15.71  | 7.01                             | 7.84  | 8.76  | 9.60  | 10.37 | 11.08 | 4.41                             | 4.93  | 5.51  | 6.04  | 6.52  | 6.97  |
| HF         | 20             | 12.11                            | 13.98 | 15.63 | 17.48 | 19.15 | 20.68  | 9.22                             | 10.31 | 11.53 | 12.63 | 13.64 | 14.58 | 5.81                             | 6.50  | 7.26  | 7.96  | 8.59  | 9.19  |
| TFE        | 8              | 4.81                             | 5.55  | 6.21  | 6.94  | 7.61  | 8.21   | 3.66                             | 4.09  | 4.58  | 5.01  | 5.41  | 5.79  | 2.31                             | 2.58  | 2.89  | 3.16  | 3.42  | 3.65  |
| TFE        | 10             | 6.59                             | 7.61  | 8.51  | 9.51  | 10.42 | 11.25  | 5.02                             | 5.61  | 6.28  | 6.87  | 7.42  | 7.94  | 3.16                             | 3.53  | 3.95  | 4.33  | 4.67  | 5.00  |
| TFE        | 12             | 8.18                             | 9.45  | 10.56 | 11.81 | 12.93 | 13.97  | 6.23                             | 6.97  | 7.79  | 8.53  | 9.21  | 9.85  | 3.92                             | 4.38  | 4.90  | 5.37  | 5.80  | 6.20  |
| TFE        | 20             | 12.49                            | 14.42 | 16.12 | 18.03 | 19.75 | 21.33  | 9.51                             | 10.63 | 11.89 | 13.02 | 14.07 | 15.04 | 5.98                             | 6.69  | 7.48  | 8.19  | 8.84  | 9.46  |
| TRAE+      | 10             | 7.08                             | 8.18  | 9.14  | 10.22 | 11.19 | 12.09  | 5.39                             | 6.03  | 6.74  | 7.38  | 7.97  | 8.52  | 3.39                             | 3.79  | 4.24  | 4.64  | 5.01  | 5.36  |
| TRAE+      | 15             | 10.32                            | 11.92 | 13.32 | 14.90 | 16.32 | 17.62  | 7.86                             | 8.79  | 9.83  | 10.76 | 11.63 | 12.43 | 4.95                             | 5.53  | 6.19  | 6.78  | 7.32  | 7.83  |
| TRAE+      | 20             | 11.52                            | 13.30 | 14.87 | 16.63 | 18.21 | 19.67  | 8.77                             | 9.81  | 10.96 | 12.01 | 12.97 | 13.87 | 5.52                             | 6.17  | 6.90  | 7.56  | 8.16  | 8.73  |
| TRAE+      | 30             | 17.46                            | 20.16 | 22.54 | 25.20 | 27.61 | 29.82  | 13.30                            | 14.87 | 16.63 | 18.21 | 19.67 | 21.03 | 8.37                             | 9.36  | 10.46 | 11.46 | 12.38 | 13.23 |
| TRAE+      | 40             | 24.00                            | 27.71 | 30.98 | 34.64 | 37.95 | 40.99  | 18.28                            | 20.44 | 22.85 | 25.03 | 27.04 | 28.90 | 11.50                            | 12.86 | 14.38 | 15.75 | 17.01 | 18.18 |
| TRAE       | 50             | 32.40                            | 37.41 | 41.83 | 46.77 | 51.23 | 55.33  | 24.67                            | 27.58 | 30.84 | 33.78 | 36.49 | 39.01 | 15.53                            | 17.36 | 19.41 | 21.27 | 22.97 | 24.56 |
| TRAE       | 60             | 35.34                            | 40.81 | 45.62 | 51.01 | 55.88 | 60.35  | 26.91                            | 30.09 | 33.64 | 36.85 | 39.80 | 42.55 | 16.94                            | 18.94 | 21.18 | 23.20 | 25.05 | 26.78 |
| TRAE       | 70             | 42.06                            | 48.57 | 54.30 | 60.71 | 66.50 | 71.83  | 32.03                            | 35.81 | 40.04 | 43.86 | 47.37 | 50.64 | 20.16                            | 22.54 | 25.20 | 27.61 | 29.82 | 31.88 |
| TJR        | 14             | 8.82                             | 10.18 | 11.39 | 12.73 | 13.95 | 15.06  | 6.72                             | 7.51  | 8.40  | 9.20  | 9.94  | 10.63 | 4.23                             | 4.73  | 5.29  | 5.79  | 6.26  | 6.69  |
| TJR        | 18             | 10.56                            | 12.19 | 13.63 | 15.24 | 16.70 | 18.03  | 8.04                             | 8.99  | 10.05 | 11.01 | 11.89 | 12.71 | 5.06                             | 5.66  | 6.33  | 6.93  | 7.48  | 8.00  |
| TER        | 22             | 13.20                            | 15.24 | 17.04 | 19.05 | 20.87 | 22.54  | 10.05                            | 11.24 | 12.56 | 13.76 | 14.86 | 15.89 | 6.33                             | 7.08  | 7.91  | 8.67  | 9.36  | 10.01 |
| TER        | 26             | 15.60                            | 18.01 | 20.14 | 22.52 | 24.67 | 26.64  | 11.88                            | 13.28 | 14.85 | 16.27 | 17.57 | 18.78 | 7.48                             | 8.36  | 9.35  | 10.24 | 11.06 | 11.83 |
| TER        | 35             | 21.00                            | 24.25 | 27.11 | 30.31 | 33.20 | 35.86  | 15.99                            | 17.88 | 19.99 | 21.90 | 23.65 | 25.28 | 10.06                            | 11.25 | 12.58 | 13.78 | 14.88 | 15.91 |
| TER        | 45             | 27.00                            | 31.18 | 34.86 | 38.97 | 42.69 | 46.11  | 20.56                            | 22.99 | 25.70 | 28.15 | 30.41 | 32.51 | 12.94                            | 14.47 | 16.18 | 17.72 | 19.14 | 20.46 |
| TIR        | 55             | 33.00                            | 38.11 | 42.60 | 47.63 | 52.18 | 56.36  | 25.13                            | 28.10 | 31.41 | 34.41 | 37.17 | 39.73 | 15.82                            | 17.69 | 19.78 | 21.66 | 23.40 | 25.01 |
| THR        | 75             | 42.00                            | 48.50 | 54.22 | 60.62 | 66.41 | 71.73  | 31.98                            | 35.75 | 39.98 | 43.79 | 47.30 | 50.56 | 20.13                            | 22.51 | 25.16 | 27.56 | 29.77 | 31.83 |
| THR        | 100            | 51.00                            | 58.89 | 65.84 | 73.61 | 80.64 | 87.10  | 38.84                            | 43.42 | 48.55 | 53.18 | 57.45 | 61.41 | 24.44                            | 27.32 | 30.55 | 33.47 | 36.15 | 38.64 |
| TMR        | 100            | 60.00                            | 69.28 | 77.46 | 86.60 | 94.87 | 102.47 | 45.69                            | 51.08 | 57.11 | 62.56 | 67.58 | 72.24 | 28.76                            | 32.15 | 35.95 | 39.38 | 42.54 | 45.47 |

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.



## R-407H (TONS) BALANCE PORTED VALVES - B-SERIES AND H-SERIES

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|            |                | 50°F                             |       |       |       |       |       | 40°F                             |       |       |       |       |       | 20°F                             |       |       |       |       |       |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   |
| BA/BN      | 1/2            | 0.46                             | 0.54  | 0.60  | 0.67  | 0.73  | 0.79  | 0.46                             | 0.53  | 0.59  | 0.66  | 0.72  | 0.78  | 0.44                             | 0.51  | 0.57  | 0.64  | 0.70  | 0.76  |
| BA/BN      | 1              | 0.88                             | 1.02  | 1.14  | 1.27  | 1.39  | 1.50  | 0.87                             | 1.00  | 1.12  | 1.25  | 1.37  | 1.48  | 0.84                             | 0.97  | 1.09  | 1.22  | 1.33  | 1.44  |
| BA/BN      | 1-3/4          | 1.37                             | 1.58  | 1.77  | 1.98  | 2.17  | 2.34  | 1.35                             | 1.56  | 1.75  | 1.95  | 2.14  | 2.31  | 1.31                             | 1.52  | 1.69  | 1.89  | 2.08  | 2.24  |
| BA/BN      | 2              | 1.84                             | 2.12  | 2.37  | 2.65  | 2.90  | 3.14  | 1.81                             | 2.09  | 2.34  | 2.61  | 2.86  | 3.09  | 1.76                             | 2.03  | 2.27  | 2.53  | 2.78  | 3.00  |
| BA/BN      | 3              | 2.32                             | 2.68  | 2.99  | 3.35  | 3.67  | 3.96  | 2.29                             | 2.64  | 2.95  | 3.30  | 3.61  | 3.90  | 2.22                             | 2.56  | 2.86  | 3.20  | 3.51  | 3.79  |
| BA/BN      | 3-1/2          | 2.81                             | 3.24  | 3.63  | 4.06  | 4.44  | 4.80  | 2.77                             | 3.20  | 3.58  | 4.00  | 4.38  | 4.73  | 2.69                             | 3.10  | 3.47  | 3.88  | 4.25  | 4.59  |
| BA/BN      | 4-1/2          | 3.63                             | 4.20  | 4.69  | 5.25  | 5.75  | 6.21  | 3.58                             | 4.14  | 4.63  | 5.17  | 5.67  | 6.12  | 3.48                             | 4.01  | 4.49  | 5.02  | 5.50  | 5.94  |
| BA/BN      | 6              | 4.61                             | 5.32  | 5.95  | 6.65  | 7.29  | 7.87  | 4.55                             | 5.25  | 5.87  | 6.56  | 7.19  | 7.76  | 4.41                             | 5.09  | 5.69  | 6.36  | 6.97  | 7.53  |
| BA/BN      | 7-1/2          | 5.72                             | 6.61  | 7.39  | 8.26  | 9.05  | 9.77  | 5.64                             | 6.52  | 7.28  | 8.14  | 8.92  | 9.64  | 5.47                             | 6.32  | 7.06  | 7.90  | 8.65  | 9.34  |
| HF         | 1/4            | 0.24                             | 0.28  | 0.31  | 0.35  | 0.38  | 0.41  | 0.24                             | 0.27  | 0.31  | 0.34  | 0.38  | 0.41  | 0.23                             | 0.27  | 0.30  | 0.33  | 0.36  | 0.39  |
| HF         | 1/2            | 0.46                             | 0.53  | 0.59  | 0.66  | 0.72  | 0.78  | 0.45                             | 0.52  | 0.58  | 0.65  | 0.71  | 0.77  | 0.44                             | 0.50  | 0.56  | 0.63  | 0.69  | 0.75  |
| HF         | 1              | 0.82                             | 0.94  | 1.06  | 1.18  | 1.29  | 1.40  | 0.81                             | 0.93  | 1.04  | 1.16  | 1.28  | 1.38  | 0.78                             | 0.90  | 1.01  | 1.13  | 1.24  | 1.34  |
| HF         | 1-1/2          | 1.25                             | 1.44  | 1.61  | 1.80  | 1.97  | 2.13  | 1.23                             | 1.42  | 1.59  | 1.78  | 1.95  | 2.10  | 1.19                             | 1.38  | 1.54  | 1.72  | 1.89  | 2.04  |
| HF         | 2              | 1.69                             | 1.95  | 2.18  | 2.44  | 2.67  | 2.88  | 1.67                             | 1.92  | 2.15  | 2.40  | 2.63  | 2.84  | 1.62                             | 1.87  | 2.09  | 2.33  | 2.55  | 2.76  |
| HF         | 2-3/4          | 2.16                             | 2.50  | 2.79  | 3.12  | 3.42  | 3.69  | 2.13                             | 2.46  | 2.75  | 3.08  | 3.37  | 3.64  | 2.07                             | 2.39  | 2.67  | 2.99  | 3.27  | 3.53  |
| HF         | 3-1/2          | 2.85                             | 3.29  | 3.68  | 4.11  | 4.51  | 4.87  | 2.81                             | 3.25  | 3.63  | 4.06  | 4.45  | 4.80  | 2.73                             | 3.15  | 3.52  | 3.94  | 4.31  | 4.66  |
| HF         | 6-1/2          | 5.07                             | 5.86  | 6.55  | 7.32  | 8.02  | 8.66  | 5.00                             | 5.78  | 6.46  | 7.22  | 7.91  | 8.55  | 4.85                             | 5.60  | 6.27  | 7.01  | 7.67  | 8.29  |
| HF         | 9              | 7.05                             | 8.14  | 9.11  | 10.18 | 11.15 | 12.05 | 6.96                             | 8.03  | 8.98  | 10.04 | 11.00 | 11.88 | 6.75                             | 7.79  | 8.71  | 9.74  | 10.67 | 11.53 |
| HF         | 11-1/2         | 8.96                             | 10.34 | 11.56 | 12.93 | 14.16 | 15.30 | 8.83                             | 10.20 | 11.41 | 12.75 | 13.97 | 15.09 | 8.57                             | 9.90  | 11.06 | 12.37 | 13.55 | 14.64 |
| HF         | 17             | 13.26                            | 15.31 | 17.12 | 19.14 | 20.97 | 22.65 | 13.08                            | 15.11 | 16.89 | 18.88 | 20.69 | 22.34 | 12.69                            | 14.65 | 16.38 | 18.32 | 20.07 | 21.67 |
| HF         | 22             | 17.40                            | 20.09 | 22.46 | 25.11 | 27.51 | 29.71 | 17.16                            | 19.81 | 22.15 | 24.77 | 27.13 | 29.31 | 16.65                            | 19.22 | 21.49 | 24.03 | 26.32 | 28.43 |

Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 100 psi pressure drop across the TXV.

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |      |      |      |       |       |
|------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|------|------|------|-------|-------|
|            |                | 0°F                              |       |       |       |       |       | -20°F                            |       |       |       |       |       | -40°F                            |      |      |      |       |       |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |       |       |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175   | 80                               | 100   | 125   | 150   | 175   | 200   | 80                               | 100  | 125  | 150  | 175   | 200   |
| BA/BN      | 1/2            | 0.40                             | 0.46  | 0.51  | 0.57  | 0.62  | 0.67  | 0.31                             | 0.34  | 0.38  | 0.42  | 0.45  | 0.48  | 0.19                             | 0.22 | 0.24 | 0.27 | 0.29  | 0.31  |
| BA/BN      | 1              | 0.75                             | 0.87  | 0.97  | 1.08  | 1.19  | 1.28  | 0.58                             | 0.65  | 0.72  | 0.79  | 0.86  | 0.92  | 0.37                             | 0.41 | 0.46 | 0.50 | 0.55  | 0.58  |
| BA/BN      | 1-3/4          | 1.17                             | 1.35  | 1.51  | 1.69  | 1.85  | 2.00  | 0.90                             | 1.01  | 1.13  | 1.24  | 1.34  | 1.43  | 0.57                             | 0.64 | 0.72 | 0.79 | 0.85  | 0.91  |
| BA/BN      | 2              | 1.56                             | 1.81  | 2.02  | 2.26  | 2.47  | 2.67  | 1.21                             | 1.35  | 1.51  | 1.65  | 1.79  | 1.91  | 0.77                             | 0.86 | 0.96 | 1.05 | 1.14  | 1.21  |
| BA/BN      | 3              | 1.98                             | 2.28  | 2.55  | 2.85  | 3.12  | 3.37  | 1.53                             | 1.71  | 1.91  | 2.09  | 2.26  | 2.41  | 0.97                             | 1.08 | 1.21 | 1.33 | 1.43  | 1.53  |
| BA/BN      | 3-1/2          | 2.39                             | 2.77  | 3.09  | 3.46  | 3.79  | 4.09  | 1.85                             | 2.07  | 2.31  | 2.53  | 2.73  | 2.92  | 1.18                             | 1.31 | 1.47 | 1.61 | 1.74  | 1.86  |
| BA/BN      | 4-1/2          | 3.10                             | 3.58  | 4.00  | 4.47  | 4.90  | 5.29  | 2.39                             | 2.67  | 2.99  | 3.27  | 3.54  | 3.78  | 1.52                             | 1.70 | 1.90 | 2.08 | 2.25  | 2.40  |
| BA/BN      | 6              | 3.93                             | 4.54  | 5.07  | 5.67  | 6.21  | 6.71  | 3.03                             | 3.39  | 3.79  | 4.15  | 4.48  | 4.79  | 1.93                             | 2.16 | 2.41 | 2.64 | 2.85  | 3.05  |
| BA/BN      | 7-1/2          | 4.88                             | 5.63  | 6.30  | 7.04  | 7.71  | 8.33  | 3.76                             | 4.21  | 4.70  | 5.15  | 5.57  | 5.95  | 2.39                             | 2.68 | 2.99 | 3.28 | 3.54  | 3.79  |
| HF         | 1/4            | 0.21                             | 0.24  | 0.27  | 0.30  | 0.33  | 0.35  | 0.16                             | 0.18  | 0.20  | 0.22  | 0.23  | 0.25  | 0.10                             | 0.11 | 0.13 | 0.14 | 0.15  | 0.16  |
| HF         | 1/2            | 0.39                             | 0.45  | 0.50  | 0.56  | 0.62  | 0.67  | 0.30                             | 0.34  | 0.38  | 0.41  | 0.44  | 0.48  | 0.19                             | 0.21 | 0.24 | 0.26 | 0.28  | 0.30  |
| HF         | 1              | 0.70                             | 0.81  | 0.90  | 1.01  | 1.10  | 1.19  | 0.54                             | 0.60  | 0.67  | 0.74  | 0.80  | 0.85  | 0.34                             | 0.38 | 0.43 | 0.47 | 0.51  | 0.54  |
| HF         | 1-1/2          | 1.07                             | 1.23  | 1.38  | 1.54  | 1.68  | 1.82  | 0.82                             | 0.92  | 1.03  | 1.13  | 1.22  | 1.30  | 0.52                             | 0.59 | 0.65 | 0.72 | 0.77  | 0.83  |
| HF         | 2              | 1.44                             | 1.66  | 1.86  | 2.08  | 2.28  | 2.46  | 1.11                             | 1.24  | 1.39  | 1.52  | 1.64  | 1.76  | 0.71                             | 0.79 | 0.88 | 0.97 | 1.05  | 1.12  |
| HF         | 2-3/4          | 1.84                             | 2.13  | 2.38  | 2.66  | 2.92  | 3.15  | 1.42                             | 1.59  | 1.78  | 1.95  | 2.11  | 2.25  | 0.91                             | 1.01 | 1.13 | 1.24 | 1.34  | 1.43  |
| HF         | 3-1/2          | 2.43                             | 2.81  | 3.14  | 3.51  | 3.85  | 4.15  | 1.88                             | 2.10  | 2.35  | 2.57  | 2.78  | 2.97  | 1.20                             | 1.34 | 1.49 | 1.64 | 1.77  | 1.89  |
| HF         | 6-1/2          | 4.33                             | 5.00  | 5.59  | 6.25  | 6.84  | 7.39  | 3.34                             | 3.74  | 4.18  | 4.58  | 4.94  | 5.28  | 2.13                             | 2.38 | 2.66 | 2.91 | 3.15  | 3.36  |
| HF         | 9              | 6.02                             | 6.95  | 7.77  | 8.69  | 9.51  | 10.28 | 4.65                             | 5.20  | 5.81  | 6.36  | 6.87  | 7.35  | 2.96                             | 3.31 | 3.70 | 4.05 | 4.37  | 4.68  |
| HF         | 11-1/2         | 7.64                             | 8.82  | 9.87  | 11.03 | 12.08 | 13.05 | 5.90                             | 6.60  | 7.38  | 8.08  | 8.73  | 9.33  | 3.76                             | 4.20 | 4.69 | 5.14 | 5.55  | 5.94  |
| HF         | 17             | 11.32                            | 13.07 | 14.61 | 16.33 | 17.89 | 19.32 | 8.74                             | 9.77  | 10.92 | 11.96 | 12.92 | 13.82 | 5.56                             | 6.22 | 6.95 | 7.62 | 8.23  | 8.79  |
| HF         | 22             | 14.84                            | 17.14 | 19.16 | 21.42 | 23.47 | 25.35 | 11.46                            | 12.81 | 14.33 | 15.69 | 16.95 | 18.12 | 7.29                             | 8.16 | 9.12 | 9.99 | 10.79 | 11.53 |

## REFRIGERANT LIQUID TEMPERATURE CORRECTION FACTORS

|        | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-407H | 1.65                              | 1.59 | 1.52 | 1.46 | 1.40 | 1.33 | 1.27 | 1.20 | 1.13 | 1.07 | 1.00 | 0.93 | 0.86 | 0.79 | 0.71 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.



## R-410A BALANCED PORTED VALVES (TONS) B SERIES

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |     |     |     |      |      |      |                                  |     |     |     |      |      |      |                                  |     |     |     |      |      |      |
|------------|----------------|----------------------------------|-----|-----|-----|------|------|------|----------------------------------|-----|-----|-----|------|------|------|----------------------------------|-----|-----|-----|------|------|------|
|            |                | 50 °F                            |     |     |     |      |      |      | 40 °F                            |     |     |     |      |      |      | 20 °F                            |     |     |     |      |      |      |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |     |     |     |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |     |     |     |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |     |     |     |      |      |      |
|            |                | 75                               | 110 | 140 | 160 | 210  | 240  | 285  | 75                               | 110 | 140 | 160 | 210  | 240  | 285  | 75                               | 110 | 140 | 160 | 210  | 240  | 285  |
| BA/BN      | 1              | 0.8                              | 1.0 | 1.1 | 1.2 | 1.3  | 1.4  | 1.6  | 0.8                              | 1.0 | 1.1 | 1.2 | 1.3  | 1.4  | 1.5  | 0.8                              | 0.9 | 1.1 | 1.1 | 1.3  | 1.4  | 1.5  |
|            | 1-1/2          | 1.3                              | 1.6 | 1.8 | 1.9 | 2.2  | 1.4  | 1.6  | 1.3                              | 1.6 | 1.7 | 1.9 | 2.1  | 2.3  | 2.5  | 1.3                              | 1.5 | 1.7 | 1.8 | 2.1  | 2.2  | 2.4  |
|            | 2              | 1.8                              | 2.2 | 2.5 | 2.6 | 3.0  | 3.2  | 3.5  | 1.8                              | 2.2 | 2.4 | 2.6 | 3.0  | 3.2  | 3.5  | 1.7                              | 2.1 | 2.4 | 2.6 | 2.9  | 3.1  | 3.4  |
|            | 3              | 2.3                              | 2.8 | 3.1 | 3.3 | 3.8  | 4.1  | 4.5  | 2.3                              | 2.8 | 3.1 | 3.3 | 3.8  | 4.1  | 4.4  | 2.2                              | 2.7 | 3.0 | 3.2 | 3.7  | 4.0  | 4.3  |
|            | 3-1/2          | 3.0                              | 3.6 | 4.0 | 4.3 | 5.0  | 5.3  | 5.8  | 2.9                              | 3.6 | 4.0 | 4.3 | 4.9  | 5.3  | 5.7  | 2.9                              | 3.5 | 3.9 | 4.2 | 4.8  | 5.1  | 5.6  |
|            | 4-1/2          | 4.1                              | 5.0 | 5.6 | 6.0 | 6.9  | 7.4  | 8.0  | 4.1                              | 5.0 | 5.6 | 6.0 | 6.9  | 7.3  | 8.0  | 4.0                              | 4.9 | 5.5 | 5.9 | 6.7  | 7.2  | 7.8  |
|            | 6              | 5.1                              | 6.1 | 6.9 | 7.4 | 8.5  | 9.0  | 9.9  | 5.0                              | 6.1 | 6.8 | 7.3 | 8.4  | 9.0  | 9.8  | 4.9                              | 5.9 | 6.7 | 7.2 | 8.2  | 8.8  | 9.6  |
|            | 7-1/2          | 6.2                              | 7.5 | 8.5 | 9.1 | 10.4 | 11.1 | 12.1 | 6.2                              | 7.5 | 8.4 | 9.0 | 10.3 | 11.0 | 12.0 | 6.0                              | 7.3 | 8.2 | 8.8 | 10.1 | 10.8 | 11.8 |

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |     |     |     |     |      |      |                                  |     |     |     |     |      |      |                                  |     |     |     |     |     |      |  |
|------------|----------------|----------------------------------|-----|-----|-----|-----|------|------|----------------------------------|-----|-----|-----|-----|------|------|----------------------------------|-----|-----|-----|-----|-----|------|--|
|            |                | 0 °F                             |     |     |     |     |      |      | -20 °F                           |     |     |     |     |      |      | -40 °F                           |     |     |     |     |     |      |  |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |     |     |     |     |      |      | PRESSURE DROP ACROSS VALVE (PSI) |     |     |     |     |      |      | PRESSURE DROP ACROSS VALVE (PSI) |     |     |     |     |     |      |  |
|            |                | 75                               | 110 | 140 | 160 | 210 | 240  | 285  | 75                               | 110 | 140 | 160 | 210 | 240  | 285  | 75                               | 110 | 140 | 160 | 210 | 240 | 285  |  |
| BA/BN      | 1              | 0.8                              | 0.9 | 1.0 | 1.1 | 1.3 | 1.4  | 1.5  | 0.7                              | 0.9 | 1.0 | 1.1 | 1.2 | 1.3  | 1.4  | 0.7                              | 0.9 | 1.0 | 1.0 | 1.2 | 1.3 | 1.4  |  |
|            | 1-1/2          | 1.2                              | 1.5 | 1.7 | 1.8 | 2.0 | 2.2  | 2.4  | 1.2                              | 1.4 | 1.6 | 1.7 | 2.0 | 2.1  | 2.3  | 1.1                              | 1.4 | 1.6 | 1.7 | 1.9 | 2.0 | 2.2  |  |
|            | 2              | 1.7                              | 2.1 | 2.3 | 2.5 | 2.8 | 3.0  | 3.3  | 1.6                              | 2.0 | 2.3 | 2.4 | 2.8 | 3.0  | 3.2  | 1.6                              | 1.9 | 2.2 | 2.3 | 2.7 | 2.8 | 3.1  |  |
|            | 3              | 2.2                              | 2.6 | 3.0 | 3.2 | 3.6 | 3.9  | 4.2  | 2.1                              | 2.5 | 2.9 | 3.1 | 3.5 | 3.8  | 4.1  | 2.0                              | 2.5 | 2.8 | 3.0 | 3.4 | 3.6 | 3.9  |  |
|            | 3-1/2          | 2.8                              | 3.4 | 3.8 | 4.1 | 4.7 | 5.0  | 5.5  | 2.7                              | 3.3 | 3.7 | 4.0 | 4.5 | 4.8  | 5.3  | 2.6                              | 3.2 | 3.6 | 3.8 | 4.4 | 4.7 | 5.1  |  |
|            | 4-1/2          | 3.9                              | 4.7 | 5.3 | 5.7 | 6.5 | 7.0  | 7.6  | 3.8                              | 4.6 | 5.2 | 5.5 | 6.3 | 6.8  | 7.4  | 3.6                              | 4.4 | 5.0 | 5.3 | 6.1 | 6.5 | 7.1  |  |
|            | 6              | 4.8                              | 5.8 | 6.5 | 7.0 | 8.0 | 8.5  | 9.3  | 4.6                              | 5.6 | 6.3 | 6.8 | 7.7 | 8.3  | 9.0  | 4.5                              | 5.4 | 6.1 | 6.5 | 7.5 | 8.0 | 8.7  |  |
|            | 7-1/2          | 5.9                              | 7.1 | 8.0 | 8.6 | 9.8 | 10.5 | 11.4 | 5.7                              | 6.9 | 7.8 | 8.3 | 9.5 | 10.2 | 11.1 | 5.5                              | 6.6 | 7.5 | 8.0 | 9.2 | 9.8 | 10.7 |  |

## R-410A BALANCED PORTED VALVES (TONS) NXT SERIES

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |      |                                  |      |      |      |      |      |      |                                  |      |      |      |      |      |      |  |
|------------|----------------|----------------------------------|------|------|------|------|------|------|----------------------------------|------|------|------|------|------|------|----------------------------------|------|------|------|------|------|------|--|
|            |                | 50 °F                            |      |      |      |      |      |      | 40 °F                            |      |      |      |      |      |      | 20 °F                            |      |      |      |      |      |      |  |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |      |  |
|            |                | 75                               | 110  | 140  | 160  | 210  | 240  | 285  | 75                               | 110  | 140  | 160  | 210  | 240  | 285  | 75                               | 110  | 140  | 160  | 210  | 240  | 285  |  |
| NXT Series | 1/2            | 0.4                              | 0.5  | 0.5  | 0.6  | 0.6  | 0.7  | 0.8  | 0.4                              | 0.5  | 0.5  | 0.6  | 0.6  | 0.7  | 0.7  | 0.4                              | 0.5  | 0.5  | 0.5  | 0.6  | 0.7  | 0.7  |  |
|            | 1              | 0.7                              | 0.8  | 0.9  | 1.0  | 1.2  | 1.2  | 1.3  | 0.7                              | 0.8  | 0.9  | 1.0  | 1.1  | 1.2  | 1.3  | 0.7                              | 0.8  | 0.9  | 1.0  | 1.1  | 1.2  | 1.3  |  |
|            | 1-1/2          | 1.0                              | 1.3  | 1.4  | 1.5  | 1.7  | 1.9  | 2.0  | 1.0                              | 1.2  | 1.4  | 1.5  | 1.7  | 1.8  | 2.0  | 1.0                              | 1.2  | 1.4  | 1.5  | 1.7  | 1.8  | 2.0  |  |
|            | 2              | 1.4                              | 1.7  | 1.9  | 2.0  | 2.3  | 2.5  | 2.7  | 1.4                              | 1.7  | 1.9  | 2.0  | 2.3  | 2.4  | 2.7  | 1.3                              | 1.6  | 1.8  | 2.0  | 2.2  | 2.4  | 2.6  |  |
|            | 3              | 2.1                              | 2.5  | 2.8  | 3.0  | 3.5  | 3.7  | 4.0  | 2.1                              | 2.5  | 2.8  | 3.0  | 3.4  | 3.7  | 4.0  | 2.0                              | 2.4  | 2.7  | 2.9  | 3.4  | 3.6  | 3.9  |  |
|            | 4              | 2.8                              | 3.3  | 3.8  | 4.0  | 4.6  | 4.9  | 5.4  | 2.7                              | 3.3  | 3.7  | 4.0  | 4.6  | 4.9  | 5.3  | 2.7                              | 3.2  | 3.7  | 3.9  | 4.5  | 4.8  | 5.2  |  |
|            | 5              | 3.5                              | 4.2  | 4.7  | 5.0  | 5.8  | 6.2  | 6.7  | 3.4                              | 4.1  | 4.7  | 5.0  | 5.7  | 6.1  | 6.7  | 3.3                              | 4.1  | 4.6  | 4.9  | 5.6  | 6.0  | 6.5  |  |
|            | 6              | 4.1                              | 5.0  | 5.7  | 6.1  | 6.9  | 7.4  | 8.1  | 4.1                              | 5.0  | 5.6  | 6.0  | 6.9  | 7.3  | 8.0  | 4.0                              | 4.9  | 5.5  | 5.9  | 6.7  | 7.2  | 7.8  |  |
|            | 7              | 4.8                              | 5.9  | 6.6  | 7.1  | 8.1  | 8.6  | 9.4  | 4.8                              | 5.8  | 6.5  | 7.0  | 8.0  | 8.6  | 9.3  | 4.7                              | 5.7  | 6.4  | 6.8  | 7.8  | 8.4  | 9.1  |  |
|            | 8              | 5.8                              | 7.0  | 7.9  | 8.5  | 9.7  | 10.4 | 11.3 | 5.7                              | 7.0  | 7.8  | 8.4  | 9.6  | 10.3 | 11.2 | 5.6                              | 6.8  | 7.7  | 8.2  | 9.4  | 10.1 | 11.0 |  |
|            | 10             | 7.1                              | 8.6  | 9.7  | 10.4 | 11.9 | 12.7 | 13.9 | 7.1                              | 8.5  | 9.6  | 10.3 | 11.8 | 12.6 | 13.8 | 6.9                              | 8.4  | 9.4  | 10.1 | 11.6 | 12.4 | 13.5 |  |
|            | 12             | 8.7                              | 10.6 | 11.9 | 12.7 | 14.6 | 15.6 | 17.0 | 8.6                              | 10.5 | 11.8 | 12.6 | 14.5 | 15.5 | 16.9 | 8.5                              | 10.2 | 11.6 | 12.4 | 14.2 | 15.1 | 16.5 |  |
|            | 15             | 10.2                             | 12.4 | 14.0 | 14.9 | 17.1 | 18.3 | 19.9 | 10.1                             | 12.3 | 13.8 | 14.8 | 16.9 | 18.1 | 19.7 | 9.9                              | 12.0 | 13.5 | 14.5 | 16.6 | 17.7 | 19.3 |  |

R-410A BALANCED PORTED VALVES (TONS) NXT SERIES

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |      |                                  |      |      |      |      |      |      |                                  |      |      |      |      |      |      |
|------------|----------------|----------------------------------|------|------|------|------|------|------|----------------------------------|------|------|------|------|------|------|----------------------------------|------|------|------|------|------|------|
|            |                | 0 °F                             |      |      |      |      |      |      | -20 °F                           |      |      |      |      |      |      | -40 °F                           |      |      |      |      |      |      |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |      |
|            |                | 75                               | 110  | 140  | 160  | 210  | 240  | 285  | 75                               | 110  | 140  | 160  | 210  | 240  | 285  | 75                               | 110  | 140  | 160  | 210  | 240  | 285  |
| NXT Series | 1/2            | 0.4                              | 0.4  | 0.5  | 0.5  | 0.6  | 0.7  | 0.7  | 0.4                              | 0.4  | 0.5  | 0.5  | 0.6  | 0.6  | 0.7  | 0.3                              | 0.4  | 0.5  | 0.6  | 0.6  | 0.6  | 0.7  |
|            | 1              | 0.7                              | 0.8  | 0.9  | 1.0  | 1.1  | 1.2  | 1.3  | 0.6                              | 0.6  | 0.9  | 0.9  | 1.1  | 1.1  | 1.2  | 0.6                              | 0.7  | 0.8  | 0.9  | 1.0  | 1.1  | 1.2  |
|            | 1-1/2          | 1.0                              | 1.2  | 1.3  | 1.4  | 1.6  | 1.8  | 1.9  | 0.9                              | 1.1  | 1.3  | 1.4  | 1.6  | 1.7  | 1.8  | 0.9                              | 1.1  | 1.2  | 1.3  | 1.5  | 1.6  | 1.8  |
|            | 2              | 1.3                              | 1.6  | 1.8  | 1.9  | 2.2  | 2.3  | 2.5  | 1.3                              | 1.5  | 1.7  | 1.8  | 2.1  | 2.3  | 2.5  | 1.2                              | 1.5  | 1.7  | 1.8  | 2.0  | 2.2  | 2.4  |
|            | 3              | 2.0                              | 2.4  | 2.7  | 2.9  | 3.3  | 3.5  | 3.8  | 1.9                              | 2.3  | 2.6  | 2.8  | 3.2  | 3.4  | 3.7  | 1.8                              | 2.2  | 2.5  | 2.7  | 3.1  | 3.3  | 3.6  |
|            | 4              | 2.6                              | 3.2  | 3.6  | 3.8  | 4.4  | 4.7  | 5.1  | 2.5                              | 3.1  | 3.5  | 3.7  | 4.2  | 4.5  | 4.9  | 2.4                              | 3.0  | 3.3  | 3.6  | 4.1  | 4.4  | 4.8  |
|            | 5              | 3.3                              | 3.9  | 4.5  | 4.8  | 5.5  | 5.8  | 6.4  | 3.2                              | 3.8  | 4.3  | 4.6  | 5.3  | 5.7  | 6.2  | 3.0                              | 3.7  | 4.2  | 4.5  | 5.1  | 5.5  | 5.9  |
|            | 6              | 3.9                              | 4.7  | 5.3  | 5.7  | 6.5  | 7.0  | 7.6  | 3.8                              | 4.6  | 5.2  | 5.5  | 6.3  | 6.8  | 7.4  | 3.7                              | 4.4  | 5.0  | 5.3  | 6.1  | 6.5  | 7.1  |
|            | 7              | 4.8                              | 5.9  | 6.6  | 6.7  | 8.1  | 8.6  | 9.4  | 4.4                              | 5.4  | 6.0  | 6.5  | 7.4  | 7.9  | 8.6  | 4.3                              | 5.2  | 5.8  | 6.2  | 7.1  | 7.6  | 8.3  |
|            | 8              | 5.5                              | 6.6  | 7.5  | 8.0  | 9.2  | 9.8  | 10.7 | 5.3                              | 6.4  | 7.2  | 7.7  | 8.9  | 9.5  | 10.3 | 5.1                              | 6.2  | 7.0  | 7.5  | 8.6  | 9.2  | 10.0 |
|            | 10             | 6.7                              | 8.1  | 9.2  | 9.8  | 11.3 | 12.0 | 13.1 | 6.5                              | 7.9  | 8.9  | 9.5  | 10.9 | 11.7 | 12.7 | 6.3                              | 7.6  | 8.6  | 9.2  | 10.5 | 11.2 | 12.3 |
|            | 12             | 8.2                              | 10.0 | 11.3 | 12.0 | 13.8 | 14.7 | 16.1 | 8.0                              | 9.7  | 10.9 | 11.7 | 13.4 | 14.3 | 15.6 | 7.7                              | 9.3  | 10.5 | 11.2 | 12.9 | 13.8 | 15.0 |
| 15         | 9.6            | 11.7                             | 13.2 | 14.1 | 16.1 | 17.3 | 18.8 | 9.3  | 11.3                             | 12.8 | 13.7 | 15.6 | 16.7 | 18.2 | 9.0  | 10.3                             | 12.3 | 13.2 | 15.1 | 15.1 | 17.6 |      |

NOTE: Standard capacity is rated at 100°F liquid inlet and 40°F evap temperature; with 160 psi pressure drop across TXV per ARI-750-2001. These ratings assume vapor free liquid entering the thermal expansion valve.

R-410A BALANCE PORTED VALVES (TONS) TFE SERIES

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |      |      |                                  |      |      |      |      |      |      |      |                                  |      |      |      |      |
|------------|----------------|----------------------------------|------|------|------|------|------|------|------|----------------------------------|------|------|------|------|------|------|------|----------------------------------|------|------|------|------|
|            |                | 50 °F                            |      |      |      |      |      |      |      | 40 °F                            |      |      |      |      |      |      |      | 20 °F                            |      |      |      |      |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |
|            |                | 75                               | 110  | 140  | 160  | 210  | 240  | 285  | 75   | 110                              | 140  | 160  | 210  | 240  | 285  | 75   | 110  | 140                              | 160  | 210  | 240  | 285  |
| TFES       | 12             | 8.1                              | 9.9  | 11.1 | 11.9 | 13.6 | 14.6 | 15.9 | 8.1  | 9.8                              | 11.0 | 11.8 | 13.5 | 14.5 | 15.7 | 7.9  | 9.6  | 10.8                             | 11.5 | 13.2 | 14.1 | 15.4 |
|            | 16             | 12.4                             | 15.0 | 16.9 | 18.1 | 20.7 | 22.1 | 24.1 | 12.3 | 14.8                             | 16.7 | 17.9 | 20.5 | 21.9 | 23.9 | 12.0 | 14.5 | 16.4                             | 17.5 | 20.1 | 21.5 | 23.4 |
|            | 20             | 13.3                             | 16.1 | 18.2 | 19.5 | 22.3 | 23.8 | 26.0 | 13.2 | 16.0                             | 18.1 | 19.3 | 22.1 | 23.6 | 25.8 | 12.9 | 15.7 | 17.7                             | 18.9 | 21.6 | 23.1 | 25.2 |

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |      |      |                                  |      |      |      |      |      |      |      |                                  |      |      |      |      |  |
|------------|----------------|----------------------------------|------|------|------|------|------|------|------|----------------------------------|------|------|------|------|------|------|------|----------------------------------|------|------|------|------|--|
|            |                | 0 °F                             |      |      |      |      |      |      |      | -20 °F                           |      |      |      |      |      |      |      | -40 °F                           |      |      |      |      |  |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |  |
|            |                | 75                               | 110  | 140  | 160  | 210  | 240  | 285  | 75   | 110                              | 140  | 160  | 210  | 240  | 285  | 75   | 110  | 140                              | 160  | 210  | 240  | 285  |  |
| TFES       | 12             | 7.7                              | 9.3  | 10.5 | 11.2 | 12.9 | 13.8 | 15.0 | 7.5  | 9.0                              | 10.2 | 10.9 | 12.5 | 13.3 | 14.5 | 7.2  | 8.7  | 9.8                              | 10.5 | 12.0 | 12.9 | 14.0 |  |
|            | 16             | 11.7                             | 14.1 | 16.0 | 17.1 | 19.5 | 20.9 | 22.8 | 11.3 | 13.7                             | 15.5 | 16.5 | 18.9 | 20.2 | 22.1 | 10.9 | 13.2 | 14.9                             | 15.9 | 18.3 | 19.5 | 21.3 |  |
|            | 20             | 12.6                             | 15.2 | 17.2 | 18.4 | 21.1 | 22.5 | 24.5 | 12.2 | 14.8                             | 16.7 | 17.8 | 20.4 | 21.8 | 23.8 | 11.8 | 14.3 | 16.1                             | 17.2 | 19.7 | 21.1 | 22.9 |  |

NOTE: Standard capacity is rated at 100 °F liquid inlet and 40 °F evap temperature; with 160 psi pressure drop across TXV per ARI 750-2001. These ratings assume vapor free liquid entering the thermal expansion valve.

REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|        | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        | 50                                | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  | 100  | 110  | 120  | 130  | 140  |
| R-410A | 1.37                              | 1.30 | 1.23 | 1.15 | 1.08 | 1.00 | 0.92 | 0.84 | 0.75 | 0.65 | 1.00 | 0.93 | 0.86 | 0.79 | 0.71 |

These factors include corrections for liquid refrigerant density and net refrigeration effect, and are based on an average evaporator temperature of 0°F with a maximum 7°F Change in Superheat. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## R-448A / R-449A (TONS) BALANCE PORTED VALVES - B SERIES AND H SERIES

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|            |                | 50°F                             |       |       |       |       |       | 40°F                             |       |       |       |       |       | 20°F                             |       |       |       |       |       |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   |
| BA/BN      | 1/2            | 0.40                             | 0.46  | 0.52  | 0.58  | 0.64  | 0.69  | 0.40                             | 0.46  | 0.51  | 0.57  | 0.63  | 0.68  | 0.39                             | 0.45  | 0.50  | 0.56  | 0.61  | 0.66  |
| BA/BN      | 1              | 0.76                             | 0.88  | 0.99  | 1.10  | 1.21  | 1.30  | 0.76                             | 0.87  | 0.97  | 1.09  | 1.19  | 1.29  | 0.74                             | 0.85  | 0.95  | 1.06  | 1.17  | 1.26  |
| BA/BN      | 1-1/2          | 1.19                             | 1.37  | 1.53  | 1.72  | 1.88  | 2.03  | 1.18                             | 1.36  | 1.52  | 1.70  | 1.86  | 2.01  | 1.15                             | 1.33  | 1.48  | 1.66  | 1.82  | 1.96  |
| BA/BN      | 2              | 1.59                             | 1.84  | 2.05  | 2.30  | 2.51  | 2.72  | 1.57                             | 1.82  | 2.03  | 2.27  | 2.49  | 2.69  | 1.54                             | 1.77  | 1.98  | 2.22  | 2.43  | 2.62  |
| BA/BN      | 2-1/2          | 2.01                             | 2.32  | 2.59  | 2.90  | 3.18  | 3.43  | 1.99                             | 2.29  | 2.57  | 2.87  | 3.14  | 3.39  | 1.94                             | 2.24  | 2.50  | 2.80  | 3.07  | 3.31  |
| BA/BN      | 3              | 2.43                             | 2.81  | 3.14  | 3.51  | 3.85  | 4.16  | 2.41                             | 2.78  | 3.11  | 3.48  | 3.81  | 4.11  | 2.35                             | 2.71  | 3.04  | 3.39  | 3.72  | 4.02  |
| BA/BN      | 4              | 3.15                             | 3.64  | 4.06  | 4.54  | 4.98  | 5.38  | 3.12                             | 3.60  | 4.02  | 4.50  | 4.93  | 5.32  | 3.04                             | 3.51  | 3.93  | 4.39  | 4.81  | 5.19  |
| BA/BN      | 5              | 3.99                             | 4.61  | 5.15  | 5.76  | 6.31  | 6.82  | 3.95                             | 4.56  | 5.10  | 5.70  | 6.25  | 6.75  | 3.86                             | 4.45  | 4.98  | 5.57  | 6.10  | 6.59  |
| BA/BN      | 6              | 4.96                             | 5.72  | 6.40  | 7.15  | 7.84  | 8.46  | 4.90                             | 5.66  | 6.33  | 7.08  | 7.75  | 8.38  | 4.79                             | 5.53  | 6.18  | 6.91  | 7.57  | 8.18  |
| HF         | 1/4            | 0.22                             | 0.26  | 0.29  | 0.32  | 0.36  | 0.38  | 0.22                             | 0.26  | 0.29  | 0.32  | 0.35  | 0.38  | 0.22                             | 0.25  | 0.28  | 0.31  | 0.34  | 0.37  |
| HF         | 1/2            | 0.43                             | 0.49  | 0.55  | 0.61  | 0.67  | 0.73  | 0.42                             | 0.49  | 0.54  | 0.61  | 0.67  | 0.72  | 0.41                             | 0.47  | 0.53  | 0.59  | 0.65  | 0.70  |
| HF         | 1              | 0.76                             | 0.88  | 0.99  | 1.10  | 1.21  | 1.30  | 0.76                             | 0.87  | 0.97  | 1.09  | 1.19  | 1.29  | 0.74                             | 0.85  | 0.95  | 1.06  | 1.17  | 1.26  |
| HF         | 1-1/2          | 1.16                             | 1.34  | 1.50  | 1.68  | 1.84  | 1.99  | 1.15                             | 1.33  | 1.49  | 1.66  | 1.82  | 1.97  | 1.13                             | 1.30  | 1.45  | 1.62  | 1.78  | 1.92  |
| HF         | 2              | 1.57                             | 1.82  | 2.03  | 2.27  | 2.49  | 2.69  | 1.56                             | 1.80  | 2.01  | 2.25  | 2.46  | 2.66  | 1.52                             | 1.76  | 1.96  | 2.20  | 2.40  | 2.60  |
| HF         | 2-1/2          | 2.02                             | 2.33  | 2.60  | 2.91  | 3.19  | 3.44  | 2.00                             | 2.30  | 2.58  | 2.88  | 3.15  | 3.41  | 1.95                             | 2.25  | 2.51  | 2.81  | 3.08  | 3.33  |
| HF         | 3-1/2          | 2.66                             | 3.07  | 3.43  | 3.84  | 4.20  | 4.54  | 2.63                             | 3.04  | 3.40  | 3.80  | 4.16  | 4.49  | 2.57                             | 2.97  | 3.32  | 3.71  | 4.06  | 4.39  |
| HF         | 6              | 4.73                             | 5.46  | 6.11  | 6.83  | 7.48  | 8.08  | 4.68                             | 5.41  | 6.04  | 6.76  | 7.40  | 8.00  | 4.57                             | 5.28  | 5.90  | 6.60  | 7.23  | 7.81  |
| HF         | 8-1/2          | 6.58                             | 7.60  | 8.49  | 9.50  | 10.40 | 11.23 | 6.51                             | 7.52  | 8.40  | 9.40  | 10.29 | 11.12 | 6.36                             | 7.34  | 8.20  | 9.17  | 10.05 | 10.85 |
| HF         | 10-1/2         | 8.35                             | 9.65  | 10.78 | 12.06 | 13.21 | 14.27 | 8.27                             | 9.55  | 10.67 | 11.93 | 13.07 | 14.12 | 8.07                             | 9.32  | 10.42 | 11.65 | 12.76 | 13.78 |
| HF         | 16             | 12.37                            | 14.28 | 15.97 | 17.85 | 19.56 | 21.13 | 12.24                            | 14.14 | 15.80 | 17.67 | 19.36 | 20.91 | 11.95                            | 13.80 | 15.43 | 17.25 | 18.89 | 20.41 |
| HF         | 20-1/2         | 16.23                            | 18.74 | 20.95 | 23.42 | 25.65 | 27.71 | 16.06                            | 18.54 | 20.73 | 23.18 | 25.39 | 27.42 | 15.67                            | 18.10 | 20.24 | 22.62 | 24.78 | 26.77 |

Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature: with 100 psi pressure drop across the TXV.

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|            |                | 0°F                              |       |       |       |       |       | -20°F                            |       |       |       |       |       | -40°F                            |       |       |       |       |       |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175   | 80                               | 100   | 125   | 150   | 175   | 200   | 80                               | 100   | 125   | 150   | 175   | 200   |
| BA/BN      | 1/2            | 0.38                             | 0.44  | 0.49  | 0.54  | 0.60  | 0.64  | 0.34                             | 0.39  | 0.43  | 0.47  | 0.51  | 0.54  | 0.23                             | 0.26  | 0.29  | 0.32  | 0.34  | 0.37  |
| BA/BN      | 1              | 0.72                             | 0.83  | 0.93  | 1.03  | 1.13  | 1.22  | 0.65                             | 0.73  | 0.82  | 0.90  | 0.97  | 1.04  | 0.44                             | 0.49  | 0.55  | 0.61  | 0.65  | 0.70  |
| BA/BN      | 1-1/2          | 1.12                             | 1.29  | 1.44  | 1.61  | 1.77  | 1.91  | 1.02                             | 1.14  | 1.27  | 1.40  | 1.51  | 1.61  | 0.69                             | 0.77  | 0.86  | 0.94  | 1.02  | 1.09  |
| BA/BN      | 2              | 1.49                             | 1.73  | 1.93  | 2.16  | 2.36  | 2.55  | 1.36                             | 1.53  | 1.71  | 1.87  | 2.02  | 2.16  | 0.92                             | 1.03  | 1.15  | 1.26  | 1.36  | 1.46  |
| BA/BN      | 2-1/2          | 1.89                             | 2.18  | 2.44  | 2.72  | 2.98  | 3.22  | 1.72                             | 1.93  | 2.15  | 2.36  | 2.55  | 2.72  | 1.16                             | 1.30  | 1.45  | 1.59  | 1.72  | 1.84  |
| BA/BN      | 3              | 2.29                             | 2.64  | 2.95  | 3.30  | 3.62  | 3.91  | 2.09                             | 2.33  | 2.61  | 2.86  | 3.09  | 3.30  | 1.41                             | 1.58  | 1.76  | 1.93  | 2.09  | 2.23  |
| BA/BN      | 4              | 2.96                             | 3.42  | 3.82  | 4.27  | 4.68  | 5.05  | 2.70                             | 3.02  | 3.38  | 3.70  | 4.00  | 4.27  | 1.82                             | 2.04  | 2.28  | 2.50  | 2.70  | 2.88  |
| BA/BN      | 5              | 3.75                             | 4.33  | 4.84  | 5.41  | 5.93  | 6.41  | 3.43                             | 3.83  | 4.28  | 4.69  | 5.07  | 5.42  | 2.31                             | 2.59  | 2.89  | 3.17  | 3.42  | 3.66  |
| BA/BN      | 6              | 4.66                             | 5.38  | 6.01  | 6.72  | 7.36  | 7.95  | 4.25                             | 4.75  | 5.32  | 5.82  | 6.29  | 6.72  | 2.87                             | 3.21  | 3.59  | 3.93  | 4.25  | 4.54  |
| HF         | 1/4            | 0.21                             | 0.24  | 0.27  | 0.31  | 0.33  | 0.36  | 0.19                             | 0.22  | 0.24  | 0.26  | 0.29  | 0.31  | 0.13                             | 0.15  | 0.16  | 0.18  | 0.19  | 0.21  |
| HF         | 1/2            | 0.40                             | 0.46  | 0.52  | 0.58  | 0.63  | 0.68  | 0.37                             | 0.41  | 0.46  | 0.50  | 0.54  | 0.58  | 0.25                             | 0.28  | 0.31  | 0.34  | 0.36  | 0.39  |
| HF         | 1              | 0.72                             | 0.83  | 0.93  | 1.03  | 1.13  | 1.22  | 0.65                             | 0.73  | 0.82  | 0.90  | 0.97  | 1.04  | 0.44                             | 0.49  | 0.55  | 0.61  | 0.65  | 0.70  |
| HF         | 1-1/2          | 1.09                             | 1.26  | 1.41  | 1.58  | 1.73  | 1.87  | 1.00                             | 1.12  | 1.25  | 1.37  | 1.48  | 1.58  | 0.67                             | 0.75  | 0.84  | 0.92  | 1.00  | 1.07  |
| HF         | 2              | 1.48                             | 1.71  | 1.91  | 2.14  | 2.34  | 2.53  | 1.35                             | 1.51  | 1.69  | 1.85  | 2.00  | 2.14  | 0.91                             | 1.02  | 1.14  | 1.25  | 1.35  | 1.44  |
| HF         | 2-1/2          | 1.89                             | 2.19  | 2.45  | 2.73  | 3.00  | 3.24  | 1.73                             | 1.93  | 2.16  | 2.37  | 2.56  | 2.74  | 1.17                             | 1.31  | 1.46  | 1.60  | 1.73  | 1.85  |
| HF         | 3-1/2          | 2.50                             | 2.88  | 3.23  | 3.61  | 3.95  | 4.27  | 2.28                             | 2.55  | 2.85  | 3.12  | 3.37  | 3.61  | 1.54                             | 1.72  | 1.93  | 2.11  | 2.28  | 2.44  |
| HF         | 6              | 4.45                             | 5.13  | 5.74  | 6.42  | 7.03  | 7.59  | 4.06                             | 4.54  | 5.07  | 5.56  | 6.00  | 6.42  | 2.74                             | 3.06  | 3.43  | 3.75  | 4.05  | 4.33  |
| HF         | 8-1/2          | 6.18                             | 7.14  | 7.98  | 8.92  | 9.77  | 10.56 | 5.64                             | 6.31  | 7.06  | 7.73  | 8.35  | 8.92  | 3.81                             | 4.26  | 4.76  | 5.22  | 5.64  | 6.03  |
| HF         | 10-1/2         | 7.85                             | 9.06  | 10.13 | 11.33 | 12.41 | 13.41 | 7.17                             | 8.01  | 8.96  | 9.81  | 10.60 | 11.33 | 4.84                             | 5.41  | 6.05  | 6.63  | 7.16  | 7.65  |
| HF         | 16             | 11.62                            | 13.42 | 15.01 | 16.78 | 18.38 | 19.85 | 10.61                            | 11.87 | 13.27 | 14.53 | 15.70 | 16.78 | 7.17                             | 8.01  | 8.96  | 9.81  | 10.60 | 11.33 |
| HF         | 20-1/2         | 15.25                            | 17.61 | 19.68 | 22.01 | 24.11 | 26.04 | 13.92                            | 15.56 | 17.40 | 19.06 | 20.59 | 22.01 | 9.40                             | 10.51 | 11.75 | 12.87 | 13.90 | 14.86 |

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

R-450A / R-513A PORTED

TXV EXTENDED CAPACITY TABLES

R-450A / R-513A BALANCE PORTED VALVES (TONS) B SERIES AND HF SERIES

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|            |                | 50°F                             |       |       |       |       |       | 40°F                             |       |       |       |       |       | 20°F                             |       |       |       |       |       |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   |
| BA/BN      | 1/4            | 0.30                             | 0.34  | 0.38  | 0.43  | 0.47  | 0.51  | 0.29                             | 0.33  | 0.37  | 0.42  | 0.46  | 0.50  | 0.28                             | 0.32  | 0.36  | 0.40  | 0.44  | 0.47  |
| BA/BN      | 1/2            | 0.56                             | 0.65  | 0.73  | 0.81  | 0.89  | 0.96  | 0.55                             | 0.63  | 0.71  | 0.79  | 0.87  | 0.94  | 0.52                             | 0.60  | 0.67  | 0.75  | 0.82  | 0.89  |
| BA/BN      | 3/4            | 0.88                             | 1.01  | 1.13  | 1.26  | 1.38  | 1.49  | 0.85                             | 0.99  | 1.10  | 1.23  | 1.35  | 1.46  | 0.81                             | 0.94  | 1.05  | 1.17  | 1.28  | 1.39  |
| BA/BN      | 1              | 1.16                             | 1.34  | 1.50  | 1.68  | 1.84  | 1.99  | 1.14                             | 1.31  | 1.47  | 1.64  | 1.80  | 1.94  | 1.08                             | 1.25  | 1.39  | 1.56  | 1.71  | 1.84  |
| BA/BN      | 1-1/2          | 1.48                             | 1.71  | 1.91  | 2.13  | 2.34  | 2.52  | 1.44                             | 1.67  | 1.86  | 2.08  | 2.28  | 2.46  | 1.37                             | 1.58  | 1.77  | 1.98  | 2.17  | 2.34  |
| BA/BN      | 1-3/4          | 1.78                             | 2.06  | 2.30  | 2.57  | 2.82  | 3.04  | 1.74                             | 2.01  | 2.25  | 2.51  | 2.75  | 2.97  | 1.65                             | 1.91  | 2.13  | 2.39  | 2.61  | 2.82  |
| BA/BN      | 2-1/4          | 2.31                             | 2.67  | 2.99  | 3.34  | 3.66  | 3.95  | 2.26                             | 2.61  | 2.91  | 3.26  | 3.57  | 3.85  | 2.14                             | 2.48  | 2.77  | 3.10  | 3.39  | 3.66  |
| BA/BN      | 3              | 2.92                             | 3.37  | 3.77  | 4.22  | 4.62  | 4.99  | 2.85                             | 3.29  | 3.68  | 4.12  | 4.51  | 4.87  | 2.71                             | 3.13  | 3.50  | 3.91  | 4.29  | 4.63  |
| BA/BN      | 3-1/2          | 3.64                             | 4.20  | 4.70  | 5.25  | 5.75  | 6.21  | 3.55                             | 4.10  | 4.58  | 5.12  | 5.61  | 6.06  | 3.37                             | 3.89  | 4.35  | 4.87  | 5.33  | 5.76  |
| HF         | 1/5            | 0.17                             | 0.19  | 0.22  | 0.24  | 0.27  | 0.29  | 0.16                             | 0.19  | 0.21  | 0.24  | 0.26  | 0.28  | 0.16                             | 0.18  | 0.20  | 0.23  | 0.25  | 0.27  |
| HF         | 1/4            | 0.31                             | 0.36  | 0.40  | 0.45  | 0.50  | 0.53  | 0.31                             | 0.35  | 0.39  | 0.44  | 0.48  | 0.52  | 0.29                             | 0.34  | 0.37  | 0.42  | 0.46  | 0.50  |
| HF         | 1/2            | 0.56                             | 0.65  | 0.73  | 0.81  | 0.89  | 0.96  | 0.55                             | 0.63  | 0.71  | 0.79  | 0.87  | 0.94  | 0.52                             | 0.60  | 0.67  | 0.75  | 0.82  | 0.89  |
| HF         | 3/4            | 0.85                             | 0.98  | 1.10  | 1.23  | 1.35  | 1.45  | 0.83                             | 0.96  | 1.07  | 1.20  | 1.31  | 1.42  | 0.79                             | 0.91  | 1.02  | 1.14  | 1.25  | 1.35  |
| HF         | 1              | 1.15                             | 1.33  | 1.48  | 1.66  | 1.82  | 1.96  | 1.12                             | 1.29  | 1.45  | 1.62  | 1.77  | 1.91  | 1.06                             | 1.23  | 1.37  | 1.54  | 1.68  | 1.82  |
| HF         | 1-1/2          | 1.48                             | 1.71  | 1.91  | 2.13  | 2.34  | 2.52  | 1.44                             | 1.67  | 1.86  | 2.08  | 2.28  | 2.46  | 1.37                             | 1.58  | 1.77  | 1.98  | 2.17  | 2.34  |
| HF         | 2              | 1.94                             | 2.24  | 2.51  | 2.80  | 3.07  | 3.32  | 1.90                             | 2.19  | 2.45  | 2.74  | 3.00  | 3.24  | 1.80                             | 2.08  | 2.33  | 2.60  | 2.85  | 3.08  |
| HF         | 3-1/2          | 3.46                             | 4.00  | 4.47  | 4.99  | 5.47  | 5.91  | 3.38                             | 3.90  | 4.36  | 4.88  | 5.34  | 5.77  | 3.21                             | 3.71  | 4.14  | 4.63  | 5.07  | 5.48  |
| HF         | 4-1/2          | 4.82                             | 5.56  | 6.22  | 6.95  | 7.62  | 8.23  | 4.70                             | 5.43  | 6.07  | 6.79  | 7.44  | 8.03  | 4.47                             | 5.16  | 5.77  | 6.45  | 7.06  | 7.63  |
| HF         | 6              | 6.09                             | 7.04  | 7.87  | 8.80  | 9.63  | 10.41 | 5.95                             | 6.87  | 7.68  | 8.59  | 9.41  | 10.16 | 5.65                             | 6.53  | 7.30  | 8.16  | 8.94  | 9.65  |
| HF         | 9              | 9.04                             | 10.44 | 11.67 | 13.05 | 14.29 | 15.44 | 8.82                             | 10.19 | 11.39 | 12.74 | 13.95 | 15.07 | 8.38                             | 9.68  | 10.82 | 12.10 | 13.26 | 14.32 |
| HF         | 11-1/2         | 11.90                            | 13.74 | 15.36 | 17.17 | 18.81 | 20.32 | 11.61                            | 13.41 | 14.99 | 16.76 | 18.36 | 19.84 | 11.03                            | 12.74 | 14.25 | 15.93 | 17.45 | 18.84 |

NOTE: Standard capacity is rate at 100F liquid inlet and 40°F evaporator temperature; with 60 psi pressure drop across the TXV.

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |       |       |       |       |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|------------|----------------|----------------------------------|------|-------|-------|-------|-------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|            |                | 0°F                              |      |       |       |       |       | -20°F                            |      |      |      |      |      | -40°F                            |      |      |      |      |      |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |      |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|            |                | 60                               | 80   | 100   | 125   | 150   | 175   | 80                               | 100  | 125  | 150  | 175  | 200  | 80                               | 100  | 125  | 150  | 175  | 200  |
| BA/BN      | 1/4            | 0.20                             | 0.23 | 0.26  | 0.29  | 0.32  | 0.34  | 0.15                             | 0.17 | 0.19 | 0.21 | 0.22 | 0.24 | 0.09                             | 0.10 | 0.11 | 0.12 | 0.13 | 0.14 |
| BA/BN      | 1/2            | 0.38                             | 0.44 | 0.49  | 0.55  | 0.60  | 0.65  | 0.29                             | 0.32 | 0.36 | 0.39 | 0.42 | 0.45 | 0.16                             | 0.18 | 0.20 | 0.22 | 0.24 | 0.26 |
| BA/BN      | 3/4            | 0.59                             | 0.68 | 0.76  | 0.85  | 0.93  | 1.01  | 0.45                             | 0.50 | 0.56 | 0.61 | 0.66 | 0.71 | 0.25                             | 0.28 | 0.32 | 0.35 | 0.38 | 0.40 |
| BA/BN      | 1              | 0.78                             | 0.90 | 1.01  | 1.13  | 1.24  | 1.34  | 0.59                             | 0.66 | 0.74 | 0.81 | 0.88 | 0.94 | 0.34                             | 0.38 | 0.42 | 0.46 | 0.50 | 0.54 |
| BA/BN      | 1-1/2          | 0.99                             | 1.15 | 1.28  | 1.44  | 1.57  | 1.70  | 0.75                             | 0.84 | 0.94 | 1.03 | 1.11 | 1.19 | 0.43                             | 0.48 | 0.54 | 0.59 | 0.64 | 0.68 |
| BA/BN      | 1-3/4          | 1.20                             | 1.39 | 1.55  | 1.73  | 1.90  | 2.05  | 0.91                             | 1.02 | 1.14 | 1.25 | 1.35 | 1.44 | 0.52                             | 0.58 | 0.65 | 0.71 | 0.77 | 0.82 |
| BA/BN      | 2-1/4          | 1.56                             | 1.80 | 2.01  | 2.25  | 2.46  | 2.66  | 1.18                             | 1.32 | 1.47 | 1.62 | 1.74 | 1.87 | 0.67                             | 0.75 | 0.84 | 0.92 | 1.00 | 1.06 |
| BA/BN      | 3              | 1.97                             | 2.27 | 2.54  | 2.84  | 3.11  | 3.36  | 1.49                             | 1.67 | 1.86 | 2.04 | 2.21 | 2.36 | 0.85                             | 0.95 | 1.06 | 1.17 | 1.26 | 1.35 |
| BA/BN      | 3-1/2          | 2.45                             | 2.83 | 3.16  | 3.53  | 3.87  | 4.18  | 1.86                             | 2.07 | 2.32 | 2.54 | 2.74 | 2.93 | 1.06                             | 1.18 | 1.32 | 1.45 | 1.57 | 1.67 |
| HF         | 1/5            | 0.11                             | 0.13 | 0.15  | 0.16  | 0.18  | 0.19  | 0.09                             | 0.10 | 0.11 | 0.12 | 0.13 | 0.14 | 0.05                             | 0.05 | 0.06 | 0.07 | 0.07 | 0.08 |
| HF         | 1/4            | 0.21                             | 0.24 | 0.27  | 0.30  | 0.33  | 0.36  | 0.16                             | 0.18 | 0.20 | 0.22 | 0.24 | 0.25 | 0.09                             | 0.10 | 0.11 | 0.12 | 0.13 | 0.14 |
| HF         | 1/2            | 0.38                             | 0.44 | 0.49  | 0.55  | 0.60  | 0.65  | 0.29                             | 0.32 | 0.36 | 0.39 | 0.42 | 0.45 | 0.16                             | 0.18 | 0.20 | 0.22 | 0.24 | 0.26 |
| HF         | 3/4            | 0.57                             | 0.66 | 0.74  | 0.83  | 0.91  | 0.98  | 0.43                             | 0.49 | 0.54 | 0.59 | 0.64 | 0.69 | 0.25                             | 0.28 | 0.31 | 0.34 | 0.37 | 0.39 |
| HF         | 1              | 0.77                             | 0.89 | 1.00  | 1.12  | 1.22  | 1.32  | 0.59                             | 0.65 | 0.73 | 0.80 | 0.87 | 0.93 | 0.33                             | 0.37 | 0.42 | 0.46 | 0.49 | 0.53 |
| HF         | 1-1/2          | 0.99                             | 1.15 | 1.28  | 1.44  | 1.57  | 1.70  | 0.75                             | 0.84 | 0.94 | 1.03 | 1.11 | 1.19 | 0.43                             | 0.48 | 0.54 | 0.59 | 0.64 | 0.68 |
| HF         | 2              | 1.31                             | 1.51 | 1.69  | 1.89  | 2.07  | 2.23  | 0.99                             | 1.11 | 1.24 | 1.36 | 1.47 | 1.57 | 0.57                             | 0.63 | 0.71 | 0.77 | 0.84 | 0.89 |
| HF         | 3-1/2          | 2.33                             | 2.69 | 3.01  | 3.36  | 3.68  | 3.98  | 1.77                             | 1.97 | 2.21 | 2.42 | 2.61 | 2.79 | 1.01                             | 1.13 | 1.26 | 1.38 | 1.49 | 1.59 |
| HF         | 4-1/2          | 3.24                             | 3.74 | 4.19  | 4.68  | 5.13  | 5.54  | 2.46                             | 2.75 | 3.07 | 3.37 | 3.64 | 3.89 | 1.40                             | 1.57 | 1.75 | 1.92 | 2.07 | 2.22 |
| HF         | 6              | 4.10                             | 4.74 | 5.30  | 5.92  | 6.49  | 7.01  | 3.11                             | 3.48 | 3.89 | 4.26 | 4.60 | 4.92 | 1.77                             | 1.98 | 2.22 | 2.43 | 2.62 | 2.81 |
| HF         | 9              | 6.09                             | 7.03 | 7.86  | 8.78  | 9.62  | 10.39 | 4.61                             | 5.16 | 5.77 | 6.32 | 6.82 | 7.29 | 2.63                             | 2.94 | 3.29 | 3.60 | 3.89 | 4.16 |
| HF         | 11-1/2         | 8.01                             | 9.25 | 10.34 | 11.56 | 12.66 | 13.68 | 6.07                             | 6.79 | 7.59 | 8.31 | 8.98 | 9.60 | 3.46                             | 3.87 | 4.33 | 4.74 | 5.12 | 5.48 |

REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE OF |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.10 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## R-452A (TONS) BALANCE PORTED VALVES - B SERIES AND H SERIES

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|            |                | 50°F                             |       |       |       |       |       | 40°F                             |       |       |       |       |       | 20°F                             |       |       |       |       |       |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   |
| BA/BN      | 1/2            | 0.30                             | 0.35  | 0.39  | 0.43  | 0.47  | 0.51  | 0.29                             | 0.34  | 0.38  | 0.42  | 0.46  | 0.50  | 0.28                             | 0.32  | 0.36  | 0.40  | 0.44  | 0.47  |
| BA/BN      | 1              | 0.57                             | 0.66  | 0.73  | 0.82  | 0.90  | 0.97  | 0.56                             | 0.64  | 0.72  | 0.80  | 0.88  | 0.95  | 0.53                             | 0.61  | 0.68  | 0.76  | 0.83  | 0.90  |
| BA/BN      | 1-1/2          | 0.89                             | 1.02  | 1.14  | 1.28  | 1.40  | 1.51  | 0.87                             | 1.00  | 1.12  | 1.25  | 1.37  | 1.48  | 0.82                             | 0.95  | 1.06  | 1.19  | 1.30  | 1.40  |
| BA/BN      | 2              | 1.19                             | 1.37  | 1.53  | 1.71  | 1.88  | 2.03  | 1.16                             | 1.34  | 1.50  | 1.67  | 1.83  | 1.98  | 1.10                             | 1.27  | 1.42  | 1.59  | 1.74  | 1.88  |
| BA/BN      | 2-1/2          | 1.50                             | 1.73  | 1.93  | 2.16  | 2.37  | 2.56  | 1.46                             | 1.69  | 1.89  | 2.11  | 2.31  | 2.50  | 1.39                             | 1.60  | 1.79  | 2.00  | 2.19  | 2.37  |
| BA/BN      | 3              | 1.82                             | 2.10  | 2.34  | 2.62  | 2.87  | 3.10  | 1.77                             | 2.05  | 2.29  | 2.56  | 2.80  | 3.03  | 1.68                             | 1.94  | 2.17  | 2.43  | 2.66  | 2.87  |
| BA/BN      | 4              | 2.35                             | 2.71  | 3.03  | 3.39  | 3.71  | 4.01  | 2.29                             | 2.65  | 2.96  | 3.31  | 3.63  | 3.92  | 2.17                             | 2.51  | 2.81  | 3.14  | 3.44  | 3.71  |
| BA/BN      | 5              | 2.98                             | 3.44  | 3.84  | 4.30  | 4.71  | 5.09  | 2.91                             | 3.36  | 3.75  | 4.20  | 4.60  | 4.97  | 2.76                             | 3.18  | 3.56  | 3.98  | 4.36  | 4.71  |
| BA/BN      | 6              | 3.70                             | 4.27  | 4.77  | 5.34  | 5.85  | 6.31  | 3.61                             | 4.17  | 4.66  | 5.21  | 5.71  | 6.17  | 3.42                             | 3.95  | 4.42  | 4.94  | 5.41  | 5.85  |
| HF         | 1/4            | 0.17                             | 0.19  | 0.22  | 0.24  | 0.27  | 0.29  | 0.16                             | 0.19  | 0.21  | 0.24  | 0.26  | 0.28  | 0.16                             | 0.18  | 0.20  | 0.22  | 0.25  | 0.27  |
| HF         | 1/2            | 0.32                             | 0.37  | 0.41  | 0.46  | 0.50  | 0.54  | 0.31                             | 0.36  | 0.40  | 0.45  | 0.49  | 0.53  | 0.29                             | 0.34  | 0.38  | 0.42  | 0.46  | 0.50  |
| HF         | 1              | 0.57                             | 0.66  | 0.73  | 0.82  | 0.90  | 0.97  | 0.56                             | 0.64  | 0.72  | 0.80  | 0.88  | 0.95  | 0.53                             | 0.61  | 0.68  | 0.76  | 0.83  | 0.90  |
| HF         | 1-1/2          | 0.87                             | 1.00  | 1.12  | 1.25  | 1.37  | 1.48  | 0.85                             | 0.98  | 1.10  | 1.22  | 1.34  | 1.45  | 0.80                             | 0.93  | 1.04  | 1.16  | 1.27  | 1.37  |
| HF         | 2              | 1.17                             | 1.36  | 1.52  | 1.70  | 1.86  | 2.01  | 1.15                             | 1.32  | 1.48  | 1.66  | 1.81  | 1.96  | 1.09                             | 1.26  | 1.40  | 1.57  | 1.72  | 1.86  |
| HF         | 2-1/2          | 1.50                             | 1.74  | 1.94  | 2.17  | 2.38  | 2.57  | 1.47                             | 1.70  | 1.90  | 2.12  | 2.32  | 2.51  | 1.39                             | 1.61  | 1.80  | 2.01  | 2.20  | 2.38  |
| HF         | 3-1/2          | 1.98                             | 2.29  | 2.56  | 2.86  | 3.14  | 3.39  | 1.94                             | 2.24  | 2.50  | 2.80  | 3.06  | 3.31  | 1.84                             | 2.12  | 2.37  | 2.65  | 2.90  | 3.14  |
| HF         | 6              | 3.53                             | 4.08  | 4.56  | 5.09  | 5.58  | 6.03  | 3.45                             | 3.98  | 4.45  | 4.97  | 5.45  | 5.89  | 3.27                             | 3.77  | 4.22  | 4.72  | 5.17  | 5.58  |
| HF         | 8-1/2          | 4.91                             | 5.67  | 6.34  | 7.08  | 7.76  | 8.38  | 4.79                             | 5.53  | 6.19  | 6.92  | 7.58  | 8.18  | 4.54                             | 5.25  | 5.87  | 6.56  | 7.18  | 7.76  |
| HF         | 10-1/2         | 6.23                             | 7.20  | 8.04  | 8.99  | 9.85  | 10.64 | 6.08                             | 7.03  | 7.86  | 8.78  | 9.62  | 10.39 | 5.77                             | 6.66  | 7.45  | 8.33  | 9.12  | 9.85  |
| HF         | 16             | 9.23                             | 10.65 | 11.91 | 13.32 | 14.59 | 15.76 | 9.01                             | 10.40 | 11.63 | 13.01 | 14.25 | 15.39 | 8.54                             | 9.87  | 11.03 | 12.33 | 13.51 | 14.59 |
| HF         | 20-1/2         | 12.10                            | 13.98 | 15.62 | 17.47 | 19.14 | 20.67 | 11.82                            | 13.65 | 15.26 | 17.06 | 18.69 | 20.18 | 11.21                            | 12.94 | 14.47 | 16.18 | 17.72 | 19.14 |

NOTE: Standard capacity is rated at 100F liquid inlet and 40F evaporator temperature; with 100 psi pressure drop across the TXV.

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |      |       |       |       |       |                                  |      |      |      |      |      |
|------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|------|-------|-------|-------|-------|----------------------------------|------|------|------|------|------|
|            |                | 0°F                              |       |       |       |       |       | -20°F                            |      |       |       |       |       | -40°F                            |      |      |      |      |      |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |      |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175   | 80                               | 100  | 125   | 150   | 175   | 200   | 80                               | 100  | 125  | 150  | 175  | 200  |
| BA/BN      | 1/2            | 0.26                             | 0.30  | 0.34  | 0.38  | 0.41  | 0.45  | 0.21                             | 0.24 | 0.26  | 0.29  | 0.31  | 0.33  | 0.13                             | 0.15 | 0.17 | 0.18 | 0.20 | 0.21 |
| BA/BN      | 1              | 0.50                             | 0.57  | 0.64  | 0.72  | 0.78  | 0.85  | 0.40                             | 0.45 | 0.50  | 0.55  | 0.59  | 0.64  | 0.26                             | 0.29 | 0.32 | 0.35 | 0.38 | 0.40 |
| BA/BN      | 1-1/2          | 0.77                             | 0.89  | 1.00  | 1.12  | 1.22  | 1.32  | 0.63                             | 0.70 | 0.78  | 0.86  | 0.93  | 0.99  | 0.40                             | 0.45 | 0.50 | 0.55 | 0.59 | 0.63 |
| BA/BN      | 2              | 1.03                             | 1.19  | 1.34  | 1.49  | 1.64  | 1.77  | 0.84                             | 0.94 | 1.05  | 1.15  | 1.24  | 1.32  | 0.53                             | 0.60 | 0.67 | 0.73 | 0.79 | 0.84 |
| BA/BN      | 2-1/2          | 1.31                             | 1.51  | 1.69  | 1.89  | 2.07  | 2.23  | 1.06                             | 1.18 | 1.32  | 1.45  | 1.56  | 1.67  | 0.67                             | 0.75 | 0.84 | 0.92 | 1.00 | 1.06 |
| BA/BN      | 3              | 1.58                             | 1.83  | 2.04  | 2.29  | 2.50  | 2.70  | 1.28                             | 1.43 | 1.60  | 1.75  | 1.89  | 2.03  | 0.82                             | 0.91 | 1.02 | 1.12 | 1.21 | 1.29 |
| BA/BN      | 4              | 2.05                             | 2.37  | 2.64  | 2.96  | 3.24  | 3.50  | 1.66                             | 1.85 | 2.07  | 2.27  | 2.45  | 2.62  | 1.06                             | 1.18 | 1.32 | 1.45 | 1.56 | 1.67 |
| BA/BN      | 5              | 2.60                             | 3.00  | 3.35  | 3.75  | 4.11  | 4.44  | 2.10                             | 2.35 | 2.63  | 2.88  | 3.11  | 3.32  | 1.34                             | 1.50 | 1.67 | 1.83 | 1.98 | 2.12 |
| BA/BN      | 6              | 3.22                             | 3.72  | 4.16  | 4.65  | 5.10  | 5.51  | 2.61                             | 2.92 | 3.26  | 3.57  | 3.86  | 4.12  | 1.66                             | 1.86 | 2.08 | 2.27 | 2.46 | 2.63 |
| HF         | 1/4            | 0.15                             | 0.17  | 0.19  | 0.21  | 0.23  | 0.25  | 0.12                             | 0.13 | 0.15  | 0.16  | 0.18  | 0.19  | 0.08                             | 0.08 | 0.09 | 0.10 | 0.11 | 0.12 |
| HF         | 1/2            | 0.28                             | 0.32  | 0.36  | 0.40  | 0.44  | 0.47  | 0.22                             | 0.25 | 0.28  | 0.31  | 0.33  | 0.35  | 0.14                             | 0.16 | 0.18 | 0.20 | 0.21 | 0.23 |
| HF         | 1              | 0.50                             | 0.57  | 0.64  | 0.72  | 0.78  | 0.85  | 0.40                             | 0.45 | 0.50  | 0.55  | 0.59  | 0.64  | 0.26                             | 0.29 | 0.32 | 0.35 | 0.38 | 0.40 |
| HF         | 1-1/2          | 0.76                             | 0.87  | 0.98  | 1.09  | 1.20  | 1.29  | 0.61                             | 0.69 | 0.77  | 0.84  | 0.91  | 0.97  | 0.39                             | 0.44 | 0.49 | 0.53 | 0.58 | 0.62 |
| HF         | 2              | 1.02                             | 1.18  | 1.32  | 1.48  | 1.62  | 1.75  | 0.83                             | 0.93 | 1.04  | 1.13  | 1.23  | 1.31  | 0.53                             | 0.59 | 0.66 | 0.72 | 0.78 | 0.83 |
| HF         | 2-1/2          | 1.31                             | 1.51  | 1.69  | 1.89  | 2.07  | 2.24  | 1.06                             | 1.19 | 1.33  | 1.45  | 1.57  | 1.68  | 0.68                             | 0.76 | 0.84 | 0.93 | 1.00 | 1.07 |
| HF         | 3-1/2          | 1.73                             | 2.00  | 2.23  | 2.50  | 2.73  | 2.95  | 1.40                             | 1.56 | 1.75  | 1.92  | 2.07  | 2.21  | 0.89                             | 1.00 | 1.11 | 1.22 | 1.32 | 1.41 |
| HF         | 6              | 3.08                             | 3.55  | 3.97  | 4.44  | 4.87  | 5.26  | 2.49                             | 2.78 | 3.11  | 3.41  | 3.68  | 3.94  | 1.59                             | 1.77 | 1.98 | 2.17 | 2.35 | 2.51 |
| HF         | 8-1/2          | 4.28                             | 4.94  | 5.52  | 6.18  | 6.77  | 7.31  | 3.46                             | 3.87 | 4.33  | 4.74  | 5.12  | 5.47  | 2.21                             | 2.47 | 2.76 | 3.02 | 3.26 | 3.49 |
| HF         | 10-1/2         | 5.43                             | 6.27  | 7.02  | 7.84  | 8.59  | 9.28  | 4.40                             | 4.92 | 5.50  | 6.02  | 6.50  | 6.95  | 2.80                             | 3.13 | 3.50 | 3.83 | 4.14 | 4.43 |
| HF         | 16             | 8.05                             | 9.29  | 10.39 | 11.61 | 12.72 | 13.74 | 6.51                             | 7.28 | 8.14  | 8.92  | 9.63  | 10.29 | 4.15                             | 4.64 | 5.18 | 5.68 | 6.13 | 6.56 |
| HF         | 20-1/2         | 10.55                            | 12.19 | 13.63 | 15.23 | 16.69 | 18.03 | 8.54                             | 9.55 | 10.67 | 11.69 | 12.63 | 13.50 | 5.44                             | 6.08 | 6.80 | 7.45 | 8.04 | 8.60 |

## REFRIGERANT LIQUID TEMPERATURE CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.

## R-502 BALANCED PORTED VALVES (TONS) B / HF / TFE / TRAE / T SERIES

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|            |                | 50°F                             |       |       |       |       |       | 40°F                             |       |       |       |       |       | 20°F                             |       |       |       |       |       |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   | 60                               | 80    | 100   | 125   | 150   | 175   |
| BA/BN      | 1/4            | 0.26                             | 0.30  | 0.34  | 0.38  | 0.41  | 0.44  | 0.25                             | 0.29  | 0.32  | 0.36  | 0.40  | 0.43  | 0.24                             | 0.28  | 0.31  | 0.35  | 0.38  | 0.41  |
| BA/BN      | 1/2            | 0.49                             | 0.57  | 0.63  | 0.71  | 0.77  | 0.84  | 0.48                             | 0.55  | 0.62  | 0.69  | 0.76  | 0.82  | 0.46                             | 0.53  | 0.59  | 0.66  | 0.73  | 0.79  |
| BA/BN      | 1              | 0.76                             | 0.88  | 0.98  | 1.10  | 1.20  | 1.30  | 0.74                             | 0.85  | 0.96  | 1.07  | 1.17  | 1.26  | 0.71                             | 0.82  | 0.92  | 1.02  | 1.12  | 1.21  |
| BA/BN      | 1-1/4          | 1.02                             | 1.18  | 1.32  | 1.47  | 1.61  | 1.74  | 0.99                             | 1.14  | 1.28  | 1.43  | 1.57  | 1.69  | 0.95                             | 1.10  | 1.23  | 1.37  | 1.50  | 1.62  |
| BA/BN      | 1-1/2          | 1.28                             | 1.48  | 1.65  | 1.85  | 2.02  | 2.19  | 1.26                             | 1.45  | 1.63  | 1.82  | 1.99  | 2.15  | 1.20                             | 1.39  | 1.55  | 1.73  | 1.90  | 2.05  |
| BA/BN      | 2              | 1.55                             | 1.79  | 2.00  | 2.24  | 2.45  | 2.65  | 1.52                             | 1.76  | 1.96  | 2.19  | 2.40  | 2.60  | 1.45                             | 1.67  | 1.87  | 2.09  | 2.29  | 2.48  |
| BA/BN      | 2-1/2          | 2.01                             | 2.32  | 2.59  | 2.90  | 3.18  | 3.43  | 1.97                             | 2.27  | 2.54  | 2.84  | 3.11  | 3.36  | 1.88                             | 2.17  | 2.43  | 2.71  | 2.97  | 3.21  |
| BA/BN      | 3              | 2.54                             | 2.93  | 3.28  | 3.67  | 4.02  | 4.34  | 2.49                             | 2.88  | 3.21  | 3.59  | 3.94  | 4.25  | 2.38                             | 2.75  | 3.07  | 3.44  | 3.76  | 4.06  |
| BA/BN      | 4              | 3.17                             | 3.66  | 4.09  | 4.58  | 5.01  | 5.41  | 3.10                             | 3.58  | 4.00  | 4.47  | 4.90  | 5.29  | 2.96                             | 3.42  | 3.82  | 4.27  | 4.68  | 5.06  |
| HF         | 1/8            | 0.14                             | 0.16  | 0.18  | 0.20  | 0.22  | 0.24  | 0.14                             | 0.16  | 0.18  | 0.20  | 0.22  | 0.24  | 0.13                             | 0.15  | 0.17  | 0.19  | 0.21  | 0.22  |
| HF         | 1/4            | 0.27                             | 0.31  | 0.35  | 0.39  | 0.43  | 0.46  | 0.27                             | 0.31  | 0.35  | 0.39  | 0.43  | 0.46  | 0.25                             | 0.29  | 0.32  | 0.36  | 0.40  | 0.43  |
| HF         | 1/2            | 0.49                             | 0.57  | 0.63  | 0.71  | 0.77  | 0.84  | 0.48                             | 0.55  | 0.62  | 0.69  | 0.76  | 0.82  | 0.46                             | 0.53  | 0.59  | 0.66  | 0.73  | 0.79  |
| HF         | 1              | 0.74                             | 0.85  | 0.96  | 1.07  | 1.17  | 1.26  | 0.73                             | 0.84  | 0.94  | 1.05  | 1.15  | 1.25  | 0.70                             | 0.81  | 0.90  | 1.01  | 1.11  | 1.20  |
| HF         | 1-1/4          | 1.00                             | 1.15  | 1.29  | 1.44  | 1.58  | 1.71  | 0.98                             | 1.13  | 1.27  | 1.41  | 1.55  | 1.67  | 0.93                             | 1.07  | 1.20  | 1.34  | 1.47  | 1.59  |
| HF         | 1-1/2          | 1.28                             | 1.48  | 1.65  | 1.85  | 2.02  | 2.19  | 1.26                             | 1.45  | 1.63  | 1.82  | 1.99  | 2.15  | 1.20                             | 1.39  | 1.55  | 1.73  | 1.90  | 2.05  |
| HF         | 2              | 1.69                             | 1.95  | 2.18  | 2.44  | 2.67  | 2.89  | 1.66                             | 1.92  | 2.14  | 2.40  | 2.62  | 2.83  | 1.58                             | 1.82  | 2.04  | 2.28  | 2.50  | 2.70  |
| HF         | 3-1/2          | 3.01                             | 3.48  | 3.89  | 4.34  | 4.76  | 5.14  | 2.95                             | 3.41  | 3.81  | 4.26  | 4.66  | 5.04  | 2.81                             | 3.24  | 3.63  | 4.06  | 4.44  | 4.80  |
| HF         | 5              | 4.19                             | 4.84  | 5.41  | 6.05  | 6.62  | 7.16  | 4.10                             | 4.73  | 5.29  | 5.92  | 6.48  | 7.00  | 3.92                             | 4.53  | 5.06  | 5.66  | 6.20  | 6.69  |
| HF         | 7              | 5.30                             | 6.12  | 6.84  | 7.65  | 8.38  | 9.05  | 5.19                             | 5.99  | 6.70  | 7.49  | 8.21  | 8.86  | 4.96                             | 5.73  | 6.40  | 7.16  | 7.84  | 8.47  |
| HF         | 10             | 7.87                             | 9.09  | 10.16 | 11.36 | 12.44 | 13.44 | 7.70                             | 8.89  | 9.94  | 11.11 | 12.17 | 13.15 | 7.35                             | 8.49  | 9.49  | 10.61 | 11.62 | 12.55 |
| HF         | 13             | 10.36                            | 11.96 | 13.37 | 14.95 | 16.38 | 17.69 | 10.14                            | 11.71 | 13.09 | 14.64 | 16.03 | 17.32 | 9.68                             | 11.18 | 12.50 | 13.97 | 15.31 | 16.53 |
| TFE        | 5              | 4.11                             | 4.75  | 5.31  | 5.93  | 6.50  | 7.02  | 4.03                             | 4.65  | 5.20  | 5.82  | 6.37  | 6.88  | 3.84                             | 4.43  | 4.96  | 5.54  | 6.07  | 6.56  |
| TFE        | 7              | 5.63                             | 6.50  | 7.27  | 8.13  | 8.90  | 9.62  | 5.51                             | 6.36  | 7.11  | 7.95  | 8.71  | 9.41  | 5.26                             | 6.07  | 6.79  | 7.59  | 8.32  | 8.98  |
| TFE        | 9              | 6.99                             | 8.07  | 9.02  | 10.09 | 11.05 | 11.94 | 6.85                             | 7.91  | 8.84  | 9.89  | 10.83 | 11.70 | 6.53                             | 7.54  | 8.43  | 9.43  | 10.32 | 11.15 |
| TFE        | 14             | 10.68                            | 12.33 | 13.79 | 15.42 | 16.89 | 18.24 | 10.45                            | 12.07 | 13.49 | 15.08 | 16.52 | 17.85 | 9.97                             | 11.51 | 12.87 | 14.39 | 15.76 | 17.03 |
| TRAE+      | 8              | 6.05                             | 6.99  | 7.81  | 8.73  | 9.57  | 10.33 | 5.93                             | 6.85  | 7.66  | 8.56  | 9.38  | 10.13 | 5.66                             | 6.54  | 7.31  | 8.17  | 8.95  | 9.67  |
| TRAE+      | 12             | 8.82                             | 10.18 | 11.39 | 12.73 | 13.95 | 15.06 | 8.64                             | 9.98  | 11.15 | 12.47 | 13.66 | 14.76 | 8.24                             | 9.51  | 10.64 | 11.89 | 13.03 | 14.07 |
| TRAE+      | 14             | 9.85                             | 11.37 | 12.72 | 14.22 | 15.57 | 16.82 | 9.64                             | 11.13 | 12.45 | 13.91 | 15.24 | 16.46 | 9.20                             | 10.62 | 11.88 | 13.28 | 14.55 | 15.71 |
| TRAE+      | 20             | 14.93                            | 17.24 | 19.27 | 21.55 | 23.61 | 25.50 | 14.61                            | 16.87 | 18.86 | 21.09 | 23.10 | 24.95 | 13.95                            | 16.11 | 18.01 | 20.14 | 22.06 | 23.82 |
| TRAE+      | 30             | 20.52                            | 23.69 | 26.49 | 29.62 | 32.44 | 35.04 | 20.09                            | 23.20 | 25.94 | 29.00 | 31.77 | 34.31 | 19.17                            | 22.14 | 24.75 | 27.67 | 30.31 | 32.74 |
| TRAE       | 35             | 27.70                            | 31.99 | 35.76 | 39.98 | 43.80 | 47.31 | 27.12                            | 31.32 | 35.01 | 39.14 | 42.88 | 46.32 | 25.88                            | 29.88 | 33.41 | 37.35 | 40.92 | 44.20 |
| TRAE       | 40             | 30.22                            | 34.90 | 39.01 | 43.62 | 47.78 | 51.61 | 29.58                            | 34.16 | 38.19 | 42.70 | 46.77 | 50.52 | 28.23                            | 32.60 | 36.44 | 40.75 | 44.64 | 48.21 |
| TRAE       | 50             | 35.96                            | 41.52 | 46.42 | 51.90 | 56.86 | 61.41 | 35.21                            | 40.66 | 45.46 | 50.82 | 55.67 | 60.13 | 35.21                            | 40.66 | 45.46 | 50.82 | 55.67 | 60.13 |
| TJR        | 9              | 7.54                             | 8.71  | 9.73  | 10.88 | 11.92 | 12.88 | 7.38                             | 8.52  | 9.53  | 10.65 | 11.67 | 12.60 | 7.05                             | 8.14  | 9.10  | 10.18 | 11.15 | 12.04 |
| TJR        | 12             | 9.03                             | 10.43 | 11.66 | 13.03 | 14.28 | 15.42 | 8.84                             | 10.21 | 11.41 | 12.76 | 13.98 | 15.10 | 8.44                             | 9.75  | 10.90 | 12.19 | 13.35 | 14.42 |
| TER        | 14             | 11.29                            | 13.04 | 14.58 | 16.30 | 17.85 | 19.28 | 11.05                            | 12.76 | 14.27 | 15.95 | 17.47 | 18.87 | 10.56                            | 12.19 | 13.63 | 15.24 | 16.70 | 18.03 |
| TER        | 16             | 13.34                            | 15.40 | 17.22 | 19.25 | 21.09 | 22.78 | 13.06                            | 15.08 | 16.86 | 18.85 | 20.65 | 22.30 | 12.48                            | 14.41 | 16.11 | 18.01 | 19.73 | 21.31 |
| TER        | 21             | 17.96                            | 20.74 | 23.19 | 25.92 | 28.40 | 30.67 | 17.58                            | 20.30 | 22.70 | 25.37 | 27.80 | 30.02 | 16.80                            | 19.39 | 21.68 | 24.24 | 26.56 | 28.69 |
| TER        | 27             | 23.09                            | 26.66 | 29.81 | 33.33 | 36.51 | 39.43 | 22.60                            | 26.10 | 29.18 | 32.62 | 35.73 | 38.60 | 21.59                            | 24.93 | 27.87 | 31.16 | 34.14 | 36.87 |
| TIR        | 37             | 28.22                            | 32.59 | 36.43 | 40.73 | 44.62 | 48.19 | 27.62                            | 31.89 | 35.66 | 39.87 | 43.67 | 47.17 | 26.39                            | 30.47 | 34.06 | 38.08 | 41.72 | 45.06 |
| THR        | 48             | 35.91                            | 41.47 | 46.36 | 51.83 | 56.78 | 61.33 | 35.15                            | 40.59 | 45.38 | 50.73 | 55.58 | 60.03 | 33.58                            | 38.77 | 43.35 | 48.47 | 53.09 | 57.35 |
| THR        | 60             | 43.61                            | 50.36 | 56.30 | 62.95 | 68.95 | 74.48 | 42.69                            | 49.29 | 55.11 | 61.62 | 67.50 | 72.91 | 40.78                            | 47.09 | 52.64 | 58.86 | 64.48 | 69.64 |
| TMR        | 60             | 51.30                            | 59.24 | 66.23 | 74.05 | 81.11 | 87.61 | 50.22                            | 57.99 | 64.83 | 72.49 | 79.40 | 85.77 | 47.97                            | 55.39 | 61.93 | 69.24 | 75.85 | 81.92 |

Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 100 psi pressure drop across the TXV per ARI 750-2001.



## R-502 BALANCED PORTED VALVES (TONS) B / HF / TFE / TRAE / T-SERIES &lt;CONT'D&gt;

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |       |       |       |       |       |                                  |       |       |       |       |       |                                  |       |       |       |       |       |
|------------|----------------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|----------------------------------|-------|-------|-------|-------|-------|
|            |                | 0°F                              |       |       |       |       |       | -20°F                            |       |       |       |       |       | -40°F                            |       |       |       |       |       |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       | PRESSURE DROP ACROSS VALVE (PSI) |       |       |       |       |       |
|            |                | 60                               | 80    | 100   | 125   | 150   | 175   | 80                               | 100   | 125   | 150   | 175   | 200   | 80                               | 100   | 125   | 150   | 175   | 200   |
| BA/BN      | 1/4            | 0.22                             | 0.25  | 0.28  | 0.32  | 0.35  | 0.38  | 0.17                             | 0.19  | 0.21  | 0.23  | 0.25  | 0.27  | 0.11                             | 0.12  | 0.14  | 0.15  | 0.16  | 0.17  |
| BA/BN      | 1/2            | 0.42                             | 0.48  | 0.54  | 0.61  | 0.66  | 0.72  | 0.33                             | 0.37  | 0.41  | 0.45  | 0.49  | 0.52  | 0.21                             | 0.23  | 0.26  | 0.29  | 0.31  | 0.33  |
| BA/BN      | 1              | 0.65                             | 0.75  | 0.84  | 0.94  | 1.03  | 1.11  | 0.52                             | 0.58  | 0.65  | 0.71  | 0.77  | 0.82  | 0.33                             | 0.37  | 0.41  | 0.45  | 0.49  | 0.52  |
| BA/BN      | 1-1/4          | 0.87                             | 1.00  | 1.12  | 1.26  | 1.38  | 1.49  | 0.69                             | 0.77  | 0.86  | 0.94  | 1.02  | 1.09  | 0.44                             | 0.49  | 0.55  | 0.60  | 0.65  | 0.70  |
| BA/BN      | 1-1/2          | 1.10                             | 1.27  | 1.42  | 1.59  | 1.74  | 1.88  | 0.87                             | 0.97  | 1.09  | 1.19  | 1.29  | 1.38  | 0.55                             | 0.61  | 0.69  | 0.75  | 0.81  | 0.87  |
| BA/BN      | 2              | 1.34                             | 1.55  | 1.73  | 1.93  | 2.12  | 2.29  | 1.05                             | 1.17  | 1.31  | 1.44  | 1.55  | 1.66  | 0.67                             | 0.75  | 0.84  | 0.92  | 0.99  | 1.06  |
| BA/BN      | 2-1/2          | 1.73                             | 2.00  | 2.23  | 2.50  | 2.74  | 2.95  | 1.36                             | 1.52  | 1.70  | 1.86  | 2.01  | 2.15  | 0.87                             | 0.97  | 1.09  | 1.19  | 1.29  | 1.38  |
| BA/BN      | 3              | 2.19                             | 2.53  | 2.83  | 3.16  | 3.46  | 3.74  | 1.73                             | 1.93  | 2.16  | 2.37  | 2.56  | 2.74  | 1.10                             | 1.23  | 1.38  | 1.51  | 1.63  | 1.74  |
| BA/BN      | 4              | 2.72                             | 3.14  | 3.51  | 3.93  | 4.30  | 4.65  | 2.15                             | 2.40  | 2.69  | 2.94  | 3.18  | 3.40  | 1.37                             | 1.53  | 1.71  | 1.88  | 2.03  | 2.17  |
| HF         | 1/8            | 0.12                             | 0.14  | 0.15  | 0.17  | 0.19  | 0.20  | 0.10                             | 0.11  | 0.13  | 0.14  | 0.15  | 0.16  | 0.06                             | 0.07  | 0.08  | 0.08  | 0.09  | 0.09  |
| HF         | 1/4            | 0.23                             | 0.27  | 0.30  | 0.33  | 0.36  | 0.39  | 0.18                             | 0.20  | 0.23  | 0.25  | 0.27  | 0.28  | 0.12                             | 0.13  | 0.15  | 0.16  | 0.18  | 0.19  |
| HF         | 1/2            | 0.42                             | 0.48  | 0.54  | 0.61  | 0.66  | 0.72  | 0.33                             | 0.37  | 0.41  | 0.45  | 0.49  | 0.52  | 0.21                             | 0.23  | 0.26  | 0.29  | 0.31  | 0.33  |
| HF         | 1              | 0.64                             | 0.74  | 0.83  | 0.92  | 1.01  | 1.09  | 0.50                             | 0.56  | 0.63  | 0.68  | 0.74  | 0.79  | 0.32                             | 0.36  | 0.40  | 0.44  | 0.47  | 0.51  |
| HF         | 1-1/4          | 0.86                             | 0.99  | 1.11  | 1.24  | 1.36  | 1.47  | 0.68                             | 0.76  | 0.85  | 0.93  | 1.01  | 1.08  | 0.43                             | 0.48  | 0.54  | 0.59  | 0.64  | 0.68  |
| HF         | 1-1/2          | 1.10                             | 1.27  | 1.42  | 1.59  | 1.74  | 1.88  | 0.87                             | 0.97  | 1.09  | 1.19  | 1.29  | 1.38  | 0.55                             | 0.61  | 0.69  | 0.75  | 0.81  | 0.87  |
| HF         | 2              | 1.46                             | 1.69  | 1.88  | 2.11  | 2.31  | 2.49  | 1.15                             | 1.29  | 1.44  | 1.57  | 1.70  | 1.82  | 0.73                             | 0.82  | 0.91  | 1.00  | 1.08  | 1.15  |
| HF         | 3-1/2          | 2.59                             | 2.99  | 3.34  | 3.74  | 4.10  | 4.42  | 1.65                             | 1.84  | 2.06  | 2.26  | 2.44  | 2.61  | 1.30                             | 1.45  | 1.63  | 1.78  | 1.92  | 2.06  |
| HF         | 5              | 3.60                             | 4.16  | 4.65  | 5.20  | 5.69  | 6.15  | 2.84                             | 3.18  | 3.55  | 3.89  | 4.20  | 4.49  | 1.81                             | 2.02  | 2.26  | 2.48  | 2.68  | 2.86  |
| HF         | 7              | 4.56                             | 5.27  | 5.89  | 6.58  | 7.21  | 7.79  | 3.60                             | 4.02  | 4.50  | 4.93  | 5.32  | 5.69  | 2.29                             | 2.56  | 2.86  | 3.14  | 3.39  | 3.62  |
| HF         | 10             | 6.76                             | 7.81  | 8.73  | 9.76  | 10.69 | 11.54 | 5.34                             | 5.97  | 6.68  | 7.31  | 7.90  | 8.44  | 3.40                             | 3.80  | 4.25  | 4.66  | 5.03  | 5.38  |
| HF         | 13             | 8.90                             | 10.28 | 11.49 | 12.85 | 14.07 | 15.20 | 7.03                             | 7.86  | 8.79  | 9.63  | 10.40 | 11.12 | 4.48                             | 5.01  | 5.60  | 6.13  | 6.63  | 7.08  |
| TFE        | 5              | 3.54                             | 4.09  | 4.57  | 5.11  | 5.60  | 6.05  | 2.79                             | 3.12  | 3.49  | 3.82  | 4.13  | 4.41  | 1.78                             | 1.99  | 2.23  | 2.44  | 2.63  | 2.81  |
| TFE        | 7              | 4.84                             | 5.59  | 6.25  | 6.99  | 7.65  | 8.27  | 3.82                             | 4.27  | 4.78  | 5.23  | 5.65  | 6.04  | 2.43                             | 2.72  | 3.04  | 3.33  | 3.59  | 3.84  |
| TFE        | 9              | 6.01                             | 6.94  | 7.76  | 8.67  | 9.50  | 10.26 | 4.75                             | 5.31  | 5.94  | 6.50  | 7.03  | 7.51  | 3.02                             | 3.38  | 3.78  | 4.14  | 4.47  | 4.78  |
| TFE        | 14             | 9.18                             | 10.60 | 11.85 | 13.25 | 14.51 | 15.68 | 7.25                             | 8.11  | 9.06  | 9.93  | 10.72 | 11.46 | 4.61                             | 5.15  | 5.76  | 6.31  | 6.82  | 7.29  |
| TRAE+      | 8              | 5.20                             | 6.00  | 6.71  | 7.51  | 8.22  | 8.88  | 4.11                             | 4.60  | 5.14  | 5.63  | 6.08  | 6.50  | 2.62                             | 2.93  | 3.28  | 3.59  | 3.88  | 4.14  |
| TRAE+      | 12             | 7.58                             | 8.75  | 9.79  | 10.94 | 11.99 | 12.95 | 5.99                             | 6.70  | 7.49  | 8.20  | 8.86  | 9.47  | 3.81                             | 4.26  | 4.76  | 5.22  | 5.64  | 6.02  |
| TRAE+      | 14             | 8.47                             | 9.78  | 10.93 | 12.23 | 13.39 | 14.47 | 6.69                             | 7.48  | 8.36  | 9.16  | 9.89  | 10.58 | 4.26                             | 4.76  | 5.33  | 5.83  | 6.30  | 6.74  |
| TRAE+      | 20             | 12.83                            | 14.81 | 16.56 | 18.52 | 20.29 | 21.91 | 10.13                            | 11.33 | 12.66 | 13.87 | 14.98 | 16.02 | 6.45                             | 7.21  | 8.06  | 8.83  | 9.54  | 10.20 |
| TRAE+      | 30             | 17.64                            | 20.37 | 22.77 | 25.46 | 27.89 | 30.13 | 13.93                            | 15.57 | 17.41 | 19.07 | 20.60 | 22.03 | 8.87                             | 9.92  | 11.09 | 12.15 | 13.12 | 14.02 |
| TRAE       | 35             | 23.81                            | 27.49 | 30.74 | 34.37 | 37.65 | 40.66 | 18.80                            | 21.02 | 23.50 | 25.74 | 27.81 | 29.73 | 11.97                            | 13.38 | 14.96 | 16.39 | 17.70 | 18.93 |
| TRAE       | 40             | 25.97                            | 29.99 | 33.53 | 37.48 | 41.06 | 44.35 | 20.51                            | 22.93 | 25.64 | 28.08 | 30.33 | 32.43 | 13.06                            | 14.60 | 16.33 | 17.88 | 19.32 | 20.65 |
| TRAE       | 50             | 30.91                            | 35.69 | 39.90 | 44.61 | 48.87 | 52.79 | 24.41                            | 27.29 | 30.51 | 33.42 | 36.10 | 38.60 | 15.54                            | 17.37 | 19.43 | 21.28 | 22.98 | 24.57 |
| TJR        | 9              | 6.70                             | 7.74  | 8.65  | 9.67  | 10.59 | 11.44 | 7.31                             | 8.17  | 9.14  | 10.01 | 10.81 | 11.56 | 6.89                             | 7.70  | 8.61  | 9.43  | 10.19 | 11.56 |
| TJR        | 12             | 8.02                             | 9.26  | 10.36 | 11.58 | 12.68 | 13.70 | 8.75                             | 9.78  | 10.94 | 11.98 | 12.94 | 13.84 | 8.25                             | 9.22  | 10.31 | 11.29 | 12.20 | 13.84 |
| TER        | 14             | 10.03                            | 11.58 | 12.95 | 14.48 | 15.86 | 17.13 | 10.95                            | 12.24 | 13.68 | 14.99 | 16.19 | 17.31 | 10.31                            | 11.53 | 12.89 | 14.12 | 15.26 | 17.31 |
| TER        | 16             | 11.85                            | 13.59 | 15.30 | 17.11 | 18.74 | 20.24 | 12.93                            | 14.46 | 16.16 | 17.71 | 19.13 | 20.45 | 12.19                            | 13.63 | 15.23 | 16.69 | 18.02 | 20.45 |
| TER        | 21             | 15.96                            | 18.43 | 20.60 | 23.03 | 25.23 | 27.26 | 17.14                            | 19.47 | 21.76 | 23.84 | 25.75 | 27.53 | 16.41                            | 18.35 | 20.51 | 22.47 | 24.27 | 27.53 |
| TER        | 27             | 20.51                            | 23.69 | 26.48 | 29.61 | 32.44 | 35.04 | 22.38                            | 25.02 | 27.98 | 30.65 | 33.10 | 35.39 | 21.09                            | 23.58 | 26.37 | 28.88 | 31.20 | 35.39 |
| TIR        | 37             | 25.07                            | 28.95 | 32.37 | 36.19 | 39.64 | 42.82 | 27.35                            | 30.58 | 34.19 | 37.45 | 40.45 | 43.25 | 25.78                            | 28.82 | 32.22 | 35.30 | 38.12 | 43.25 |
| THR        | 48             | 31.90                            | 36.84 | 41.19 | 46.05 | 50.44 | 54.49 | 34.81                            | 38.92 | 43.51 | 47.66 | 51.48 | 55.04 | 32.80                            | 36.67 | 41.00 | 44.92 | 48.52 | 55.04 |
| THR        | 60             | 38.74                            | 44.74 | 50.02 | 55.92 | 61.26 | 66.71 | 42.27                            | 47.26 | 52.84 | 57.88 | 62.52 | 66.84 | 39.84                            | 44.54 | 49.79 | 54.55 | 58.92 | 66.84 |
| TMR        | 60             | 45.58                            | 52.63 | 58.84 | 65.79 | 72.07 | 77.84 | 49.73                            | 55.60 | 62.84 | 68.09 | 73.55 | 78.62 | 46.86                            | 52.39 | 58.58 | 64.17 | 69.31 | 78.62 |

## REFRIGERANT LIQUID TEMPERATURE VALVE CAPACITY MULTIPLIER CORRECTION FACTORS

|               | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|               | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-12          | 1.60                              | 1.54 | 1.48 | 1.42 | 1.36 | 1.30 | 1.24 | 1.18 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.75 |
| R-134a        | 1.70                              | 1.63 | 1.56 | 1.49 | 1.42 | 1.36 | 1.29 | 1.21 | 1.14 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.71 |
| R-22          | 1.56                              | 1.51 | 1.45 | 1.40 | 1.34 | 1.29 | 1.23 | 1.17 | 1.12 | 1.06 | 1.00 | 0.94 | 0.88 | 0.82 | 0.76 |
| R-404A/R-507  | 2.00                              | 1.90 | 1.80 | 1.70 | 1.60 | 1.50 | 1.40 | 1.30 | 1.20 | 1.10 | 1.00 | 0.90 | 0.80 | 0.70 | 0.50 |
| R-450A/R-513A | 1.73                              | 1.65 | 1.58 | 1.51 | 1.44 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.93 | 0.85 | 0.78 | 0.70 |
| R-448A/R-449A | 1.71                              | 1.64 | 1.57 | 1.50 | 1.43 | 1.36 | 1.29 | 1.22 | 1.15 | 1.07 | 1.00 | 0.92 | 0.85 | 0.77 | 0.69 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.



R-1234yf BALANCE PORTED VALVES (TONS) B SERIES AND H SERIES

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|            |                | 50°F                             |      |      |      |      |      | 40°F                             |      |      |      |      |      | 20°F                             |      |      |      |      |      |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|            |                | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  | 60                               | 80   | 100  | 125  | 150  | 175  |
| BA/BN      | 1/4            | 0.15                             | 0.17 | 0.19 | 0.22 | 0.24 | 0.26 | 0.15                             | 0.17 | 0.19 | 0.21 | 0.23 | 0.25 | 0.11                             | 0.13 | 0.14 | 0.16 | 0.18 | 0.19 |
| BA/BN      | 1/2            | 0.29                             | 0.33 | 0.37 | 0.41 | 0.45 | 0.49 | 0.28                             | 0.32 | 0.36 | 0.40 | 0.44 | 0.47 | 0.21                             | 0.25 | 0.27 | 0.31 | 0.34 | 0.36 |
| BA/BN      | 3/4            | 0.44                             | 0.51 | 0.57 | 0.64 | 0.70 | 0.76 | 0.43                             | 0.50 | 0.56 | 0.62 | 0.68 | 0.74 | 0.33                             | 0.38 | 0.43 | 0.48 | 0.52 | 0.57 |
| BA/BN      | 1              | 0.59                             | 0.69 | 0.77 | 0.86 | 0.94 | 1.02 | 0.58                             | 0.67 | 0.74 | 0.83 | 0.91 | 0.99 | 0.44                             | 0.51 | 0.57 | 0.64 | 0.70 | 0.76 |
| BA/BN      | 1-1/4          | 0.75                             | 0.87 | 0.97 | 1.08 | 1.19 | 1.28 | 0.73                             | 0.84 | 0.94 | 1.05 | 1.15 | 1.24 | 0.56                             | 0.65 | 0.72 | 0.81 | 0.89 | 0.96 |
| BA/BN      | 1-1/2          | 0.91                             | 1.05 | 1.17 | 1.31 | 1.44 | 1.55 | 0.88                             | 1.02 | 1.14 | 1.27 | 1.40 | 1.51 | 0.68                             | 0.78 | 0.88 | 0.98 | 1.07 | 1.16 |
| BA/BN      | 2              | 1.18                             | 1.36 | 1.52 | 1.70 | 1.86 | 2.01 | 1.14                             | 1.32 | 1.47 | 1.65 | 1.81 | 1.95 | 0.88                             | 1.01 | 1.13 | 1.27 | 1.39 | 1.50 |
| BA/BN      | 2-1/2          | 1.49                             | 1.72 | 1.93 | 2.15 | 2.36 | 2.55 | 1.45                             | 1.67 | 1.87 | 2.09 | 2.29 | 2.47 | 1.11                             | 1.29 | 1.44 | 1.61 | 1.76 | 1.90 |
| BA/BN      | 3-1/4          | 1.85                             | 2.14 | 2.39 | 2.67 | 2.93 | 3.16 | 1.80                             | 2.08 | 2.32 | 2.59 | 2.84 | 3.07 | 1.38                             | 1.60 | 1.78 | 1.99 | 2.18 | 2.36 |
| HF         | 1/8            | 0.08                             | 0.10 | 0.11 | 0.12 | 0.13 | 0.14 | 0.08                             | 0.09 | 0.11 | 0.12 | 0.13 | 0.14 | 0.06                             | 0.07 | 0.08 | 0.09 | 0.10 | 0.11 |
| HF         | 1/4            | 0.16                             | 0.18 | 0.21 | 0.23 | 0.25 | 0.27 | 0.15                             | 0.18 | 0.20 | 0.22 | 0.24 | 0.26 | 0.12                             | 0.14 | 0.15 | 0.17 | 0.19 | 0.20 |
| HF         | 1/2            | 0.29                             | 0.33 | 0.37 | 0.41 | 0.45 | 0.49 | 0.28                             | 0.32 | 0.36 | 0.40 | 0.44 | 0.47 | 0.21                             | 0.25 | 0.27 | 0.31 | 0.34 | 0.36 |
| HF         | 3/4            | 0.44                             | 0.50 | 0.56 | 0.63 | 0.69 | 0.74 | 0.42                             | 0.49 | 0.55 | 0.61 | 0.67 | 0.72 | 0.32                             | 0.37 | 0.42 | 0.47 | 0.51 | 0.55 |
| HF         | 1              | 0.59                             | 0.68 | 0.76 | 0.85 | 0.93 | 1.01 | 0.57                             | 0.66 | 0.74 | 0.82 | 0.90 | 0.98 | 0.44                             | 0.51 | 0.57 | 0.63 | 0.69 | 0.75 |
| HF         | 1-1/4          | 0.75                             | 0.87 | 0.97 | 1.09 | 1.19 | 1.29 | 0.73                             | 0.84 | 0.94 | 1.06 | 1.16 | 1.25 | 0.56                             | 0.65 | 0.73 | 0.81 | 0.89 | 0.96 |
| HF         | 1-3/4          | 0.99                             | 1.15 | 1.28 | 1.43 | 1.57 | 1.70 | 0.96                             | 1.11 | 1.24 | 1.39 | 1.52 | 1.65 | 0.74                             | 0.86 | 0.96 | 1.07 | 1.17 | 1.27 |
| HF         | 3              | 1.77                             | 2.04 | 2.28 | 2.55 | 2.80 | 3.02 | 1.72                             | 1.98 | 2.22 | 2.48 | 2.71 | 2.93 | 1.32                             | 1.52 | 1.70 | 1.90 | 2.09 | 2.25 |

Standard capacity is rated at 100°F liquid inlet and 40°F evaporator temperature; with 100 psi pressure drop across the TXV.

| VALVE TYPE | NOMINAL RATING | EVAPORATOR TEMPERATURE           |      |      |      |      |      |                                  |      |      |      |      |      |                                  |      |      |      |      |      |
|------------|----------------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|----------------------------------|------|------|------|------|------|
|            |                | 0°F                              |      |      |      |      |      | -20°F                            |      |      |      |      |      | -40°F                            |      |      |      |      |      |
|            |                | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      | PRESSURE DROP ACROSS VALVE (PSI) |      |      |      |      |      |
|            |                | 60                               | 80   | 100  | 125  | 150  | 175  | 80                               | 100  | 125  | 150  | 175  | 200  | 80                               | 100  | 125  | 150  | 175  | 200  |
| BA/BN      | 1/4            | 0.08                             | 0.09 | 0.10 | 0.11 | 0.12 | 0.13 | 0.06                             | 0.06 | 0.07 | 0.08 | 0.08 | 0.09 | 0.04                             | 0.04 | 0.04 | 0.05 | 0.05 | 0.06 |
| BA/BN      | 1/2            | 0.14                             | 0.17 | 0.19 | 0.21 | 0.23 | 0.25 | 0.11                             | 0.12 | 0.14 | 0.15 | 0.16 | 0.17 | 0.07                             | 0.08 | 0.08 | 0.09 | 0.10 | 0.11 |
| BA/BN      | 3/4            | 0.23                             | 0.26 | 0.29 | 0.32 | 0.36 | 0.38 | 0.17                             | 0.19 | 0.21 | 0.23 | 0.25 | 0.27 | 0.10                             | 0.12 | 0.13 | 0.14 | 0.15 | 0.17 |
| BA/BN      | 1              | 0.30                             | 0.35 | 0.39 | 0.43 | 0.48 | 0.51 | 0.23                             | 0.25 | 0.28 | 0.31 | 0.33 | 0.36 | 0.14                             | 0.16 | 0.17 | 0.19 | 0.21 | 0.22 |
| BA/BN      | 1-1/4          | 0.38                             | 0.44 | 0.49 | 0.55 | 0.60 | 0.65 | 0.29                             | 0.32 | 0.36 | 0.39 | 0.42 | 0.45 | 0.18                             | 0.20 | 0.22 | 0.24 | 0.26 | 0.28 |
| BA/BN      | 1-1/2          | 0.46                             | 0.53 | 0.60 | 0.67 | 0.73 | 0.79 | 0.35                             | 0.39 | 0.43 | 0.47 | 0.51 | 0.55 | 0.21                             | 0.24 | 0.27 | 0.29 | 0.32 | 0.34 |
| BA/BN      | 2              | 0.60                             | 0.69 | 0.77 | 0.86 | 0.94 | 1.02 | 0.45                             | 0.50 | 0.56 | 0.61 | 0.66 | 0.71 | 0.28                             | 0.31 | 0.35 | 0.38 | 0.41 | 0.44 |
| BA/BN      | 2-1/2          | 0.76                             | 0.87 | 0.98 | 1.09 | 1.20 | 1.29 | 0.57                             | 0.63 | 0.71 | 0.78 | 0.84 | 0.90 | 0.35                             | 0.39 | 0.44 | 0.48 | 0.52 | 0.56 |
| BA/BN      | 3-1/4          | 0.94                             | 1.08 | 1.21 | 1.35 | 1.48 | 1.60 | 0.70                             | 0.79 | 0.88 | 0.97 | 1.04 | 1.11 | 0.44                             | 0.49 | 0.54 | 0.60 | 0.64 | 0.69 |
| HF         | 1/8            | 0.04                             | 0.05 | 0.05 | 0.06 | 0.07 | 0.07 | 0.03                             | 0.04 | 0.04 | 0.04 | 0.05 | 0.05 | 0.02                             | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 |
| HF         | 1/4            | 0.08                             | 0.09 | 0.10 | 0.12 | 0.13 | 0.14 | 0.06                             | 0.07 | 0.08 | 0.08 | 0.09 | 0.10 | 0.04                             | 0.04 | 0.05 | 0.05 | 0.06 | 0.06 |
| HF         | 1/2            | 0.14                             | 0.17 | 0.19 | 0.21 | 0.23 | 0.25 | 0.11                             | 0.12 | 0.14 | 0.15 | 0.16 | 0.17 | 0.07                             | 0.08 | 0.08 | 0.09 | 0.10 | 0.11 |
| HF         | 3/4            | 0.22                             | 0.25 | 0.28 | 0.32 | 0.35 | 0.38 | 0.17                             | 0.19 | 0.21 | 0.23 | 0.25 | 0.26 | 0.10                             | 0.11 | 0.13 | 0.14 | 0.15 | 0.16 |
| HF         | 1              | 0.30                             | 0.34 | 0.38 | 0.43 | 0.47 | 0.51 | 0.22                             | 0.25 | 0.28 | 0.31 | 0.33 | 0.35 | 0.14                             | 0.15 | 0.17 | 0.19 | 0.20 | 0.22 |
| HF         | 1-1/4          | 0.38                             | 0.44 | 0.49 | 0.55 | 0.60 | 0.65 | 0.29                             | 0.32 | 0.36 | 0.39 | 0.42 | 0.45 | 0.18                             | 0.20 | 0.22 | 0.24 | 0.26 | 0.28 |
| HF         | 1-3/4          | 0.50                             | 0.58 | 0.65 | 0.73 | 0.80 | 0.86 | 0.38                             | 0.42 | 0.47 | 0.52 | 0.56 | 0.60 | 0.23                             | 0.26 | 0.29 | 0.32 | 0.35 | 0.37 |
| HF         | 3              | 0.90                             | 1.03 | 1.16 | 1.29 | 1.42 | 1.53 | 0.67                             | 0.75 | 0.84 | 0.92 | 1.00 | 1.06 | 0.42                             | 0.47 | 0.52 | 0.57 | 0.62 | 0.66 |

REFRIGERANT LIQUID TEMPERATURE CORRECTION FACTORS

|          | REFRIGERANT LIQUID TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|----------|-----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|          | 0                                 | 10   | 20   | 30   | 40   | 50   | 60   | 70   | 80   | 90   | 100  | 110  | 120  | 130  | 140  |
| R-1234yf | 1.89                              | 1.80 | 1.72 | 1.63 | 1.54 | 1.45 | 1.36 | 1.27 | 1.18 | 1.09 | 1.00 | 0.91 | 0.82 | 0.72 | 0.63 |

These factors include corrections for liquid refrigerant density and net refrigerating effect and are based on an average evaporator temperature of 0°F. However, they may be used for any evaporator temperature from -40°F to +40°F since the variation in the actual factors across this range is insignificant.



EX5-U21 800618

## EX4-EX8 SERIES ELECTRICAL CONTROL VALVES

*The EX4-EX8 Series are bi-polar stepper motor driven valves optimized for the control of liquid or gaseous mass flow in refrigeration systems. Multifunction capability as expansion valve, hot gas bypass, suction gas throttling, head pressure, liquid line actuator and other applications systems.*

### FEATURES

- Fully hermetic stainless steel design
- Fast full stroke time
- Ceramic slide and port for accurate flow and minimal wear
- High resolution and excellent repeatability
- Bi-directional versions for heat pump applications
- Positive shut-off function to eliminate the use of an additional solenoid valve
- Linear flow capacity
- Wide capacity range (10 - 100%)
- Continuous modulation of mass flow, no stress (liquid hammering) in the refrigeration circuit
- Direct coupling of motor and valve for high reliability (no gear mechanism)

### SPECIFICATIONS

|                                               |                                                        |
|-----------------------------------------------|--------------------------------------------------------|
| CE Marking.....                               | EX4/EX5 not required, EX6-EX8 required Cat I, Module A |
| Maximum Operating Pressure Differential ..... | EX4-EX6: 580 psid (40 bar)                             |
| .....                                         | EX7: 507 psid (35 bar)                                 |
| .....                                         | EX8: 435 psid (30 bar)                                 |
| Maximum Working Pressure.....                 | EX4-EX7: 870 psig (60 bar)                             |
| .....                                         | EX8: 650 psig (45 bar)                                 |
| Ambient Temperature .....                     | -40°F/C to 130°F (54°C)                                |
| Operating Humidity .....                      | 5 to 95% R.H.                                          |
| External Leakage .....                        | 0.1 oz./yr. (R-22)                                     |
| Connectors .....                              | 4 pin terminal via plug                                |
| Driver Supply Voltage .....                   | 24 VDC Nominal, Range: 18-36 VDC                       |
| Full Travel Time.....                         | EX4-EX6: 1.5 seconds                                   |
| .....                                         | EX7: 3.2 seconds                                       |
| .....                                         | EX8: 5.2 seconds                                       |
| Total Number of Full Steps .....              | EX4-EX6: 750                                           |
| .....                                         | EX7: 1600                                              |
| .....                                         | EX8: 2600                                              |
| Phase Current (Operating).....                | EX4-EX6: 500 mA max                                    |
| .....                                         | EX7 750 mA                                             |
| .....                                         | EX8 800 mA                                             |
| Holding Current .....                         | EX4-EX6: 100 mA                                        |
| .....                                         | EX7: 250 mA                                            |
| .....                                         | EX8: 500 mA                                            |
| Nominal Input Power Per Phase .....           | EX4-EX6: 3.5W                                          |
| .....                                         | EX7-EX8: 5W                                            |
| Phase Inductance .....                        | EX4-EX6: 100 mA                                        |
| .....                                         | EX7: 250 mA                                            |
| .....                                         | EX8: 500 mA                                            |

## EX4-EX8 SERIES STEPPER MOTOR DRIVEN VALVES

| DESCRIPTION                          | INLET CONNECTION (IN) | OUTLET CONNECTION (IN) | MODEL NUMBER   | ITEM NUMBER |
|--------------------------------------|-----------------------|------------------------|----------------|-------------|
| EX4 Electrical Control Valve         | 3/8                   | 5/8                    | EX4-I21 800615 | 097719      |
| EX5 Electrical Control Valve         | 5/8                   | 7/8                    | EX5-U21 800618 | 097720      |
| EX6 Electrical Control Valve         | 7/8                   | 1-1/8                  | EX6-I21 800620 | 097721      |
| EX7 Electrical Control Valve         | 1-1/8                 | 1-3/8                  | EX7-I21 800624 | 097722      |
| EX8 Electrical Control Valve         | 1-5/8                 | 1-5/8                  | EX8-I21 800631 | 097723      |
| EX4 Bi-Flow Electrical Control Valve | 5/8                   | 5/8                    | EX4-U31 800617 | 097756      |
| EX5 Bi-Flow Electrical Control Valve | 7/8                   | 7/8                    | EX5-U31 800619 | 097729      |
| EX6 Bi-Flow Electrical Control Valve | 1-1/8                 | 1-1/8                  | EX6-I31 800622 | 097757      |
| EX7 Bi-Flow Electrical Control Valve | 1-3/8                 | 1-3/8                  | EX7-U31 800626 | 097758      |

## EX4-EX8 SERIES PARTS &amp; ACCESSORIES

| DESCRIPTION                                                                                                                                                                        | MODEL NUMBER    | ITEM NUMBER |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------|
| Superheat and/or Temperature Controller for 1 Valve                                                                                                                                | EXD-SH1 807855  | 097175      |
| Superheat and/or Temperature Controller for 2 Valves                                                                                                                               | EXD-SH2 807856  | 097176      |
| Superheat and/or Temperature Controller kit for 1 Valve (Kit includes 1 each EXD-SH1, EXV-M60, PT5N-18M, PT4-M60, TP1-NP6, EXD-M03, 90-T40F3). Valve not included.                 | EXD-SH1K        | EXD-SH1K    |
| Superheat and/or Temperature Controller kit for 2 Valves (Kit includes 1 each EXD-SH2, EXD-M03, 90-T50F3 and two of each EXV-M60, PT4-M60, TP1-NP6, PT5N-18M). Valve not included. | EXD-SH2K        | EXD-SH2K    |
| Universal driver                                                                                                                                                                   | EXD-U02 808053  | 808053      |
| 3M Cable for supply voltage                                                                                                                                                        | EXD-M03 807865  | 097177      |
| Electronic Expansion Valve Cable and Connector                                                                                                                                     | EXV-M60 804665  | 097741      |
| Pressure Transmitter able to operate in a vacuum                                                                                                                                   | PT5N-07M 805350 | 805350      |
| Pressure Transmitter including R-410A                                                                                                                                              | PT5N-18M 805351 | 805351      |
| Pressure Transmitter including sub-critical R-744, 435 psi                                                                                                                         | PT5N-30M 805352 | 805352      |
| Pressure Transmitter including trans-critical R-744, 725 psi                                                                                                                       | PT5N-50M 805353 | 805353      |
| 6M Plug & Cable Assy for Pressure Transmitter                                                                                                                                      | PT4-M60 804805  | 097717      |
| Temperature Sensor, 6M Cable                                                                                                                                                       | TP1-NP6 804490  | 804490      |
| Transformer for 1 circuit                                                                                                                                                          | 90-T40F3        | 90-T40F3    |
| Transformer 2 circuits                                                                                                                                                             | 90-T50F3        | 90-T50F3    |

## EX4-EX8 SERIES NOMINAL CAPACITIES IN TONS 10% - 100% (Based on Capacities Table Conditions Below)

| VALVE TYPE | R-407C     | R-22         | R-134a       | R-404A       | R-410A       | R-23       | R-124    | R-744        |
|------------|------------|--------------|--------------|--------------|--------------|------------|----------|--------------|
| EX4        | .6 – 5     | .6 – 4.7     | .3 – 3.6     | .3 – 3.3     | .6 – 5.5     | .6 – 5.1   | .3 – 2.6 | .9 – 9.5     |
| EX5        | 1.4 – 15.1 | 1.4 – 14.2   | 1.1 – 11.1   | 1.1 – 10     | 1.7 – 16.5   | 1.4 – 15.4 | .9 – 8   | 2.8 – 29     |
| EX6        | 4.3 – 35.8 | 4.3 – 34.1   | 2.8 – 26.4   | 2.8 – 23.9   | 4.3 – 39.8   | 3.7 – 37   | 2 – 19.1 | 6.8 – 69.4   |
| EX7        | 10 – 98.7  | 10 – 93.8    | 7.1 – 72.5   | 7.1 – 65.4   | 11.4 – 109.5 | —          | —        | 19.9 – 190.5 |
| EX8        | 28.4 – 263 | 25.6 – 250.2 | 19.9 – 193.4 | 17.1 – 174.3 | 28.4 – 292   | —          | —        | 51.2 – 508.7 |

## CAPACITIES TABLE CONDITIONS

| REFRIGERANT                  | EVAPORATING TEMPERATURE | CONDENSING TEMPERATURE | SUBCOOLING |
|------------------------------|-------------------------|------------------------|------------|
| R-22, R-134a, R-404A, R-410A | +40 °F                  | +100°F                 | 2°F        |
| R-407C                       | +40°F dew point         | +100°F bubble          | 2°F        |
| R-124                        | +68°F                   | +176°F                 | 2°F        |
| R-23                         | -76°F                   | -13°F                  | 2°F        |
| R-744                        | -40°F                   | 14°F                   | 2°F        |



Instruction Sheet  
with detailed  
product drawings



Capacity  
Tables (Tons)



EXD-SH2

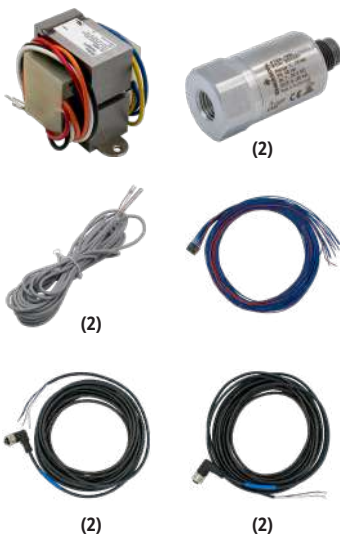
## EXD-SH1 & EXD-SH2 SERIES TEMPERATURE & SUPERHEAT CONTROLLERS & KITS

Stand-alone universal superheat and or temperature controllers for air conditioning units or refrigeration systems. Recommended for use with bi-polar EX Series or CV Series expansion valves.

### FEATURES

- EXD-SH1 controls one valve and EXD-SH2 can control two valves in two independent circuits
- Functions as a superheat control, temperature control, low pressure switch and freeze protection
- Self-adapting superheat control function in conjunction with Copeland EX4-8 series valves
- Easy system monitoring with Modbus communication
- Integrated keyboard with two line display
- Self adaptive algorithm eliminates need for setting PID control for individual systems
- Flash key to allow quick upload and download of parameters from one configured controller to another
- Multiple function alarms including low/high superheat alarm
- Electrical connection via plug-in type screw terminals
- Controllers sold separately or in pre-assembled kits (EXD-SH1K and EXD-SH2K)

### PARTS INCLUDED IN KITS



(2) SIGNIFIES X2 FOR EXD-SH2K

### SPECIFICATIONS

Supply Voltage.....24VAC/DC +or-10%, 5%0Hz  
 Power Consumption..... EXD-SH1 Max. 25 VA / EXD-SH2 Max. 50 VA  
 Terminals 1 to 12..... Suitable for 12 poles molex plug  
 Terminals 13 to 36 ... Suitable for removable screw version: wire size 0.005...0.006 in  
 Temperatures .....Storage: -13°F (-25°C) to 140°F (60°C)  
 .....Operating: 32°F (0°C) to 131°F (55°C)  
 Humidity..... 20 to 85% R.H. non condensing  
 Mounting ..... DIN RAIL mounting  
 Weight ..... 0.71 lbs.  
 Housing..... Self-extinguishing ABS  
 Protection Class .....IP 00  
 Agency .....CE, EAC,  
 Compliance..... EMC, roHS

### INPUT, OUTPUT EXD-SH1, EXD-SH2

| DESCRIPTION                                                                                                                             | SPECIFICATION                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Analog input(s): NTC Temperature sensor<br>Analog input: PT1000 Temperature sensor                                                      | ECN-N...-49°F (-45°C)...122°F (50°C) sensing range<br>ECN-Z60 sensing range                                                      |
| Analog input(s): 4-20 mA pressure transmitters<br>Analog input(s): 0.5-4.5 V pressure transmitters                                      | PT5N Third party ratio metric pressure transmitters (total error: ≤ 1%)                                                          |
| Digital input(s)                                                                                                                        | Dry contact, potential free                                                                                                      |
| Digital output(s): Alarm relay(s)<br>Contact closed: During alarm condition<br>Contact open: During normal operation & supply power OFF | Resistive Load 24 VAC/DC, max. 1 A<br>Inductive Load 24 VAC, max. 0.5 A                                                          |
| Communication                                                                                                                           | RS485 RTU Modbus, two wires                                                                                                      |
| Stepper motor output                                                                                                                    | Bi-Polar Valves: EX4-8                                                                                                           |
| Refrigerants                                                                                                                            | R-22; R-134a; R-507; R-404A; R-407C; R-410A; R-124; R-744; R-407A; R-407F; R-23; R-32*; R-1234ze; R-448A; R-449A; R-450A; R-513A |

\* R-32 IS FOR SYSTEMS/REGIONS WHICH IT DOES NOT CONSIDER R-32 AS POTENTIAL EXPLOSIVE REFRIGERANT (FLAMMABLE OR LOW FLAMMABLE) AND PED/CE MARKING IS NOT REQUIRED.

## EXD-SH1 & EXD-SH2 CONTROLLERS & KITS

| DESCRIPTION                                                                                                                                                                            | MODEL NUMBER   | ITEM NUMBER |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------|
| EXD-SH1 is a Superheat and/or Temperature Controller for a single EX4-8 or CV4-6 valves                                                                                                | EXD-SH1 807855 | 097175      |
| EXD-SH2 is a Superheat and/or Temperature Controller with Second Circuit Superheat Control for Two EX4-8 or CV4-6 valves                                                               | EXD-SH2 807856 | 097176      |
| EXD-SH1K Superheat and/or Temperature Controller kit for single EX4-8 valve (Kit includes 1 each EXD-SH1, EXV-M60, PT5N-18M, PT4-M60, TP1-NP6, EXD-M03, 90-T40F3). Valve not included. | EXD-SH1K       | EXD-SH1K    |
| Superheat and/or Temperature Controller kit for 2 Valves (Kit includes 1 each EXD-SH2, EXD-M03, 90-T50F3 and two of each EXV-M60, PT4-M60, TP1-NP6, PT5N-18M). Valve not included.     | EXD-SH2K       | EXD-SH2K    |

## EXD-SH1 & EXD-SH2 PARTS AND ACCESSORIES

| DESCRIPTION                                                                                                                                      | MODEL NUMBER    | ITEM NUMBER |
|--------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------|
| 12 pin Molex Plug with 3 Meter Cable for EXD-SH1 and EXD-SH2 for Supply Voltage, Temperature Sensor 1 and 2, PT5 Circuit 1 and 2, Vdc and Ground | EXD-M03 807865  | 097177      |
| Electronic Expansion Valve Cable and Connector                                                                                                   | EXV-M60 804665  | 097741      |
| Pressure Transmitter for applications needed to operate in a vacuum*                                                                             | PT5N-07M 805350 | 805350      |
| Pressure Transmitter for refrigerants including R-410A                                                                                           | PT5N-18M 805351 | 805351      |
| Pressure Transmitter for refrigerants including subcritical R-744*, 435 psi                                                                      | PT5N-30M 805352 | 805352      |
| Pressure Transmitter for refrigerants including transcritical R-744*, 725 psi                                                                    | PT5N-50M 805353 | 805353      |
| 6 Meter Long Plug and Cable Assembly for PT5 Pressure Transmitter                                                                                | PT4-M60 804805  | 097717      |
| Electronic Expansion Valve Temperature Sensor with a 6 Meter Cable                                                                               | TP1-NP6 804490  | 804490      |
| Transformer 12/208/240 Primary, 24V Secondary 40VA, for 1 circuit                                                                                | 90-T40F3        | 90-T40F3    |
| Transformer 12/208/240 Primary, 24V Secondary 50VA, for 2 circuits                                                                               | 90-T50F3        | 90-T50F3    |

\* NOT INCLUDED IN KIT



EXD-U02 808053

## EXD-U02 UNIVERSAL DRIVER MODULE

The EXD-U02 is a universal driver that enables the operation of Copeland EX4 - EX8 and CV4 - CV6 stepper motor driven valves used in applications such as solenoid valves, electronic expansion valves, hot gas bypass or evaporator pressure regulator as capacity control, crankcase pressure regulator, heat reclaim regulator, and liquid level control.

### FEATURES

- Plug and play, no parameter settings required
- Digital input can be used to force valve closing
- Dip-switches for selection of electronic control valve type, analog input and start mode
- Step recovery function
- Direct replacement for EXD-U01

### SPECIFICATIONS

Supply voltage.....24 VAC  $\pm 10\%$ , 50-60 Hz  
**NOTE:** ..... 24 VDC supply voltage can be used but it results to lower MOPD  
 ..... and it needs to be verified by system manufacturer  
 Supply current.....To be protected by a 1.0A external fuse  
 Power consumption .....10VA in conjunction with electronic valve  
 Temperature ..... Storage:  $-4^{\circ}\text{F}$  to  $149^{\circ}\text{F}$  ( $-20^{\circ}\text{C}$  to  $65^{\circ}\text{C}$ )  
 ..... Operating:  $32^{\circ}\text{F}$  to  $+140^{\circ}\text{F}$  ( $0^{\circ}\text{C}$  to  $60^{\circ}\text{C}$ )  
 Humidity.....< 90% R.H. non condensing  
 Approvals .....EMC EN 61326-1, EN50081, EN50082  
 Marking .....CE, UKCA, EAC  
 Protection class.....IP20  
 Input analogue signal .....4-20 mA or 0-10V  
 ..... Burden  $364\ \Omega$   
 ..... Impedence  $24\text{K}\Omega$   
 Digital input.....24V AC  $\pm 10\%$ , 50-60Hz, 24V DC  $\pm 10\%$   
 Connection to EX4-8 and CV4-6.....Via 4 wires cable, AWG 2 $\frac{1}{2}$   
 Connector .....Screw terminals for wire size 0.5-2.5 mm<sup>2</sup>  
 Mounting .....DIN rail mounted  
 Housing.....Aluminum

### EXD-U02 UNIVERSAL DRIVER MODULE

| DESCRIPTION                                                       | MODEL NUMBER   | ITEM NUMBER |
|-------------------------------------------------------------------|----------------|-------------|
| Universal Driver Module with Terminal Kit for EX4-EX8 and CV4-CV6 | EXD-U02 808053 | 808053      |



INSTALLATION  
INSTRUCTIONS

APPLICATION  
& TECHNICAL  
INFORMATION





PT5N-07M 805350

## PRESSURE TRANSMITTERS

*Pressure Transmitters convert pressure into a linear electric output signal that is optimized for refrigeration applications*

### FEATURES

- Pressure sensitive piezo-based cell with strong primary output signal for precise operation
- Compact dimensions
- Vibration, shock and pulsation resistant
- Reduced full scale error over complete temperature range
- Sealed gauge absolute pressure reference for increased accuracy independent of atmospheric pressure variation
- Output signal is 4 to 20 mA
- Calibrated for specific temperature and pressure ranges to fulfill application demands in air conditioning and refrigeration systems
- Easy-to-install M12 electrical connection with pre-assembled cable assembly
- Pressure connector 7/16-20 UNF with Schrader valve

### SPECIFICATIONS

Supply Voltage: ..... Nominal 24 VDC Range (polarity protected) 7 – 30 VDC  
 Permissible Noise & Ripple: ..... < 1 Vp-p  
 Influence of Supply Voltage: ..... < 0.02 % FS/V  
 Operating Current: ..... 4 to 20 mA output, Max. ≤ 24 mA  
 Load Resistance: .....  $RL \leq U_b - 8.0V \ 0.02A$   
 Mounting Position: ..... Non-position sensitive  
 Response Time: ..... <5 ms  
 Temperatures: ..... Ambient: -40°F/C to 176°F (80°C)  
 ..... Medium: -58°F (-50°C) to 212°F (100°C)  
 ..... Storage: -40°F/C to 185°F (85°C)  
 Sensor Life: ..... ≥10,000,000 cycles full stroke at 77°F (25°C)  
 Burst Pressure: ..... 805350 = 2,176 psi (150 bar)  
 ..... 805351 and 805352 = 3,626 psi (250 bar)  
 Approvals: ..... CE marking according to PED, not allowed (SEP)  
 ..... CE marking according to EMC, CE marked  
 Vibration at 10 – 2000 Hz: ..... Max. 4 g

### PRESSURE TRANSMITTERS

| DESCRIPTION                                                          | PRESSURE RANGE | MODEL NUMBER    | ITEM NUMBER |
|----------------------------------------------------------------------|----------------|-----------------|-------------|
| For use with various refrigerants and is able to operate in a vacuum | 22"Hg - 100psi | PT5N-07M 805350 | 805350      |
| For various refrigerants including R-410A                            | 0 - 261psi     | PT5N-18M 805351 | 805351      |
| For subcritical R-744                                                | 0 - 435psi     | PT5N-30M 805352 | 805352      |
| For transcritical R-744                                              | 0 - 725psi     | PT5N-50M 805353 | 805353      |

### PRESSURE TRANSMITTERS PARTS AND ACCESSORIES

| DESCRIPTION                                                                                                                       | MODEL NUMBER   | ITEM NUMBER |
|-----------------------------------------------------------------------------------------------------------------------------------|----------------|-------------|
| 3 Meter Long Plug and Cable Assembly for Pressure Transmitter Connection to Superheat and/or Temperature Controllers              | PT4-M30 804804 | 097781      |
| 12 Pin Molex 6 Meter Long Plug and Cable Assembly for Pressure Transmitter Connection to Superheat and/or Temperature Controllers | PT4-M60 804805 | 097717      |



## ELECTRONIC EXPANSION VALVES CAPACITY TABLES

## R-22 EXTENDED CAPACITIES (TONS) - EX4-8 SERIES, AS EXPANSION AND LIQUID INJECTION VALVES

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

| VALVE TYPE | CONDENSING TEMPERATURE (°F) | EVAPORATING TEMPERATURE (°F) |     |     |     |     |     |     |     |     |     |     |     |
|------------|-----------------------------|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|            |                             | 60                           | 50  | 40  | 30  | 20  | 10  | 0   | -10 | -20 | -30 | -40 | -50 |
| EX4        | 140                         | 5                            | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   |
| EX5        |                             | 15                           | 15  | 15  | 16  | 16  | 16  | 16  | 15  | 15  | 15  | 15  | 15  |
| EX6        |                             | 35                           | 36  | 37  | 37  | 38  | 38  | 37  | 37  | 37  | 36  | 36  | 35  |
| EX7        |                             | 97                           | 100 | 101 | 102 | 103 | 104 | 103 | 102 | 102 | 100 | 98  | 96  |
| EX8        |                             | 260                          | 266 | 270 | 273 | 275 | 276 | 272 | 271 | 266 | 262 | 262 | 257 |
| EX4        | 130                         | 5                            | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   |
| EX5        |                             | 14                           | 15  | 15  | 15  | 16  | 16  | 16  | 15  | 15  | 15  | 15  | 15  |
| EX6        |                             | 34                           | 35  | 36  | 37  | 37  | 37  | 37  | 37  | 37  | 37  | 36  | 36  |
| EX7        |                             | 94                           | 97  | 100 | 101 | 102 | 103 | 102 | 102 | 101 | 101 | 99  | 98  |
| EX8        |                             | 251                          | 258 | 266 | 270 | 273 | 274 | 273 | 273 | 270 | 268 | 264 | 260 |
| EX4        | 120                         | 4                            | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   |
| EX5        |                             | 14                           | 14  | 15  | 15  | 15  | 15  | 16  | 15  | 15  | 15  | 15  | 15  |
| EX6        |                             | 33                           | 34  | 35  | 36  | 37  | 37  | 37  | 37  | 37  | 37  | 37  | 36  |
| EX7        |                             | 90                           | 94  | 97  | 99  | 100 | 102 | 103 | 102 | 102 | 101 | 100 | 99  |
| EX8        |                             | 240                          | 250 | 259 | 264 | 268 | 272 | 274 | 272 | 271 | 270 | 268 | 263 |
| EX4        | 110                         | 4                            | 4   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   |
| EX5        |                             | 12                           | 13  | 14  | 14  | 15  | 15  | 15  | 15  | 15  | 15  | 15  | 15  |
| EX6        |                             | 30                           | 32  | 34  | 34  | 35  | 36  | 36  | 36  | 37  | 36  | 36  | 36  |
| EX7        |                             | 82                           | 88  | 92  | 95  | 98  | 99  | 100 | 100 | 101 | 99  | 99  | 98  |
| EX8        |                             | 219                          | 234 | 246 | 253 | 260 | 263 | 266 | 266 | 268 | 265 | 263 | 261 |
| EX4        | 100                         | 4                            | 4   | 4   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   |
| EX5        |                             | 11                           | 12  | 13  | 14  | 14  | 15  | 15  | 15  | 15  | 15  | 15  | 15  |
| EX6        |                             | 27                           | 29  | 31  | 33  | 34  | 35  | 35  | 36  | 36  | 36  | 35  | 35  |
| EX7        |                             | 74                           | 81  | 87  | 91  | 93  | 96  | 97  | 98  | 98  | 98  | 98  | 97  |
| EX8        |                             | 197                          | 216 | 231 | 242 | 249 | 256 | 259 | 263 | 263 | 262 | 260 | 258 |
| EX4        | 90                          | 3                            | 4   | 4   | 4   | 4   | 5   | 5   | 5   | 5   | 5   | 5   | 5   |
| EX5        |                             | 9                            | 11  | 12  | 13  | 13  | 14  | 14  | 14  | 14  | 14  | 14  | 14  |
| EX6        |                             | 22                           | 26  | 29  | 31  | 32  | 33  | 34  | 34  | 35  | 35  | 35  | 34  |
| EX7        |                             | 61                           | 71  | 78  | 84  | 87  | 91  | 93  | 94  | 95  | 95  | 95  | 94  |
| EX8        |                             | 163                          | 190 | 209 | 224 | 233 | 242 | 249 | 251 | 255 | 254 | 253 | 251 |
| EX4        | 80                          | 2                            | 3   | 3   | 4   | 4   | 4   | 4   | 4   | 5   | 5   | 5   | 5   |
| EX5        |                             | 7                            | 9   | 10  | 11  | 12  | 13  | 13  | 14  | 14  | 14  | 14  | 14  |
| EX6        |                             | 16                           | 21  | 25  | 27  | 29  | 30  | 32  | 33  | 33  | 33  | 33  | 33  |
| EX7        |                             | 44                           | 58  | 68  | 75  | 81  | 84  | 87  | 89  | 90  | 91  | 91  | 91  |
| EX8        |                             | 117                          | 156 | 182 | 201 | 215 | 224 | 233 | 239 | 240 | 243 | 243 | 241 |
| EX4        | 70                          | —                            | 2   | 3   | 3   | 4   | 4   | 4   | 4   | 4   | 4   | 4   | 4   |
| EX5        |                             | —                            | 6   | 8   | 10  | 11  | 12  | 12  | 13  | 13  | 13  | 13  | 13  |
| EX6        |                             | —                            | 15  | 20  | 24  | 26  | 28  | 30  | 31  | 31  | 32  | 32  | 32  |
| EX7        |                             | —                            | 40  | 55  | 65  | 72  | 77  | 81  | 84  | 85  | 87  | 88  | 87  |
| EX8        |                             | —                            | 108 | 147 | 173 | 191 | 205 | 217 | 224 | 227 | 231 | 234 | 233 |
| EX4        | 60                          | —                            | —   | 2   | 3   | 3   | 3   | 4   | 4   | 4   | 4   | 4   | 4   |
| EX5        |                             | —                            | —   | 6   | 8   | 9   | 10  | 11  | 12  | 12  | 12  | 12  | 12  |
| EX6        |                             | —                            | —   | 13  | 19  | 22  | 25  | 27  | 28  | 29  | 29  | 30  | 30  |
| EX7        |                             | —                            | —   | 36  | 51  | 61  | 68  | 74  | 76  | 79  | 81  | 82  | 82  |
| EX8        |                             | —                            | —   | 97  | 137 | 163 | 182 | 196 | 204 | 211 | 216 | 219 | 219 |
| EX4        | 50                          | —                            | —   | —   | 2   | 2   | 3   | 3   | 3   | 4   | 4   | 4   | 4   |
| EX5        |                             | —                            | —   | —   | 5   | 7   | 9   | 10  | 11  | 11  | 11  | 12  | 12  |
| EX6        |                             | —                            | —   | —   | 11  | 17  | 21  | 23  | 25  | 26  | 27  | 28  | 28  |
| EX7        |                             | —                            | —   | —   | 31  | 47  | 57  | 65  | 69  | 73  | 74  | 76  | 77  |
| EX8        |                             | —                            | —   | —   | 83  | 126 | 152 | 172 | 185 | 194 | 199 | 203 | 206 |

R-23 EXTENDED CAPACITIES (TONS) - EX4-8 SERIES, AS EXPANSION AND LIQUID INJECTION VALVES

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

| VALVE TYPE | CONDENSING TEMPERATURE (°F) | EVAPORATING TEMPERATURE (°F) |     |     |     |     |      |      |      |      |      |
|------------|-----------------------------|------------------------------|-----|-----|-----|-----|------|------|------|------|------|
|            |                             | -50                          | -60 | -70 | -80 | -90 | -100 | -110 | -120 | -130 | -140 |
| EX4        | 0                           | 5                            | 5   | 5   | 5   | 5   | 5    | 5    | 5    | 5    | 5    |
| EX5        |                             | 14                           | 15  | 15  | 16  | 16  | 16   | 16   | 16   | 16   | 16   |
| EX6        |                             | 33                           | 35  | 36  | 38  | 38  | 39   | 39   | 39   | 39   | 38   |
| EX4        | -10                         | 4                            | 4   | 5   | 5   | 5   | 5    | 5    | 5    | 5    | 5    |
| EX5        |                             | 12                           | 13  | 14  | 15  | 15  | 15   | 16   | 15   | 16   | 15   |
| EX6        |                             | 29                           | 32  | 34  | 35  | 36  | 37   | 37   | 37   | 37   | 37   |
| EX4        | -20                         | 3                            | 4   | 4   | 4   | 5   | 5    | 5    | 5    | 5    | 5    |
| EX5        |                             | 10                           | 12  | 13  | 14  | 14  | 15   | 15   | 15   | 15   | 15   |
| EX6        |                             | 24                           | 28  | 31  | 33  | 34  | 35   | 36   | 36   | 36   | 36   |
| EX4        | -30                         | 2                            | 3   | 4   | 4   | 4   | 4    | 5    | 5    | 5    | 5    |
| EX5        |                             | 7                            | 9   | 11  | 12  | 13  | 13   | 14   | 14   | 14   | 14   |
| EX6        |                             | 17                           | 23  | 26  | 29  | 31  | 32   | 33   | 33   | 33   | 34   |
| EX4        | -40                         | —                            | 2   | 3   | 3   | 4   | 4    | 4    | 4    | 4    | 4    |
| EX5        |                             | —                            | 6   | 9   | 10  | 11  | 12   | 12   | 13   | 13   | 13   |
| EX6        |                             | —                            | 16  | 21  | 25  | 27  | 29   | 30   | 31   | 31   | 31   |
| EX4        | -50                         | —                            | —   | 2   | 3   | 3   | 3    | 4    | 4    | 4    | 4    |
| EX5        |                             | —                            | —   | 5   | 8   | 9   | 10   | 11   | 11   | 12   | 12   |
| EX6        |                             | —                            | —   | 13  | 19  | 23  | 25   | 26   | 27   | 28   | 28   |

R-124 EXTENDED CAPACITIES (TONS) - EX4-8 SERIES, AS EXPANSION AND LIQUID INJECTION VALVES

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

| VALVE TYPE | CONDENSING TEMPERATURE (°F) | EVAPORATING TEMPERATURE (°F) |    |    |    |    |
|------------|-----------------------------|------------------------------|----|----|----|----|
|            |                             | 80                           | 70 | 60 | 50 | 40 |
| EX4        | 210                         | 2                            | 2  | 2  | 2  | 2  |
| EX5        |                             | 6                            | 6  | 6  | 5  | 5  |
| EX6        |                             | 15                           | 14 | 13 | 13 | 12 |
| EX4        | 200                         | 2                            | 2  | 2  | 2  | 2  |
| EX5        |                             | 7                            | 6  | 6  | 6  | 6  |
| EX6        |                             | 16                           | 15 | 15 | 14 | 14 |
| EX4        | 190                         | 2                            | 2  | 2  | 2  | 2  |
| EX5        |                             | 7                            | 7  | 7  | 7  | 6  |
| EX6        |                             | 17                           | 17 | 17 | 16 | 15 |
| EX4        | 180                         | 3                            | 2  | 2  | 2  | 2  |
| EX5        |                             | 8                            | 8  | 7  | 7  | 7  |
| EX6        |                             | 18                           | 18 | 18 | 17 | 17 |
| EX4        | 170                         | 3                            | 3  | 2  | 2  | 2  |
| EX5        |                             | 8                            | 8  | 8  | 7  | 7  |
| EX6        |                             | 18                           | 18 | 18 | 18 | 17 |
| EX4        | 160                         | 3                            | 3  | 3  | 3  | 3  |
| EX5        |                             | 8                            | 8  | 8  | 8  | 8  |
| EX6        |                             | 18                           | 19 | 19 | 18 | 18 |
| EX4        | 150                         | 2                            | 2  | 3  | 3  | 3  |
| EX5        |                             | 7                            | 8  | 8  | 8  | 8  |
| EX6        |                             | 18                           | 18 | 18 | 18 | 18 |



Capacity  
Tables (kW)

**R-134A EXTENDED CAPACITIES (TONS) - EX4-8 SERIES, AS EXPANSION AND LIQUID INJECTION VALVES**

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

| VALVE TYPE | CONDENSING TEMPERATURE (°F) | EVAPORATING TEMPERATURE (°F) |     |     |     |     |     |     |     |     |
|------------|-----------------------------|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|
|            |                             | 60                           | 50  | 40  | 30  | 20  | 10  | 0   | -10 | -20 |
| EX4        | 140                         | 4                            | 4   | 4   | 4   | 4   | 4   | 4   | 3   | 3   |
| EX5        |                             | 11                           | 11  | 11  | 11  | 11  | 11  | 11  | 11  | 10  |
| EX6        |                             | 27                           | 27  | 27  | 27  | 27  | 26  | 26  | 25  | 25  |
| EX7        |                             | 74                           | 75  | 75  | 75  | 73  | 73  | 71  | 69  | 68  |
| EX8        |                             | 197                          | 200 | 200 | 199 | 196 | 194 | 190 | 185 | 181 |
| EX4        | 130                         | 4                            | 4   | 4   | 4   | 4   | 4   | 4   | 4   | 3   |
| EX5        |                             | 11                           | 11  | 11  | 11  | 11  | 11  | 11  | 11  | 10  |
| EX6        |                             | 26                           | 26  | 27  | 27  | 27  | 27  | 26  | 26  | 25  |
| EX7        |                             | 72                           | 73  | 74  | 74  | 73  | 73  | 72  | 70  | 69  |
| EX8        |                             | 191                          | 194 | 198 | 197 | 196 | 194 | 192 | 187 | 183 |
| EX4        | 120                         | 3                            | 4   | 4   | 4   | 4   | 4   | 4   | 4   | 4   |
| EX5        |                             | 10                           | 11  | 11  | 11  | 11  | 11  | 11  | 11  | 11  |
| EX6        |                             | 25                           | 26  | 26  | 27  | 27  | 27  | 26  | 26  | 25  |
| EX7        |                             | 68                           | 71  | 73  | 73  | 73  | 73  | 72  | 71  | 70  |
| EX8        |                             | 182                          | 188 | 194 | 196 | 195 | 195 | 193 | 189 | 186 |
| EX4        | 110                         | 3                            | 3   | 3   | 4   | 4   | 4   | 4   | 4   | 3   |
| EX5        |                             | 10                           | 10  | 11  | 11  | 11  | 11  | 11  | 11  | 11  |
| EX6        |                             | 23                           | 24  | 25  | 26  | 26  | 26  | 26  | 26  | 25  |
| EX7        |                             | 63                           | 65  | 69  | 70  | 71  | 71  | 71  | 70  | 69  |
| EX8        |                             | 168                          | 176 | 183 | 187 | 189 | 191 | 189 | 188 | 184 |
| EX4        | 100                         | 3                            | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   |
| EX5        |                             | 9                            | 9   | 10  | 10  | 10  | 11  | 11  | 11  | 10  |
| EX6        |                             | 20                           | 22  | 24  | 24  | 25  | 25  | 25  | 25  | 25  |
| EX7        |                             | 56                           | 60  | 65  | 67  | 69  | 69  | 69  | 69  | 68  |
| EX8        |                             | 149                          | 161 | 173 | 178 | 183 | 184 | 185 | 184 | 182 |
| EX4        | 90                          | 2                            | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   |
| EX5        |                             | 7                            | 8   | 9   | 9   | 10  | 10  | 10  | 10  | 10  |
| EX6        |                             | 16                           | 19  | 21  | 22  | 23  | 24  | 24  | 24  | 24  |
| EX7        |                             | 44                           | 52  | 58  | 61  | 64  | 66  | 66  | 66  | 66  |
| EX8        |                             | 118                          | 139 | 153 | 163 | 170 | 175 | 177 | 176 | 177 |
| EX4        | 80                          | 1                            | 2   | 2   | 3   | 3   | 3   | 3   | 3   | 3   |
| EX5        |                             | 4                            | 6   | 7   | 8   | 9   | 9   | 9   | 10  | 10  |
| EX6        |                             | 10                           | 15  | 18  | 20  | 21  | 22  | 23  | 23  | 23  |
| EX7        |                             | 27                           | 40  | 49  | 54  | 58  | 60  | 62  | 62  | 63  |
| EX8        |                             | 72                           | 107 | 130 | 144 | 154 | 160 | 165 | 166 | 167 |
| EX4        | 70                          | —                            | 1   | 2   | 2   | 3   | 3   | 3   | 3   | 3   |
| EX5        |                             | —                            | 3   | 6   | 7   | 8   | 8   | 9   | 9   | 9   |
| EX6        |                             | —                            | 8   | 13  | 16  | 18  | 20  | 21  | 21  | 22  |
| EX7        |                             | —                            | 22  | 37  | 45  | 50  | 54  | 57  | 59  | 59  |
| EX8        |                             | —                            | 58  | 98  | 120 | 134 | 145 | 152 | 156 | 158 |
| EX4        | 60                          | —                            | —   | 1   | 2   | 2   | 2   | 3   | 3   | 3   |
| EX5        |                             | —                            | —   | 2   | 5   | 6   | 7   | 8   | 8   | 8   |
| EX6        |                             | —                            | —   | 5   | 12  | 15  | 17  | 18  | 19  | 20  |
| EX7        |                             | —                            | —   | 14  | 32  | 40  | 46  | 50  | 52  | 53  |
| EX8        |                             | —                            | —   | 38  | 84  | 107 | 122 | 133 | 139 | 143 |
| EX4        | 50                          | —                            | —   | —   | —   | 1   | 2   | 2   | 2   | 2   |
| EX5        |                             | —                            | —   | —   | —   | 4   | 5   | 6   | 7   | 7   |
| EX6        |                             | —                            | —   | —   | —   | 9   | 13  | 15  | 16  | 17  |
| EX7        |                             | —                            | —   | —   | —   | 26  | 36  | 42  | 45  | 48  |
| EX8        |                             | —                            | —   | —   | —   | 69  | 95  | 111 | 120 | 128 |

R-404A/R-507 EXTENDED CAPACITIES (TONS) - EX4-8 SERIES, AS EXPANSION AND LIQUID INJECTION VALVES

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

| VALVE TYPE | CONDENSING TEMPERATURE (°F) | EVAPORATING TEMPERATURE (°F) |     |     |     |     |     |     |     |     |     |     |     |
|------------|-----------------------------|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|            |                             | 60                           | 50  | 40  | 30  | 20  | 10  | 0   | -10 | -20 | -30 | -40 | -50 |
| EX4        | 130                         | 3                            | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 2   | 2   | 2   |
| EX5        |                             | 9                            | 9   | 9   | 9   | 9   | 9   | 8   | 8   | 8   | 8   | 7   | 7   |
| EX6        |                             | 21                           | 21  | 22  | 21  | 21  | 21  | 20  | 20  | 19  | 18  | 17  | 16  |
| EX7        |                             | 58                           | 59  | 59  | 58  | 58  | 57  | 56  | 54  | 52  | 50  | 48  | 45  |
| EX8        |                             | 153                          | 156 | 157 | 156 | 154 | 152 | 148 | 143 | 139 | 133 | 127 | 120 |
| EX4        | 120                         | 3                            | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   |
| EX5        |                             | 9                            | 9   | 9   | 10  | 9   | 9   | 9   | 9   | 9   | 9   | 8   | 8   |
| EX6        |                             | 22                           | 22  | 23  | 23  | 23  | 23  | 22  | 22  | 21  | 20  | 20  | 19  |
| EX7        |                             | 59                           | 61  | 62  | 63  | 62  | 62  | 61  | 60  | 58  | 56  | 54  | 52  |
| EX8        |                             | 158                          | 162 | 165 | 168 | 166 | 165 | 163 | 169 | 165 | 149 | 144 | 138 |
| EX4        | 110                         | 3                            | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   |
| EX5        |                             | 9                            | 9   | 10  | 10  | 10  | 10  | 10  | 9   | 9   | 9   | 9   | 8   |
| EX6        |                             | 21                           | 22  | 23  | 23  | 23  | 23  | 23  | 23  | 22  | 22  | 21  | 20  |
| EX7        |                             | 58                           | 60  | 63  | 63  | 64  | 64  | 63  | 62  | 61  | 59  | 58  | 56  |
| EX8        |                             | 153                          | 161 | 167 | 168 | 170 | 171 | 168 | 165 | 163 | 158 | 154 | 148 |
| EX4        | 100                         | 3                            | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   |
| EX5        |                             | 8                            | 9   | 9   | 10  | 10  | 10  | 10  | 10  | 10  | 10  | 9   | 9   |
| EX6        |                             | 20                           | 21  | 23  | 23  | 24  | 24  | 24  | 24  | 23  | 23  | 22  | 22  |
| EX7        |                             | 54                           | 59  | 62  | 64  | 65  | 66  | 66  | 66  | 64  | 63  | 62  | 59  |
| EX8        |                             | 145                          | 156 | 165 | 171 | 174 | 175 | 176 | 173 | 171 | 168 | 164 | 158 |
| EX4        | 90                          | 2                            | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   |
| EX5        |                             | 7                            | 8   | 9   | 9   | 10  | 10  | 10  | 10  | 10  | 10  | 10  | 9   |
| EX6        |                             | 17                           | 20  | 21  | 23  | 23  | 24  | 24  | 24  | 24  | 23  | 23  | 23  |
| EX7        |                             | 48                           | 54  | 58  | 62  | 64  | 65  | 66  | 66  | 66  | 64  | 63  | 62  |
| EX8        |                             | 127                          | 144 | 156 | 164 | 170 | 173 | 176 | 176 | 175 | 171 | 169 | 165 |
| EX4        | 80                          | 2                            | 2   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   |
| EX5        |                             | 6                            | 7   | 8   | 9   | 9   | 10  | 10  | 10  | 10  | 10  | 10  | 9   |
| EX6        |                             | 13                           | 17  | 19  | 21  | 22  | 23  | 23  | 24  | 24  | 23  | 23  | 23  |
| EX7        |                             | 37                           | 46  | 53  | 58  | 61  | 63  | 64  | 65  | 65  | 64  | 63  | 62  |
| EX8        |                             | 98                           | 124 | 142 | 154 | 162 | 168 | 171 | 173 | 172 | 171 | 169 | 166 |
| EX4        | 70                          | 1                            | 2   | 2   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   | 3   |
| EX5        |                             | 2                            | 5   | 7   | 8   | 9   | 9   | 9   | 10  | 10  | 10  | 10  | 10  |
| EX6        |                             | 6                            | 13  | 17  | 19  | 21  | 22  | 23  | 23  | 24  | 23  | 23  | 23  |
| EX7        |                             | 16                           | 35  | 46  | 52  | 57  | 60  | 62  | 64  | 64  | 64  | 64  | 63  |
| EX8        |                             | 42                           | 94  | 122 | 138 | 152 | 160 | 166 | 170 | 172 | 170 | 170 | 168 |
| EX4        | 60                          | —                            | 1   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 3   | 3   | 3   |
| EX5        |                             | —                            | 2   | 5   | 7   | 8   | 8   | 9   | 9   | 9   | 9   | 9   | 9   |
| EX6        |                             | —                            | 4   | 12  | 16  | 18  | 20  | 21  | 22  | 22  | 22  | 23  | 22  |
| EX7        |                             | —                            | 11  | 33  | 43  | 50  | 55  | 58  | 60  | 61  | 62  | 62  | 61  |
| EX8        |                             | —                            | 30  | 89  | 116 | 133 | 146 | 155 | 159 | 163 | 164 | 165 | 162 |
| EX4        | 50                          | —                            | —   | —   | 2   | 2   | 2   | 3   | 3   | 3   | 3   | 3   | 3   |
| EX5        |                             | —                            | —   | —   | 5   | 6   | 7   | 8   | 9   | 9   | 9   | 9   | 9   |
| EX6        |                             | —                            | —   | —   | 11  | 15  | 18  | 19  | 20  | 21  | 21  | 22  | 22  |
| EX7        |                             | —                            | —   | —   | 31  | 42  | 48  | 53  | 56  | 58  | 59  | 60  | 59  |
| EX8        |                             | —                            | —   | —   | 82  | 111 | 128 | 142 | 149 | 154 | 157 | 160 | 158 |
| EX4        | 40                          | —                            | —   | —   | —   | 1   | 2   | 2   | 2   | 3   | 3   | 3   | 3   |
| EX5        |                             | —                            | —   | —   | —   | 4   | 6   | 7   | 8   | 8   | 8   | 8   | 9   |
| EX6        |                             | —                            | —   | —   | —   | 10  | 14  | 17  | 18  | 19  | 20  | 20  | 21  |
| EX7        |                             | —                            | —   | —   | —   | 27  | 38  | 46  | 50  | 53  | 55  | 56  | 56  |
| EX8        |                             | —                            | —   | —   | —   | 72  | 102 | 122 | 133 | 142 | 146 | 149 | 150 |

## R-407C EXTENDED CAPACITIES (TONS) - EX4-8 SERIES, AS EXPANSION AND LIQUID INJECTION VALVES

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

| VALVE TYPE | CONDENSING TEMPERATURE<br>BUBBLE POINT (°F) | EVAPORATING TEMPERATURE (°F) |     |     |     |     |     |     |     |
|------------|---------------------------------------------|------------------------------|-----|-----|-----|-----|-----|-----|-----|
|            |                                             | 60                           | 50  | 40  | 30  | 20  | 10  | 0   | -10 |
| EX4        | 140                                         | 5                            | 5   | 5   | 5   | 5   | 5   | 5   | 5   |
| EX5        |                                             | 14                           | 15  | 15  | 15  | 15  | 15  | 14  | 14  |
| EX6        |                                             | 34                           | 35  | 35  | 35  | 35  | 35  | 34  | 33  |
| EX7        |                                             | 95                           | 97  | 97  | 97  | 96  | 95  | 94  | 92  |
| EX8        |                                             | 253                          | 257 | 258 | 259 | 256 | 255 | 250 | 244 |
| EX4        | 130                                         | 5                            | 5   | 5   | 5   | 5   | 5   | 5   | 5   |
| EX5        |                                             | 15                           | 15  | 15  | 15  | 15  | 15  | 15  | 14  |
| EX6        |                                             | 35                           | 35  | 36  | 36  | 36  | 35  | 35  | 34  |
| EX7        |                                             | 95                           | 96  | 98  | 98  | 98  | 97  | 96  | 94  |
| EX8        |                                             | 253                          | 257 | 261 | 261 | 261 | 260 | 256 | 252 |
| EX4        | 120                                         | 5                            | 5   | 5   | 5   | 5   | 5   | 5   | 5   |
| EX5        |                                             | 14                           | 15  | 15  | 15  | 15  | 15  | 15  | 15  |
| EX6        |                                             | 34                           | 35  | 36  | 36  | 36  | 36  | 36  | 36  |
| EX7        |                                             | 93                           | 96  | 99  | 99  | 99  | 100 | 99  | 98  |
| EX8        |                                             | 249                          | 256 | 264 | 265 | 265 | 266 | 264 | 261 |
| EX4        | 110                                         | 4                            | 5   | 5   | 5   | 5   | 5   | 5   | 5   |
| EX5        |                                             | 14                           | 14  | 15  | 15  | 15  | 15  | 15  | 15  |
| EX6        |                                             | 33                           | 34  | 35  | 35  | 36  | 36  | 36  | 35  |
| EX7        |                                             | 90                           | 93  | 96  | 97  | 99  | 99  | 99  | 98  |
| EX8        |                                             | 239                          | 248 | 255 | 260 | 263 | 264 | 263 | 260 |
| EX4        | 100                                         | 4                            | 4   | 5   | 5   | 5   | 5   | 5   | 5   |
| EX5        |                                             | 13                           | 14  | 14  | 15  | 15  | 15  | 15  | 15  |
| EX6        |                                             | 30                           | 32  | 34  | 35  | 35  | 36  | 36  | 36  |
| EX7        |                                             | 84                           | 89  | 94  | 96  | 98  | 9   | 99  | 98  |
| EX8        |                                             | 224                          | 239 | 250 | 256 | 260 | 263 | 254 | 262 |
| EX4        | 90                                          | 4                            | 4   | 4   | 5   | 5   | 5   | 5   | 5   |
| EX5        |                                             | 11                           | 13  | 13  | 14  | 14  | 15  | 15  | 15  |
| EX6        |                                             | 27                           | 30  | 32  | 33  | 34  | 35  | 35  | 35  |
| EX7        |                                             | 75                           | 83  | 87  | 92  | 94  | 96  | 97  | 96  |
| EX8        |                                             | 201                          | 220 | 233 | 244 | 250 | 256 | 259 | 257 |
| EX4        | 80                                          | 3                            | 4   | 4   | 4   | 4   | 5   | 5   | 5   |
| EX5        |                                             | 10                           | 11  | 12  | 13  | 13  | 14  | 14  | 14  |
| EX6        |                                             | 23                           | 26  | 29  | 31  | 32  | 33  | 34  | 34  |
| EX7        |                                             | 63                           | 73  | 80  | 85  | 88  | 91  | 93  | 93  |
| EX8        |                                             | 169                          | 193 | 212 | 227 | 235 | 243 | 247 | 248 |
| EX4        | 70                                          | 2                            | 3   | 4   | 4   | 4   | 4   | 4   | 4   |
| EX5        |                                             | 7                            | 9   | 11  | 12  | 13  | 13  | 14  | 14  |
| EX6        |                                             | 17                           | 22  | 26  | 28  | 30  | 31  | 32  | 33  |
| EX7        |                                             | 47                           | 61  | 71  | 77  | 83  | 87  | 89  | 90  |
| EX8        |                                             | 125                          | 164 | 190 | 206 | 220 | 231 | 236 | 239 |
| EX4        | 60                                          | 0                            | 2   | 3   | 3   | 4   | 4   | 4   | 4   |
| EX5        |                                             | 2                            | 7   | 9   | 10  | 11  | 12  | 13  | 13  |
| EX6        |                                             | 4                            | 16  | 21  | 24  | 27  | 29  | 30  | 31  |
| EX7        |                                             | 10                           | 43  | 58  | 67  | 74  | 79  | 82  | 85  |
| EX8        |                                             | 26                           | 115 | 154 | 179 | 197 | 211 | 219 | 225 |
| EX4        | 50                                          | —                            | —   | 2   | 3   | 3   | 4   | 4   | 4   |
| EX5        |                                             | —                            | —   | 6   | 8   | 10  | 11  | 12  | 12  |
| EX6        |                                             | —                            | —   | 15  | 20  | 23  | 26  | 27  | 29  |
| EX7        |                                             | —                            | —   | 40  | 55  | 64  | 70  | 75  | 79  |
| EX8        |                                             | —                            | —   | 107 | 146 | 170 | 187 | 201 | 210 |

R-410A EXTENDED CAPACITIES (TONS) - EX4-8 SERIES, AS EXPANSION AND LIQUID INJECTION VALVES

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

| VALVE TYPE | CONDENSING TEMPERATURE (°F) | EVAPORATING TEMPERATURE (°F) |     |     |     |     |     |     |     |     |     |     |     |
|------------|-----------------------------|------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|            |                             | 60                           | 50  | 40  | 30  | 20  | 10  | 0   | -10 | -20 | -30 | -40 | -50 |
| EX4        | 140                         | 5                            | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   |
| EX5        |                             | 15                           | 15  | 16  | 16  | 16  | 16  | 16  | 16  | 15  | 15  | 15  | 15  |
| EX6        |                             | 36                           | 37  | 38  | 38  | 38  | 38  | 38  | 38  | 37  | 37  | 36  | 35  |
| EX7        |                             | 99                           | 102 | 104 | 105 | 105 | 105 | 105 | 104 | 103 | 101 | 99  | 97  |
| EX8        |                             | 265                          | 271 | 277 | 279 | 281 | 281 | 280 | 277 | 274 | 269 | 264 | 258 |
| EX4        | 130                         | 5                            | 5   | 5   | 5   | 6   | 6   | 6   | 6   | 5   | 5   | 5   | 5   |
| EX5        |                             | 15                           | 16  | 16  | 16  | 17  | 17  | 17  | 17  | 16  | 16  | 16  | 16  |
| EX6        |                             | 37                           | 38  | 39  | 40  | 40  | 40  | 40  | 40  | 40  | 39  | 39  | 38  |
| EX7        |                             | 101                          | 105 | 107 | 109 | 110 | 110 | 111 | 110 | 109 | 108 | 106 | 104 |
| EX8        |                             | 269                          | 279 | 285 | 292 | 293 | 295 | 296 | 294 | 291 | 288 | 283 | 277 |
| EX4        | 120                         | 5                            | 5   | 6   | 6   | 6   | 6   | 6   | 6   | 6   | 6   | 6   | 6   |
| EX5        |                             | 15                           | 16  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  |
| EX6        |                             | 37                           | 39  | 40  | 41  | 42  | 42  | 42  | 42  | 42  | 42  | 41  | 40  |
| EX7        |                             | 101                          | 106 | 110 | 112 | 114 | 115 | 116 | 116 | 116 | 114 | 113 | 111 |
| EX8        |                             | 270                          | 283 | 293 | 299 | 305 | 308 | 309 | 310 | 309 | 305 | 301 | 297 |
| EX4        | 110                         | 5                            | 5   | 5   | 6   | 6   | 6   | 6   | 6   | 6   | 6   | 6   | 6   |
| EX5        |                             | 15                           | 15  | 16  | 17  | 17  | 17  | 18  | 18  | 18  | 17  | 17  | 17  |
| EX6        |                             | 35                           | 37  | 39  | 40  | 42  | 42  | 43  | 43  | 43  | 42  | 42  | 41  |
| EX7        |                             | 96                           | 102 | 107 | 111 | 114 | 115 | 117 | 118 | 117 | 116 | 115 | 113 |
| EX8        |                             | 257                          | 273 | 286 | 297 | 305 | 308 | 313 | 314 | 313 | 309 | 308 | 303 |
| EX4        | 100                         | 5                            | 5   | 5   | 6   | 6   | 6   | 6   | 6   | 6   | 6   | 6   | 6   |
| EX5        |                             | 14                           | 15  | 16  | 17  | 17  | 17  | 18  | 18  | 18  | 18  | 18  | 18  |
| EX6        |                             | 33                           | 36  | 38  | 40  | 41  | 42  | 43  | 43  | 43  | 43  | 43  | 42  |
| EX7        |                             | 90                           | 98  | 105 | 110 | 113 | 116 | 118 | 119 | 119 | 118 | 118 | 116 |
| EX8        |                             | 240                          | 261 | 281 | 294 | 301 | 308 | 315 | 316 | 316 | 315 | 316 | 311 |
| EX4        | 90                          | 4                            | 4   | 5   | 5   | 5   | 6   | 6   | 6   | 6   | 6   | 6   | 6   |
| EX5        |                             | 12                           | 13  | 15  | 16  | 16  | 17  | 17  | 18  | 18  | 18  | 18  | 18  |
| EX6        |                             | 28                           | 33  | 36  | 38  | 40  | 41  | 42  | 42  | 43  | 43  | 43  | 43  |
| EX7        |                             | 78                           | 89  | 98  | 104 | 109 | 112 | 116 | 116 | 118 | 118 | 118 | 117 |
| EX8        |                             | 207                          | 239 | 260 | 277 | 290 | 300 | 308 | 311 | 314 | 314 | 315 | 313 |
| EX4        | 80                          | 3                            | 4   | 4   | 5   | 5   | 5   | 6   | 6   | 6   | 6   | 6   | 6   |
| EX5        |                             | 9                            | 12  | 13  | 15  | 15  | 16  | 17  | 17  | 17  | 17  | 17  | 17  |
| EX6        |                             | 22                           | 28  | 32  | 35  | 37  | 39  | 40  | 41  | 42  | 42  | 42  | 42  |
| EX7        |                             | 61                           | 77  | 87  | 97  | 103 | 107 | 111 | 113 | 114 | 116 | 115 | 114 |
| EX8        |                             | 163                          | 204 | 233 | 257 | 274 | 286 | 297 | 300 | 305 | 309 | 308 | 305 |
| EX4        | 70                          | 2                            | 3   | 4   | 4   | 5   | 5   | 5   | 5   | 6   | 6   | 6   | 6   |
| EX5        |                             | 5                            | 9   | 11  | 13  | 14  | 15  | 16  | 16  | 17  | 17  | 17  | 17  |
| EX6        |                             | 11                           | 21  | 27  | 31  | 34  | 37  | 39  | 39  | 40  | 41  | 41  | 41  |
| EX7        |                             | 31                           | 59  | 75  | 86  | 94  | 101 | 106 | 108 | 111 | 112 | 114 | 113 |
| EX8        |                             | 84                           | 157 | 201 | 230 | 251 | 270 | 284 | 289 | 295 | 300 | 303 | 301 |
| EX4        | 60                          | —                            | 1   | 3   | 4   | 4   | 5   | 5   | 5   | 5   | 5   | 5   | 5   |
| EX5        |                             | —                            | 4   | 8   | 11  | 13  | 14  | 15  | 15  | 16  | 16  | 16  | 16  |
| EX6        |                             | —                            | 10  | 20  | 26  | 30  | 33  | 36  | 37  | 38  | 39  | 40  | 39  |
| EX7        |                             | —                            | 27  | 56  | 72  | 84  | 92  | 98  | 102 | 105 | 108 | 109 | 109 |
| EX8        |                             | —                            | 72  | 150 | 192 | 224 | 245 | 262 | 273 | 281 | 287 | 291 | 290 |
| EX4        | 50                          | —                            | —   | 1   | 3   | 3   | 4   | 4   | 5   | 5   | 5   | 5   | 5   |
| EX5        |                             | —                            | —   | 3   | 8   | 10  | 12  | 14  | 14  | 15  | 15  | 16  | 16  |
| EX6        |                             | —                            | —   | 8   | 19  | 25  | 29  | 33  | 35  | 36  | 37  | 38  | 38  |
| EX7        |                             | —                            | —   | 21  | 53  | 69  | 80  | 90  | 95  | 99  | 102 | 104 | 104 |
| EX8        |                             | —                            | —   | 57  | 143 | 185 | 214 | 239 | 254 | 265 | 272 | 278 | 277 |

## R-448A EXTENDED CAPACITIES (TONS) - EX4-8 SERIES, AS EXPANSION AND LIQUID INJECTION VALVES

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

| VALVE TYPE | CONDENSING TEMPERATURE (°F) | EVAPORATING TEMPERATURE (°F) |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------------|-----------------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|            |                             | 50                           | 40    | 32    | 25    | 15    | 0     | -10   | -20   | -30   | -40   | -50   | -60   | -70   | -80   | -95   |
| EX4        | 140                         | 4.3                          | 4.3   | 4.3   | 4.3   | 4.3   | 4.2   | 4.1   | 4.0   | 3.9   | 3.7   | 3.6   | 3.5   | 3.3   | 3.2   | 2.9   |
| EX5        |                             | 13.1                         | 13.1  | 13.1  | 13.1  | 12.8  | 12.7  | 12.3  | 12.0  | 11.7  | 11.4  | 11.0  | 10.4  | 10.2  | 9.8   | 9.0   |
| EX6        |                             | 31.3                         | 31.6  | 31.6  | 31.3  | 31.0  | 30.3  | 29.6  | 28.9  | 28.0  | 27.3  | 26.3  | 25.1  | 24.2  | 23.2  | 21.5  |
| EX7        |                             | 86.4                         | 86.7  | 86.7  | 86.3  | 85.4  | 83.4  | 81.6  | 79.5  | 77.3  | 74.8  | 72.2  | 69.4  | 66.5  | 63.7  | 59.1  |
| EX8        |                             | 230.3                        | 231.2 | 230.9 | 229.9 | 227.5 | 222.1 | 217.4 | 211.9 | 205.9 | 199.3 | 192.4 | 185.0 | 177.4 | 169.4 | 157.6 |
| EX4        | 120                         | 4.5                          | 4.5   | 4.6   | 4.6   | 4.6   | 4.6   | 4.5   | 4.4   | 4.3   | 4.2   | 4.1   | 4.0   | 3.9   | 3.7   | 3.6   |
| EX5        |                             | 13.3                         | 13.7  | 14.0  | 14.0  | 14.0  | 13.9  | 13.5  | 13.5  | 13.2  | 12.9  | 12.6  | 12.2  | 11.7  | 11.4  | 10.9  |
| EX6        |                             | 32.4                         | 33.1  | 33.3  | 33.4  | 33.4  | 33.0  | 32.8  | 32.2  | 31.6  | 31.0  | 30.0  | 29.1  | 28.2  | 27.3  | 25.8  |
| EX7        |                             | 88.9                         | 90.6  | 91.4  | 91.8  | 92.0  | 91.1  | 90.0  | 88.6  | 86.8  | 84.9  | 82.7  | 80.2  | 77.8  | 75.2  | 71.2  |
| EX8        |                             | 237.1                        | 241.9 | 244.2 | 245.2 | 245.4 | 243.0 | 240.2 | 236.1 | 231.6 | 226.1 | 220.5 | 214.1 | 207.3 | 200.7 | 189.7 |
| EX4        | 100                         | 4.2                          | 4.4   | 4.5   | 4.5   | 4.6   | 4.6   | 4.6   | 4.6   | 4.5   | 4.4   | 4.4   | 4.3   | 4.2   | 4.1   | 3.9   |
| EX5        |                             | 12.6                         | 13.2  | 13.5  | 13.8  | 13.9  | 13.9  | 13.9  | 13.9  | 13.7  | 13.4  | 13.1  | 12.8  | 12.5  | 12.2  | 11.7  |
| EX6        |                             | 30.5                         | 31.8  | 32.4  | 32.9  | 33.3  | 33.5  | 33.6  | 33.1  | 32.8  | 32.3  | 31.7  | 31.0  | 30.2  | 29.6  | 28.2  |
| EX7        |                             | 83.7                         | 87.3  | 89.3  | 90.6  | 91.8  | 92.3  | 92.0  | 91.3  | 90.2  | 88.7  | 87.2  | 85.3  | 83.3  | 80.9  | 77.6  |
| EX8        |                             | 223.3                        | 232.7 | 238.1 | 241.6 | 244.6 | 246.2 | 245.4 | 243.6 | 240.6 | 236.9 | 232.4 | 227.4 | 221.9 | 216.1 | 207.1 |
| EX4        | 85                          | 3.7                          | 4.0   | 4.1   | 4.3   | 4.4   | 4.5   | 4.5   | 4.5   | 4.5   | 4.4   | 4.4   | 4.3   | 4.2   | 4.1   | 4.0   |
| EX5        |                             | 11.2                         | 11.9  | 12.7  | 13.0  | 13.3  | 13.6  | 13.6  | 13.6  | 13.7  | 13.4  | 13.3  | 13.0  | 12.7  | 12.4  | 11.9  |
| EX6        |                             | 26.6                         | 28.9  | 30.2  | 31.2  | 32.0  | 32.8  | 33.0  | 32.7  | 32.7  | 32.4  | 31.8  | 31.1  | 30.5  | 29.9  | 28.9  |
| EX7        |                             | 73.4                         | 79.3  | 83.0  | 85.4  | 87.9  | 89.9  | 90.3  | 90.4  | 89.9  | 88.7  | 87.4  | 86.1  | 84.1  | 82.2  | 79.4  |
| EX8        |                             | 195.7                        | 211.9 | 221.3 | 227.6 | 234.3 | 239.7 | 241.0 | 240.8 | 239.2 | 236.7 | 233.3 | 229.4 | 224.6 | 219.7 | 211.4 |
| EX4        | 70                          | 2.8                          | 3.3   | 3.6   | 3.8   | 4.0   | 4.2   | 4.3   | 4.3   | 4.3   | 4.3   | 4.3   | 4.2   | 4.1   | 4.1   | 3.9   |
| EX5        |                             | 8.4                          | 10.0  | 11.0  | 11.5  | 12.1  | 12.9  | 13.0  | 13.2  | 13.2  | 13.2  | 12.9  | 12.8  | 12.5  | 12.5  | 11.8  |
| EX6        |                             | 20.3                         | 24.1  | 26.3  | 27.7  | 29.4  | 30.7  | 31.3  | 31.6  | 31.6  | 31.3  | 31.2  | 30.7  | 30.1  | 29.7  | 28.5  |
| EX7        |                             | 55.6                         | 66.1  | 72.1  | 76.2  | 80.6  | 84.6  | 86.2  | 86.9  | 86.8  | 86.3  | 85.5  | 84.3  | 82.8  | 81.0  | 78.3  |
| EX8        |                             | 148.6                        | 176.5 | 192.5 | 203.3 | 214.7 | 225.5 | 229.5 | 231.3 | 231.4 | 230.4 | 228.0 | 224.8 | 221.0 | 216.4 | 208.8 |
| EX4        | 60                          | 2.8                          | 3.1   | 3.3   | 3.5   | 3.7   | 3.8   | 3.9   | 4.0   | 4.0   | 4.1   | 4.1   | 4.1   | 4.1   | 4.1   | 4.1   |
| EX5        |                             | 8.4                          | 9.5   | 10.1  | 10.5  | 11.0  | 11.7  | 11.8  | 12.1  | 12.3  | 12.4  | 12.3  | 12.4  | 12.4  | 12.5  | 12.4  |
| EX6        |                             | 20.3                         | 22.8  | 24.4  | 25.3  | 26.6  | 27.8  | 28.5  | 29.1  | 29.4  | 29.4  | 29.8  | 29.8  | 29.8  | 29.9  | 29.7  |
| EX7        |                             | 55.6                         | 62.6  | 66.7  | 69.7  | 73.1  | 76.7  | 78.5  | 79.8  | 80.6  | 81.3  | 81.7  | 81.9  | 81.9  | 81.8  | 81.6  |
| EX8        |                             | 148.4                        | 167.0 | 178.2 | 186.1 | 194.9 | 204.6 | 209.2 | 212.5 | 214.9 | 216.7 | 217.7 | 218.3 | 218.5 | 218.3 | 217.5 |
| EX4        | 50                          | 2.9                          | 3.0   | 3.1   | 3.2   | 3.2   | 3.4   | 3.5   | 3.6   | 3.6   | 3.7   | 3.8   | 3.9   | 4.0   | 4.1   | 4.2   |
| EX5        |                             | 8.9                          | 9.1   | 9.4   | 9.6   | 9.8   | 10.2  | 10.5  | 10.8  | 11.0  | 11.3  | 11.6  | 11.9  | 12.1  | 12.4  | 12.8  |
| EX6        |                             | 21.4                         | 22.0  | 22.6  | 23.0  | 23.6  | 24.6  | 25.3  | 25.9  | 26.5  | 27.2  | 27.8  | 28.5  | 29.1  | 29.8  | 30.7  |
| EX7        |                             | 58.8                         | 60.5  | 62.0  | 63.2  | 65.0  | 67.7  | 69.4  | 71.2  | 73.0  | 74.8  | 76.6  | 78.3  | 80.1  | 81.9  | 84.6  |
| EX8        |                             | 156.9                        | 161.6 | 165.4 | 168.7 | 173.4 | 180.4 | 185.1 | 189.8 | 194.6 | 199.3 | 204.0 | 208.7 | 213.4 | 218.1 | 225.2 |
| EX4        | 32                          | 2.2                          | 2.3   | 2.4   | 2.5   | 2.6   | 2.7   | 2.9   | 3.0   | 3.1   | 3.2   | 3.3   | 3.4   | 3.5   | 3.7   | 3.8   |
| EX5        |                             | 6.7                          | 7.0   | 7.3   | 7.5   | 7.9   | 8.4   | 8.7   | 9.0   | 9.4   | 9.7   | 10.0  | 10.4  | 10.7  | 11.0  | 11.5  |
| EX6        |                             | 15.8                         | 16.7  | 17.3  | 17.9  | 18.7  | 20.0  | 20.8  | 21.7  | 22.5  | 23.3  | 24.2  | 25.0  | 25.9  | 26.7  | 27.9  |
| EX7        |                             | 43.4                         | 45.7  | 47.6  | 49.2  | 51.5  | 55.0  | 57.3  | 59.6  | 61.9  | 64.2  | 66.5  | 68.8  | 71.1  | 73.4  | 76.9  |
| EX8        |                             | 115.9                        | 122.0 | 126.9 | 131.2 | 137.3 | 146.5 | 152.6 | 158.7 | 164.9 | 171.0 | 177.1 | 183.2 | 189.3 | 195.5 | 204.6 |
| EX4        | 15                          | —                            | 1.3   | 1.4   | 1.6   | 1.7   | 1.9   | 2.1   | 2.2   | 2.4   | 2.5   | 2.7   | 2.8   | 3.0   | 3.1   | 3.4   |
| EX5        |                             | —                            | 4.0   | 4.3   | 4.6   | 5.1   | 5.8   | 6.2   | 6.7   | 7.2   | 7.6   | 8.1   | 8.5   | 9.0   | 9.5   | 10.1  |
| EX6        |                             | —                            | 9.6   | 10.5  | 11.2  | 12.3  | 14.0  | 15.1  | 16.2  | 17.3  | 18.3  | 19.4  | 20.5  | 21.6  | 22.7  | 24.3  |
| EX7        |                             | —                            | 26.3  | 28.7  | 30.8  | 33.9  | 38.4  | 41.4  | 44.5  | 47.5  | 50.5  | 53.5  | 56.6  | 59.6  | 62.6  | 67.1  |
| EX8        |                             | —                            | 69.9  | 76.4  | 82.1  | 90.2  | 102.3 | 110.4 | 118.5 | 126.6 | 134.7 | 142.7 | 150.8 | 158.9 | 166.9 | 179.0 |
| EX4        | -5                          | —                            | —     | —     | —     | —     | —     | 1.0   | 1.2   | 1.4   | 1.5   | 1.7   | 1.9   | 2.1   | 2.2   | 2.5   |
| EX5        |                             | —                            | —     | —     | —     | —     | —     | 3.1   | 3.7   | 4.2   | 4.7   | 5.2   | 5.7   | 6.3   | 6.8   | 7.6   |
| EX6        |                             | —                            | —     | —     | —     | —     | —     | 7.4   | 8.7   | 9.9   | 11.1  | 12.4  | 13.6  | 14.9  | 16.1  | 17.9  |
| EX7        |                             | —                            | —     | —     | —     | —     | —     | 20.6  | 24.0  | 27.4  | 30.8  | 34.2  | 37.5  | 40.9  | 44.3  | 49.4  |
| EX8        |                             | —                            | —     | —     | —     | —     | —     | 55.2  | 64.2  | 73.2  | 82.2  | 91.2  | 100.3 | 109.3 | 118.3 | 131.8 |



**R-449A EXTENDED CAPACITIES (TONS) - EX4-8 SERIES, AS EXPANSION AND LIQUID INJECTION VALVES**

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

| VALVE TYPE | CONDENSING TEMPERATURE (°F) | EVAPORATING TEMPERATURE (°F) |       |       |       |       |       |       |       |       |       |       |       |
|------------|-----------------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|            |                             | 50                           | 40    | 30    | 20    | 10    | 0     | -10   | -20   | -30   | -40   | -80   | -100  |
| EX4        | 140                         | 4.3                          | 4.3   | 4.3   | 4.3   | 4.1   | 3.9   | 4.0   | 3.8   | 3.7   | 3.7   | 3.1   | 2.7   |
| EX5        |                             | 12.8                         | 12.8  | 12.7  | 12.5  | 12.4  | 12.2  | 12.1  | 11.7  | 11.4  | 10.8  | 9.2   | 8.2   |
| EX6        |                             | 30.4                         | 30.7  | 30.4  | 30.4  | 29.9  | 29.2  | 28.7  | 27.8  | 27.1  | 26.2  | 22.0  | 19.9  |
| EX7        |                             | 83.9                         | 84.2  | 83.8  | 83.1  | 82.0  | 80.6  | 78.8  | 76.6  | 74.4  | 71.9  | 60.8  | 54.8  |
| EX8        |                             | 223.5                        | 224.4 | 223.8 | 221.7 | 218.8 | 214.8 | 210.0 | 204.5 | 198.3 | 191.6 | 162.1 | 145.8 |
| EX4        | 120                         | 4.3                          | 4.3   | 4.6   | 4.6   | 4.6   | 4.4   | 4.3   | 4.3   | 4.3   | 4.0   | 3.7   | 3.3   |
| EX5        |                             | 13.1                         | 13.4  | 13.4  | 13.4  | 13.4  | 13.5  | 13.3  | 13.0  | 12.7  | 12.4  | 11.1  | 10.1  |
| EX6        |                             | 31.5                         | 32.2  | 32.5  | 32.5  | 32.5  | 32.2  | 31.7  | 31.1  | 30.5  | 29.9  | 26.4  | 24.5  |
| EX7        |                             | 86.6                         | 88.3  | 89.0  | 89.4  | 89.3  | 88.6  | 87.3  | 85.7  | 83.9  | 82.1  | 72.4  | 67.0  |
| EX8        |                             | 231.0                        | 235.4 | 237.8 | 238.6 | 237.9 | 235.9 | 232.8 | 228.8 | 224.2 | 218.8 | 192.9 | 178.5 |
| EX4        | 100                         | 4.2                          | 4.2   | 4.3   | 4.5   | 4.5   | 4.6   | 4.6   | 4.5   | 4.3   | 4.3   | 4.0   | 3.7   |
| EX5        |                             | 12.3                         | 13.0  | 13.3  | 13.6  | 13.6  | 13.6  | 13.7  | 13.4  | 13.4  | 13.1  | 11.9  | 11.3  |
| EX6        |                             | 29.7                         | 31.0  | 31.9  | 32.3  | 32.6  | 32.7  | 32.5  | 32.3  | 32.0  | 31.4  | 28.7  | 26.8  |
| EX7        |                             | 81.8                         | 85.1  | 87.7  | 89.1  | 89.8  | 89.9  | 89.8  | 88.8  | 87.7  | 86.3  | 78.3  | 74.0  |
| EX8        |                             | 218.4                        | 227.5 | 233.5 | 237.6 | 239.7 | 240.2 | 239.2 | 237.0 | 234.0 | 230.3 | 209.5 | 197.3 |
| EX4        | 85                          | 3.6                          | 3.9   | 4.0   | 4.3   | 4.2   | 4.4   | 4.6   | 4.3   | 4.3   | 4.3   | 3.9   | 4.1   |
| EX5        |                             | 10.9                         | 11.9  | 12.5  | 12.8  | 13.2  | 13.4  | 13.3  | 13.3  | 13.4  | 13.1  | 12.1  | 11.5  |
| EX6        |                             | 26.0                         | 28.3  | 29.9  | 30.9  | 31.6  | 31.9  | 32.1  | 32.1  | 31.9  | 31.6  | 28.9  | 27.8  |
| EX7        |                             | 72.0                         | 77.6  | 82.0  | 84.8  | 86.8  | 87.7  | 88.3  | 88.2  | 87.6  | 86.7  | 80.0  | 76.2  |
| EX8        |                             | 191.5                        | 207.4 | 218.4 | 226.3 | 231.3 | 234.4 | 235.4 | 235.2 | 233.6 | 230.8 | 213.7 | 202.3 |
| EX4        | 70                          | 2.6                          | 3.2   | 3.5   | 3.9   | 4.1   | 4.0   | 4.3   | 4.3   | 4.3   | 4.3   | 4.0   | 4.0   |
| EX5        |                             | 8.4                          | 9.7   | 10.9  | 11.8  | 12.3  | 12.6  | 12.7  | 12.9  | 12.9  | 12.9  | 12.2  | 11.3  |
| EX6        |                             | 19.7                         | 23.5  | 26.2  | 28.0  | 29.4  | 30.0  | 30.7  | 30.8  | 30.7  | 30.7  | 28.7  | 27.4  |
| EX7        |                             | 54.5                         | 64.9  | 71.8  | 76.9  | 80.5  | 82.7  | 84.1  | 84.8  | 84.8  | 84.3  | 79.3  | 75.2  |
| EX8        |                             | 145.4                        | 172.9 | 191.7 | 205.2 | 214.6 | 220.9 | 224.6 | 226.3 | 226.5 | 225.1 | 211.0 | 200.7 |
| EX4        | 50                          | 2.8                          | 2.9   | 3.0   | 3.1   | 3.2   | 3.3   | 3.4   | 3.5   | 3.6   | 3.7   | 4.0   | 4.2   |
| EX5        |                             | 8.7                          | 9.0   | 9.2   | 9.5   | 9.8   | 10.0  | 10.3  | 10.5  | 10.8  | 11.1  | 12.1  | 12.6  |
| EX6        |                             | 20.9                         | 21.6  | 22.2  | 22.8  | 23.5  | 24.1  | 24.7  | 25.4  | 26.0  | 26.6  | 29.2  | 30.5  |
| EX7        |                             | 57.7                         | 59.4  | 61.1  | 62.8  | 64.6  | 66.3  | 68.0  | 69.7  | 71.5  | 73.2  | 80.1  | 83.5  |
| EX8        |                             | 153.8                        | 158.4 | 163.0 | 167.6 | 172.2 | 176.8 | 181.4 | 186.0 | 190.5 | 195.1 | 213.5 | 222.6 |
| EX4        | 32                          | 2.2                          | 2.3   | 2.4   | 2.5   | 2.6   | 2.7   | 2.8   | 3.0   | 3.1   | 3.2   | 3.6   | 3.8   |
| EX5        |                             | 6.4                          | 6.7   | 7.1   | 7.4   | 7.8   | 8.1   | 8.5   | 8.8   | 9.2   | 9.5   | 10.9  | 11.6  |
| EX6        |                             | 15.4                         | 16.2  | 17.0  | 17.8  | 18.7  | 19.5  | 20.3  | 21.1  | 22.0  | 22.8  | 26.1  | 27.7  |
| EX7        |                             | 42.7                         | 44.9  | 47.2  | 49.4  | 51.6  | 53.9  | 56.1  | 58.4  | 60.6  | 62.9  | 71.8  | 76.3  |
| EX8        |                             | 113.6                        | 119.6 | 125.6 | 131.6 | 137.6 | 143.6 | 149.6 | 155.6 | 161.6 | 167.5 | 191.5 | 203.5 |
| EX4        | 15                          | —                            | —     | 1.5   | 1.6   | 1.8   | 1.9   | 2.1   | 2.2   | 2.3   | 2.5   | 3.0   | 3.3   |
| EX5        |                             | —                            | —     | 4.3   | 4.8   | 5.2   | 5.7   | 6.1   | 6.6   | 7.1   | 7.5   | 9.3   | 10.2  |
| EX6        |                             | —                            | —     | 10.4  | 11.5  | 12.6  | 13.7  | 14.8  | 15.8  | 16.9  | 18.0  | 22.3  | 24.5  |
| EX7        |                             | —                            | —     | 28.5  | 31.5  | 34.5  | 37.5  | 40.4  | 43.4  | 46.4  | 49.4  | 61.3  | 67.3  |
| EX8        |                             | —                            | —     | 76.0  | 84.0  | 92.0  | 100.0 | 108.0 | 116.0 | 123.9 | 131.9 | 163.7 | 179.6 |
| EX4        | -5                          | —                            | —     | —     | —     | —     | —     | 1.0   | 1.2   | 1.3   | 1.5   | 2.2   | 2.5   |
| EX5        |                             | —                            | —     | —     | —     | —     | —     | 3.1   | 3.6   | 4.1   | 4.6   | 6.6   | 7.6   |
| EX6        |                             | —                            | —     | —     | —     | —     | —     | 7.1   | 8.4   | 9.6   | 10.9  | 15.8  | 18.3  |
| EX7        |                             | —                            | —     | —     | —     | —     | —     | 20.1  | 23.5  | 26.8  | 30.1  | 43.5  | 50.1  |
| EX8        |                             | —                            | —     | —     | —     | —     | —     | 53.4  | 62.3  | 71.3  | 80.2  | 115.8 | 133.6 |

## R-450A EXTENDED CAPACITIES (TONS) - EX4-8 SERIES, AS EXPANSION AND LIQUID INJECTION VALVES

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

| VALVE TYPE | CONDENSING TEMPERATURE (°F) | EVAPORATING TEMPERATURE (°F) |       |       |       |       |       |       |       |       |       |       |       |
|------------|-----------------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|            |                             | 130                          | 120   | 100   | 80    | 60    | 50    | 40    | 30    | 20    | 0     | -10   | -20   |
| EX4        | 175                         | 2.6                          | 2.8   | 3.0   | 3.0   | 2.9   | 2.9   | 2.8   | 2.7   | 2.6   | 2.3   | 2.2   | 2.1   |
| EX5        |                             | 7.9                          | 8.6   | 8.9   | 9.2   | 8.9   | 8.6   | 8.6   | 8.2   | 8.0   | 7.0   | 6.7   | 6.4   |
| EX6        |                             | 19.0                         | 20.3  | 21.8  | 22.0  | 21.5  | 21.0  | 20.3  | 19.7  | 19.0  | 17.0  | 16.1  | 15.1  |
| EX7        |                             | 52.1                         | 55.8  | 59.7  | 60.4  | 59.1  | 57.7  | 56.1  | 54.1  | 51.9  | 47.0  | 44.2  | 41.5  |
| EX8        |                             | 139.0                        | 148.8 | 159.2 | 161.2 | 157.3 | 153.8 | 149.4 | 144.2 | 138.4 | 125.1 | 118.1 | 110.6 |
| EX4        | 160                         | 2.2                          | 2.6   | 3.0   | 3.2   | 3.2   | 3.1   | 3.1   | 3.0   | 2.9   | 2.7   | 2.6   | 2.4   |
| EX5        |                             | 6.8                          | 8.0   | 9.1   | 9.6   | 9.6   | 9.4   | 9.4   | 9.1   | 9.0   | 8.2   | 7.9   | 7.5   |
| EX6        |                             | 16.4                         | 18.9  | 21.7  | 23.0  | 23.1  | 22.8  | 22.4  | 22.0  | 21.3  | 19.5  | 18.6  | 17.7  |
| EX7        |                             | 45.0                         | 52.2  | 59.8  | 63.2  | 63.4  | 62.7  | 61.6  | 60.0  | 58.2  | 53.9  | 51.5  | 48.8  |
| EX8        |                             | 120.3                        | 138.8 | 159.9 | 168.6 | 169.3 | 167.4 | 164.3 | 160.4 | 155.5 | 143.6 | 137.0 | 130.0 |
| EX4        | 140                         | 2.4                          | 2.5   | 2.6   | 2.7   | 2.8   | 2.8   | 2.9   | 2.9   | 3.0   | 3.1   | 3.1   | 3.2   |
| EX5        |                             | 7.4                          | 7.6   | 7.9   | 8.1   | 8.4   | 8.6   | 8.7   | 8.9   | 9.0   | 9.3   | 9.5   | 9.6   |
| EX6        |                             | 17.8                         | 18.2  | 18.9  | 19.6  | 20.3  | 20.6  | 21.0  | 21.4  | 21.7  | 22.4  | 22.8  | 23.1  |
| EX7        |                             | 49.0                         | 49.9  | 51.9  | 53.8  | 55.8  | 56.7  | 57.7  | 58.7  | 59.6  | 61.6  | 62.6  | 63.5  |
| EX8        |                             | 130.6                        | 133.2 | 138.3 | 143.5 | 148.7 | 151.3 | 153.9 | 156.4 | 159.0 | 164.2 | 166.8 | 169.4 |
| EX4        | 120                         | 2.5                          | 2.6   | 2.7   | 2.7   | 2.8   | 2.9   | 2.9   | 3.0   | 3.0   | 3.1   | 3.1   | 3.2   |
| EX5        |                             | 7.8                          | 7.9   | 8.1   | 8.4   | 8.6   | 8.7   | 8.9   | 9.0   | 9.1   | 9.3   | 9.5   | 9.6   |
| EX6        |                             | 18.5                         | 18.8  | 19.4  | 20.0  | 20.6  | 20.9  | 21.2  | 21.5  | 21.8  | 22.4  | 22.7  | 23.0  |
| EX7        |                             | 50.6                         | 51.5  | 53.2  | 54.9  | 56.6  | 57.4  | 58.2  | 59.1  | 59.9  | 61.6  | 62.4  | 63.2  |
| EX8        |                             | 135.0                        | 137.4 | 141.9 | 146.4 | 150.9 | 153.1 | 155.3 | 157.6 | 159.8 | 164.2 | 166.4 | 168.6 |
| EX4        | 110                         | 2.1                          | 2.2   | 2.3   | 2.5   | 2.6   | 2.7   | 2.8   | 2.9   | 2.9   | 3.1   | 3.2   | 3.3   |
| EX5        |                             | 6.3                          | 6.5   | 7.0   | 7.5   | 7.9   | 8.2   | 8.4   | 8.7   | 8.9   | 9.4   | 9.6   | 9.9   |
| EX6        |                             | 15.1                         | 15.7  | 16.8  | 18.0  | 19.1  | 19.7  | 20.2  | 20.8  | 21.4  | 22.5  | 23.1  | 23.7  |
| EX7        |                             | 41.5                         | 43.1  | 46.2  | 49.3  | 52.5  | 54.1  | 55.6  | 57.2  | 58.8  | 61.9  | 63.5  | 65.1  |
| EX8        |                             | 110.9                        | 115.0 | 123.3 | 131.7 | 140.0 | 144.2 | 148.4 | 152.6 | 156.8 | 165.2 | 169.4 | 173.6 |
| EX4        | 105                         | 1.9                          | 2.0   | 2.2   | 2.4   | 2.5   | 2.6   | 2.7   | 2.8   | 2.9   | 3.0   | 3.1   | 3.2   |
| EX5        |                             | 5.9                          | 6.2   | 6.7   | 7.2   | 7.7   | 7.9   | 8.2   | 8.4   | 8.6   | 9.1   | 9.4   | 9.6   |
| EX6        |                             | 14.2                         | 14.8  | 16.0  | 17.2  | 18.4  | 19.0  | 19.6  | 20.2  | 20.8  | 21.9  | 22.5  | 23.1  |
| EX7        |                             | 39.3                         | 40.9  | 44.1  | 47.3  | 50.6  | 52.2  | 53.8  | 55.4  | 57.0  | 60.2  | 61.8  | 63.4  |
| EX8        |                             | 104.6                        | 109.0 | 117.6 | 126.2 | 134.8 | 139.1 | 143.4 | 147.8 | 152.1 | 160.7 | 165.0 | 169.3 |
| EX4        | 95                          | 1.5                          | 1.6   | 1.8   | 2.1   | 2.3   | 2.4   | 2.5   | 2.6   | 2.8   | 3.0   | 3.1   | 3.2   |
| EX5        |                             | 4.6                          | 5.0   | 5.7   | 6.3   | 7.0   | 7.4   | 7.7   | 8.1   | 8.4   | 9.1   | 9.4   | 9.8   |
| EX6        |                             | 11.2                         | 12.0  | 13.7  | 15.3  | 16.9  | 17.7  | 18.5  | 19.3  | 20.1  | 21.7  | 22.5  | 23.4  |
| EX7        |                             | 30.4                         | 32.6  | 37.2  | 41.7  | 46.2  | 48.4  | 50.7  | 52.9  | 55.2  | 59.7  | 62.0  | 64.2  |
| EX8        |                             | 81.2                         | 87.3  | 99.3  | 111.3 | 123.3 | 129.3 | 135.3 | 141.3 | 147.3 | 159.3 | 165.3 | 171.3 |
| EX4        | 85                          | 1.6                          | 1.7   | 1.8   | 2.0   | 2.2   | 2.3   | 2.4   | 2.5   | 2.6   | 2.8   | 2.9   | 3.0   |
| EX5        |                             | 4.7                          | 5.0   | 5.6   | 6.2   | 6.8   | 7.1   | 7.4   | 7.7   | 7.9   | 8.5   | 8.8   | 9.1   |
| EX6        |                             | 11.3                         | 12.0  | 13.4  | 14.8  | 16.3  | 17.0  | 17.7  | 18.4  | 19.2  | 20.6  | 21.3  | 22.0  |
| EX7        |                             | 31.0                         | 33.0  | 36.9  | 40.8  | 44.8  | 46.7  | 48.7  | 50.7  | 52.6  | 56.6  | 58.5  | 60.5  |
| EX8        |                             | 83.3                         | 88.5  | 98.9  | 109.2 | 119.6 | 124.8 | 129.9 | 135.1 | 140.3 | 150.7 | 155.8 | 161.0 |
| EX4        | 75                          | —                            | —     | —     | 1.3   | 1.7   | 1.8   | 2.0   | 2.2   | 2.3   | 2.7   | 2.8   | 3.0   |
| EX5        |                             | —                            | —     | —     | 4.0   | 5.0   | 5.5   | 6.0   | 6.5   | 7.1   | 8.1   | 8.6   | 9.1   |
| EX6        |                             | —                            | —     | —     | 9.7   | 12.1  | 13.3  | 14.5  | 15.7  | 17.0  | 19.4  | 20.6  | 21.8  |
| EX7        |                             | —                            | —     | —     | 26.8  | 33.4  | 36.7  | 40.1  | 43.4  | 46.7  | 53.3  | 56.6  | 59.9  |
| EX8        |                             | —                            | —     | —     | 71.3  | 89.0  | 97.8  | 106.7 | 115.5 | 124.4 | 142.0 | 150.9 | 159.7 |

**R-513A EXTENDED CAPACITIES (TONS) - EX4-8 SERIES, AS EXPANSION AND LIQUID INJECTION VALVES**

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

| VALVE TYPE | CONDENSING TEMPERATURE (°F) | EVAPORATING TEMPERATURE (°F) |       |       |       |       |       |       |       |       |       |       |       |
|------------|-----------------------------|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|            |                             | 130                          | 120   | 100   | 80    | 60    | 50    | 40    | 30    | 20    | 0     | -10   | -20   |
| EX4        | 175                         | 2.4                          | 2.6   | 2.7   | 2.7   | 2.6   | 2.4   | 2.3   | 2.1   | 1.9   | 1.7   | 1.6   | 1.5   |
| EX5        |                             | 7.1                          | 7.8   | 8.1   | 8.3   | 7.8   | 7.2   | 6.9   | 6.6   | 5.6   | 5.1   | 4.8   | 4.6   |
| EX6        |                             | 17.3                         | 18.4  | 19.6  | 19.7  | 18.9  | 17.3  | 16.6  | 15.6  | 13.4  | 12.5  | 11.9  | 10.6  |
| EX7        |                             | 47.7                         | 50.8  | 53.9  | 54.0  | 51.7  | 47.8  | 45.5  | 42.9  | 37.1  | 34.1  | 32.4  | 29.2  |
| EX8        |                             | 126.9                        | 135.8 | 143.9 | 144.0 | 137.9 | 127.8 | 121.4 | 114.5 | 99.0  | 90.9  | 86.8  | 78.0  |
| EX4        | 160                         | 2.2                          | 2.5   | 2.9   | 3.0   | 3.0   | 2.9   | 2.8   | 2.7   | 2.4   | 2.3   | 2.2   | 2.0   |
| EX5        |                             | 6.7                          | 7.6   | 8.7   | 9.2   | 8.9   | 8.7   | 8.4   | 8.0   | 7.3   | 6.7   | 6.4   | 6.2   |
| EX6        |                             | 15.7                         | 18.2  | 21.0  | 21.9  | 21.7  | 20.8  | 20.1  | 19.3  | 17.5  | 16.4  | 15.9  | 14.9  |
| EX7        |                             | 43.2                         | 50.1  | 57.4  | 60.1  | 59.6  | 57.1  | 55.3  | 53.0  | 47.9  | 45.1  | 43.7  | 40.5  |
| EX8        |                             | 115.4                        | 133.2 | 153.0 | 160.4 | 159.4 | 152.5 | 147.4 | 141.5 | 127.7 | 120.1 | 116.2 | 108.1 |
| EX4        | 140                         | —                            | 2.5   | 2.6   | 2.7   | 2.8   | 2.8   | 2.9   | 2.9   | 3.0   | 3.0   | 3.0   | 3.1   |
| EX5        |                             | —                            | 7.7   | 7.9   | 8.1   | 8.3   | 8.6   | 8.7   | 8.8   | 9.0   | 9.1   | 9.2   | 9.3   |
| EX6        |                             | —                            | 18.3  | 18.8  | 19.4  | 19.9  | 20.5  | 20.8  | 21.0  | 21.6  | 21.9  | 22.0  | 22.3  |
| EX7        |                             | —                            | 50.5  | 51.9  | 53.4  | 54.9  | 56.4  | 57.2  | 57.9  | 59.4  | 60.2  | 60.6  | 61.3  |
| EX8        |                             | —                            | 134.6 | 138.5 | 142.5 | 146.5 | 150.5 | 152.5 | 154.5 | 158.5 | 160.4 | 161.4 | 163.4 |
| EX4        | 120                         | —                            | —     | 2.4   | 2.5   | 2.7   | 2.8   | 2.9   | 3.0   | 3.1   | 3.2   | 3.2   | 3.3   |
| EX5        |                             | —                            | —     | 7.3   | 7.8   | 8.2   | 8.6   | 8.8   | 9.0   | 9.5   | 9.7   | 9.8   | 10.0  |
| EX6        |                             | —                            | —     | 17.4  | 18.5  | 19.5  | 20.6  | 21.1  | 21.6  | 22.7  | 23.2  | 23.4  | 24.0  |
| EX7        |                             | —                            | —     | 48.0  | 50.8  | 53.7  | 56.6  | 58.1  | 59.5  | 62.4  | 63.8  | 64.6  | 66.0  |
| EX8        |                             | —                            | —     | 128.1 | 135.7 | 143.4 | 151.0 | 154.9 | 158.7 | 166.4 | 170.2 | 172.1 | 176.0 |
| EX4        | 110                         | —                            | —     | 2.3   | 2.5   | 2.6   | 2.8   | 2.9   | 2.9   | 3.1   | 3.2   | 3.2   | 3.3   |
| EX5        |                             | —                            | —     | 7.1   | 7.5   | 8.0   | 8.4   | 8.6   | 8.9   | 9.3   | 9.6   | 9.7   | 9.9   |
| EX6        |                             | —                            | —     | 16.9  | 18.0  | 19.1  | 20.2  | 20.8  | 21.3  | 22.4  | 23.0  | 23.3  | 23.8  |
| EX7        |                             | —                            | —     | 46.6  | 49.6  | 52.6  | 55.7  | 57.2  | 58.7  | 61.7  | 63.2  | 63.9  | 65.4  |
| EX8        |                             | —                            | —     | 124.2 | 132.3 | 140.3 | 148.3 | 152.3 | 156.4 | 164.4 | 168.4 | 170.4 | 174.4 |
| EX4        | 105                         | —                            | —     | 2.0   | 2.2   | 2.4   | 2.6   | 2.7   | 2.8   | 3.0   | 3.1   | 3.2   | 3.3   |
| EX5        |                             | —                            | —     | 5.9   | 6.6   | 7.2   | 7.9   | 8.2   | 8.5   | 9.2   | 9.5   | 9.7   | 10.0  |
| EX6        |                             | —                            | —     | 14.6  | 16.1  | 17.6  | 19.1  | 19.8  | 20.5  | 22.0  | 22.8  | 23.1  | 23.9  |
| EX7        |                             | —                            | —     | 39.8  | 44.0  | 48.1  | 52.3  | 54.3  | 56.4  | 60.5  | 62.6  | 63.6  | 65.7  |
| EX8        |                             | —                            | —     | 106.0 | 117.1 | 128.2 | 139.3 | 144.9 | 150.4 | 161.5 | 167.1 | 169.9 | 175.4 |
| EX4        | 95                          | —                            | —     | —     | 1.9   | 2.1   | 2.4   | 2.5   | 2.6   | 2.9   | 3.0   | 3.1   | 3.2   |
| EX5        |                             | —                            | —     | —     | 5.6   | 6.4   | 7.2   | 7.6   | 8.0   | 8.8   | 9.2   | 9.4   | 9.8   |
| EX6        |                             | —                            | —     | —     | 13.6  | 15.5  | 17.3  | 18.3  | 19.2  | 21.1  | 22.1  | 22.5  | 23.5  |
| EX7        |                             | —                            | —     | —     | 37.4  | 42.5  | 47.7  | 50.2  | 52.8  | 57.9  | 60.4  | 61.7  | 64.3  |
| EX8        |                             | —                            | —     | —     | 99.7  | 113.4 | 127.0 | 133.9 | 140.7 | 154.4 | 161.2 | 164.6 | 171.5 |
| EX4        | 85                          | —                            | —     | —     | —     | 1.8   | 2.1   | 2.2   | 2.4   | 2.7   | 2.9   | 2.9   | 3.1   |
| EX5        |                             | —                            | —     | —     | —     | 5.4   | 6.3   | 6.8   | 7.3   | 8.2   | 8.7   | 8.9   | 9.4   |
| EX6        |                             | —                            | —     | —     | —     | 12.9  | 15.2  | 16.3  | 17.5  | 19.7  | 20.9  | 21.4  | 22.6  |
| EX7        |                             | —                            | —     | —     | —     | 35.5  | 41.8  | 44.9  | 48.0  | 54.2  | 57.3  | 58.9  | 62.0  |
| EX8        |                             | —                            | —     | —     | —     | 94.4  | 111.2 | 119.6 | 128.0 | 144.7 | 153.1 | 157.3 | 165.6 |
| EX4        | 75                          | —                            | —     | —     | 1.5   | 1.7   | 2.0   | 2.1   | 2.2   | 2.5   | 2.6   | 2.7   | 2.8   |
| EX5        |                             | —                            | —     | —     | 4.5   | 5.2   | 6.0   | 6.3   | 6.7   | 7.4   | 7.8   | 8.0   | 8.4   |
| EX6        |                             | —                            | —     | —     | 11.1  | 12.8  | 14.5  | 15.3  | 16.2  | 17.9  | 18.7  | 19.1  | 20.0  |
| EX7        |                             | —                            | —     | —     | 30.1  | 34.9  | 39.7  | 42.1  | 44.5  | 49.3  | 51.7  | 52.9  | 55.3  |
| EX8        |                             | —                            | —     | —     | 79.7  | 92.7  | 105.7 | 112.3 | 118.8 | 131.8 | 138.3 | 141.6 | 148.1 |

**R-744 EXTENDED CAPACITIES (TONS) - EX4-8 SERIES, AS EXPANSION AND LIQUID INJECTION VALVES**

The following tables provide the capacity of valves at different conditions considering 20 psi pressure drop through liquid line:

| VALVE TYPE | CONDENSING TEMPERATURE (°F) | EVAPORATING TEMPERATURE (°F) |     |     |     |     |     |     |
|------------|-----------------------------|------------------------------|-----|-----|-----|-----|-----|-----|
|            |                             | 10                           | 0   | -10 | -20 | -30 | -40 | -50 |
| EX4        | 30                          | 6                            | 7   | 8   | 9   | 10  | 10  | 10  |
| EX5        |                             | 18                           | 22  | 25  | 27  | 29  | 30  | 31  |
| EX6        |                             | 43                           | 53  | 60  | 65  | 70  | 73  | 75  |
| EX7        |                             | 117                          | 145 | 165 | 179 | 191 | 200 | 206 |
| EX8        |                             | 312                          | 388 | 439 | 479 | 510 | 534 | 549 |
| EX4        | 20                          | —                            | 6   | 7   | 8   | 9   | 9   | 10  |
| EX5        |                             | —                            | 18  | 22  | 25  | 27  | 29  | 30  |
| EX6        |                             | —                            | 43  | 53  | 60  | 65  | 69  | 72  |
| EX7        |                             | —                            | 119 | 145 | 164 | 178 | 189 | 197 |
| EX8        |                             | —                            | 319 | 387 | 437 | 476 | 506 | 526 |
| EX4        | 10                          | —                            | —   | 6   | 7   | 8   | 9   | 9   |
| EX5        |                             | —                            | —   | 18  | 22  | 25  | 27  | 29  |
| EX6        |                             | —                            | —   | 43  | 53  | 60  | 65  | 68  |
| EX7        |                             | —                            | —   | 119 | 145 | 163 | 178 | 187 |
| EX8        |                             | —                            | —   | 318 | 386 | 436 | 474 | 500 |
| EX4        | 0                           | —                            | —   | —   | 6   | 7   | 8   | 9   |
| EX5        |                             | —                            | —   | —   | 17  | 21  | 24  | 26  |
| EX6        |                             | —                            | —   | —   | 41  | 51  | 58  | 63  |
| EX7        |                             | —                            | —   | —   | 114 | 140 | 159 | 172 |
| EX8        |                             | —                            | —   | —   | 303 | 373 | 423 | 458 |
| EX4        | -10                         | —                            | —   | —   | —   | 5   | 7   | 8   |
| EX5        |                             | —                            | —   | —   | —   | 17  | 20  | 23  |
| EX6        |                             | —                            | —   | —   | —   | 40  | 49  | 55  |
| EX7        |                             | —                            | —   | —   | —   | 109 | 134 | 152 |
| EX8        |                             | —                            | —   | —   | —   | 290 | 359 | 405 |
| EX4        | -20                         | —                            | —   | —   | —   | 3   | 5   | 6   |
| EX5        |                             | —                            | —   | —   | —   | 19  | 16  | 20  |
| EX6        |                             | —                            | —   | —   | —   | 22  | 38  | 47  |
| EX7        |                             | —                            | —   | —   | —   | 61  | 104 | 129 |
| EX8        |                             | —                            | —   | —   | —   | 163 | 278 | 344 |
| EX4        | -30                         | —                            | —   | —   | —   | —   | 3   | 5   |
| EX5        |                             | —                            | —   | —   | —   | —   | 8   | 15  |
| EX6        |                             | —                            | —   | —   | —   | —   | 19  | 35  |
| EX7        |                             | —                            | —   | —   | —   | —   | 53  | 96  |
| EX8        |                             | —                            | —   | —   | —   | —   | 142 | 257 |

EX5-8 NOMINAL CAPACITIES (TONS) - AS CONDENSING PRESSURE REGULATOR AND LIQUID DUTY

| VALVE TYPE | R-407C | R-22 | R-134a | R-404A |
|------------|--------|------|--------|--------|
| EX5        | 5      | 6    | 5      | 4      |
| EX6        | 12     | 13   | 12     | 9      |
| EX7        | 44     | 46   | 43     | 31     |
| EX8        | 133    | 140  | 131    | 93     |

THE NOMINAL CAPACITY IS BASED ON THE FOLLOWING CONDITIONS:

| REFRIGERANT          | EVAPORATING TEMPERATURE | CONDENSING TEMPERATURE | SUBCOOLING | PRESSURE DROP |
|----------------------|-------------------------|------------------------|------------|---------------|
| R-22, R-134a, R-404A | +40°F                   | +100°F                 | 2°F        | 5 Psid        |
| R-407C               | +40°F dew point         | +100°F bubble          | 2°F        | 5 Psid        |

Note 1: Bi-flow versions are not released for use below -40°F.  
Note 2: EX6, EX7 and EX8 must be installed with motor downward in suction line applications. This insures the valve life expectancy.

MULTIPLY ABOVE NOMINAL CAPACITIES BY FOLLOWING FACTORS TO OBTAIN CAPACITIES AT DIFFERENT PRESSURE DROPS:

| ΔP, Psid          | 2.0  | 3.0  | 5.0  |
|-------------------|------|------|------|
| Correction factor | 0.65 | 0.76 | 1.00 |

R-22 EXTENDED CAPACITIES (TONS) - EX5-8 SERIES, CONDENSING PRESSURE REGULATOR AND LIQUID DUTY

| VALVE TYPE | CONDENSING TEMPERATURE °F | EVAPORATING TEMPERATURE °F |     |     |     |     |     |     |     |     |     |
|------------|---------------------------|----------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|            |                           | 50                         | 40  | 30  | 20  | 10  | 0   | -10 | -20 | -30 | -40 |
| EX5        | 140                       | 4                          | 4   | 4   | 4   | 4   | 4   | 4   | 4   | 4   | 4   |
| EX6        |                           | 10                         | 10  | 10  | 10  | 10  | 9   | 9   | 9   | 9   | 9   |
| EX7        |                           | 36                         | 36  | 35  | 35  | 34  | 33  | 33  | 32  | 31  | 31  |
| EX8        |                           | 111                        | 109 | 107 | 105 | 104 | 102 | 100 | 98  | 96  | 94  |
| EX5        | 130                       | 5                          | 5   | 5   | 4   | 4   | 4   | 4   | 4   | 4   | 4   |
| EX6        |                           | 11                         | 11  | 11  | 10  | 10  | 10  | 10  | 10  | 10  | 9   |
| EX7        |                           | 39                         | 38  | 38  | 37  | 37  | 36  | 35  | 35  | 34  | 33  |
| EX8        |                           | 118                        | 116 | 115 | 113 | 111 | 109 | 107 | 105 | 103 | 101 |
| EX5        | 120                       | 5                          | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 4   | 4   |
| EX6        |                           | 12                         | 12  | 11  | 11  | 11  | 11  | 11  | 10  | 10  | 10  |
| EX7        |                           | 42                         | 41  | 41  | 40  | 39  | 39  | 38  | 37  | 37  | 36  |
| EX8        |                           | 126                        | 125 | 123 | 121 | 119 | 117 | 115 | 113 | 111 | 109 |
| EX5        | 110                       | 5                          | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   | 5   |
| EX6        |                           | 12                         | 12  | 12  | 12  | 12  | 12  | 11  | 11  | 11  | 11  |
| EX7        |                           | 44                         | 43  | 43  | 42  | 42  | 41  | 40  | 40  | 39  | 38  |
| EX8        |                           | 133                        | 132 | 130 | 128 | 126 | 124 | 122 | 120 | 118 | 116 |
| EX5        | 100                       | 6                          | 6   | 6   | 5   | 5   | 5   | 5   | 5   | 5   | 5   |
| EX6        |                           | 13                         | 13  | 13  | 13  | 12  | 12  | 12  | 12  | 12  | 11  |
| EX7        |                           | 47                         | 46  | 46  | 45  | 44  | 44  | 43  | 42  | 41  | 41  |
| EX8        |                           | 142                        | 140 | 138 | 136 | 134 | 132 | 130 | 128 | 126 | 124 |

**R-134A EXTENDED CAPACITIES (TONS) - EX5-8 SERIES, CONDENSING PRESSURE REGULATOR AND LIQUID DUTY**

| VALVE TYPE | CONDENSING TEMPERATURE °F | EVAPORATING TEMPERATURE °F |     |     |     |
|------------|---------------------------|----------------------------|-----|-----|-----|
|            |                           | 50                         | 40  | 30  | 20  |
| EX5        | 140                       | 4                          | 4   | 4   | 4   |
| EX6        |                           | 9                          | 9   | 9   | 8   |
| EX7        |                           | 33                         | 32  | 31  | 30  |
| EX8        |                           | 100                        | 98  | 95  | 92  |
| EX5        | 130                       | 4                          | 4   | 4   | 4   |
| EX6        |                           | 10                         | 10  | 9   | 9   |
| EX7        |                           | 36                         | 35  | 34  | 33  |
| EX8        |                           | 108                        | 105 | 102 | 99  |
| EX5        | 120                       | 5                          | 5   | 4   | 4   |
| EX6        |                           | 11                         | 11  | 10  | 10  |
| EX7        |                           | 39                         | 38  | 37  | 36  |
| EX8        |                           | 117                        | 115 | 112 | 108 |
| EX5        | 110                       | 5                          | 5   | 5   | 5   |
| EX6        |                           | 12                         | 11  | 11  | 11  |
| EX7        |                           | 41                         | 40  | 39  | 38  |
| EX8        |                           | 125                        | 122 | 119 | 116 |
| EX5        | 100                       | 5                          | 5   | 5   | 5   |
| EX6        |                           | 12                         | 12  | 12  | 12  |
| EX7        |                           | 44                         | 43  | 42  | 41  |
| EX8        |                           | 134                        | 131 | 128 | 125 |

**R-407C EXTENDED CAPACITIES (TONS) - EX5-8 SERIES, CONDENSING PRESSURE REGULATOR AND LIQUID DUTY**

| VALVE TYPE | CONDENSING TEMPERATURE DEW POINT °F | EVAPORATING TEMPERATURE °F |     |     |     |
|------------|-------------------------------------|----------------------------|-----|-----|-----|
|            |                                     | 50                         | 40  | 30  | 20  |
| EX5        | 140                                 | 4                          | 4   | 4   | 4   |
| EX6        |                                     | 9                          | 9   | 9   | 8   |
| EX7        |                                     | 32                         | 32  | 31  | 30  |
| EX8        |                                     | 98                         | 96  | 94  | 91  |
| EX5        | 130                                 | 4                          | 4   | 4   | 4   |
| EX6        |                                     | 10                         | 10  | 9   | 9   |
| EX7        |                                     | 35                         | 34  | 34  | 33  |
| EX8        |                                     | 106                        | 105 | 102 | 100 |
| EX5        | 120                                 | 5                          | 5   | 4   | 4   |
| EX6        |                                     | 11                         | 11  | 10  | 10  |
| EX7        |                                     | 38                         | 38  | 37  | 36  |
| EX8        |                                     | 117                        | 115 | 112 | 110 |
| EX5        | 110                                 | 5                          | 5   | 5   | 5   |
| EX6        |                                     | 12                         | 11  | 11  | 11  |
| EX7        |                                     | 41                         | 40  | 40  | 39  |
| EX8        |                                     | 125                        | 123 | 120 | 118 |
| EX5        | 100                                 | 5                          | 5   | 5   | 5   |
| EX6        |                                     | 12                         | 12  | 12  | 12  |
| EX7        |                                     | 44                         | 44  | 43  | 42  |
| EX8        |                                     | 135                        | 133 | 130 | 128 |

EX4-8 NOMINAL CAPACITIES (TONS) - AS HOT GAS BYPASS REGULATOR

| VALVE TYPE | R-22 / R-407C | R-134a | R-404A / R-507 |
|------------|---------------|--------|----------------|
| EX4        | 1.4           | 1.0    | 1.3            |
| EX5        | 4.5           | 3.1    | 4.3            |
| EX6        | 10.5          | 7.3    | 10.1           |
| EX7        | 37.3          | 26.0   | 35.7           |
| EX8        | 113.0         | 79.0   | 108.5          |

THE NOMINAL CAPACITY IS BASED ON THE FOLLOWING CONDITIONS:

| REFRIGERANT                 | EVAPORATING TEMPERATURE | CONDENSING TEMPERATURE | SUBCOOLING |
|-----------------------------|-------------------------|------------------------|------------|
| R-22, R-134a, R-404A, R-507 | +40°F                   | +100°F                 | 2°F        |
| R-407C                      | +40°F bubble point      | +100°F dew point       | 2°F        |

NOTE 1: Bi-flow versions are not released for hot gas bypass applications.  
NOTE 2: EX4, EX5, EX6, EX7 and EX8 must be installed with motor downward in hot gas line applications.

EXTENDED CAPACITIES (TONS) - EX4-8 SERIES

| VALVE TYPE | LIQUID / CONDENSING TEMPERATURE°F                                   | R-22 / R-407C | R-134a | R-404A / R-507 |
|------------|---------------------------------------------------------------------|---------------|--------|----------------|
| EX4        | 140 Bubble point for all refrigerants<br>(147 dew point for R-407C) | 2             | 1      | 2              |
| EX5        |                                                                     | 7             | 5      | 6              |
| EX6        |                                                                     | 15            | 11     | 13             |
| EX7        |                                                                     | 54            | 38     | 46             |
| EX8        |                                                                     | 165           | 117    | 139            |
| EX4        | 130 bubble point for all refrigerants<br>(138 dew point for R-407C) | 2             | 1      | 2              |
| EX5        |                                                                     | 6             | 4      | 5              |
| EX6        |                                                                     | 14            | 10     | 12             |
| EX7        |                                                                     | 49            | 35     | 44             |
| EX8        |                                                                     | 150           | 106    | 132            |
| EX4        | 120 bubble point for all refrigerants<br>(128 dew point for R-407C) | 2             | 1      | 2              |
| EX5        |                                                                     | 6             | 4      | 5              |
| EX6        |                                                                     | 13            | 9      | 12             |
| EX7        |                                                                     | 45            | 32     | 41             |
| EX8        |                                                                     | 138           | 97     | 126            |
| EX4        | 110 bubble point for all refrigerants<br>(119 dew point for R-407C) | 2             | 1      | 1              |
| EX5        |                                                                     | 5             | 3      | 5              |
| EX6        |                                                                     | 12            | 8      | 11             |
| EX7        |                                                                     | 41            | 29     | 38             |
| EX8        |                                                                     | 124           | 87     | 117            |



## EX6-8 NOMINAL CAPACITIES (TONS) - AS FOR HOT GAS FLOW SUCH AS HEAT RECLAIM APPLICATION

| VALVE TYPE | R-22 / R-407C | R-404A / R-507 |
|------------|---------------|----------------|
| EX6        | 3.1           | 2.8            |
| EX7        | 11.1          | 10.2           |
| EX8        | 33.8          | 30.7           |

## THE NOMINAL CAPACITY IS BASED ON THE FOLLOWING CONDITIONS:

| REFRIGERANT         | EVAPORATING TEMPERATURE | CONDENSING TEMPERATURE | SUBCOOLING | PRESSURE DROP | ISENTROPIC EFFICIENCY |
|---------------------|-------------------------|------------------------|------------|---------------|-----------------------|
| R-22, R-404A, R-507 | +40°F                   | +100°F                 | 2°F        | 2 psid        | 80%                   |
| R-407C              | +40°F bubble point      | +100°F dew point       | 2°F        | 2 psid        | 80%                   |

NOTE: Bi-flow versions are not released for hot gas bypass applications.

NOTE: EX6, EX7 and EX8 must be installed with motor downward in suction line applications. This insures the valve life expectancy.

## R-22 / R-407C EXTENDED CAPACITIES (TONS) - EX6-8 EERIES, AS FOR HOT GAS FLOW SUCH AS HEAT RECLAIM APPLICATION

| VALVE TYPE | CONDENSING TEMPERATURE °F | PRESSURE DROP PSI | EVAPORATING TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |
|------------|---------------------------|-------------------|----------------------------|------|------|------|------|------|------|------|------|------|------|------|
|            |                           |                   | 60                         | 50   | 40   | 30   | 20   | 10   | 0    | -10  | -20  | -30  | -40  | -50  |
| EX6        | 140                       | 1.5               | 1.6                        | 1.5  | 1.5  | 1.5  | 1.4  | 1.4  | 1.3  | 1.3  | 1.2  | 1.2  | 1.2  | 1.1  |
| EX7        |                           |                   | 5.6                        | 5.5  | 5.3  | 5.2  | 5.0  | 4.9  | 4.7  | 4.6  | 4.4  | 4.3  | 4.1  | 4.0  |
| EX8        |                           |                   | 17.0                       | 16.6 | 16.2 | 15.7 | 15.3 | 14.8 | 14.4 | 13.9 | 13.4 | 13.0 | 12.5 | 12.0 |
| EX6        |                           | 7.0               | 3.4                        | 3.3  | 3.3  | 3.2  | 3.1  | 3.0  | 2.9  | 2.8  | 2.7  | 2.6  | 2.5  | 2.4  |
| EX7        |                           |                   | 12.2                       | 11.9 | 11.6 | 11.3 | 10.9 | 10.6 | 10.3 | 10.0 | 9.6  | 9.3  | 9.0  | 8.6  |
| EX8        |                           |                   | 37.0                       | 36.1 | 35.2 | 34.2 | 33.3 | 32.3 | 31.3 | 30.3 | 29.3 | 28.2 | 27.2 | 26.2 |
| EX6        |                           | 14.0              | 4.8                        | 4.7  | 4.5  | 4.4  | 4.3  | 4.2  | 4.0  | 3.9  | 3.8  | 3.7  | 3.5  | 3.4  |
| EX7        |                           |                   | 17.3                       | 16.9 | 16.4 | 16.0 | 15.6 | 15.1 | 14.6 | 14.2 | 13.7 | 13.2 | 12.7 | 12.3 |
| EX8        |                           |                   | 52.5                       | 51.3 | 49.9 | 48.6 | 47.3 | 45.9 | 44.5 | 43.0 | 41.6 | 40.2 | 38.7 | 37.3 |
| EX6        | 120                       | 1.5               | 1.5                        | 1.5  | 1.5  | 1.4  | 1.4  | 1.4  | 1.3  | 1.3  | 1.2  | 1.2  | 1.2  | 1.1  |
| EX7        |                           |                   | 5.5                        | 5.3  | 5.2  | 5.1  | 4.9  | 4.8  | 4.7  | 4.5  | 4.4  | 4.3  | 4.1  | 4.0  |
| EX8        |                           |                   | 16.6                       | 16.2 | 15.8 | 15.4 | 15.0 | 14.6 | 14.2 | 13.8 | 13.4 | 12.9 | 12.5 | 12.1 |
| EX6        |                           | 7.0               | 3.3                        | 3.3  | 3.2  | 3.1  | 3.0  | 2.9  | 2.9  | 2.8  | 2.7  | 2.6  | 2.5  | 2.4  |
| EX7        |                           |                   | 11.8                       | 11.6 | 11.3 | 11.0 | 10.7 | 10.4 | 10.1 | 9.9  | 9.6  | 9.3  | 8.9  | 8.6  |
| EX8        |                           |                   | 35.9                       | 35.1 | 34.3 | 33.5 | 32.6 | 31.7 | 30.8 | 29.9 | 29.0 | 28.1 | 27.2 | 26.2 |
| EX6        |                           | 14.0              | 4.6                        | 4.5  | 4.4  | 4.3  | 4.2  | 4.1  | 4.0  | 3.9  | 3.7  | 3.6  | 3.5  | 3.4  |
| EX7        |                           |                   | 16.8                       | 16.4 | 16.0 | 15.6 | 15.2 | 14.8 | 14.4 | 14.0 | 13.5 | 13.1 | 12.7 | 12.3 |
| EX8        |                           |                   | 50.9                       | 49.7 | 48.6 | 47.4 | 46.2 | 44.9 | 43.7 | 42.4 | 41.1 | 39.8 | 38.5 | 37.2 |
| EX6        | 100                       | 1.5               | 1.5                        | 1.4  | 1.4  | 1.4  | 1.3  | 1.3  | 1.3  | 1.2  | 1.2  | 1.2  | 1.1  | 1.1  |
| EX7        |                           |                   | 5.2                        | 5.1  | 5.0  | 4.9  | 4.7  | 4.6  | 4.5  | 4.4  | 4.3  | 4.1  | 4.0  | 3.9  |
| EX8        |                           |                   | 15.8                       | 15.4 | 15.1 | 14.7 | 14.4 | 14.0 | 13.7 | 13.3 | 12.9 | 12.5 | 12.2 | 11.8 |
| EX6        |                           | 7.0               | 3.2                        | 3.1  | 3.0  | 3.0  | 2.9  | 2.8  | 2.7  | 2.7  | 2.6  | 2.5  | 2.4  | 2.4  |
| EX7        |                           |                   | 11.2                       | 11.0 | 10.7 | 10.5 | 10.2 | 10.0 | 9.7  | 9.5  | 9.2  | 8.9  | 8.7  | 8.4  |
| EX8        |                           |                   | 34.1                       | 33.4 | 32.6 | 31.9 | 31.1 | 30.4 | 29.6 | 28.8 | 28.0 | 27.1 | 26.3 | 25.5 |
| EX6        |                           | 14.0              | 4.4                        | 4.3  | 4.2  | 4.1  | 4.0  | 3.9  | 3.8  | 3.7  | 3.6  | 3.5  | 3.4  | 3.3  |
| EX7        |                           |                   | 15.8                       | 15.5 | 15.2 | 14.8 | 14.5 | 14.1 | 13.7 | 13.4 | 13.0 | 12.6 | 12.2 | 11.8 |
| EX8        |                           |                   | 48.0                       | 47.0 | 46.0 | 45.0 | 43.9 | 42.8 | 41.7 | 40.6 | 39.5 | 38.3 | 37.2 | 36.0 |
| EX6        | 80                        | 1.5               | 1.4                        | 1.3  | 1.3  | 1.3  | 1.2  | 1.2  | 1.2  | 1.2  | 1.1  | 1.1  | 1.1  | 1.0  |
| EX7        |                           |                   | 4.8                        | 4.7  | 4.6  | 4.5  | 4.4  | 4.3  | 4.2  | 4.1  | 4.0  | 3.9  | 3.8  | 3.7  |
| EX8        |                           |                   | 14.7                       | 14.4 | 14.1 | 13.8 | 13.5 | 13.2 | 12.8 | 12.5 | 12.2 | 11.9 | 11.5 | 11.2 |
| EX6        |                           | 7.0               | 2.9                        | 2.9  | 2.8  | 2.8  | 2.7  | 2.6  | 2.6  | 2.5  | 2.4  | 2.4  | 2.3  | 2.2  |
| EX7        |                           |                   | 10.4                       | 10.2 | 10.0 | 9.8  | 9.6  | 9.3  | 9.1  | 8.9  | 8.6  | 8.4  | 8.2  | 7.9  |
| EX8        |                           |                   | 31.6                       | 31.0 | 30.4 | 29.7 | 29.0 | 28.4 | 27.7 | 27.0 | 26.3 | 25.6 | 24.8 | 24.1 |
| EX6        |                           | 14.0              | 4.0                        | 4.0  | 3.9  | 3.8  | 3.7  | 3.6  | 3.5  | 3.4  | 3.4  | 3.3  | 3.2  | 3.1  |
| EX7        |                           |                   | 14.6                       | 14.3 | 14.0 | 13.7 | 13.4 | 13.1 | 12.8 | 12.5 | 12.1 | 11.8 | 11.5 | 11.1 |
| EX8        |                           |                   | 44.3                       | 43.4 | 42.6 | 41.7 | 40.7 | 39.8 | 38.8 | 37.9 | 36.9 | 35.9 | 34.8 | 33.8 |

**R-404A / R-507 EXTENDED CAPACITIES (TONS) - EX6-8 SERIES, HOT GAS FLOW SUCH A HEAT RECLAIM APPLICATIONS**

| VALVE TYPE | CONDENSING TEMPERATURE °F | PRESSURE DROP PSI | EVAPORATING TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |
|------------|---------------------------|-------------------|----------------------------|------|------|------|------|------|------|------|------|------|------|------|
|            |                           |                   | 60                         | 50   | 40   | 30   | 20   | 10   | 0    | -10  | -20  | -30  | -40  | -50  |
| EX6        | 140                       | 1.5               | 1.2                        | 1.1  | 1.1  | 1.0  | 1.0  | 0.9  | 0.9  | 0.8  | 0.8  | 0.7  | 0.7  | 0.6  |
| EX7        |                           |                   | 4.2                        | 4.1  | 3.9  | 3.7  | 3.5  | 3.3  | 3.2  | 3.0  | 2.8  | 2.6  | 2.4  | 2.2  |
| EX8        |                           |                   | 12.8                       | 12.3 | 11.8 | 11.3 | 10.7 | 10.1 | 9.6  | 9.0  | 8.4  | 7.8  | 7.2  | 6.6  |
| EX6        |                           | 7                 | 2.6                        | 2.5  | 2.4  | 2.3  | 2.2  | 2.0  | 1.9  | 1.8  | 1.7  | 1.6  | 1.4  | 1.3  |
| EX7        |                           |                   | 9.2                        | 8.8  | 8.4  | 8.1  | 7.7  | 7.3  | 6.8  | 6.4  | 6.0  | 5.6  | 5.2  | 4.7  |
| EX8        |                           |                   | 27.8                       | 26.7 | 25.6 | 24.5 | 23.3 | 22.0 | 20.8 | 19.5 | 18.2 | 16.9 | 15.6 | 14.4 |
| EX6        |                           | 14                | 3.6                        | 3.4  | 3.3  | 3.2  | 3.0  | 2.8  | 2.7  | 2.5  | 2.4  | 2.2  | 2.0  | 1.9  |
| EX7        |                           |                   | 13.0                       | 12.5 | 12.0 | 11.4 | 10.9 | 10.3 | 9.7  | 9.1  | 8.5  | 7.9  | 7.3  | 6.7  |
| EX8        |                           |                   | 39.4                       | 37.9 | 36.3 | 34.7 | 33.0 | 31.3 | 29.5 | 27.7 | 25.9 | 24.1 | 22.2 | 20.4 |
| EX6        | 120                       | 1.5               | 1.3                        | 1.3  | 1.2  | 1.2  | 1.1  | 1.1  | 1.0  | 1.0  | 0.9  | 0.9  | 0.8  | 0.8  |
| EX7        |                           |                   | 4.6                        | 4.5  | 4.3  | 4.2  | 4.0  | 3.8  | 3.7  | 3.5  | 3.3  | 3.2  | 3.0  | 2.8  |
| EX8        |                           |                   | 14.0                       | 13.6 | 13.1 | 12.7 | 12.2 | 11.7 | 11.2 | 10.7 | 10.1 | 9.6  | 9.1  | 8.5  |
| EX6        |                           | 7                 | 2.8                        | 2.7  | 2.6  | 2.5  | 2.4  | 2.3  | 2.2  | 2.1  | 2.0  | 1.9  | 1.8  | 1.7  |
| EX7        |                           |                   | 10.0                       | 9.7  | 9.4  | 9.0  | 8.7  | 8.3  | 8.0  | 7.6  | 7.2  | 6.9  | 6.5  | 6.1  |
| EX8        |                           |                   | 30.4                       | 29.5 | 28.5 | 27.5 | 26.4 | 25.4 | 24.3 | 23.1 | 22.0 | 20.9 | 19.7 | 18.6 |
| EX6        |                           | 14                | 3.9                        | 3.8  | 3.7  | 3.5  | 3.4  | 3.3  | 3.1  | 3.0  | 2.8  | 2.7  | 2.5  | 2.4  |
| EX7        |                           |                   | 14.1                       | 13.7 | 13.3 | 12.8 | 12.3 | 11.8 | 11.3 | 10.8 | 10.3 | 9.7  | 9.2  | 8.7  |
| EX8        |                           |                   | 43.0                       | 41.7 | 40.3 | 38.9 | 37.4 | 35.9 | 34.4 | 32.8 | 31.2 | 29.6 | 28.0 | 26.3 |
| EX6        | 100                       | 1.5               | 1.3                        | 1.3  | 1.2  | 1.2  | 1.2  | 1.1  | 1.1  | 1.1  | 1.0  | 1.0  | 0.9  | 0.9  |
| EX7        |                           |                   | 4.7                        | 4.6  | 4.4  | 4.3  | 4.2  | 4.0  | 3.9  | 3.7  | 3.6  | 3.4  | 3.3  | 3.1  |
| EX8        |                           |                   | 14.2                       | 13.9 | 13.5 | 13.1 | 12.7 | 12.2 | 11.8 | 11.4 | 10.9 | 10.4 | 10.0 | 9.5  |
| EX6        |                           | 7                 | 2.9                        | 2.8  | 2.7  | 2.6  | 2.5  | 2.5  | 2.4  | 2.3  | 2.2  | 2.1  | 2.0  | 1.9  |
| EX7        |                           |                   | 10.1                       | 9.9  | 9.6  | 9.3  | 9.0  | 8.7  | 8.4  | 8.1  | 7.8  | 7.4  | 7.1  | 6.8  |
| EX8        |                           |                   | 30.8                       | 30.0 | 29.2 | 28.3 | 27.4 | 26.5 | 25.5 | 24.6 | 23.6 | 22.6 | 21.6 | 20.6 |
| EX6        |                           | 14                | 4.0                        | 3.9  | 3.7  | 3.6  | 3.5  | 3.4  | 3.3  | 3.2  | 3.0  | 2.9  | 2.8  | 2.6  |
| EX7        |                           |                   | 14.3                       | 13.9 | 13.5 | 13.1 | 12.7 | 12.3 | 11.9 | 11.4 | 11.0 | 10.5 | 10.0 | 9.6  |
| EX8        |                           |                   | 43.5                       | 42.3 | 41.2 | 39.9 | 38.7 | 37.4 | 36.1 | 34.7 | 33.3 | 31.9 | 30.5 | 29.1 |
| EX6        | 80                        | 1.5               | 1.3                        | 1.3  | 1.2  | 1.2  | 1.2  | 1.1  | 1.1  | 1.1  | 1.0  | 1.0  | 0.9  | 0.9  |
| EX7        |                           |                   | 4.6                        | 4.5  | 4.4  | 4.2  | 4.1  | 4.0  | 3.9  | 3.8  | 3.6  | 3.5  | 3.4  | 3.2  |
| EX8        |                           |                   | 13.9                       | 13.6 | 13.3 | 12.9 | 12.6 | 12.2 | 11.8 | 11.4 | 11.0 | 10.6 | 10.2 | 9.8  |
| EX6        |                           | 7                 | 2.8                        | 2.7  | 2.6  | 2.6  | 2.5  | 2.4  | 2.4  | 2.3  | 2.2  | 2.1  | 2.0  | 2.0  |
| EX7        |                           |                   | 9.9                        | 9.6  | 9.4  | 9.2  | 8.9  | 8.7  | 8.4  | 8.1  | 7.8  | 7.6  | 7.3  | 7.0  |
| EX8        |                           |                   | 30.0                       | 29.3 | 28.6 | 27.8 | 27.1 | 26.3 | 25.5 | 24.7 | 23.8 | 22.9 | 22.1 | 21.2 |
| EX6        |                           | 14                | 3.8                        | 3.7  | 3.7  | 3.6  | 3.5  | 3.4  | 3.3  | 3.2  | 3.0  | 2.9  | 2.8  | 2.7  |
| EX7        |                           |                   | 13.9                       | 13.5 | 13.2 | 12.9 | 12.5 | 12.2 | 11.8 | 11.4 | 11.0 | 10.6 | 10.2 | 9.8  |
| EX8        |                           |                   | 42.1                       | 41.1 | 40.1 | 39.1 | 38.0 | 36.9 | 35.8 | 34.7 | 33.5 | 32.3 | 31.1 | 29.8 |

**EX6-8 NOMINAL CAPACITIES (TONS) - AS SUCTION PRESSURE REGULATOR (EVAPORATOR OR CRANKCASE)**

| VALVE TYPE | R-407C | R-22 | R-134a | R-404A |
|------------|--------|------|--------|--------|
| EX6        | 1.1    | 1.1  | 0.9    | 1.0    |
| EX7        | 3.8    | 4.0  | 3.0    | 3.5    |
| EX8        | 11.5   | 12.2 | 9.2    | 10.5   |

**THE NOMINAL CAPACITY IS BASED ON THE FOLLOWING CONDITIONS:**

| REFRIGERANT          | EVAPORATING TEMPERATURE | CONDENSING TEMPERATURE | SUBCOOLING | PRESSURE DROP |
|----------------------|-------------------------|------------------------|------------|---------------|
| R-22, R-134a, R-404A | +40°F                   | +100°F                 | 2°F        | 2 psid        |
| R-407C               | +40°F bubble point      | +100°F dew point       | 2°F        | 2 psid        |

NOTE 1: Bi-flow versions are not released for use below -40°F.

NOTE 2: EX6, EX7 and EX8 must be installed with motor downward in suction line applications. This insures the valve life expectancy.

**MULTIPLY ABOVE NOMINAL CAPACITIES BY FOLLOWING FACTORS TO OBTAIN CAPACITIES AT DIFFERENT PRESSURE DROPS:**

| $\Delta P$ , psid | 1.5  | 2.0  | 3.0  | 4.5  |
|-------------------|------|------|------|------|
| CORRECTION FACTOR | 0.82 | 1.00 | 1.15 | 1.41 |

Example: EX6 provides 1 ton at 2.0 psid pressure drop with R-404A: 4 psi pressure drop.

**R-404A / R-507 EXTENDED CAPACITIES (TONS) - EX6-8 SERIES, SUCTION PRESSURE REGULATOR DUTY**

| VALVE TYPE | CONDENSING TEMPERATURE °F | EVAPORATING TEMPERATURE °F |    |    |    |    |   |     |     |     |     |
|------------|---------------------------|----------------------------|----|----|----|----|---|-----|-----|-----|-----|
|            |                           | 50                         | 40 | 30 | 20 | 10 | 0 | -10 | -20 | -30 | -40 |
| EX6        | 140                       | 1                          | 1  | 1  | 0  | 0  | 0 | 0   | 0   | 0   | 0   |
| EX7        |                           | 3                          | 2  | 2  | 2  | 2  | 1 | 1   | 1   | 1   | 1   |
| EX8        |                           | 8                          | 7  | 6  | 5  | 5  | 4 | 3   | 3   | 2   | 2   |
| EX6        | 130                       | 1                          | 1  | 1  | 1  | 1  | 0 | 0   | 0   | 0   | 0   |
| EX7        |                           | 3                          | 3  | 2  | 2  | 2  | 2 | 1   | 1   | 1   | 1   |
| EX8        |                           | 9                          | 8  | 7  | 6  | 5  | 5 | 4   | 3   | 3   | 2   |
| EX6        | 120                       | 1                          | 1  | 1  | 1  | 1  | 0 | 0   | 0   | 0   | 0   |
| EX7        |                           | 3                          | 3  | 3  | 2  | 2  | 2 | 1   | 1   | 1   | 1   |
| EX8        |                           | 10                         | 9  | 8  | 7  | 6  | 5 | 4   | 4   | 3   | 3   |
| EX6        | 110                       | 1                          | 1  | 1  | 1  | 1  | 1 | 0   | 0   | 0   | 0   |
| EX7        |                           | 4                          | 3  | 3  | 2  | 2  | 2 | 2   | 1   | 1   | 1   |
| EX8        |                           | 11                         | 10 | 9  | 8  | 7  | 6 | 5   | 4   | 4   | 3   |
| EX6        | 100                       | 1                          | 1  | 1  | 1  | 1  | 1 | 1   | 0   | 0   | 0   |
| EX7        |                           | 4                          | 3  | 3  | 3  | 2  | 2 | 2   | 2   | 1   | 1   |
| EX8        |                           | 12                         | 11 | 9  | 8  | 7  | 6 | 5   | 5   | 4   | 3   |

**R-404A / R-507 EXTENDED CAPACITIES (TONS) - EX6-8 SERIES, HOT GAS FLOW SUCH A HEAT RECLAIM APPLICATIONS**

| VALVE TYPE | CONDENSING TEMPERATURE °F | PRESSURE DROP PSI | EVAPORATING TEMPERATURE °F |      |      |      |      |      |      |      |      |      |      |      |
|------------|---------------------------|-------------------|----------------------------|------|------|------|------|------|------|------|------|------|------|------|
|            |                           |                   | 60                         | 50   | 40   | 30   | 20   | 10   | 0    | -10  | -20  | -30  | -40  | -50  |
| EX6        | 140                       | 1.5               | 1.2                        | 1.1  | 1.1  | 1.0  | 1.0  | 0.9  | 0.9  | 0.8  | 0.8  | 0.7  | 0.7  | 0.6  |
| EX7        |                           |                   | 4.2                        | 4.1  | 3.9  | 3.7  | 3.5  | 3.3  | 3.2  | 3.0  | 2.8  | 2.6  | 2.4  | 2.2  |
| EX8        |                           |                   | 12.8                       | 12.3 | 11.8 | 11.3 | 10.7 | 10.1 | 9.6  | 9.0  | 8.4  | 7.8  | 7.2  | 6.6  |
| EX6        |                           | 7                 | 2.6                        | 2.5  | 2.4  | 2.3  | 2.2  | 2.0  | 1.9  | 1.8  | 1.7  | 1.6  | 1.4  | 1.3  |
| EX7        |                           |                   | 9.2                        | 8.8  | 8.4  | 8.1  | 7.7  | 7.3  | 6.8  | 6.4  | 6.0  | 5.6  | 5.2  | 4.7  |
| EX8        |                           |                   | 27.8                       | 26.7 | 25.6 | 24.5 | 23.3 | 22.0 | 20.8 | 19.5 | 18.2 | 16.9 | 15.6 | 14.4 |
| EX6        |                           | 14                | 3.6                        | 3.4  | 3.3  | 3.2  | 3.0  | 2.8  | 2.7  | 2.5  | 2.4  | 2.2  | 2.0  | 1.9  |
| EX7        |                           |                   | 13.0                       | 12.5 | 12.0 | 11.4 | 10.9 | 10.3 | 9.7  | 9.1  | 8.5  | 7.9  | 7.3  | 6.7  |
| EX8        |                           |                   | 39.4                       | 37.9 | 36.3 | 34.7 | 33.0 | 31.3 | 29.5 | 27.7 | 25.9 | 24.1 | 22.2 | 20.4 |
| EX6        | 120                       | 1.5               | 1.3                        | 1.3  | 1.2  | 1.2  | 1.1  | 1.1  | 1.0  | 1.0  | 0.9  | 0.9  | 0.8  | 0.8  |
| EX7        |                           |                   | 4.6                        | 4.5  | 4.3  | 4.2  | 4.0  | 3.8  | 3.7  | 3.5  | 3.3  | 3.2  | 3.0  | 2.8  |
| EX8        |                           |                   | 14.0                       | 13.6 | 13.1 | 12.7 | 12.2 | 11.7 | 11.2 | 10.7 | 10.1 | 9.6  | 9.1  | 8.5  |
| EX6        |                           | 7                 | 2.8                        | 2.7  | 2.6  | 2.5  | 2.4  | 2.3  | 2.2  | 2.1  | 2.0  | 1.9  | 1.8  | 1.7  |
| EX7        |                           |                   | 10.0                       | 9.7  | 9.4  | 9.0  | 8.7  | 8.3  | 8.0  | 7.6  | 7.2  | 6.9  | 6.5  | 6.1  |
| EX8        |                           |                   | 30.4                       | 29.5 | 28.5 | 27.5 | 26.4 | 25.4 | 24.3 | 23.1 | 22.0 | 20.9 | 19.7 | 18.6 |
| EX6        |                           | 14                | 3.9                        | 3.8  | 3.7  | 3.5  | 3.4  | 3.3  | 3.1  | 3.0  | 2.8  | 2.7  | 2.5  | 2.4  |
| EX7        |                           |                   | 14.1                       | 13.7 | 13.3 | 12.8 | 12.3 | 11.8 | 11.3 | 10.8 | 10.3 | 9.7  | 9.2  | 8.7  |
| EX8        |                           |                   | 43.0                       | 41.7 | 40.3 | 38.9 | 37.4 | 35.9 | 34.4 | 32.8 | 31.2 | 29.6 | 28.0 | 26.3 |
| EX6        | 100                       | 1.5               | 1.3                        | 1.3  | 1.2  | 1.2  | 1.2  | 1.1  | 1.1  | 1.1  | 1.0  | 1.0  | 0.9  | 0.9  |
| EX7        |                           |                   | 4.7                        | 4.6  | 4.4  | 4.3  | 4.2  | 4.0  | 3.9  | 3.7  | 3.6  | 3.4  | 3.3  | 3.1  |
| EX8        |                           |                   | 14.2                       | 13.9 | 13.5 | 13.1 | 12.7 | 12.2 | 11.8 | 11.4 | 10.9 | 10.4 | 10.0 | 9.5  |
| EX6        |                           | 7                 | 2.9                        | 2.8  | 2.7  | 2.6  | 2.5  | 2.5  | 2.4  | 2.3  | 2.2  | 2.1  | 2.0  | 1.9  |
| EX7        |                           |                   | 10.1                       | 9.9  | 9.6  | 9.3  | 9.0  | 8.7  | 8.4  | 8.1  | 7.8  | 7.4  | 7.1  | 6.8  |
| EX8        |                           |                   | 30.8                       | 30.0 | 29.2 | 28.3 | 27.4 | 26.5 | 25.5 | 24.6 | 23.6 | 22.6 | 21.6 | 20.6 |
| EX6        |                           | 14                | 4.0                        | 3.9  | 3.7  | 3.6  | 3.5  | 3.4  | 3.3  | 3.2  | 3.0  | 2.9  | 2.8  | 2.6  |
| EX7        |                           |                   | 14.3                       | 13.9 | 13.5 | 13.1 | 12.7 | 12.3 | 11.9 | 11.4 | 11.0 | 10.5 | 10.0 | 9.6  |
| EX8        |                           |                   | 43.5                       | 42.3 | 41.2 | 39.9 | 38.7 | 37.4 | 36.1 | 34.7 | 33.3 | 31.9 | 30.5 | 29.1 |
| EX6        | 80                        | 1.5               | 1.3                        | 1.3  | 1.2  | 1.2  | 1.2  | 1.1  | 1.1  | 1.1  | 1.0  | 1.0  | 0.9  | 0.9  |
| EX7        |                           |                   | 4.6                        | 4.5  | 4.4  | 4.2  | 4.1  | 4.0  | 3.9  | 3.8  | 3.6  | 3.5  | 3.4  | 3.2  |
| EX8        |                           |                   | 13.9                       | 13.6 | 13.3 | 12.9 | 12.6 | 12.2 | 11.8 | 11.4 | 11.0 | 10.6 | 10.2 | 9.8  |
| EX6        |                           | 7                 | 2.8                        | 2.7  | 2.6  | 2.6  | 2.5  | 2.4  | 2.4  | 2.3  | 2.2  | 2.1  | 2.0  | 2.0  |
| EX7        |                           |                   | 9.9                        | 9.6  | 9.4  | 9.2  | 8.9  | 8.7  | 8.4  | 8.1  | 7.8  | 7.6  | 7.3  | 7.0  |
| EX8        |                           |                   | 30.0                       | 29.3 | 28.6 | 27.8 | 27.1 | 26.3 | 25.5 | 24.7 | 23.8 | 22.9 | 22.1 | 21.2 |
| EX6        |                           | 14                | 3.8                        | 3.7  | 3.7  | 3.6  | 3.5  | 3.4  | 3.3  | 3.2  | 3.0  | 2.9  | 2.8  | 2.7  |
| EX7        |                           |                   | 13.9                       | 13.5 | 13.2 | 12.9 | 12.5 | 12.2 | 11.8 | 11.4 | 11.0 | 10.6 | 10.2 | 9.8  |
| EX8        |                           |                   | 42.1                       | 41.1 | 40.1 | 39.1 | 38.0 | 36.9 | 35.8 | 34.7 | 33.5 | 32.3 | 31.1 | 29.8 |

**EX6-8 NOMINAL CAPACITIES (TONS) - AS SUCTION PRESSURE REGULATOR (EVAPORATOR OR CRANKCASE)**

| VALVE TYPE | R-407C | R-22 | R-134a | R-404A |
|------------|--------|------|--------|--------|
| EX6        | 1.1    | 1.1  | 0.9    | 1.0    |
| EX7        | 3.8    | 4.0  | 3.0    | 3.5    |
| EX8        | 11.5   | 12.2 | 9.2    | 10.5   |

**THE NOMINAL CAPACITY IS BASED ON THE FOLLOWING CONDITIONS:**

| REFRIGERANT          | EVAPORATING TEMPERATURE | CONDENSING TEMPERATURE | SUBCOOLING | PRESSURE DROP |
|----------------------|-------------------------|------------------------|------------|---------------|
| R-22, R-134a, R-404A | +40°F                   | +100°F                 | 2°F        | 2 psid        |
| R-407C               | +40°F bubble point      | +100°F dew point       | 2°F        | 2 psid        |

NOTE 1: Bi-flow versions are not released for use below -40°F.

NOTE 2: EX6, EX7 and EX8 must be installed with motor downward in suction line applications. This insures the valve life expectancy.

**MULTIPLY ABOVE NOMINAL CAPACITIES BY FOLLOWING FACTORS TO OBTAIN CAPACITIES AT DIFFERENT PRESSURE DROPS:**

| $\Delta P$ , psid | 1.5  | 2.0  | 3.0  | 4.5  |
|-------------------|------|------|------|------|
| CORRECTION FACTOR | 0.82 | 1.00 | 1.15 | 1.41 |

Example: EX6 provides 1 ton at 2.0 psid pressure drop with R-404A: 4 psi pressure drop.

**R-404A / R-507 EXTENDED CAPACITIES (TONS) - EX6-8 SERIES, SUCTION PRESSURE REGULATOR DUTY**

| VALVE TYPE | CONDENSING TEMPERATURE °F | EVAPORATING TEMPERATURE °F |    |    |    |    |   |     |     |     |     |
|------------|---------------------------|----------------------------|----|----|----|----|---|-----|-----|-----|-----|
|            |                           | 50                         | 40 | 30 | 20 | 10 | 0 | -10 | -20 | -30 | -40 |
| EX6        | 140                       | 1                          | 1  | 1  | 0  | 0  | 0 | 0   | 0   | 0   | 0   |
| EX7        |                           | 3                          | 2  | 2  | 2  | 2  | 1 | 1   | 1   | 1   | 1   |
| EX8        |                           | 8                          | 7  | 6  | 5  | 5  | 4 | 3   | 3   | 2   | 2   |
| EX6        | 130                       | 1                          | 1  | 1  | 1  | 1  | 0 | 0   | 0   | 0   | 0   |
| EX7        |                           | 3                          | 3  | 2  | 2  | 2  | 2 | 1   | 1   | 1   | 1   |
| EX8        |                           | 9                          | 8  | 7  | 6  | 5  | 5 | 4   | 3   | 3   | 2   |
| EX6        | 120                       | 1                          | 1  | 1  | 1  | 1  | 0 | 0   | 0   | 0   | 0   |
| EX7        |                           | 3                          | 3  | 3  | 2  | 2  | 2 | 1   | 1   | 1   | 1   |
| EX8        |                           | 10                         | 9  | 8  | 7  | 6  | 5 | 4   | 4   | 3   | 3   |
| EX6        | 110                       | 1                          | 1  | 1  | 1  | 1  | 1 | 0   | 0   | 0   | 0   |
| EX7        |                           | 4                          | 3  | 3  | 2  | 2  | 2 | 2   | 1   | 1   | 1   |
| EX8        |                           | 11                         | 10 | 9  | 8  | 7  | 6 | 5   | 4   | 4   | 3   |
| EX6        | 100                       | 1                          | 1  | 1  | 1  | 1  | 1 | 1   | 0   | 0   | 0   |
| EX7        |                           | 4                          | 3  | 3  | 3  | 2  | 2 | 2   | 2   | 1   | 1   |
| EX8        |                           | 12                         | 11 | 9  | 8  | 7  | 6 | 5   | 5   | 4   | 3   |

REFRIGERANT SOLENOID VALVES QUICK SELECTION GUIDE

UNI-FLOW SOLENOIDS

| TONNAGE |        | OPERATION       |               | TWO TYPES     |                | DESIGN    | PORT SIZE | VALVE SERIES |
|---------|--------|-----------------|---------------|---------------|----------------|-----------|-----------|--------------|
| R-410A  | R-404A | NORMALLY CLOSED | NORMALLY OPEN | DIRECT ACTING | PILOT OPERATED |           |           |              |
| —       | 0.9    | √               |               | √             |                | Piston    | 1/8"      | 100RB 2      |
| 3.4     | 2.3    | √               |               |               | √              | Piston    | 1/8"      | 200RB 2      |
| 4.5     | 3.1    | √               |               |               | √              | Piston    | 3/16"     | 200RB 3      |
| 7.5     | 5.1    | √               |               |               | √              | Piston    | 1/4"      | 200RB 4      |
| 7.7     | 5.3    | √               |               |               | √              | Piston    | 5/16"     | 200RB 5      |
| 8.9     | 6.1    | √               |               |               | √              | Piston    | 3/8"      | 200RB 6      |
| 15.7    | 11.1   | √               |               |               | √              | Piston    | 7/16"     | 200RB 7      |
| 14.6    | 10.3   | √               |               |               | √              | Diaphragm | 1/2"      | 250RA 8      |
| 28.5    | 20.1   | √               |               |               | √              | Diaphragm | 9/16"     | 250RA 9      |
| 32.6    | 23.0   | √               |               |               | √              | Diaphragm | 3/4"      | 250RA 12     |
| 54.2    | 38.3   | √               |               |               | √              | Diaphragm | 1"        | 250RA 16     |
| 89.1    | 65.7   | √               |               |               | √              | Diaphragm | 1-1/4"    | 250RA 20     |
| 3.4     | 2.3    |                 | √             |               | √              | Piston    | 1/8"      | 500RB 2      |
| 4.5     | 3.1    |                 | √             |               | √              | Piston    | 3/16"     | 500RB 3      |
| 7.5     | 5.1    |                 | √             |               | √              | Piston    | 1/4"      | 500RB 4      |
| 7.7     | 5.3    |                 | √             |               | √              | Piston    | 5/16"     | 500RB 5      |
| 8.9     | 6.1    |                 | √             |               | √              | Piston    | 3/8"      | 500RB 6      |
| 15.7    | 11.1   |                 | √             |               | √              | Piston    | 7/16"     | 500RB 7      |
| 14.6    | 10.3   |                 | √             |               | √              | Diaphragm | 1/2"      | 540RA 8      |
| 28.5    | 20.1   |                 | √             |               | √              | Diaphragm | 9/16"     | 540RA 9      |
| 32.6    | 23.0   |                 | √             |               | √              | Diaphragm | 3/4"      | 540RA 12     |
| 54.2    | 38.3   |                 | √             |               | √              | Diaphragm | 1"        | 540RA 16     |
| 89.1    | 65.7   |                 | √             |               | √              | Diaphragm | 1-1/4"    | 540RA 20     |

BI-FLOW SOLENOIDS

| TONNAGE | OPERATION       |               | TWO TYPES     |                | DESIGN | PORT SIZE | VALVE SERIES |
|---------|-----------------|---------------|---------------|----------------|--------|-----------|--------------|
| R-410A  | NORMALLY CLOSED | NORMALLY OPEN | DIRECT ACTING | PILOT OPERATED |        |           |              |
| 4.5     | √               |               |               | √              | Piston | 3/16"     | 200RB 3 BF   |
| 7.5     | √               |               |               | √              | Piston | 1/4"      | 200RB 4 BF   |
| 7.7     | √               |               |               | √              | Piston | 5/16"     | 200RB 5 BF   |
| 8.9     | √               |               |               | √              | Piston | 3/8"      | 200RB 6 BF   |



100RB 2S3VLC

## 100RB SERIES REFRIGERANT SOLENOID VALVES

The 100RB is a direct-acting, 2-way, normally closed valve used for liquid or discharge gas refrigerant service.

### FEATURES

- Single coil family fits all valve sizes
- Extended ends for easy installation (standard)
- PTFE O-ring for superior external sealing
- SAE or ODF connection sizes in 1/4" and 3/8" or 1/4" NPTF
- Field serviceable parts available

### SPECIFICATIONS

Maximum Fluid Temperature.....250°F (121°C)  
 Maximum Working Pressure.....500 psig (35 bar)  
 Maximum Operating Pressure Differential .....300 psig (21 bar)  
 UL/CUL File Number .....MP604  
 Canadian CRN .....0C21506.513467890YTN

### MODEL NUMBER NOMENCLATURE - Example: 100RB 2F2VLC

| VALVE SERIES                              | PORT SIZE | CONNECTION TYPE                              | CONNECTION SIZE    | *COIL                                                                                        | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                                | PACK TYPE                                        |
|-------------------------------------------|-----------|----------------------------------------------|--------------------|----------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------|--------------------------------------------------|
| 100RB                                     | 2         | F                                            | 2                  | VLC                                                                                          |                       |                                                 |                                                  |
| Direct-Acting Refrigerant Solenoid Valves | In 1/16"  | F = SAE<br>S = ODF Extended Ends<br>P = NPTF | In 1/8" Increments | VLC = Valve Less Coil<br><br>For Valves with Coil See Coil Nomenclature on Coil Catalog Page | Blank Thru -99        | G = Customer Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

\* Valves in catalog are shipped without solenoid coils (VLC = Valve Less Coil). See coil pages for coil selection and a complete list of voltage options.

### 100RB SERIES REFRIGERANT SOLENOID VALVES

| PORT SIZE (IN) | CONNECTION SIZE & TYPE | NOMINAL LIQUID CAPACITY - TONS (kW) |           |           |                |           |                 |                 | MODEL NUMBER | ITEM NUMBER |
|----------------|------------------------|-------------------------------------|-----------|-----------|----------------|-----------|-----------------|-----------------|--------------|-------------|
|                |                        | R-22                                | R-134a    | R-290     | R-404A / R-507 | R-407C    | R-448A / R-449A | R-450A / R-513A |              |             |
| 1/8            | 1/4" SAE               | 1.3 (4.5)                           | 1.0 (3.4) | 1.3 (4.5) | 0.9 (3.0)      | 1.2 (4.3) | 1.3 (4.5)       | 0.9 (3.1)       | 100RB 2F2VLC | 047500      |
|                | 1/4" NPTF              |                                     |           |           |                |           |                 |                 | 100RB 2P2VLC | 047502      |
|                | 1/4" ODF               |                                     |           |           |                |           |                 |                 | 100RB 2S2VLC | 047503      |
|                | 3/8" SAE               |                                     |           |           |                |           |                 |                 | 100RB 2F3VLC | 047501      |
|                | 3/8" ODF               |                                     |           |           |                |           |                 |                 | 100RB 2S3VLC | 047504      |
|                | 1/2" ODF               |                                     |           |           |                |           |                 |                 | 100RB 2S4VLC | 047505      |

NOTE: Capacities based on 100°F liquid and 40°F saturated evaporator per ARI standard 760-87.



Detailed  
product  
drawings

Extended  
capacity  
tables





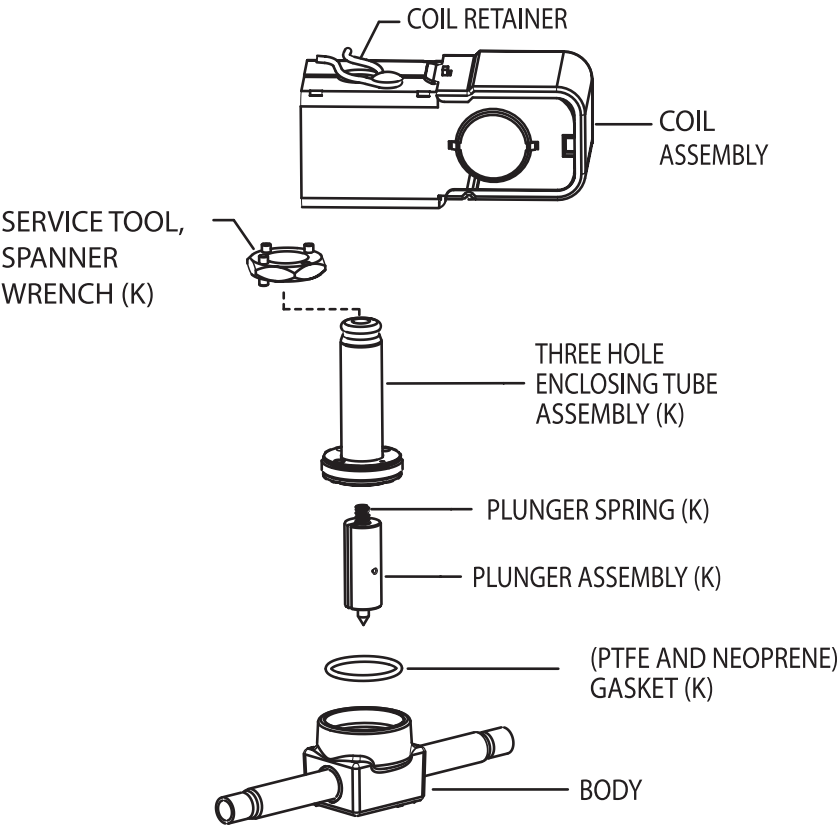
EXPLODED VIEW & PARTS KIT DATA

100RB SERIES PART KITS

| DESCRIPTION                                                                                                                                                                                                                                       | MODEL NUMBER  | ITEM NUMBER |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|
| Valve Repair Kit (K)                                                                                                                                                                                                                              | KS-30112      | 049191      |
| Universal (2/3 hole) spanner wrench                                                                                                                                                                                                               | X-11981-1     | 027451      |
| Parts Kit (Contains 12 pieces each of PTFE and neoprene O-rings)                                                                                                                                                                                  | KG-10041      | 054812      |
| Magnetic Solenoid Tool opens a normally closed solenoid valve in the de-energized state, incorporates a spanner wrench for easy disassembly of solenoid valve series 100RB, 200RB, 240RA and provides an orifice to manually adjust opening stem. | SOLENOID TOOL | 066019      |

VALVE REPAIR KIT

(K) indicates part is supplied in valve repair kit.





200RB 5T5MVLV

## 200RB SERIES REFRIGERANT SOLENOID VALVES

The 200RB is a pilot-operated, 2-way, normally closed valve used for liquid, discharge, or suction gas refrigerant service.

### FEATURES

- Single coil family fits all valve sizes
- Extended ends for easy installation (standard)
- PTFE O-ring for superior external sealing
- Available in 7 port sizes
- Optional manual stem or mounting stud
- Bi-Directional operation either factory assembled or convert with kit KS-30293 (except 200RB 7 & 9)
- Field serviceable parts available

### SPECIFICATIONS

Maximum Fluid Temperature..... 250°F (121°C)  
 Maximum Working Pressure..... 680 psig (47 bar)  
 Minimum Operating Pressure Drop ..... 2 psi (0.15 bar)  
 \* Maximum Operating Pressure Differential ..... 300 psig (21 bar)  
 UL/CUL File Number ..... MP604  
 Canadian CRN ..... 0C21506.513467890YTN

\* MOPD based on AC applications. Consult application engineer for DC applications.

### MODEL NUMBER NOMENCLATURE - Example: 200RB 3T3BFVLC

| VALVE SERIES                                               | DESIGN SERIES | PORT SIZE | CONNECTION TYPE                                   | CONNECTION SIZE | VALVE CONFIGURATION                                                                                          | *COIL                                                                                       | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                        |
|------------------------------------------------------------|---------------|-----------|---------------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------|--------------------------------------------------|
| 200R                                                       | B             | 3         | T                                                 | 3               | BF                                                                                                           | VLC                                                                                         |                       |                                             |                                                  |
| Pilot-Operated Normally Closed Refrigerant Solenoid Valves | Piston Design | In 1/16"  | F = SAE<br>S = ODF Short<br>T = ODF Extended Ends | In 1/8"         | BF = Bi-Directional (Heat Pump)<br>M = Manual Opening Stem<br>T = Mounting Stud<br><br>(Omit for Std. Valve) | VLC = Valve Less Coil<br>For Valves with Coil<br>See Coil Nomenclature on Coil Catalog Page | Blank Thru -99        | G = Customer Special<br><br>(Omit for Std.) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

\* Valves in catalog are shipped without solenoid coils (VLC = Valve Less Coil). See coil pages for coil selection and a complete list of voltage options.

### 200RB SERIES REFRIGERANT SOLENOID VALVES

| VALVE CONFIG. | PORT SIZE (IN) | CONN. SIZE & TYPE (IN) | EXTD. ENDS | NOMINAL LIQUID CAPACITY - TONS (kW) |            |            |                |            |            |                 |                 |             | MODEL NUMBER | ITEM NUMBER |
|---------------|----------------|------------------------|------------|-------------------------------------|------------|------------|----------------|------------|------------|-----------------|-----------------|-------------|--------------|-------------|
|               |                |                        |            | R-22                                | R-134a     | R-290      | R-404A / R-507 | R-407C     | R-410A     | R-448A / R-449A | R-450A / R-513A | R-744       |              |             |
| Standard      | 1/8            | 1/4 SAE                | —          | 3.6 (12.7)                          | 2.7 (9.6)  | 3.8 (13.4) | 2.3 (8.2)      | 3.4 (11.9) | 3.4 (11.9) | 3.6 (12.7)      | 2.5 (8.7)       | 8.2 (28.7)  | 200RB 2F2VLC | 053104      |
|               |                | 1/4 ODF                | Yes        |                                     |            |            |                |            |            |                 |                 |             | 200RB 2T2VLC | 053105      |
|               |                | 3/8 SAE                | —          |                                     |            |            |                |            |            |                 |                 |             | 200RB 2F3VLC | 062611      |
|               |                | 3/8 ODF                | Yes        |                                     |            |            |                |            |            |                 |                 |             | 200RB 2T3VLC | 053106      |
|               | 3/16           | 1/4 ODF                | Yes        | 4.8 (16.9)                          | 3.6 (12.7) | 5.0 (17.6) | 3.1 (10.9)     | 4.5 (15.9) | 4.5 (15.8) | 4.8 (17.0)      | 3.3 (11.6)      | 10.9 (38.2) | 200RB 3T2VLC | 049608      |
|               |                | 3/8 SAE                | —          |                                     |            |            |                |            |            |                 |                 |             | 200RB 3F3VLC | 052726      |
|               |                | 3/8 ODF                | Yes        |                                     |            |            |                |            |            |                 |                 |             | 200RB 3T3VLC | 049609      |
|               |                | 1/2 SAE                | —          |                                     |            |            |                |            |            |                 |                 |             | 200RB 3F4VLC | 052727      |
|               |                | 1/2 ODF                | Yes        |                                     |            |            |                |            |            |                 |                 |             | 200RB 3T4VLC | 049692      |
|               |                | 3/8 SAE                | —          |                                     |            |            |                |            |            |                 |                 |             | 200RB 4F3VLC | 047506      |
|               | 1/4            | 3/8 ODF X 1/2 ODM      | —          | 8.0 (28.0)                          | 6.0 (21.1) | 8.3 (29.2) | 5.1 (18.0)     | 7.5 (26.3) | 7.5 (26.4) | 8.0 (28.1)      | 5.5 (19.3)      | 18.0 (63.3) | 200RB 4S3VLC | 047511      |
|               |                | 3/8 ODF                | Yes        |                                     |            |            |                |            |            |                 |                 |             | 200RB 4T3VLC | 047517      |
|               |                | 1/2 ODF X 5/8 ODM      | —          |                                     |            |            |                |            |            |                 |                 |             | 200RB 4S4VLC | 047516      |
|               |                | 1/2 ODF                | Yes        |                                     |            |            |                |            |            |                 |                 |             | 200RB 4T4VLC | 047518      |
|               |                | 5/8 ODF                | Yes        |                                     |            |            |                |            |            |                 |                 |             | 200RB 4T5VLC | 058950      |
|               |                | 3/8 SAE                | —          |                                     |            |            |                |            |            |                 |                 |             |              |             |

## 200RB SERIES REFRIGERANT SOLENOID VALVES (CONTINUED)

| VALVE CONFIG.  | PORT SIZE (IN) | CONN. SIZE & TYPE (IN) | EXTD. ENDS | NOMINAL LIQUID CAPACITY - TONS (kW) |             |            |                |             |             |                 |                 |              | MODEL NUMBER   | ITEM NUMBER |
|----------------|----------------|------------------------|------------|-------------------------------------|-------------|------------|----------------|-------------|-------------|-----------------|-----------------|--------------|----------------|-------------|
|                |                |                        |            | R-22                                | R-134a      | R-290      | R-404A / R-507 | R-407C      | R-410A      | R-448A / R-449A | R-450A / R-513A | R-744        |                |             |
| Standard       | 5/16           | 3/8 ODF                | Yes        | 8.2 (28.9)                          | 6.2 (21.8)  | 8.6 (30.1) | 5.3 (18.6)     | 7.7 (27.2)  | 7.7 (26.4)  | 8.3 (29.0)      | 5.7 (19.9)      | 18.7 (65.5)  | 200RB 5T3VLC   | 061227      |
|                |                | 1/2 SAE                | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 5F4VLC   | 047519      |
|                | 5/16           | 1/2 ODF X 5/8 ODM      | —          | 8.2 (28.9)                          | 6.2 (21.8)  | 8.6 (30.1) | 5.3 (18.6)     | 7.7 (27.2)  | 7.7 (26.4)  | 8.3 (29.0)      | 5.7 (19.9)      | 18.7 (65.5)  | 200RB 5S4VLC   | 047524      |
|                |                | 1/2 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 5T4VLC   | 057206      |
|                |                | 5/8 SAE                | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 5F5VLC   | 059729      |
|                |                | 5/8 ODF                | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 5S5VLC   | 049201      |
|                |                | 5/8 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 5T5VLC   | 059730      |
|                | 3/8            | 1/2 ODF X 5/8 ODM      | —          | 9.5 (33.3)                          | 7.2 (25.2)  | 9.9 (34.7) | 6.1 (21.5)     | 8.9 (31.4)  | 8.9 (31.3)  | 9.5 (33.5)      | 6.5 (23.0)      | 21.5 (75.6)  | 200RB 6S4VLC   | 047537      |
|                |                | 1/2 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 6T4VLC   | 047544      |
|                |                | 5/8 SAE                | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 6F5VLC   | 059732      |
|                |                | 5/8 ODF                | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 6S5VLC   | 047540      |
|                |                | 5/8 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 6T5VLC   | 056766      |
|                | 7/16           | 5/8 ODF X 7/8 ODM      | —          | 17.0 (59.8)                         | 12.7 (44.6) | —          | 11.1 (39.0)    | 16.2 (57.0) | 15.7 (55.2) | 17.1 (60.0)     | 11.7 (41.2)     | 37.7 (132.3) | 200RB 7S5VLC   | 064037      |
|                |                | 5/8 ODF                | Yes        |                                     |             | —          |                |             |             |                 |                 |              | 200RB 7T5VLC   | 064063      |
|                |                | 7/8 ODF                | Yes        |                                     |             | —          |                |             |             |                 |                 |              | 200RB 7T7VLC   | 064282      |
|                | 9/16           | 7/8 ODF                | —          | 29.5 (103.8)                        | 22.5 (79.1) | —          | 18.3 (64.2)    | 28.0 (98.3) | 27.7 (97.6) | 29.6 (104.2)    | 20.3 (71.5)     | 67.7 (238.0) | 200RB 9T7VLC   | 064645      |
|                |                | 1-1/8 ODF              | Yes        |                                     |             | —          |                |             |             |                 |                 |              | 200RB 9T9VLC   | 064767      |
| Bi-Directional | 3/16           | 3/8 ODF                | Yes        | 4.8 (17.0)                          | 4.4 (15.6)  | 5.0 (17.6) | 3.2 (11.3)     | 4.5 (16.0)  | 4.5 (15.8)  | 5.6 (19.6)      | 3.3 (11.6)      | 10.9 (38.2)  | 200RB 3T3BFVLC | 009689      |
|                | 1/4            | 3/8 ODF                | Yes        | 5.6 (19.8)                          | 5.3 (18.6)  | 5.8 (20.4) | 3.7 (13.1)     | 5.3 (18.8)  | 7.5 (26.4)  | 9.2 (32.4)      | 5.5 (19.3)      | 18.0 (63.3)  | 200RB 4T3BFVLC | 009690      |
|                | 5/16           | 1/2 ODF                | Yes        | 8.2 (29.0)                          | 7.8 (27.7)  | 8.6 (30.2) | 54. (19.1)     | 7.8 (27.6)  | 7.7 (26.4)  | 9.5 (33.5)      | 5.7 (19.9)      | 18.7 (65.5)  | 200RB 5T4BFVLC | 009692      |
|                |                | 5/8 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 5T5BFVLC | 009693      |
|                | 3/8            | 5/8 ODF                | Yes        | 10.0 (35.4)                         | 9.4 (33.4)  | 9.9 (34.8) | 6.5 (23.0)     | 9.5 (33.6)  | 8.9 (31.3)  | 11.0 (38.7)     | 6.5 (23.0)      | 21.5 (75.6)  | 200RB 6T5BFVLC | 009694      |
| Mounting Stud  | 1/8            | 1/4 ODF                | Yes        | 3.6 (12.7)                          | 2.7 (9.6)   | 3.8 (13.4) | 2.3 (8.2)      | 3.4 (11.9)  | 3.4 (11.9)  | 3.6 (12.7)      | 2.5 (8.7)       | 8.2 (28.7)   | 200RB 2T2TVLC  | 053236      |
|                |                | 3/8 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 2T3TVLC  | 054170      |
|                | 3/16           | 3/8 SAE                | —          | 4.8 (16.9)                          | 3.6 (12.7)  | 5.0 (17.6) | 3.1 (10.9)     | 4.5 (15.9)  | 4.5 (15.8)  | 4.8 (17.0)      | 3.3 (11.6)      | 10.9 (38.2)  | 200RB 3F3TVLC  | 056438      |
|                |                | 3/8 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 3T3TVLC  | 049585      |
|                |                | 1/2 SAE                | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 3F4TVLC  | 055855      |
|                |                | 3/8 SAE                | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 4F3TVLC  | 047508      |
|                | 1/4            | 3/8 ODF X 1/2 ODM      | —          | 8.0 (28.0)                          | 6.0 (21.1)  | 8.3 (29.2) | 5.1 (18.0)     | 7.5 (26.3)  | 7.5 (26.4)  | 8.0 (28.1)      | 5.5 (19.3)      | 18.0 (63.3)  | 200RB 4S3TVLC  | 047513      |
|                |                | 3/8 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 4T3TVLC  | 049162      |
|                |                | 1/2 ODF X 5/8 ODM      | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 4S4TVLC  | 047515      |
|                |                | 1/2 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 4T4TVLC  | 049163      |
|                |                | 5/8 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 4T5TVLC  | 058045      |
|                |                | 3/8 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 5T3TVLC  | 054323      |
|                | 5/16           | 1/2 SAE                | —          | 8.2 (28.9)                          | 6.2 (21.8)  | 8.6 (30.1) | 5.3 (18.6)     | 7.7 (27.2)  | 7.7 (26.4)  | 8.3 (29.0)      | 5.7 (19.9)      | 18.7 (65.5)  | 200RB 5F4TVLC  | 047521      |
|                |                | 1/2 ODF X 5/8 ODM      | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 5S4TVLC  | 047526      |
|                |                | 1/2 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 5T4TVLC  | 049164      |
|                |                | 5/8 SAE                | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 5F5TVLC  | 047523      |
|                |                | 5/8 ODF                | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 5S5TVLC  | 047528      |
|                |                | 5/8 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 5T5TVLC  | 049165      |
|                |                | 1/2 SAE                | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 6F4TVLC  | 047531      |
|                |                | 1/2 ODF X 5/8 ODM      | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 6S4TVLC  | 047539      |
|                | 3/8            | 1/2 ODF                | Yes        | 9.5 (33.3)                          | 7.2 (25.2)  | 9.9 (34.7) | 6.1 (21.5)     | 8.9 (31.4)  | 8.9 (31.3)  | 9.5 (33.5)      | 6.5 (23.0)      | 21.5 (75.6)  | 200RB 6T4TVLC  | 047546      |
|                |                | 5/8 SAE                | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 6F5TVLC  | 047534      |
|                |                | 5/8 ODF                | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 6S5TVLC  | 047542      |
|                |                | 5/8 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 6T5TVLC  | 047548      |

## 200RB SERIES REFRIGERANT SOLENOID VALVES (CONTINUED)

| VALVE CONFIG.       | PORT SIZE (IN) | CONN. SIZE & TYPE (IN) | EXTD. ENDS | NOMINAL LIQUID CAPACITY - TONS (kW) |             |            |                |             |             |                 |                 |              | MODEL NUMBER  | ITEM NUMBER |
|---------------------|----------------|------------------------|------------|-------------------------------------|-------------|------------|----------------|-------------|-------------|-----------------|-----------------|--------------|---------------|-------------|
|                     |                |                        |            | R-22                                | R-134a      | R-290      | R-404A / R-507 | R-407C      | R-410A      | R-448A / R-449A | R-450A / R-513A | R-744        |               |             |
| Mounting Stud       | 7/16           | 5/8 ODF                | —          | 17.0 (59.8)                         | 12.7 (44.6) | —          | 11.1 (39.0)    | 16.2 (57.0) | 15.7 (55.2) | 17.1 (60.0)     | 11.7 (41.2)     | 37.7 (132.3) | 200RB 7T5TVLC | 064562      |
|                     |                | 7/8 ODF                | Yes        |                                     |             | —          |                |             |             |                 |                 |              | 200RB 7T7TVLC | 064284      |
|                     | 9/16           | 5/8 ODF                | Yes        | 29.5 (103.8)                        | 22.5 (79.1) | —          | 18.3 (64.2)    | 28.0 (98.3) | 27.7 (97.6) | 29.6 (104.2)    | 20.3 (71.5)     | 67.7 (238.0) | 200RB 9T5TVLC | 064764      |
|                     |                | 7/8 ODF                | Yes        |                                     |             | —          |                |             |             |                 |                 |              | 200RB 9T7TVLC | 064766      |
|                     |                | 1-1/8 ODF              | Yes        |                                     |             | —          |                |             |             |                 |                 |              | 200RB 9T9TVLC | 064769      |
| Manual Opening Stem | 3/16           | 3/8 ODF                | —          | 4.8 (16.9)                          | 3.6 (12.7)  | 5.0 (17.6) | 3.1 (10.9)     | 4.5 (15.9)  | 4.5 (15.8)  | 4.8 (17.0)      | 3.3 (11.6)      | 10.9 (38.2)  | 200RB 3T3MVLC | 065620      |
|                     |                | 1/2 ODF                | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 3T4MVLC | 065621      |
|                     | 1/4            | 3/8 SAE                | —          | 8.0 (28.0)                          | 6.0 (21.1)  | 8.3 (29.2) | 5.1 (18.0)     | 7.5 (26.3)  | 7.5 (26.4)  | 8.0 (28.1)      | 5.5 (19.3)      | 18.0 (63.3)  | 200RB 4F3MVLC | 047507      |
|                     |                | 3/8 ODF X 1/2 ODM      | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 4S3MVLC | 047512      |
|                     |                | 3/8 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 4T3MVLC | 049186      |
|                     |                | 1/2 ODF X 5/8 ODM      | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 4S4MVLC | 047514      |
|                     |                | 1/2 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 4T4MVLC | 049187      |
|                     |                | 5/8 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 4T5MVLC | 056518      |
|                     |                | 5/8 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 4T5MVLC | 056518      |
|                     | 5/16           | 1/2 SAE                | —          | 8.2 (28.9)                          | 6.2 (21.8)  | 8.6 (30.1) | 5.3 (18.6)     | 7.7 (27.2)  | 7.7 (26.4)  | 8.3 (29.0)      | 5.7 (19.9)      | 18.7 (65.5)  | 200RB 5F4MVLC | 047520      |
|                     |                | 1/2 ODF X 5/8 ODM      | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 5S4MVLC | 047525      |
|                     |                | 1/2 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 5T4MVLC | 049188      |
|                     |                | 5/8 SAE                | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 5F5MVLC | 047522      |
|                     |                | 5/8 ODF                | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 5S5MVLC | 047527      |
|                     |                | 5/8 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 5T5MVLC | 049189      |
|                     | 3/8            | 1/2 SAE                | —          | 9.5 (33.3)                          | 7.2 (25.2)  | 9.9 (34.7) | 6.1 (21.5)     | 8.9 (31.4)  | 8.9 (31.3)  | 9.5 (33.5)      | 6.5 (23.0)      | 21.5 (75.6)  | 200RB 6F4MVLC | 047530      |
|                     |                | 1/2 ODF X 5/8 ODM      | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 6S4MVLC | 047538      |
|                     |                | 1/2 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 6T4MVLC | 047545      |
|                     |                | 5/8 SAE                | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 6F5MVLC | 047533      |
|                     |                | 5/8 ODF                | —          |                                     |             |            |                |             |             |                 |                 |              | 200RB 6S5MVLC | 047541      |
|                     |                | 5/8 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 6T5MVLC | 047547      |
|                     | 7/16           | 5/8 ODF                | Yes        | 17.0 (59.8)                         | 12.7 (44.6) | —          | 11.1 (39.0)    | 16.2 (57.0) | 15.7 (55.2) | 17.1 (60.0)     | 11.7 (41.2)     | 37.7 (132.3) | 200RB 7T5MVLC | 064267      |
|                     |                | 7/8 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 7T7MVLC | 064283      |
|                     | 9/16           | 5/8 ODF                | Yes        | 29.5 (103.8)                        | 22.5 (79.1) | —          | 18.3 (64.2)    | 28.0 (98.3) | 27.7 (97.6) | 29.6 (104.2)    | 20.3 (71.5)     | 67.7 (238.0) | 200RB 9T5MVLC | 064763      |
|                     |                | 7/8 ODF                | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 9T7MVLC | 064765      |
|                     |                | 1 1/8 ODF              | Yes        |                                     |             |            |                |             |             |                 |                 |              | 200RB 9T9MVLC | 064768      |

Capacities based on 100°F liquid and 40°F saturated evaporator per ARI standard 760-87. All ratings are based on largest connection size.



Detailed  
product  
drawings

Extended  
capacity  
tables



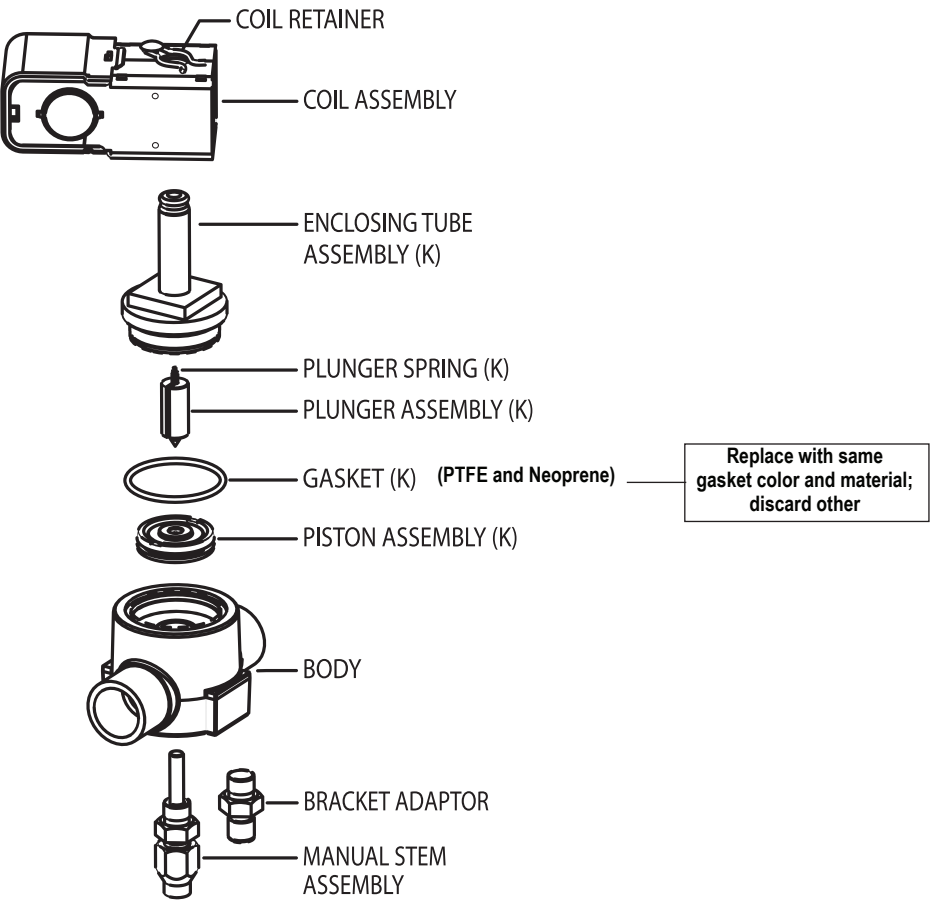
EXPLODED VIEW & PARTS KIT DATA

200RB SERIES PART KITS

| DESCRIPTION                                                                                                                                                                                                                                        | MODEL NUMBER  | ITEM NUMBER |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|
| Complete Kits                                                                                                                                                                                                                                      |               |             |
| Complete Valve Repair Kit (K) for 200RB/RD 2 - 200RB/RD 6                                                                                                                                                                                          | KS-30115      | 049194      |
| Complete Valve Repair Kit (K) for 200RB/RD 7                                                                                                                                                                                                       | KS-30354      | 064263      |
| Complete Valve Repair Kit (K) for 200RB/RD 9                                                                                                                                                                                                       | KS-30362      | 064825      |
| Manual Opener Kits                                                                                                                                                                                                                                 |               |             |
| Solenoid Valve Manual Opener Kit 200RB 3                                                                                                                                                                                                           | KS-30377      | 065695      |
| Solenoid Valve Manual Opener Kit 200RB 4 - 200RB 6                                                                                                                                                                                                 | KS-30117      | 053959      |
| Solenoid Valve Manual Opener Kit 200RB 7                                                                                                                                                                                                           | KS-30361      | 064831      |
| Solenoid Valve Manual Opener Kit 200RB 9                                                                                                                                                                                                           | KS-30364      | 064832      |
| Gasket Kits                                                                                                                                                                                                                                        |               |             |
| Gasket Kit for 200RB/RD 7                                                                                                                                                                                                                          | KG-00002      | 064262      |
| Gasket Kit for 200RB/RD 9                                                                                                                                                                                                                          | KG-00003      | 064830      |
| Gasket Kit for 200RB/RD 2 - 200RB/RD 6 and 500RB, 12 PTFE and 12 Neoprene O-Rings                                                                                                                                                                  | KG-10025      | 049190      |
| Bi-Directional Kit                                                                                                                                                                                                                                 |               |             |
| Bi-Directional Flow Valve Kit for 200RB/RD 2 - 200RB/RD 6                                                                                                                                                                                          | KS-30293      | 056431      |
| Tool Kit                                                                                                                                                                                                                                           |               |             |
| Magnetic Solenoid Tool closes a normally closed solenoid valve in the de-energized state, incorporates a spanner wrench for easy disassembly of solenoid valve series 100RB, 200RB, 240RA and provides an orifice to manually adjust opening stem. | SOLENOID TOOL | 066019      |

VALVE REPAIR KIT

(K) indicates part is supplied in valve repair kit.





200RC 4T4 VLC 802081

## 200RC SERIES REFRIGERANT SOLENOID VALVES

The 200RC Series is a pilot-operated, 2-way, normally closed valve used for liquid, discharge, or suction gas refrigerant service. It is designed specifically for R-744 refrigeration systems.

### FEATURES

- Designed for the high pressure requirements of R-744 refrigeration systems
- Brass forged body with copper connections
- Extended ends for easy installation
- Mounting screw with washer
- Coil Options: AM and DM Series (24 vac 50/60 Hz, 120 vac 50/60 Hz, and 208-240 vac 50/60 Hz)

### SPECIFICATIONS

|                                                                |                         |
|----------------------------------------------------------------|-------------------------|
| Maximum Fluid Temperature .....                                | 250°F (121°C)           |
| Maximum Working Pressure .....                                 | 1885 psig (130 bar)     |
| Maximum Operating Pressure Differential (MOPD - See COILS).... | Up to 870 psig (60 bar) |
| Minimum Operating Pressure Differential .....                  | 2 psi (0.15 bar)        |
| UL/CUL File Number .....                                       | MP604                   |
| Marking .....                                                  | CE, UKCA, EAC           |

### MODEL NUMBER NOMENCLATURE - EXAMPLE: 200RC 4T4 VLC 802081

| VALVE SERIES                                              | DESIGN SERIES | PORT SIZE | CONNECTION TYPE | CONNECTION SIZE       | COIL*   | UNIQUE IDENTIFIER     |
|-----------------------------------------------------------|---------------|-----------|-----------------|-----------------------|---------|-----------------------|
| 200R                                                      | C             | 4         | T               | 4                     | VLC     | 802081                |
| Pilot-Operated Normally Closed Refrigerant Solenoid Valve |               | C = CO2   | In 1/16"        | T = ODF Extended Ends | In 1/8" | VLC = Valve Less Coil |

\* VALVES IN CATALOG ARE SHIPPED WITHOUT SOLENOID COILS (VLC = VALVE LESS COIL). SEE COILS TABLE BELOW FOR ORDERING INFORMATION.

### 200RC SERIES VALVES: NOMINAL R-744 CAPACITIES - TONS (kW)

| PORT SIZE (IN.) | CONNECTION SIZE (IN.) & TYPE | Cv   | LIQUID      | SUCTION     | DISCHARGE   | MODEL NUMBER         | ITEM NUMBER |
|-----------------|------------------------------|------|-------------|-------------|-------------|----------------------|-------------|
| 3/16            | 3/8 ODF                      | 0.95 | 10.9 (38.2) | 0.94 (3.30) | 1.16 (4.09) | 200RC 3T3 VLC 802080 | 802080      |
| 1/4             | 1/2 ODF                      | 1.35 | 18.0 (63.3) | 1.76 (6.19) | 2.18 (7.67) | 200RC 4T4 VLC 802081 | 802081      |

LIQUID NOMINAL CAPACITIES ARE DETERMINED AT 20°F (-7°C) EVAPORATING TEMPERATURE AND 7 PSI (0.5 BAR) DROP ACROSS SOLENOID VALVE.

SUCTION GAS NOMINAL CAPACITIES ARE DETERMINED AT 20°F (-7°C) LIQUID, -20°F (-29°C) EVAPORATING TEMPERATURE, 25°F (14°C) SUPERHEAT AND 2 PSI (0.15 BAR) DROP ACROSS SOLENOID VALVE.

DISCHARGE GAS NOMINAL CAPACITIES ARE DETERMINED AT 2 PSI (0.15 BAR) PRESSURE DROP ACROSS SOLENOID VALVE.  
FLOW COEFFICIENT CV IS US GALLONS PER MINUTE (GPM) OF WATER AT 60°F WITH 1 PSI PRESSURE DROP ACROSS THE VALVE.

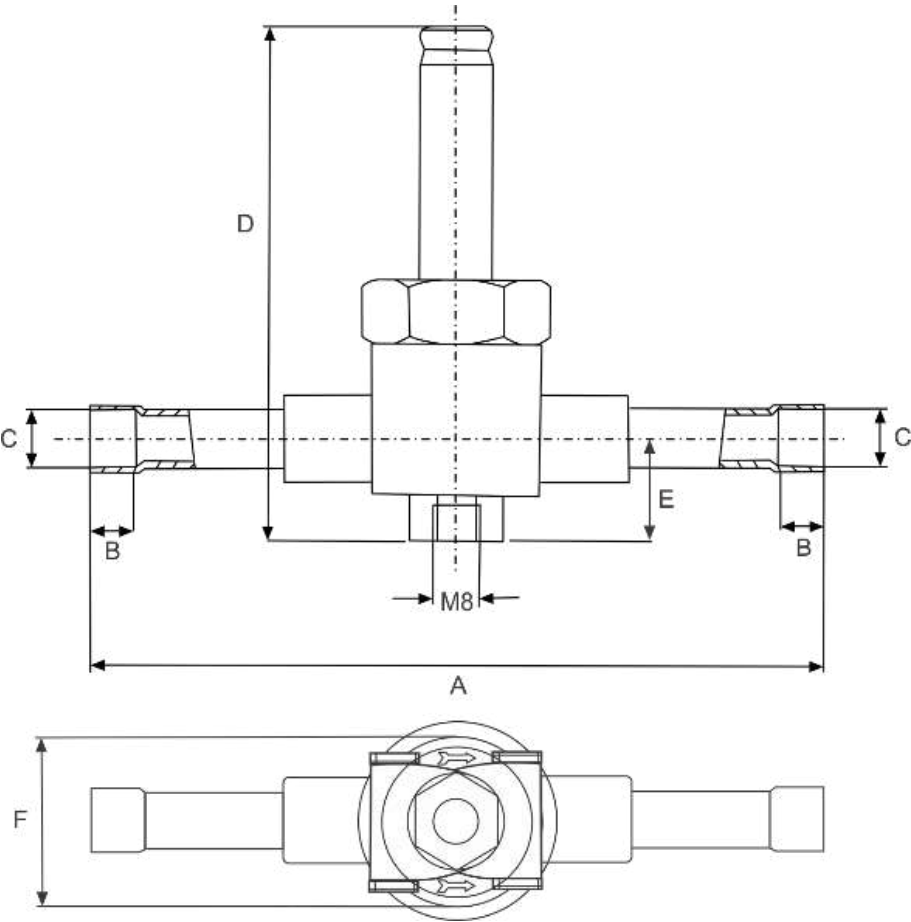
### RECOMMENDED COILS FOR 200RC SERIES VALVES

| COIL SERIES | VOLTAGE            | WATTS | MOPD             | ENCLOSURE TYPE | LEAD            | MODEL NUMBER | ITEM NUMBER |
|-------------|--------------------|-------|------------------|----------------|-----------------|--------------|-------------|
| AMG         | 24 (50/60 Hz)      | 17/12 | 870 psi (60 bar) | Junction Box   | 6 inch (152 mm) | AMG 1-01     | 057341      |
|             | 120 (50/60 Hz)     | 17/12 | 870 psi (60 bar) |                |                 | AMG 2-01     | 057331      |
|             | 120-240 (50/60 Hz) | 17/12 | 870 psi (60 bar) |                |                 | AMG 4-01     | 057343      |
|             | 208-220 (50 Hz)    | 17    | 870 psi (60 bar) | Junction Box   | 6 inch (152 mm) | AMG 3-01     | 057342      |
|             | 208-240 (60 Hz)    | 12    | 780 psi (54 bar) |                |                 |              |             |

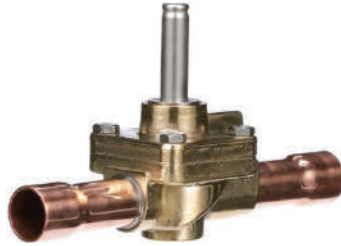
ADDITIONAL AM AND DM SERIES COILS ARE APPROVED WITH THE SAME PRESSURE RATINGS SHOWN ABOVE FOR 24 VAC, 120 VAC, AND 208-240 VAC ONLY.  
SEE CATALOG FOR ORDERING INFORMATION

200RC DIMENSIONS - IN. (mm)

| MODEL NUMBER         | C        | A         | B        | D        | E        | F        |
|----------------------|----------|-----------|----------|----------|----------|----------|
| 200RC 3T3 VLC 802080 | 3/8 (10) | 5.0 (126) | 0.3 (8)  | 3.5 (88) | 0.7 (18) | 1.1 (29) |
| 200RC 4T4 VLC 802081 | 1/2 (12) | 5.0 (126) | 0.4 (10) | 3.5 (88) | 0.7 (18) | 1.1 (29) |







250RA 12T9VLC-01

## 250RA SERIES REFRIGERANT SOLENOID VALVES

The 250RA is a 2-way, normally closed diaphragm valve used for liquid, suction, and hot gas service. It is applied in various commercial air-conditioning and refrigeration systems.

### FEATURES

- Single coil family fits all sizes
- Can be brazed into the line without disassembly
- Compatible with all A1 class refrigerants and A2L class refrigerants R-32, R-452B, R-454A, R-454B, R-455A
- PTFE upgraded diaphragm design for high temperature and pressure applications
- Extended ends for easy installation (standard)
- Mounting stud models can be field converted to manual stem

### SPECIFICATIONS

Maximum Fluid Temperature..... 250°F (121°C)  
 Maximum Working Pressure..... 680 psig (35 bar)  
 Maximum Operating Pressure Differential ..... 300 psig (21 bar)  
 UL/CUL File Number ..... MP604

### MODEL NUMBER NOMENCLATURE - Example: 250RA 12T9VLC-01

| VALVE SERIES                                       | DESIGN SERIES    | PORT SIZE | CONNECTION TYPE         | CONNECTION SIZE | VALVE CONFIGURATION                                                     | *COIL                                                                                              | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                                | PACK TYPE                                        |
|----------------------------------------------------|------------------|-----------|-------------------------|-----------------|-------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------|--------------------------------------------------|
| 250R                                               | A                | 12        | T                       | 9               | M                                                                       | VLC                                                                                                |                       |                                                 |                                                  |
| Normally Closed Solenoid Valves with increased MWP | Diaphragm Design | In 1/16"  | T = ODF<br>Extended End | In 1/8"         | M = Manual Opening Stem<br>T = Mounting Stud<br><br>(Omit for Standard) | VLC = Valve Less Coil<br><br>For Valves with Coil<br>See Coil Nomenclature<br>on Coil Catalog Page | -01 Thru -99          | G = Customer Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

\* Valves in catalog are shipped without solenoid coils (VLC = Valve Less Coil). See Coil pages for coil selection and a complete list of voltage options.

### 250RA SERIES REFRIGERANT SOLENOID VALVES

| VALVE CONFIG.       | PORT SIZE (IN) | CONN. SIZE & TYPE | NOMINAL LIQUID CAPACITY - TONS (KW) |              |               |              |              |              |              |               |               |              |               | MODEL NUMBER       | ITEM NUMBER |
|---------------------|----------------|-------------------|-------------------------------------|--------------|---------------|--------------|--------------|--------------|--------------|---------------|---------------|--------------|---------------|--------------------|-------------|
|                     |                |                   | R134a                               | R22          | R32           | R404A / R507 | R407A        | R407C        | R410A        | R448A / R449A | R450A / R513A | R-454A       | R454B / R452B |                    |             |
| Standard Valve      | 1/2            | 5/8 ODF           |                                     |              |               |              |              |              |              |               |               |              |               | 250RA 8T5VLC-01    | 1838403     |
| Mounting Stud       |                | 5/8 ODF           | 12.1 (42.6)                         | 15.6 (54.9)  | 21.2 (74.6)   | 10.3 (36.2)  | 11.0 (38.8)  | 14.8 (52.1)  | 14.6 (51.2)  | 15.7 (55.1)   | 10.8 (37.8)   | 14.5 (51.0)  | 14.1 (49.6)   | 250RA 8T5TVLC-01   | 1838391     |
| Manual Opening Stem |                | 5/8 ODF           |                                     |              |               |              |              |              |              |               |               |              |               | 250RA 8T5MVLC-01   | 1840052     |
| Manual Opening Stem |                | 7/8 ODF           |                                     |              |               |              |              |              |              |               |               |              |               | 250RA 8T7MVLC-01   | 1840061     |
| Standard Valve      | 9/16           | 7/8 ODF           |                                     |              |               |              |              |              |              |               |               |              |               | 250RA 9T7VLC-01    | 1838420     |
| Mounting Stud       |                | 7/8 ODF           | 21.0 (74.0)                         | 30.5 (107.3) | 41.5 (145.9)  | 20.1 (70.7)  | 21.6 (75.9)  | 29.0 (102.0) | 28.5 (100.2) | 30.6 (107.7)  | 21.0 (74.0)   | 28.3 (99.6)  | 27.6 (97.0)   | 250RA 9T7TVLC-01   | 1838411     |
| Manual Opening Stem |                | 5/8 ODF           |                                     |              |               |              |              |              |              |               |               |              |               | 250RA 9T5MVLC-01   | 1840079     |
| Manual Opening Stem |                | 7/8 ODF           |                                     |              |               |              |              |              |              |               |               |              |               | 250RA 9T7MVLC-01   | 1840087     |
| Standard Valve      | 3/4            | 1-1/8 ODF         |                                     |              |               |              |              |              |              |               |               |              |               | 250RA 12T9VLC-01   | 1838340     |
| Mounting Stud       |                | 1-1/8 ODF         | 27.1 (95.3)                         | 34.9 (122.7) | 47.5 (166.9)  | 23.0 (80.9)  | 24.7 (86.9)  | 33.2 (116.8) | 32.6 (114.6) | 29.0 (102.0)  | 24.1 (84.6)   | 32.4 (114.0) | 31.5 (111.0)  | 250RA 12T9TVLC-01  | 1838331     |
| Manual Opening Stem |                | 7/8 ODF           |                                     |              |               |              |              |              |              |               |               |              |               | 250RA 12T7MVLC-01  | 1839991     |
| Manual Opening Stem |                | 1-1/8 ODF         |                                     |              |               |              |              |              |              |               |               |              |               | 250RA 12T9MVLC-01  | 1840001     |
| Standard Valve      | 1              | 1-3/8 ODF         |                                     |              |               |              |              |              |              |               |               |              |               | 250RA 16T11VLC-01  | 1838366     |
| Mounting Stud       |                | 1-3/8 ODF         | 45.0 (158.3)                        | 58.0 (203.9) | 78.9 (277.4)  | 38.3 (134.7) | 41.1 (144.4) | 55.2 (194.1) | 54.2 (190.5) | 58.2 (204.8)  | 40.0 (140.6)  | 53.9 (189.4) | 52.4 (184.4)  | 250RA 16T11TVLC-01 | 1838358     |
| Manual Opening Stem |                | 1-1/8 ODF         |                                     |              |               |              |              |              |              |               |               |              |               | 250RA 16T9MVLC-01  | 1840028     |
| Manual Opening Stem |                | 1-3/8 ODF         |                                     |              |               |              |              |              |              |               |               |              |               | 250RA 16T11MVLC-01 | 1840010     |
| Standard Valve      | 1-1/4          | 1-5/8 ODF         |                                     |              |               |              |              |              |              |               |               |              |               | 250RA 20T13VLC-01  | 1838382     |
| Mounting Stud       |                | 1-5/8 ODF         | 70.9 (249.4)                        | 95.4 (335.5) | 129.7 (456.3) | 65.7 (231.1) | 67.5 (237.5) | 90.8 (319.3) | 89.1 (313.4) | 95.8 (336.8)  | 65.8 (231.3)  | 88.6 (311.6) | 86.2 (303.3)  | 250RA 20T13TVLC-01 | 1838374     |
| Manual Opening Stem |                | 1-3/8 ODF         |                                     |              |               |              |              |              |              |               |               |              |               | 250RA 20T11MVLC-01 | 1840036     |
| Manual Opening Stem |                | 1-5/8 ODF         |                                     |              |               |              |              |              |              |               |               |              |               | 250RA 20T13MVLC-01 | 1840044     |

Capacities based on 100°F liquid and 40°F saturated evaporator per AHRI standard 760. All ratings are based on largest connection size.

EXPLODED VIEW & PARTS KIT DATA

250RA SERIES PART KITS

| DESCRIPTION                                                                                                                                      | MODEL NUMBER  | ITEM NUMBER |
|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|
| Repair Kits                                                                                                                                      |               |             |
| 250RA 8 Solenoid Valve Repair Kit (K)                                                                                                            | KS-30401      | 1838462     |
| 250RA 9 Solenoid Valve Repair Kit (K)                                                                                                            | KS-30402      | 1838471     |
| 250RA 12 Solenoid Valve Repair Kit (K)                                                                                                           | KS-30403      | 1838489     |
| 250RA 16 Solenoid Valve Repair Kit (K)                                                                                                           | KS-30404      | 1838497     |
| 240RA, 250RA 20 Solenoid Valve Complete Kit (K)                                                                                                  | KS-30325      | 060630      |
| Manual Opener Kits                                                                                                                               |               |             |
| 240RA, 250RA 8 Solenoid Valve Manual Opener Kit (M)                                                                                              | KS-30066      | 044657      |
| 240RA, 250RA 9 and 12 Solenoid Valve Manual Opener Kit (M)                                                                                       | KS-30067      | 044658      |
| 240RA, 250RA 16 Solenoid Valve Manual Opener Kit (M)                                                                                             | KS-30068      | 044491      |
| 240RA, 250RA 20 Solenoid Valve Manual Opener Kit (M)                                                                                             | KS-30098      | 047723      |
| Gasket Kits                                                                                                                                      |               |             |
| 240RA, 250RA, 540RA Gasket Kit (G)                                                                                                               | KG-10028      | 054356      |
| Tool Kits                                                                                                                                        |               |             |
| Magnetic Solenoid Tool opens a normally closed solenoid valve in the de-energized state and provides an orifice to manually adjust opening stem. | SOLENOID TOOL | 066019      |

VALVE REPAIR KIT

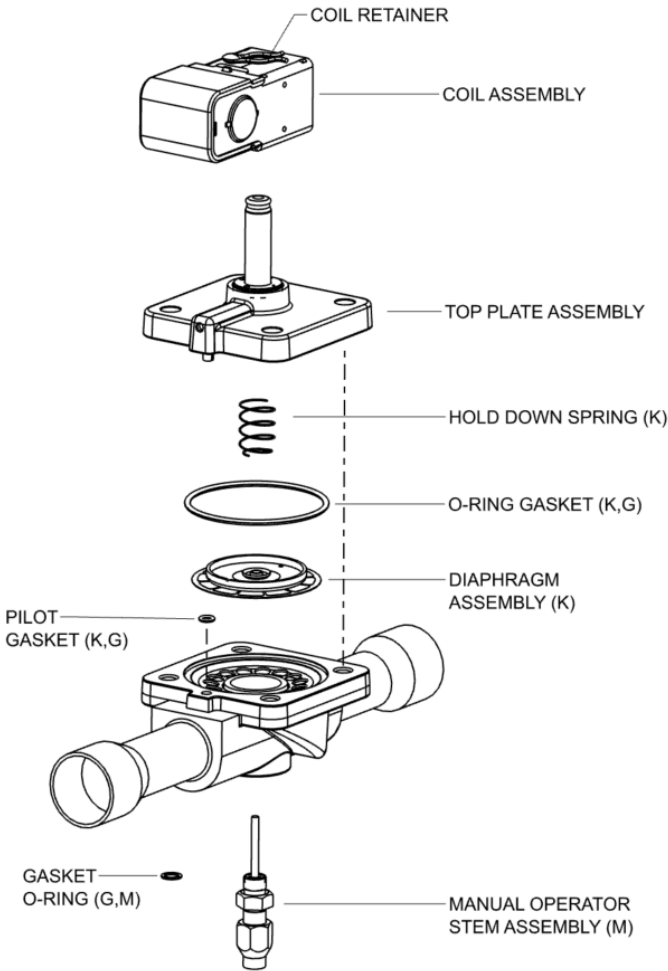
(K) indicates part is supplied in valve repair kit.

MANUAL STEM KIT

(M) indicates part is supplied in manual stem kit

GASKET KIT

(G) indicates gasket is supplied in gasket kit.



## EXPLODED VIEW &amp; PARTS KIT DATA

## 240RA SERIES PART KITS

| DESCRIPTION                                                                                                                                                                                                                                        | MODEL NUMBER  | ITEM NUMBER |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|
| <b>Complete Kits</b>                                                                                                                                                                                                                               |               |             |
| 200RA 8 Solenoid Valve Complete Kit (K)                                                                                                                                                                                                            | KS-30321      | 060626      |
| 200RA 9 Solenoid Valve Complete Kit (K)                                                                                                                                                                                                            | KS-30322      | 060627      |
| 240RA 12 Solenoid Valve Complete Kit (K)                                                                                                                                                                                                           | KS-30323      | 060628      |
| 240RA 16 Solenoid Valve Complete Kit (K)                                                                                                                                                                                                           | KS-30324      | 060629      |
| 240RA 20 Solenoid Valve Complete Kit (K)                                                                                                                                                                                                           | KS-30325      | 060630      |
| <b>Manual Opener Kits</b>                                                                                                                                                                                                                          |               |             |
| 240RA 8 Solenoid Valve Manual Opener Kit (M)                                                                                                                                                                                                       | KS-30066      | 044657      |
| 240RA 9 and 240RA 12 Solenoid Valve Manual Opener Kit (M)                                                                                                                                                                                          | KS-30067      | 044658      |
| 240RA 16 Solenoid Valve Manual Opener Kit (M)                                                                                                                                                                                                      | KS-30068      | 044491      |
| 240RA 20 Solenoid Valve Manual Opener Kit (M)                                                                                                                                                                                                      | KS-30098      | 047723      |
| <b>Gasket Kits</b>                                                                                                                                                                                                                                 |               |             |
| 240RA and 540RA Gasket Kit (G)                                                                                                                                                                                                                     | KG-10028      | 054356      |
| <b>Tool Kits</b>                                                                                                                                                                                                                                   |               |             |
| 100RB, 240RA and 540RA Solenoid Valve Universal (2/3 hole) Spanner Wrench (Included in complete valve kit)                                                                                                                                         | X-11981-1     | 027451      |
| Magnetic Solenoid Tool opens a normally closed solenoid valve in the de-energized state, incorporates a spanner wrench for easy disassembly of solenoid valve series 100RB, 200RB, 240RA, and provides an orifice to manually adjust opening stem. | SOLENOID TOOL | 066019      |

**VALVE REPAIR KIT**

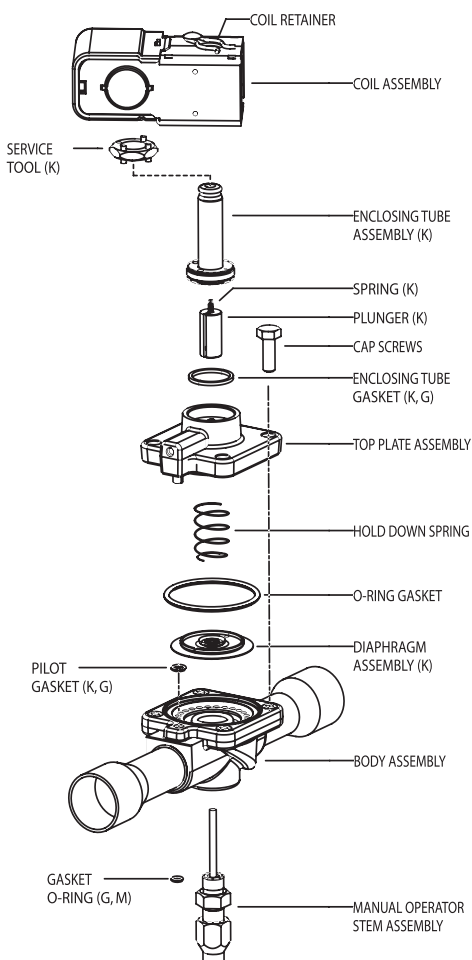
(K) indicates part is supplied in valve repair kit.

**MANUAL STEM KIT**

(M) indicates part is supplied in manual stem kit

**GASKET KIT**

(G) indicates gasket is supplied in gasket kit.





500RB 4T3VLC

## 500RB SERIES REFRIGERANT SOLENOID VALVES

The 500RB is a pilot-operated, normally open valve used for liquid, suction and hot gas service.

### FEATURES

- Single coil family fits all valve sizes
- Extended ends for easy installation
- Low pressure differential required for full opening
- PTFE O-ring for superior external sealing
- Optional SAE, ODF, NPTF and ODF inlet with ODM outlet
- Field serviceable parts available

### SPECIFICATIONS

Maximum Fluid Temperature.....250°F (121°C)  
 Maximum Working Pressure..... 680 psig (47 bar)  
 Maximum Operating Pressure Differential ..... 275 psig (19 bar)  
 UL/CUL File Number ..... MP604

### MODEL NUMBER NOMENCLATURE - Example: 500RB 4T3VLC

| VALVE SERIES                                             | DESIGN SERIES | PORT SIZE           | CONNECTION TYPE                                                                       | CONNECTION SIZE                    | *COIL                                                                                        | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                                | PACK TYPE                                        |
|----------------------------------------------------------|---------------|---------------------|---------------------------------------------------------------------------------------|------------------------------------|----------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------|--------------------------------------------------|
| 500R                                                     | B             | 4                   | T                                                                                     | 3                                  | VLC                                                                                          |                       |                                                 |                                                  |
| Pilot-Operated Normally Open Refrigerant Solenoid Valves | Piston Design | In 1/16" Increments | F = SAE<br>P = NPTF<br>S = ODF Inlet/ODM Outlet<br>T = ODF (Copper Extended Fittings) | Connection Size In 1/8" Increments | VLC = Valve Less Coil<br><br>For Valves with Coil See Coil Nomenclature on Coil Catalog Page | Blank Thru -99        | G = Customer Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

\* Valves are shipped without the solenoid coils (VLC = Valve Less Coil). See coil assemblies for availability. Valves require a DM, MM coil.

### 500RB SERIES REFRIGERANT SOLENOID VALVES

| PORT SIZE (IN) | CONNECTION SIZE & TYPE | NOMINAL LIQUID CAPACITY - TONS (kW) |            |            |                |            |            |                 |                 |             | MODEL NUMBER | ITEM NUMBER |
|----------------|------------------------|-------------------------------------|------------|------------|----------------|------------|------------|-----------------|-----------------|-------------|--------------|-------------|
|                |                        | R-22                                | R-134a     | R-290      | R-404A / R-507 | R-407C     | R410A      | R-448A / R-449A | R-450A / R-513A | R-744       |              |             |
| 1/8            | 1/4" SAE               |                                     |            |            |                |            |            |                 |                 |             | 500RB 2F2VLC | 063274      |
|                | 1/4" ODF               | 3.6 (12.7)                          | 2.7 (9.6)  | 3.8 (13.4) | 2.3 (8.2)      | 3.4 (11.9) | 3.4 (11.9) | 3.6 (12.7)      | 2.5 (8.7)       | 8.2 (28.7)  | 500RB 2T2VLC | 063278      |
|                | 3/8" ODF               |                                     |            |            |                |            |            |                 |                 |             | 500RB 2T3VLC | 063280      |
| 3/16           | 1/2" SAE               | 4.8 (16.9)                          | 3.6 (12.7) | 5.0 (17.6) | 3.1 (10.9)     | 4.5 (15.9) | 4.5 (15.9) | 4.8 (17.0)      | 3.3 (11.6)      | 10.9 (38.2) | 500RB 3F4VLC | 063286      |
| 1/4            | 1/4" ODF               | 8.0 (28.0)                          | 6.0 (21.1) | 8.3 (29.2) | 5.1 (18.0)     | 7.5 (26.3) | 7.5 (26.3) | 8.0 (28.1)      | 5.5 (19.3)      | 18.0 (63.3) | 500RB 4T2VLC | 063304      |
|                | 3/8" SAE               | 4.8 (16.9)                          | 3.6 (12.7) | 5.0 (17.6) | 3.1 (10.9)     | 4.5 (15.9) | 4.5 (15.9) | 4.8 (17.0)      | 3.3 (11.6)      | 18.0 (63.3) | 500RB 4F3VLC | 063294      |
|                | 3/8" NPTF              |                                     |            |            |                |            |            |                 |                 |             | 500RB 4P3VLC | 063298      |
|                | 3/8" ODF               |                                     |            |            |                |            |            |                 |                 |             | 500RB 4T3VLC | 063306      |
|                | 1/2" ODF X 5/8" ODM    | 8.0 (28.0)                          | 6.0 (21.1) | 8.3 (29.2) | 5.1 (18.0)     | 7.5 (26.3) | 7.5 (26.3) | 8.0 (28.1)      | 5.5 (19.3)      | 18.0 (63.3) | 500RB 4S4VLC | 063302      |
|                | 1/2" ODF               |                                     |            |            |                |            |            |                 |                 |             | 500RB 4T4VLC | 063308      |
|                | 5/8" ODF               |                                     |            |            |                |            |            |                 |                 |             | 500RB 4T5VLC | 063310      |
| 5/16           | 3/8" NPTF              |                                     |            |            |                |            |            |                 |                 |             | 500RB 5P3VLC | 063316      |
|                | 3/8" ODF               |                                     |            |            |                |            |            |                 |                 |             | 500RB 5T3VLC | 063322      |
|                | 1/2" SAE               |                                     |            |            |                |            |            |                 |                 |             | 500RB 5F4VLC | 063312      |
|                | 1/2" ODF X 5/8" ODM    | 8.2 (21.8)                          | 6.2 (21.8) | 8.6 (30.1) | 5.3 (18.6)     | 7.7 (27.2) | 7.7 (27.2) | 8.3 (29.0)      | 5.7 (19.9)      | 18.7 (65.5) | 500RB 5S4VLC | 063318      |
|                | 5/8" SAE               |                                     |            |            |                |            |            |                 |                 |             | 500RB 5F5VLC | 063314      |
|                | 5/8" ODF               |                                     |            |            |                |            |            |                 |                 |             | 500RB 5S5VLC | 063320      |

## 500RB SERIES REFRIGERANT SOLENOID VALVES (CONTINUED)

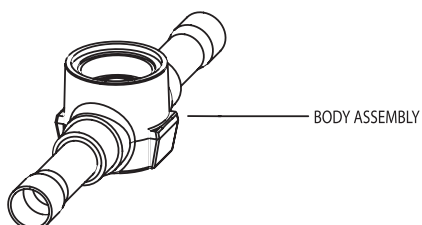
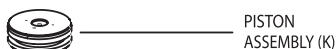
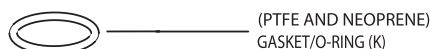
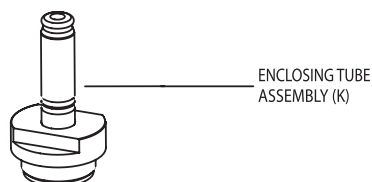
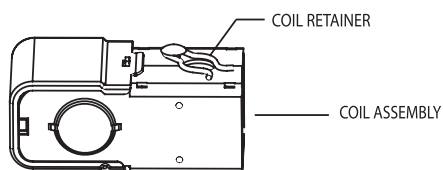
| PORT SIZE (IN) | CONNECTION SIZE & TYPE | NOMINAL LIQUID CAPACITY - TONS (kW) |             |            |                |             |             |                 |                 |              | MODEL NUMBER | ITEM NUMBER |
|----------------|------------------------|-------------------------------------|-------------|------------|----------------|-------------|-------------|-----------------|-----------------|--------------|--------------|-------------|
|                |                        | R-22                                | R-134a      | R-290      | R-404A / R-507 | R-407C      | R410A       | R-448A / R-449A | R-450A / R-513A | R-744        |              |             |
| 3/4            | 3/8" NPTF              | 9.5 (33.3)                          | 7.2 (25.2)  | 9.9 (34.7) | 6.1 (21.5)     | 8.9 (31.4)  | 8.9 (31.4)  | 9.5 (33.5)      | 6.5 (23.0)      | 21.5 (75.6)  | 500RB 6P3VLC | 063331      |
|                | 1/2" ODF X 5/8" ODM    |                                     |             |            |                |             |             |                 |                 |              | 500RB 6S4VLC | 063333      |
|                | 5/8" SAE               |                                     |             |            |                |             |             |                 |                 |              | 500RB 6F5VLC | 063329      |
|                | 5/8" ODF               |                                     |             |            |                |             |             |                 |                 |              | 500RB 6S5VLC | 063335      |
|                | 1/2" ODF               |                                     |             |            |                |             |             |                 |                 |              | 500RB 6T4VLC | 063339      |
| 7/16           | 1/2" ODF               | 17.0 (59.8)                         | 12.7 (44.6) | —          | 11.1 (39.0)    | 16.2 (57.0) | 15.7 (55.2) | 17.1 (60.0)     | 11.7 (41.2)     | 37.7 (132.3) | 500RB 7T4VLC | 064064      |
|                | 5/8" ODF X 7/8" ODM    |                                     |             |            |                |             |             |                 |                 |              | 500RB 7S5VLC | 064038      |

NOTE: Capacities based on 100°F liquid and 40°F saturated evaporator per ARI standard 760-87. All ratings are based on largest connection size.

## EXPLODED VIEW &amp; PARTS KIT DATA

## 500RB SERIES PART KITS

| DESCRIPTION                                                                                                                                                                                                                               | MODEL NUMBER  | ITEM NUMBER |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|
| 500RB 2 - 500RB 6 Solenoid Valve Repair Kit (K), Enclosing Tube Assembly and Gasket (PTFE and Neoprene) and Piston Assembly                                                                                                               | KS-30353      | 064268      |
| 500RB 7 Solenoid Valve Repair Kit (K), Enclosing Tube Assembly and Gasket (PTFE and Neoprene) and Piston Assembly                                                                                                                         | KS-30355      | 064264      |
| 200RB 2 - 200RB 6 and 500RB Solenoid Valve Gasket Kit, 12 PTFE and 12 Neoprene O-Rings                                                                                                                                                    | KG-10025      | 049190      |
| Magnetic Solenoid Tool closes a normally open solenoid valve in the de-energized state, incorporates a spanner wrench for easy disassembly of solenoid valve series 500RB, 540RA and provides an orifice to manually adjust opening stem. | SOLENOID TOOL | 066019      |



Detailed  
product  
drawings

Extended  
capacity  
tables





540RA 9T7TVLC

## 540RA SERIES REFRIGERANT SOLENOID VALVES

The 540RA is a 2-way, normally open diaphragm valve used for liquid, suction and hot gas service.

### FEATURES

- Single coil family fits all valve sizes
- Can be brazed into the line without disassembly
- PTFE diaphragm
- Extended ends for easy installation
- Low pressure differential required for full opening
- Field serviceable parts available

### SPECIFICATIONS

Maximum Fluid Temperature..... 250°F (121°C)  
 Maximum Working Pressure..... 500 psig (35 Bar)  
 Maximum Operating Pressure Differential ..... 250 psig (17 bar)  
 UL/CUL File Number ..... MP604

### MODEL NUMBER NOMENCLATURE - Example: 540RA 8T5VLC

| VALVE SERIES                             | DESIGN SERIES    | PORT SIZE | CONNECTION TYPE          | CONNECTION SIZE | VALVE CONFIGURATION                                                       | *COIL                                                                                        | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                                | PACK TYPE                                        |
|------------------------------------------|------------------|-----------|--------------------------|-----------------|---------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------|--------------------------------------------------|
| 540R                                     | A                | 8         | T                        | 5               |                                                                           | VLC                                                                                          |                       |                                                 |                                                  |
| Normally Open Refrigerant Solenoid Valve | Diaphragm Design | In 1/16"  | T = Copper Extended Ends | In 1/8"         | M = Manual Opening Stem<br>T = Mounting Stud<br><br>(Omit for Std. Valve) | VLC = Valve Less Coil<br><br>For Valves with Coil See Coil Nomenclature on Coil Catalog Page | Blank Thru -99        | G = Customer Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

\* Valves are shipped without the solenoid coils (VLC = Valve Less Coil). See coil assemblies for availability. Valves require a DM, MM or ASC2 type coil assembly.

### 540RA SERIES REFRIGERANT SOLENOID VALVES

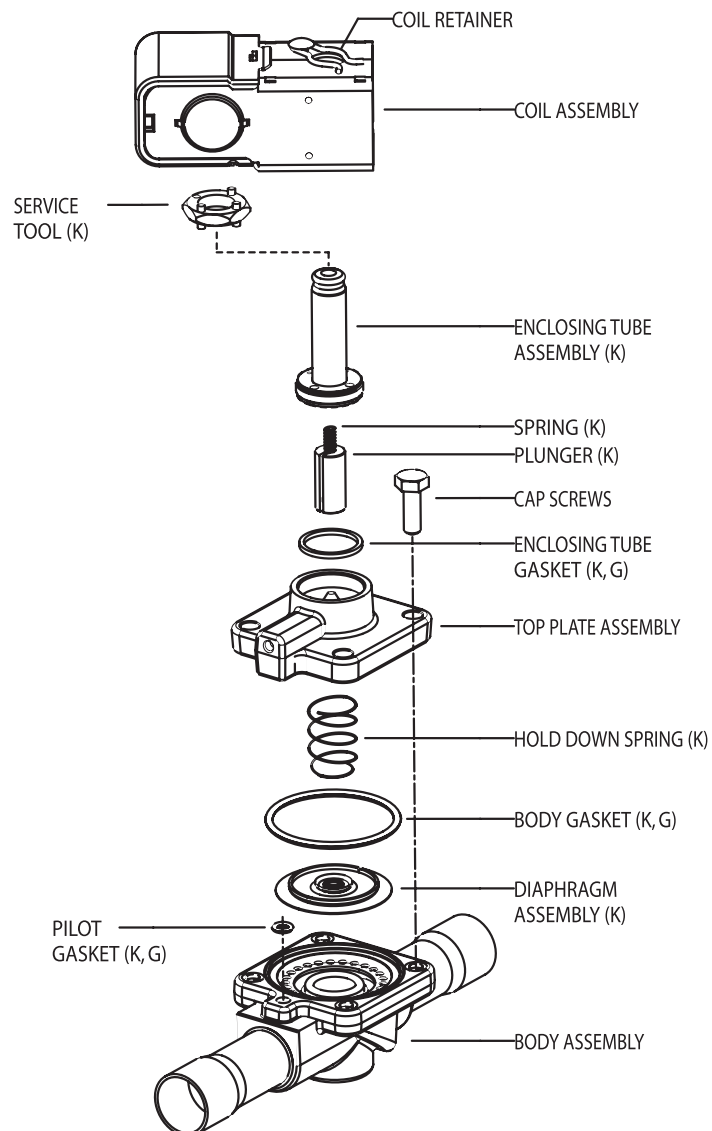
| VALVE CONFIG.  | PORT SIZE (IN) | CONNECTION SIZE & TYPE | NOMINAL LIQUID CAPACITY - TONS (kW) |              |                |              |                 |                 | MODEL NUMBER    | ITEM NUMBER |
|----------------|----------------|------------------------|-------------------------------------|--------------|----------------|--------------|-----------------|-----------------|-----------------|-------------|
|                |                |                        | R-22                                | R-134a       | R-404A / R-507 | R-407C       | R-448A / R-449A | R-450A / R-513A |                 |             |
| Standard Valve | 1/2            | 5/8" ODF               | 15.6 (54.9)                         | 12.1 (42.6)  | 10.3 (36.2)    | 14.8 (52.1)  | 15.7 (55.1)     | 10.8 (37.8)     | 540RA 8T5VLC    | 060392      |
| Standard Valve | 9/16           | 7/8" ODF               | 30.5 (107.3)                        | 21.0 (74.0)  | 20.1 (70.7)    | 29.0 (102.0) | 30.6 (107.7)    | 21.0 (74.0)     | 540RA 9T7VLC    | 060395      |
| Standard Valve | 3/4            | 7/8" ODF               | 34.9 (122.7)                        | 27.1 (95.3)  | 23.0 (80.9)    | 33.2 (116.8) | 35.0 (123.2)    | 24.1 (84.6)     | 540RA 12T7VLC   | 060397      |
| Standard Valve |                | 1-1/8" ODF             |                                     |              |                |              |                 |                 | 540RA 12T9VLC   | 060398      |
| Standard Valve | 1              | 1-1/8" ODF             | 58.0 (203.9)                        | 45.0 (158.3) | 38.3 (134.7)   | 55.2 (194.1) | 58.2 (204.8)    | 40.0 (140.6)    | 540RA 16T9VLC   | 060399      |
| Standard Valve | 1-1/4          | 1-5/8" ODF             | 95.4 (335.5)                        | 70.9 (249.4) | 65.7 (231.1)   | 90.8 (319.3) | 95.8 (336.8)    | 65.8 (231.3)    | 540RA 20T13VLC  | 060402      |
| Mounting Stud  | 1/2            | 1/2" ODF               | 15.6 (54.9)                         | 12.1 (42.6)  | 10.3 (36.2)    | 14.8 (52.1)  | 15.7 (55.1)     | 10.8 (37.8)     | 540RA 8T4TVLC   | 058573      |
| Mounting Stud  |                | 5/8" ODF               |                                     |              |                |              |                 |                 | 540RA 8T5TVLC   | 046265      |
| Mounting Stud  | 9/16           | 5/8" ODF               | 23.3 (81.9)                         | 18.0 (63.3)  | 15.3 (53.8)    | 22.1 (77.2)  | 23.4 (82.3)     | 16.1 (56.5)     | 540RA 9T5TVLC   | 046266      |
| Mounting Stud  |                | 7/8" ODF               | 30.5 (107.3)                        | 21.0 (74.0)  | 20.1 (70.7)    | 29.0 (102.0) | 30.6 (107.7)    | 21.0 (74.0)     | 540RA 9T7TVLC   | 046268      |
| Mounting Stud  | 3/4            | 7/8" ODF               | 34.9 (122.7)                        | 27.1 (95.3)  | 23.0 (80.9)    | 33.2 (116.8) | 35.0 (123.2)    | 24.1 (84.6)     | 540RA 12T7TVLC  | 046269      |
| Mounting Stud  | 1              | 1-1/8" ODF             | 58.0 (203.9)                        | 45.0 (158.3) | 38.3 (134.7)   | 55.2 (194.1) | 58.2 (204.8)    | 40.0 (140.6)    | 540RA 16T9TVLC  | 046270      |
| Mounting Stud  | 1-1/4          | 1-3/8" ODF             | 95.4 (335.5)                        | 70.9 (249.4) | 65.7 (231.1)   | 90.8 (319.3) | 95.8 (336.8)    | 65.8 (231.3)    | 540RA 20T11TVLC | 047953      |

NOTE: Capacities based on 100°F liquid and 40°F saturated evaporator per ARI standard 760-87. All ratings are based on largest connection size.

## 540RA SERIES PARTS LIST

| DESCRIPTION                                                                                                                                                                                                                               | MODEL NUMBER  | ITEM NUMBER |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------|
| <b>Complete Kits</b>                                                                                                                                                                                                                      |               |             |
| 540RA 8 Solenoid Valve Repair Kit (K), Enclosing Tube Assembly and Gasket, Plunger and Spring, Hold Down Spring, Body Gasket and Diaphragm Assembly                                                                                       | KS-30328      | 060633      |
| 540RA 9 Solenoid Valve Repair Kit (K), Enclosing Tube Assembly and Gasket, Plunger and Spring, Hold Down Spring, Body Gasket and Diaphragm Assembly                                                                                       | KS-30329      | 060634      |
| 540RA 12 Solenoid Valve Repair Kit (K), Enclosing Tube Assembly and Gasket, Plunger and Spring, Hold Down Spring, Body Gasket and Diaphragm Assembly                                                                                      | KS-30330      | 060635      |
| 540RA 16 Solenoid Valve Repair Kit (K), Enclosing Tube and Gasket, Plunger and Spring, Hold Down Spring, Body Gasket and Diaphragm Assembly                                                                                               | KS-30331      | 060636      |
| 540RA 20 Solenoid Valve Repair Kit (K), Enclosing Tube and Gasket, Plunger and Spring, Hold Down Spring, Body Gasket and Diaphragm Assembly                                                                                               | KS-30332      | 060637      |
| <b>Gasket Kit</b>                                                                                                                                                                                                                         |               |             |
| 240RA and 540RA Gasket Kit (G)                                                                                                                                                                                                            | KG-10028      | 054356      |
| <b>Tool Kits</b>                                                                                                                                                                                                                          |               |             |
| 100RB, 240RA and 540RA Solenoid Valve Universal (2/3 hole) Spanner Wrench (Included in complete valve kit)                                                                                                                                | X-11981-1     | 027451      |
| Magnetic Solenoid Tool closes a normally open solenoid valve in the de-energized state, incorporates a spanner wrench for easy disassembly of solenoid valve series 500RB, 540RA and provides an orifice to manually adjust opening stem. | SOLENOID TOOL | 066019      |

## EXPLODED VIEW &amp; PARTS KIT DATA

**VALVE REPAIR KIT**

(K) indicates part is supplied in valve repair kit.

**GASKET KIT**

(G) indicates gasket is supplied in gasket kit.





066019

SOLENOID MULTI-PURPOSE TOOL

The Solenoid Multi-Purpose Tool is a magnetic tool that holds key components together as the valve is disassembled. The manual stem adjustment makes it easy to open valves. This tool provides longer life utilizing its spanner wrench which not only makes it easier to service valves, but also protects the enclosing tube from damage.

FEATURES

- Magnet opens a normally closed Copeland solenoid valve that is in the de-energized state
- Incorporates a spanner wrench and drive socket which enables easy disassembly of Copeland solenoid valves 100RB & 240RA/540RA by using a 3/8" socket wrench
- Tool has a manual stem orifice used to manually adjust opening stem
- May reassemble valve with proper torque specifications on collar

SPECIFICATIONS

Drive Socket Size ..... 3/8"

TORQUE SPECIFICATIONS

|              |                          |
|--------------|--------------------------|
| 100RB Series | 225 in. lbs. (102.06 kg) |
| 240RA Series | 150 in. lbs. (68.04 kg)  |
| 540RA Series | 150 in. lbs. (68.04 kg)  |

SOLENOID MULTI-PURPOSE TOOL

|               |             |
|---------------|-------------|
| MODEL NUMBER  | ITEM NUMBER |
| SOLENOID TOOL | 066019      |



AMS - OPEN FRAME

## COILS FOR SOLENOID VALVES

A wide range of coils for Refrigerant and Industrial Solenoid Valves in various voltages and configurations.

### FEATURES

- Compact designs
- Coil windings are insulated to provide shock and vibration protection
- ASC2 is designed to provide weather protection
- Interchangeable housings
- Snap-on coil design provides easy installation for A, D and M series coils



ASC2 - DIN

Requires ASC2 female connector  
(Item Number 059261). For UL50 Type 4 Enclosure.



MMG - SPECIAL DC



AMC - 1/2" CONDUIT



AMG - JUNCTION BOX

### MODEL NUMBER NOMENCLATURE - Example: AMG 5-01

| SERIES                                                               | INSULATION                                     | ENCLOSURE**                                                                                                                                                                                                            | COIL CODE                                                                                                                                                                                        |                                                                                                                                                                                    | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                                | PACK TYPE                                        |
|----------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------|--------------------------------------------------|
| A                                                                    | M                                              | G                                                                                                                                                                                                                      | 5                                                                                                                                                                                                |                                                                                                                                                                                    | -1                    |                                                 |                                                  |
| A = 12 Watt<br>B = 15 Watt<br>D = 7 Watt<br>M = 4 Watt<br>R = 7 Watt | B or G = Class B<br>M = Class F<br>H = Class H | C = Conduit<br>F = Open Frame with Leads<br>G = Junction Box<br>L = Grommet 18" Leads<br>S = Open Frame with Spade Connection<br><br>** C and G are UL / Canadian Listed<br>** F, L and S are UL / Canadian Recognized | 1 = 24 50/60<br>2 = 120 50/60<br>3 = 208-220 50, 208-240 60<br>4 = 120-240 50/60<br>5 = 12dc<br>6 = 24dc<br>7 = 100 50/60<br>8 = 120 60<br>9 = 200 50/60<br>10 = 208-240 50/60<br>11 = 220 50/60 | 12 = 200-240 50/60<br>13 = 220/240, 50/60<br>14 = 230 50/60<br>15 = 240 50/60<br>16 = 255 50<br>17 = 36dc<br>18 = 600 60<br>20 = 480 50/60<br>21 = 6dc<br>22 = 32dc<br>24 = 277 60 | -01 Thru -99          | G = Customer Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

### SOLENOID COIL VALVE SERIES SELECTION TABLE

| VALVE SERIES          | JUNCTION BOX     | CONDUIT        | LEADS       | SPADES | MOLDED-DIN WITH CONNECTOR |
|-----------------------|------------------|----------------|-------------|--------|---------------------------|
| 50RB                  | —                | —              | SML / RMF** | RMS    | —                         |
| 100RB / 200RB / 240RA | AMG / MMG*       | AMC / MMC*     | AMF         | AMS    | ASC2 / ASC2L              |
| 500RB                 | DMG              | —              | DMF         | DMS    | —                         |
| 540RA                 | —                | —              | —           | DMS    | ASC2                      |
| 202CB                 | AMG / AHG / MMG* | AMC / AHC MMC* | AMF / MMF*  | AMS    | ASC2 / ASC2L              |
| 203CA                 | AMG / AHG / MMG* | AMC / AHC MMC* | AMF / MMF*  | AMS    | ASC2 / ASC2L              |
| 204CD                 | AMG / AHG / MMG* | AMC / AHC MMC* | AMF / MMF*  | AMS    | ASC2 / ASC2L              |
| 210CA                 | AMG / MMG*       | AMC / MMC*     | AMF / MMF*  | AMS    | ASC2 / ASC2L              |
| 211CA                 | AMG / MMG*       | AMC / MMC*     | AMF / MMF*  | AMS    | ASC2 / ASC2L              |
| 222CB                 | AMG / AHG / MMG* | AMC / AHC MMC* | AMF / MMF*  | AMS    | ASC2 / ASC2L              |
| 214CB                 | AMG / AHG / MMG* | AMC / AHC MMC* | AMF / MMF*  | AMS    | ASC2 / ASC2L              |
| 314UB                 | AMG / MMG*       | AMC / MMC*     | AMF / MMF*  | AMS    | ASC2 / ASC2L              |

\* Special DC Application

\*\* SML if for OEM, RMF is for wholesale replacement.

Detailed  
product  
drawings



## COILS FOR SOLENOID VALVES

| COIL SERIES | VOLTAGE                | WATTS 50/60 HZ | ENCLOSURE TYPE  | LEADS | MODEL NUMBER | ITEM NUMBER |
|-------------|------------------------|----------------|-----------------|-------|--------------|-------------|
| AHC         | 120 50/60              | 17/12          | Conduit         | 18"   | AHC 2-01     | 057743      |
| AHG         | 24 50/60               | 17/12          | Junction Box    | 6"    | AHG 1-01     | 057669      |
|             | 120 50/60              | 17/12          | Junction Box    | 6"    | AHG 2-01     | 057673      |
|             | 208-220 50, 208-240 60 | 17/12          | Junction Box    | 6"    | AHG 3-01     | 057671      |
|             |                        |                |                 |       |              |             |
| AMC         | 12dc                   | 15             | Conduit         | 18"   | AMC 5-01     | 057596      |
|             | 24dc                   | 15             | Conduit         | 18"   | AMC 6-01     | 057633      |
|             | 24 50/60               | 17/12          | Conduit         | 18"   | AMC 1-01     | 057631      |
|             | 120 50/60              | 17/12          | Conduit         | 18"   | AMC 2-01     | 057598      |
|             | 120-240 50/60          | 17/12          | Conduit         | 18"   | AMC 4-01     | 057730      |
|             | 208-220/50, 208-240/60 | 17/12          | Conduit         | 18"   | AMC 3-01     | 057594      |
| AMF         | 12dc                   | 15             | Open Frame      | 18"   | AMF 5-01     | 057543      |
|             | 24dc                   | 15             | Open Frame      | 18"   | AMF 6-01     | 057545      |
|             | 24 50/60               | 17/12          | Open Frame      | 18"   | AMF 1-01     | 057539      |
|             | 24 50/60               | 17/12          | Open Frame      | 36"   | AMF 1-02     | 057538      |
|             | 120 50/60              | 17/12          | Open Frame      | 18"   | AMF 2-01     | 057546      |
|             | 208-220 50, 208-240 60 | 17/12          | Open Frame      | 18"   | AMF 3-01     | 057540      |
|             | 277 60                 | 17/12          | Open Frame      | 18"   | AMF 24-01    | 057533      |
|             | 480 50/60              | 17/12          | Open Frame      | 18"   | AMF 20-01    | 057534      |
| AMG         | 12dc                   | 15             | Junction Box    | 6"    | AMG 5-01     | 057521      |
|             | 24dc                   | 15             | Junction Box    | 6"    | AMG 6-01     | 057523      |
|             | 24 50/60               | 17/12          | Junction Box    | 6"    | AMG 1-01     | 057341      |
|             | 120 50/60              | 17/12          | Junction Box    | 6"    | AMG 2-01     | 057331      |
|             | 120-240 50/60          | 17/12          | Junction Box    | 6"    | AMG 4-01     | 057343      |
|             | 208-220 50, 208-240 60 | 17/12          | Junction Box    | 6"    | AMG 3-01     | 057342      |
|             | 277 60                 | 17/12          | Junction Box    | 6"    | AMG 24-01    | 057528      |
|             | 480 50/60              | 17/12          | Junction Box    | 6"    | AMG 20-01    | 057527      |
| AMS         | 24 50/60               | 17/12          | Spade           | —     | AMS 1-01     | 057603      |
|             | 120 50/60              | 17/12          | Spade           | —     | AMS 2-01     | 057349      |
|             | 208-220 50, 208-240 60 | 17/12          | Spade           | —     | AMS 3-01     | 057531      |
| ASC2        | 24dc                   | 15             | Din             | —     | ASC2 6-01    | 064375      |
|             | 24 50/60               | 17/12          | Din             | —     | ASC2 1-01    | 062792      |
|             | 120 50/60              | 17/12          | Din             | —     | ASC2 2-01    | 062462      |
|             | 208-220 50, 208-240 60 | 17/12          | Din             | —     | ASC2 3-01    | 062463      |
|             | 24 50/60               | 17/12          | Lead Connection | —     | ASC2L 1-01   | 063542      |
| DMG         | 24 50/60               | 10/10          | Junction Box    | 6"    | DMG 1-01     | 055129      |
|             | 120 50/60              | 10/10          | Junction Box    | 6"    | DMG 2-01     | 054762      |
|             | 208-220 50, 208-240 60 | 10/10          | Junction Box    | 6"    | DMG 3-01     | 054764      |
| DMS         | 24 50/60               | 10/10          | Spade           | —     | DMS 1-01     | 062013      |
| MMF         | 12dc                   | 4              | Open Frame      | 18"   | MMF 5-01     | 062972      |
| MMG         | 12dc                   | 4              | Junction Box    | 18"   | MMG 5-01     | 063524      |
|             | 24dc                   | 4              | Junction Box    | 18"   | MMG 6-01     | 063526      |
| RMF         | 24 50/60               | 7              | Open Frame Lead | 18"   | RMF 1-01     | 065677      |
|             | 120 50/60              | 7              | Open Frame Lead | —     | RMF 2-01     | 065678      |
|             | 208-220 50, 208-240 60 | 7              | Open Frame Lead | 18"   | RMF 3-01     | 065679      |
| RMS         | 24 50/60               | 7              | Spade           | —     | RMS 1-01     | 065680      |
|             | 120 50/60              | 7              | Spade           | —     | RMS 2-01     | 065204      |
|             | 208-220 50, 208-240 60 | 7              | Spade           | —     | RMS 3-01     | 065681      |

## REFRIGERANT SOLENOID CAPACITY TABLES

## LIQUID CAPACITIES - TONS

| PRESSURE DROP ACROSS VALVE - PSI |       |       |        |        |
|----------------------------------|-------|-------|--------|--------|
| VALVE SERIES                     | 2     | 3     | 4      | 5      |
| <b>R-12</b>                      |       |       |        |        |
| 50RB                             | 0.34  | 0.42  | 0.48   | 0.54   |
| 100RB                            | 0.80  | 1.00  | 1.16   | 1.20   |
| 150RB 1                          | 0.80  | 1.00  | 1.16   | 1.20   |
| 150RB 3                          | 2.28  | 2.80  | 3.23   | 3.61   |
| 150RB 7                          | 3.04  | 3.72  | 4.30   | 4.80   |
| 150RB 9                          | 4.95  | 6.17  | 7.12   | 7.97   |
| 200RB/500RB 2                    | 2.28  | 2.80  | 3.23   | 3.61   |
| 200RB/500RB 3                    | 3.04  | 3.72  | 4.30   | 4.80   |
| 200RB/500RB 4                    | 4.95  | 6.17  | 7.12   | 7.97   |
| 200RB/500RB 5                    | 5.20  | 6.38  | 7.37   | 8.24   |
| 200RB/500RB 6                    | 6.01  | 7.36  | 8.50   | 9.50   |
| 200RB/500RB 7                    | 10.75 | 13.05 | 15.10  | 17.05  |
| 240RA/250RA/540RA 8              | 10.00 | 12.20 | 14.10  | 15.80  |
| 240RA/250RA/540RA 9T (5/8)       | 14.90 | 18.20 | 21.10  | 23.60  |
| 240RA/250RA/540RA 9T (7/8 & Up)  | 19.60 | 24.00 | 27.70  | 31.00  |
| 240RA/250RA/540RA 12             | 22.50 | 27.60 | 31.80  | 35.60  |
| 240RA/250RA/540RA 16             | 10.00 | 12.20 | 14.10  | 15.80  |
| 240RA/250RA/540RA 20             | 14.90 | 18.20 | 21.10  | 23.60  |
| <b>R-1234yf</b>                  |       |       |        |        |
| 100RB                            | 0.72  | 0.88  | 1.01   | 1.13   |
| 150RB 1                          | 0.72  | 0.88  | 1.01   | 1.13   |
| 150RB 3                          | 2.03  | 2.49  | 2.88   | 3.22   |
| 150RB 7                          | 2.71  | 3.32  | 3.84   | 4.29   |
| 150RB 9                          | 4.49  | 5.50  | 6.35   | 7.10   |
| 200RB/500RB 2                    | 2.03  | 2.49  | 2.88   | 3.22   |
| 200RB/500RB 3                    | 2.71  | 3.32  | 3.84   | 4.29   |
| 200RB/500RB 4                    | 4.49  | 5.50  | 6.35   | 7.10   |
| 200RB/500RB 5                    | 4.64  | 5.69  | 6.57   | 7.34   |
| 200RB/500RB 6                    | 5.36  | 6.56  | 7.58   | 8.47   |
| <b>R-134a</b>                    |       |       |        |        |
| 50RB                             | 0.41  | 0.50  | 0.60   | 0.60   |
| 100RB                            | 0.96  | 1.20  | 1.40   | 1.50   |
| 150RB 1                          | 0.96  | 1.20  | 1.40   | 1.50   |
| 150RB 3                          | 2.72  | 3.33  | 3.85   | 4.30   |
| 150RB 7                          | 3.62  | 4.44  | 5.12   | 5.73   |
| 150RB 9                          | 6.00  | 7.35  | 8.49   | 9.49   |
| 200RB/500RB 2                    | 2.72  | 3.33  | 3.85   | 4.30   |
| 200RB/500RB 3                    | 3.62  | 4.44  | 5.12   | 5.73   |
| 200RB/500RB 4                    | 6.00  | 7.35  | 8.49   | 9.49   |
| 200RB/500RB 5                    | 6.21  | 7.60  | 8.78   | 9.82   |
| 200RB/500RB 6                    | 7.16  | 8.77  | 10.13  | 11.32  |
| 200RB/500RB 7                    | 12.68 | 15.93 | 18.39  | 20.56  |
| 240RA/250RA/540RA 8              | 12.10 | 14.80 | 17.10  | 19.10  |
| 240RA/250RA/540RA 9T (5/8)       | 18.00 | 22.00 | 25.50  | 28.50  |
| 240RA/250RA/540RA 9T (7/8 & Up)  | 23.60 | 28.90 | 33.40  | 37.30  |
| 240RA/250RA/540RA 12             | 27.10 | 33.20 | 38.30  | 42.80  |
| 240RA/250RA/540RA 16             | 45.00 | 55.10 | 63.60  | 71.20  |
| 240RA/250RA/540RA 20             | 70.90 | 86.80 | 100.30 | 112.10 |

## LIQUID CAPACITIES - kW

| PRESSURE DROP ACROSS VALVE - kPa |        |        |        |        |
|----------------------------------|--------|--------|--------|--------|
| VALVE SERIES                     | 13.8   | 20.7   | 27.6   | 34.5   |
| <b>R-12</b>                      |        |        |        |        |
| 50RB                             | 1.20   | 1.48   | 1.69   | 1.90   |
| 100RB                            | 2.81   | 3.52   | 4.08   | 4.22   |
| 150RB 1                          | 2.81   | 3.52   | 4.08   | 4.22   |
| 150RB 3                          | 8.02   | 9.85   | 11.36  | 12.70  |
| 150RB 7                          | 10.69  | 13.08  | 15.12  | 16.88  |
| 150RB 9                          | 17.41  | 21.70  | 25.04  | 28.03  |
| 200RB/500RB 2                    | 8.02   | 9.85   | 11.36  | 12.70  |
| 200RB/500RB 3                    | 10.69  | 13.08  | 15.12  | 16.88  |
| 200RB/500RB 4                    | 17.41  | 21.70  | 25.04  | 28.03  |
| 200RB/500RB 5                    | 18.29  | 22.44  | 25.92  | 28.98  |
| 200RB/500RB 6                    | 21.14  | 25.88  | 29.89  | 33.41  |
| 200RB/500RB 7                    | 37.81  | 45.90  | 53.11  | 59.96  |
| 240RA/250RA/540RA 8              | 35.17  | 42.91  | 49.59  | 55.57  |
| 240RA/250RA/540RA 9T (5/8)       | 52.40  | 64.01  | 74.21  | 83.00  |
| 240RA/250RA/540RA 9T (7/8 & Up)  | 68.93  | 84.41  | 97.42  | 109.02 |
| 240RA/250RA/540RA 12             | 79.13  | 97.07  | 111.84 | 125.20 |
| 240RA/250RA/540RA 16             | 35.17  | 42.91  | 49.59  | 55.57  |
| 240RA/250RA/540RA 20             | 52.40  | 64.01  | 74.21  | 83.00  |
| <b>R-1234yf</b>                  |        |        |        |        |
| 100RB                            | 2.52   | 3.09   | 3.57   | 3.99   |
| 150RB 1                          | 2.52   | 3.09   | 3.57   | 3.99   |
| 150RB 3                          | 7.15   | 8.76   | 10.12  | 11.31  |
| 150RB 7                          | 9.54   | 11.68  | 13.49  | 15.08  |
| 150RB 9                          | 15.80  | 19.35  | 22.34  | 24.98  |
| 200RB/500RB 2                    | 7.15   | 8.76   | 10.12  | 11.31  |
| 200RB/500RB 3                    | 9.54   | 11.68  | 13.49  | 15.08  |
| 200RB/500RB 4                    | 15.80  | 19.35  | 22.34  | 24.98  |
| 200RB/500RB 5                    | 16.34  | 20.01  | 23.10  | 25.83  |
| 200RB/500RB 6                    | 18.84  | 23.07  | 26.64  | 29.79  |
| <b>R-134a</b>                    |        |        |        |        |
| 50RB                             | 1.44   | 1.76   | 2.11   | 2.11   |
| 100RB                            | 3.38   | 4.22   | 4.92   | 5.28   |
| 150RB 1                          | 3.38   | 4.22   | 4.92   | 5.28   |
| 150RB 3                          | 9.57   | 11.71  | 13.54  | 15.12  |
| 150RB 7                          | 12.73  | 15.62  | 18.01  | 20.15  |
| 150RB 9                          | 21.10  | 25.85  | 29.86  | 33.38  |
| 200RB/500RB 2                    | 9.57   | 11.71  | 13.54  | 15.12  |
| 200RB/500RB 3                    | 12.73  | 15.62  | 18.01  | 20.15  |
| 200RB/500RB 4                    | 21.10  | 25.85  | 29.86  | 33.38  |
| 200RB/500RB 5                    | 21.84  | 26.73  | 30.88  | 34.54  |
| 200RB/500RB 6                    | 25.18  | 30.84  | 35.63  | 39.81  |
| 200RB/500RB 7                    | 44.59  | 56.02  | 64.68  | 72.31  |
| 240RA/250RA/540RA 8              | 42.55  | 52.05  | 60.14  | 67.17  |
| 240RA/250RA/540RA 9T (5/8)       | 63.30  | 77.37  | 89.68  | 100.23 |
| 240RA/250RA/540RA 9T (7/8 & Up)  | 83.00  | 101.64 | 117.46 | 131.18 |
| 240RA/250RA/540RA 12             | 95.31  | 116.76 | 134.70 | 150.52 |
| 240RA/250RA/540RA 16             | 158.26 | 193.78 | 223.67 | 250.40 |
| 240RA/250RA/540RA 20             | 249.35 | 305.27 | 352.75 | 394.24 |

NOTE: Shading indicates AHRI standard ratings  
 All liquid capacities are based on 40°F Evaporator Temperature and 100°F Liquid Temperature.  
 NOTE: Capacity is based on largest connection size.

LIQUID CAPACITIES - TONS

| PRESSURE DROP ACROSS VALVE - PSI |        |        |        |        |
|----------------------------------|--------|--------|--------|--------|
| VALVE SERIES                     | 2      | 3      | 4      | 5      |
| R-22                             |        |        |        |        |
| 50RB                             | 0.44   | 0.54   | 0.62   | 0.69   |
| 100RB                            | 1.04   | 1.27   | 1.47   | 1.64   |
| 150RB 1                          | 1.04   | 1.27   | 1.47   | 1.64   |
| 150RB 3                          | 2.94   | 3.60   | 4.16   | 4.65   |
| 150RB 7                          | 3.92   | 4.80   | 5.54   | 6.19   |
| 150RB 9                          | 6.49   | 7.95   | 9.18   | 10.26  |
| 200RB/500RB 2                    | 2.94   | 3.60   | 4.16   | 4.65   |
| 200RB/500RB 3                    | 3.92   | 4.80   | 5.54   | 6.19   |
| 200RB/500RB 4                    | 6.49   | 7.95   | 9.18   | 10.26  |
| 200RB/500RB 5                    | 6.71   | 8.22   | 9.49   | 10.61  |
| 200RB/500RB 6                    | 7.74   | 9.48   | 10.95  | 12.24  |
| 200RB/500RB 7                    | 13.50  | 17.00  | 18.75  | 27.85  |
| 240RA/250RA/540RA 8              | 12.70  | 15.60  | 18.00  | 20.10  |
| 240RA/250RA/540RA 9T (5/8)       | 19.00  | 23.30  | 26.90  | 30.10  |
| 240RA/250RA/540RA 9T (7/8 & Up)  | 24.90  | 30.50  | 35.20  | 39.40  |
| 240RA/250RA/540RA 12             | 28.50  | 34.90  | 40.30  | 45.10  |
| 240RA/250RA/540RA 16             | 47.40  | 58.00  | 67.00  | 74.90  |
| 240RA/250RA/540RA 20             | 77.90  | 95.40  | 110.20 | 123.20 |
| R-290                            |        |        |        |        |
| 50RB                             | 0.46   | 0.56   | 0.65   | 0.73   |
| 100RB                            | 1.08   | 1.32   | 1.53   | 1.71   |
| 150RB 1                          | 1.08   | 1.32   | 1.53   | 1.71   |
| 150RB 3                          | 3.06   | 3.75   | 4.33   | 4.84   |
| 150RB 7                          | 4.08   | 5.00   | 5.78   | 6.46   |
| 150RB 9                          | 6.76   | 8.25   | 9.57   | 10.69  |
| 200RB/500RB 2                    | 3.06   | 3.75   | 4.33   | 4.84   |
| 200RB/500RB 3                    | 4.08   | 5.00   | 5.78   | 6.46   |
| 200RB/500RB 4                    | 6.76   | 8.25   | 9.57   | 10.69  |
| 200RB/500RB 5                    | 6.99   | 8.57   | 9.89   | 11.06  |
| 200RB/500RB 6                    | 8.07   | 9.88   | 11.41  | 12.75  |
| R-32                             |        |        |        |        |
| 100RB                            | 1.41   | 1.73   | 2.00   | 2.23   |
| 150RB 1                          | 1.41   | 1.73   | 2.00   | 2.23   |
| 150RB 3                          | 4.00   | 4.90   | 5.66   | 6.32   |
| 150RB 7                          | 5.33   | 6.53   | 7.53   | 8.42   |
| 150RB 9                          | 8.83   | 10.81  | 12.48  | 13.95  |
| 200RB/500RB 2                    | 4.00   | 4.90   | 5.66   | 6.32   |
| 200RB/500RB 3                    | 5.33   | 6.53   | 7.53   | 8.42   |
| 200RB/500RB 4                    | 8.83   | 10.81  | 12.48  | 13.95  |
| 200RB/500RB 5                    | 9.13   | 11.18  | 12.91  | 14.43  |
| 200RB/500RB 6                    | 10.53  | 12.89  | 14.89  | 16.65  |
| 250RA 8                          | 17.27  | 21.22  | 24.48  | 27.34  |
| 250RA 9T (5/8)                   | 25.84  | 31.69  | 36.58  | 40.94  |
| 250RA 9T (7/8 & Up)              | 33.86  | 41.48  | 47.87  | 53.58  |
| 250RA 12                         | 38.76  | 47.46  | 54.81  | 61.34  |
| 250RA 16                         | 64.46  | 78.88  | 91.12  | 101.86 |
| 250RA 20                         | 105.94 | 129.74 | 149.87 | 167.55 |

NOTE: Shading indicates AHRI standard ratings  
All liquid capacities are based on 40°F Evaporator Temperature and 100°F Liquid Temperature.  
NOTE: Capacity is based on largest connection size.

LIQUID CAPACITIES - kW

| PRESSURE DROP ACROSS VALVE - kPa |        |        |        |        |
|----------------------------------|--------|--------|--------|--------|
| VALVE SERIES                     | 13.8   | 20.7   | 27.6   | 34.5   |
| R-22                             |        |        |        |        |
| 50RB                             | 1.55   | 1.90   | 2.18   | 2.43   |
| 100RB                            | 3.66   | 4.47   | 5.17   | 5.77   |
| 150RB 1                          | 3.66   | 4.47   | 5.17   | 5.77   |
| 150RB 3                          | 10.34  | 12.66  | 14.63  | 16.35  |
| 150RB 7                          | 13.79  | 16.88  | 19.48  | 21.77  |
| 150RB 9                          | 22.82  | 27.96  | 32.29  | 36.08  |
| 200RB/500RB 2                    | 10.34  | 12.66  | 14.63  | 16.35  |
| 200RB/500RB 3                    | 13.79  | 16.88  | 19.48  | 21.77  |
| 200RB/500RB 4                    | 22.82  | 27.96  | 32.29  | 36.08  |
| 200RB/500RB 5                    | 23.60  | 28.91  | 33.38  | 37.31  |
| 200RB/500RB 6                    | 27.22  | 33.34  | 38.51  | 43.05  |
| 200RB/500RB 7                    | 47.48  | 59.79  | 65.94  | 97.95  |
| 240RA/250RA/540RA 8              | 44.66  | 54.86  | 63.30  | 70.69  |
| 240RA/250RA/540RA 9T (5/8)       | 66.82  | 81.94  | 94.60  | 105.86 |
| 240RA/250RA/540RA 9T (7/8 & Up)  | 87.57  | 107.27 | 123.79 | 138.57 |
| 240RA/250RA/540RA 12             | 100.23 | 122.74 | 141.73 | 158.61 |
| 240RA/250RA/540RA 16             | 166.70 | 203.98 | 235.63 | 263.42 |
| 240RA/250RA/540RA 20             | 273.97 | 335.51 | 387.56 | 433.28 |
| R-290                            |        |        |        |        |
| 50RB                             | 1.62   | 1.97   | 2.29   | 2.57   |
| 100RB                            | 3.80   | 4.64   | 5.38   | 6.01   |
| 150RB 1                          | 3.80   | 4.64   | 5.38   | 6.01   |
| 150RB 3                          | 10.76  | 13.19  | 15.23  | 17.02  |
| 150RB 7                          | 14.35  | 17.58  | 20.33  | 22.72  |
| 150RB 9                          | 23.77  | 29.12  | 33.66  | 37.60  |
| 200RB/500RB 2                    | 10.76  | 13.19  | 15.23  | 17.02  |
| 200RB/500RB 3                    | 14.35  | 17.58  | 20.33  | 22.72  |
| 200RB/500RB 4                    | 23.77  | 29.12  | 33.66  | 37.60  |
| 200RB/500RB 5                    | 24.58  | 30.14  | 34.78  | 38.90  |
| 200RB/500RB 6                    | 28.38  | 34.75  | 40.13  | 44.84  |
| R-32                             |        |        |        |        |
| 100RB                            | 4.97   | 6.07   | 7.03   | 7.84   |
| 150RB 1                          | 4.97   | 6.07   | 7.03   | 7.84   |
| 150RB 3                          | 14.06  | 17.22  | 19.90  | 22.24  |
| 150RB 7                          | 18.75  | 22.96  | 26.50  | 29.61  |
| 150RB 9                          | 31.04  | 38.02  | 43.91  | 49.07  |
| 200RB/500RB 2                    | 14.06  | 17.22  | 19.90  | 22.24  |
| 200RB/500RB 3                    | 18.75  | 22.96  | 26.50  | 29.61  |
| 200RB/500RB 4                    | 31.04  | 38.02  | 43.91  | 49.07  |
| 200RB/500RB 5                    | 32.09  | 39.32  | 45.39  | 50.75  |
| 200RB/500RB 6                    | 37.02  | 45.34  | 52.37  | 58.54  |
| 250RA 8                          | 60.74  | 74.61  | 86.09  | 96.14  |
| 250RA 9T (5/8)                   | 90.88  | 111.44 | 128.66 | 143.97 |
| 250RA 9T (7/8 & Up)              | 119.09 | 145.88 | 168.36 | 188.45 |
| 250RA 12                         | 136.31 | 166.92 | 192.75 | 215.71 |
| 250RA 16                         | 226.71 | 277.41 | 320.46 | 358.24 |
| 250RA 20                         | 372.59 | 456.29 | 527.08 | 589.26 |

## LIQUID CAPACITIES - TONS

| PRESSURE DROP ACROSS VALVE - PSI |       |       |        |        |
|----------------------------------|-------|-------|--------|--------|
| VALVE SERIES                     | 2     | 3     | 4      | 5      |
| <b>R-404A/R-507</b>              |       |       |        |        |
| 50RB                             | 0.30  | 0.34  | 0.40   | 0.40   |
| 100RB                            | 0.70  | 0.85  | 1.00   | 1.10   |
| 150RB 1                          | 0.70  | 0.85  | 1.00   | 1.10   |
| 150RB 3                          | 1.90  | 2.32  | 2.68   | 3.00   |
| 150RB 7                          | 2.52  | 3.09  | 3.57   | 4.00   |
| 150RB 9                          | 4.18  | 5.12  | 5.92   | 6.61   |
| 200RB/500RB 2                    | 1.90  | 2.32  | 2.68   | 3.00   |
| 200RB/500RB 3                    | 2.52  | 3.09  | 3.57   | 4.00   |
| 200RB/500RB 4                    | 4.18  | 5.12  | 5.92   | 6.61   |
| 200RB/500RB 5                    | 4.33  | 5.30  | 6.12   | 6.84   |
| 200RB/500RB 6                    | 4.99  | 6.11  | 7.06   | 7.89   |
| 200RB/500RB 7                    | 9.06  | 11.10 | 12.81  | 14.33  |
| 240RA/250RA/540RA 8              | 8.40  | 10.30 | 11.90  | 13.30  |
| 240RA/250RA/540RA 9T (5/8)       | 12.50 | 15.30 | 17.70  | 19.80  |
| 240RA/250RA/540RA 9T (7/8 & Up)  | 16.40 | 20.10 | 23.20  | 25.90  |
| 240RA/250RA/540RA 12             | 18.80 | 23.00 | 26.60  | 29.70  |
| 240RA/250RA/540RA 16             | 31.30 | 38.30 | 44.20  | 49.40  |
| 240RA/250RA/540RA 20             | 53.60 | 65.70 | 75.90  | 84.80  |
| <b>R-407C</b>                    |       |       |        |        |
| 50RB                             | 0.40  | 0.51  | 0.60   | 0.70   |
| 100RB                            | 1.00  | 1.21  | 1.40   | 1.60   |
| 150RB 1                          | 1.00  | 1.21  | 1.40   | 1.60   |
| 150RB 3                          | 2.77  | 3.39  | 3.91   | 4.38   |
| 150RB 7                          | 3.68  | 4.51  | 5.21   | 5.82   |
| 150RB 9                          | 6.11  | 7.48  | 8.64   | 9.66   |
| 200RB/500RB 2                    | 2.77  | 3.39  | 3.91   | 4.38   |
| 200RB/500RB 3                    | 3.68  | 4.51  | 5.21   | 5.82   |
| 200RB/500RB 4                    | 6.11  | 7.48  | 8.64   | 9.66   |
| 200RB/500RB 5                    | 6.31  | 7.73  | 8.93   | 9.98   |
| 200RB/500RB 6                    | 7.28  | 8.92  | 10.30  | 11.52  |
| 200RB/500RB 7                    | 13.10 | 16.15 | 18.65  | 20.65  |
| 240RA/250RA/540RA 8              | 12.10 | 14.80 | 17.10  | 19.10  |
| 240RA/250RA/540RA 9T (5/8)       | 18.00 | 22.10 | 25.50  | 28.50  |
| 240RA/250RA/540RA 9T (7/8 & Up)  | 23.70 | 29.00 | 33.50  | 37.40  |
| 240RA/250RA/540RA 12             | 27.10 | 33.20 | 38.30  | 42.90  |
| 240RA/250RA/540RA 16             | 45.10 | 55.20 | 63.70  | 71.30  |
| 240RA/250RA/540RA 20             | 74.10 | 90.80 | 104.80 | 117.20 |
| <b>R-410A</b>                    |       |       |        |        |
| 100RB                            | 0.97  | 1.19  | 1.37   | 1.53   |
| 150RB 1                          | 0.97  | 1.19  | 1.37   | 1.53   |
| 150RB 3                          | 2.76  | 3.38  | 3.90   | 4.36   |
| 150RB 7                          | 3.67  | 4.50  | 5.19   | 5.80   |
| 150RB 9                          | 6.09  | 7.45  | 8.61   | 9.62   |
| 200RB/500RB 2                    | 2.76  | 3.38  | 3.90   | 4.36   |
| 200RB/500RB 3                    | 3.67  | 4.50  | 5.19   | 5.80   |
| 200RB/500RB 4                    | 6.09  | 7.45  | 8.61   | 9.62   |
| 200RB/500RB 5                    | 6.29  | 7.71  | 8.90   | 9.95   |
| 200RB/500RB 6                    | 7.26  | 8.89  | 10.27  | 11.48  |
| 200RB/500RB 7                    | 12.20 | 15.70 | 18.10  | 20.10  |
| 250RA 8                          | 11.86 | 14.57 | 16.81  | 18.77  |
| 250RA 9T (5/8)                   | 17.75 | 21.76 | 25.12  | 28.11  |
| 250RA 9T (7/8 & Up)              | 23.26 | 28.49 | 32.88  | 36.80  |
| 250RA 12                         | 26.62 | 32.60 | 37.64  | 42.12  |
| 250RA 16                         | 44.27 | 54.17 | 62.58  | 69.96  |
| 250RA 20                         | 72.76 | 89.10 | 102.93 | 115.07 |

## LIQUID CAPACITIES - kW

| PRESSURE DROP ACROSS VALVE - kPa |        |        |        |        |
|----------------------------------|--------|--------|--------|--------|
| VALVE SERIES                     | 13.8   | 20.7   | 27.6   | 34.5   |
| <b>R-404A/R-507</b>              |        |        |        |        |
| 50RB                             | 1.06   | 1.20   | 1.41   | 1.41   |
| 100RB                            | 2.46   | 2.99   | 3.52   | 3.87   |
| 150RB 1                          | 2.46   | 2.99   | 3.52   | 3.87   |
| 150RB 3                          | 6.68   | 8.16   | 9.43   | 10.55  |
| 150RB 7                          | 8.86   | 10.87  | 12.56  | 14.07  |
| 150RB 9                          | 14.70  | 18.01  | 20.82  | 23.25  |
| 200RB/500RB 2                    | 6.68   | 8.16   | 9.43   | 10.55  |
| 200RB/500RB 3                    | 8.86   | 10.87  | 12.56  | 14.07  |
| 200RB/500RB 4                    | 14.70  | 18.01  | 20.82  | 23.25  |
| 200RB/500RB 5                    | 15.23  | 18.64  | 21.52  | 24.06  |
| 200RB/500RB 6                    | 17.55  | 21.49  | 24.83  | 27.75  |
| 200RB/500RB 7                    | 31.86  | 39.04  | 45.05  | 50.40  |
| 240RA/250RA/540RA 8              | 29.54  | 36.22  | 41.85  | 46.77  |
| 240RA/250RA/540RA 9T (5/8)       | 43.96  | 53.81  | 62.25  | 69.63  |
| 240RA/250RA/540RA 9T (7/8 & Up)  | 57.68  | 70.69  | 81.59  | 91.09  |
| 240RA/250RA/540RA 12             | 66.12  | 80.89  | 93.55  | 104.45 |
| 240RA/250RA/540RA 16             | 110.08 | 134.70 | 155.45 | 173.73 |
| 240RA/250RA/540RA 20             | 188.51 | 231.06 | 266.93 | 298.23 |
| <b>R-407C</b>                    |        |        |        |        |
| 50RB                             | 1.41   | 1.79   | 2.11   | 2.46   |
| 100RB                            | 3.52   | 4.26   | 4.92   | 5.63   |
| 150RB 1                          | 3.52   | 4.26   | 4.92   | 5.63   |
| 150RB 3                          | 9.74   | 11.92  | 13.75  | 15.40  |
| 150RB 7                          | 12.94  | 15.86  | 18.32  | 20.47  |
| 150RB 9                          | 21.49  | 26.31  | 30.39  | 33.97  |
| 200RB/500RB 2                    | 9.74   | 11.92  | 13.75  | 15.40  |
| 200RB/500RB 3                    | 12.94  | 15.86  | 18.32  | 20.47  |
| 200RB/500RB 4                    | 21.49  | 26.31  | 30.39  | 33.97  |
| 200RB/500RB 5                    | 22.19  | 27.19  | 31.41  | 35.10  |
| 200RB/500RB 6                    | 25.60  | 31.37  | 36.22  | 40.51  |
| 200RB/500RB 7                    | 46.53  | 56.97  | 65.80  | 73.54  |
| 240RA/250RA/540RA 8              | 42.55  | 52.05  | 60.14  | 67.17  |
| 240RA/250RA/540RA 9T (5/8)       | 63.30  | 77.72  | 89.68  | 100.23 |
| 240RA/250RA/540RA 9T (7/8 & Up)  | 83.35  | 101.99 | 117.82 | 131.53 |
| 240RA/250RA/540RA 12             | 95.31  | 116.76 | 134.70 | 150.88 |
| 240RA/250RA/540RA 16             | 158.61 | 194.13 | 224.03 | 250.75 |
| 240RA/250RA/540RA 20             | 260.60 | 319.33 | 368.57 | 412.18 |
| <b>R-410A</b>                    |        |        |        |        |
| 100RB                            | 3.42   | 4.17   | 4.83   | 5.39   |
| 150RB 1                          | 3.42   | 4.17   | 4.83   | 5.39   |
| 150RB 3                          | 9.71   | 11.89  | 13.72  | 15.33  |
| 150RB 7                          | 12.91  | 15.83  | 18.25  | 20.4   |
| 150RB 9                          | 21.42  | 26.2   | 30.28  | 33.83  |
| 200RB/500RB 2                    | 9.71   | 11.89  | 13.72  | 15.33  |
| 200RB/500RB 3                    | 12.91  | 15.83  | 18.25  | 20.4   |
| 200RB/500RB 4                    | 21.42  | 26.2   | 30.28  | 33.83  |
| 200RB/500RB 5                    | 22.12  | 27.12  | 31.3   | 34.99  |
| 200RB/500RB 6                    | 25.53  | 31.27  | 36.12  | 40.37  |
| 200RB/500RB 7                    | 42.91  | 55.22  | 63.66  | 70.69  |
| 250RA 8                          | 41.72  | 51.24  | 59.13  | 66.02  |
| 250RA 9T (5/8)                   | 62.41  | 76.53  | 88.36  | 98.87  |
| 250RA 9T (7/8 & Up)              | 81.79  | 100.18 | 115.62 | 129.42 |
| 250RA 12                         | 93.62  | 114.64 | 132.37 | 148.14 |
| 250RA 16                         | 155.70 | 190.51 | 220.08 | 246.03 |
| 250RA 20                         | 255.88 | 313.36 | 361.98 | 404.68 |

NOTE: Shading indicates AHRI standard ratings  
 All liquid capacities are based on 40°F Evaporator Temperature and 100°F Liquid Temperature.  
 NOTE: Capacity is based on largest connection size.

LIQUID CAPACITIES - TONS

| PRESSURE DROP ACROSS VALVE - PSI |       |        |        |        |
|----------------------------------|-------|--------|--------|--------|
| VALVE SERIES                     | 2     | 3      | 4      | 5      |
| R-448A/R-449A                    |       |        |        |        |
| 50RB                             | 0.44  | 0.54   | 0.63   | 0.70   |
| 100RB                            | 1.04  | 1.28   | 1.47   | 1.65   |
| 150RB 1                          | 1.04  | 1.28   | 1.47   | 1.65   |
| 150RB 3                          | 2.95  | 3.61   | 4.17   | 4.67   |
| 150RB 7                          | 3.93  | 4.82   | 5.56   | 6.22   |
| 150RB 9                          | 6.52  | 7.98   | 9.22   | 10.30  |
| 200RB/500RB 2                    | 2.95  | 3.61   | 4.17   | 4.67   |
| 200RB/500RB 3                    | 3.93  | 4.82   | 5.56   | 6.22   |
| 200RB/500RB 4                    | 6.52  | 7.98   | 9.22   | 10.30  |
| 200RB/500RB 5                    | 6.74  | 8.25   | 9.53   | 10.65  |
| 200RB/500RB 6                    | 7.77  | 9.52   | 10.99  | 12.29  |
| 200RB/500RB 7                    | 13.94 | 17.07  | 19.71  | 22.03  |
| 240RA/250RA/540RA 8              | 12.79 | 15.66  | 18.09  | 20.22  |
| 240RA/250RA/540RA 9T (5/8)       | 19.10 | 23.39  | 27.01  | 30.20  |
| 240RA/250RA/540RA 9T (7/8 & Up)  | 25.00 | 30.62  | 35.36  | 39.53  |
| 240RA/250RA/540RA 12             | 28.61 | 35.04  | 40.46  | 45.24  |
| 240RA/250RA/540RA 16             | 47.55 | 58.23  | 67.24  | 75.18  |
| 240RA/250RA/540RA 20             | 78.20 | 95.78  | 110.60 | 123.65 |
| R-454A                           |       |        |        |        |
| 100RB                            | 1.18  | 1.44   | 1.67   | 1.86   |
| 150RB 1                          | 1.18  | 1.44   | 1.67   | 1.86   |
| 150RB 3                          | 3.34  | 4.09   | 4.73   | 5.29   |
| 150RB 7                          | 4.46  | 5.46   | 6.30   | 7.05   |
| 150RB 9                          | 7.38  | 9.04   | 10.44  | 11.67  |
| 200RB/500RB 2                    | 3.34  | 4.09   | 4.73   | 5.29   |
| 200RB/500RB 3                    | 4.46  | 5.46   | 6.30   | 7.05   |
| 200RB/500RB 4                    | 7.38  | 9.04   | 10.44  | 11.67  |
| 200RB/500RB 5                    | 7.63  | 9.35   | 10.80  | 12.07  |
| 200RB/500RB 6                    | 8.80  | 10.78  | 12.45  | 13.92  |
| 250RA/540RA 8                    | 14.49 | 17.74  | 20.49  | 22.91  |
| 250RA/540RA 9T (5/8)             | 21.64 | 26.50  | 30.60  | 34.21  |
| 250RA/540RA 9T (7/8 & Up)        | 28.32 | 34.69  | 40.05  | 44.78  |
| 250RA/540RA 12                   | 32.41 | 39.69  | 45.83  | 51.24  |
| 250RA/540RA 16                   | 53.86 | 65.97  | 76.17  | 85.16  |
| 250RA/540RA 20                   | 88.59 | 108.50 | 125.29 | 140.07 |
| R-454B/R-452B                    |       |        |        |        |
| 100RB                            | 0.94  | 1.15   | 1.33   | 1.48   |
| 150RB 1                          | 0.94  | 1.15   | 1.33   | 1.48   |
| 150RB 3                          | 2.66  | 3.25   | 3.76   | 4.20   |
| 150RB 7                          | 3.54  | 4.34   | 5.01   | 5.59   |
| 150RB 9                          | 5.86  | 7.18   | 8.29   | 9.27   |
| 200RB/500RB 2                    | 2.66  | 3.25   | 3.76   | 4.20   |
| 200RB/500RB 3                    | 3.54  | 4.34   | 5.01   | 5.59   |
| 200RB/500RB 4                    | 5.86  | 7.18   | 8.29   | 9.27   |
| 200RB/500RB 5                    | 6.06  | 7.43   | 8.57   | 9.59   |
| 200RB/500RB 6                    | 6.99  | 8.57   | 9.89   | 11.06  |
| 250RA 8                          | 11.47 | 14.09  | 16.26  | 18.16  |
| 250RA 9T (5/8)                   | 17.17 | 21.05  | 24.30  | 27.20  |
| 250RA 9T (7/8 & Up)              | 22.50 | 27.56  | 31.80  | 35.60  |
| 250RA 12                         | 25.75 | 31.53  | 36.41  | 40.75  |
| 250RA 16                         | 42.83 | 52.40  | 60.53  | 67.67  |
| 250RA 20                         | 70.38 | 86.19  | 99.57  | 111.31 |
| R-454C                           |       |        |        |        |
| 100RB                            | 0.99  | 1.21   | 1.39   | 1.56   |
| 150RB 1                          | 0.99  | 1.21   | 1.39   | 1.56   |
| 150RB 3                          | 2.80  | 3.42   | 3.95   | 4.42   |
| 150RB 7                          | 3.73  | 4.57   | 5.27   | 5.89   |
| 150RB 9                          | 6.17  | 7.56   | 8.73   | 9.76   |
| 200RB/500RB 2                    | 2.80  | 3.42   | 3.95   | 4.42   |
| 200RB/500RB 3                    | 3.73  | 4.57   | 5.27   | 5.89   |
| 200RB/500RB 4                    | 6.17  | 7.56   | 8.73   | 9.76   |
| 200RB/500RB 5                    | 6.38  | 7.82   | 9.03   | 10.09  |
| 200RB/500RB 6                    | 7.36  | 9.02   | 10.41  | 11.64  |

LIQUID CAPACITIES - kW

| PRESSURE DROP ACROSS VALVE - kPa |        |        |        |        |
|----------------------------------|--------|--------|--------|--------|
| VALVE SERIES                     | 13.8   | 20.7   | 27.6   | 34.5   |
| R-448A/R-449A                    |        |        |        |        |
| 50RB                             | 1.56   | 1.91   | 2.20   | 2.46   |
| 100RB                            | 3.66   | 4.48   | 5.18   | 5.79   |
| 150RB 1                          | 3.66   | 4.48   | 5.18   | 5.79   |
| 150RB 3                          | 10.38  | 12.71  | 14.68  | 16.41  |
| 150RB 7                          | 13.84  | 16.95  | 19.57  | 21.88  |
| 150RB 9                          | 22.92  | 28.07  | 32.41  | 36.24  |
| 200RB/500RB 2                    | 10.38  | 12.71  | 14.68  | 16.41  |
| 200RB/500RB 3                    | 13.84  | 16.95  | 19.57  | 21.88  |
| 200RB/500RB 4                    | 22.92  | 28.07  | 32.41  | 36.24  |
| 200RB/500RB 5                    | 23.70  | 29.02  | 33.51  | 37.47  |
| 200RB/500RB 6                    | 27.33  | 33.47  | 38.65  | 43.21  |
| 200RB/500RB 7                    | 49.01  | 60.02  | 69.31  | 77.49  |
| 240RA/250RA/540RA 8              | 44.97  | 55.08  | 63.60  | 71.11  |
| 240RA/250RA/540RA 9T (5/8)       | 67.17  | 82.27  | 95.00  | 106.21 |
| 240RA/250RA/540RA 9T (7/8 & Up)  | 87.93  | 107.69 | 124.35 | 139.03 |
| 240RA/250RA/540RA 12             | 100.61 | 123.23 | 142.29 | 159.08 |
| 240RA/250RA/540RA 16             | 167.21 | 204.79 | 236.47 | 264.38 |
| 240RA/250RA/540RA 20             | 275.03 | 336.84 | 388.95 | 434.86 |
| R-454A                           |        |        |        |        |
| 100RB                            | 4.15   | 5.08   | 5.87   | 6.56   |
| 150RB 1                          | 4.15   | 5.08   | 5.87   | 6.56   |
| 150RB 3                          | 11.76  | 14.40  | 16.63  | 18.59  |
| 150RB 7                          | 15.68  | 19.20  | 22.17  | 24.79  |
| 150RB 9                          | 25.96  | 31.80  | 36.72  | 41.05  |
| 200RB/500RB 2                    | 11.76  | 14.40  | 16.63  | 18.59  |
| 200RB/500RB 3                    | 15.68  | 19.20  | 22.17  | 24.79  |
| 200RB/500RB 4                    | 25.96  | 31.80  | 36.72  | 41.05  |
| 200RB/500RB 5                    | 26.85  | 32.88  | 37.97  | 42.45  |
| 200RB/500RB 6                    | 30.96  | 37.92  | 43.79  | 48.95  |
| 250RA/540RA 8                    | 50.95  | 62.40  | 72.05  | 80.56  |
| 250RA/540RA 9T (5/8)             | 76.10  | 93.20  | 107.62 | 120.32 |
| 250RA/540RA 9T (7/8 & Up)        | 99.61  | 122.00 | 140.87 | 157.50 |
| 250RA/540RA 12                   | 113.98 | 139.60 | 161.20 | 180.22 |
| 250RA/540RA 16                   | 189.43 | 232.00 | 267.89 | 299.51 |
| 250RA/540RA 20                   | 311.57 | 381.60 | 440.63 | 492.64 |
| R-454B/R-452B                    |        |        |        |        |
| 100RB                            | 3.30   | 4.04   | 4.67   | 5.21   |
| 150RB 1                          | 3.30   | 4.04   | 4.67   | 5.21   |
| 150RB 3                          | 9.34   | 11.44  | 13.22  | 14.78  |
| 150RB 7                          | 12.46  | 15.25  | 17.60  | 19.67  |
| 150RB 9                          | 20.62  | 25.26  | 29.17  | 32.60  |
| 200RB/500RB 2                    | 9.34   | 11.44  | 13.22  | 14.78  |
| 200RB/500RB 3                    | 12.46  | 15.25  | 17.60  | 19.67  |
| 200RB/500RB 4                    | 20.62  | 25.26  | 29.17  | 32.60  |
| 200RB/500RB 5                    | 21.32  | 26.12  | 30.15  | 33.71  |
| 200RB/500RB 6                    | 24.59  | 30.12  | 34.79  | 38.89  |
| 250RA 8                          | 40.35  | 49.57  | 57.19  | 63.87  |
| 250RA 9T (5/8)                   | 60.37  | 74.04  | 85.47  | 95.64  |
| 250RA 9T (7/8 & Up)              | 79.12  | 96.91  | 111.85 | 125.19 |
| 250RA 12                         | 90.56  | 110.89 | 128.05 | 143.30 |
| 250RA 16                         | 150.61 | 184.29 | 212.89 | 237.99 |
| 250RA 20                         | 247.53 | 303.13 | 350.16 | 391.46 |
| R-454C                           |        |        |        |        |
| 100RB                            | 3.47   | 4.25   | 4.91   | 5.48   |
| 150RB 1                          | 3.47   | 4.25   | 4.91   | 5.48   |
| 150RB 3                          | 9.83   | 12.04  | 13.91  | 15.55  |
| 150RB 7                          | 13.11  | 16.06  | 18.54  | 20.73  |
| 150RB 9                          | 21.71  | 26.59  | 30.71  | 34.33  |
| 200RB/500RB 2                    | 9.83   | 12.04  | 13.91  | 15.55  |
| 200RB/500RB 3                    | 13.11  | 16.06  | 18.54  | 20.73  |
| 200RB/500RB 4                    | 21.71  | 26.59  | 30.71  | 34.33  |
| 200RB/500RB 5                    | 22.45  | 27.50  | 31.75  | 35.50  |
| 200RB/500RB 6                    | 25.89  | 31.71  | 36.62  | 40.94  |

NOTE: Shading indicates AHRI standard ratings  
All liquid capacities are based on 40°F Evaporator Temperature and 100°F Liquid Temperature.  
NOTE: Capacity is based on largest connection size.



## LIQUID CAPACITIES - TONS

| PRESSURE DROP ACROSS VALVE - PSI |       |       |        |        |
|----------------------------------|-------|-------|--------|--------|
| VALVE SERIES                     | 2     | 3     | 4      | 5      |
| <b>R-455A</b>                    |       |       |        |        |
| 100RB                            | 1.03  | 1.27  | 1.46   | 1.63   |
| 150RB 1                          | 1.03  | 1.27  | 1.46   | 1.63   |
| 150RB 3                          | 2.93  | 3.59  | 4.14   | 4.63   |
| 150RB 7                          | 3.91  | 4.78  | 5.52   | 6.18   |
| 150RB 9                          | 6.47  | 7.92  | 9.15   | 10.23  |
| 200RB/500RB 2                    | 2.93  | 3.59  | 4.14   | 4.63   |
| 200RB/500RB 3                    | 3.91  | 4.78  | 5.52   | 6.18   |
| 200RB/500RB 4                    | 6.47  | 7.92  | 9.15   | 10.23  |
| 200RB/500RB 5                    | 6.69  | 8.19  | 9.46   | 10.58  |
| 200RB/500RB 6                    | 7.71  | 9.45  | 10.91  | 12.20  |
| 250RA/540RA 8                    | 12.69 | 15.55 | 17.95  | 20.07  |
| 250RA/540RA 9T (5/8)             | 18.96 | 23.22 | 26.81  | 29.98  |
| 250RA/540RA 9T (7/8 & Up)        | 24.82 | 30.40 | 35.10  | 39.24  |
| 250RA/540RA 12                   | 28.40 | 34.78 | 40.16  | 44.91  |
| 250RA/540RA 16                   | 47.20 | 57.81 | 66.75  | 74.63  |
| 250RA/540RA 20                   | 77.63 | 95.08 | 109.79 | 122.75 |
| <b>R-502</b>                     |       |       |        |        |
| 50RB                             | 0.30  | 0.35  | 0.40   | 0.50   |
| 100RB                            | 0.70  | 0.83  | 1.00   | 1.10   |
| 150RB 1                          | 0.70  | 0.83  | 1.00   | 1.10   |
| 150RB 3                          | 1.93  | 2.36  | 2.73   | 3.05   |
| 150RB 7                          | 2.57  | 3.14  | 3.63   | 4.06   |
| 150RB 9                          | 4.15  | 5.21  | 6.02   | 6.73   |
| 200RB/500RB 2                    | 1.93  | 2.36  | 2.73   | 3.05   |
| 200RB/500RB 3                    | 2.57  | 3.14  | 3.63   | 4.06   |
| 200RB/500RB 4                    | 4.15  | 5.21  | 6.02   | 6.73   |
| 200RB/500RB 5                    | 4.50  | 5.39  | 6.22   | 6.69   |
| 200RB/500RB 6                    | 5.08  | 6.22  | 7.18   | 8.03   |
| 200RB/500RB 7                    | 9.22  | 11.29 | 13.04  | 14.57  |
| 240RA/250RA/540RA 8              | 8.20  | 10.10 | 11.70  | 13.00  |
| 240RA/250RA/540RA 9T (5/8)       | 12.30 | 15.10 | 17.40  | 19.50  |
| 240RA/250RA/540RA 9T (7/8 & Up)  | 16.20 | 19.80 | 22.90  | 25.60  |
| 240RA/250RA/540RA 12             | 18.50 | 22.70 | 26.20  | 29.30  |
| 240RA/250RA/540RA 16             | 30.80 | 37.70 | 43.50  | 48.70  |
| 240RA/250RA/540RA 20             | 50.60 | 62.00 | 71.60  | 80.00  |
| <b>R-513A/R-450A</b>             |       |       |        |        |
| 50RB                             | 0.37  | 0.46  | 0.53   | 0.59   |
| 100RB                            | 0.88  | 1.07  | 1.24   | 1.38   |
| 150RB 1                          | 0.88  | 1.07  | 1.24   | 1.38   |
| 150RB 3                          | 2.48  | 3.04  | 3.51   | 3.92   |
| 150RB 7                          | 3.31  | 4.05  | 4.68   | 5.23   |
| 150RB 9                          | 5.48  | 6.71  | 7.75   | 8.67   |
| 200RB/500RB 2                    | 2.48  | 3.04  | 3.51   | 3.92   |
| 200RB/500RB 3                    | 3.31  | 4.05  | 4.68   | 5.23   |
| 200RB/500RB 4                    | 5.48  | 6.71  | 7.75   | 8.67   |
| 200RB/500RB 5                    | 5.67  | 6.94  | 8.02   | 8.96   |
| 200RB/500RB 6                    | 6.54  | 8.01  | 9.24   | 10.34  |
| 200RB/500RB 7                    | 11.72 | 14.36 | 16.58  | 18.53  |
| 240RA/250RA/540RA 8              | 10.76 | 13.17 | 15.21  | 17.01  |
| 240RA/250RA/540RA 9T (5/8)       | 16.07 | 19.68 | 22.72  | 25.40  |
| 240RA/250RA/540RA 9T (7/8 & Up)  | 21.03 | 25.76 | 29.74  | 33.25  |
| 240RA/250RA/540RA 12             | 24.06 | 29.47 | 34.03  | 38.05  |
| 240RA/250RA/540RA 16             | 39.99 | 48.98 | 56.56  | 63.23  |
| 240RA/250RA/540RA 20             | 65.78 | 80.56 | 93.02  | 104.00 |

## LIQUID CAPACITIES - kW

| PRESSURE DROP ACROSS VALVE - kPa |        |        |        |        |
|----------------------------------|--------|--------|--------|--------|
| VALVE SERIES                     | 13.8   | 20.7   | 27.6   | 34.5   |
| <b>R-455A</b>                    |        |        |        |        |
| 100RB                            | 3.63   | 4.45   | 5.14   | 5.75   |
| 150RB 1                          | 3.63   | 4.45   | 5.14   | 5.75   |
| 150RB 3                          | 10.30  | 12.62  | 14.57  | 16.29  |
| 150RB 7                          | 13.74  | 16.83  | 19.43  | 21.72  |
| 150RB 9                          | 22.75  | 27.87  | 32.18  | 35.98  |
| 200RB/500RB 2                    | 10.30  | 12.62  | 14.57  | 16.29  |
| 200RB/500RB 3                    | 13.74  | 16.83  | 19.43  | 21.72  |
| 200RB/500RB 4                    | 22.75  | 27.87  | 32.18  | 35.98  |
| 200RB/500RB 5                    | 23.53  | 28.81  | 33.27  | 37.20  |
| 200RB/500RB 6                    | 27.13  | 33.23  | 38.37  | 42.90  |
| 250RA/540RA 8                    | 44.65  | 54.68  | 63.14  | 70.59  |
| 250RA/540RA 9T (5/8)             | 66.69  | 81.67  | 94.31  | 105.44 |
| 250RA/540RA 9T (7/8 & Up)        | 87.29  | 106.91 | 123.45 | 138.02 |
| 250RA/540RA 12                   | 99.88  | 122.33 | 141.26 | 157.93 |
| 250RA/540RA 16                   | 166.00 | 203.30 | 234.76 | 262.46 |
| 250RA/540RA 20                   | 273.04 | 334.40 | 386.13 | 431.71 |
| <b>R-502</b>                     |        |        |        |        |
| 50RB                             | 1.06   | 1.23   | 1.41   | 1.76   |
| 100RB                            | 2.46   | 2.92   | 3.52   | 3.87   |
| 150RB 1                          | 2.46   | 2.92   | 3.52   | 3.87   |
| 150RB 3                          | 6.79   | 8.30   | 9.60   | 10.73  |
| 150RB 7                          | 9.04   | 11.04  | 12.77  | 14.28  |
| 150RB 9                          | 14.60  | 18.32  | 21.17  | 23.67  |
| 200RB/500RB 2                    | 6.79   | 8.30   | 9.60   | 10.73  |
| 200RB/500RB 3                    | 9.04   | 11.04  | 12.77  | 14.28  |
| 200RB/500RB 4                    | 14.60  | 18.32  | 21.17  | 23.67  |
| 200RB/500RB 5                    | 15.83  | 18.96  | 21.88  | 23.53  |
| 200RB/500RB 6                    | 17.87  | 21.88  | 25.25  | 28.24  |
| 200RB/500RB 7                    | 32.43  | 39.71  | 45.86  | 51.24  |
| 240RA/250RA/540RA 8              | 28.84  | 35.52  | 41.15  | 45.72  |
| 240RA/250RA/540RA 9T (5/8)       | 43.26  | 53.11  | 61.19  | 68.58  |
| 240RA/250RA/540RA 9T (7/8 & Up)  | 56.97  | 69.63  | 80.54  | 90.03  |
| 240RA/250RA/540RA 12             | 65.06  | 79.83  | 92.14  | 103.05 |
| 240RA/250RA/540RA 16             | 108.32 | 132.59 | 152.99 | 171.27 |
| 240RA/250RA/540RA 20             | 177.96 | 218.05 | 251.81 | 281.35 |
| <b>R-513A/R-450A</b>             |        |        |        |        |
| 50RB                             | 1.31   | 1.60   | 1.85   | 2.07   |
| 100RB                            | 3.08   | 3.77   | 4.36   | 4.87   |
| 150RB 1                          | 3.08   | 3.77   | 4.36   | 4.87   |
| 150RB 3                          | 8.73   | 10.69  | 12.35  | 13.80  |
| 150RB 7                          | 11.64  | 14.26  | 16.46  | 18.40  |
| 150RB 9                          | 19.28  | 23.61  | 27.26  | 30.48  |
| 200RB/500RB 2                    | 8.73   | 10.69  | 12.35  | 13.80  |
| 200RB/500RB 3                    | 11.64  | 14.26  | 16.46  | 18.40  |
| 200RB/500RB 4                    | 19.28  | 23.61  | 27.26  | 30.48  |
| 200RB/500RB 5                    | 19.93  | 24.41  | 28.19  | 31.52  |
| 200RB/500RB 6                    | 22.99  | 28.15  | 32.51  | 36.35  |
| 200RB/500RB 7                    | 41.22  | 50.49  | 58.30  | 65.18  |
| 240RA/250RA/540RA 8              | 37.83  | 46.33  | 53.50  | 59.81  |
| 240RA/250RA/540RA 9T (5/8)       | 56.50  | 69.20  | 79.90  | 89.33  |
| 240RA/250RA/540RA 9T (7/8 & Up)  | 73.96  | 90.58  | 104.59 | 116.94 |
| 240RA/250RA/540RA 12             | 84.63  | 103.65 | 119.68 | 133.81 |
| 240RA/250RA/540RA 16             | 140.64 | 172.25 | 198.90 | 222.37 |
| 240RA/250RA/540RA 20             | 231.33 | 283.32 | 327.15 | 365.76 |

NOTE: Shading indicates AHRI standard ratings  
 All liquid capacities are based on 40°F Evaporator Temperature and 100°F Liquid Temperature.  
 NOTE: Capacity is based on largest connection size.

LIQUID CAPACITIES - TONS

| PRESSURE DROP ACROSS VALVE - PSI |       |      |      |      |      |       |
|----------------------------------|-------|------|------|------|------|-------|
| VALVE SERIES                     | 2     | 3    | 4    | 5    | 6    | 7     |
|                                  | R-744 |      |      |      |      |       |
| 100RB                            | 1.58  | 1.93 | 2.24 | 2.50 | 2.74 | 2.96  |
| 150RB 1                          | 1.58  | 1.93 | 2.24 | 2.50 | 2.74 | 2.96  |
| 150RB 3                          | 4.36  | 5.34 | 6.17 | 6.90 | 7.56 | 8.16  |
| 150RB 7                          | 5.80  | 7.11 | 8.21 | 9.18 | 10.1 | 10.86 |
| 150RB 9                          | 9.62  | 11.8 | 13.6 | 15.2 | 16.7 | 18.01 |
| 200RB/500RB 2                    | 4.36  | 5.34 | 6.17 | 6.90 | 7.56 | 8.16  |
| 200RB/500RB 3                    | 5.80  | 7.11 | 8.21 | 9.18 | 10.1 | 10.86 |
| 200RB/500RB 4                    | 9.62  | 11.8 | 13.6 | 15.2 | 16.7 | 18.01 |
| 200RB/500RB 5                    | 9.95  | 12.2 | 14.1 | 15.7 | 17.2 | 18.62 |
| 200RB/500RB 6                    | 11.5  | 14.1 | 16.2 | 18.2 | 19.9 | 21.49 |
| 200RB/500RB 7                    | 20.1  | 24.6 | 28.4 | 31.8 | 34.8 | 37.62 |

NOTE: Shading indicates nominal ratings at 1°F saturation pressure drop across solenoid valve.  
All liquid capacities are based on 20°F evaporating temperature.

LIQUID CAPACITIES - kW

| PRESSURE DROP ACROSS VALVE - kPa |       |       |        |        |        |        |
|----------------------------------|-------|-------|--------|--------|--------|--------|
| VALVE SERIES                     | 13.8  | 20.7  | 27.6   | 34.5   | 41.4   | 48.3   |
|                                  | R-744 |       |        |        |        |        |
| 100RB                            | 5.56  | 6.81  | 7.86   | 8.79   | 9.63   | 10.40  |
| 150RB 1                          | 5.56  | 6.81  | 7.86   | 8.79   | 9.63   | 10.40  |
| 150RB 3                          | 15.34 | 18.79 | 21.70  | 24.26  | 26.57  | 28.70  |
| 150RB 7                          | 20.41 | 25.00 | 28.86  | 32.27  | 35.35  | 38.18  |
| 150RB 9                          | 33.85 | 41.46 | 47.87  | 53.52  | 58.63  | 63.33  |
| 200RB/500RB 2                    | 15.34 | 18.79 | 21.70  | 24.26  | 26.57  | 28.70  |
| 200RB/500RB 3                    | 20.41 | 25.00 | 28.86  | 32.27  | 35.35  | 38.18  |
| 200RB/500RB 4                    | 33.85 | 41.46 | 47.87  | 53.52  | 58.63  | 63.33  |
| 200RB/500RB 5                    | 35.01 | 42.88 | 49.51  | 55.36  | 60.64  | 65.50  |
| 200RB/500RB 6                    | 40.40 | 49.47 | 57.13  | 63.87  | 69.97  | 75.57  |
| 200RB/500RB 7                    | 70.73 | 86.62 | 100.02 | 111.83 | 122.50 | 132.32 |

## SUCTION GAS

## SOLENOID CAPACITY TABLES

### SUCTION GAS CAPACITIES - TONS

| SUCTION GAS CAPACITIES @ 2 PSI PRESSURE DROP |                            |      |      |      |      |
|----------------------------------------------|----------------------------|------|------|------|------|
| VALVE SERIES                                 | EVAPORATOR TEMPERATURE - F |      |      |      |      |
|                                              | 40                         | 20   | 0    | -20  | -40  |
| R-12                                         |                            |      |      |      |      |
| 100RB                                        | 0.13                       | 0.12 | 0.09 | 0.07 | 0.04 |
| 150RB 1                                      | 0.13                       | 0.12 | 0.09 | 0.07 | 0.04 |
| 150RB 3                                      | 0.32                       | 0.30 | 0.23 | 0.17 | 0.10 |
| 150RB 7                                      | 0.44                       | 0.41 | 0.31 | 0.23 | 0.14 |
| 150RB 9                                      | 0.81                       | 0.77 | 0.59 | 0.44 | 0.26 |
| 200RB/500RB 2                                | 0.32                       | 0.30 | 0.23 | 0.17 | 0.10 |
| 200RB/500RB 3                                | 0.44                       | 0.41 | 0.31 | 0.23 | 0.14 |
| 200RB/500RB 4                                | 0.81                       | 0.77 | 0.59 | 0.44 | 0.26 |
| 200RB/500RB 5                                | 0.97                       | 0.93 | 0.71 | 0.53 | 0.32 |
| 200RB/500RB 6                                | 1.05                       | 0.99 | 0.76 | 0.56 | 0.34 |
| 200RB/500RB 7                                | 1.90                       | 1.70 | 1.30 | 1.00 | 0.60 |
| 240RA/250RA/540RA 8                          | 1.00                       | 0.80 | 0.60 | 0.50 | 0.40 |
| 240RA/250RA/540RA 9T5                        | 1.30                       | 1.10 | 0.90 | 0.70 | 0.50 |
| 240RA/250RA/540RA 9                          | 1.60                       | 1.30 | 1.00 | 0.80 | 0.60 |
| 240RA/250RA/540RA 12                         | 2.00                       | 1.60 | 1.20 | 1.00 | 0.70 |
| 240RA/250RA/540RA 16                         | 3.90                       | 3.20 | 2.50 | 1.90 | 1.50 |
| 240RA/250RA/540RA 20                         | 5.50                       | 4.50 | 3.50 | 2.70 | 2.10 |
| R-1234yf                                     |                            |      |      |      |      |
| 100RB                                        | 0.09                       | 0.07 | 0.06 | 0.04 | 0.03 |
| 150RB 1                                      | 0.09                       | 0.07 | 0.06 | 0.04 | 0.03 |
| 150RB 3                                      | 0.23                       | 0.18 | 0.14 | 0.10 | 0.08 |
| 150RB 7                                      | 0.32                       | 0.25 | 0.19 | 0.14 | 0.10 |
| 150RB 9                                      | 0.60                       | 0.47 | 0.36 | 0.27 | 0.20 |
| 200RB/500RB 2                                | 0.23                       | 0.18 | 0.14 | 0.10 | 0.08 |
| 200RB/500RB 3                                | 0.32                       | 0.25 | 0.19 | 0.14 | 0.10 |
| 200RB/500RB 4                                | 0.60                       | 0.47 | 0.36 | 0.27 | 0.20 |
| 200RB/500RB 5                                | 0.73                       | 0.58 | 0.44 | 0.33 | 0.24 |
| 200RB/500RB 6                                | 0.77                       | 0.61 | 0.47 | 0.35 | 0.25 |
| R-134a                                       |                            |      |      |      |      |
| 100RB                                        | 0.10                       | 0.08 | 0.06 | 0.04 | 0.03 |
| 150RB 1                                      | 0.10                       | 0.08 | 0.06 | 0.04 | 0.03 |
| 150RB 3                                      | 0.26                       | 0.21 | 0.16 | 0.11 | 0.08 |
| 150RB 7                                      | 0.36                       | 0.29 | 0.21 | 0.15 | 0.10 |
| 150RB 9                                      | 0.69                       | 0.54 | 0.42 | 0.28 | 0.16 |
| 200RB/500RB 2                                | 0.26                       | 0.21 | 0.16 | 0.11 | 0.08 |
| 200RB/500RB 3                                | 0.36                       | 0.29 | 0.21 | 0.15 | 0.10 |
| 200RB/500RB 4                                | 0.69                       | 0.54 | 0.42 | 0.28 | 0.16 |
| 200RB/500RB 5                                | 0.83                       | 0.65 | 0.47 | 0.34 | 0.23 |
| 200RB/500RB 6                                | 0.88                       | 0.69 | 0.52 | 0.37 | 0.26 |
| 200RB/500RB 7                                | 1.50                       | 1.20 | 0.90 | 0.70 | 0.50 |
| 240RA/250RA/540RA 8                          | 0.80                       | 0.60 | 0.50 | 0.40 | 0.30 |
| 240RA/250RA/540RA 9T5                        | 1.40                       | 1.10 | 0.80 | 0.60 | 0.40 |
| 240RA/250RA/540RA 9                          | 1.70                       | 1.40 | 1.10 | 0.80 | 0.50 |
| 240RA/250RA/540RA 12                         | 1.90                       | 1.50 | 1.20 | 0.90 | 0.60 |
| 240RA/250RA/540RA 16                         | 3.20                       | 2.50 | 1.90 | 1.40 | 1.00 |
| 240RA/250RA/540RA 20                         | 4.40                       | 3.50 | 2.70 | 2.00 | 1.60 |

### SUCTION GAS CAPACITIES - kW

| SUCTION GAS CAPACITIES @ 14.0 kPa PRESSURE DROP |                            |       |       |      |      |
|-------------------------------------------------|----------------------------|-------|-------|------|------|
| VALVE SERIES                                    | EVAPORATOR TEMPERATURE - C |       |       |      |      |
|                                                 | 4                          | -7    | -18   | -29  | -40  |
| R-12                                            |                            |       |       |      |      |
| 100RB                                           | 0.45                       | 0.42  | 0.32  | 0.24 | 0.14 |
| 150RB 1                                         | 0.45                       | 0.42  | 0.32  | 0.24 | 0.14 |
| 150RB 3                                         | 1.13                       | 1.06  | 0.81  | 0.60 | 0.35 |
| 150RB 7                                         | 1.55                       | 1.44  | 1.09  | 0.81 | 0.49 |
| 150RB 9                                         | 2.85                       | 2.71  | 2.07  | 1.55 | 0.91 |
| 200RB/500RB 2                                   | 1.13                       | 1.06  | 0.81  | 0.60 | 0.35 |
| 200RB/500RB 3                                   | 1.55                       | 1.44  | 1.09  | 0.81 | 0.49 |
| 200RB/500RB 4                                   | 2.85                       | 2.71  | 2.07  | 1.55 | 0.91 |
| 200RB/500RB 5                                   | 3.41                       | 3.27  | 2.50  | 1.86 | 1.13 |
| 200RB/500RB 6                                   | 3.69                       | 3.48  | 2.67  | 1.97 | 1.20 |
| 200RB/500RB 7                                   | 6.80                       | 6.00  | 4.60  | 3.50 | 2.10 |
| 240RA/250RA/540RA 8                             | 3.52                       | 2.81  | 2.11  | 1.76 | 1.41 |
| 240RA/250RA/540RA 9T5                           | 4.57                       | 3.87  | 3.17  | 2.46 | 1.76 |
| 240RA/250RA/540RA 9                             | 5.63                       | 4.57  | 3.52  | 2.81 | 2.11 |
| 240RA/250RA/540RA 12                            | 7.03                       | 5.63  | 4.22  | 3.52 | 2.46 |
| 240RA/250RA/540RA 16                            | 13.72                      | 11.25 | 8.79  | 6.68 | 5.28 |
| 240RA/250RA/540RA 20                            | 19.34                      | 15.83 | 12.31 | 9.50 | 7.39 |
| R-1234yf                                        |                            |       |       |      |      |
| 100RB                                           | 0.32                       | 0.25  | 0.20  | 0.15 | 0.11 |
| 150RB 1                                         | 0.32                       | 0.25  | 0.20  | 0.15 | 0.11 |
| 150RB 3                                         | 0.81                       | 0.64  | 0.49  | 0.36 | 0.26 |
| 150RB 7                                         | 1.12                       | 0.88  | 0.68  | 0.50 | 0.36 |
| 150RB 9                                         | 2.12                       | 1.67  | 1.28  | 0.95 | 0.69 |
| 200RB/500RB 2                                   | 0.81                       | 0.64  | 0.49  | 0.36 | 0.26 |
| 200RB/500RB 3                                   | 1.12                       | 0.88  | 0.68  | 0.50 | 0.36 |
| 200RB/500RB 4                                   | 2.12                       | 1.67  | 1.28  | 0.95 | 0.69 |
| 200RB/500RB 5                                   | 2.58                       | 2.02  | 1.55  | 1.16 | 0.84 |
| 200RB/500RB 6                                   | 2.72                       | 2.14  | 1.64  | 1.22 | 0.89 |
| R-134a                                          |                            |       |       |      |      |
| 100RB                                           | 0.37                       | 0.30  | 0.23  | 0.15 | 0.11 |
| 150RB 1                                         | 0.37                       | 0.30  | 0.23  | 0.15 | 0.11 |
| 150RB 3                                         | 0.91                       | 0.74  | 0.56  | 0.39 | 0.28 |
| 150RB 7                                         | 1.27                       | 1.02  | 0.74  | 0.53 | 0.35 |
| 150RB 9                                         | 2.43                       | 1.90  | 1.48  | 0.98 | 0.56 |
| 200RB/500RB 2                                   | 0.91                       | 0.74  | 0.56  | 0.39 | 0.28 |
| 200RB/500RB 3                                   | 1.27                       | 1.02  | 0.74  | 0.53 | 0.35 |
| 200RB/500RB 4                                   | 2.43                       | 1.90  | 1.48  | 0.98 | 0.56 |
| 200RB/500RB 5                                   | 2.92                       | 2.29  | 1.65  | 1.20 | 0.81 |
| 200RB/500RB 6                                   | 3.09                       | 2.43  | 1.83  | 1.30 | 0.91 |
| 200RB/500RB 7                                   | 5.30                       | 4.20  | 3.10  | 2.50 | 1.80 |
| 240RA/250RA/540RA 8                             | 2.81                       | 2.11  | 1.76  | 1.41 | 1.06 |
| 240RA/250RA/540RA 9T5                           | 4.92                       | 3.87  | 2.81  | 2.11 | 1.41 |
| 240RA/250RA/540RA 9                             | 5.98                       | 4.92  | 3.87  | 2.81 | 1.76 |
| 240RA/250RA/540RA 12                            | 6.68                       | 5.28  | 4.22  | 3.17 | 2.11 |
| 240RA/250RA/540RA 16                            | 11.25                      | 8.79  | 6.68  | 4.92 | 3.52 |
| 240RA/250RA/540RA 20                            | 15.47                      | 12.31 | 9.50  | 7.03 | 5.63 |

NOTE: Capacity is based on largest connection size.

SUCTION GAS CAPACITIES - TONS

| SUCTION GAS CAPACITIES @ 2 PSI PRESSURE DROP |                            |       |      |      |      |
|----------------------------------------------|----------------------------|-------|------|------|------|
| VALVE SERIES                                 | EVAPORATOR TEMPERATURE - F |       |      |      |      |
|                                              | 40                         | 20    | 0    | -20  | -40  |
| R-22/R407C                                   |                            |       |      |      |      |
| 100RB                                        | 0.14                       | 0.11  | 0.09 | 0.07 | 0.05 |
| 150RB 1                                      | 0.14                       | 0.11  | 0.09 | 0.07 | 0.05 |
| 150RB 3                                      | 0.34                       | 0.28  | 0.22 | 0.18 | 0.13 |
| 150RB 7                                      | 0.47                       | 0.38  | 0.31 | 0.24 | 0.18 |
| 150RB 9                                      | 0.89                       | 0.73  | 0.58 | 0.46 | 0.34 |
| 200RB/500RB 2                                | 0.34                       | 0.28  | 0.22 | 0.18 | 0.13 |
| 200RB/500RB 3                                | 0.47                       | 0.38  | 0.31 | 0.24 | 0.18 |
| 200RB/500RB 4                                | 0.89                       | 0.73  | 0.58 | 0.46 | 0.34 |
| 200RB/500RB 5                                | 1.08                       | 0.88  | 0.71 | 0.55 | 0.39 |
| 200RB/500RB 6                                | 1.14                       | 0.93  | 0.75 | 0.59 | 0.43 |
| 200RB/500RB 7                                | 1.90                       | 1.00  | 1.30 | 1.00 | 0.76 |
| 240RA/250RA/540RA 8                          | 1.50                       | 1.20  | 1.00 | 0.80 | 0.60 |
| 240RA/250RA/540RA 9T5                        | 2.00                       | 1.60  | 1.30 | 1.00 | 0.80 |
| 240RA/250RA/540RA 9                          | 2.40                       | 2.00  | 1.60 | 1.20 | 1.00 |
| 240RA/250RA/540RA 12                         | 2.90                       | 2.40  | 1.90 | 1.50 | 1.20 |
| 240RA/250RA/540RA 16                         | 5.80                       | 4.70  | 3.80 | 3.00 | 2.30 |
| 240RA/250RA/540RA 20                         | 8.20                       | 6.70  | 5.40 | 4.20 | 3.30 |
| R-290                                        |                            |       |      |      |      |
| 100RB                                        | 0.24                       | 0.33  | 0.26 | 0.02 | 0.15 |
| 150RB 1                                      | 0.24                       | 0.33  | 0.26 | 0.02 | 0.15 |
| 150RB 3                                      | 0.59                       | 0.83  | 0.65 | 0.05 | 0.38 |
| 150RB 7                                      | 0.82                       | 1.15  | 0.90 | 0.70 | 0.52 |
| 150RB 9                                      | 1.55                       | 2.17  | 1.71 | 1.32 | 0.99 |
| 200RB/500RB 2                                | 0.59                       | 0.83  | 0.65 | 0.05 | 0.38 |
| 200RB/500RB 3                                | 0.82                       | 1.15  | 0.90 | 0.70 | 0.52 |
| 200RB/500RB 4                                | 1.55                       | 2.17  | 1.71 | 1.32 | 0.99 |
| 200RB/500RB 5                                | 1.88                       | 2.64  | 2.08 | 1.60 | 1.20 |
| 200RB/500RB 6                                | 1.99                       | 2.78  | 2.19 | 1.69 | 1.27 |
| 200RB/500RB 7                                | 3.31                       | 4.64  | 3.65 | 2.82 | 2.12 |
| R-32                                         |                            |       |      |      |      |
| 100RB                                        | 0.21                       | 0.17  | 0.14 | 0.11 | 0.08 |
| 150RB 1                                      | 0.21                       | 0.17  | 0.14 | 0.11 | 0.08 |
| 150RB 3                                      | 0.53                       | 0.44  | 0.34 | 0.28 | 0.20 |
| 150RB 7                                      | 0.73                       | 0.59  | 0.48 | 0.37 | 0.28 |
| 150RB 9                                      | 1.39                       | 1.14  | 0.90 | 0.72 | 0.53 |
| 200RB/500RB 2                                | 0.53                       | 0.44  | 0.34 | 0.28 | 0.20 |
| 200RB/500RB 3                                | 0.73                       | 0.59  | 0.48 | 0.37 | 0.28 |
| 200RB/500RB 4                                | 1.39                       | 1.14  | 0.90 | 0.72 | 0.53 |
| 200RB/500RB 5                                | 1.68                       | 1.37  | 1.11 | 0.86 | 0.61 |
| 200RB/500RB 6                                | 1.78                       | 1.45  | 1.17 | 0.92 | 0.67 |
| 250RA 8                                      | 2.34                       | 1.87  | 1.56 | 1.25 | 0.94 |
| 250RA 9T (5/8)                               | 3.12                       | 2.50  | 2.03 | 1.56 | 1.25 |
| 250RA 9T (7/8 & Up)                          | 3.74                       | 3.12  | 2.50 | 1.87 | 1.56 |
| 250RA 12                                     | 4.52                       | 3.74  | 2.96 | 2.34 | 1.87 |
| 250RA 16                                     | 9.05                       | 7.33  | 5.93 | 4.68 | 3.59 |
| 250RA 20                                     | 12.79                      | 10.45 | 8.42 | 6.55 | 5.15 |

NOTE: Capacity is based on largest connection size.

SUCTION GAS CAPACITIES - kW

| SUCTION GAS CAPACITIES @ 14.0 kPa PRESSURE DROP |                            |       |       |       |       |
|-------------------------------------------------|----------------------------|-------|-------|-------|-------|
| VALVE SERIES                                    | EVAPORATOR TEMPERATURE - C |       |       |       |       |
|                                                 | 4                          | -7    | -18   | -29   | -40   |
| R-22/R407C                                      |                            |       |       |       |       |
| 100RB                                           | 0.48                       | 0.39  | 0.31  | 0.25  | 0.18  |
| 150RB 1                                         | 0.48                       | 0.39  | 0.31  | 0.25  | 0.18  |
| 150RB 3                                         | 1.20                       | 0.98  | 0.77  | 0.63  | 0.46  |
| 150RB 7                                         | 1.65                       | 1.34  | 1.09  | 0.84  | 0.63  |
| 150RB 9                                         | 3.13                       | 2.57  | 2.04  | 1.62  | 1.20  |
| 200RB/500RB 2                                   | 1.20                       | 0.98  | 0.77  | 0.63  | 0.46  |
| 200RB/500RB 3                                   | 1.65                       | 1.34  | 1.09  | 0.84  | 0.63  |
| 200RB/500RB 4                                   | 3.13                       | 2.57  | 2.04  | 1.62  | 1.20  |
| 200RB/500RB 5                                   | 3.80                       | 3.09  | 2.50  | 1.93  | 1.37  |
| 200RB/500RB 6                                   | 4.01                       | 3.27  | 2.64  | 2.07  | 1.51  |
| 200RB/500RB 7                                   | 6.80                       | 5.60  | 4.60  | 3.50  | 2.70  |
| 240RA/250RA/540RA 8                             | 5.28                       | 4.22  | 3.52  | 2.81  | 2.11  |
| 240RA/250RA/540RA 9T5                           | 7.03                       | 5.63  | 4.57  | 3.52  | 2.81  |
| 240RA/250RA/540RA 9                             | 8.44                       | 7.03  | 5.63  | 4.22  | 3.52  |
| 240RA/250RA/540RA 12                            | 10.20                      | 8.44  | 6.68  | 5.28  | 4.22  |
| 240RA/250RA/540RA 16                            | 20.40                      | 16.53 | 13.36 | 10.55 | 8.09  |
| 240RA/250RA/540RA 20                            | 28.84                      | 23.56 | 18.99 | 14.77 | 11.61 |
| R-290                                           |                            |       |       |       |       |
| 100RB                                           | 0.83                       | 1.17  | 0.91  | 0.07  | 0.53  |
| 150RB 1                                         | 0.83                       | 1.17  | 0.91  | 0.07  | 0.53  |
| 150RB 3                                         | 2.08                       | 2.92  | 2.29  | 1.76  | 1.34  |
| 150RB 7                                         | 2.88                       | 4.04  | 3.17  | 2.46  | 1.83  |
| 150RB 9                                         | 5.45                       | 7.63  | 6.01  | 4.64  | 3.48  |
| 200RB/500RB 2                                   | 2.08                       | 2.92  | 2.29  | 1.76  | 1.34  |
| 200RB/500RB 3                                   | 2.88                       | 4.04  | 3.17  | 2.46  | 1.83  |
| 200RB/500RB 4                                   | 5.45                       | 7.63  | 6.01  | 4.64  | 3.48  |
| 200RB/500RB 5                                   | 6.61                       | 9.28  | 7.32  | 5.63  | 4.22  |
| 200RB/500RB 6                                   | 7.00                       | 9.78  | 7.70  | 5.94  | 4.47  |
| 200RB/500RB 7                                   | 11.64                      | 16.32 | 12.84 | 9.92  | 7.46  |
| R-32                                            |                            |       |       |       |       |
| 100RB                                           | 0.75                       | 0.61  | 0.48  | 0.40  | 0.29  |
| 150RB 1                                         | 0.75                       | 0.61  | 0.48  | 0.40  | 0.29  |
| 150RB 3                                         | 1.87                       | 1.54  | 1.21  | 0.99  | 0.71  |
| 150RB 7                                         | 2.58                       | 2.08  | 1.70  | 1.32  | 0.99  |
| 150RB 9                                         | 4.88                       | 4.01  | 3.18  | 2.52  | 1.87  |
| 200RB/500RB 2                                   | 1.87                       | 1.54  | 1.21  | 0.99  | 0.71  |
| 200RB/500RB 3                                   | 2.58                       | 2.08  | 1.70  | 1.32  | 0.99  |
| 200RB/500RB 4                                   | 4.88                       | 4.01  | 3.18  | 2.52  | 1.87  |
| 200RB/500RB 5                                   | 5.93                       | 4.83  | 3.90  | 3.02  | 2.14  |
| 200RB/500RB 6                                   | 6.25                       | 5.10  | 4.11  | 3.24  | 2.36  |
| 250RA 8                                         | 8.23                       | 6.58  | 5.49  | 4.39  | 3.29  |
| 250RA 9T (5/8)                                  | 10.97                      | 8.78  | 7.13  | 5.49  | 4.39  |
| 250RA 9T (7/8 & Up)                             | 13.17                      | 10.97 | 8.78  | 6.58  | 5.49  |
| 250RA 12                                        | 15.91                      | 13.17 | 10.42 | 8.23  | 6.58  |
| 250RA 16                                        | 31.82                      | 25.79 | 20.85 | 16.46 | 12.62 |
| 250RA 20                                        | 44.99                      | 36.76 | 29.63 | 23.04 | 18.11 |

# SUCTION GAS

# SOLENOID CAPACITY TABLES

## SUCTION GAS CAPACITIES - TONS

| SUCTION GAS CAPACITIES @ 2 PSI PRESSURE DROP |                            |      |      |      |      |
|----------------------------------------------|----------------------------|------|------|------|------|
| VALVE SERIES                                 | EVAPORATOR TEMPERATURE - F |      |      |      |      |
|                                              | 40                         | 20   | 0    | -20  | -40  |
| R-404A/R-507                                 |                            |      |      |      |      |
| 100RB                                        | 0.12                       | 0.09 | 0.07 | 0.06 | 0.04 |
| 150RB 1                                      | 0.12                       | 0.09 | 0.07 | 0.06 | 0.04 |
| 150RB 3                                      | 0.29                       | 0.23 | 0.18 | 0.14 | 0.10 |
| 150RB 7                                      | 0.39                       | 0.31 | 0.24 | 0.19 | 0.13 |
| 150RB 9                                      | 0.74                       | 0.54 | 0.46 | 0.35 | 0.26 |
| 200RB/500RB 2                                | 0.29                       | 0.23 | 0.18 | 0.14 | 0.10 |
| 200RB/500RB 3                                | 0.39                       | 0.31 | 0.24 | 0.19 | 0.13 |
| 200RB/500RB 4                                | 0.74                       | 0.54 | 0.46 | 0.35 | 0.26 |
| 200RB/500RB 5                                | 0.90                       | 0.71 | 0.56 | 0.42 | 0.30 |
| 200RB/500RB 6                                | 0.95                       | 0.76 | 0.59 | 0.45 | 0.32 |
| 200RB/500RB 7                                | 1.70                       | 1.30 | 1.00 | 0.80 | 0.60 |
| 240RA/250RA/540RA 8                          | 0.90                       | 0.70 | 0.50 | 0.40 | 0.30 |
| 240RA/250RA/540RA 9T5                        | 1.50                       | 1.20 | 0.90 | 0.70 | 0.50 |
| 240RA/250RA/540RA 9                          | 1.90                       | 1.50 | 1.20 | 0.90 | 0.60 |
| 240RA/250RA/540RA 12                         | 2.20                       | 1.80 | 1.40 | 1.00 | 0.80 |
| 240RA/250RA/540RA 16                         | 3.40                       | 2.70 | 2.10 | 1.60 | 1.20 |
| 240RA/250RA/540RA 20                         | 4.80                       | 3.80 | 2.90 | 2.20 | 1.60 |
| R-410A                                       |                            |      |      |      |      |
| 100RB                                        | 0.16                       | 0.14 | 0.11 | 0.09 | 0.06 |
| 150RB 1                                      | 0.16                       | 0.14 | 0.11 | 0.09 | 0.06 |
| 150RB 3                                      | 0.28                       | 0.22 | 0.20 | 0.21 | 0.16 |
| 150RB 7                                      | 0.57                       | 0.46 | 0.37 | 0.29 | 0.23 |
| 150RB 9                                      | 1.07                       | 0.88 | 0.70 | 0.55 | 0.43 |
| 200RB/500RB 2                                | 0.41                       | 0.34 | 0.27 | 0.22 | 0.16 |
| 200RB/500RB 3                                | 0.57                       | 0.46 | 0.37 | 0.29 | 0.23 |
| 200RB/500RB 4                                | 1.07                       | 0.88 | 0.70 | 0.55 | 0.43 |
| 200RB/500RB 5                                | 1.30                       | 1.06 | 0.85 | 0.67 | 0.51 |
| 200RB/500RB 6                                | 1.37                       | 1.12 | 0.90 | 0.72 | 0.55 |
| 200RB/500RB 7                                | 2.40                       | 2.00 | 1.60 | 1.20 | 1.00 |
| 250RA 8                                      | 1.82                       | 1.45 | 1.21 | 0.97 | 0.73 |
| 250RA 9T5                                    | 2.42                       | 1.94 | 1.57 | 1.21 | 0.97 |
| 250RA 9                                      | 2.90                       | 2.42 | 1.94 | 1.45 | 1.21 |
| 250RA 12                                     | 3.51                       | 2.90 | 2.30 | 1.82 | 1.45 |
| 250RA 16                                     | 7.02                       | 5.69 | 4.60 | 3.63 | 2.78 |
| 250RA 20                                     | 9.92                       | 8.11 | 6.53 | 5.08 | 3.99 |
| R-448A/R-449A                                |                            |      |      |      |      |
| 100RB                                        | 0.13                       | 0.12 | 0.10 | 0.08 | 0.06 |
| 150RB 1                                      | 0.13                       | 0.12 | 0.10 | 0.08 | 0.06 |
| 150RB 3                                      | 0.32                       | 0.30 | 0.25 | 0.19 | 0.15 |
| 150RB 7                                      | 0.44                       | 0.42 | 0.34 | 0.27 | 0.21 |
| 150RB 9                                      | 0.82                       | 0.80 | 0.65 | 0.51 | 0.40 |
| 200RB/500RB 2                                | 0.32                       | 0.30 | 0.25 | 0.19 | 0.15 |
| 200RB/500RB 3                                | 0.44                       | 0.42 | 0.34 | 0.27 | 0.21 |
| 200RB/500RB 4                                | 0.82                       | 0.80 | 0.65 | 0.51 | 0.40 |
| 200RB/500RB 5                                | 1.00                       | 0.97 | 0.79 | 0.61 | 0.48 |
| 200RB/500RB 6                                | 1.06                       | 1.02 | 0.83 | 0.65 | 0.51 |
| 200RB/500RB 7                                | 1.76                       | 1.70 | 1.38 | 1.08 | 0.85 |
| 240RA/250RA/540RA 8                          | 1.39                       | 1.34 | 1.09 | 0.85 | 0.67 |
| 240RA/250RA/540RA 9T5                        | 1.85                       | 1.79 | 1.46 | 1.14 | 0.89 |
| 240RA/250RA/540RA 9                          | 2.22                       | 2.15 | 1.75 | 1.36 | 1.07 |
| 240RA/250RA/540RA 12                         | 2.69                       | 2.59 | 2.11 | 1.65 | 1.30 |
| 240RA/250RA/540RA 16                         | 5.37                       | 5.19 | 4.22 | 3.30 | 2.59 |
| 240RA/250RA/540RA 20                         | 7.60                       | 7.33 | 5.97 | 4.66 | 3.66 |
| R-454A                                       |                            |      |      |      |      |
| 100RB                                        | 0.13                       | 0.10 | 0.07 | 0.06 | 0.05 |
| 150RB 1                                      | 0.13                       | 0.10 | 0.07 | 0.06 | 0.05 |
| 150RB 3                                      | 0.33                       | 0.26 | 0.18 | 0.16 | 0.12 |
| 150RB 7                                      | 0.45                       | 0.36 | 0.25 | 0.22 | 0.16 |
| 150RB 9                                      | 0.85                       | 0.67 | 0.47 | 0.42 | 0.31 |
| 200RB/500RB 2                                | 0.33                       | 0.26 | 0.18 | 0.16 | 0.12 |
| 200RB/500RB 3                                | 0.45                       | 0.36 | 0.25 | 0.22 | 0.16 |
| 200RB/500RB 4                                | 0.85                       | 0.67 | 0.47 | 0.42 | 0.31 |
| 200RB/500RB 5                                | 1.03                       | 0.82 | 0.57 | 0.50 | 0.38 |
| 200RB/500RB 6                                | 1.09                       | 0.86 | 0.60 | 0.53 | 0.40 |
| 250RA/540RA 8                                | 1.43                       | 1.14 | 0.79 | 0.70 | 0.53 |
| 250RA/540RA 9T5                              | 1.91                       | 1.52 | 1.05 | 0.93 | 0.70 |
| 250RA/540RA 9                                | 2.29                       | 1.82 | 1.26 | 1.12 | 0.84 |
| 250RA/540RA 12                               | 2.77                       | 2.20 | 1.52 | 1.35 | 1.02 |
| 250RA/540RA 16                               | 5.54                       | 4.40 | 3.04 | 2.71 | 2.03 |
| 250RA/540RA 20                               | 7.84                       | 6.22 | 4.30 | 3.83 | 2.88 |

## SUCTION GAS CAPACITIES - kW

| SUCTION GAS CAPACITIES @ 14.0 kPa PRESSURE DROP |                            |       |       |       |       |
|-------------------------------------------------|----------------------------|-------|-------|-------|-------|
| VALVE SERIES                                    | EVAPORATOR TEMPERATURE - C |       |       |       |       |
|                                                 | 4                          | -7    | -18   | -29   | -40   |
| R-404A/R-507                                    |                            |       |       |       |       |
| 100RB                                           | 0.41                       | 0.32  | 0.25  | 0.20  | 0.14  |
| 150RB 1                                         | 0.41                       | 0.32  | 0.25  | 0.20  | 0.14  |
| 150RB 3                                         | 1.02                       | 0.81  | 0.63  | 0.49  | 0.35  |
| 150RB 7                                         | 1.37                       | 1.09  | 0.84  | 0.67  | 0.46  |
| 150RB 9                                         | 2.60                       | 1.90  | 1.62  | 1.23  | 0.91  |
| 200RB/500RB 2                                   | 1.02                       | 0.81  | 0.63  | 0.49  | 0.35  |
| 200RB/500RB 3                                   | 1.37                       | 1.09  | 0.84  | 0.67  | 0.46  |
| 200RB/500RB 4                                   | 2.60                       | 1.90  | 1.62  | 1.23  | 0.91  |
| 200RB/500RB 5                                   | 3.17                       | 2.50  | 1.97  | 1.48  | 1.06  |
| 200RB/500RB 6                                   | 3.34                       | 2.67  | 2.07  | 1.58  | 1.13  |
| 200RB/500RB 7                                   | 6.00                       | 4.60  | 3.50  | 2.80  | 2.10  |
| 240RA/250RA/540RA 8                             | 3.17                       | 2.46  | 1.76  | 1.41  | 1.06  |
| 240RA/250RA/540RA 9T5                           | 5.28                       | 4.22  | 3.17  | 2.46  | 1.76  |
| 240RA/250RA/540RA 9                             | 6.68                       | 5.28  | 4.22  | 3.17  | 2.11  |
| 240RA/250RA/540RA 12                            | 7.74                       | 6.33  | 4.92  | 3.52  | 2.81  |
| 240RA/250RA/540RA 16                            | 11.96                      | 9.50  | 7.39  | 5.63  | 4.22  |
| 240RA/250RA/540RA 20                            | 16.88                      | 13.36 | 10.20 | 7.74  | 5.63  |
| R-410A                                          |                            |       |       |       |       |
| 100RB                                           | 0.58                       | 0.48  | 0.37  | 0.31  | 0.22  |
| 150RB 1                                         | 0.58                       | 0.48  | 0.37  | 0.31  | 0.22  |
| 150RB 3                                         | 0.98                       | 0.77  | 0.70  | 0.74  | 0.56  |
| 150RB 7                                         | 2.00                       | 1.62  | 1.30  | 1.02  | 0.81  |
| 150RB 9                                         | 3.76                       | 3.09  | 2.46  | 1.93  | 1.51  |
| 200RB/500RB 2                                   | 1.45                       | 1.19  | 0.94  | 0.77  | 0.55  |
| 200RB/500RB 3                                   | 2.00                       | 1.62  | 1.30  | 1.02  | 0.81  |
| 200RB/500RB 4                                   | 3.76                       | 3.09  | 2.46  | 1.93  | 1.51  |
| 200RB/500RB 5                                   | 4.57                       | 3.73  | 2.99  | 2.36  | 1.79  |
| 200RB/500RB 6                                   | 4.82                       | 3.94  | 3.17  | 2.53  | 1.93  |
| 200RB/500RB 7                                   | 8.40                       | 7.00  | 5.60  | 4.20  | 3.50  |
| 250RA 8                                         | 6.38                       | 5.11  | 4.26  | 3.40  | 2.55  |
| 250RA 9T5                                       | 8.51                       | 6.81  | 5.53  | 4.26  | 3.40  |
| 250RA 9                                         | 10.21                      | 8.51  | 6.81  | 5.11  | 4.26  |
| 250RA 12                                        | 12.34                      | 10.21 | 8.09  | 6.38  | 5.11  |
| 250RA 16                                        | 24.68                      | 20.00 | 16.17 | 12.77 | 9.79  |
| 250RA 20                                        | 34.90                      | 28.51 | 22.98 | 17.87 | 14.04 |
| R-448A/R-449A                                   |                            |       |       |       |       |
| 100RB                                           | 0.45                       | 0.42  | 0.35  | 0.27  | 0.21  |
| 150RB 1                                         | 0.45                       | 0.42  | 0.35  | 0.27  | 0.21  |
| 150RB 3                                         | 1.11                       | 1.07  | 0.87  | 0.68  | 0.53  |
| 150RB 7                                         | 1.53                       | 1.48  | 1.20  | 0.94  | 0.74  |
| 150RB 9                                         | 2.90                       | 2.80  | 2.28  | 1.78  | 1.40  |
| 200RB/500RB 2                                   | 1.11                       | 1.07  | 0.87  | 0.68  | 0.53  |
| 200RB/500RB 3                                   | 1.53                       | 1.48  | 1.20  | 0.94  | 0.74  |
| 200RB/500RB 4                                   | 2.90                       | 2.80  | 2.28  | 1.78  | 1.40  |
| 200RB/500RB 5                                   | 3.52                       | 3.40  | 2.76  | 2.16  | 1.70  |
| 200RB/500RB 6                                   | 3.72                       | 3.59  | 2.92  | 2.28  | 1.79  |
| 200RB/500RB 7                                   | 6.19                       | 5.98  | 4.86  | 3.80  | 2.98  |
| 240RA/250RA/540RA 8                             | 4.89                       | 4.72  | 3.84  | 3.00  | 2.36  |
| 240RA/250RA/540RA 9T5                           | 6.52                       | 6.29  | 5.12  | 4.00  | 3.14  |
| 240RA/250RA/540RA 9                             | 7.82                       | 7.55  | 6.14  | 4.80  | 3.77  |
| 240RA/250RA/540RA 12                            | 9.45                       | 9.12  | 7.42  | 5.80  | 4.56  |
| 240RA/250RA/540RA 16                            | 18.90                      | 18.24 | 14.84 | 11.59 | 9.11  |
| 240RA/250RA/540RA 20                            | 26.72                      | 25.79 | 20.98 | 16.39 | 12.88 |
| R-454A                                          |                            |       |       |       |       |
| 100RB                                           | 0.46                       | 0.36  | 0.25  | 0.22  | 0.17  |
| 150RB 1                                         | 0.46                       | 0.36  | 0.25  | 0.22  | 0.17  |
| 150RB 3                                         | 1.14                       | 0.91  | 0.63  | 0.56  | 0.42  |
| 150RB 7                                         | 1.58                       | 1.25  | 0.87  | 0.77  | 0.58  |
| 150RB 9                                         | 2.99                       | 2.37  | 1.64  | 1.46  | 1.10  |
| 200RB/500RB 2                                   | 1.14                       | 0.91  | 0.63  | 0.56  | 0.42  |
| 200RB/500RB 3                                   | 1.58                       | 1.25  | 0.87  | 0.77  | 0.58  |
| 200RB/500RB 4                                   | 2.99                       | 2.37  | 1.64  | 1.46  | 1.10  |
| 200RB/500RB 5                                   | 3.63                       | 2.88  | 1.99  | 1.77  | 1.33  |
| 200RB/500RB 6                                   | 3.83                       | 3.04  | 2.10  | 1.87  | 1.41  |
| 250RA/540RA 8                                   | 5.04                       | 4.00  | 2.76  | 2.46  | 1.85  |
| 250RA/540RA 9T5                                 | 6.72                       | 5.33  | 3.69  | 3.28  | 2.47  |
| 250RA/540RA 9                                   | 8.07                       | 6.40  | 4.42  | 3.94  | 2.96  |
| 250RA/540RA 12                                  | 9.75                       | 7.73  | 5.35  | 4.76  | 3.58  |
| 250RA/540RA 16                                  | 19.50                      | 15.46 | 10.69 | 9.52  | 7.16  |
| 250RA/540RA 20                                  | 27.57                      | 21.86 | 15.11 | 13.46 | 10.12 |

NOTE: Capacity is based on largest connection size.

SUCTION GAS CAPACITIES - TONS

| SUCTION GAS CAPACITIES @ 2 PSI PRESSURE DROP |                             |      |      |      |      |
|----------------------------------------------|-----------------------------|------|------|------|------|
| VALVE SERIES                                 | EVAPORATOR TEMPERATURE (°F) |      |      |      |      |
|                                              | 40                          | 20   | 0    | -20  | -40  |
| R-454B/R-452B                                |                             |      |      |      |      |
| 100RB                                        | 0.16                        | 0.13 | 0.10 | 0.08 | 0.06 |
| 150RB 1                                      | 0.16                        | 0.13 | 0.10 | 0.08 | 0.06 |
| 150RB 3                                      | 0.39                        | 0.32 | 0.25 | 0.21 | 0.15 |
| 150RB 7                                      | 0.54                        | 0.44 | 0.36 | 0.28 | 0.21 |
| 150RB 9                                      | 1.02                        | 0.84 | 0.67 | 0.53 | 0.39 |
| 200RB/500RB 2                                | 0.39                        | 0.32 | 0.25 | 0.21 | 0.15 |
| 200RB/500RB 3                                | 0.54                        | 0.44 | 0.36 | 0.28 | 0.21 |
| 200RB/500RB 4                                | 1.02                        | 0.84 | 0.67 | 0.53 | 0.39 |
| 200RB/500RB 5                                | 1.24                        | 1.01 | 0.82 | 0.63 | 0.45 |
| 200RB/500RB 6                                | 1.31                        | 1.07 | 0.86 | 0.68 | 0.49 |
| 250RA 8                                      | 1.73                        | 1.38 | 1.15 | 0.92 | 0.69 |
| 250RA 9T5                                    | 2.30                        | 1.84 | 1.50 | 1.15 | 0.92 |
| 250RA 9                                      | 2.76                        | 2.30 | 1.84 | 1.38 | 1.15 |
| 250RA 12                                     | 3.34                        | 2.76 | 2.19 | 1.73 | 1.38 |
| 250RA 16                                     | 6.67                        | 5.41 | 4.37 | 3.45 | 2.65 |
| 250RA 20                                     | 9.43                        | 7.71 | 6.21 | 4.83 | 3.80 |
| R-454C                                       |                             |      |      |      |      |
| 100RB                                        | 0.12                        | 0.11 | 0.10 | 0.08 | 0.06 |
| 150RB 1                                      | 0.12                        | 0.11 | 0.10 | 0.08 | 0.06 |
| 150RB 3                                      | 0.30                        | 0.28 | 0.25 | 0.20 | 0.16 |
| 150RB 7                                      | 0.41                        | 0.39 | 0.34 | 0.28 | 0.21 |
| 150RB 9                                      | 0.78                        | 0.74 | 0.65 | 0.52 | 0.41 |
| 200RB/500RB 2                                | 0.30                        | 0.28 | 0.25 | 0.20 | 0.16 |
| 200RB/500RB 3                                | 0.41                        | 0.39 | 0.34 | 0.28 | 0.21 |
| 200RB/500RB 4                                | 0.78                        | 0.74 | 0.65 | 0.52 | 0.41 |
| 200RB/500RB 5                                | 0.95                        | 0.89 | 0.79 | 0.63 | 0.49 |
| 200RB/500RB 6                                | 1.00                        | 0.94 | 0.84 | 0.67 | 0.52 |
| R-455A                                       |                             |      |      |      |      |
| 100RB                                        | 0.12                        | 0.10 | 0.08 | 0.06 | 0.04 |
| 150RB 1                                      | 0.12                        | 0.10 | 0.08 | 0.06 | 0.04 |
| 150RB 3                                      | 0.30                        | 0.24 | 0.19 | 0.15 | 0.11 |
| 150RB 7                                      | 0.42                        | 0.34 | 0.26 | 0.20 | 0.15 |
| 150RB 9                                      | 0.79                        | 0.64 | 0.50 | 0.38 | 0.29 |
| 200RB/500RB 2                                | 0.30                        | 0.24 | 0.19 | 0.15 | 0.11 |
| 200RB/500RB 3                                | 0.42                        | 0.34 | 0.26 | 0.20 | 0.15 |
| 200RB/500RB 4                                | 0.79                        | 0.64 | 0.50 | 0.38 | 0.29 |
| 200RB/500RB 5                                | 0.96                        | 0.77 | 0.61 | 0.46 | 0.35 |
| 200RB/500RB 6                                | 1.01                        | 0.82 | 0.64 | 0.49 | 0.37 |
| 250RA/540RA 8                                | 1.33                        | 1.07 | 0.84 | 0.65 | 0.48 |
| 250RA/540RA 9T5                              | 1.78                        | 1.43 | 1.12 | 0.86 | 0.64 |
| 250RA/540RA 9                                | 2.14                        | 1.72 | 1.35 | 1.03 | 0.77 |
| 250RA/540RA 12                               | 2.58                        | 2.07 | 1.63 | 1.25 | 0.93 |
| 250RA/540RA 16                               | 5.16                        | 4.15 | 3.26 | 2.50 | 1.86 |
| 250RA/540RA 20                               | 7.30                        | 5.87 | 4.61 | 3.53 | 2.63 |

SUCTION GAS CAPACITIES - kW

| SUCTION GAS CAPACITIES @ 14.0 kPa PRESSURE DROP |                             |       |       |       |       |
|-------------------------------------------------|-----------------------------|-------|-------|-------|-------|
| VALVE SERIES                                    | EVAPORATOR TEMPERATURE (°C) |       |       |       |       |
|                                                 | 4                           | -7    | -18   | -29   | -40   |
| R-454B/R-452B                                   |                             |       |       |       |       |
| 100RB                                           | 0.55                        | 0.45  | 0.36  | 0.29  | 0.21  |
| 150RB 1                                         | 0.55                        | 0.45  | 0.36  | 0.29  | 0.21  |
| 150RB 3                                         | 1.38                        | 1.13  | 0.89  | 0.73  | 0.53  |
| 150RB 7                                         | 1.90                        | 1.54  | 1.25  | 0.97  | 0.73  |
| 150RB 9                                         | 3.60                        | 2.95  | 2.35  | 1.86  | 1.38  |
| 200RB/500RB 2                                   | 1.38                        | 1.13  | 0.89  | 0.73  | 0.53  |
| 200RB/500RB 3                                   | 1.90                        | 1.54  | 1.25  | 0.97  | 0.73  |
| 200RB/500RB 4                                   | 3.60                        | 2.95  | 2.35  | 1.86  | 1.38  |
| 200RB/500RB 5                                   | 4.37                        | 3.56  | 2.87  | 2.22  | 1.58  |
| 200RB/500RB 6                                   | 4.61                        | 3.76  | 3.03  | 2.39  | 1.74  |
| 250RA 8                                         | 6.07                        | 4.85  | 4.04  | 3.24  | 2.43  |
| 250RA 9T5                                       | 8.09                        | 6.47  | 5.26  | 4.04  | 3.24  |
| 250RA 9                                         | 9.71                        | 8.09  | 6.47  | 4.85  | 4.04  |
| 250RA 12                                        | 11.73                       | 9.71  | 7.68  | 6.07  | 4.85  |
| 250RA 16                                        | 23.46                       | 19.01 | 15.37 | 12.13 | 9.30  |
| 250RA 20                                        | 33.16                       | 27.10 | 21.84 | 16.99 | 13.35 |
| R-454C                                          |                             |       |       |       |       |
| 100RB                                           | 0.42                        | 0.40  | 0.35  | 0.28  | 0.22  |
| 150RB 1                                         | 0.42                        | 0.40  | 0.35  | 0.28  | 0.22  |
| 150RB 3                                         | 1.05                        | 0.99  | 0.88  | 0.70  | 0.55  |
| 150RB 7                                         | 1.45                        | 1.37  | 1.21  | 0.97  | 0.75  |
| 150RB 9                                         | 2.74                        | 2.59  | 2.30  | 1.83  | 1.43  |
| 200RB/500RB 2                                   | 1.05                        | 0.99  | 0.88  | 0.70  | 0.55  |
| 200RB/500RB 3                                   | 1.45                        | 1.37  | 1.21  | 0.97  | 0.75  |
| 200RB/500RB 4                                   | 2.74                        | 2.59  | 2.30  | 1.83  | 1.43  |
| 200RB/500RB 5                                   | 3.33                        | 3.14  | 2.79  | 2.22  | 1.73  |
| 200RB/500RB 6                                   | 3.51                        | 3.31  | 2.94  | 2.35  | 1.83  |
| R-455A                                          |                             |       |       |       |       |
| 100RB                                           | 0.43                        | 0.34  | 0.27  | 0.21  | 0.15  |
| 150RB 1                                         | 0.43                        | 0.34  | 0.27  | 0.21  | 0.15  |
| 150RB 3                                         | 1.06                        | 0.86  | 0.67  | 0.51  | 0.38  |
| 150RB 7                                         | 1.47                        | 1.18  | 0.93  | 0.71  | 0.53  |
| 150RB 9                                         | 2.79                        | 2.24  | 1.76  | 1.35  | 1.00  |
| 200RB/500RB 2                                   | 1.06                        | 0.86  | 0.67  | 0.51  | 0.38  |
| 200RB/500RB 3                                   | 1.47                        | 1.18  | 0.93  | 0.71  | 0.53  |
| 200RB/500RB 4                                   | 2.79                        | 2.24  | 1.76  | 1.35  | 1.00  |
| 200RB/500RB 5                                   | 3.38                        | 2.72  | 2.13  | 1.64  | 1.22  |
| 200RB/500RB 6                                   | 3.57                        | 2.87  | 2.25  | 1.73  | 1.28  |
| 250RA/540RA 8                                   | 4.69                        | 3.77  | 2.96  | 2.27  | 1.69  |
| 250RA/540RA 9T5                                 | 6.26                        | 5.03  | 3.95  | 3.03  | 2.25  |
| 250RA/540RA 9                                   | 7.51                        | 6.04  | 4.74  | 3.63  | 2.70  |
| 250RA/540RA 12                                  | 9.08                        | 7.30  | 5.73  | 4.39  | 3.27  |
| 250RA/540RA 16                                  | 18.15                       | 14.59 | 11.46 | 8.78  | 6.53  |
| 250RA/540RA 20                                  | 25.66                       | 20.63 | 16.21 | 12.42 | 9.24  |

NOTE: Capacity is based on largest connection size.



## SUCTION GAS CAPACITIES - TONS

| SUCTION GAS CAPACITIES @ 2 PSI PRESSURE DROP |                             |      |       |      |      |
|----------------------------------------------|-----------------------------|------|-------|------|------|
| VALVE SERIES                                 | EVAPORATOR TEMPERATURE (°F) |      |       |      |      |
|                                              | 40                          | 20   | 0     | -20  | -40  |
| <b>R-502</b>                                 |                             |      |       |      |      |
| 100RB                                        | 0.11                        | 0.09 | 0.07  | 0.05 | 0.04 |
| 150RB 1                                      | 0.11                        | 0.09 | 0.07  | 0.05 | 0.04 |
| 150RB 3                                      | 0.28                        | 0.22 | 0.17  | 0.13 | 0.10 |
| 150RB 7                                      | 0.38                        | 0.30 | 0.24  | 0.19 | 0.13 |
| 150RB 9                                      | 0.71                        | 0.57 | 0.45  | 0.35 | 0.26 |
| 200RB/500RB 2                                | 0.28                        | 0.22 | 0.17  | 0.13 | 0.10 |
| 200RB/500RB 3                                | 0.38                        | 0.30 | 0.24  | 0.19 | 0.13 |
| 200RB/500RB 4                                | 0.71                        | 0.57 | 0.45  | 0.35 | 0.26 |
| 200RB/500RB 5                                | 0.86                        | 0.69 | 0.55  | 0.42 | 0.30 |
| 200RB/500RB 6                                | 0.92                        | 0.74 | 0.58  | 0.45 | 0.33 |
| 200RB/500RB 7                                | 1.60                        | 1.30 | 1.00  | 0.80 | 0.60 |
| 240RA/250RA/540RA 8                          | 1.20                        | 1.00 | 0.80  | 0.60 | 0.40 |
| 240RA/250RA/540RA 9T5                        | 1.60                        | 1.30 | 1.00  | 0.80 | 0.60 |
| 240RA/250RA/540RA 9                          | 1.90                        | 1.50 | 1.20  | 0.90 | 0.07 |
| 240RA/250RA/540RA 12                         | 2.30                        | 1.90 | 14.50 | 1.10 | 0.80 |
| 240RA/250RA/540RA 16                         | 4.60                        | 3.70 | 2.90  | 2.30 | 1.70 |
| 240RA/250RA/540RA 20                         | 6.50                        | 5.20 | 4.10  | 3.20 | 2.40 |
| <b>R-513A/R-450A</b>                         |                             |      |       |      |      |
| 100RB                                        | 0.10                        | 0.08 | 0.06  | 0.04 | 0.03 |
| 150RB 1                                      | 0.10                        | 0.08 | 0.06  | 0.04 | 0.03 |
| 150RB 3                                      | 0.24                        | 0.19 | 0.15  | 0.11 | 0.08 |
| 150RB 7                                      | 0.33                        | 0.27 | 0.20  | 0.15 | 0.11 |
| 150RB 9                                      | 0.62                        | 0.50 | 0.39  | 0.29 | 0.21 |
| 200RB/500RB 2                                | 0.24                        | 0.19 | 0.15  | 0.11 | 0.08 |
| 200RB/500RB 3                                | 0.33                        | 0.27 | 0.20  | 0.15 | 0.11 |
| 200RB/500RB 4                                | 0.62                        | 0.50 | 0.39  | 0.29 | 0.21 |
| 200RB/500RB 5                                | 0.76                        | 0.61 | 0.47  | 0.35 | 0.26 |
| 200RB/500RB 6                                | 0.80                        | 0.64 | 0.50  | 0.37 | 0.27 |
| 200RB/500RB 7                                | 1.33                        | 1.07 | 0.83  | 0.62 | 0.45 |
| 240RA/250RA/540RA 8                          | 1.05                        | 0.85 | 0.65  | 0.49 | 0.35 |
| 240RA/250RA/540RA 9T5                        | 1.40                        | 1.13 | 0.87  | 0.65 | 0.47 |
| 240RA/250RA/540RA 9                          | 1.68                        | 1.35 | 1.04  | 0.78 | 0.57 |
| 240RA/250RA/540RA 12                         | 2.03                        | 1.64 | 1.26  | 0.94 | 0.69 |
| 240RA/250RA/540RA 16                         | 4.06                        | 3.27 | 2.52  | 1.89 | 1.37 |
| 240RA/250RA/540RA 20                         | 5.74                        | 4.63 | 3.56  | 2.67 | 1.94 |

| SUCTION GAS CAPACITIES @ 2 PSI PRESSURE DROP |                             |       |       |       |       |
|----------------------------------------------|-----------------------------|-------|-------|-------|-------|
| VALVE SERIES                                 | EVAPORATOR TEMPERATURE (°F) |       |       |       |       |
|                                              | 0                           | -10   | -20   | -30   | -40   |
| <b>R-744</b>                                 |                             |       |       |       |       |
| 100RB                                        | 0.21                        | 0.20  | 0.18  | 0.17  | 0.16  |
| 150RB 1                                      | 0.21                        | 0.20  | 0.18  | 0.17  | 0.16  |
| 150RB 3                                      | 0.52                        | 0.49  | 0.46  | 0.43  | 0.39  |
| 150RB 7                                      | 1.07                        | 1.00  | 0.94  | 0.87  | 0.80  |
| 150RB 9                                      | 2.00                        | 1.88  | 1.76  | 1.63  | 1.50  |
| 200RB/500RB 2                                | 0.52                        | 0.49  | 0.46  | 0.43  | 0.39  |
| 200RB/500RB 3                                | 1.07                        | 1.00  | 0.94  | 0.87  | 0.80  |
| 200RB/500RB 4                                | 2.00                        | 1.88  | 1.76  | 1.63  | 1.50  |
| 200RB/500RB 5                                | 2.43                        | 2.29  | 2.14  | 1.98  | 1.82  |
| 200RB/500RB 6                                | 2.56                        | 2.41  | 2.25  | 2.09  | 1.92  |
| 200RB/500RB 7                                | 2.71                        | 2.55  | 2.39  | 2.21  | 2.03  |
| 250RA 8                                      | 3.38                        | 3.18  | 2.97  | 2.76  | 2.53  |
| 250RA 9T5                                    | 4.48                        | 4.22  | 3.94  | 3.66  | 3.36  |
| 250RA 9                                      | 5.40                        | 5.09  | 4.75  | 4.41  | 4.05  |
| 250RA 12                                     | 6.50                        | 6.12  | 5.72  | 5.31  | 4.88  |
| 250RA 16                                     | 13.03                       | 12.27 | 11.45 | 10.64 | 9.77  |
| 250RA 20                                     | 18.41                       | 17.33 | 16.18 | 15.03 | 13.80 |

## SUCTION GAS CAPACITIES - kW

| SUCTION GAS CAPACITIES @ 14.0 kPa PRESSURE DROP |                             |       |       |       |      |
|-------------------------------------------------|-----------------------------|-------|-------|-------|------|
| VALVE SERIES                                    | EVAPORATOR TEMPERATURE (°C) |       |       |       |      |
|                                                 | 4                           | -7    | -18   | -29   | -40  |
| <b>R-502</b>                                    |                             |       |       |       |      |
| 100RB                                           | 0.39                        | 0.31  | 0.24  | 0.18  | 0.14 |
| 150RB 1                                         | 0.39                        | 0.31  | 0.24  | 0.18  | 0.14 |
| 150RB 3                                         | 0.98                        | 0.77  | 0.60  | 0.46  | 0.35 |
| 150RB 7                                         | 1.34                        | 1.06  | 0.84  | 0.67  | 0.46 |
| 150RB 9                                         | 2.50                        | 2.00  | 1.58  | 1.23  | 0.91 |
| 200RB/500RB 2                                   | 0.98                        | 0.77  | 0.60  | 0.46  | 0.35 |
| 200RB/500RB 3                                   | 1.34                        | 1.06  | 0.84  | 0.67  | 0.46 |
| 200RB/500RB 4                                   | 2.50                        | 2.00  | 1.58  | 1.23  | 0.91 |
| 200RB/500RB 5                                   | 3.02                        | 2.43  | 1.93  | 1.48  | 1.06 |
| 200RB/500RB 6                                   | 3.24                        | 2.60  | 2.04  | 1.58  | 1.16 |
| 200RB/500RB 7                                   | 5.60                        | 4.60  | 3.50  | 2.80  | 2.10 |
| 240RA/250RA/540RA 8                             | 4.22                        | 3.52  | 2.81  | 2.11  | 1.41 |
| 240RA/250RA/540RA 9T5                           | 5.63                        | 4.57  | 3.52  | 2.81  | 2.11 |
| 240RA/250RA/540RA 9                             | 6.68                        | 5.28  | 4.22  | 3.17  | 0.25 |
| 240RA/250RA/540RA 12                            | 8.09                        | 6.68  | 51.00 | 3.87  | 2.81 |
| 240RA/250RA/540RA 16                            | 16.18                       | 13.01 | 10.20 | 8.09  | 5.98 |
| 240RA/250RA/540RA 20                            | 22.86                       | 18.29 | 14.42 | 11.25 | 8.44 |
| <b>R-513A/R-450A</b>                            |                             |       |       |       |      |
| 100RB                                           | 0.34                        | 0.27  | 0.21  | 0.15  | 0.11 |
| 150RB 1                                         | 0.34                        | 0.27  | 0.21  | 0.15  | 0.11 |
| 150RB 3                                         | 0.84                        | 0.67  | 0.52  | 0.39  | 0.28 |
| 150RB 7                                         | 1.16                        | 0.93  | 0.72  | 0.54  | 0.39 |
| 150RB 9                                         | 2.19                        | 1.77  | 1.36  | 1.02  | 0.74 |
| 200RB/500RB 2                                   | 0.84                        | 0.67  | 0.52  | 0.39  | 0.28 |
| 200RB/500RB 3                                   | 1.16                        | 0.93  | 0.72  | 0.54  | 0.39 |
| 200RB/500RB 4                                   | 2.19                        | 1.77  | 1.36  | 1.02  | 0.74 |
| 200RB/500RB 5                                   | 2.66                        | 2.14  | 1.65  | 1.24  | 0.90 |
| 200RB/500RB 6                                   | 2.80                        | 2.26  | 1.74  | 1.31  | 0.95 |
| 200RB/500RB 7                                   | 4.67                        | 3.77  | 2.90  | 2.18  | 1.58 |
| 240RA/250RA/540RA 8                             | 3.69                        | 2.98  | 2.29  | 1.72  | 1.25 |
| 240RA/250RA/540RA 9T5                           | 4.92                        | 3.97  | 3.06  | 2.29  | 1.66 |
| 240RA/250RA/540RA 9                             | 5.90                        | 4.76  | 3.67  | 2.75  | 2.00 |
| 240RA/250RA/540RA 12                            | 7.13                        | 5.75  | 4.43  | 3.32  | 2.41 |
| 240RA/250RA/540RA 16                            | 14.27                       | 11.51 | 8.87  | 6.65  | 4.83 |
| 240RA/250RA/540RA 20                            | 20.17                       | 16.27 | 12.53 | 9.40  | 6.82 |

| SUCTION GAS CAPACITIES @ 14.0 kPa PRESSURE DROP |                             |       |       |       |       |
|-------------------------------------------------|-----------------------------|-------|-------|-------|-------|
| VALVE SERIES                                    | EVAPORATOR TEMPERATURE (°F) |       |       |       |       |
|                                                 | 0                           | -10   | -20   | -30   | -40   |
| <b>R-744</b>                                    |                             |       |       |       |       |
| 100RB                                           | 0.73                        | 0.69  | 0.65  | 0.60  | 0.55  |
| 150RB 1                                         | 0.73                        | 0.69  | 0.65  | 0.60  | 0.55  |
| 150RB 3                                         | 1.84                        | 1.73  | 1.62  | 1.50  | 1.38  |
| 150RB 7                                         | 3.75                        | 3.53  | 3.30  | 3.06  | 2.81  |
| 150RB 9                                         | 7.03                        | 6.63  | 6.19  | 5.74  | 5.27  |
| 200RB/500RB 2                                   | 1.84                        | 1.73  | 1.62  | 1.50  | 1.38  |
| 200RB/500RB 3                                   | 3.75                        | 3.53  | 3.30  | 3.06  | 2.81  |
| 200RB/500RB 4                                   | 7.03                        | 6.63  | 6.19  | 5.74  | 5.27  |
| 200RB/500RB 5                                   | 8.55                        | 8.05  | 7.52  | 6.97  | 6.41  |
| 200RB/500RB 6                                   | 9.01                        | 8.49  | 7.93  | 7.35  | 6.75  |
| 200RB/500RB 7                                   | 9.53                        | 8.98  | 8.39  | 7.78  | 7.14  |
| 250RA 8                                         | 11.88                       | 11.19 | 10.45 | 9.70  | 8.91  |
| 250RA 9T5                                       | 15.76                       | 14.83 | 13.85 | 12.86 | 11.82 |
| 250RA 9                                         | 19.00                       | 17.88 | 16.70 | 15.51 | 14.25 |
| 250RA 12                                        | 22.87                       | 21.53 | 20.10 | 18.67 | 17.15 |
| 250RA 16                                        | 45.83                       | 43.14 | 40.28 | 37.41 | 34.37 |
| 250RA 20                                        | 64.74                       | 60.94 | 56.90 | 52.85 | 48.55 |

NOTE: Shading indicates nominal ratings at 20°F Liquid, -20°F Evaporating Temperature, and 25°F Superheat



DISCHARGE GAS CAPACITIES - TONS

| PRESSURE DROP ACROSS VALVE - PSI |      |       |       |       |       |       |
|----------------------------------|------|-------|-------|-------|-------|-------|
| VALVE SERIES                     | 2.0  | 5.0   | 10    | 25.0  | 50    | 100   |
| R-12                             |      |       |       |       |       |       |
| 100RB                            | 0.10 | 0.20  | 0.30  | 0.50  | 0.50  | 0.50  |
| 150RB 1                          | 0.10 | 0.20  | 0.30  | 0.50  | 0.50  | 0.50  |
| 150RB 3                          | 0.35 | 0.50  | 0.75  | 1.05  | 1.20  | 1.35  |
| 150RB 7                          | 0.45 | 0.75  | 1.00  | 1.45  | 1.75  | 1.85  |
| 150RB 9                          | 0.85 | 1.35  | 1.95  | 2.70  | 3.55  | 4.25  |
| 200RB/500RB 2                    | 0.35 | 0.50  | 0.75  | 1.05  | 1.20  | 1.35  |
| 200RB/500RB 3                    | 0.45 | 0.75  | 1.00  | 1.45  | 1.75  | 1.85  |
| 200RB/500RB 4                    | 0.85 | 1.35  | 1.95  | 2.70  | 3.55  | 4.25  |
| 200RB/500RB 5                    | 1.05 | 1.65  | 2.45  | 3.30  | 4.45  | 5.45  |
| 200RB/500RB 6                    | 1.15 | 1.75  | 2.50  | 3.70  | 4.80  | 5.85  |
| 200RB/500RB 7                    | 1.50 | 2.40  | 3.30  | 5.20  | 6.60  | 7.20  |
| 240RA/250RA/540RA 8              | 1.50 | 2.40  | 3.30  | 5.20  | 6.60  | 7.20  |
| 240RA/250RA/540RA 9T5            | 2.50 | 4.00  | 5.60  | 8.30  | 10.40 | 11.20 |
| 240RA/250RA/540RA 9              | 3.20 | 5.00  | 7.10  | 10.10 | 12.10 | 11.10 |
| 240RA/250RA/540RA 12             | 3.50 | 5.50  | 7.80  | 11.70 | 14.00 | 12.40 |
| 240RA/250RA/540RA 16             | 5.80 | 9.10  | 12.90 | 18.90 | 23.60 | 24.30 |
| 240RA/250RA/540RA 20             | 8.10 | 12.80 | 18.10 | 28.20 | 34.40 | 33.10 |
| R-1234yf                         |      |       |       |       |       |       |
| 100RB                            | 0.13 | 0.20  | 0.28  | 0.41  | 0.52  | 0.54  |
| 150RB 1                          | 0.13 | 0.20  | 0.28  | 0.41  | 0.52  | 0.54  |
| 150RB 3                          | 0.29 | 0.45  | 0.63  | 0.93  | 1.17  | 1.23  |
| 150RB 7                          | 0.42 | 0.65  | 0.91  | 1.34  | 1.68  | 1.77  |
| 150RB 9                          | 0.81 | 1.26  | 1.74  | 2.58  | 3.24  | 3.40  |
| 200RB/500RB 2                    | 0.29 | 0.45  | 0.63  | 0.93  | 1.17  | 1.23  |
| 200RB/500RB 3                    | 0.42 | 0.65  | 0.91  | 1.34  | 1.68  | 1.77  |
| 200RB/500RB 4                    | 0.81 | 1.26  | 1.74  | 2.58  | 3.24  | 3.40  |
| 200RB/500RB 5                    | 0.97 | 1.51  | 2.09  | 3.10  | 3.88  | 4.09  |
| 200RB/500RB 6                    | 1.03 | 1.61  | 2.23  | 3.30  | 4.14  | 4.36  |
| R-134a                           |      |       |       |       |       |       |
| 100RB                            | 0.20 | 0.20  | 0.30  | 0.50  | 0.60  | 0.60  |
| 150RB 1                          | 0.20 | 0.20  | 0.30  | 0.50  | 0.60  | 0.60  |
| 150RB 3                          | 0.40 | 0.65  | 0.90  | 1.30  | 1.55  | 1.40  |
| 150RB 7                          | 0.55 | 0.85  | 1.20  | 1.75  | 2.15  | 2.05  |
| 150RB 9                          | 1.00 | 1.65  | 2.30  | 3.25  | 4.30  | 5.20  |
| 200RB/500RB 2                    | 0.40 | 0.65  | 0.90  | 1.30  | 1.55  | 1.40  |
| 200RB/500RB 3                    | 0.55 | 0.85  | 1.20  | 1.75  | 2.15  | 2.05  |
| 200RB/500RB 4                    | 1.00 | 1.65  | 2.30  | 3.25  | 4.30  | 5.20  |
| 200RB/500RB 5                    | 1.25 | 2.00  | 2.85  | 4.00  | 5.40  | 6.85  |
| 200RB/500RB 6                    | 1.35 | 2.15  | 3.00  | 4.45  | 5.80  | 6.95  |
| 200RB/500RB 7                    | 1.80 | 2.80  | 4.00  | 6.20  | 8.00  | 8.90  |
| 240RA/250RA/540RA 8              | 1.80 | 2.80  | 4.00  | 6.20  | 8.00  | 8.90  |
| 240RA/250RA/540RA 9T5            | 3.00 | 4.70  | 6.70  | 10.00 | 12.70 | 13.90 |
| 240RA/250RA/540RA 9              | 3.80 | 6.00  | 8.50  | 12.20 | 14.80 | 14.20 |
| 240RA/250RA/540RA 12             | 4.20 | 6.60  | 9.40  | 14.20 | 17.10 | 15.90 |
| 240RA/250RA/540RA 16             | 6.90 | 10.90 | 15.40 | 22.80 | 28.60 | 30.40 |
| 240RA/250RA/540RA 20             | 9.70 | 15.30 | 21.60 | 34.00 | 41.90 | 41.90 |

NOTE: Shading indicates AHRI standard ratings  
NOTE: Capacity is based on largest connection size.

DISCHARGE GAS CAPACITIES - kW

| PRESSURE DROP ACROSS VALVE - kPa |       |       |       |        |        |        |
|----------------------------------|-------|-------|-------|--------|--------|--------|
| VALVE SERIES                     | 13.8  | 34.5  | 69    | 172.5  | 345    | 690    |
| R-12                             |       |       |       |        |        |        |
| 100RB                            | 0.35  | 0.70  | 1.06  | 1.76   | 1.76   | 1.76   |
| 150RB 1                          | 0.35  | 0.70  | 1.06  | 1.76   | 1.76   | 1.76   |
| 150RB 3                          | 1.23  | 1.76  | 2.64  | 3.69   | 4.22   | 4.75   |
| 150RB 7                          | 1.58  | 2.64  | 3.52  | 5.10   | 6.15   | 6.51   |
| 150RB 9                          | 2.99  | 4.75  | 6.86  | 9.50   | 12.48  | 14.95  |
| 200RB/500RB 2                    | 1.23  | 1.76  | 2.64  | 3.69   | 4.22   | 4.75   |
| 200RB/500RB 3                    | 1.58  | 2.64  | 3.52  | 5.10   | 6.15   | 6.51   |
| 200RB/500RB 4                    | 2.99  | 4.75  | 6.86  | 9.50   | 12.48  | 14.95  |
| 200RB/500RB 5                    | 3.69  | 5.80  | 8.62  | 11.61  | 15.65  | 19.17  |
| 200RB/500RB 6                    | 4.04  | 6.15  | 8.79  | 13.01  | 16.88  | 20.57  |
| 200RB/500RB 7                    | 5.28  | 8.44  | 11.61 | 18.29  | 23.21  | 25.32  |
| 240RA/250RA/540RA 8              | 5.28  | 8.44  | 11.61 | 18.29  | 23.21  | 25.32  |
| 240RA/250RA/540RA 9T5            | 8.79  | 14.07 | 19.69 | 29.19  | 36.58  | 39.39  |
| 240RA/250RA/540RA 9              | 11.25 | 17.58 | 24.97 | 35.52  | 42.55  | 39.04  |
| 240RA/250RA/540RA 12             | 12.31 | 19.34 | 27.43 | 41.15  | 49.24  | 43.61  |
| 240RA/250RA/540RA 16             | 20.40 | 32.00 | 45.37 | 66.47  | 83.00  | 85.46  |
| 240RA/250RA/540RA 20             | 28.49 | 45.02 | 63.66 | 99.18  | 120.98 | 116.41 |
| R-1234yf                         |       |       |       |        |        |        |
| 100RB                            | 0.45  | 0.71  | 0.98  | 1.45   | 1.82   | 1.92   |
| 150RB 1                          | 0.45  | 0.71  | 0.98  | 1.45   | 1.82   | 1.92   |
| 150RB 3                          | 1.02  | 1.59  | 2.21  | 3.27   | 4.10   | 4.31   |
| 150RB 7                          | 1.48  | 2.30  | 3.19  | 4.72   | 5.92   | 6.23   |
| 150RB 9                          | 2.84  | 4.43  | 6.13  | 9.08   | 11.38  | 11.97  |
| 200RB/500RB 2                    | 1.02  | 1.59  | 2.21  | 3.27   | 4.10   | 4.31   |
| 200RB/500RB 3                    | 1.48  | 2.30  | 3.19  | 4.72   | 5.92   | 6.23   |
| 200RB/500RB 4                    | 2.84  | 4.43  | 6.13  | 9.08   | 11.38  | 11.97  |
| 200RB/500RB 5                    | 3.40  | 5.32  | 7.36  | 10.90  | 13.66  | 14.37  |
| 200RB/500RB 6                    | 3.63  | 5.67  | 7.85  | 11.62  | 14.57  | 15.33  |
| R-134a                           |       |       |       |        |        |        |
| 100RB                            | 0.70  | 0.70  | 1.06  | 1.76   | 2.11   | 2.11   |
| 150RB 1                          | 0.70  | 0.70  | 1.06  | 1.76   | 2.11   | 2.11   |
| 150RB 3                          | 1.41  | 2.29  | 3.17  | 4.57   | 5.45   | 4.92   |
| 150RB 7                          | 1.93  | 2.99  | 4.22  | 6.15   | 7.56   | 7.21   |
| 150RB 9                          | 3.52  | 5.80  | 8.09  | 11.43  | 15.12  | 18.29  |
| 200RB/500RB 2                    | 1.41  | 2.29  | 3.17  | 4.57   | 5.45   | 4.92   |
| 200RB/500RB 3                    | 1.93  | 2.99  | 4.22  | 6.15   | 7.56   | 7.21   |
| 200RB/500RB 4                    | 3.52  | 5.80  | 8.09  | 11.43  | 15.12  | 18.29  |
| 200RB/500RB 5                    | 4.40  | 7.03  | 10.02 | 14.07  | 18.99  | 24.09  |
| 200RB/500RB 6                    | 4.75  | 7.56  | 10.55 | 15.65  | 20.40  | 24.44  |
| 200RB/500RB 7                    | 6.33  | 9.85  | 14.07 | 21.80  | 28.14  | 31.30  |
| 240RA/250RA/540RA 8              | 6.33  | 9.85  | 14.07 | 21.80  | 28.14  | 31.30  |
| 240RA/250RA/540RA 9T5            | 10.55 | 16.53 | 23.56 | 35.17  | 44.66  | 48.88  |
| 240RA/250RA/540RA 9              | 13.36 | 21.10 | 29.89 | 42.91  | 52.05  | 49.94  |
| 240RA/250RA/540RA 12             | 14.77 | 23.21 | 33.06 | 49.94  | 60.14  | 55.92  |
| 240RA/250RA/540RA 16             | 24.27 | 38.33 | 54.16 | 80.19  | 100.58 | 106.91 |
| 240RA/250RA/540RA 20             | 34.11 | 53.81 | 75.97 | 119.57 | 147.36 | 147.36 |

## DISCHARGE GAS CAPACITIES - TONS

| PRESSURE DROP ACROSS VALVE - PSI |       |       |       |       |       |        |
|----------------------------------|-------|-------|-------|-------|-------|--------|
| VALVE SERIES                     | 2.0   | 5.0   | 10    | 25.0  | 50    | 100    |
| <b>R-22</b>                      |       |       |       |       |       |        |
| 100RB                            | 0.20  | 0.30  | 0.40  | 0.60  | 0.80  | 1.00   |
| 150RB 1                          | 0.20  | 0.30  | 0.40  | 0.60  | 0.80  | 1.00   |
| 150RB 3                          | 0.45  | 0.75  | 1.05  | 1.65  | 2.10  | 2.40   |
| 150RB 7                          | 0.65  | 1.05  | 1.45  | 2.25  | 2.95  | 3.35   |
| 150RB 9                          | 1.25  | 1.95  | 2.80  | 4.05  | 5.50  | 7.05   |
| 200RB/500RB 2                    | 0.45  | 0.75  | 1.05  | 1.65  | 2.10  | 2.40   |
| 200RB/500RB 3                    | 0.65  | 1.05  | 1.45  | 2.25  | 2.95  | 3.35   |
| 200RB/500RB 4                    | 1.25  | 1.95  | 2.80  | 4.05  | 5.50  | 7.05   |
| 200RB/500RB 5                    | 1.50  | 2.37  | 3.50  | 4.90  | 6.75  | 9.00   |
| 200RB/500RB 6                    | 1.60  | 2.55  | 3.60  | 5.50  | 7.40  | 9.45   |
| 200RB/500RB 7                    | 2.10  | 3.40  | 4.80  | 7.80  | 10.40 | 12.80  |
| 240RA/250RA/540RA 8              | 2.10  | 3.40  | 4.80  | 7.80  | 10.40 | 12.80  |
| 240RA/250RA/540RA 9T5            | 3.60  | 5.70  | 8.10  | 12.50 | 16.60 | 20.40  |
| 240RA/250RA/540RA 9              | 4.60  | 7.20  | 10.20 | 15.40 | 20.00 | 23.10  |
| 240RA/250RA/540RA 12             | 5.10  | 8.00  | 11.30 | 18.10 | 23.40 | 26.60  |
| 240RA/250RA/540RA 16             | 8.30  | 13.20 | 18.70 | 28.60 | 37.80 | 45.63  |
| 240RA/250RA/540RA 20             | 11.70 | 18.40 | 26.10 | 43.00 | 56.10 | 66.00  |
| <b>R-290</b>                     |       |       |       |       |       |        |
| 100RB                            | 0.35  | 0.55  | 0.76  | 1.16  | 1.53  | 1.85   |
| 150RB 1                          | 0.35  | 0.55  | 0.76  | 1.16  | 1.53  | 1.85   |
| 150RB 3                          | 0.78  | 1.23  | 1.72  | 2.61  | 3.44  | 4.16   |
| 150RB 7                          | 1.13  | 1.78  | 2.48  | 3.77  | 4.97  | 6.01   |
| 150RB 9                          | 2.18  | 3.42  | 4.77  | 7.25  | 9.56  | 11.55  |
| 200RB/500RB 2                    | 0.78  | 1.23  | 1.72  | 2.61  | 3.44  | 4.16   |
| 200RB/500RB 3                    | 1.13  | 1.78  | 2.48  | 3.77  | 4.97  | 6.01   |
| 200RB/500RB 4                    | 2.18  | 3.42  | 4.77  | 7.25  | 9.56  | 11.55  |
| 200RB/500RB 5                    | 2.62  | 4.10  | 5.73  | 8.70  | 11.47 | 13.86  |
| 200RB/500RB 6                    | 2.79  | 4.38  | 6.11  | 9.28  | 12.24 | 14.79  |
| 200RB/500RB 7                    | 3.66  | 5.74  | 8.02  | 12.18 | 23.50 | 30.98  |
| <b>R-32</b>                      |       |       |       |       |       |        |
| 100RB                            | 0.31  | 0.47  | 0.63  | 0.94  | 1.26  | 1.57   |
| 150RB 1                          | 0.31  | 0.47  | 0.63  | 0.94  | 1.26  | 1.57   |
| 150RB 3                          | 0.71  | 1.18  | 1.65  | 2.59  | 3.30  | 3.77   |
| 150RB 7                          | 1.02  | 1.65  | 2.28  | 3.53  | 4.63  | 5.26   |
| 150RB 9                          | 1.96  | 3.06  | 4.40  | 6.36  | 8.64  | 11.07  |
| 200RB/500RB 2                    | 0.71  | 1.18  | 1.65  | 2.59  | 3.30  | 3.77   |
| 200RB/500RB 3                    | 1.02  | 1.65  | 2.28  | 3.53  | 4.63  | 5.26   |
| 200RB/500RB 4                    | 1.96  | 3.06  | 4.40  | 6.36  | 8.64  | 11.07  |
| 200RB/500RB 5                    | 2.36  | 3.72  | 5.50  | 7.69  | 10.60 | 14.13  |
| 200RB/500RB 6                    | 2.51  | 4.00  | 5.65  | 8.64  | 11.62 | 14.84  |
| 250RA 8                          | 3.30  | 5.34  | 7.54  | 12.25 | 16.33 | 20.10  |
| 250RA 9T (5/8)                   | 5.65  | 8.95  | 12.72 | 19.63 | 26.06 | 32.03  |
| 250RA 9T (7/8 & Up)              | 7.22  | 11.30 | 16.01 | 24.18 | 31.40 | 36.27  |
| 250RA 12                         | 8.01  | 12.56 | 17.74 | 28.42 | 36.74 | 41.76  |
| 250RA 16                         | 13.03 | 20.72 | 29.36 | 44.90 | 59.35 | 71.64  |
| 250RA 20                         | 18.37 | 28.89 | 40.98 | 67.51 | 88.08 | 103.62 |

NOTE: Shading indicates AHRI standard ratings

NOTE: Capacity is based on largest connection size.

## DISCHARGE GAS CAPACITIES - kW

| PRESSURE DROP ACROSS VALVE - kPa |       |        |        |        |        |        |
|----------------------------------|-------|--------|--------|--------|--------|--------|
| VALVE SERIES                     | 13.8  | 34.5   | 69     | 172.5  | 345    | 690    |
| <b>R-22</b>                      |       |        |        |        |        |        |
| 100RB                            | 0.70  | 1.06   | 1.41   | 2.11   | 2.81   | 3.52   |
| 150RB 1                          | 0.70  | 1.06   | 1.41   | 2.11   | 2.81   | 3.52   |
| 150RB 3                          | 1.58  | 2.64   | 3.69   | 5.80   | 7.39   | 8.44   |
| 150RB 7                          | 2.29  | 3.69   | 5.10   | 7.91   | 10.37  | 11.78  |
| 150RB 9                          | 4.40  | 6.86   | 9.85   | 14.24  | 19.34  | 24.79  |
| 200RB/500RB 2                    | 1.58  | 2.64   | 3.69   | 5.80   | 7.39   | 8.44   |
| 200RB/500RB 3                    | 2.29  | 3.69   | 5.10   | 7.91   | 10.37  | 11.78  |
| 200RB/500RB 4                    | 4.40  | 6.86   | 9.85   | 14.24  | 19.34  | 24.79  |
| 200RB/500RB 5                    | 5.28  | 8.34   | 12.31  | 17.23  | 23.74  | 31.65  |
| 200RB/500RB 6                    | 5.63  | 8.97   | 12.66  | 19.34  | 26.03  | 33.23  |
| 200RB/500RB 7                    | 7.39  | 11.96  | 16.88  | 27.43  | 36.58  | 45.02  |
| 240RA/250RA/540RA 8              | 7.39  | 11.96  | 16.88  | 27.43  | 36.58  | 45.02  |
| 240RA/250RA/540RA 9T5            | 12.66 | 20.05  | 28.49  | 43.96  | 58.38  | 71.74  |
| 240RA/250RA/540RA 9              | 16.18 | 25.32  | 35.87  | 54.16  | 70.34  | 81.24  |
| 240RA/250RA/540RA 12             | 17.94 | 28.14  | 39.74  | 63.66  | 82.30  | 93.55  |
| 240RA/250RA/540RA 16             | 29.19 | 46.42  | 65.77  | 100.58 | 132.94 | 160.48 |
| 240RA/250RA/540RA 20             | 41.15 | 64.71  | 91.79  | 151.23 | 197.30 | 232.12 |
| <b>R-290</b>                     |       |        |        |        |        |        |
| 100RB                            | 1.23  | 1.93   | 2.67   | 4.08   | 5.38   | 6.51   |
| 150RB 1                          | 1.23  | 1.93   | 2.67   | 4.08   | 5.38   | 6.51   |
| 150RB 3                          | 2.74  | 4.33   | 6.05   | 9.18   | 12.10  | 14.63  |
| 150RB 7                          | 3.97  | 6.26   | 8.72   | 13.26  | 17.48  | 21.14  |
| 150RB 9                          | 7.67  | 12.03  | 16.78  | 25.50  | 33.62  | 40.62  |
| 200RB/500RB 2                    | 2.74  | 4.33   | 6.05   | 9.18   | 12.10  | 14.63  |
| 200RB/500RB 3                    | 3.97  | 6.26   | 8.72   | 13.26  | 17.48  | 21.14  |
| 200RB/500RB 4                    | 7.67  | 12.03  | 16.78  | 25.50  | 33.62  | 40.62  |
| 200RB/500RB 5                    | 9.21  | 14.42  | 20.15  | 30.60  | 40.34  | 48.74  |
| 200RB/500RB 6                    | 9.81  | 15.40  | 21.49  | 32.64  | 43.05  | 52.01  |
| 200RB/500RB 7                    | 12.87 | 20.19  | 28.21  | 42.84  | 56.48  | 68.26  |
| <b>R-32</b>                      |       |        |        |        |        |        |
| 100RB                            | 1.10  | 1.66   | 2.21   | 3.31   | 4.42   | 5.52   |
| 150RB 1                          | 1.10  | 1.66   | 2.21   | 3.31   | 4.42   | 5.52   |
| 150RB 3                          | 2.48  | 4.14   | 5.80   | 9.11   | 11.60  | 13.25  |
| 150RB 7                          | 3.59  | 5.80   | 8.01   | 12.42  | 16.29  | 18.50  |
| 150RB 9                          | 6.90  | 10.77  | 15.46  | 22.36  | 30.37  | 38.93  |
| 200RB/500RB 2                    | 2.48  | 4.14   | 5.80   | 9.11   | 11.60  | 13.25  |
| 200RB/500RB 3                    | 3.59  | 5.80   | 8.01   | 12.42  | 16.29  | 18.50  |
| 200RB/500RB 4                    | 6.90  | 10.77  | 15.46  | 22.36  | 30.37  | 38.93  |
| 200RB/500RB 5                    | 8.28  | 13.09  | 19.33  | 27.06  | 37.27  | 49.69  |
| 200RB/500RB 6                    | 8.83  | 14.08  | 19.88  | 30.37  | 40.86  | 52.18  |
| 250RA 8                          | 11.60 | 18.77  | 26.50  | 43.07  | 57.42  | 70.67  |
| 250RA 9T (5/8)                   | 19.88 | 31.47  | 44.72  | 69.02  | 91.66  | 112.64 |
| 250RA 9T (7/8 & Up)              | 25.40 | 39.75  | 56.32  | 85.03  | 110.43 | 127.55 |
| 250RA 12                         | 28.16 | 44.17  | 62.39  | 99.94  | 129.20 | 146.87 |
| 250RA 16                         | 45.83 | 72.88  | 103.25 | 157.91 | 208.71 | 251.94 |
| 250RA 20                         | 64.60 | 101.59 | 144.11 | 237.42 | 309.75 | 364.42 |

DISCHARGE GAS CAPACITIES - TONS

| PRESSURE DROP ACROSS VALVE - PSI |              |       |       |       |       |       |
|----------------------------------|--------------|-------|-------|-------|-------|-------|
| VALVE SERIES                     | 2.0          | 5.0   | 10    | 25.0  | 50    | 100   |
|                                  | R-404A/R-507 |       |       |       |       |       |
| 100RB                            | 0.20         | 0.30  | 0.40  | 0.60  | 0.70  | 0.90  |
| 150RB 1                          | 0.20         | 0.30  | 0.40  | 0.60  | 0.70  | 0.90  |
| 150RB 3                          | 0.45         | 0.70  | 1.00  | 1.50  | 1.95  | 2.25  |
| 150RB 7                          | 0.60         | 0.95  | 1.30  | 2.00  | 2.65  | 3.15  |
| 150RB 9                          | 1.10         | 1.75  | 2.50  | 3.65  | 4.95  | 6.45  |
| 200RB/500RB 2                    | 0.45         | 0.70  | 1.00  | 1.50  | 1.95  | 2.25  |
| 200RB/500RB 3                    | 0.60         | 0.95  | 1.30  | 2.00  | 2.65  | 3.15  |
| 200RB/500RB 4                    | 1.10         | 1.75  | 2.50  | 3.65  | 4.95  | 6.45  |
| 200RB/500RB 5                    | 1.35         | 2.05  | 3.00  | 4.35  | 5.80  | 8.15  |
| 200RB/500RB 6                    | 1.45         | 2.20  | 3.15  | 4.45  | 6.00  | 8.67  |
| 200RB/500RB 7                    | 1.80         | 2.90  | 4.10  | 5.70  | 8.90  | 11.30 |
| 240RA/250RA/540RA 8              | 1.80         | 2.90  | 4.10  | 6.70  | 8.90  | 11.30 |
| 240RA/250RA/540RA 9T5            | 3.10         | 4.90  | 6.90  | 10.70 | 14.30 | 17.90 |
| 240RA/250RA/540RA 9              | 3.90         | 6.20  | 8.70  | 13.30 | 17.40 | 20.20 |
| 240RA/250RA/540RA 12             | 4.30         | 6.80  | 9.60  | 15.50 | 20.30 | 23.90 |
| 240RA/250RA/540RA 16             | 7.10         | 11.30 | 16.00 | 23.60 | 30.80 | 36.20 |
| 240RA/250RA/540RA 20             | 9.90         | 15.70 | 22.20 | 36.90 | 48.70 | 58.90 |
| R-407C                           |              |       |       |       |       |       |
| 100RB                            | 0.20         | 0.30  | 0.40  | 0.60  | 0.80  | 1.00  |
| 150RB 1                          | 0.20         | 0.30  | 0.40  | 0.60  | 0.80  | 1.00  |
| 150RB 3                          | 0.45         | 0.70  | 0.95  | 1.45  | 1.90  | 2.25  |
| 150RB 7                          | 0.60         | 0.90  | 1.25  | 1.95  | 2.55  | 3.05  |
| 150RB 9                          | 1.05         | 1.70  | 2.40  | 3.50  | 4.75  | 6.20  |
| 200RB/500RB 2                    | 0.45         | 0.70  | 0.95  | 1.45  | 1.90  | 2.25  |
| 200RB/500RB 3                    | 0.60         | 0.90  | 1.25  | 1.95  | 2.55  | 3.05  |
| 200RB/500RB 4                    | 1.05         | 1.70  | 2.40  | 3.50  | 4.75  | 6.20  |
| 200RB/500RB 5                    | 1.30         | 2.10  | 3.00  | 4.20  | 5.80  | 7.85  |
| 200RB/500RB 6                    | 1.40         | 2.20  | 3.10  | 4.75  | 7.55  | 8.35  |
| 200RB/500RB 7                    | 2.10         | 3.30  | 4.70  | 7.70  | 10.30 | 13.00 |
| 240RA/250RA/540RA 8              | 2.10         | 3.30  | 4.70  | 7.70  | 10.30 | 13.00 |
| 240RA/250RA/540RA 9T5            | 3.60         | 5.60  | 8.00  | 12.40 | 16.50 | 20.60 |
| 240RA/250RA/540RA 9              | 4.50         | 7.10  | 10.10 | 15.30 | 20.00 | 22.50 |
| 240RA/250RA/540RA 12             | 6.00         | 9.50  | 13.40 | 21.20 | 29.60 | 37.10 |
| 240RA/250RA/540RA 16             | 8.20         | 13.00 | 18.40 | 28.40 | 37.70 | 46.20 |
| 240RA/250RA/540RA 20             | 11.50        | 18.20 | 25.70 | 42.70 | 56.10 | 67.20 |

NOTE: Shading indicates AHRI standard ratings  
NOTE: Capacity is based on largest connection size.

DISCHARGE GAS CAPACITIES - kW

| PRESSURE DROP ACROSS VALVE - kPa |              |       |       |        |        |        |
|----------------------------------|--------------|-------|-------|--------|--------|--------|
| VALVE SERIES                     | 13.8         | 34.5  | 69    | 172.5  | 345    | 690    |
|                                  | R-404A/R-507 |       |       |        |        |        |
| 100RB                            | 0.70         | 1.06  | 1.41  | 2.11   | 2.46   | 3.17   |
| 150RB 1                          | 0.70         | 1.06  | 1.41  | 2.11   | 2.46   | 3.17   |
| 150RB 3                          | 1.58         | 2.46  | 3.52  | 5.28   | 6.86   | 7.91   |
| 150RB 7                          | 2.11         | 3.34  | 4.57  | 7.03   | 9.32   | 11.08  |
| 150RB 9                          | 3.87         | 6.15  | 8.79  | 12.84  | 17.41  | 22.68  |
| 200RB/500RB 2                    | 1.58         | 2.46  | 3.52  | 5.28   | 6.86   | 7.91   |
| 200RB/500RB 3                    | 2.11         | 3.34  | 4.57  | 7.03   | 9.32   | 11.08  |
| 200RB/500RB 4                    | 3.87         | 6.15  | 8.79  | 12.84  | 17.41  | 22.68  |
| 200RB/500RB 5                    | 4.75         | 7.21  | 10.55 | 15.30  | 20.40  | 28.66  |
| 200RB/500RB 6                    | 5.10         | 7.74  | 11.08 | 15.65  | 21.10  | 30.49  |
| 200RB/500RB 7                    | 6.33         | 10.20 | 14.42 | 20.05  | 31.30  | 39.74  |
| 240RA/250RA/540RA 8              | 6.33         | 10.20 | 14.42 | 23.56  | 31.30  | 39.74  |
| 240RA/250RA/540RA 9T5            | 10.90        | 17.23 | 24.27 | 37.63  | 50.29  | 62.95  |
| 240RA/250RA/540RA 9              | 13.72        | 21.80 | 30.60 | 46.77  | 61.19  | 71.04  |
| 240RA/250RA/540RA 12             | 15.12        | 23.91 | 33.76 | 54.51  | 71.39  | 84.05  |
| 240RA/250RA/540RA 16             | 24.97        | 39.74 | 56.27 | 83.00  | 108.32 | 127.31 |
| 240RA/250RA/540RA 20             | 34.82        | 55.22 | 78.08 | 129.77 | 171.27 | 207.15 |
| R-407C                           |              |       |       |        |        |        |
| 100RB                            | 0.70         | 1.06  | 1.41  | 2.11   | 2.81   | 3.52   |
| 150RB 1                          | 0.70         | 1.06  | 1.41  | 2.11   | 2.81   | 3.52   |
| 150RB 3                          | 1.58         | 2.46  | 3.34  | 5.10   | 6.68   | 7.91   |
| 150RB 7                          | 2.11         | 3.17  | 4.40  | 6.86   | 8.97   | 10.73  |
| 150RB 9                          | 3.69         | 5.98  | 8.44  | 12.31  | 16.71  | 21.80  |
| 200RB/500RB 2                    | 1.58         | 2.46  | 3.34  | 5.10   | 6.68   | 7.91   |
| 200RB/500RB 3                    | 2.11         | 3.17  | 4.40  | 6.86   | 8.97   | 10.73  |
| 200RB/500RB 4                    | 3.69         | 5.98  | 8.44  | 12.31  | 16.71  | 21.80  |
| 200RB/500RB 5                    | 4.57         | 7.39  | 10.55 | 14.77  | 20.40  | 27.61  |
| 200RB/500RB 6                    | 4.92         | 7.74  | 10.90 | 16.71  | 26.55  | 29.37  |
| 200RB/500RB 7                    | 7.39         | 11.61 | 16.53 | 27.08  | 36.22  | 45.72  |
| 240RA/250RA/540RA 8              | 7.39         | 11.61 | 16.53 | 27.08  | 36.22  | 45.72  |
| 240RA/250RA/540RA 9T5            | 12.66        | 19.69 | 28.14 | 43.61  | 58.03  | 72.45  |
| 240RA/250RA/540RA 9              | 15.83        | 24.97 | 35.52 | 53.81  | 70.34  | 79.13  |
| 240RA/250RA/540RA 12             | 21.10        | 33.41 | 47.13 | 74.56  | 104.10 | 130.48 |
| 240RA/250RA/540RA 16             | 28.84        | 45.72 | 64.71 | 99.88  | 132.59 | 162.48 |
| 240RA/250RA/540RA 20             | 40.44        | 64.01 | 90.38 | 150.17 | 197.30 | 236.34 |

## DISCHARGE GAS CAPACITIES - TONS

| PRESSURE DROP ACROSS VALVE - PSI |        |       |       |       |       |       |
|----------------------------------|--------|-------|-------|-------|-------|-------|
| VALVE SERIES                     | 2.0    | 5.0   | 10    | 25.0  | 50    | 100   |
|                                  | R-410A |       |       |       |       |       |
| 100RB                            | 0.24   | 0.37  | 0.49  | 0.73  | 0.98  | 1.22  |
| 150RB 1                          | 0.24   | 0.37  | 0.49  | 0.73  | 0.98  | 1.22  |
| 150RB 3                          | 0.55   | 0.90  | 1.30  | 2.05  | 2.75  | 3.40  |
| 150RB 7                          | 0.80   | 1.25  | 1.75  | 2.80  | 3.75  | 4.70  |
| 150RB 9                          | 1.50   | 2.40  | 3.35  | 5.35  | 6.80  | 9.10  |
| 200RB/500RB 2                    | 0.55   | 0.90  | 1.30  | 2.05  | 2.75  | 3.40  |
| 200RB/500RB 3                    | 0.80   | 1.25  | 1.75  | 2.80  | 3.75  | 4.70  |
| 200RB/500RB 4                    | 1.50   | 2.40  | 3.35  | 5.35  | 6.80  | 9.10  |
| 200RB/500RB 5                    | 1.85   | 2.95  | 4.25  | 6.75  | 8.30  | 11.30 |
| 200RB/500RB 6                    | 2.00   | 3.10  | 4.35  | 6.85  | 9.25  | 12.25 |
| 200RB/500RB 7                    | 2.30   | 3.55  | 5.00  | 7.80  | 9.80  | 13.00 |
| 250RA 8                          | 2.56   | 4.15  | 5.86  | 9.52  | 12.69 | 15.62 |
| 250RA 9T5                        | 4.39   | 6.95  | 9.88  | 15.25 | 20.25 | 24.89 |
| 250RA 9                          | 5.61   | 8.78  | 12.44 | 18.79 | 24.40 | 28.18 |
| 250RA 12                         | 6.22   | 9.76  | 13.79 | 22.08 | 28.55 | 32.45 |
| 250RA 16                         | 10.13  | 16.10 | 22.81 | 34.89 | 46.12 | 55.67 |
| 250RA 20                         | 14.27  | 22.45 | 31.84 | 52.46 | 68.44 | 80.52 |

| PRESSURE DROP ACROSS VALVE - PSI |               |       |       |       |       |       |
|----------------------------------|---------------|-------|-------|-------|-------|-------|
| VALVE SERIES                     | 13.8          | 34.5  | 69    | 172.5 | 345   | 690   |
|                                  | R-448A/R-449A |       |       |       |       |       |
| 100RB                            | 0.23          | 0.36  | 0.51  | 0.78  | 1.04  | 1.31  |
| 150RB 1                          | 0.23          | 0.36  | 0.51  | 0.78  | 1.04  | 1.31  |
| 150RB 3                          | 0.52          | 0.81  | 1.14  | 1.75  | 2.34  | 2.96  |
| 150RB 7                          | 0.75          | 1.17  | 1.64  | 2.52  | 3.39  | 4.27  |
| 150RB 9                          | 1.44          | 2.26  | 3.16  | 4.85  | 6.51  | 8.21  |
| 200RB/500RB 2                    | 0.52          | 0.81  | 1.14  | 1.75  | 2.34  | 2.96  |
| 200RB/500RB 3                    | 0.75          | 1.17  | 1.64  | 2.52  | 3.39  | 4.27  |
| 200RB/500RB 4                    | 1.44          | 2.26  | 3.16  | 4.85  | 6.51  | 8.21  |
| 200RB/500RB 5                    | 1.72          | 2.71  | 3.80  | 5.82  | 7.81  | 9.86  |
| 200RB/500RB 6                    | 1.84          | 2.89  | 4.05  | 6.21  | 8.33  | 10.51 |
| 200RB/500RB 7                    | 2.41          | 3.79  | 5.31  | 8.15  | 10.94 | 13.80 |
| 240RA/250RA/540RA 8              | 2.41          | 3.79  | 5.31  | 8.15  | 10.94 | 13.80 |
| 240RA/250RA/540RA 9T5            | 4.14          | 6.51  | 9.11  | 13.97 | 18.75 | 23.66 |
| 240RA/250RA/540RA 9              | 5.29          | 8.31  | 11.64 | 17.86 | 23.96 | 30.23 |
| 240RA/250RA/540RA 12             | 5.86          | 9.22  | 12.91 | 19.80 | 26.56 | 33.51 |
| 240RA/250RA/540RA 16             | 9.54          | 15.00 | 21.00 | 32.22 | 43.23 | 54.54 |
| 240RA/250RA/540RA 20             | 13.45         | 21.14 | 29.61 | 45.42 | 60.94 | 76.89 |
| VALVE SERIES                     | R-454A        |       |       |       |       |       |
|                                  |               |       |       |       |       |       |
| 100RB                            | 0.23          | 0.36  | 0.50  | 0.77  | 1.03  | 1.29  |
| 150RB 1                          | 0.23          | 0.36  | 0.50  | 0.77  | 1.03  | 1.29  |
| 150RB 3                          | 0.51          | 0.80  | 1.13  | 1.73  | 2.31  | 2.89  |
| 150RB 7                          | 0.74          | 1.16  | 1.63  | 2.49  | 3.33  | 4.18  |
| 150RB 9                          | 1.42          | 2.24  | 3.13  | 4.79  | 6.41  | 8.04  |
| 200RB/500RB 2                    | 0.51          | 0.80  | 1.13  | 1.73  | 2.31  | 2.89  |
| 200RB/500RB 3                    | 0.74          | 1.16  | 1.63  | 2.49  | 3.33  | 4.18  |
| 200RB/500RB 4                    | 1.42          | 2.24  | 3.13  | 4.79  | 6.41  | 8.04  |
| 200RB/500RB 5                    | 1.71          | 2.68  | 3.75  | 5.75  | 7.70  | 9.65  |
| 200RB/500RB 6                    | 1.82          | 2.86  | 4.00  | 6.13  | 8.21  | 10.29 |
| 250RA/540RA 8                    | 2.39          | 3.76  | 5.26  | 8.05  | 10.77 | 13.51 |
| 250RA/540RA 9T5                  | 4.10          | 6.44  | 9.01  | 13.80 | 18.47 | 23.15 |
| 250RA/540RA 9                    | 5.23          | 8.23  | 11.51 | 17.63 | 23.60 | 29.58 |
| 250RA/540RA 12                   | 5.80          | 9.12  | 12.76 | 19.55 | 26.16 | 32.80 |
| 250RA/540RA 16                   | 9.44          | 14.84 | 20.77 | 31.82 | 42.58 | 53.38 |
| 250RA/540RA 20                   | 13.31         | 20.92 | 29.28 | 44.85 | 60.02 | 75.24 |

NOTE: Shading indicates AHRI standard ratings  
NOTE: Capacity is based on largest connection size.

## DISCHARGE GAS CAPACITIES - kW

| PRESSURE DROP ACROSS VALVE - kPa |        |       |        |        |        |        |
|----------------------------------|--------|-------|--------|--------|--------|--------|
| VALVE SERIES                     | 13.8   | 34.5  | 69     | 172.5  | 345    | 690    |
|                                  | R-410A |       |        |        |        |        |
| 100RB                            | 0.86   | 1.29  | 1.72   | 2.57   | 3.43   | 4.29   |
| 150RB 1                          | 0.86   | 1.29  | 1.72   | 2.57   | 3.43   | 4.29   |
| 150RB 3                          | 1.93   | 3.17  | 4.57   | 7.21   | 9.67   | 11.96  |
| 150RB 7                          | 2.81   | 4.40  | 6.15   | 9.85   | 13.19  | 16.53  |
| 150RB 9                          | 5.28   | 8.44  | 11.78  | 18.82  | 23.91  | 32.00  |
| 200RB/500RB 2                    | 1.93   | 3.17  | 4.57   | 7.21   | 9.67   | 11.96  |
| 200RB/500RB 3                    | 2.81   | 4.40  | 6.15   | 9.85   | 13.19  | 16.53  |
| 200RB/500RB 4                    | 5.28   | 8.44  | 11.78  | 18.82  | 23.91  | 32.00  |
| 200RB/500RB 5                    | 6.51   | 10.37 | 14.95  | 23.74  | 29.19  | 39.74  |
| 200RB/500RB 6                    | 7.03   | 10.90 | 15.30  | 24.09  | 32.53  | 43.08  |
| 200RB/500RB 7                    | 8.09   | 12.48 | 17.58  | 27.43  | 34.47  | 45.72  |
| 250RA 8                          | 9.01   | 14.59 | 20.59  | 33.47  | 44.62  | 54.92  |
| 250RA 9T5                        | 15.45  | 24.46 | 34.75  | 53.63  | 71.22  | 87.53  |
| 250RA 9                          | 19.74  | 30.89 | 43.76  | 66.07  | 85.81  | 99.11  |
| 250RA 12                         | 21.88  | 34.32 | 48.48  | 77.66  | 100.40 | 114.13 |
| 250RA 16                         | 35.61  | 56.64 | 80.23  | 122.71 | 162.18 | 195.78 |
| 250RA 20                         | 50.20  | 78.95 | 111.98 | 184.49 | 240.70 | 283.18 |

| PRESSURE DROP ACROSS VALVE - kPa |               |       |        |        |        |        |
|----------------------------------|---------------|-------|--------|--------|--------|--------|
| VALVE SERIES                     | 13.8          | 34.5  | 69     | 172.5  | 345    | 690    |
|                                  | R-448A/R-449A |       |        |        |        |        |
| 100RB                            | 0.81          | 1.27  | 1.78   | 2.73   | 3.66   | 4.62   |
| 150RB 1                          | 0.81          | 1.27  | 1.78   | 2.73   | 3.66   | 4.62   |
| 150RB 3                          | 1.82          | 2.86  | 4.00   | 6.14   | 8.24   | 10.40  |
| 150RB 7                          | 2.63          | 4.13  | 5.78   | 8.87   | 11.91  | 15.02  |
| 150RB 9                          | 5.05          | 7.94  | 11.12  | 17.06  | 22.90  | 28.89  |
| 200RB/500RB 2                    | 1.82          | 2.86  | 4.00   | 6.14   | 8.24   | 10.40  |
| 200RB/500RB 3                    | 2.63          | 4.13  | 5.78   | 8.87   | 11.91  | 15.02  |
| 200RB/500RB 4                    | 5.05          | 7.94  | 11.12  | 17.06  | 22.90  | 28.89  |
| 200RB/500RB 5                    | 6.06          | 9.53  | 13.35  | 20.48  | 27.48  | 34.67  |
| 200RB/500RB 6                    | 6.47          | 10.17 | 14.24  | 21.84  | 29.31  | 36.98  |
| 200RB/500RB 7                    | 8.49          | 13.35 | 18.69  | 28.67  | 38.47  | 48.53  |
| 240RA/250RA/540RA 8              | 8.49          | 13.35 | 18.69  | 28.67  | 38.47  | 48.53  |
| 240RA/250RA/540RA 9T5            | 14.55         | 22.88 | 32.04  | 49.15  | 65.94  | 83.20  |
| 240RA/250RA/540RA 9              | 18.60         | 29.23 | 40.94  | 62.80  | 84.26  | 106.31 |
| 240RA/250RA/540RA 12             | 20.62         | 32.41 | 45.39  | 69.62  | 93.42  | 117.86 |
| 240RA/250RA/540RA 16             | 33.56         | 52.75 | 73.86  | 113.31 | 152.04 | 191.82 |
| 240RA/250RA/540RA 20             | 47.30         | 74.35 | 104.12 | 159.72 | 214.32 | 270.39 |
| VALVE SERIES                     | R-454A        |       |        |        |        |        |
|                                  |               |       |        |        |        |        |
| 100RB                            | 0.80          | 1.26  | 1.76   | 2.70   | 3.61   | 4.52   |
| 150RB 1                          | 0.80          | 1.26  | 1.76   | 2.70   | 3.61   | 4.52   |
| 150RB 3                          | 1.80          | 2.83  | 3.96   | 6.07   | 8.12   | 10.18  |
| 150RB 7                          | 2.60          | 4.09  | 5.72   | 8.76   | 11.73  | 14.70  |
| 150RB 9                          | 5.00          | 7.86  | 11.00  | 16.85  | 22.55  | 28.27  |
| 200RB/500RB 2                    | 1.80          | 2.83  | 3.96   | 6.07   | 8.12   | 10.18  |
| 200RB/500RB 3                    | 2.60          | 4.09  | 5.72   | 8.76   | 11.73  | 14.70  |
| 200RB/500RB 4                    | 5.00          | 7.86  | 11.00  | 16.85  | 22.55  | 28.27  |
| 200RB/500RB 5                    | 6.00          | 9.43  | 13.20  | 20.22  | 27.06  | 33.93  |
| 200RB/500RB 6                    | 6.40          | 10.06 | 14.08  | 21.57  | 28.87  | 36.19  |
| 250RA/540RA 8                    | 8.40          | 13.21 | 18.48  | 28.31  | 37.89  | 47.50  |
| 250RA/540RA 9T5                  | 14.41         | 22.64 | 31.69  | 48.54  | 64.95  | 81.43  |
| 250RA/540RA 9                    | 18.41         | 28.93 | 40.49  | 62.02  | 83.00  | 104.04 |
| 250RA/540RA 12                   | 20.41         | 32.07 | 44.89  | 68.76  | 92.02  | 115.35 |
| 250RA/540RA 16                   | 33.22         | 52.20 | 73.06  | 111.91 | 149.76 | 187.73 |
| 250RA/540RA 20                   | 46.82         | 73.58 | 102.99 | 157.75 | 211.10 | 264.63 |

DISCHARGE GAS CAPACITIES - TONS

| PRESSURE DROP ACROSS VALVE - PSI |               |       |       |       |       |       |
|----------------------------------|---------------|-------|-------|-------|-------|-------|
| VALVE SERIES                     | 2.0           | 5.0   | 10    | 25.0  | 50    | 100   |
|                                  | R-454B/R-452B |       |       |       |       |       |
| 100RB                            | 0.23          | 0.35  | 0.46  | 0.70  | 0.93  | 1.16  |
| 150RB 1                          | 0.23          | 0.35  | 0.46  | 0.70  | 0.93  | 1.16  |
| 150RB 3                          | 0.52          | 0.87  | 1.22  | 1.91  | 2.44  | 2.78  |
| 150RB 7                          | 0.75          | 1.22  | 1.68  | 2.61  | 3.42  | 3.89  |
| 150RB 9                          | 1.45          | 2.26  | 3.25  | 4.70  | 6.38  | 8.18  |
| 200RB/500RB 2                    | 0.52          | 0.87  | 1.22  | 1.91  | 2.44  | 2.78  |
| 200RB/500RB 3                    | 0.75          | 1.22  | 1.68  | 2.61  | 3.42  | 3.89  |
| 200RB/500RB 4                    | 1.45          | 2.26  | 3.25  | 4.70  | 6.38  | 8.18  |
| 200RB/500RB 5                    | 1.74          | 2.75  | 4.06  | 5.68  | 7.83  | 10.44 |
| 200RB/500RB 6                    | 1.86          | 2.96  | 4.18  | 6.38  | 8.58  | 10.96 |
| 250RA 8                          | 2.44          | 3.94  | 5.57  | 9.05  | 12.06 | 14.85 |
| 250RA 9T5                        | 4.18          | 6.61  | 9.40  | 14.50 | 19.26 | 23.66 |
| 250RA 9                          | 5.34          | 8.35  | 11.83 | 17.86 | 23.20 | 26.80 |
| 250RA 12                         | 5.92          | 9.28  | 13.11 | 21.00 | 27.14 | 30.86 |
| 250RA 16                         | 9.63          | 15.31 | 21.69 | 33.18 | 43.85 | 52.93 |
| 250RA 20                         | 13.57         | 21.34 | 30.28 | 49.88 | 65.08 | 76.56 |

DISCHARGE GAS CAPACITIES - kW

| PRESSURE DROP ACROSS VALVE - kPa |               |       |        |        |        |        |
|----------------------------------|---------------|-------|--------|--------|--------|--------|
| VALVE SERIES                     | 13.8          | 34.5  | 69     | 172.5  | 345    | 690    |
|                                  | R-454B/R-452B |       |        |        |        |        |
| 100RB                            | 0.82          | 1.22  | 1.63   | 2.45   | 3.26   | 4.08   |
| 150RB 1                          | 0.82          | 1.22  | 1.63   | 2.45   | 3.26   | 4.08   |
| 150RB 3                          | 1.84          | 3.06  | 4.28   | 6.73   | 8.57   | 9.79   |
| 150RB 7                          | 2.65          | 4.28  | 5.92   | 9.18   | 12.03  | 13.67  |
| 150RB 9                          | 5.10          | 7.96  | 11.42  | 16.52  | 22.44  | 28.76  |
| 200RB/500RB 2                    | 1.84          | 3.06  | 4.28   | 6.73   | 8.57   | 9.79   |
| 200RB/500RB 3                    | 2.65          | 4.28  | 5.92   | 9.18   | 12.03  | 13.67  |
| 200RB/500RB 4                    | 5.10          | 7.96  | 11.42  | 16.52  | 22.44  | 28.76  |
| 200RB/500RB 5                    | 6.12          | 9.67  | 14.28  | 19.99  | 27.54  | 36.72  |
| 200RB/500RB 6                    | 6.53          | 10.40 | 14.69  | 22.44  | 30.19  | 38.55  |
| 250RA 8                          | 8.57          | 13.87 | 19.58  | 31.82  | 42.43  | 52.22  |
| 250RA 9T5                        | 14.69         | 23.25 | 33.04  | 50.99  | 67.72  | 83.22  |
| 250RA 9                          | 18.77         | 29.37 | 41.61  | 62.83  | 81.59  | 94.24  |
| 250RA 12                         | 20.81         | 32.64 | 46.10  | 73.84  | 95.46  | 108.52 |
| 250RA 16                         | 33.86         | 53.85 | 76.29  | 116.68 | 154.21 | 186.15 |
| 250RA 20                         | 47.73         | 75.06 | 106.48 | 175.42 | 228.86 | 269.25 |

| PRESSURE DROP ACROSS VALVE - PSI |       |       |       |       |       |       |
|----------------------------------|-------|-------|-------|-------|-------|-------|
| VALVE SERIES                     | 2.0   | 5.0   | 10    | 25.0  | 50    | 100   |
| R-454C                           |       |       |       |       |       |       |
| 100RB                            | 0.17  | 0.27  | 0.38  | 0.57  | 0.76  | 0.91  |
| 150RB 1                          | 0.17  | 0.27  | 0.38  | 0.57  | 0.76  | 0.91  |
| 150RB 3                          | 0.39  | 0.61  | 0.85  | 1.29  | 1.70  | 2.05  |
| 150RB 7                          | 0.56  | 0.88  | 1.23  | 1.87  | 2.46  | 2.96  |
| 150RB 9                          | 1.08  | 1.70  | 2.37  | 3.59  | 4.73  | 5.69  |
| 200RB/500RB 2                    | 0.39  | 0.61  | 0.85  | 1.29  | 1.70  | 2.05  |
| 200RB/500RB 3                    | 0.56  | 0.88  | 1.23  | 1.87  | 2.46  | 2.96  |
| 200RB/500RB 4                    | 1.08  | 1.70  | 2.37  | 3.59  | 4.73  | 5.69  |
| 200RB/500RB 5                    | 1.30  | 2.04  | 2.84  | 4.31  | 5.68  | 6.83  |
| 200RB/500RB 6                    | 1.38  | 2.17  | 3.03  | 4.60  | 6.05  | 7.29  |
| R-455A                           |       |       |       |       |       |       |
| 100RB                            | 0.19  | 0.29  | 0.41  | 0.63  | 0.83  | 1.01  |
| 150RB 1                          | 0.19  | 0.29  | 0.41  | 0.63  | 0.83  | 1.01  |
| 150RB 3                          | 0.42  | 0.66  | 0.93  | 1.41  | 1.86  | 2.28  |
| 150RB 7                          | 0.61  | 0.96  | 1.34  | 2.04  | 2.69  | 3.29  |
| 150RB 9                          | 1.17  | 1.84  | 2.57  | 3.91  | 5.18  | 6.32  |
| 200RB/500RB 2                    | 0.42  | 0.66  | 0.93  | 1.41  | 1.86  | 2.28  |
| 200RB/500RB 3                    | 0.61  | 0.96  | 1.34  | 2.04  | 2.69  | 3.29  |
| 200RB/500RB 4                    | 1.17  | 1.84  | 2.57  | 3.91  | 5.18  | 6.32  |
| 200RB/500RB 5                    | 1.41  | 2.21  | 3.08  | 4.70  | 6.22  | 7.59  |
| 200RB/500RB 6                    | 1.50  | 2.36  | 3.29  | 5.01  | 6.63  | 8.09  |
| 250RA/540RA 8                    | 1.97  | 3.09  | 4.32  | 6.58  | 8.70  | 10.62 |
| 250RA/540RA 9T5 (5/8)            | 3.38  | 5.30  | 7.40  | 11.27 | 14.92 | 18.21 |
| 250RA/540RA 9 (7/8 & Up)         | 4.31  | 6.77  | 9.46  | 14.40 | 19.06 | 23.27 |
| 250RA/540RA 12                   | 4.78  | 7.51  | 10.49 | 15.97 | 21.14 | 25.80 |
| 250RA/540RA 16                   | 7.78  | 12.22 | 17.07 | 25.99 | 34.40 | 41.99 |
| 250RA/540RA 20                   | 10.97 | 17.22 | 24.06 | 36.63 | 48.49 | 59.19 |

| PRESSURE DROP ACROSS VALVE - kPa |       |       |       |        |        |        |
|----------------------------------|-------|-------|-------|--------|--------|--------|
| VALVE SERIES                     | 13.8  | 34.5  | 69    | 172.5  | 345    | 690    |
| R-454C                           |       |       |       |        |        |        |
| 100RB                            | 0.61  | 0.95  | 1.33  | 2.02   | 2.66   | 3.20   |
| 150RB 1                          | 0.61  | 0.95  | 1.33  | 2.02   | 2.66   | 3.20   |
| 150RB 3                          | 1.37  | 2.15  | 3.00  | 4.55   | 5.99   | 7.21   |
| 150RB 7                          | 1.98  | 3.10  | 4.33  | 6.57   | 8.65   | 10.41  |
| 150RB 9                          | 3.80  | 5.97  | 8.33  | 12.64  | 16.64  | 20.02  |
| 200RB/500RB 2                    | 1.37  | 2.15  | 3.00  | 4.55   | 5.99   | 7.21   |
| 200RB/500RB 3                    | 1.98  | 3.10  | 4.33  | 6.57   | 8.65   | 10.41  |
| 200RB/500RB 4                    | 3.80  | 5.97  | 8.33  | 12.64  | 16.64  | 20.02  |
| 200RB/500RB 5                    | 4.56  | 7.16  | 9.99  | 15.17  | 19.96  | 24.03  |
| 200RB/500RB 6                    | 4.87  | 7.64  | 10.66 | 16.18  | 21.29  | 25.63  |
| R-455A                           |       |       |       |        |        |        |
| 100RB                            | 0.66  | 1.04  | 1.45  | 2.20   | 2.92   | 3.56   |
| 150RB 1                          | 0.66  | 1.04  | 1.45  | 2.20   | 2.92   | 3.56   |
| 150RB 3                          | 1.48  | 2.33  | 3.25  | 4.96   | 6.56   | 8.01   |
| 150RB 7                          | 2.14  | 3.37  | 4.70  | 7.16   | 9.47   | 11.56  |
| 150RB 9                          | 4.12  | 6.47  | 9.04  | 13.77  | 18.22  | 22.24  |
| 200RB/500RB 2                    | 1.48  | 2.33  | 3.25  | 4.96   | 6.56   | 8.01   |
| 200RB/500RB 3                    | 2.14  | 3.37  | 4.70  | 7.16   | 9.47   | 11.56  |
| 200RB/500RB 4                    | 4.12  | 6.47  | 9.04  | 13.77  | 18.22  | 22.24  |
| 200RB/500RB 5                    | 4.95  | 7.77  | 10.85 | 16.52  | 21.86  | 26.69  |
| 200RB/500RB 6                    | 5.28  | 8.28  | 11.57 | 17.62  | 23.32  | 28.47  |
| 250RA/540RA 8                    | 6.93  | 10.87 | 15.19 | 23.13  | 30.61  | 37.36  |
| 250RA/540RA 9T5 (5/8)            | 11.87 | 18.64 | 26.04 | 39.64  | 52.47  | 64.05  |
| 250RA/540RA 9 (7/8 & Up)         | 15.17 | 23.81 | 33.27 | 50.66  | 67.05  | 81.84  |
| 250RA/540RA 12                   | 16.82 | 26.40 | 36.88 | 56.16  | 74.34  | 90.74  |
| 250RA/540RA 16                   | 27.38 | 42.97 | 60.03 | 91.40  | 120.98 | 147.67 |
| 250RA/540RA 20                   | 38.59 | 60.57 | 84.62 | 128.84 | 170.54 | 208.16 |

NOTE: Shading indicates AHRI standard ratings  
NOTE: Capacity is based on largest connection size.

# DISCHARGE GAS

# SOLENOID CAPACITY TABLES

## DISCHARGE GAS CAPACITIES - TONS

| PRESSURE DROP ACROSS VALVE - PSI |       |       |       |       |       |       |
|----------------------------------|-------|-------|-------|-------|-------|-------|
| VALVE SERIES                     | 2.0   | 5.0   | 10    | 25.0  | 50    | 100   |
|                                  | R-502 |       |       |       |       |       |
| 100RB                            | 0.20  | 0.20  | 0.30  | 0.50  | 0.70  | 0.80  |
| 150RB 1                          | 0.20  | 0.20  | 0.30  | 0.50  | 0.70  | 0.80  |
| 150RB 3                          | 0.40  | 0.60  | 0.85  | 1.35  | 1.75  | 2.00  |
| 150RB 7                          | 0.55  | 0.85  | 1.20  | 1.80  | 2.35  | 2.80  |
| 150RB 9                          | 1.00  | 1.60  | 2.25  | 3.25  | 4.40  | 5.75  |
| 200RB/500RB 2                    | 0.40  | 0.60  | 0.85  | 1.35  | 1.75  | 2.00  |
| 200RB/500RB 3                    | 0.55  | 0.85  | 1.20  | 1.80  | 2.35  | 2.80  |
| 200RB/500RB 4                    | 1.00  | 1.60  | 2.25  | 3.25  | 4.40  | 5.75  |
| 200RB/500RB 5                    | 1.20  | 1.95  | 2.75  | 3.95  | 5.45  | 7.30  |
| 200RB/500RB 6                    | 1.30  | 2.05  | 2.90  | 4.40  | 6.00  | 7.70  |
| 200RB/500RB 7                    | 1.70  | 2.70  | 3.80  | 6.20  | 8.30  | 10.40 |
| 240RA/250RA/540RA 8              | 1.70  | 2.70  | 3.80  | 6.20  | 8.30  | 10.40 |
| 240RA/250RA/540RA 9T5            | 2.90  | 4.50  | 6.40  | 10.00 | 13.30 | 16.50 |
| 240RA/250RA/540RA 9              | 3.60  | 5.70  | 8.10  | 12.30 | 16.10 | 18.80 |
| 240RA/250RA/540RA 12             | 4.00  | 6.40  | 9.00  | 14.40 | 18.70 | 21.70 |
| 240RA/250RA/540RA 16             | 6.60  | 10.50 | 14.80 | 22.80 | 30.20 | 37.00 |
| 240RA/250RA/540RA 20             | 9.30  | 14.60 | 20.70 | 34.30 | 45.00 | 53.70 |
| R-513A/R-450A                    |       |       |       |       |       |       |
| 100RB                            | 0.13  | 0.20  | 0.28  | 0.41  | 0.51  | 0.53  |
| 150RB 1                          | 0.13  | 0.20  | 0.28  | 0.41  | 0.51  | 0.53  |
| 150RB 3                          | 0.29  | 0.46  | 0.63  | 0.93  | 1.16  | 1.18  |
| 150RB 7                          | 0.42  | 0.66  | 0.92  | 1.35  | 1.67  | 1.71  |
| 150RB 9                          | 0.82  | 1.27  | 1.76  | 2.59  | 3.22  | 3.28  |
| 200RB/500RB 2                    | 0.29  | 0.46  | 0.63  | 0.93  | 1.16  | 1.18  |
| 200RB/500RB 3                    | 0.42  | 0.66  | 0.92  | 1.35  | 1.67  | 1.71  |
| 200RB/500RB 4                    | 0.82  | 1.27  | 1.76  | 2.59  | 3.22  | 3.28  |
| 200RB/500RB 5                    | 0.98  | 1.53  | 2.11  | 3.11  | 3.86  | 3.94  |
| 200RB/500RB 6                    | 1.04  | 1.63  | 2.25  | 3.32  | 4.12  | 4.20  |
| 200RB/500RB 7                    | 1.37  | 2.14  | 2.96  | 4.36  | 5.41  | 5.52  |
| 240RA/250RA/540RA 8              | 1.37  | 2.14  | 2.96  | 4.36  | 5.41  | 5.52  |
| 240RA/250RA/540RA 9T5            | 2.35  | 3.67  | 5.07  | 7.47  | 9.27  | 9.46  |
| 240RA/250RA/540RA 9              | 3.00  | 4.68  | 6.48  | 9.54  | 11.84 | 12.09 |
| 240RA/250RA/540RA 12             | 3.33  | 5.19  | 7.18  | 10.58 | 13.13 | 13.40 |
| 240RA/250RA/540RA 16             | 5.42  | 8.45  | 11.69 | 17.21 | 21.37 | 21.81 |
| 240RA/250RA/540RA 20             | 7.63  | 11.91 | 16.47 | 24.27 | 30.12 | 30.75 |

## DISCHARGE GAS CAPACITIES - kW

| PRESSURE DROP ACROSS VALVE - kPa |       |       |       |        |        |        |
|----------------------------------|-------|-------|-------|--------|--------|--------|
| VALVE SERIES                     | 13.8  | 34.5  | 69    | 172.5  | 345    | 690    |
|                                  | R-502 |       |       |        |        |        |
| 100RB                            | 0.70  | 0.70  | 1.06  | 1.76   | 2.46   | 2.81   |
| 150RB 1                          | 0.70  | 0.70  | 1.06  | 1.76   | 2.46   | 2.81   |
| 150RB 3                          | 1.41  | 2.11  | 2.99  | 4.75   | 6.15   | 7.03   |
| 150RB 7                          | 1.93  | 2.99  | 4.22  | 6.33   | 8.26   | 9.85   |
| 150RB 9                          | 3.52  | 5.63  | 7.91  | 11.43  | 15.47  | 20.22  |
| 200RB/500RB 2                    | 1.41  | 2.11  | 2.99  | 4.75   | 6.15   | 7.03   |
| 200RB/500RB 3                    | 1.93  | 2.99  | 4.22  | 6.33   | 8.26   | 9.85   |
| 200RB/500RB 4                    | 3.52  | 5.63  | 7.91  | 11.43  | 15.47  | 20.22  |
| 200RB/500RB 5                    | 4.22  | 6.86  | 9.67  | 13.89  | 19.17  | 25.67  |
| 200RB/500RB 6                    | 4.57  | 7.21  | 10.20 | 15.47  | 21.10  | 27.08  |
| 200RB/500RB 7                    | 5.98  | 9.50  | 13.36 | 21.80  | 29.19  | 36.58  |
| 240RA/250RA/540RA 8              | 5.98  | 9.50  | 13.36 | 21.80  | 29.19  | 36.58  |
| 240RA/250RA/540RA 9T5            | 10.20 | 15.83 | 22.51 | 35.17  | 46.77  | 58.03  |
| 240RA/250RA/540RA 9              | 12.66 | 20.05 | 28.49 | 43.26  | 56.62  | 66.12  |
| 240RA/250RA/540RA 12             | 14.07 | 22.51 | 31.65 | 50.64  | 65.77  | 76.32  |
| 240RA/250RA/540RA 16             | 23.21 | 36.93 | 52.05 | 80.19  | 106.21 | 130.13 |
| 240RA/250RA/540RA 20             | 32.71 | 51.35 | 72.80 | 120.63 | 158.26 | 188.86 |
| R-513A/R-450A                    |       |       |       |        |        |        |
| 100RB                            | 0.46  | 0.72  | 0.99  | 1.46   | 1.81   | 1.85   |
| 150RB 1                          | 0.46  | 0.72  | 0.99  | 1.46   | 1.81   | 1.85   |
| 150RB 3                          | 1.03  | 1.61  | 2.23  | 3.28   | 4.07   | 4.16   |
| 150RB 7                          | 1.49  | 2.33  | 3.22  | 4.74   | 5.89   | 6.01   |
| 150RB 9                          | 2.87  | 4.48  | 6.19  | 9.12   | 11.32  | 11.55  |
| 200RB/500RB 2                    | 1.03  | 1.61  | 2.23  | 3.28   | 4.07   | 4.16   |
| 200RB/500RB 3                    | 1.49  | 2.33  | 3.22  | 4.74   | 5.89   | 6.01   |
| 200RB/500RB 4                    | 2.87  | 4.48  | 6.19  | 9.12   | 11.32  | 11.55  |
| 200RB/500RB 5                    | 3.44  | 5.37  | 7.43  | 10.94  | 13.58  | 13.86  |
| 200RB/500RB 6                    | 3.67  | 5.73  | 7.92  | 11.67  | 14.49  | 14.79  |
| 200RB/500RB 7                    | 4.82  | 7.52  | 10.40 | 15.32  | 19.02  | 19.41  |
| 240RA/250RA/540RA 8              | 4.82  | 7.52  | 10.40 | 15.32  | 19.02  | 19.41  |
| 240RA/250RA/540RA 9T5            | 8.26  | 12.89 | 17.82 | 26.26  | 32.60  | 33.27  |
| 240RA/250RA/540RA 9              | 10.56 | 16.47 | 22.78 | 33.55  | 41.65  | 42.51  |
| 240RA/250RA/540RA 12             | 11.70 | 18.26 | 25.25 | 37.20  | 46.18  | 47.13  |
| 240RA/250RA/540RA 16             | 19.05 | 29.72 | 41.09 | 60.54  | 75.16  | 76.71  |
| 240RA/250RA/540RA 20             | 26.85 | 41.89 | 57.93 | 85.34  | 105.94 | 108.13 |

| PRESSURE DROP ACROSS VALVE - PSI |       |      |      |      |       |
|----------------------------------|-------|------|------|------|-------|
| VALVE SERIES                     | 2     | 5    | 10   | 25   | 50    |
|                                  | R-744 |      |      |      |       |
| 100RB                            | 0.36  | 0.56 | 0.79 | 1.22 | 1.66  |
| 150RB 1                          | 0.36  | 0.56 | 0.79 | 1.22 | 1.66  |
| 150RB 3                          | 0.80  | 1.26 | 1.77 | 2.74 | 3.73  |
| 150RB 7                          | 1.16  | 1.83 | 2.57 | 3.98 | 5.43  |
| 150RB 9                          | 2.18  | 3.43 | 4.82 | 7.46 | 10.18 |
| 200RB/500RB 2                    | 0.80  | 1.26 | 1.77 | 2.74 | 3.73  |
| 200RB/500RB 3                    | 1.16  | 1.83 | 2.57 | 3.98 | 5.43  |
| 200RB/500RB 4                    | 2.18  | 3.43 | 4.82 | 7.46 | 10.18 |
| 200RB/500RB 5                    | 2.69  | 4.23 | 5.95 | 9.21 | 12.6  |
| 200RB/500RB 6                    | 2.91  | 4.58 | 6.43 | 9.95 | 13.6  |
| 200RB/500RB 7                    | 3.34  | 5.26 | 7.39 | 11.4 | 15.6  |

| PRESSURE DROP ACROSS VALVE - kPa |       |       |       |       |       |
|----------------------------------|-------|-------|-------|-------|-------|
| VALVE SERIES                     | 13.8  | 34.5  | 69    | 172.5 | 345   |
|                                  | R-744 |       |       |       |       |
| 100RB                            | 1.25  | 1.97  | 2.77  | 4.28  | 5.83  |
| 150RB 1                          | 1.25  | 1.97  | 2.77  | 4.28  | 5.83  |
| 150RB 3                          | 2.81  | 4.43  | 6.22  | 9.63  | 13.13 |
| 150RB 7                          | 4.09  | 6.44  | 9.04  | 14.00 | 19.10 |
| 150RB 9                          | 7.67  | 12.07 | 16.95 | 26.25 | 35.82 |
| 200RB/500RB 2                    | 2.81  | 4.43  | 6.22  | 9.63  | 13.13 |
| 200RB/500RB 3                    | 4.09  | 6.44  | 9.04  | 14.00 | 19.10 |
| 200RB/500RB 4                    | 7.67  | 12.07 | 16.95 | 26.25 | 35.82 |
| 200RB/500RB 5                    | 9.45  | 14.89 | 20.91 | 32.38 | 44.18 |
| 200RB/500RB 6                    | 10.22 | 16.09 | 22.60 | 35.00 | 47.76 |
| 200RB/500RB 7                    | 11.75 | 18.51 | 25.99 | 40.25 | 54.92 |

NOTE: Shading indicates AHRI standard ratings  
NOTE: Capacity is based on largest connection size.



INDUSTRIAL SOLENOID VALVES

Industrial Solenoid Valves are for use with air, water, and steam as well as the following list of secondary loop fluids.

| FLUID                       | MANUFACTURER                       |
|-----------------------------|------------------------------------|
| ETHYLENE & PROPYLENE GLYCOL | VARIOUS                            |
| TYFOXIT                     | SPAUSCHUS ASSOCIATES (DISTRIBUTOR) |
| SILTHERM XLT                | DOW                                |
| HFE                         | 3M                                 |
| DOWFROST                    | DOW                                |
| PEKASOL                     | —                                  |
| DYNALENE                    | DYNALENE                           |

MODEL NUMBER NOMENCLATURE - Example: 202CB 1/8B5/32VVLC

| VALVE TYPE                  | PRODUCT GROUP                 | VALVE TYPE                                                             | DESIGN SERIES | CONNECTION TYPE               | BODY MATERIAL                                                                    | PORT SIZE             | ELASTOMER CODE                                                                                                              | *COIL                                                                                               | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                                | PACK TYPE                                        |
|-----------------------------|-------------------------------|------------------------------------------------------------------------|---------------|-------------------------------|----------------------------------------------------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------|--------------------------------------------------|
| 2<br>2 = 2 Way<br>3 = 3 Way | 02<br>Two Digit Product Group | C<br>C = Normally Closed<br>O = Normally Open<br>U = Universal (3-Way) | B             | 1/8"<br>1/8" to 2" NPT Female | B = Brass<br>S = Stainless Steel<br>T = Stainless Steel with Silver Shading Band | 1/2"<br>3/64" thru 2" | B<br>B = Buna-N<br>P = Ethylene Propylene<br>T = PFTE w/Ethylene Propylene Gaskets<br>V = Viton w/Ethylene Propylene Gasket | VLC<br>VLC = Valve Less Coil<br><br>For Valves with Coil See Coil Nomenclature on Coil Catalog Page | Blank thru -99        | G = Customer Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

\* Valves in catalog are shipped without solenoid coils (VLC = Valve Less Coil). See coil pages for coil selection and a complete list of voltage options.





202CB 1/8B1/8BVLC

## 202CB SERIES INDUSTRIAL SOLENOID VALVES

The 202CB is a direct-acting 2-way, normally closed valve for control of air, water, and steam applications.

### FEATURES

- Superior life with stainless steel enclosing tube
- Repair kits available
- Brass or stainless steel bodies

### SPECIFICATIONS

|                               |                                                        |
|-------------------------------|--------------------------------------------------------|
| Watts .....                   | 12 AC, 15 DC                                           |
| Va Inrush .....               | 28                                                     |
| Va Holding .....              | 19                                                     |
| Maximum Working Pressure..... | 500 psi (35 bar), 1000 psi (69 bar) 3/64" orifice only |
| Weight .....                  | 1 lb                                                   |
| UL/CUL file number .....      | MP604                                                  |

### 202CB SERIES INDUSTRIAL SOLENOID VALVES

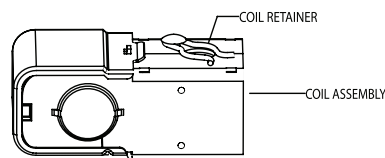
| DESCRIPTION                     | PORT SIZE (IN) | CONN. SIZE | MOPD <sup>2</sup> AC | MOPD <sup>2</sup> DC | CV   | MAX. AC FLUID TEMP. <sup>1</sup> | ELASTOMER                           | SUGGESTED COIL | MODEL NUMBER       | ITEM NUMBER |
|---------------------------------|----------------|------------|----------------------|----------------------|------|----------------------------------|-------------------------------------|----------------|--------------------|-------------|
| Brass General Purpose           | 1/8            | 1/8"       | 150                  | 75                   | 0.34 | 180°F                            | BUNA-N                              | AMG            | 202CB 1/8B1/8BVLC  | 030113      |
| Brass General Purpose           | 5/32           | 1/8"       | 100                  | 40                   | 0.48 | 180°F                            | BUNA-N                              | AMG            | 202CB 1/8B5/32BVLC | 030114      |
| Brass Steam                     | 1/8            | 1/8"       | 150                  | —                    | 0.34 | 400°F                            | Ethylene Propylene                  | AHG            | 202CB 1/8B1/8PVLC  | 030118      |
| Brass Steam                     | 1/8            | 1/8"       | 150                  | —                    | 0.34 | 400°F                            | PTFE w/Ethylene Propylene Gaskets   | AHG            | 202CB 1/8B1/8TVLC  | 030123      |
| Brass Steam                     | 5/32           | 1/8"       | 100                  | —                    | 0.48 | 400°F                            | Viton w/ Ethylene Propylene Gaskets | AHG            | 202CB 1/8B5/32VVLC | 056954      |
| Stainless Steel General Purpose | 1/16           | 1/8"       | 500                  | 500                  | 0.12 | 180°F                            | BUNA-N                              | AMG            | 202CB 1/8S1/16BVLC | 064756      |

<sup>1</sup> With an ambient temperature of 77°F

<sup>2</sup> Maximum Operating Pressure Differential

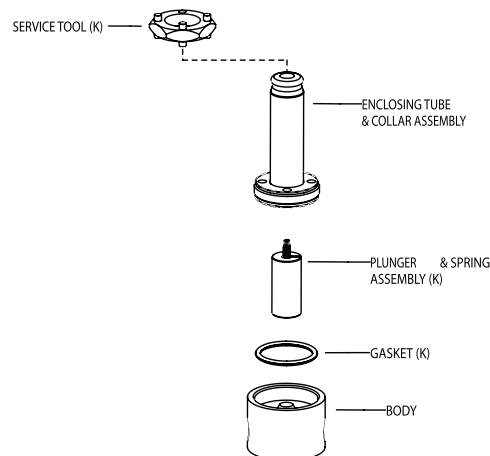
VLC - See coil assemblies for availability

## EXPLODED VIEW & PARTS KIT DATA



### VALVE REPAIR KIT

(K) indicates part is supplied in valve repair kit.



### 202CB COMPLETE VALVE REPAIR KITS

| SEAT MATERIAL      | MODEL NUMBER | ITEM NUMBER |
|--------------------|--------------|-------------|
| Rulon              | K-1068       | 032396      |
| Ethylene Propylene | K-1064       | 021104      |



203CA 3/8B3/8BVLC

# 203CA SERIES INDUSTRIAL SOLENOID VALVES

The 203CA is a direct-acting, 2-way normally closed valve for air, water and steam applications.

## FEATURES

- Superior life with stainless steel enclosing tube
- Forged brass body with large wrench flats
- Repair kits available
- 3/8" NPT Solenoid Valve

## SPECIFICATIONS

Watts: ..... 12 AC  
VA Inrush: ..... 37 for 5/32 & 1/8 orifices, 47 for 1/4 + orifices  
VA Holding: ..... 19  
Maximum working pressure: ..... 500 psi (35 bar)  
Weight: ..... 1 lb. 4 oz.  
UL/CUL file number: ..... MP604

## 203CA SERIES INDUSTRIAL SOLENOID VALVES

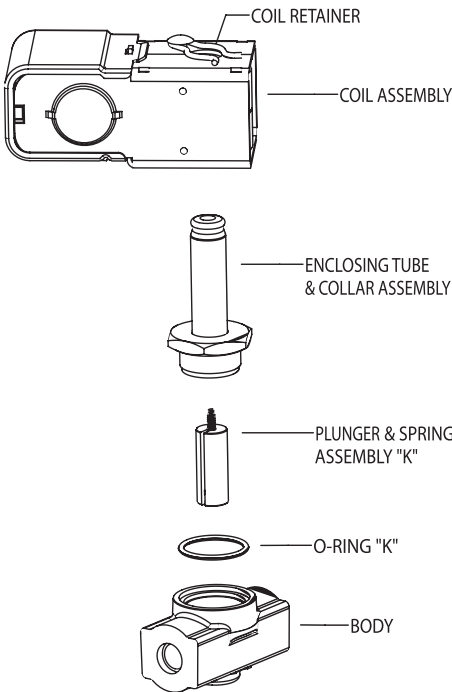
| DESCRIPTION           | PORT SIZE (IN) | CONNECTION SIZE | MOPD <sup>2</sup> AC | CV  | MAX. AC FLUID TEMP. <sup>1</sup> | ELASTOMER | SUGGESTED COIL | MODEL NUMBER      | ITEM NUMBER |
|-----------------------|----------------|-----------------|----------------------|-----|----------------------------------|-----------|----------------|-------------------|-------------|
| Brass General Purpose | 3/8            | 3/8"            | 10                   | 1.7 | 180°F                            | Buna-N    | AMG            | 203CA 3/8B3/8BVLC | 030605      |

<sup>1</sup> With an ambient temperature of 77°F

<sup>2</sup> Maximum Operating Pressure Differential

VLC - See coil assemblies for availability

## EXPLODED VIEW & PARTS KIT DATA



**VALVE REPAIR KIT**  
(K) indicates part is supplied in valve repair kit.

## 203CA COMPLETE VALVE REPAIR KITS

| SEAT MATERIAL       | MODEL NUMBER | ITEM NUMBER |
|---------------------|--------------|-------------|
| Ethylene Propylene* | K-1106       | 040598      |

\* May also be used for Buna-n



204CD 1/4S1/8BVLC

## 204CD SERIES INDUSTRIAL SOLENOID VALVES

The 204CD is a 2-way direct-acting unidirectional, normally closed valve for air, water and steam applications.

### FEATURES

- Superior life with stainless steel enclosing tube
- Repair kits available
- Brass or stainless steel bodies
- 1/4" NPT Solenoid Valve

### SPECIFICATIONS

|                                |                  |
|--------------------------------|------------------|
| Watts .....                    | 12 AC, 15 DC     |
| VA Inrush .....                | 31               |
| VA Holding .....               | 19               |
| Maximum working pressure ..... | 500 psi (35 bar) |
| Weight .....                   | 1 lb. 3 oz.      |
| UL/CUL file number .....       | MP604            |

### 204CD SERIES INDUSTRIAL SOLENOID VALVES

| DESCRIPTION                     | PORT SIZE (IN) | CONN. SIZE | MOPD <sup>2</sup> AC | MOPD <sup>2</sup> DC | CV   | MAX. AC FLUID TEMP. <sup>1</sup> | ELASTOMER                         | SUGGESTED COIL <sup>3</sup> | MODEL NUMBER        | ITEM NUMBER |
|---------------------------------|----------------|------------|----------------------|----------------------|------|----------------------------------|-----------------------------------|-----------------------------|---------------------|-------------|
| Brass General Purpose           | 3/32           | 1/4"       | 300                  | 125                  | 0.22 | 180°F                            | BUNA-N                            | AMG                         | 204CD 1/4B3/32BVLC  | 030733      |
| Brass General Purpose           | 1/8            | 1/4"       | 150                  | 75                   | 0.34 | 180°F                            | BUNA-N                            | AMG                         | 204CD 1/4B1/8BVLC   | 056110      |
| Brass General Purpose           | 5/32           | 1/4"       | 100                  | 40                   | 0.48 | 180°F                            | BUNA-N                            | AMG                         | 204CD 1/4B5/32BVLC  | 030735      |
| Brass General Purpose           | 1/4            | 1/4"       | 20                   | 10                   | 0.70 | 180°F                            | BUNA-N                            | AMG                         | 204CD 1/4B1/4BVLC   | 030737      |
| Brass Steam                     | 5/32           | 1/4"       | 100                  | —                    | 0.48 | 400°F                            | E.P. Seat                         | AMG 120V, 50/60             | 204CD 1/4B5/32PAMG2 | 064682      |
| Stainless Steel General Purpose | 3/32           | 1/4"       | 300                  | 125                  | 0.22 | 180°F                            | BUNA-N                            | AMG                         | 204CD 1/4S3/32BVLC  | 030870      |
| Stainless Steel General Purpose | 1/8            | 1/4"       | 150                  | 75                   | 0.34 | 180°F                            | BUNA-N                            | AMG                         | 204CD 1/4S1/8BVLC   | 030871      |
| Stainless Steel Steam           | 3/64           | 1/4"       | 150                  | —                    | 0.05 | 400°F                            | PTFE w/Ethylene Propylene Gaskets | AHG                         | 204CD 1/4S3/64TVLC  | 030883      |
| Stainless Steel Steam           | 1/8            | 1/4"       | 150                  | —                    | 0.34 | 400°F                            | PTFE w/Ethylene Propylene Gaskets | AHG                         | 204CD 1/4S1/8TVLC   | 030886      |
| Stainless Steel Steam           | 5/32           | 1/4"       | 100                  | —                    | 0.48 | 400°F                            | E.P. Seat                         | AMF 120V, 50/60             | 204CD 1/4S5/32PAMF2 | 053492      |

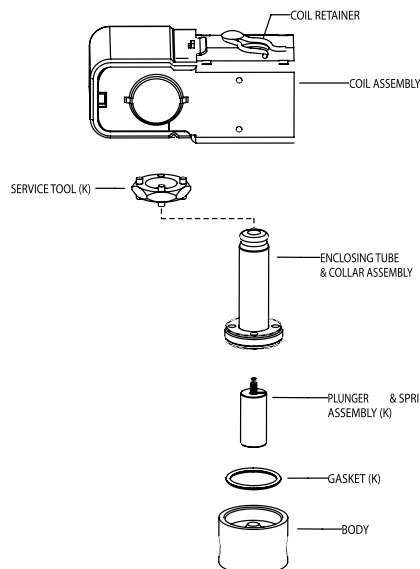
<sup>1</sup> With an ambient temperature of 77°F

<sup>2</sup> Maximum Operating Pressure Differential

<sup>3</sup> Coil is included with valve if voltage is listed

VLC - See coil assemblies for availability

## EXPLODED VIEW & PARTS KIT DATA



### VALVE REPAIR KIT

(K) indicates part is supplied in valve repair kit.

### 204CD COMPLETE VALVE REPAIR KITS

| SEAT MATERIAL             | MODEL NUMBER | ITEM NUMBER |
|---------------------------|--------------|-------------|
| Buna-N                    | K-1072       | 021105      |
| Buna-N (1/4 orifice only) | K-1162       | 039145      |
| Viton                     | K-1074       | 021106      |
| Rulon                     | K-1077       | 021107      |
| Ethylene Propylene        | K-1076       | 032154      |



3/8", 1/2", 3/4"



1" ONLY

## 210CA / 211CA SERIES INDUSTRIAL SOLENOID VALVES

The 210CA/211CA is a 2-way normally closed valve used in air, water and steam applications. The 210CA valve is pilot-operated and the 211CA valve is direct-acting.

### FEATURES

- Unique captive diaphragm and seal
- Superior life with stainless steel enclosing tube
- Repair kits available

### SPECIFICATIONS

|                                                  |                                                                         |
|--------------------------------------------------|-------------------------------------------------------------------------|
| Watts .....                                      | 12 AC                                                                   |
| VA Inrush.....                                   | 31                                                                      |
| VA Holding .....                                 | 19                                                                      |
| Maximum Working Pressure.....                    | 300 psi (21 bar), 250 psi (17 bar) on 1" 210C only                      |
| Weight .....                                     | 1 lbs. 3 oz.                                                            |
| Diaphragm Operated Solenoid Valve Pressure ..... | 210CA - from 5 to 150 psi (0.34 to 10 bar)                              |
| .....                                            | 3/8" to 1" NPT, 211CA - from 0 to 100 psi (0 to 7 bar) 3/8" to 3/4" NPT |
| UL/CUL file number .....                         | MP604                                                                   |

### 210CA SERIES INDUSTRIAL SOLENOID VALVES

| DESCRIPTION                                | PORT SIZE (IN) | CONN. SIZE | MOPD AC                            | CV  | MAX. AC FLUID TEMP. <sup>1</sup> | ELASTOMER          | SUGGESTED COIL | MODEL NUMBER      | ITEM NUMBER |
|--------------------------------------------|----------------|------------|------------------------------------|-----|----------------------------------|--------------------|----------------|-------------------|-------------|
| Brass General Purpose                      | 5/8            | 1/2"       | 150                                | 3.6 | 180°F                            | BUNA-N             | AMG            | 210CA 1/2B5/8BVLC | 030620      |
| Brass General Purpose                      | 5/8            | 3/8"       | 150                                | 2.8 | 180°F                            | BUNA-N             | AMG            | 210CA 3/8B5/8BVLC | 030619      |
| Brass General Purpose                      | 3/4"           | 3/4"       | 125                                | 5.5 | 180°F                            | BUNA-N             | AMG            | 210CA 3/4B3/4BVLC | 030621      |
| Brass General Purpose                      | 1              | 1"         | 125                                | 13  | 180°F                            | BUNA-N             | AMG            | 210CA 1B1BVLC     | 038629      |
| Brass-Hot Water (210°F) or Steam (To 250°) | 5/8            | 1/2"       | 100 <sup>2</sup> , 15 <sup>3</sup> | 3.6 | 250°F                            | ETHYLENE PROPYLENE | AMG            | 210CA 1/2B5/8PVLC | 030623      |
| Brass-Hot Water (210°F) or Steam (To 250°) | 3/4            | 3/4"       | 100 <sup>2</sup> , 15 <sup>3</sup> | 5.5 | 250°F                            | ETHYLENE PROPYLENE | AMG            | 210CA 3/4B3/4PVLC | 030624      |

1 With an ambient temperature of 77°F

2 MOPD-Hot Water

3 MOPD-Steam

VLC -See coil assemblies for availability

### 211CA SERIES INDUSTRIAL SOLENOID VALVES

| DESCRIPTION                                | PORT SIZE (IN) | CONN. SIZE | MOPD AC                            | CV  | MAX. AC FLUID TEMP. <sup>1</sup> | ELASTOMER          | SUGGESTED COIL | MODEL NUMBER      | ITEM NUMBER |
|--------------------------------------------|----------------|------------|------------------------------------|-----|----------------------------------|--------------------|----------------|-------------------|-------------|
| Brass General Purpose                      | 5/8            | 3/8"       | 100                                | 2.8 | 180°F                            | BUNA-N             | AMG            | 211CA 3/8B5/8BVLC | 030625      |
| Brass General Purpose                      | 5/8            | 1/2"       | 100                                | 3.6 | 180°F                            | BUNA-N             | AMG            | 211CA 1/2B5/8BVLC | 030626      |
| Brass General Purpose                      | 3/4            | 3/4"       | 100                                | 5.5 | 180°F                            | BUNA-N             | AMG            | 211CA 3/4B3/4BVLC | 030627      |
| Brass-Hot Water (210°F) or Steam (TO 250°) | 5/8            | 3/8"       | 100 <sup>2</sup> , 15 <sup>3</sup> | 2.8 | 250°F                            | ETHYLENE PROPYLENE | AMG            | 211CA 3/8B5/8PVLC | 032303      |
| Brass-Hot Water (210°F) or Steam (TO 250°) | 5/8            | 1/2"       | 100 <sup>2</sup> , 15 <sup>3</sup> | 3.6 | 250°F                            | ETHYLENE PROPYLENE | AMG            | 211CA 1/2B5/8PVLC | 032304      |
| Brass-Hot Water (210°F) or Steam (TO 250°) | 3/4            | 3/4"       | 100 <sup>2</sup> , 15 <sup>3</sup> | 5.5 | 250°F                            | ETHYLENE PROPYLENE | AMG            | 211CA 3/4B3/4PVLC | 032305      |

1 With an ambient temperature of 77°F

2 MOPD-Hot Water

3 MOPD-Steam

VLC -See coil assemblies for availability

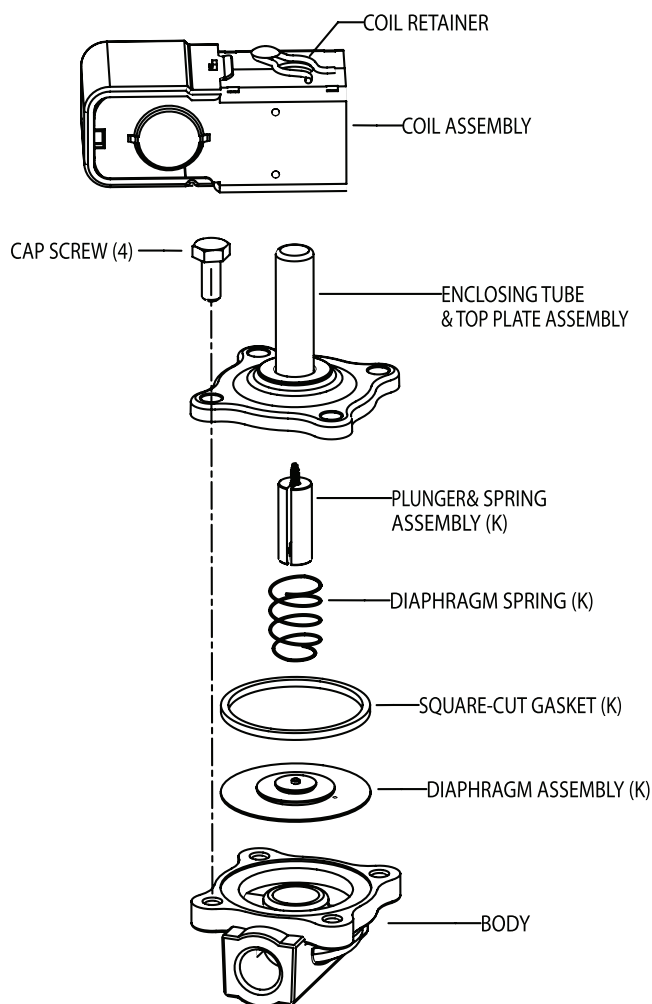
## EXPLODED VIEW &amp; PARTS KIT DATA

## 210CA COMPLETE VALVE REPAIR KITS

| SEAT MATERIAL      | CONNECTION SIZE (IN) | MODEL NUMBER | ITEM NUMBER |
|--------------------|----------------------|--------------|-------------|
| BUNA-N             | 3/8 & 1/2            | K-1155       | 028964      |
| ETHYLENE PROPYLENE | 3/8 & 1/2            | K-1156       | 029856      |
| BUNA-N             | 1                    | K-1177       | 038934      |
| BUNA-N             | 3/4                  | K-1231       | 045072      |
| ETHYLENE PROPYLENE | 3/4                  | K-1232       | 045083      |

## 211CA COMPLETE VALVE REPAIR KITS

| SEAT MATERIAL      | MODEL NUMBER | ITEM NUMBER |
|--------------------|--------------|-------------|
| BUNA-N             | K-1157       | 034357      |
| ETHYLENE PROPYLENE | K-1158       | 039879      |



## VALVE REPAIR KIT

(K) indicates part is supplied in valve repair kit.



214CB 3/8B3/8BVLC

# 214CB SERIES INDUSTRIAL SOLENOID VALVES

The 214CB is a 2-way normally closed valve for air, water, and steam applications.

**FEATURES**

- Superior life with stainless steel enclosing tube
- Forged brass body with large wrench flats
- PTFE O-ring for superior external leakage
- Repair kits available

**SPECIFICATIONS**

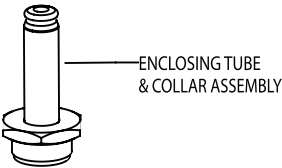
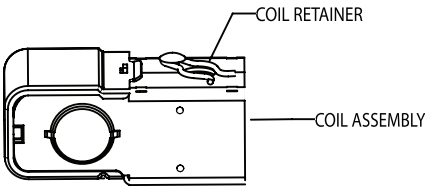
|                                |                               |
|--------------------------------|-------------------------------|
| Watts .....                    | 12 @ 60Hz                     |
| VA Inrush .....                | 44                            |
| VA Holding .....               | 22                            |
| Maximum Working Pressure ..... | 350 psi (24 bar)              |
| Weight .....                   | 1 lbs. 4 oz.                  |
| Pilot Operated Pressure .....  | 2 to 200 psi (0.15 to 14 bar) |
| UL/CUL file number .....       | MP604                         |

**214CB SERIES INDUSTRIAL SOLENOID VALVES**

| DESCRIPTION           | PORT SIZE (IN) | CONNECTION SIZE | MOPD <sup>2</sup> AC | CV  | MAX. AC FLUID TEMP. <sup>1</sup> | ELASTOMER | SUGGESTED COIL | MODEL NUMBER      | ITEM NUMBER |
|-----------------------|----------------|-----------------|----------------------|-----|----------------------------------|-----------|----------------|-------------------|-------------|
| Brass General Purpose | 1/4            | 1/4"            | 200                  | 1.2 | 180°F                            | BUNA-N    | AMG            | 214CB 1/4B1/4BVLC | 030540      |
| Brass General Purpose | 3/8            | 3/8"            | 200                  | 2.2 | 180°F                            | BUNA-N    | AMG            | 214CB 3/8B3/8BVLC | 030545      |

1 With an ambient temperature of 77°F  
2 Maximum Operating Pressure Differential  
VLC - See coil assemblies for availability

## EXPLODED VIEW & PARTS KIT DATA



**VALVE REPAIR KIT**

(K) indicates part is supplied in valve repair kit.

**214CB COMPLETE VALVE REPAIR KITS**

| SEAT MATERIAL      | MODEL NUMBER | ITEM NUMBER |
|--------------------|--------------|-------------|
| Buna-N             | K-1112       | 035074      |
| Ethylene Propylene | K-1113       | 041334      |



222CB 1-1/4B1-1/4BVLC

## 222CB SERIES INDUSTRIAL SOLENOID VALVES

*The 222CB is a 2-way normally closed valve for air, water, and steam applications.*

### FEATURES

- Forged brass body with large wrench flats
- Repair kits available

### SPECIFICATIONS

Seat Material .....Rulon  
 Watts ..... 12 @ 60Hz  
 VA Inrush..... 38  
 VA Holding..... 19  
 Maximum Working Pressure..... 300 psi (21 bar)  
 Minimum Operating Pressure..... 5 psi (0.34 bar)  
 UL/CUL file number ..... MP604

### 222CB SERIES INDUSTRIAL SOLENOID VALVES

| DESCRIPTION           | PORT SIZE (IN) | CONN. SIZE | MOPD <sup>2</sup> AC | CV   | MAX. AC FLUID TEMP. <sup>1</sup> | ELASTOMER                             | SUGGESTED COIL | MODEL NUMBER          | ITEM NUMBER |
|-----------------------|----------------|------------|----------------------|------|----------------------------------|---------------------------------------|----------------|-----------------------|-------------|
| Brass General Purpose | 1/2            | 1/2"       | 250                  | 3.5  | 180°F                            | BUNA-N                                | AMG            | 222CB 1/2B1/2BVLC     | 039917      |
| Brass General Purpose | 3/4            | 3/4"       | 250                  | 7.0  | 180°F                            | BUNA-N                                | AMG            | 222CB 3/4B3/4BVLC     | 028192      |
| Brass General Purpose | 1              | 1"         | 250                  | 13.0 | 180°F                            | BUNA-N                                | AMG            | 222CB 1B1BVLC         | 039931      |
| Brass General Purpose | 1-1/4          | 1-1/4"     | 250                  | 16.0 | 180°F                            | BUNA-N                                | AMG            | 222CB 1-1/4B1-1/4BVLC | 039918      |
| Brass General Purpose | 1-1/2          | 1-1/2"     | 250                  | 25.0 | 180°F                            | BUNA-N                                | AMG            | 222CB 1-1/2B1-1/2BVLC | 038879      |
| Brass Steam           | 1/2            | 1/2"       | 150                  | 3.5  | 400°F                            | Rulon with Ethylene Propylene Gaskets | AHG            | 222CB 1/2B1/2TVLC     | 037958      |
| Brass Steam           | 3/4            | 3/4"       | 150                  | 7.0  | 400°F                            | Rulon with Ethylene Propylene Gaskets | AHG            | 222CB 3/4B3/4TVLC     | 039930      |
| Brass Steam           | 1              | 1"         | 250                  | 13.0 | 180°F                            | BUNA-N                                | AHG            | 222CB 1B1TVLC         | 039834      |
| Brass Steam           | 1-1/4          | 1-1/4"     | 150                  | 16.0 | 400°F                            | Rulon with Ethylene Propylene Gaskets | AHG            | 222CB 1-1/4B1-1/4TVLC | 040532      |
| Brass Steam           | 1-1/2          | 1-1/2"     | 150                  | 25.0 | 400°F                            | Rulon with Ethylene Propylene Gaskets | AHG            | 222CB 1-1/2B1-1/2TVLC | 040582      |

- 1 With an ambient temperature of 77°F  
 2 Maximum Operating Pressure Differential  
 VLC - See coil assemblies for availability



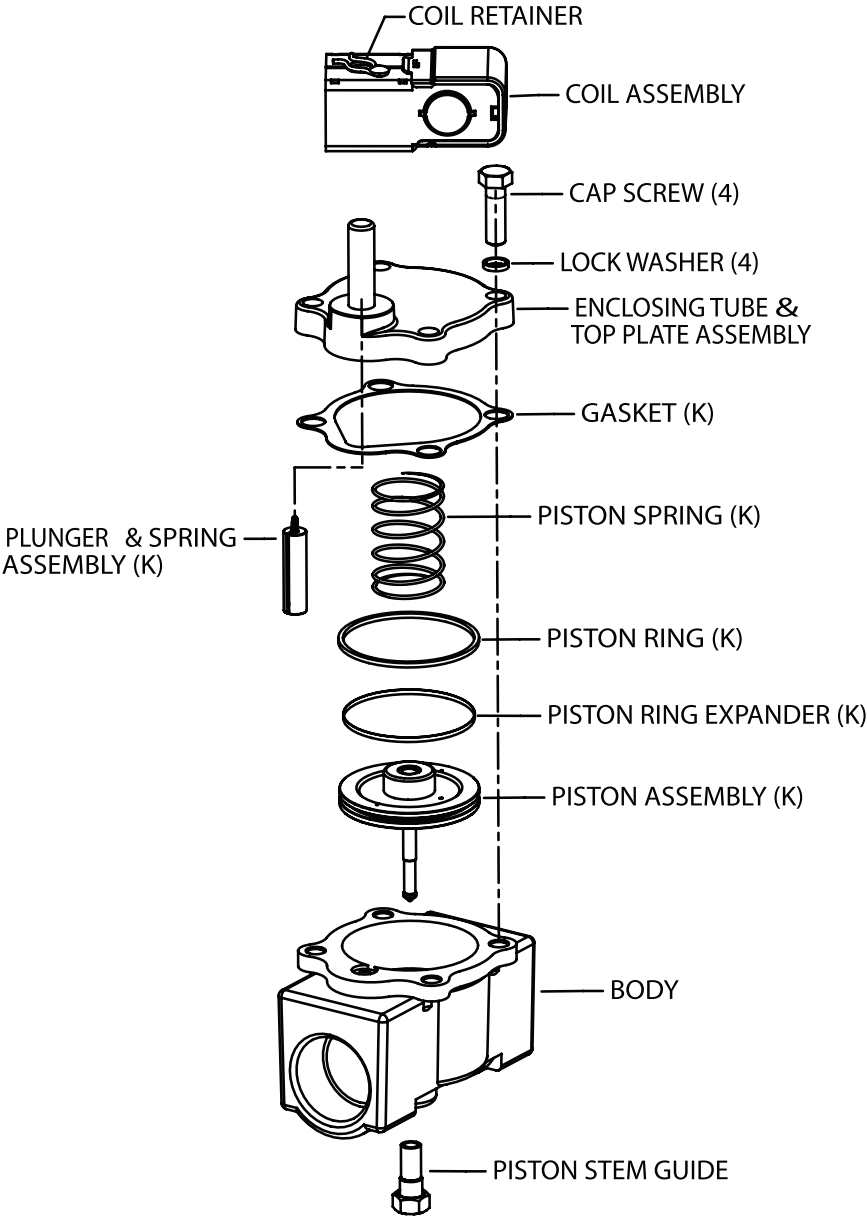
EXPLODED VIEW & PARTS KIT DATA

222CB COMPLETE VALVE REPAIR KITS

| SEAT MATERIAL | BODY SIZE    |             |              |             |              |             |              |             |              |             |
|---------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|-------------|
|               | 3/8" & 1/2"  |             | 3/4"         |             | 1"           |             | 1-1/4"       |             | 1-1/2"       |             |
|               | MODEL NUMBER | ITEM NUMBER | MODEL NUMBER | ITEM NUMBER | MODEL NUMBER | ITEM NUMBER | MODEL NUMBER | ITEM NUMBER | MODEL NUMBER | ITEM NUMBER |
| Buna-N        | K-1116       | 030765      | K-1120       | 037558      | K-1124       | 028955      | K-1128       | 031349      | K-1132       | 028956      |
| Rulon         | K-1118       | 029235      | K-1122       | 021109      | K-1126       | 034178      | K-1130       | 034047      |              |             |

VALVE REPAIR KIT

(K) indicates part is supplied in valve repair kit.



# FILTER DRIER QUICK SELECTION GUIDE

## HERMETIC LIQUID LINE FILTER DRIERS

| SERIES | DESCRIPTION                            | APPLICATION       | CONSTRUCTION   | TONNAGES (R-410A) |
|--------|----------------------------------------|-------------------|----------------|-------------------|
| EK     | Premium Universal                      | Uni-Flow          | Compacted Bead | 1 to 34 tons      |
| BSL    | Builder Series (Residential)           | Uni-Flow          | Compacted Bead | 1 to 8 tons       |
| ADK    | Standard Filter Drier                  | Uni-Flow          | Solid Core     | 1 to 34 tons      |
| BFK    | Premium Heat Pump                      | Bi-Flow           | Solid Core     | 1 to 26 tons      |
| BSB    | Builder Series (Residential Heat Pump) | Bi-Flow           | Solid Core     | 3 to 5 tons       |
| BOK    | Burnout for AB or Mineral Oil          | Uni-Flow          | Solid Core     | 2 to 18 tons      |
| CU     | Copper Spun Residential                | Uni-Flow          | Solid Core     | 3 to 6 tons       |
| ALF    | Filter Only                            | Recovery Machines | —              | Up to 8 tons      |

## HERMETIC SUCTION LINE FILTER DRIERS

| SERIES | DESCRIPTION                         | APPLICATION | CONSTRUCTION | TONNAGES (R-410A) |
|--------|-------------------------------------|-------------|--------------|-------------------|
| ASD    | Premium Universal                   | Uni-Flow    | Beaded       | 2 to 21 tons      |
| SFD    | Smaller Lay-in                      | Uni-Flow    | Beaded       | 4 to 8 tons       |
| CSFD   | Compact "Pancake Style"             | Uni-Flow    | Solid Core   | 2 to 9 tons       |
| ASK    | Burnout (contains Activated Carbon) | Uni-Flow    | Solid Core   | 4 to 8 tons       |
| BSS    | Builder Series (Residential)        | Uni-Flow    | Solid Core   | 3 to 6 tons       |
| ASF    | Filter Only                         | Uni-Flow    | —            | 5 to 35 tons      |

## TAKE-APART FILTER DRIERS

| SERIES | DESCRIPTION                    | APPLICATION       | CORE / CARTRIDGE  | TONNAGES (R-410A)           |
|--------|--------------------------------|-------------------|-------------------|-----------------------------|
| STAS   | Steel Shell, Steel Internals   | Liquid or Suction | 48 Cu. In. Cores  | 22 to 123 tons              |
| ADKS   | Steel Shell, Plastic Internals | Liquid or Suction | 100 Cu. In. Cores | 110 to 180 tons (<500 psig) |
| BTAS   | Brass Shell                    | Suction           | Cartridges        | 1 to 8 tons (R-404a)        |



EK 083S

## EK SERIES HERMETIC LIQUID LINE FILTER DRIERS

*The EK is a premium compacted bead liquid line filter designed for maximum filtration in both air conditioning and refrigeration applications.*

### FEATURES

- 99.9% filtration efficiency with minimal pressure drop
- Retains contaminants during system cycling and vibration
- Filtration first for more effective use of surface area of desiccant
- High moisture and acid removal capacity
- Specially formulated blend to protect POE oils
- Shock resistant steel shell construction
- Solid copper connections

### SPECIFICATIONS

Desiccant ..... Blend optimized for high water and acid capacity  
 Filtration ..... 20 microns  
 Maximum Working Pressure..... 680 psig (47 bar)  
 UL/CUL File Number ..... SA3124  
 Canadian CRN ..... 0E21971.513467890YTN

### MODEL NUMBER NOMENCLATURE - Example: EK 083SVV

| SERIES                             | UNIT SIZE    | CONNECTION SIZE    | CONNECTION STYLE                                                                                                                       | ACCESS TYPE                                                                                                     | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                                | PACK TYPE                                        |
|------------------------------------|--------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------|--------------------------------------------------|
| EK                                 | 08           | 3                  | S                                                                                                                                      | VV                                                                                                              |                       |                                                 |                                                  |
| Hermetic Liquid Line Filter Driers | In Cubic In. | In 1/8" Increments | S = ODF<br>FM = SAE Female X SAE Male<br>SVCAP = ODF X Cap. Tube with Access Valve<br>MF = SAE Male X SAE Female<br><br>(Omit for SAE) | V = Single Access Valve<br>VV = Dual Access Valve<br>VCAP = Single Access Valve with Cap Tube Outlet Connection | Blank Thru -99        | G = Customer Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

### EK SERIES LIQUID LINE FILTER DRIERS

| UNIT SIZE (CUBIC INCHES) | INLET X OUTLET CONNECTION SIZE    | ACCESS TYPE | MODEL NUMBER | ITEM NUMBER |
|--------------------------|-----------------------------------|-------------|--------------|-------------|
| 3                        | 1/4" X 1/4" SAE Flare             | None        | EK 032       | 060009      |
| 3                        | 1/4" Female X 1/4" Male SAE Flare | None        | EK 032FM     | 060011      |
| 3                        | 1/4" Male X 1/4" Female SAE Flare | None        | EK 032MF     | 060010      |
| 3                        | 1/4" X 1/4" ODF                   | None        | EK 032S      | 060012      |
| 3                        | 1/4" ODF X Cap Tube               | Single      | EK 032SVCAP  | 063208      |
| 3                        | 1/4" X 1/4" ODF                   | Dual        | EK 032SVV    | 063908      |
| 3                        | 3/8" X 3/8" SAE Flare             | None        | EK 033       | 060013      |
| 3                        | 3/8" X 3/8" ODF                   | None        | EK 033S      | 060014      |
| 5                        | 1/4" X 1/4" SAE Flare             | None        | EK 052       | 047601      |
| 5                        | 1/4" Male X 1/4" Female SAE Flare | None        | EK 052MF     | 057013      |
| 5                        | 1/4" X 1/4" ODF                   | None        | EK 052S      | 047602      |
| 5                        | 1/4" ODF X Cap Tube               | Single      | EK 052SVCAP  | 065846      |
| 5                        | 1/4" X 1/4" ODF                   | Dual        | EK 052SVV    | 065966      |
| 5                        | 3/8" X 3/8" SAE Flare             | None        | EK 053       | 047603      |
| 5                        | 3/8" X 3/8" ODF                   | None        | EK 053S      | 047604      |
| 5                        | 3/8" X 3/8" ODF                   | Dual        | EK 053SVV    | 065963      |
| 8                        | 1/4" X 1/4" SAE Flare             | None        | EK 082       | 047605      |
| 8                        | 5/16" X 5/16" ODF                 | None        | EK 0825S     | 049551      |
| 8                        | 1/4" X 1/4" ODF                   | None        | EK 082S      | 047606      |
| 8                        | 3/8" X 3/8" SAE Flare             | None        | EK 083       | 047607      |
| 8                        | 3/8" Male X 3/8" Female SAE Flare | None        | EK 083MF     | 056906      |

## EK SERIES LIQUID LINE FILTER DRIERS (CONTINUED)

| UNIT SIZE (CUBIC INCHES) | INLET X OUTLET CONNECTION SIZE | ACCESS TYPE | MODEL NUMBER | ITEM NUMBER |
|--------------------------|--------------------------------|-------------|--------------|-------------|
| 8                        | 3/8" X 3/8" ODF                | None        | EK 083S      | 047608      |
| 8                        | 3/8" X 3/8" ODF                | Dual        | EK 083SVV    | 065964      |
| 8                        | 1/2" X 1/2" SAE Flare          | None        | EK 084       | 047609      |
| 8                        | 1/2" X 1/2" ODF                | None        | EK 084S      | 047610      |
| 16                       | 1/4" X 1/4" SAE Flare          | None        | EK 162       | 047611      |
| 16                       | 5/16" X 5/16 ODF               | None        | EK 1625S     | 056045      |
| 16                       | 1/4" X 1/4" ODF                | None        | EK 162S      | 047612      |
| 16                       | 3/8" X 3/8" SAE Flare          | None        | EK 163       | 047613      |
| 16                       | 3/8" X 3/8" ODF                | None        | EK 163S      | 047614      |
| 16                       | 3/8" X 3/8" ODF                | Dual        | EK 163SVV    | 065965      |
| 16                       | 1/2" X 1/2" SAE Flare          | None        | EK 164       | 047615      |
| 16                       | 1/2" X 1/2" ODF                | None        | EK 164S      | 047616      |
| 16                       | 5/8" X 5/8" SAE Flare          | None        | EK 165       | 047617      |
| 16                       | 5/8" X 5/8" ODF                | None        | EK 165S      | 047618      |
| 16                       | 7/8" X 7/8" ODF                | None        | EK 167S      | 047619      |
| 30                       | 3/8" X 3/8" SAE Flare          | None        | EK 303       | 048210      |
| 30                       | 3/8" X 3/8" ODF                | None        | EK 303S      | 048211      |
| 30                       | 1/2" X 1/2" SAE Flare          | None        | EK 304       | 048212      |
| 30                       | 1/2" X 1/2" ODF                | None        | EK 304S      | 048213      |
| 30                       | 5/8" X 5/8" SAE Flare          | None        | EK 305       | 048214      |
| 30                       | 5/8" X 5/8" ODF                | None        | EK 305S      | 048215      |
| 30                       | 3/4" X 3/4" SAE Flare          | None        | EK 306       | 048668      |
| 30                       | 3/4" X 3/4" ODF                | None        | EK 306S      | 048216      |
| 30                       | 7/8" X 7/8" ODF                | None        | EK 307S      | 048217      |
| 30                       | 1-1/8" X 1-1/8" ODF            | None        | EK 309S      | 048218      |
| 41                       | 3/8" X 3/8" SAE Flare          | None        | EK 413       | 048219      |
| 41                       | 1/2" X 1/2" SAE Flare          | None        | EK 414       | 048220      |
| 41                       | 1/2" X 1/2" ODF                | None        | EK 414S      | 048221      |
| 41                       | 5/8" X 5/8" SAE Flare          | None        | EK 415       | 048222      |
| 41                       | 5/8" X 5/8" ODF                | None        | EK 415S      | 048223      |
| 41                       | 7/8" X 7/8" ODF                | None        | EK 417S      | 048224      |
| 41                       | 1-1/8" X 1-1/8" ODF            | None        | EK 419S      | 048225      |
| 75                       | 7/8" X 7/8" ODF                | None        | EK 757S      | 048228      |
| 75                       | 1-1/8" X 1-1/8" ODF            | None        | EK 759S      | 048229      |

## EK SERIES CAPACITY TABLE

| MODEL NUMBER | ITEM NUMBER | FLOW CAPACITY TONS<br>@ 1 PSI ΔP <sup>1,4</sup><br>(FOR kW, MULTIPLY<br>TONS BY 3.5 ) |                              |                             |        |       |      | WATER CAPACITY <sup>2</sup> DROPS OF WATER <sup>3</sup> |      |        |      |                  |      |                   |      |        |      |        |      |                    |      |                                          |     |       |    |
|--------------|-------------|---------------------------------------------------------------------------------------|------------------------------|-----------------------------|--------|-------|------|---------------------------------------------------------|------|--------|------|------------------|------|-------------------|------|--------|------|--------|------|--------------------|------|------------------------------------------|-----|-------|----|
|              |             |                                                                                       |                              |                             |        |       |      | R-22                                                    |      | R-134a |      | R-290<br>/ R-600 |      | R-404A<br>/ R-507 |      | R-407C |      | R-410A |      | R-450A<br>/ R-513A |      | R452A<br>/ R452C<br>/ R-448A<br>/ R-449A |     | R-744 |    |
|              |             | R-22<br>/R-410A<br>/R-448A<br>/R-449A                                                 | R-134a<br>/R-450A<br>/R-513A | R-290<br>/R-452A<br>/R-452C | R-407C | R-744 | 75°F | 125°F                                                   | 75°F | 125°F  | 75°F | 125°F            | 75°F | 125°F             | 75°F | 125°F  | 75°F | 125°F  | 75°F | 125°F              | 14°F | 75°F                                     |     |       |    |
|              |             |                                                                                       |                              |                             |        |       |      |                                                         |      |        |      |                  |      |                   |      |        |      |        |      |                    |      |                                          |     |       |    |
| EK 032FM     | 060011      | 2.2                                                                                   | 2.0                          | 2.4                         | 1.4    | 2.1   | 2.8  | 40                                                      | 33   | 40     | 37   | 46               | 42   | 38                | 37   | 33     | 25   | 21     | 19   | 41                 | 46   | 41                                       | 45  | 30    | 34 |
| EK 032       | 060009      | 2.2                                                                                   | 2.0                          | 2.4                         | 1.4    | 2.1   | 2.8  | 40                                                      | 33   | 40     | 37   | 46               | 42   | 38                | 37   | 33     | 25   | 21     | 19   | 41                 | 46   | 41                                       | 45  | 30    | 34 |
| EK 032MF     | 060010      | 2.2                                                                                   | 2.0                          | 2.4                         | 1.4    | 2.1   | 2.8  | 40                                                      | 33   | 40     | 37   | 46               | 42   | 38                | 37   | 33     | 25   | 21     | 19   | 41                 | 46   | 41                                       | 45  | 30    | 34 |
| EK 032S      | 060012      | 2.9                                                                                   | 2.7                          | 3.2                         | 2.0    | 2.9   | 3.7  | 40                                                      | 33   | 40     | 37   | 46               | 42   | 38                | 37   | 33     | 25   | 21     | 19   | 41                 | 46   | 41                                       | 45  | 30    | 34 |
| EK 033       | 060013      | 3.3                                                                                   | 3.0                          | 3.6                         | 2.2    | 3.2   | 4.3  | 40                                                      | 33   | 40     | 37   | 46               | 42   | 38                | 37   | 33     | 25   | 21     | 19   | 41                 | 46   | 41                                       | 45  | 30    | 34 |
| EK 033S      | 060014      | 3.3                                                                                   | 3.0                          | 3.6                         | 2.2    | 3.2   | 4.3  | 40                                                      | 33   | 40     | 37   | 46               | 42   | 38                | 37   | 33     | 25   | 21     | 19   | 41                 | 46   | 41                                       | 45  | 30    | 34 |
| EK 052       | 047601      | 2.3                                                                                   | 2.1                          | 2.5                         | 1.5    | 2.2   | 3.0  | 114                                                     | 97   | 116    | 106  | 125              | 114  | 109               | 106  | 95     | 75   | 64     | 58   | 112                | 123  | 111                                      | 122 | 81    | 89 |
| EK 052MF     | 057013      | 2.3                                                                                   | 2.1                          | 2.5                         | 1.5    | 2.2   | 3.0  | 114                                                     | 97   | 116    | 106  | 125              | 114  | 109               | 106  | 95     | 75   | 64     | 58   | 112                | 123  | 111                                      | 122 | 81    | 89 |
| EK 052S      | 047602      | 3.4                                                                                   | 3.1                          | 3.7                         | 2.2    | 3.3   | 4.6  | 114                                                     | 97   | 116    | 106  | 125              | 114  | 109               | 106  | 95     | 75   | 64     | 58   | 112                | 123  | 111                                      | 122 | 81    | 89 |

## EK SERIES CAPACITY TABLE (CONTINUED)

| MODEL NUMBER | ITEM NUMBER | FLOW CAPACITY TONS<br>@ 1 PSI ΔP <sup>1,4</sup><br>(FOR kW, MULTIPLY<br>TONS BY 3.5) |                              |                             |        |       |      | WATER CAPACITY <sup>2</sup> DROPS OF WATER <sup>3</sup> |      |        |      |                  |      |                   |      |        |      |        |      |                    |      |                                          |      |       |      |
|--------------|-------------|--------------------------------------------------------------------------------------|------------------------------|-----------------------------|--------|-------|------|---------------------------------------------------------|------|--------|------|------------------|------|-------------------|------|--------|------|--------|------|--------------------|------|------------------------------------------|------|-------|------|
|              |             |                                                                                      |                              |                             |        |       |      | R-22                                                    |      | R-134a |      | R-290<br>/ R-600 |      | R-404A<br>/ R-507 |      | R-407C |      | R-410A |      | R-450A<br>/ R-513A |      | R452A<br>/ R452C<br>/ R-448A<br>/ R-449A |      | R-744 |      |
|              |             | R-22<br>/R-410A<br>/R-448A<br>/R-449A                                                | R-134a<br>/R-450A<br>/R-513A | R-290<br>/R-452A<br>/R-452C | R-407C | R-744 | 75°F | 125°F                                                   | 75°F | 125°F  | 75°F | 125°F            | 75°F | 125°F             | 75°F | 125°F  | 75°F | 125°F  | 75°F | 125°F              | 75°F | 125°F                                    | 14°F | 75°F  |      |
| EK 053       | 047603      | 3.8                                                                                  | 3.5                          | 4.2                         | 2.5    | 3.7   | 4.9  | 114                                                     | 97   | 116    | 106  | 125              | 114  | 109               | 106  | 95     | 75   | 64     | 58   | 112                | 123  | 111                                      | 122  | 81    | 89   |
| EK 053S      | 047604      | 4.8                                                                                  | 4.4                          | 5.3                         | 3.2    | 4.7   | 6.2  | 114                                                     | 97   | 116    | 106  | 125              | 114  | 109               | 106  | 95     | 75   | 64     | 58   | 112                | 123  | 111                                      | 122  | 81    | 89   |
| EK 082       | 047605      | 2.5                                                                                  | 2.3                          | 2.8                         | 1.7    | 2.4   | 3.2  | 235                                                     | 200  | 237    | 218  | 257              | 234  | 224               | 217  | 195    | 155  | 159    | 118  | 231                | 254  | 228                                      | 251  | 163   | 180  |
| EK 0825S     | 049551      | 3.8                                                                                  | 3.5                          | 4.2                         | 2.5    | 3.7   | 4.9  | 235                                                     | 200  | 237    | 218  | 257              | 234  | 224               | 217  | 195    | 155  | 159    | 118  | 231                | 254  | 228                                      | 251  | 163   | 180  |
| EK 082S      | 047606      | 3.6                                                                                  | 3.3                          | 4.0                         | 2.4    | 3.5   | 4.4  | 235                                                     | 200  | 237    | 218  | 257              | 234  | 224               | 217  | 195    | 155  | 159    | 118  | 231                | 254  | 228                                      | 251  | 163   | 180  |
| EK 083       | 047607      | 4.3                                                                                  | 4.0                          | 4.7                         | 2.9    | 4.3   | 5.5  | 235                                                     | 200  | 237    | 218  | 257              | 234  | 224               | 217  | 195    | 155  | 159    | 118  | 231                | 254  | 228                                      | 251  | 163   | 180  |
| EK 083MF     | 056906      | 4.3                                                                                  | 4.0                          | 4.7                         | 2.9    | 4.3   | 5.5  | 235                                                     | 200  | 237    | 218  | 257              | 234  | 224               | 217  | 195    | 155  | 159    | 118  | 231                | 254  | 228                                      | 251  | 163   | 180  |
| EK 083S      | 047608      | 4.9                                                                                  | 4.5                          | 5.4                         | 3.3    | 4.8   | 6.3  | 235                                                     | 200  | 237    | 218  | 257              | 234  | 224               | 217  | 195    | 155  | 159    | 118  | 231                | 254  | 228                                      | 251  | 163   | 180  |
| EK 084       | 047609      | 7.3                                                                                  | 6.7                          | 8.0                         | 4.9    | 7.1   | 9.4  | 235                                                     | 200  | 237    | 218  | 257              | 234  | 224               | 217  | 195    | 155  | 159    | 118  | 231                | 254  | 228                                      | 251  | 163   | 180  |
| EK 084S      | 047610      | 7.7                                                                                  | 7.1                          | 8.5                         | 5.1    | 7.5   | 9.9  | 235                                                     | 200  | 237    | 218  | 257              | 234  | 224               | 217  | 195    | 155  | 159    | 118  | 231                | 254  | 228                                      | 251  | 163   | 180  |
| EK 162       | 047611      | 2.5                                                                                  | 2.3                          | 2.8                         | 1.7    | 2.4   | 3.2  | 368                                                     | 313  | 371    | 341  | 403              | 366  | 350               | 340  | 305    | 240  | 206    | 186  | 361                | 398  | 357                                      | 392  | 260   | 286  |
| EK 1625S     | 056045      | 3.4                                                                                  | 3.1                          | 3.7                         | 2.2    | 3.3   | 4.4  | 368                                                     | 313  | 371    | 341  | 403              | 366  | 350               | 340  | 305    | 240  | 206    | 186  | 361                | 398  | 357                                      | 392  | 260   | 286  |
| EK 162S      | 047612      | 3.4                                                                                  | 3.1                          | 3.7                         | 2.2    | 3.3   | 4.4  | 368                                                     | 313  | 371    | 341  | 403              | 366  | 350               | 340  | 305    | 240  | 206    | 186  | 361                | 398  | 357                                      | 392  | 260   | 286  |
| EK 163       | 047613      | 4.2                                                                                  | 3.9                          | 4.6                         | 2.8    | 4.1   | 5.4  | 368                                                     | 313  | 371    | 341  | 403              | 366  | 350               | 340  | 305    | 240  | 206    | 186  | 361                | 398  | 357                                      | 392  | 260   | 286  |
| EK 163S      | 047614      | 4.8                                                                                  | 4.4                          | 5.3                         | 3.2    | 4.7   | 6.2  | 368                                                     | 313  | 371    | 341  | 403              | 366  | 350               | 340  | 305    | 240  | 206    | 186  | 361                | 398  | 357                                      | 392  | 260   | 286  |
| EK 164       | 047615      | 7.8                                                                                  | 6.1                          | 8.6                         | 4.2    | 6.5   | 10.1 | 368                                                     | 313  | 371    | 341  | 403              | 366  | 350               | 340  | 305    | 240  | 206    | 186  | 361                | 398  | 357                                      | 392  | 260   | 286  |
| EK 164S      | 047616      | 9.2                                                                                  | 8.5                          | 10.1                        | 6.2    | 9.0   | 11.9 | 368                                                     | 313  | 371    | 341  | 403              | 366  | 350               | 340  | 305    | 240  | 206    | 186  | 361                | 398  | 357                                      | 392  | 260   | 286  |
| EK 165       | 047617      | 10.5                                                                                 | 9.7                          | 11.6                        | 7.0    | 10.3  | 13.5 | 368                                                     | 313  | 371    | 341  | 403              | 366  | 350               | 340  | 305    | 240  | 206    | 186  | 361                | 398  | 357                                      | 392  | 260   | 286  |
| EK 165S      | 047618      | 10.9                                                                                 | 10.1                         | 12.0                        | 7.3    | 10.7  | 14.1 | 368                                                     | 313  | 371    | 341  | 403              | 366  | 350               | 340  | 305    | 240  | 206    | 186  | 361                | 398  | 357                                      | 392  | 260   | 286  |
| EK 167S      | 047619      | 16.8                                                                                 | 15.5                         | 18.5                        | 11.2   | 16.5  | 21.7 | 368                                                     | 313  | 371    | 341  | 403              | 366  | 350               | 340  | 305    | 240  | 206    | 186  | 361                | 398  | 357                                      | 392  | 260   | 286  |
| EK 303       | 048210      | 4.7                                                                                  | 4.3                          | 5.2                         | 3.1    | 4.6   | 6.1  | 657                                                     | 561  | 664    | 611  | —                | —    | 627               | 608  | 548    | 434  | 515    | 355  | 648                | 713  | 640                                      | 703  | 458   | 504  |
| EK 303S      | 048211      | 6.8                                                                                  | 6.3                          | 7.5                         | 4.6    | 6.7   | 8.8  | 657                                                     | 561  | 664    | 611  | —                | —    | 627               | 608  | 548    | 434  | 515    | 355  | 648                | 713  | 640                                      | 703  | 458   | 504  |
| EK 304       | 048212      | 8.8                                                                                  | 8.1                          | 9.7                         | 5.9    | 8.6   | 11.4 | 657                                                     | 561  | 664    | 611  | —                | —    | 627               | 608  | 548    | 434  | 515    | 355  | 648                | 713  | 640                                      | 703  | 458   | 504  |
| EK 304S      | 048213      | 10.8                                                                                 | 10.0                         | 11.9                        | 7.2    | 10.6  | 13.9 | 657                                                     | 561  | 664    | 611  | —                | —    | 627               | 608  | 548    | 434  | 515    | 355  | 648                | 713  | 640                                      | 703  | 458   | 504  |
| EK 305       | 048214      | 11.5                                                                                 | 10.6                         | 12.7                        | 7.7    | 11.3  | 14.8 | 657                                                     | 561  | 664    | 611  | —                | —    | 627               | 608  | 548    | 434  | 515    | 355  | 648                | 713  | 640                                      | 703  | 458   | 504  |
| EK 306S      | 048216      | 16.0                                                                                 | 14.8                         | 17.6                        | 10.7   | 15.7  | 20.6 | 657                                                     | 561  | 664    | 611  | —                | —    | 627               | 608  | 548    | 434  | 515    | 355  | 648                | 713  | 640                                      | 703  | 458   | 504  |
| EK 307S      | 048217      | 18.2                                                                                 | 16.8                         | 20.0                        | 12.2   | 17.9  | 23.5 | 657                                                     | 561  | 664    | 611  | —                | —    | 627               | 608  | 548    | 434  | 515    | 355  | 648                | 713  | 640                                      | 703  | 458   | 504  |
| EK 309S      | 048218      | 21.2                                                                                 | 19.6                         | 23.3                        | 14.2   | 20.8  | 27.3 | 657                                                     | 561  | 664    | 611  | —                | —    | 627               | 608  | 548    | 434  | 515    | 355  | 648                | 713  | 640                                      | 703  | 458   | 504  |
| EK 413       | 048219      | 4.7                                                                                  | 4.3                          | 5.2                         | 3.1    | 4.6   | 6.1  | 919                                                     | 785  | 938    | 854  | —                | —    | 876               | 850  | 765    | 607  | 715    | 465  | 906                | 997  | 895                                      | 984  | 638   | 702  |
| EK 414       | 048220      | 11.3                                                                                 | 10.4                         | 12.4                        | 7.5    | 11.1  | 14.6 | 919                                                     | 785  | 938    | 854  | —                | —    | 876               | 850  | 765    | 607  | 715    | 465  | 906                | 997  | 895                                      | 984  | 638   | 702  |
| EK 414S      | 048221      | 11.7                                                                                 | 10.8                         | 12.9                        | 7.8    | 11.5  | 15.1 | 919                                                     | 785  | 938    | 854  | —                | —    | 876               | 850  | 765    | 607  | 715    | 465  | 906                | 997  | 895                                      | 984  | 638   | 702  |
| EK 415       | 048222      | 13.0                                                                                 | 12.0                         | 14.3                        | 8.7    | 12.8  | 16.8 | 919                                                     | 785  | 938    | 854  | —                | —    | 876               | 850  | 765    | 607  | 715    | 465  | 906                | 997  | 895                                      | 984  | 638   | 702  |
| EK 417S      | 048224      | 22.0                                                                                 | 20.3                         | 24.2                        | 14.7   | 21.6  | 28.4 | 919                                                     | 785  | 938    | 854  | —                | —    | 876               | 850  | 765    | 607  | 715    | 465  | 906                | 997  | 895                                      | 984  | 638   | 702  |
| EK 419S      | 048225      | 30.0                                                                                 | 27.7                         | 33.0                        | 20.1   | 29.4  | 38.7 | 919                                                     | 785  | 938    | 854  | —                | —    | 876               | 850  | 765    | 607  | 715    | 465  | 906                | 997  | 895                                      | 984  | 638   | 702  |
| EK 757S      | 048228      | 24.1                                                                                 | 22.2                         | 26.5                        | 16.1   | 23.6  | 31.1 | 2159                                                    | 1880 | 2159   | 2019 | —                | —    | 2019              | 2019 | 1810   | 1460 | 1460   | 1111 | 2170               | 2387 | 2142                                     | 2356 | 1578  | 1737 |
| EK 759S      | 048229      | 35.4                                                                                 | 32.7                         | 38.9                        | 23.7   | 34.8  | 45.7 | 2159                                                    | 1880 | 2159   | 2019 | —                | —    | 2019              | 2019 | 1810   | 1460 | 1460   | 1111 | 2170               | 2387 | 2142                                     | 2356 | 1578  | 1737 |

<sup>1</sup> All ratings in accordance with ARI Standard 710-04. 86°F liquid refrigerant temperature

5°F saturated vapor temperature

3.1 lbs./min./ton for R-134a

2.9 lbs./min./ton for R-22 and R-407C

4.0 lbs./min./ton for R-404A/507 and R-12

2.7 lbs./min./ton for R-410A

<sup>5</sup> Since there is currently no ARI standard for R-744, values are based on 1 ton of refrigeration

at 20°F liquid refrigerant temperature and -20°F saturated vapor temperature.

<sup>2</sup> Water Capacities are based on:

Equilibrium Point Dryness (EPD) of:

50 parts per million for R-134a,

R404-A/507, R-410A, R-407C, and R-744

60 parts per million for R-22

15 parts per million for R-12

<sup>3</sup> 20 drops of water = 1 gram = 1 cc

<sup>4</sup> For 2 PSI ΔP, Multiply values by 1.4

**LIQUID REFRIGERANT HOLDING CAPACITY-OUNCES**

| UNIT<br>SIZE | R-12 |       | R-134a |       | R-22 |       | R-407C |       | R-410A |       | R-404A/R-507 |       | R-502 |       | R-744 |       |
|--------------|------|-------|--------|-------|------|-------|--------|-------|--------|-------|--------------|-------|-------|-------|-------|-------|
|              | 75°F | 125°F | 75°F   | 125°F | 75°F | 125°F | 75°F   | 125°F | 75°F   | 125°F | 75°F         | 125°F | 75°F  | 125°F | 20°F  | -20°F |
| 03           | 2.9  | 2.6   | 2.6    | 2.3   | 2.6  | 2.3   | 2.5    | 2.1   | 2.3    | 1.9   | 2.3          | 1.9   | 2.7   | 2.3   | 2.1   | 2.3   |
| 05           | 6.5  | 5.9   | 6.0    | 5.4   | 5.9  | 5.3   | 5.6    | 4.9   | 5.3    | 4.4   | 5.2          | 4.4   | 6.0   | 5.3   | 4.8   | 5.3   |
| 08           | 8.3  | 7.6   | 7.6    | 6.9   | 7.5  | 6.8   | 7.2    | 6.3   | 6.7    | 5.7   | 6.6          | 5.6   | 7.7   | 6.8   | 6.1   | 6.7   |
| 16           | 10.2 | 9.4   | 9.4    | 8.6   | 9.3  | 8.4   | 8.9    | 7.8   | 8.3    | 7.0   | 8.2          | 6.9   | 9.5   | 8.4   | 7.5   | 8.3   |
| 30           | 28.7 | 26.3  | 26.4   | 23.9  | 26.1 | 23.5  | 24.9   | 21.9  | 23.3   | 19.6  | 22.9         | 19.4  | 26.7  | 23.4  | 21.1  | 23.4  |
| 41           | 40.0 | 36.4  | 36.9   | 33.1  | 36.4 | 32.5  | 34.7   | 30.3  | 32.5   | 27.2  | 31.9         | 26.8  | 37.2  | 32.4  | 29.2  | 32.4  |
| 75           | 72.4 | 66.3  | 66.7   | 60.3  | 65.8 | 59.2  | 62.8   | 55.2  | 58.7   | 49.5  | 57.7         | 48.9  | 67.2  | 59.0  | 53.1  | 58.9  |



ADK 163S

## ADK SERIES HERMETIC LIQUID LINE FILTER DRIERS

*The ADK is a solid core liquid line filter drier good for use in residential air conditioning and refrigeration systems.*

### FEATURES

- Solid copper connections
- High moisture and acid removal capacity
- Corrosion resistant epoxy powder paint finish

### SPECIFICATIONS

Desiccant blend..... Optimized for high water and acid capacity  
 Filtration ..... 40 microns  
 Maximum working pressure ..... 680 psig (47 bar)  
 UL/CUL file number ..... SA 3124  
 Canadian CRN ..... 0E21971.513467890YTN

### MODEL NUMBER NOMENCLATURE - EXAMPLE: ADK 032SVCAP

| SERIES                                        | UNIT SIZE    | CONNECTION SIZE    | CONNECTION TYPE                                | ACCESS                                                                                                   | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                                | PACK TYPE                                        |
|-----------------------------------------------|--------------|--------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------------------------|--------------------------------------------------|
| ADK                                           | 03           | 2                  | S                                              | VCAP                                                                                                     |                       |                                                 |                                                  |
| Hermetic Core Style Liquid Line Filter Driers | In Cubic In. | In 1/8" Increments | S = Solder (ODF)<br><br>(Omit for Flare (SAE)) | V = Single Access Valve<br>VCAP = Single Access Valve with Cap Tube Outlet<br>(Omit for no access valve) | Blank Thru -99        | G = Customer Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

### ADK SERIES REFRIGERANT FILTER DRIERS

| UNIT SIZE (CUBIC INCHES) | INLET X OUTLET CONNECTION SIZE & TYPE | ACCESS TYPE | MODEL NUMBER | ITEM NUMBER |
|--------------------------|---------------------------------------|-------------|--------------|-------------|
| 03                       | 1/4" X 1/4" SAE                       | None        | ADK 032      | 059874      |
| 03                       | 1/4" X 1/4" ODF                       | None        | ADK 032S     | 052451      |
| 03                       | 1/4" ODF X Cap Tube                   | Single      | ADK 032SVCAP | 063909      |
| 03                       | 3/8" X 3/8" SAE                       | None        | ADK 033      | 023157      |
| 03                       | 3/8" X 1/4" ODF                       | None        | ADK 033/2S   | 063496      |
| 03                       | 3/8" X 3/8" ODF                       | None        | ADK 033S     | 053172      |
| 05                       | 1/4" X 1/4" SAE                       | None        | ADK 052      | 060125      |
| 05                       | 1/4" X 1/4" ODF                       | None        | ADK 052S     | 060126      |
| 05                       | 3/8" X 3/8" SAE                       | None        | ADK 053      | 060127      |
| 05                       | 3/8" X 3/8" ODF                       | None        | ADK 053S     | 060128      |
| 08                       | 1/4" X 1/4" SAE                       | None        | ADK 082      | 060129      |
| 08                       | 1/4" X 1/4" ODF                       | None        | ADK 082S     | 060130      |
| 08                       | 3/8" X 3/8" SAE                       | None        | ADK 083      | 060131      |
| 08                       | 3/8" X 3/8" ODF                       | None        | ADK 083S     | 060132      |
| 08                       | 1/2" X 1/2" SAE                       | None        | ADK 084      | 060133      |
| 08                       | 1/2" X 1/2" ODF                       | None        | ADK 084S     | 060134      |
| 16                       | 1/4" X 1/4" SAE                       | None        | ADK 162      | 059820      |
| 16                       | 1/4" X 1/4" ODF                       | None        | ADK 162S     | 059838      |
| 16                       | 3/8" X 3/8" SAE                       | None        | ADK 163      | 059839      |
| 16                       | 3/8" X 3/8" ODF                       | None        | ADK 163S     | 060795      |
| 16                       | 1/2" X 1/2" SAE                       | None        | ADK 164      | 059840      |
| 16                       | 1/2" X 1/2" ODF                       | None        | ADK 164S     | 059841      |
| 16                       | 5/8" X 5/8" SAE                       | None        | ADK 165      | 059842      |
| 16                       | 5/8" X 5/8" ODF                       | None        | ADK 165S     | 059843      |



## ADK SERIES REFRIGERANT FILTER DRIERS (CONT'D)

| UNIT SIZE<br>(CUBIC INCHES) | INLET X OUTLET CONNECTION SIZE & TYPE | ACCESS TYPE | MODEL NUMBER | ITEM NUMBER |
|-----------------------------|---------------------------------------|-------------|--------------|-------------|
| 30                          | 3/8" X 3/8" SAE                       | None        | ADK 303      | 060172      |
| 30                          | 3/8" X 3/8" ODF                       | None        | ADK 303S     | 058507      |
| 30                          | 1/2" X 1/2" SAE                       | None        | ADK 304      | 060173      |
| 30                          | 1/2" X 1/2" ODF                       | None        | ADK 304S     | 060176      |
| 30                          | 5/8" X 5/8" SAE                       | None        | ADK 305      | 060174      |
| 30                          | 5/8" X 5/8" ODF                       | None        | ADK 305S     | 060177      |
| 30                          | 7/8" X 7/8" ODF                       | None        | ADK 307S     | 060178      |
| 30                          | 1-1/8" X 1-1/8" ODF                   | None        | ADK 309S     | 060179      |
| 41                          | 3/8" X 3/8" SAE                       | None        | ADK 413      | 060182      |
| 41                          | 1/2" X 1/2" SAE                       | None        | ADK 414      | 060183      |
| 41                          | 1/2" X 1/2" ODF                       | None        | ADK 414S     | 060185      |
| 41                          | 5/8" X 5/8" SAE                       | None        | ADK 415      | 060184      |
| 41                          | 5/8" X 5/8" ODF                       | None        | ADK 415S     | 060186      |
| 41                          | 7/8" X 7/8" ODF                       | None        | ADK 417S     | 060187      |
| 41                          | 1-1/8" X 1-1/8" ODF                   | None        | ADK 419S     | 060188      |
| 75                          | 7/8" X 7/8" ODF                       | None        | ADK 757S     | 060190      |
| 75                          | 1-1/8" X 1-1/8" ODF                   | None        | ADK 759S     | 060191      |

## ADK SERIES CAPACITY TABLE

| MODEL<br>NUMBER | CONN.   | FLOW CAPACITY TONS @ 1 PSI ΔP <sup>1,4</sup><br>(FOR KW, MULTIPLY TONS BY 3.5) |       |      |       |      |       |      | WATER CAPACITY <sup>2</sup> (DROPS OF WATER <sup>3</sup> ) |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
|-----------------|---------|--------------------------------------------------------------------------------|-------|------|-------|------|-------|------|------------------------------------------------------------|------|--------|------|-------|------|--------|------|--------|------|-----------------|------|--------------------|-----|--------------------|-----|-------|-----|
|                 |         |                                                                                |       |      |       |      |       |      | R-22                                                       |      | R-134a |      | R-290 |      | R-407C |      | R-410A |      | R-404A<br>/ 507 |      | R-448A<br>/ R-449A |     | R-450A<br>/ R-513A |     | R-744 |     |
|                 |         | 75°F                                                                           | 125°F | 75°F | 125°F | 75°F | 125°F | 75°F | 125°F                                                      | 75°F | 125°F  | 75°F | 125°F | 75°F | 125°F  | 75°F | 125°F  | 75°F | 125°F           | 14°F | 75°F               |     |                    |     |       |     |
| ADK 032         | 1/4 SAE | 2.1                                                                            | 1.9   | 2.3  | 2.1   | 2.0  | 1.4   | 2.7  | 69                                                         | 63   | 74     | 68   | 62    | 59   | 57     | 46   | 47     | 36   | 76              | 72   | 49                 | 45  | 63                 | 57  | 58    | 64  |
| ADK 032S        | 1/4 ODF | 2.5                                                                            | 2.3   | 2.8  | 2.5   | 2.4  | 1.7   | 3.2  |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 033         | 3/8 SAE | 2.9                                                                            | 2.7   | 3.2  | 2.9   | 2.9  | 2.0   | 3.7  |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 033S        | 3/8 ODF | 3.3                                                                            | 3.0   | 3.6  | 3.3   | 3.2  | 2.2   | 4.3  |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 052         | 1/4 SAE | 2.2                                                                            | 2.0   | 2.4  | 2.2   | 2.1  | 1.4   | 2.8  | 180                                                        | 130  | 195    | 180  | 161   | 152  | 150    | 120  | 125    | 95   | 200             | 190  | 128                | 116 | 162                | 147 | 144   | 169 |
| ADK 052S        | 1/4 ODF | 3.1                                                                            | 2.9   | 3.4  | 3.1   | 3.1  | 2.1   | 4.0  |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 053         | 3/8 SAE | 4.0                                                                            | 3.7   | 4.4  | 4.0   | 3.9  | 2.7   | 5.2  |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 53S         | 3/8 ODF | 4.9                                                                            | 4.5   | 5.4  | 4.9   | 4.8  | 3.3   | 6.3  |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 082         | 1/4 SAE | 2.2                                                                            | 2.0   | 2.4  | 2.2   | 2.1  | 1.4   | 2.8  | 250                                                        | 225  | 265    | 245  | 227   | 214  | 205    | 165  | 170    | 130  | 275             | 260  | 180                | 164 | 228                | 207 | 198   | 233 |
| ADK 082S        | 1/4 ODF | 3.4                                                                            | 3.1   | 3.7  | 3.4   | 3.3  | 2.2   | 4.4  |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 083         | 3/8 SAE | 4.7                                                                            | 4.3   | 5.2  | 4.7   | 4.6  | 3.1   | 6.1  |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 083S        | 3/8 ODF | 4.6                                                                            | 4.2   | 5.1  | 4.6   | 4.5  | 3.0   | 5.9  |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 084         | 1/2 SAE | 7.3                                                                            | 6.7   | 8.0  | 7.3   | 7.1  | 4.9   | 9.4  | 265                                                        | 330  | 390    | 360  | 322   | 304  | 300    | 240  | 250    | 190  | 400             | 380  | 256                | 233 | 323                | 294 | 328   | 386 |
| ADK 084S        | 1/2 ODF | 7.6                                                                            | 7.0   | 8.4  | 7.6   | 7.4  | 5.1   | 9.8  |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 162         | 1/4 SAE | 2.2                                                                            | 2.0   | 2.4  | 2.2   | 2.1  | 1.4   | 2.8  |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 163         | 3/8 SAE | 4.8                                                                            | 4.4   | 5.3  | 4.8   | 4.7  | 3.2   | 6.2  |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 163S        | 3/8 ODF | 5.3                                                                            | 4.9   | 5.8  | 5.3   | 5.2  | 3.6   | 6.8  | 810                                                        | 740  | 865    | 800  | —     | —    | 675    | 540  | 555    | 420  | 895             | 845  | 614                | 558 | 775                | 705 | 676   | 796 |
| ADK 164         | 1/2 SAE | 9.0                                                                            | 8.3   | 9.9  | 9.0   | 8.8  | 6.0   | 11.6 |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 164S        | 1/2 ODF | 9.3                                                                            | 8.6   | 10.2 | 9.3   | 9.1  | 6.2   | 12.0 |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 165         | 5/8 SAE | 12.8                                                                           | 11.8  | 14.1 | 12.8  | 12.5 | 8.6   | 16.5 |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 165S        | 5/8 ODF | 14.2                                                                           | 13.1  | 15.6 | 14.2  | 13.9 | 9.5   | 18.3 | 810                                                        | 740  | 865    | 800  | —     | —    | 675    | 540  | 555    | 420  | 895             | 845  | 614                | 558 | 775                | 705 | 676   | 796 |
| ADK 167S        | 7/8 ODF | 17.3                                                                           | 16.0  | 19.0 | 17.3  | 17.0 | 11.8  | 22.3 |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 303         | 3/8 SAE | 5.1                                                                            | 4.7   | —    | 5.1   | 5.0  | 3.4   | 6.6  |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 304         | 1/2 SAE | 9.3                                                                            | 8.6   | —    | 9.3   | 9.1  | 6.2   | 12.0 |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |
| ADK 304S        | 1/2 ODF | 9.5                                                                            | 8.8   | —    | 9.5   | 9.4  | 6.4   | 12.3 | 810                                                        | 740  | 865    | 800  | —     | —    | 675    | 540  | 555    | 420  | 895             | 845  | 614                | 558 | 775                | 705 | 676   | 796 |
| ADK 305         | 5/8 SAE | 15.0                                                                           | 13.8  | —    | 15.0  | 14.7 | 10.0  | 19.4 |                                                            |      |        |      |       |      |        |      |        |      |                 |      |                    |     |                    |     |       |     |

ADK SERIES CAPACITY TABLE (CONTINUED)

| MODEL<br>NUMBER | CONN.     | FLOW CAPACITY TONS @ 1 PSI ΔP <sup>1,4</sup><br>(FOR KW, MULTIPLY TONS BY 3.5) |                              |       |        |        |                   |       | WATER CAPACITY <sup>2</sup> (DROPS OF WATER <sup>3</sup> ) |       |        |       |       |       |        |       |        |       |              |       |                 |       |                 |      |       |      |
|-----------------|-----------|--------------------------------------------------------------------------------|------------------------------|-------|--------|--------|-------------------|-------|------------------------------------------------------------|-------|--------|-------|-------|-------|--------|-------|--------|-------|--------------|-------|-----------------|-------|-----------------|------|-------|------|
|                 |           |                                                                                |                              |       |        |        |                   |       | R-22                                                       |       | R-134a |       | R-290 |       | R-407C |       | R-410A |       | R-404A / 507 |       | R-448A / R-449A |       | R-450A / R-513A |      | R-744 |      |
|                 |           | R-22/<br>R-448A/<br>R-449A                                                     | R-134a/<br>R-450A/<br>R-513A | R-290 | R-410A | R-407C | R-404A<br>/ R-507 | R-744 | 75°F                                                       | 125°F | 75°F   | 125°F | 75°F  | 125°F | 75°F   | 125°F | 75°F   | 125°F | 75°F         | 125°F | 75°F            | 125°F | 14°F            | 75°F |       |      |
| ADK 305S        | 5/8 ODF   | 15.7                                                                           | 14.5                         | —     | 15.7   | 15.4   | 10.5              | 20.3  | 810                                                        | 740   | 865    | 800   | —     | —     | 675    | 540   | 555    | 420   | 895          | 845   | 614             | 558   | 775             | 705  | 676   | 796  |
| ADK 306S        | 3/4 ODF   | 17.1                                                                           | 15.8                         | —     | 17.1   | 16.8   | 11.5              | 22.1  |                                                            |       |        |       |       |       |        |       |        |       |              |       |                 |       |                 |      |       |      |
| ADK 307S        | 7/8 ODF   | 18.9                                                                           | 17.4                         | —     | 18.9   | 18.5   | 12.6              | 24.4  |                                                            |       |        |       |       |       |        |       |        |       |              |       |                 |       |                 |      |       |      |
| ADK 309S        | 1-1/8 ODF | 27.0                                                                           | 24.9                         | —     | 27.0   | 26.5   | 18.0              | 34.8  |                                                            |       |        |       |       |       |        |       |        |       |              |       |                 |       |                 |      |       |      |
| ADK 413         | 3/8 SAE   | 5.1                                                                            | 4.7                          | —     | 5.1    | 5.0    | 3.4               | 6.6   | 1140                                                       | 1010  | 1210   | 1100  | —     | —     | 945    | 740   | 780    | 580   | 1260         | 1156  | 818             | 744   | 1033            | 1033 | 900   | 1060 |
| ADK 414         | 1/2 SAE   | 10.6                                                                           | 9.8                          | —     | 10.6   | 10.4   | 7.1               | 13.7  |                                                            |       |        |       |       |       |        |       |        |       |              |       |                 |       |                 |      |       |      |
| ADK 414S        | 1/2 ODF   | 11.6                                                                           | 10.7                         | —     | 11.6   | 11.4   | 7.8               | 15.0  |                                                            |       |        |       |       |       |        |       |        |       |              |       |                 |       |                 |      |       |      |
| ADK 415         | 5/8 SAE   | 16.9                                                                           | 15.6                         | —     | 16.9   | 16.6   | 11.3              | 21.8  |                                                            |       |        |       |       |       |        |       |        |       |              |       |                 |       |                 |      |       |      |
| ADK 415S        | 5/8 ODF   | 17.9                                                                           | 16.5                         | —     | 17.9   | 17.5   | 12.0              | 23.1  |                                                            |       |        |       |       |       |        |       |        |       |              |       |                 |       |                 |      |       |      |
| ADK 417S        | 7/8 ODF   | 22.0                                                                           | 20.3                         | —     | 22.0   | 21.7   | 14.7              | 28.4  |                                                            |       |        |       |       |       |        |       |        |       |              |       |                 |       |                 |      |       |      |
| ADK 419S        | 1-1/8 ODF | 27.3                                                                           | 25.2                         | —     | 27.3   | 26.8   | 18.3              | 35.2  |                                                            |       |        |       |       |       |        |       |        |       |              |       |                 |       |                 |      |       |      |
| ADK 757S        | 7/8 ODF   | 37.1                                                                           | 34.2                         | —     | 37.1   | 36.3   | 24.8              | 47.9  | 1956                                                       | 1800  | 2100   | 1940  | —     | —     | 1635   | 1310  | 1350   | 1030  | 2170         | 2050  | 1590            | 1446  | 2008            | 1826 | 1750  | 2060 |
| ADK 759S        | 1-1/8 ODF | 40.4                                                                           | 37.3                         | —     | 40.4   | 39.6   | 27.0              | 52.1  |                                                            |       |        |       |       |       |        |       |        |       |              |       |                 |       |                 |      |       |      |

<sup>1</sup> All ratings in accordance with ARI Standard 710-04. 86oF liquid refrigerant temperature  
5°F saturated vapor temperature  
3.1 lbs./min./ton for R-134a  
2.9 lbs./min./ton for R-22 and R-407C  
4.0 lbs./min./ton for R-404A/507 and R-12  
2.7 lbs./min./ton for R-410A  
5 Since there is currently no ARI standard for R-744, values are based on 1 ton of refrigeration at 20°F liquid refrigerant temperature and -20°F saturated vapor temperature.

<sup>2</sup> Water Capacities are based on:  
Equilibrium Point Dryness (EPD) of:  
50 parts per million for R-134a,  
R404-A/507, R-410A, R-407C, and R-744  
60 parts per million for R-22  
15 parts per million for R-12

<sup>3</sup> 20 drops of water = 1 gram = 1 cc  
<sup>4</sup> For 2 PSI ΔP, Multiply values by 1.4

LIQUID REFRIGERANT HOLDING CAPACITY-OUNCES

| UNIT<br>SIZE | R-12 |       | R-22 / R-448A / R-449A |       | R290 |       | R-134a / R-450A /R-513A |       | R-407C |       | R-410A |       | R-404A / 507 |       | R-502 |       | R-744 |       |
|--------------|------|-------|------------------------|-------|------|-------|-------------------------|-------|--------|-------|--------|-------|--------------|-------|-------|-------|-------|-------|
|              | 75°F | 125°F | 75°F                   | 125°F | 75°F | 125°F | 75°F                    | 125°F | 75°F   | 125°F | 75°F   | 125°F | 75°F         | 125°F | 75°F  | 125°F | 20°F  | -20°F |
| 03           | 2.4  | 2.2   | 2.2                    | 2.0   | 0.9  | 0.8   | 2.2                     | 2.0   | 2.1    | 1.9   | 2.0    | 1.7   | 1.9          | 1.7   | 2.7   | 2.3   | 1.8   | 2.0   |
| 05           | 5.9  | 6.0   | 5.4                    | 5.4   | 2.2  | 2     | 5.5                     | 5.5   | 5.2    | 5.0   | 4.8    | 4.5   | 4.7          | 4.5   | 6.0   | 5.3   | 4.9   | 5.4   |
| 08           | 8.0  | 7.4   | 7.3                    | 6.6   | 3    | 2.7   | 7.4                     | 6.7   | 7.0    | 6.2   | 6.5    | 5.5   | 6.4          | 5.5   | 7.7   | 6.8   | 5.9   | 6.5   |
| 16           | 14.5 | 12.5  | 13.2                   | 11.2  | 5.4  | 4.9   | 13.4                    | 11.4  | 12.6   | 10.4  | 11.7   | 9.4   | 11.6         | 9.3   | 9.5   | 8.4   | 10.1  | 11.2  |
| 30           | 21.8 | 19.9  | 19.8                   | 17.8  | 8.1  | 7.3   | 20.1                    | 18.1  | 18.9   | 16.6  | 17.4   | 14.9  | 17.4         | 14.7  | 26.7  | 23.4  | 16.0  | 17.7  |
| 41           | 29.3 | 26.8  | 26.6                   | 23.9  | 11   | 9.9   | 26.9                    | 24.4  | 25.4   | 22.3  | 23.7   | 20.0  | 23.3         | 19.7  | 37.2  | 32.4  | 21.4  | 23.8  |
| 75           | 52.8 | 48.3  | 48.0                   | 43.1  | 19.8 | 17.9  | 48.6                    | 43.9  | 45.8   | 40.2  | 42.8   | 36.0  | 42.1         | 35.6  | 67.2  | 59.0  | 38.7  | 42.9  |



BFK 083S

## BFK SERIES HERMETIC LIQUID LINE BI-DIRECTIONAL FILTER DRIERS

*The BFK is a liquid line filter drier for heat pump applications.*

### FEATURES

- Available 5 to 30 Cubic In. size
- Internal check valve allows flow and filtration in either direction eliminating the need for external check valves
- High moisture and acid removal capacity
- Corrosion resistant epoxy powder paint finish
- Approved for POE oils

### SPECIFICATIONS

Desiccant Blend..... Optimized for high water and acid capacity  
 Filtration ..... 40 microns  
 Maximum Working Pressure..... 680 psig (47 bar)  
 UL/CUL File Number ..... SA3124  
 Canadian CRN ..... 0E21971.513467890YTN

### MODEL NUMBER NOMENCLATURE - EXAMPLE: BFK 165S

| SERIES                                            | UNIT SIZE    | CONNECTION SIZE    | CONNECTION STYLE | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|---------------------------------------------------|--------------|--------------------|------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| BFK                                               | 16           | 5                  | S                |                       |                                             |                                              |
| Hermetic Liquid Line Bi-Directional Filter Driers | In Cubic In. | In 1/8" Increments | S = ODF          | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### BFK BI-DIRECTIONAL LIQUID LINE FILTER DRIERS

| UNIT SIZE (CUBIC INCHES) | INLET X OUTLET CONNECTION SIZE | MODEL NUMBER | ITEM NUMBER |
|--------------------------|--------------------------------|--------------|-------------|
| 5                        | 1/4" X 1/4" SAE                | BFK 052      | 062300      |
| 5                        | 1/4" X 1/4" ODF                | BFK 052S     | 062425      |
| 5                        | 3/8" X 3/8" SAE                | BFK 053      | 062254      |
| 5                        | 3/8" X 3/8" ODF                | BFK 053S     | 062255      |
| 8                        | 3/8" X 3/8" SAE                | BFK 083      | 043321      |
| 8                        | 3/8" X 3/8" ODF                | BFK 083S     | 043323      |
| 8                        | 1/2" X 1/2" SAE                | BFK 084      | 043325      |
| 8                        | 1/2" X 1/2" ODF                | BFK 084S     | 043327      |
| 8                        | 5/8" X 5/8" SAE                | BFK 085      | 043728      |
| 8                        | 5/8" X 5/8" ODF                | BFK 085S     | 043730      |
| 16                       | 3/8" X 3/8" SAE                | BFK 163      | 043330      |
| 16                       | 3/8" X 3/8" ODF                | BFK 163S     | 043333      |
| 16                       | 1/2" X 1/2" SAE                | BFK 164      | 043335      |
| 16                       | 1/2" X 1/2" ODF                | BFK 164S     | 043337      |
| 16                       | 5/8" X 5/8" SAE                | BFK 165      | 043732      |
| 16                       | 5/8" X 5/8" ODF                | BFK 165S     | 043734      |
| 16                       | 7/8" X 7/8" ODF                | BFK 167S     | 058589      |
| 30                       | 3/8" X 3/8" ODF                | BFK 303S     | 063077      |
| 30                       | 1/2" X 1/2" SAE                | BFK 304      | 063078      |
| 30                       | 1/2" X 1/2" ODF                | BFK 304S     | 063079      |
| 30                       | 5/8" X 5/8" SAE                | BFK 305      | 063080      |
| 30                       | 5/8" X 5/8" ODF                | BFK 305S     | 063081      |
| 30                       | 3/4" X 3/4" ODF                | BFK 306S     | 063083      |
| 30                       | 7/8" X 7/8" ODF                | BFK 307S     | 063084      |
| 30                       | 1-1/8" X 1-1/8" ODF            | BFK 309S     | 063451      |

## BFK SERIES CAPACITY TABLE

| MODEL<br>NUMBER | CONNECTION | FLOW CAPACITY<br>TONS @ 1 PSI $\Delta P$ <sup>1,4</sup><br>(FOR KW, MULTIPLY TONS BY 3.5) |        |        |       | WATER CAPACITY <sup>2</sup><br>DROPS OF WATER <sup>3</sup> |       |        |       |        |       |       |      |
|-----------------|------------|-------------------------------------------------------------------------------------------|--------|--------|-------|------------------------------------------------------------|-------|--------|-------|--------|-------|-------|------|
|                 |            | R-22                                                                                      | R-410A | R-407C | R-744 | R-22                                                       |       | R-407C |       | R-410A |       | R-744 |      |
|                 |            |                                                                                           |        |        |       | 75°F                                                       | 125°F | 75°F   | 125°F | 75°F   | 125°F | 14°F  | 75°F |
| BFK-05 2        | 1/4 SAE    | 1.6                                                                                       | 1.6    | 1.6    | 2.1   | 73                                                         | 66    | 58     | 42    | 39     | 35    | 81    | 89   |
| BFK-05 2S       | 1/4 ODF    | 2.2                                                                                       | 2.2    | 2.2    | 2.8   |                                                            |       |        |       |        |       |       |      |
| BFK-05 3        | 3/8 SAE    | 3.5                                                                                       | 3.5    | 3.4    | 4.5   |                                                            |       |        |       |        |       |       |      |
| BFK-05 3S       | 3/8 ODF    | 4.0                                                                                       | 4.0    | 3.9    | 5.2   |                                                            |       |        |       |        |       |       |      |
| BFK-08 3        | 3/8 SAE    | 4.5                                                                                       | 4.5    | 4.4    | 5.8   | 159                                                        | 144   | 106    | 79    | 85     | 75    | 136   | 150  |
| BFK-08 3S       | 3/8 ODF    | 5.1                                                                                       | 5.1    | 5.0    | 6.6   |                                                            |       |        |       |        |       |       |      |
| BFK-08 4        | 1/2 SAE    | 6.4                                                                                       | 6.4    | 6.3    | 8.3   |                                                            |       |        |       |        |       |       |      |
| BFK-08 4S       | 1/2 ODF    | 6.7                                                                                       | 6.7    | 6.6    | 8.6   |                                                            |       |        |       |        |       |       |      |
| BFK-08 5        | 5/8 SAE    | 7.2                                                                                       | 7.2    | 7.0    | 9.3   | 323                                                        | 294   | 237    | 179   | 178    | 160   | 221   | 260  |
| BFK-08 5S       | 5/8 ODF    | 8.1                                                                                       | 8.1    | 7.9    | 10.4  |                                                            |       |        |       |        |       |       |      |
| BFK-16 3        | 3/8 SAE    | 4.6                                                                                       | 4.6    | 4.5    | 5.9   |                                                            |       |        |       |        |       |       |      |
| BFK-16 3S       | 3/8 ODF    | 5.2                                                                                       | 5.2    | 5.1    | 6.7   |                                                            |       |        |       |        |       |       |      |
| BFK-16 4        | 1/2 SAE    | 7.7                                                                                       | 7.7    | 7.6    | 9.9   | 585                                                        | 532   | 452    | 345   | 415    | 293   | 453   | 533  |
| BFK-16 4S       | 1/2 ODF    | 8.1                                                                                       | 8.1    | 7.9    | 10.4  |                                                            |       |        |       |        |       |       |      |
| BFK-16 5        | 5/8 SAE    | 8.3                                                                                       | 8.3    | 8.1    | 10.7  |                                                            |       |        |       |        |       |       |      |
| BFK-16 5S       | 5/8 ODF    | 8.7                                                                                       | 8.7    | 8.5    | 11.2  |                                                            |       |        |       |        |       |       |      |
| BFK-30 3S       | 3/8 ODF    | 5.8                                                                                       | 5.8    | 5.7    | 7.5   | 585                                                        | 532   | 452    | 345   | 415    | 293   | 453   | 533  |
| BFK-30 4        | 1/2 SAE    | 7.6                                                                                       | 7.6    | 7.5    | 9.8   |                                                            |       |        |       |        |       |       |      |
| BFK-30 4S       | 1/2 ODF    | 9.7                                                                                       | 9.7    | 9.5    | 12.5  |                                                            |       |        |       |        |       |       |      |
| BFK-30 5        | 5/8 SAE    | 10.3                                                                                      | 10.3   | 10.1   | 13.3  |                                                            |       |        |       |        |       |       |      |
| BFK-30 5S       | 5/8 ODF    | 14.2                                                                                      | 14.2   | 13.9   | 18.3  |                                                            |       |        |       |        |       |       |      |
| BFK-30 6S       | 3/4 ODF    | 16.0                                                                                      | 16.0   | 15.7   | 20.6  |                                                            |       |        |       |        |       |       |      |
| BFK-30 7S       | 7/8 ODF    | 16.7                                                                                      | 16.7   | 16.4   | 21.5  | 585                                                        | 532   | 452    | 345   | 415    | 293   | 453   | 533  |
| BFK-30 9S       | 1 1/8 ODF  | 18.0                                                                                      | 18.0   | 17.5   | 23.2  |                                                            |       |        |       |        |       |       |      |

<sup>1</sup> All ratings in accordance with ARI Standard 710-04. 86oF liquid refrigerant temperature  
5°F saturated vapor temperature  
3.1 lbs./min./ton for R-134a  
2.9 lbs./min./ton for R-22 and R-407C  
4.0 lbs./min./ton for R-404A/507 and R-12  
2.7 lbs./min./ton for R-410A  
<sup>5</sup> Since there is currently no ARI standard for R-744, values are based on 1 ton of refrigeration at 20°F liquid refrigerant temperature and -20°F saturated vapor temperature.

<sup>2</sup> Water Capacities are based on:  
Equilibrium Point Dryness (EPD) of:  
50 parts per million for R-134a,  
R404-A/507, R-410A, R-407C, and R-744  
60 parts per million for R-22  
15 parts per million for R-12

<sup>3</sup> 20 drops of water = 1 gram = 1 cc  
<sup>4</sup> For 2 PSI  $\Delta P$ , Multiply values by 1.4

## LIQUID REFRIGERANT HOLDING CAPACITY-OUNCES

| UNIT<br>SIZE | R-22 |       | R-407C |       | R-410A |       | R-744 |       |
|--------------|------|-------|--------|-------|--------|-------|-------|-------|
|              | 75°F | 125°F | 75°F   | 125°F | 75°F   | 125°F | 20°F  | -20°F |
| 05           | 4.6  | 4.2   | 4.4    | 3.9   | 4.1    | 3.5   | 3.7   | 4.1   |
| 08           | 7.7  | 6.9   | 7.3    | 6.4   | 6.9    | 5.8   | 6.2   | 6.9   |
| 16           | 14.2 | 12.7  | 13.5   | 11.8  | 12.6   | 10.6  | 1.4   | 12.7  |
| 30           | 21.0 | 18.7  | 20.0   | 17.4  | 19.6   | 16.5  | 16.8  | 18.7  |



BSL 0835S



BSB 083S



BSS 167S

## BUILDER SERIES HERMETIC FILTER DRIERS

*The Builder Series is a hermetic filter drier that provides economical system protection for air conditioning and heat pump applications.*

### FEATURES

- ODF solid copper connections for easy install
- Desiccant blend optimized for high water and acid capacity
- Corrosion resistant epoxy powder paint finish
- BSB and BSS feature solid core construction
- BSL features compacted bead construction with 20 micron filtration for maximum moisture and acid removal while protecting POE oil
- BSL filters at both the inlet and outlet and retains contaminants during system cycling and vibration

### SPECIFICATIONS

Desiccant blend..... Optimized for high water capacity and acid capacity  
 Maximum working pressure ..... 680 psig (47 bar)  
 UL/CUL file number ..... SA 7175  
 Filtration ..... 40 microns (BSB and BSS only)  
 ..... 20 microns (BSL only)  
 Canadian CRN ..... 0E21971.513467890YTN

### MODEL NUMBER NOMENCLATURE - EXAMPLE: BSB 083S

| SERIES                 | TYPE                                            | UNIT SIZE    | CONNECTION SIZE    | CONNECTION STYLE          | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|------------------------|-------------------------------------------------|--------------|--------------------|---------------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| BS                     | B                                               | 08           | 3                  | S                         |                       |                                             |                                              |
| Hermetic Filter Driers | B = Bi-Directional<br>L = Liquid<br>S = Suction | In Cubic In. | In 1/8" Increments | S = ODF<br>(Omit for SAE) | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### BUILDER SERIES HERMETIC FILTER DRIERS

| LINE TYPE      | UNIT SIZE<br>(CUBIC INCHES) | INLET X OUTLET<br>CONNECTION SIZE | WATER CAPACITY DROPS<br>R-410A @ 125°F | FLOW CAPACITY<br>TONS R-410A | MODEL NUMBER | ITEM NUMBER |
|----------------|-----------------------------|-----------------------------------|----------------------------------------|------------------------------|--------------|-------------|
| Liquid         | 5                           | 3/8" X 3/8" ODF                   | 56                                     | 5.3                          | BSL 053S     | 066758      |
| Liquid         | 8                           | 3/8" X 3/8" ODF                   | 108                                    | 5.3                          | BSL 083S     | 066759      |
| Liquid         | 8                           | 1/2" X 1/2" ODF                   | 108                                    | 7.6                          | BSL 084S     | 066760      |
| Liquid         | 16                          | 3/8" X 3/8" ODF                   | 151                                    | 5.3                          | BSL 163S     | 066761      |
| Liquid         | 16                          | 1/2" X 1/2" ODF                   | 151                                    | 7.6                          | BSL 164S     | 066763      |
| Bi-Directional | 8                           | 3/8" X 3/8" ODF                   | 70                                     | 5.1                          | BSB 083S     | 066130      |
| Bi-Directional | 16                          | 3/8" X 3/8" ODF                   | 125                                    | 5.1                          | BSB 163S     | 066131      |
| Suction        | 16                          | 5/8" X 5/8" ODF                   | 51                                     | 3.5                          | BSS 165S     | 066126      |
| Suction        | 16                          | 3/4" X 3/4" ODF                   | 51                                     | 4.2                          | BSS 166S     | 066127      |
| Suction        | 16                          | 7/8" X 7/8" ODF                   | 51                                     | 4.2                          | BSS 167S     | 066128      |
| Suction        | 30                          | 5/8" X 5/8" ODF                   | 84                                     | 3.5                          | BSS 305S     | 066100      |
| Suction        | 30                          | 3/4" X 3/4" ODF                   | 84                                     | 5.5                          | BSS 306S     | 066101      |
| Suction        | 30                          | 7/8" X 7/8" ODF                   | 84                                     | 6.0                          | BSS 307S     | 066129      |
| Suction        | 30                          | 1-1/8" X 1-1/8" ODF               | 84                                     | 6.2                          | BSS 309S     | 066102      |



BOK 304SHH

## BOK SERIES HERMETIC LIQUID LINE FILTER DRIERS

*The BOK is a liquid line filter drier for burnout clean-up and wax removal.*

### FEATURES

- Activated carbon blend for soluble contaminant and wax removal
- Solid copper connections
- Corrosion resistant epoxy powder paint finish

### SPECIFICATIONS

Filtration ..... 40 microns  
 Maximum Working Pressure..... 680 psig (47 bar)  
 UL/CUL File Number ..... SA3124  
 Canadian CRN ..... 0E21971.513467890YTN

### MODEL NUMBER NOMENCLATURE - Example: BOK 305S-HH

| SERIES                             | UNIT SIZE    | CONNECTION SIZE    | CONNECTION STYLE | DESICCANT TYPE        | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|------------------------------------|--------------|--------------------|------------------|-----------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| BOK                                | 30           | 5                  | S                | HH                    |                       |                                             |                                              |
| Hermetic Liquid Line Filter Driers | In Cubic In. | In 1/8" Increments | S = ODF          | HH = Activated Carbon | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### BOK LIQUID LINE FILTER DRIERS & CAPACITY TABLE

| MODEL NUMBER | ITEM NUMBER | UNIT SIZE (CUBIC INCHES) | INLET X OUTLET CONN. SIZE | FLOW CAPACITY <sup>14</sup><br>TONS @ 1 PSI ΔP<br>(FOR KW, MULTIPLY TONS BY 3.5) |                          |                |        |        |       | WATER CAPACITY <sup>2</sup> DROPS OF WATER <sup>3</sup> |       |        |       |                |       |        |       |        |       |                 |       |                 |       |       |      |
|--------------|-------------|--------------------------|---------------------------|----------------------------------------------------------------------------------|--------------------------|----------------|--------|--------|-------|---------------------------------------------------------|-------|--------|-------|----------------|-------|--------|-------|--------|-------|-----------------|-------|-----------------|-------|-------|------|
|              |             |                          |                           | R-22 / R-448A / R-449A                                                           | R-134a / R-450A / R-513A | R-404A / R-507 | R-407C | R-410A | R-744 | R-22                                                    |       | R-134a |       | R-404A / R-507 |       | R-407C |       | R-410A |       | R-448A / R-449A |       | R-450A / R-513A |       | R-744 |      |
|              |             |                          |                           |                                                                                  |                          |                |        |        |       | 75°F                                                    | 125°F | 75°F   | 125°F | 75°F           | 125°F | 75°F   | 125°F | 75°F   | 125°F | 75°F            | 125°F | 75°F            | 125°F | 14°F  | 75°F |
| BOK 082HH    | 060223      | 8                        | 1/4" X 1/4" SAE           | 1.6                                                                              | 1.5                      | 1.1            | 1.6    | 1.6    | 2.1   | 78                                                      | 59    | 88     | 71    | 93             | 71    | 74     | 45    | 66     | 38    | 32              | 30    | 40              | 37    | 51    | 63   |
| BOK 082SHH   | 064591      | 8                        | 1/4" X 1/4" ODF           | 3.4                                                                              | 3.1                      | 2.2            | 3.3    | 3.4    | 4.4   |                                                         |       |        |       |                |       |        |       |        |       |                 |       |                 |       |       |      |
| BOK 083HH    | 060224      | 8                        | 3/8" X 3/8" SAE           | 4.2                                                                              | 3.9                      | 2.8            | 4.1    | 4.2    | 5.4   |                                                         |       |        |       |                |       |        |       |        |       |                 |       |                 |       |       |      |
| BOK 083SHH   | 064572      | 8                        | 3/8" X 3/8" ODF           | 4.6                                                                              | 4.2                      | 3.0            | 4.5    | 4.6    | 5.9   |                                                         |       |        |       |                |       |        |       |        |       |                 |       |                 |       |       |      |
| BOK 162HH    | 060240      | 16                       | 1/4" X 1/4" SAE           | 1.6                                                                              | 1.5                      | 1.1            | 1.6    | 1.6    | 2.1   | 153                                                     | 117   | 171    | 141   | 182            | 141   | 91     | 56    | 77     | 41    | 67              | 61    | 83              | 76    | 93    | 113  |
| BOK 163HH    | 060241      | 16                       | 3/8" X 3/8" SAE           | 4.7                                                                              | 4.3                      | 3.1            | 4.6    | 4.7    | 6.1   |                                                         |       |        |       |                |       |        |       |        |       |                 |       |                 |       |       |      |
| BOK 163SHH   | 060242      | 16                       | 3/8" X 3/8" ODF           | 6.3                                                                              | 5.8                      | 4.2            | 6.2    | 6.3    | 8.1   |                                                         |       |        |       |                |       |        |       |        |       |                 |       |                 |       |       |      |
| BOK 164HH    | 060228      | 16                       | 1/2" X 1/2" SAE           | 9.3                                                                              | 8.6                      | 6.2            | 9.1    | 9.3    | 12.0  |                                                         |       |        |       |                |       |        |       |        |       |                 |       |                 |       |       |      |
| BOK 164SHH   | 060229      | 16                       | 1/2" X 1/2" ODF           | 11.1                                                                             | 10.2                     | 7.4            | 10.9   | 11.1   | 14.3  |                                                         |       |        |       |                |       |        |       |        |       |                 |       |                 |       |       |      |
| BOK 165HH    | 060230      | 16                       | 5/8" X 5/8" SAE           | 13.9                                                                             | 12.8                     | 9.3            | 13.6   | 13.9   | 17.9  |                                                         |       |        |       |                |       |        |       |        |       |                 |       |                 |       |       |      |
| BOK 165SHH   | 060231      | 16                       | 5/8" X 5/8" ODF           | 13.9                                                                             | 12.8                     | 9.3            | 13.6   | 13.9   | 17.9  |                                                         |       |        |       |                |       |        |       |        |       |                 |       |                 |       |       |      |
| BOK 303HH    | 060232      | 30                       | 3/8" X 3/8" SAE           | 4.7                                                                              | 4.3                      | 3.1            | 4.6    | 4.7    | 6.1   |                                                         |       |        |       |                |       |        |       |        |       |                 |       |                 |       |       |      |
| BOK 304HH    | 060233      | 30                       | 1/2" X 1/2" SAE           | 10.7                                                                             | 9.9                      | 7.2            | 10.5   | 10.7   | 13.8  | 267                                                     | 204   | 300    | 245   | 318            | 247   | 234    | 146   | 160    | 94    | 119             | 108   | 148             | 135   | 167   | 203  |
| BOK 304SHH   | 060234      | 30                       | 1/2" X 1/2" ODF           | 11.7                                                                             | 10.8                     | 7.8            | 11.5   | 11.7   | 15.1  |                                                         |       |        |       |                |       |        |       |        |       |                 |       |                 |       |       |      |
| BOK 305HH    | 060235      | 30                       | 5/8" X 5/8" SAE           | 14.6                                                                             | 13.5                     | 9.8            | 14.3   | 14.6   | 18.8  |                                                         |       |        |       |                |       |        |       |        |       |                 |       |                 |       |       |      |
| BOK 305SHH   | 060236      | 30                       | 5/8" X 5/8" ODF           | 15.8                                                                             | 14.6                     | 10.6           | 15.5   | 15.8   | 20.4  |                                                         |       |        |       |                |       |        |       |        |       |                 |       |                 |       |       |      |

## BOK LIQUID LINE FILTER DRIERS & CAPACITY TABLE (CONTINUED)

| MODEL<br>NUMBER | ITEM<br>NUMBER | UNIT SIZE<br>(CUBIC<br>INCHES) | INLET<br>X OUTLET<br>CONN. SIZE | FLOW CAPACITY <sup>1 4</sup><br>TONS @ 1 PSI ΔP<br>(FOR KW, MULTIPLY TONS BY 3.5) |                          |                |        |        |       | WATER CAPACITY <sup>2</sup> DROPS OF WATER <sup>3</sup> |       |        |       |                   |       |        |       |        |       |                    |       |                    |       |       |      |
|-----------------|----------------|--------------------------------|---------------------------------|-----------------------------------------------------------------------------------|--------------------------|----------------|--------|--------|-------|---------------------------------------------------------|-------|--------|-------|-------------------|-------|--------|-------|--------|-------|--------------------|-------|--------------------|-------|-------|------|
|                 |                |                                |                                 |                                                                                   |                          |                |        |        |       | R-22                                                    |       | R-134a |       | R-404A<br>/ R-507 |       | R-407C |       | R-410A |       | R-448A<br>/ R-449A |       | R-450A<br>/ R-513A |       | R-744 |      |
|                 |                |                                |                                 | R-22 / R-448A / R-449A                                                            | R-134a / R-450A / R-513A | R-404A / R-507 | R-407C | R-410A | R-744 | 75°F                                                    | 125°F | 75°F   | 125°F | 75°F              | 125°F | 75°F   | 125°F | 75°F   | 125°F | 75°F               | 125°F | 75°F               | 125°F | 14°F  | 75°F |
| BOK 414HH       | 060237         | 41                             | 1/2" X 1/2" SAE                 | 11.1                                                                              | 10.2                     | 7.4            | 10.9   | 11.1   | 14.3  | 379                                                     | 282   | 427    | 344   | 454               | 342   | 256    | 155   | 220    | 125   | 163                | 150   | 204                | 186   | 249   | 305  |
| BOK 415HH       | 060238         | 41                             | 5/8" X 5/8" SAE                 | 17.7                                                                              | 16.3                     | 11.8           | 17.4   | 17.7   | 22.8  |                                                         |       |        |       |                   |       |        |       |        |       |                    |       |                    |       |       |      |
| BOK 415SHH      | 064593         | 41                             | 5/8" X 5/8" ODF                 | 17.7                                                                              | 16.3                     | 14.4           | 21.1   | 17.7   | 22.8  |                                                         |       |        |       |                   |       |        |       |        |       |                    |       |                    |       |       |      |
| BOK 417SHH      | 060239         | 41                             | 7/8" X 7/8" ODF                 | 21.5                                                                              | 19.8                     | 14.4           | 21.1   | 21.5   | 27.7  |                                                         |       |        |       |                   |       |        |       |        |       |                    |       |                    |       |       |      |

<sup>1</sup> All ratings in accordance with ARI Standard 710-04. 86oF liquid refrigerant temperature  
5°F saturated vapor temperature  
3.1 lbs./min./ton for R-134a  
2.9 lbs./min./ton for R-22 and R-407C  
4.0 lbs./min./ton for R-404A/507 and R-12  
2.7 lbs./min./ton for R-410A  
5 Since there is currently no ARI standard for R-744, values are based on 1 ton of refrigeration at 20°F liquid refrigerant temperature and -20°F saturated vapor temperature.

<sup>2</sup> Water Capacities are based on:  
Equilibrium Point Dryness (EPD) of:  
50 parts per million for R-134a,  
R404-A/507, R-410A, R-407C, and R-744  
60 parts per million for R-22  
15 parts per million for R-12

<sup>3</sup> 20 drops of water = 1 gram = 1 cc  
<sup>4</sup> For 2 PSI ΔP, Multiply values by 1.4

## LIQUID REFRIGERANT HOLDING CAPACITY-OUNCES

| UNIT SIZE | R-134a |       | R-22 |       | R-407C |       | R-410A |       | R-404A / 507 |       | R-448A / R-449A |       | R-450A / R-513A |       | R-744 |       |
|-----------|--------|-------|------|-------|--------|-------|--------|-------|--------------|-------|-----------------|-------|-----------------|-------|-------|-------|
|           | 75°F   | 125°F | 75°F | 125°F | 75°F   | 125°F | 75°F   | 125°F | 75°F         | 125°F | 75°F            | 125°F | 75°F            | 125°F | 20°F  | -20°F |
| 08        | 6.7    | 6.0   | 6.6  | 5.9   | 6.3    | 5.5   | 5.9    | 4.9   | 5.8          | 4.9   | 6.0             | 5.4   | 6.4             | 5.8   | 5.3   | 5.9   |
| 16        | 12.8   | 11.5  | 12.6 | 11.3  | 12.0   | 10.5  | 11.2   | 9.4   | 11.1         | 9.3   | 11.7            | 10.4  | 12.4            | 11.2  | 10.1  | 11.3  |
| 30        | 20.1   | 18.1  | 19.8 | 17.8  | 18.9   | 16.6  | 17.6   | 14.9  | 17.4         | 14.7  | 18.3            | 16.3  | 19.4            | 17.6  | 16.0  | 17.7  |
| 41        | 26.9   | 24.4  | 26.6 | 23.9  | 25.4   | 22.3  | 23.7   | 20.0  | 23.3         | 19.7  | 24.5            | 21.8  | 26.1            | 23.6  | 21.4  | 23.8  |





CU 083S



CU 319

## CU SERIES SPUN COPPER HERMETIC LIQUID LINE FILTER DRIERS

The CU series is a high capacity spun copper solid core filter drier ideal for superior corrosion resistance in ocean going vessels and residential coastal applications. Models available for replacement in residential air conditioning or refrigeration equipment.

### FEATURES

- All copper construction for extreme corrosion resistance
- 100% molecular sieve solid core drier

### SPECIFICATIONS

Maximum Working Pressure..... 600 psig (41 bar)  
 Filtration ..... Standard 40 microns  
 ..... Fractional Tonnage 100 microns  
 UL/CUL File Number ..... SA7175  
 Canadian CRN ..... 0E21971.513467890YTN

### MODEL NUMBER NOMENCLATURE - Example: CU 1635

| SERIES                             | UNIT SIZE    | CONNECTION SIZE    | CONNECTION TYPE                 | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|------------------------------------|--------------|--------------------|---------------------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| CU                                 | 16           | 3                  | S                               |                       |                                             |                                              |
| Hermetic Liquid Line Filter Driers | In Cubic In. | In 1/8" Increments | S = ODF<br>(Omit S for special) | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### CU SERIES SPUN COPPER HERMETIC LIQUID LINE FILTER DRIERS

| PARKER EQUIVALENT | UNIT SIZE (CUBIC INCHES) | INLET CONNECTION | OUTLET CONNECTION | FILTRATION (MICRONS) | MAXIMUM WORKING PRESSURE (PSIG) |     | FLOW CAPACITY TONS<br>@ 1 PSI ΔP <sup>1,4</sup><br>(FOR KW, MULTIPLY<br>TONS BY 3.5) |        |       |                   |     | WATER CAPACITY <sup>2</sup> (DROPS OF WATER <sup>3</sup> ) |     |        |     |                    |     |                    |     |     |     |     |     |     |     |     |         | MODEL NUMBER | ITEM NUMBER |
|-------------------|--------------------------|------------------|-------------------|----------------------|---------------------------------|-----|--------------------------------------------------------------------------------------|--------|-------|-------------------|-----|------------------------------------------------------------|-----|--------|-----|--------------------|-----|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|---------|--------------|-------------|
|                   |                          |                  |                   |                      |                                 |     | R-22                                                                                 | R-134a | R-290 | R-404A<br>/ R-507 |     | R-407C                                                     |     | R-410A |     | R-448A<br>/ R-449A |     | R-450A<br>/ R-513A |     |     |     |     |     |     |     |     |         |              |             |
|                   |                          |                  |                   |                      |                                 |     |                                                                                      |        |       |                   |     |                                                            |     |        |     |                    |     |                    |     |     |     |     |     |     |     |     |         |              |             |
| CU LLD 3-3S       | 3                        | 3/8 ODF          | 3/8 ODF           | 40                   | 600                             | 2.8 | 2.6                                                                                  | 3.1    | 1.9   | 2.7               | 87  | 81                                                         | 93  | 87     | 109 | 103                | 96  | 93                 | 72  | 57  | 60  | 54  | 87  | 79  | 110 | 100 | CU 033S | 064389       |             |
| CU LLD 5-3S       | 5                        | 3/8 ODF          | 3/8 ODF           | 40                   | 600                             | 2.8 | 2.6                                                                                  | 3.1    | 1.9   | 2.7               | 101 | 93                                                         | 108 | 101    | 126 | 119                | 112 | 108                | 82  | 63  | 70  | 62  | 99  | 90  | 137 | 125 | CU 053S | 064391       |             |
| CU LLD 8-3S       | 8                        | 3/8 ODF          | 3/8 ODF           | 40                   | 600                             | 3.8 | 3.5                                                                                  | 4.2    | 2.5   | 3.7               | 191 | 177                                                        | 205 | 191    | 236 | 223                | 212 | 205                | 156 | 122 | 131 | 117 | 188 | 171 | 237 | 216 | CU 083S | 064393       |             |
| CU LLD 16-3S      | 16                       | 3/8 ODF          | 3/8 ODF           | 40                   | 600                             | 4.3 | 4.0                                                                                  | 4.7    | 2.9   | 4.2               | 257 | 237                                                        | 277 | 257    | 340 | 320                | 287 | 277                | 207 | 158 | 177 | 157 | 270 | 245 | 341 | 310 | CU 163S | 064395       |             |

### CU SERIES SPUN COPPER HERMETIC LIQUID LINE FRACTIONAL TONNAGE FILTER DRIERS

|         |   |                     |                      |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |        |        |
|---------|---|---------------------|----------------------|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|--------|--------|
| MMS-80  | — | 1/4 ODF             | 1/4 ODF              | 100 | 500 | 0.5 | 0.3 | 0.6 | 0.3 | 0.5 | 25 | 22 | 26 | 23 | 33 | 31 | 26 | 23 | 23 | 21 | 17 | 15 | 38  | 35  | 38  | 35  | CU 80  | 064023 |
| 619     | — | 1/4 ODF             | CAP                  | 100 | 500 | 0.5 | 0.3 | 0.6 | 0.3 | 0.5 | 25 | 22 | 26 | 23 | 33 | 31 | 26 | 23 | 23 | 21 | 17 | 15 | 38  | 35  | 38  | 35  | CU 619 | 064026 |
| 620     | — | 5/16 ODF            | CAP                  | 100 | 500 | 2.0 | 1.0 | 2.2 | 0.8 | 1.9 | 50 | 44 | 53 | 46 | 66 | 63 | 53 | 46 | 43 | 39 | 33 | 29 | 76  | 69  | 76  | 69  | CU 620 | 064027 |
| 621     | — | 5/16 ODF            | CAP                  | 100 | 500 | 2.0 | 1.0 | 2.2 | 0.8 | 1.9 | 50 | 44 | 53 | 46 | 66 | 63 | 53 | 46 | 43 | 39 | 33 | 29 | 76  | 69  | 76  | 69  | CU 621 | 064119 |
| MMS-200 | — | 5/16 ODF<br>3/8 ODF | 5/16 ODF,<br>3/8 ODF | 100 | 500 | 1.0 | 0.8 | 1.1 | 0.6 | 0.9 | 50 | 44 | 53 | 46 | 66 | 63 | 53 | 46 | 43 | 39 | 33 | 29 | 76  | 69  | 76  | 69  | CU 200 | 064024 |
| 319F    | — | 5/16 ODF            | CAP                  | 100 | 500 | 2.0 | 1.0 | 2.2 | 0.8 | 1.9 | 75 | 66 | 80 | 76 | 99 | 94 | 79 | 75 | 65 | 59 | 50 | 44 | 114 | 104 | 114 | 104 | CU 319 | 064025 |

<sup>1</sup> All ratings in accordance with ARI Standard 710-04. 86°F liquid refrigerant temperature  
 5°F saturated vapor temperature  
 3.1 lbs./min./ton for R-134a  
 2.9 lbs./min./ton for R-22 and R-407C  
 4.0 lbs./min./ton for R-404A/507 and R-12  
 2.7 lbs./min./ton for R-410A

<sup>2</sup> Water Capacities are based on:  
 Equilibrium Point Dryness (EPD) of:  
 50 parts per million for R-134a,  
 R404-A/507, R-410A, R-407C, and R-744  
 60 parts per million for R-22

<sup>3</sup> 20 drops of water = 1 gram = 1 cc  
<sup>4</sup> For 2 PSI ΔP, Multiply values by 1.4



ALF 032MF

## ALF SERIES HERMETIC LIQUID LINE FILTERS

The ALF is a liquid line refrigerant filter for recovery, recycle and reclaim usage.  
The ALF is also used for protecting solenoid and expansion valve parts from debris.

### FEATURES

- Filtering media maximizes removal of finer particles
- Corrosion resistant epoxy powder paint finish

### SPECIFICATIONS

Filtration ..... 40 microns  
Maximum Working Pressure..... 680 psig (47 bar)  
UL/CUL File Number .....SA 3124  
Canadian CRN .....0E21971.513467890YTN

### MODEL NUMBER NOMENCLATURE - EXAMPLE: ALF 032S

| SERIES                       | UNIT SIZE    | CONNECTION SIZE    | CONNECTION STYLE                            | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                                | PACK TYPE                                        |
|------------------------------|--------------|--------------------|---------------------------------------------|-----------------------|-------------------------------------------------|--------------------------------------------------|
| ALF                          | 03           | 2                  | S                                           |                       |                                                 |                                                  |
| Hermetic Liquid Line Filters | In Cubic In. | In 1/8" Increments | S = ODF<br>MF = ODM x ODF<br>(Omit for SAE) | Blank Thru -99        | G = Customer Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

### ALF LIQUID LINE FILTERS

| UNIT SIZE (CUBIC INCHES) | INLET X OUTLET CONNECTION SIZE        | MODEL NUMBER | ITEM NUMBER |
|--------------------------|---------------------------------------|--------------|-------------|
| 3                        | 1/4" SAE Male X 1/4" SAE Flare Female | ALF 032MF    | 057193      |
| 3                        | 1/4" X 1/4" ODF                       | ALF 032S     | 056618      |
| 3                        | 3/8" X 3/8" ODF                       | ALF 033S     | 057140      |
| 3                        | 1/2" X 1/2" ODF                       | ALF 034S     | 056645      |

### CAPACITY TABLE

| RECOVERY, RECYCLE AND RECLAIM REFRIGERANT FLOW CAPACITY (LBS./MIN. LIQUID) |                                 |                |
|----------------------------------------------------------------------------|---------------------------------|----------------|
| R-134a / R-450A / R-513A                                                   | R-22 / R-410A / R-448A / R-449A | R-404A / R-507 |
| 7.6                                                                        | 8.0                             | 8.0            |



STAS 9617T

## STAS SERIES TAKE-APART LIQUID AND SUCTION FILTER DRIERS

*The STAS is a replaceable core filter drier for use in large commercial air conditioning and refrigeration systems. The STAS-CO is specifically designed for CO<sub>2</sub> (R-744) systems.*

### FEATURES

- Slotted cover/unique internal hardware for hassle-free installation
- Full flow fittings for low pressure drop
- Corrosion resistant epoxy powder paint finish
- Sturdy steel shells for long life
- Solid copper connections
- 100 mesh outlet screen

### SPECIFICATIONS

Filtration .....40 microns with core  
 Maximum Working Pressure..... SV version = 500 psig (35 bar)  
 ..... T version = 680 psig (47 bar)  
 UL/CUL File Number ..... SA7175  
 Canadian CRN .....0E21971.513467890YTN

### MODEL NUMBER NOMENCLATURE - EXAMPLE: STAS CO489T

| SERIES                                           | DESIGN                                                      | UNIT SIZE    | CONNECTION SIZE    | SYSTEM SERVICE                                       | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|--------------------------------------------------|-------------------------------------------------------------|--------------|--------------------|------------------------------------------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| STAS                                             | CO                                                          | 48           | 9                  | T                                                    | VV                    |                                             |                                              |
| Steel Take-Apart Liquid or Suction Filter Driers | CO = For use with R-744<br>(Omit for Standard Refrigerants) | In Cubic In. | In 1/8" Increments | T = Liquid Line Service<br>SV = Suction Line Service | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### STAS SERIES LIQUID AND SUCTION LINE FILTER DRIERS

(STAS uses 48 cubic in. Cores and shipped without filter or filter drier cores. See filter drier cores and filters section)

| UNIT SIZE<br>(CUBIC INCHES) | INLET X OUTLET<br>CONNECTION SIZE | ACCESS TYPE | NUMBER OF<br>48 IN. CORES | MODEL NUMBER | ITEM NUMBER |
|-----------------------------|-----------------------------------|-------------|---------------------------|--------------|-------------|
| 48                          | 5/8" X 5/8" ODF                   | Tap Access  | 1                         | STAS 485T    | 053001      |
| 48                          | 5/8" X 5/8" ODF                   | Tap Access  | 1                         | STAS CO485T  | 066725      |
| 48                          | 7/8" X 7/8" ODF                   | Tap Access  | 1                         | STAS 487T    | 053003      |
| 48                          | 7/8" X 7/8" ODF                   | Tap Access  | 1                         | STAS CO487T  | 066726      |
| 48                          | 1-1/8" X 1-1/8" ODF               | Tap Access  | 1                         | STAS 489T    | 053005      |
| 48                          | 1-1/8" X 1-1/8" ODF               | Tap Access  | 1                         | STAS CO489T  | 066727      |
| 48                          | 1-3/8" X 1-3/8" ODF               | Single      | 1                         | STAS 4811SV  | 053938      |
| 48                          | 1-3/8" X 1-3/8" ODF               | Tap Access  | 1                         | STAS 4811T   | 053007      |
| 48                          | 1-5/8" X 1-5/8" ODF               | Single      | 1                         | STAS 4813SV  | 053043      |
| 48                          | 1-5/8" X 1-5/8" ODF               | Tap Access  | 1                         | STAS 4813T   | 053375      |
| 48                          | 2-1/8" X 2-1/8" ODF               | Single      | 1                         | STAS 4817SV  | 053044      |
| 48                          | 2-5/8" X 2-5/8" ODF               | Single      | 1                         | STAS 4821SV  | 053045      |
| 96                          | 7/8" X 7/8" ODF                   | Tap Access  | 2                         | STAS 967T    | 053010      |
| 96                          | 1-1/8" X 1-1/8" ODF               | Tap Access  | 2                         | STAS 969T    | 053012      |
| 96                          | 1-3/8" X 1-3/8" ODF               | Tap Access  | 2                         | STAS CO9611T | 066729      |
| 96                          | 1-3/8" X 1-3/8" ODF               | Tap Access  | 2                         | STAS 9611T   | 053014      |
| 96                          | 1-1/8" X 1-1/8" ODF               | Tap Access  | 2                         | STAS CO969T  | 066728      |

## STAS SERIES LIQUID AND SUCTION LINE FILTER DRIERS (CONTINUED)

| UNIT SIZE<br>(CUBIC INCHES) | INLET X OUTLET<br>CONNECTION SIZE | ACCESS TYPE | NUMBER OF<br>48 IN. CORES | MODEL NUMBER | ITEM NUMBER |
|-----------------------------|-----------------------------------|-------------|---------------------------|--------------|-------------|
| 96                          | 1-5/8" X 1-5/8" ODF               | Tap Access  | 2                         | STAS 9613T   | 053017      |
| 96                          | 2-1/8" X 2-1/8" ODF               | Single      | 2                         | STAS 9617SV  | 053047      |
| 96                          | 2-1/8" X 2-1/8" ODF               | Tap Access  | 2                         | STAS 9617T   | 053018      |
| 96                          | 2-5/8" X 2-5/8" ODF               | Single      | 2                         | STAS 9621SV  | 053048      |
| 96                          | 3-1/8" X 3-1/8" ODF               | Single      | 2                         | STAS 9625SV  | 059739      |
| 144                         | 1-1/8" X 1-1/8" ODF               | Tap Access  | 3                         | STAS 1449T   | 053020      |
| 144                         | 1-3/8" X 1-3/8" ODF               | Tap Access  | 3                         | STAS 14411T  | 053022      |
| 144                         | 1-5/8" X 1-5/8" ODF               | Tap Access  | 3                         | STAS 14413T  | 053024      |
| 144                         | 2-1/8" X 2-1/8" ODF               | Tap Access  | 3                         | STAS 14417T  | 053025      |
| 192                         | 1-3/8" X 1-3/8" ODF               | Tap Access  | 4                         | STAS 19211T  | 053028      |
| 192                         | 1-5/8" X 1-5/8" ODF               | Tap Access  | 4                         | STAS 19213T  | 053030      |
| 192                         | 2-1/8" X 2-1/8" ODF               | Tap Access  | 4                         | STAS 19217T  | 053031      |

SV style includes stainless steel bolts and access valve

T style can be used for suction by removing pipe plug and installing x-11562-2

## STAS SERIES PARTS LIST

| DESCRIPTION                                                                                                                                    | MODEL<br>NUMBER | ITEM<br>NUMBER |
|------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| STAS Steel Liquid and Suction Line Filter Drier Cover Bolts (Stainless Steel - Suction Line service)                                           | X-25787-7       | 053121         |
| STAS Felt Set                                                                                                                                  | 27394-1         | 060278         |
| STAS Steel Liquid and Suction Line Filter Drier Gasket Set                                                                                     | X-11983-1       | 027453         |
| STAS Handle                                                                                                                                    | 26446-1         | 053812         |
| STAS Steel Liquid and Suction Line Filter Drier Mounting Bracket                                                                               | X-28747-1       | 061715         |
| STAS Spring                                                                                                                                    | 26439-1         | 060258         |
| BTAS and STAS Suction Line Filter Drier Access Valve with Cap (V-Option)                                                                       | X-11562-2       | 037409         |
| STAS Inlet Retainer                                                                                                                            | 26447-1         | 053813         |
| STAS Steel Liquid and Suction Line Filter Drier Retainer Assembly for 48 cu. In.                                                               | X-27458-1       | 060274         |
| STAS Steel Liquid and Suction Line Filter Drier Retainer Assembly for 96 cu. In.                                                               | X-27458-2       | 060275         |
| STAS Steel Liquid and Suction Line Filter Drier Retainer Assembly for 144 cu. In.                                                              | X-27458-3       | 060276         |
| STAS Steel Liquid and Suction Line Filter Drier Retainer Assembly for 192 cu. In.                                                              | X-27458-4       | 060277         |
| STAS Flange cover assembly includes flange cover, compression spring, pipe plug and grade 5 bolts                                              | X-12176-3       | 054046         |
| Replacement Filter (Suction Only) for ADKS and Similar Competitive Filters Not for BTAS                                                        | F 100           | 095762         |
| Replacement Filter (Suction Only) Reverse Flow for STAS and Similar Competitive Filters Not for BTAS                                           | F 48R           | 047664         |
| Filter Drier Core for High Acid and Water Removal in ADKS and STAS Shells and Similar Competitive Take-Apart Filter Drier Shells Not for BTAS  | H 100           | 089338         |
| Block Filter Drier Core for High Acid and Water Removal in STAS Shells and Similar Competitive Take-Apart Filter Drier Shells Not for BTAS     | H 48            | 059542         |
| Filter Drier Core for Highest Water Removal in STAS Shells and Similar Competitive Take-Apart Filter Drier Shells Not for BTAS                 | HX 48           | 062549         |
| Universal Replacement Cores, Filter Cores Use In STAS Shells and Similar Competitive Take-Apart Filter Drier Shells. May Not Be Used for BTAS. | RW 48           | 061238         |
| Premium Universal Replacement Filter Drier Core for ADKS Shells and Similar Competitive Take-Apart Filter Drier Shells Not for BTAS            | UK 100          | 062424         |
| Premium Universal Replacement Filter Drier Core for STAS Shells and Similar Competitive Take-Apart Filter Drier Shells Not for BTAS            | UK 48           | 061617         |
| Burnout Clean Up Filter Drier Core for ADKS Shells and Similar Competitive Take-Apart Filter Drier Shells Not for BTAS                         | W 100HH         | 043582         |
| Burnout Clean Up Filter Drier Core for STAS Shells and Similar Competitive Take-Apart Filter Drier Shells Not for BTAS                         | W 48HH          | 061235         |

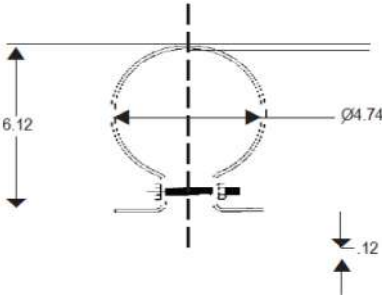


Capacity  
Tables

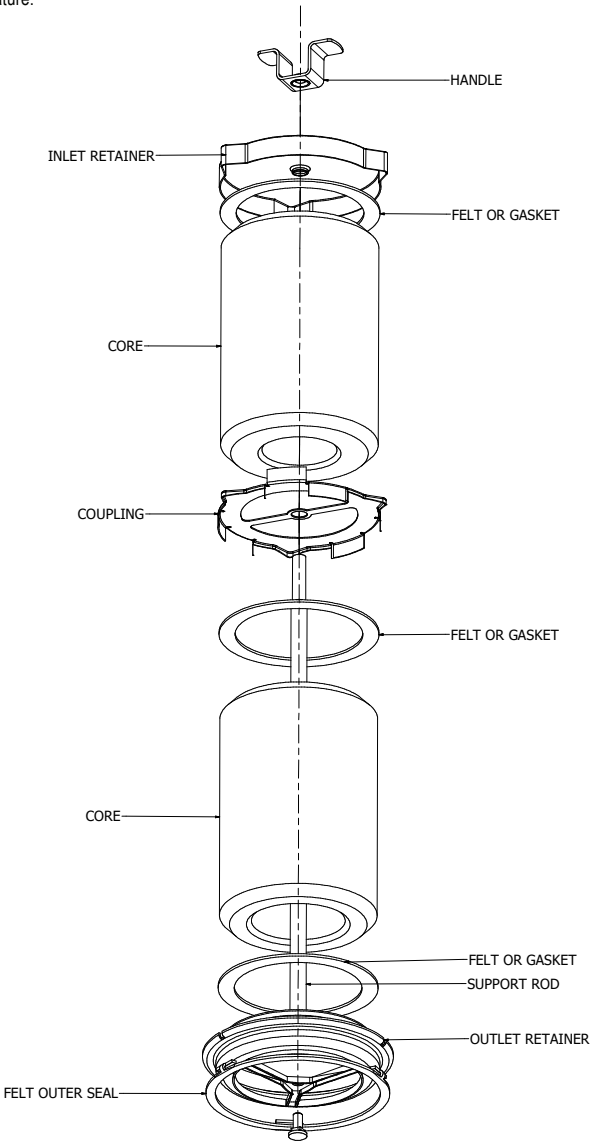
STAS SERIES CAPACITY TABLE

| CONNECTIONS | LIQUID FLOW CAPACITY TONS @ 1 PSI ΔP¹ |                          |              |        |       | MODEL NUMBER | ITEM NUMBER |
|-------------|---------------------------------------|--------------------------|--------------|--------|-------|--------------|-------------|
|             | R-22 / R-410A / R-448A / R-449A       | R-134a / R-450A / R-513A | R-404A / 507 | R-407C | R-744 |              |             |
| 5/8 ODF     | 22                                    | 21                       | 15           | 21     | 28    | STAS 485T    | 053001      |
| 7/8 ODF     | 41                                    | 38                       | 27           | 39     | 53    | STAS 487T    | 053003      |
| 1-1/8 ODF   | 58                                    | 53                       | 38           | 56     | 75    | STAS 489T    | 053005      |
| 1-3/8 ODF   | 81                                    | 75                       | 53           | 78     | —     | STAS 4811T   | 053007      |
| 1-5/8 ODF   | 89                                    | 81                       | 58           | 85     | —     | STAS 4813T   | 053375      |
| 7/8 ODF     | 45                                    | 42                       | 30           | 43     | —     | STAS 967T    | 053010      |
| 1-1/8 ODF   | 71                                    | 65                       | 47           | 68     | 92    | STAS 969T    | 053012      |
| 1-3/8 ODF   | 87                                    | 80                       | 57           | 83     | 112   | STAS 9611T   | 053014      |
| 1-5/8 ODF   | 100                                   | 92                       | 65           | 95     | —     | STAS 9613T   | 053017      |
| 1-1/8 ODF   | 72                                    | 66                       | 47           | 69     | —     | STAS 1449T   | 053020      |
| 1-3/8 ODF   | 100                                   | 92                       | 65           | 96     | —     | STAS 14411T  | 053022      |
| 1-5/8 ODF   | 101                                   | 93                       | 66           | 97     | —     | STAS 14413T  | 053024      |
| 2-1/8 ODF   | 120                                   | 110                      | 78           | 115    | —     | STAS 14417T  | 053025      |
| 1-1/8 ODF   | 102                                   | 94                       | 67           | 98     | —     | STAS 19211T  | 053028      |
| 1-5/8 ODF   | 113                                   | 103                      | 74           | 108    | —     | STAS 19213T  | 053030      |
| 2-1/8 ODF   | 123                                   | 113                      | 80           | 117    | —     | STAS 19217T  | 053031      |

All ratings in accordance with ARI standard 710-04. 86oF liquid refrigerant temperature.  
5F saturated vapor temperature  
3.1 lbs./min./ton for R-134a  
2.9 lbs./min./ton for R-22 and R-407C  
4.0lbs./min./ton for R-404A/507 and R-12  
For 2 PSI (triangle)P, Multiply values by 1.4  
For kW, multiply by 3.5"



Mounting Bracket for STAS 48\*  
\* More than one mounting bracket may be required for shell sizes 96 and above.





ADKS 30017T

## ADKS SERIES TAKE-APART LIQUID & SUCTION LINE FILTERS DRIERS

*The ADKS is a replaceable core filter drier for use in the liquid or suction line for very large commercial air conditioning and refrigerant systems.*

### FEATURES

- Full flow fittings for low pressure drop
- Corrosion resistant epoxy powder paint finish
- Sturdy steel shells for long life durability

### SPECIFICATIONS

Filtration (With Core)..... 40 microns  
 Maximum Working Pressure..... 500 psig\* (35 bar)  
 UL/CUL File Number .....SA 3124  
 Bolt Torque.....35 ft-lbs

\* **Not suitable for R-410A applications above 500 psig.**

### MODEL NUMBER NOMENCLATURE - EXAMPLE: ADKS 30013T

| SERIES                                            | UNIT SIZE    | CONNECTION SIZE    | ACCESS                                                  | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|---------------------------------------------------|--------------|--------------------|---------------------------------------------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| ADKS                                              | 300          | 13                 | T                                                       |                       |                                             |                                              |
| Take-Apart Liquid and Suction Line Filters Driers | In Cubic In. | In 1/8" Increments | T = Tap Access Connection<br>(Omit for no access valve) | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

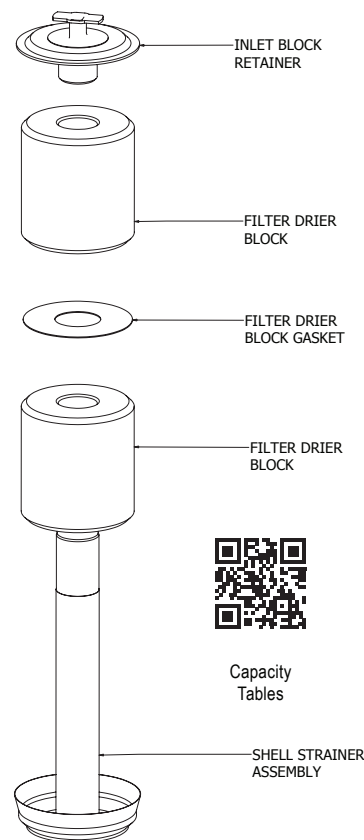
### ADKS LIQUID AND SUCTION LINE FILTER DRIER

| UNIT SIZE (CUBIC INCHES) | INLET X OUTLET CONNECTION SIZE | ACCESS TYPE | NUMBER OF 100 IN <sub>3</sub> CORES | FLOW CAPACITY IN TONS @ 1 PSI ΔP 1, 2    |                                |                |        | MODEL NUMBER | ITEM NUMBER |
|--------------------------|--------------------------------|-------------|-------------------------------------|------------------------------------------|--------------------------------|----------------|--------|--------------|-------------|
|                          |                                |             |                                     | R-22<br>/ R-410A<br>/ R-448A<br>/ R-449A | R-134a<br>/ R-450A<br>/ R-513A | R-404<br>/ 507 | R-407C |              |             |
| 300                      | 1-5/8" X 1-5/8" ODF            | Tap Access  | 3                                   | 110                                      | 102                            | 73             | 108    | ADKS 30013T  | 026570      |
| 300                      | 2-1/8" X 2-1/8" ODF            | Tap Access  | 3                                   | 160                                      | 148                            | 107            | 157    | ADKS 30017T  | 037978      |
| 400                      | 2-1/8" X 2-1/8" ODF            | Tap Access  | 4                                   | 170                                      | 157                            | 114            | 167    | ADKS 40017T  | 032105      |
| 400                      | 2-5/8" X 2-5/8" ODF            | Tap Access  | 4                                   | 180                                      | 166                            | 120            | 177    | ADKS 40021T  | 037570      |

Models are shipped without filter cores or filter drier cores. Use 100 cubic inch cores.

### ADKS SERIES REPLACEMENT PARTS

| DESCRIPTION                                      | MODEL NUMBER | ITEM NUMBER |
|--------------------------------------------------|--------------|-------------|
| ADKS-300, ADKS-400 Flange Cover                  | X-12176-2    | 027467      |
| ADKS 300 cu. In. Shell Strainer Replacement Kit  | X-10574-5    | 039967      |
| ADKS 400 cu. In. Shell Strainer Replacement Kit  | X-10574-6    | 038315      |
| Gasket Set (Includes Cover Gasket)               | X-11983-2    | 027454      |
| ADKS Series Replacement Flange and Plug Assembly | X-12176-3    | 054046      |
| ADKS Series Gasket Set                           | X-11983-2    | 027454      |





H 48

## FILTER DRIER CORES AND FILTERS FOR TAKE-APART SHELLS

Universal replacement cores and filter cores for use in our ADKS and STAS shells and similar competitive Take-Apart type filter drier shells. May not be used for BTAS.

- FEATURES**
- Water capacities to suit specific system conditions
  - Exceptional acid capacities for normal system protection, or to effectively clean-up following a compressor burnout
  - Activated carbon blend for soluble contaminant and wax removal (W-HH Series)

**MODEL NUMBER NOMENCLATURE - EXAMPLE: H 48**

| SERIES                                  | UNIT SIZE    |
|-----------------------------------------|--------------|
| H                                       | 48           |
| Universal Replacement Cores and Filters | In Cubic In. |

### FILTER DRIER CORES AND FILTERS

| FUNCTION                                                     | DESCRIPTION <sup>3</sup>                                                                                                      | WATER CAPACITY <sup>1</sup> (DROPS OF WATER <sup>2</sup> ) |       |        |       |                   |       |        |       |        |       |                    |       |                    |       |       |      | MODEL<br>NUMBER <sup>3</sup> | ITEM<br>NUMBER |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|-------|--------|-------|-------------------|-------|--------|-------|--------|-------|--------------------|-------|--------------------|-------|-------|------|------------------------------|----------------|
|                                                              |                                                                                                                               | R-22                                                       |       | R-134a |       | R-404A<br>/ R-507 |       | R-407C |       | R-410A |       | R-448A<br>/ R-449A |       | R-450A<br>/ R-513A |       | R-744 |      |                              |                |
|                                                              |                                                                                                                               | 75°F                                                       | 125°F | 75°F   | 125°F | 75°F              | 125°F | 75°F   | 125°F | 75°F   | 125°F | 75°F               | 125°F | 75°F               | 125°F | 14°F  | 75°F |                              |                |
| High Acid and Water Removal<br>Premium Universal Replacement | Premium Universal Replacement Filter Drier Core for ADKS Shells and Similar Competitive Take-Apart Filter Drier Shells        | 2574                                                       | 2345  | 2769   | 2550  | 2868              | 2710  | 2182   | 1682  | 1616   | 1303  | 1683               | 1531  | 2787               | 2437  | 1887  | 2073 | UK 100                       | 062424         |
| High Acid and Water Removal<br>Premium Universal Replacement | Premium Universal Replacement Filter Drier Core for STAS Shells and Similar Competitive Take-Apart Filter Drier Shells        | 1181                                                       | 1072  | 1272   | 1168  | 1319              | 1241  | 1033   | 786   | 976    | 707   | 942                | 857   | 1332               | 1150  | 1184  | 1388 | UK 48                        | 061617         |
| High Acid and Water Removal                                  | Filter Drier Core for High Acid and Water Removal in ADKS Shells and Similar Competitive Take-Apart Filter Drier Shells       | 962                                                        | 673   | 1112   | 834   | 1199              | 839   | 726    | 418   | 672    | 364   | 238                | 219   | 1109               | 758   | 526   | 550  | H 100                        | 089338         |
| High Acid and Water Removal                                  | Block Filter Drier Core for High Acid and Water Removal in STAS Shells and Similar Competitive Take-Apart Filter Drier Shells | 597                                                        | 436   | 676    | 538   | 721               | 535   | 445    | 285   | 380    | 226   | 388                | 225   | 643                | 475   | 274   | 321  | H 48                         | 059542         |
| High Acid Removal                                            | Block Filter Drier Core for High Acid Removal in STAS not for BTAS                                                            | 363                                                        | 254   | 415    | 340   | 457               | 343   | 225    | 95    | 210    | 86    | 106                | 98    | 388                | 225   | 186   | 218  | D 48                         | 059541         |
| Highest Water Removal                                        | Filter Drier Core for Highest Water Removal in STAS Shells and Similar Competitive Take-Apart Filter Drier Shells             | 1600                                                       | 1491  | 1710   | 1600  | 1765              | 1710  | 1459   | 1161  | 1280   | 930   | 1050               | 974   | 1932               | 1744  | 929   | 1027 | HX 48                        | 062549         |
| Refrigerant Reclaim / Maximum Moisture Removal               | Filter Drier Core / Filter for CFC, HCFC Refrigerant Reclamation and Maximum Moisture Removal                                 | 1037                                                       | 790   | 1096   | 920   | 1090              | 940   | 750    | 530   | 650    | 420   | 421                | 384   | 643                | 475   | 576   | 621  | RH 48                        | 061237         |
| Refrigerant Reclaim / Burnout with Wax Removal               | Universal Replacement Cores for STAS Shells and Similar Competitive Take-Apart Filter Drier Shells                            | 532                                                        | 380   | 583    | 493   | 600               | 482   | 380    | 230   | 350    | 197   | 147                | 135   | 444                | 306   | 294   | 308  | RW 48                        | 061238         |



## FILTER DRIER CORES AND FILTERS (CONTINUED)

| FUNCTION                                                         | DESCRIPTION <sup>3</sup>                                                                                              | WATER CAPACITY <sup>1</sup> (DROPS OF WATER <sup>2</sup> ) |       |        |       |                   |       |        |       |        |       |                    |       |                    |       |       |      | MODEL<br>NUMBER <sup>3</sup> | ITEM<br>NUMBER |
|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|-------|--------|-------|-------------------|-------|--------|-------|--------|-------|--------------------|-------|--------------------|-------|-------|------|------------------------------|----------------|
|                                                                  |                                                                                                                       | R-22                                                       |       | R-134a |       | R-404A<br>/ R-507 |       | R-407C |       | R-410A |       | R-448A<br>/ R-449A |       | R-450A<br>/ R-513A |       | R-744 |      |                              |                |
|                                                                  |                                                                                                                       | 75°F                                                       | 125°F | 75°F   | 125°F | 75°F              | 125°F | 75°F   | 125°F | 75°F   | 125°F | 75°F               | 125°F | 75°F               | 125°F | 14°F  | 75°F |                              |                |
| Burnout<br>Cleanup with<br>Charcoal                              | Burnout Clean Up Filter<br>Drier Core for ADKS<br>Shells and Similar<br>Competitive Take-Apart<br>Filter Drier Shells | 938                                                        | 621   | 1077   | 812   | 1162              | 792   | 629    | 363   | 573    | 307   | 248                | 228   | 960                | 663   | 510   | 534  | W 100HH                      | 043582         |
| Burnout<br>Cleanup with<br>Charcoal                              | Burnout Clean Up Filter<br>Drier Core for STAS<br>Shells and Similar<br>Competitive Take-Apart<br>Filter Drier Shells | 335                                                        | 226   | 387    | 294   | 417               | 289   | 290    | 165   | 249    | 130   | 119                | 109   | 444                | 306   | 328   | 386  | W 48HH                       | 061235         |
| Solid<br>Contaminant<br>Filter (Suction<br>Only)                 | Replacement Filter<br>(Suction Only) for STAS<br>Not for BTAS                                                         | —                                                          |       | —      |       | —                 |       | —      |       | —      |       | —                  |       | —                  |       | —     |      | F 48                         | 089559         |
| Solid<br>Contaminant<br>Filter (Suction<br>Only) Reverse<br>Flow | Replacement Filter<br>(Suction Only) Reverse<br>Flow for STAS and<br>Similar Competitive Filters<br>Not for BTAS      | —                                                          |       | —      |       | —                 |       | —      |       | —      |       | —                  |       | —                  |       | —     |      | F 48R                        | 047664         |
| Solid<br>Contaminant<br>Filter<br>(Suction Only)                 | Replacement Filter<br>(Suction Only) for ADKS<br>and Similar Competitive<br>Filters Not for BTAS                      | —                                                          |       | —      |       | —                 |       | —      |       | —      |       | —                  |       | —                  |       | —     |      | F 100                        | 095762         |

<sup>1</sup> Water Capacities are based on:  
50 parts per million for R-134a, R404-A/R-410A and R-407C  
60 parts per million for R-22  
15 parts per million for R-12

<sup>2</sup> 20 drops of water = 1 gram = 1 cc Equilibrium Point Dryness (EPD) of:

<sup>3</sup> D-42 and H-42 include one neoprene composite lid gasket and one core gasket. All other cores include a universal neoprene composite gasket kit which includes 2 sizes of replacement lid gaskets, and gaskets for the top and bottom of the core or filter.



BTAS 311SV

# BTAS SERIES TAKE-APART SUCTION LINE FILTER DRIERS

The BTAS is a replaceable core take-apart filter drier for suction line service ideal for commercial refrigeration applications.

### FEATURES

- Full flow fittings for low pressure drop
- Corrosion resistant brass body with stainless steel bolts
- Special cartridge design exclusive to brass shell

### SPECIFICATIONS

Filtration .....40 microns with core  
Maximum Working Pressure..... 400 psig (28 bar)  
UL/CUL File Number ..... SA3124  
Canadian CRN .....0E21971.513467890YTN

### MODEL NUMBER NOMENCLATURE - EXAMPLE: BTAS 311SV

| SERIES                                      | UNIT SIZE                        | CONNECTION SIZE    | TYPE                      | SEQUENTIAL IDENTIFIER     | CUSTOMER SPECIAL | PACK TYPE                                   |
|---------------------------------------------|----------------------------------|--------------------|---------------------------|---------------------------|------------------|---------------------------------------------|
| BTAS                                        | 3                                | 11                 | SV                        |                           |                  |                                             |
| Brass Take-Apart Suction Line Filter Driers | Nominal Shell Diameter In Inches | In 1/8" Increments | SV = Suction Line Service | S = ODF<br>(Omit for SAE) | Blank Thru -99   | G = Customer Special<br>(Omit for Standard) |

### BTAS SERIES TAKE-APART FILTER DRIERS AND CORES

| UNIT SIZE (DIAMETER IN INCHES) | INLET X OUTLET CONNECTION SIZE | MODEL NUMBER | ITEM NUMBER |
|--------------------------------|--------------------------------|--------------|-------------|
| 2                              | 7/8" X 7/8" ODF                | BTAS 27SV    | 049462      |
| 3                              | 1-1/8" X 1-1/8" ODF            | BTAS 39SV    | 049465      |
| 3                              | 1-3/8" X 1-3/8" ODF            | BTAS 311SV   | 049466      |
| 3                              | 1-5/8" X 1-5/8" ODF            | BTAS 313SV   | 049467      |
| 3                              | 2-1/8" X 2-1/8" ODF            | BTAS 317SV   | 049468      |
| 4                              | 1-3/8" X 1-3/8" ODF            | BTAS 411SV   | 064169      |
| 4                              | 1-5/8" X 1-5/8" ODF            | BTAS 413SV   | 049470      |
| 4                              | 2-1/8" X 2-1/8" ODF            | BTAS 417SV   | 049471      |
| 4                              | 2-5/8" X 2-5/8" ODF            | BTAS 421SV   | 049472      |
| 5                              | 2-1/8" X 2-1/8" ODF            | BTAS 517SV   | 049473      |
| 5                              | 2-5/8" X 2-5/8" ODF            | BTAS 521SV   | 049474      |
| 5                              | 3-1/8" X 3-1/8" ODF            | BTAS 525SV   | 049475      |

BTAS models are shipped without filter cartridge or Filter Drier cartridge.

## TYPE A-F REPLACEABLE FILTER CARTRIDGES

| FOR SHELL NO. | CORE O.D. | CORE LENGTH | FILTER AREA (SQUARE IN.) | WEIGHT (LBS) | MODEL NUMBER | ITEM NUMBER |
|---------------|-----------|-------------|--------------------------|--------------|--------------|-------------|
| BTAS 2        | 1 29/32   | 6 3/8       | 66                       | 0.33         | A2 F         | 049479      |
| BTAS 3        | 2 3/4     | 6 7/8       | 115                      | 0.50         | A3 F         | 049480      |
| BTAS 4        | 3 3/4     | 7 1/2       | 189                      | 0.88         | A4 F         | 049481      |
| BTAS 5        | 4 5/16    | 8 1/2       | 270                      | 1.00         | A5 F         | 049482      |

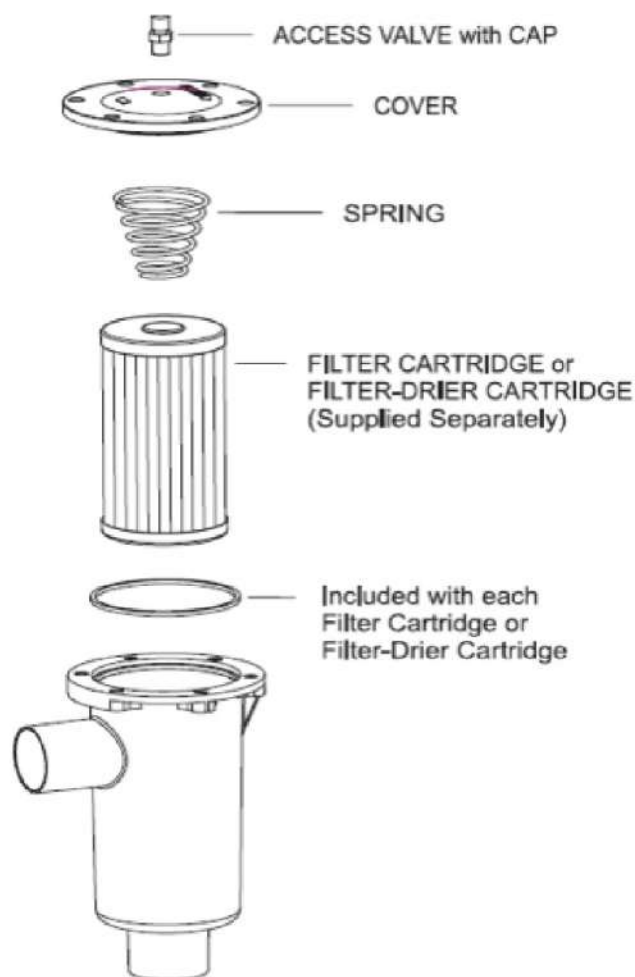
## TYPE A-F-D REPLACEABLE FILTER DRIER CARTRIDGES

| FOR SHELL NO. | CARTRIDGE O.D. | CARTRIDGE LENGTH | DESICCANT VOLUME (CUBIC IN.) | WEIGHT (LBS) | MODEL NUMBER | ITEM NUMBER |
|---------------|----------------|------------------|------------------------------|--------------|--------------|-------------|
| BTAS 2        | 1 29/32        | 6 3/8            | 4.2                          | 0.50         | A2 FD        | 049483      |
| BTAS 3        | 2 3/4          | 6 7/8            | 13.3                         | 0.88         | A3 FD        | 049484      |
| BTAS 4        | 3 3/4          | 7 1/2            | 26.0                         | 1.20         | A4 FD        | 049485      |
| BTAS 5        | 4 5/16         | 8 1/2            | 36.5                         | 1.20         | A5 FD        | 049486      |

## BTAS SERIES REPLACEMENT PARTS\*

| DESCRIPTION          | MODEL NUMBER | ITEM NUMBER |
|----------------------|--------------|-------------|
| Access Valve         | X-11562-2    | 037409      |
| BTAS 2 Repair Kit*   | KD-30519-2   | 065970      |
| BTAS 3 Repair Kit*   | KD-30519-3   | 065971      |
| BTAS 4 Repair Kit*   | KD-30519-4   | 065972      |
| BTAS 5 Repair Kit*   | KD-30519-5   | 065973      |
| BTAS 2 Seal Ring Kit | KD-40015-1   | 066430      |
| BTAS 3 Seal Ring Kit | KD-40015-2   | 066431      |
| BTAS 4 Seal Ring Kit | KD-40015-3   | 066432      |
| BTAS 5 Seal Ring Kit | KD-40015-4   | 066433      |

\* Repair kits contain cover bolts, cover, spring and seal ring.



Capacity  
Tables



ASD 35S5VV

## ASD SERIES PREMIUM HERMETIC SUCTION LINE FILTER DRIERS

*The ASD is a premium beaded suction line filter drier optimized for high moisture, acid, and solid contaminant removal.*

### FEATURES

- Outstanding filtration for ultimate compressor protection
- Dual access valves for easy pressure readings
- Solid copper connections
- Corrosion resistant epoxy powder paint finish

### SPECIFICATIONS

Filtration ..... 40 microns  
 Maximum Working Pressure..... 500 psig (35 bar)  
 UL/CUL File Number ..... SA3124  
 Canadian CRN ..... 0E21971.513467890YTD

### MODEL NUMBER NOMENCLATURE - EXAMPLE: ASD 35S5VV

| SERIES                                      | UNIT SIZE    | CONNECTION STYLE   | CONNECTION SIZE    | ACCESS                  | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|---------------------------------------------|--------------|--------------------|--------------------|-------------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| ASD                                         | 35           | S                  | 5                  | VV                      |                       |                                             |                                              |
| Premium Hermetic Suction Line Filter Driers | In Cubic In. | S = ODF<br>F = SAE | In 1/8" Increments | VV = Dual Access Valves | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### ASD SERIES SUCTION LINE FILTER DRIER

| UNIT SIZE (CUBIC INCHES) | INLET X OUTLET CONNECTION SIZE | ACCESS | MODEL NUMBER | ITEM NUMBER |
|--------------------------|--------------------------------|--------|--------------|-------------|
| 28                       | 3/8" X 3/8" ODF                | Dual   | ASD 28S3VV   | 049168      |
| 28                       | 3/8" X 3/8" SAE                | None   | ASD 28F3     | 056352      |
| 28                       | 1/2" X 1/2" ODF                | Dual   | ASD 28S4VV   | 049169      |
| 35                       | 5/8" X 5/8" SAE                | Dual   | ASD 35F5VV   | 049170      |
| 35                       | 5/8" X 5/8" ODF                | Dual   | ASD 35S5VV   | 049171      |
| 45                       | 3/4" X 3/4" ODF                | Dual   | ASD 45S6VV   | 049172      |
| 45                       | 7/8" X 7/8" ODF                | Dual   | ASD 45S7VV   | 049173      |
| 50                       | 1-1/8" X 1-1/8" ODF            | Dual   | ASD 50S9VV   | 049174      |
| 75                       | 1-3/8" X 1-3/8" ODF            | Dual   | ASD 75S11VV  | 049175      |
| 75                       | 1-5/8" X 1-5/8" ODF            | Dual   | ASD 75S13VV  | 049176      |



Capacity  
Tables



SFD 13S5VV

## SFD SERIES HERMETIC SUCTION LINE FILTER DRIERS

*The SFD is a standard suction line beaded filter drier for use air conditioning, heat pump and refrigeration applications.*

### FEATURES

- Solid copper connections
- Dual access valves for easy pressure readings
- Corrosion resistant epoxy powder paint finish

### SPECIFICATIONS

Filtration ..... 40 microns  
 Maximum Working Pressure..... 500 psig (35 bar)  
 UL/CUL File Number ..... SA3124  
 Canadian CRN ..... 0E21971.513467890YTN

### MODEL NUMBER NOMENCLATURE - Example: SFD 13S5VV

| SERIES                  | UNIT SIZE    | CONNECTION STYLE   | CONNECTION SIZE    | ACCESS TYPE             | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|-------------------------|--------------|--------------------|--------------------|-------------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| SFD                     | 13           | S                  | 5                  | VV                      |                       |                                             |                                              |
| Steel Take-Apart Series | In Cubic In. | S = ODF<br>F = SAE | In 1/8" Increments | VV = Dual Access Valves | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### SFD SERIES HERMETIC SUCTION LINE FILTER DRIERS

| UNIT SIZE (CUBIC INCHES) | INLET X OUTLET CONNECTION SIZE | ACCESS TYPE | MODEL NUMBER | ITEM NUMBER |
|--------------------------|--------------------------------|-------------|--------------|-------------|
| 8                        | 1/2" X 1/2" ODF                | Dual        | SFD 08S4VV   | 064045      |
| 8                        | 5/8" X 5/8" ODF                | Dual        | SFD 08S5VV   | 064046      |
| 8                        | 3/4" X 3/4" ODF                | Dual        | SFD 08S6VV   | 064047      |
| 13                       | 3/8" X 3/8" ODF                | Dual        | SFD 13S3VV   | 060245      |
| 13                       | 3/8" X 3/8" SAE                | Dual        | SFD 13F3VV   | 060244      |
| 13                       | 1/2" X 1/2" ODF                | Dual        | SFD 13S4VV   | 060247      |
| 13                       | 1/2" X 1/2" SAE                | Dual        | SFD 13F4VV   | 060246      |
| 13                       | 5/8" X 5/8" ODF                | Dual        | SFD 13S5VV   | 060249      |
| 13                       | 5/8" X 5/8" SAE                | Dual        | SFD 13F5VV   | 060248      |
| 13                       | 3/4" X 3/4" ODF                | Dual        | SFD 13S6VV   | 060250      |
| 13                       | 7/8" X 7/8" ODF                | Dual        | SFD 13S7VV   | 060262      |
| 27                       | 3/4" X 3/4" ODF                | Dual        | SFD 27S6VV   | 056505      |
| 27                       | 7/8" X 7/8" ODF                | Dual        | SFD 27S7VV   | 060251      |
| 27                       | 1-1/8" X 1-1/8" ODF            | Dual        | SFD 27S9VV   | 060252      |
| 54                       | 1-3/8" X 1-3/8" ODF            | Dual        | SFD 54S11VV  | 060253      |
| 54                       | 1-5/8" X 1-5/8" ODF            | Dual        | SFD 54S13VV  | 060254      |



Capacity  
Tables



CSFD 14S7VV

CSFD SERIES HERMETIC COMPACT  
SUCTION LINE FILTER DRIERS

The CSFD is a hermetic suction line filter drier used for moisture, acid and solid contaminant removal.

FEATURES

- Dual access valves for easy pressure readings
- High acid removal capacity
- Solid copper fittings for easy brazing
- Corrosion resistant epoxy powder paint finish

SPECIFICATIONS

Filtration ..... 40 microns  
Maximum Working Pressure..... 500 psig (35 bar)  
UL/CUL File Number ..... SA3124  
Canadian CRN ..... 0E21971.513467890YTN

MODEL NUMBER NOMENCLATURE - Example: CSFD 14S4VV

| SERIES                              | UNIT SIZE    | CONNECTION STYLE | CONNECTION SIZE    | ACCESS                 | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|-------------------------------------|--------------|------------------|--------------------|------------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| CSFD                                | 14           | S                | 4                  | VV                     |                       |                                             |                                              |
| Hermetic Suction Line Filter Driers | In Cubic In. | S = ODF          | In 1/8" Increments | VV = Dual Access Valve | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

CSFD COMPACT SERIES SUCTION LINE FILTER DRIERS

| UNIT SIZE (CUBIC INCHES) | INLET X OUTLET CONNECTION SIZE | ACCESS TYPE | MODEL NUMBER | ITEM NUMBER |
|--------------------------|--------------------------------|-------------|--------------|-------------|
| 14                       | 1/2" X 1/2" ODF                | Dual        | CSFD 14S4VV  | 062231      |
| 14                       | 5/8" X 5/8" ODF                | Dual        | CSFD 14S5VV  | 062232      |
| 14                       | 3/4" X 3/4" ODF                | Dual        | CSFD 14S6VV  | 062233      |
| 14                       | 7/8" X 7/8" ODF                | Dual        | CSFD 14S7VV  | 062234      |
| 14                       | 1-1/8" X 1-1/8" ODF            | Dual        | CSFD 14S9VV  | 062235      |



Capacity  
Tables



ASK 306SVVHH

## ASK SERIES HERMETIC SUCTION LINE FILTER DRIERS

*The ASK is a refrigerant filter drier that utilizes a solid core with an activated carbon blend to maximize acid, moisture and wax removal.*

### FEATURES

- Dual access valves for easy pressure readings
- Corrosion resistant epoxy powder paint finish
- Activated carbon blend for soluble contaminant and wax
- Solid copper connections

### SPECIFICATIONS

Filtration ..... 40 microns  
 Maximum Working Pressure..... 500 psig (35 bar)  
 UL/CUL File Number ..... SA3124  
 Canadian CRN .....0E21971.513467890YTN

### MODEL NUMBER NOMENCLATURE - Example: ASK 306SVVHH

| SERIES                              | UNIT SIZE    | CONNECTION SIZE    | CONNECTION STYLE | ACCESS                  | DESICCANT TYPE        | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|-------------------------------------|--------------|--------------------|------------------|-------------------------|-----------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| ASK                                 | 30           | 6                  | S                | VV                      | HH                    |                       |                                             |                                              |
| Hermetic Suction Line Filter Driers | In Cubic In. | In 1/8" Increments | S = ODF          | VV = Dual Access Valves | HH = Activated Carbon | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### ASK SERIES SUCTION LINE FILTER DRIER

| UNIT SIZE<br>(CUBIC INCHES) | INLET X OUTLET CONNECTION SIZE | ACCESS | MODEL NUMBER | ITEM NUMBER |
|-----------------------------|--------------------------------|--------|--------------|-------------|
| 16                          | 5/8" X 5/8" ODF                | Dual   | ASK 165SVVHH | 056508      |
| 16                          | 3/4" X 3/4" ODF                | Dual   | ASK 166SVVHH | 056509      |
| 16                          | 7/8" X 7/8" ODF                | Dual   | ASK 167SVVHH | 056510      |
| 30                          | 3/4" X 3/4" ODF                | Dual   | ASK 306SVVHH | 056511      |
| 30                          | 7/8" X 7/8" ODF                | Dual   | ASK 307SVVHH | 056512      |
| 30                          | 1-1/8" X 1-1/8" ODF            | Dual   | ASK 309SVVHH | 056513      |



Capacity  
Tables





ASF 45S6VV

## ASF SERIES HERMETIC SUCTION LINE FILTERS

*The ASF is a refrigerant filter drier designed to protect the compressor from dirt and all solid contaminants.*

### FEATURES

- Dual access valves for easy pressure readings
- Solid copper connections
- Corrosion resistant epoxy powder paint finish

### SPECIFICATIONS

Filtration ..... 40 microns  
 Maximum Working Pressure..... 500 psig (35 bar)  
 UL/CUL File Number ..... SA3124  
 Canadian CRN ..... 0E21971.513467890YTN

### MODEL NUMBER NOMENCLATURE - Example: ASF 35S5VV

| SERIES                              | UNIT SIZE    | CONNECTION STYLE   | CONNECTION SIZE    | ACCESS                  | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|-------------------------------------|--------------|--------------------|--------------------|-------------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| ASF                                 | 35           | S                  | 5                  | VV                      |                       |                                             |                                              |
| Hermetic Suction Line Filter Driers | In Cubic In. | S = ODF<br>F = SAE | In 1/8" Increments | VV = Dual Access Valves | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### ASF SERIES SUCTION LINE FILTERS

| UNIT SIZE<br>(CUBIC INCHES) | INLET X OUTLET CONNECTION SIZE | ACCESS TYPE | MODEL NUMBER | ITEM NUMBER |
|-----------------------------|--------------------------------|-------------|--------------|-------------|
| 11                          | 1/2" X 1/2" ODF                | None        | ASF 11S4     | 062961      |
| 11                          | 5/8" X 5/8" ODF                | None        | ASF 11S5     | 062962      |
| 28                          | 3/8" X 3/8" ODF                | Dual        | ASF 28S3VV   | 049177      |
| 28                          | 1/2" X 1/2" ODF                | Dual        | ASF 28S4VV   | 049178      |
| 28                          | 7/8" X 7/8" ODF                | Dual        | ASF 28S7VV   | 062963      |
| 28                          | 1-1/8" X 1-1/8" ODF            | Dual        | ASF 28S9VV   | 062964      |
| 35                          | 5/8" X 5/8" ODF                | Dual        | ASF 35S5VV   | 049180      |
| 35                          | 5/8" X 5/8" SAE                | Dual        | ASF 35F5VV   | 049179      |
| 45                          | 3/8" X 3/8" SAE                | Dual        | ASF 45F3VV   | 059999      |
| 45                          | 3/4" X 3/4" ODF                | Dual        | ASF 45S6VV   | 049181      |
| 45                          | 7/8" X 7/8" ODF                | Dual        | ASF 45S7VV   | 049182      |
| 50                          | 1-1/8" X 1-1/8" ODF            | Dual        | ASF 50S9VV   | 049183      |
| 64                          | 2-1/8" X 2-1/8" ODF            | Single      | ASF 64S17V   | 063113      |
| 64                          | 2-5/8" X 2-5/8" ODF            | Single      | ASF 64S21V   | 063115      |
| 75                          | 1-3/8" X 1-3/8" ODF            | Dual        | ASF 75S11VV  | 049184      |
| 75                          | 1-5/8" X 1-5/8" ODF            | Dual        | ASF 75S13VV  | 049185      |



Capacity  
Tables

# HERMETIC SUCTION LINE FILTER DRIER FLOW CAPACITIES

| MODEL NUMBER  | CONNECTIONS (IN) | FLOW CAPACITY IN TONS REFRIGERANT <sub>1</sub> (FOR KW, MULTIPLY TONS BY 3.5) <sub>2</sub> |      |      |     |                          |      |      |     |       |       |       |       |
|---------------|------------------|--------------------------------------------------------------------------------------------|------|------|-----|--------------------------|------|------|-----|-------|-------|-------|-------|
|               |                  | R-12                                                                                       |      |      |     | R-134a / R-450A / R-513A |      |      |     | R-744 |       |       |       |
|               |                  | EVAPORATOR TEMPERATURE (°F)                                                                |      |      |     |                          |      |      |     |       |       |       |       |
|               |                  | 40                                                                                         | 20   | 0    | -20 | 40                       | 20   | 0    | -20 | 20    | 0     | -20   | -40   |
|               |                  | PRESSURE DROP (PSI)                                                                        |      |      |     |                          |      |      |     |       |       |       |       |
|               |                  | 2.0                                                                                        | 1.5  | 1.0  | 0.5 | 2.0                      | 1.5  | 1.0  | 0.5 | 6.0   | 5.0   | 4.0   | 3.0   |
| ASD 28S3VV    | 3/8 ODF          | 1.1                                                                                        | 0.6  | 0.5  | 0.5 | 1.1                      | 0.6  | 0.5  | 0.4 | 7.2   | 6.3   | 6.8   | 8.5   |
| ASD 28S4VV    | 1/2 ODF          | 1.8                                                                                        | 1.2  | 0.8  | 0.7 | 1.9                      | 1.2  | 0.8  | 0.6 | 11.8  | 10.2  | 10.6  | 14.2  |
| ASD 35F5VV    | 5/8 SAE          | 2.1                                                                                        | 1.4  | 1.1  | 0.9 | 2.2                      | 1.4  | 1.0  | 0.8 | 13.7  | 12.2  | 12.9  | 17.0  |
| ASD 35S5VV    | 5/8 ODF          | 2.8                                                                                        | 1.9  | 1.4  | 1.1 | 2.9                      | 1.9  | 1.3  | 1.0 | 18.1  | 15.6  | 16.7  | 22.7  |
| ASD 45S6VV    | 3/4 ODF          | 3.8                                                                                        | 2.5  | 1.8  | 1.2 | 3.9                      | 2.5  | 1.7  | 1.1 | 21.8  | 22.4  | 24.2  | 28.4  |
| ASD 45S7VV    | 7/8 ODF          | 5.0                                                                                        | 3.6  | 2.3  | 1.5 | 5.1                      | 3.5  | 2.2  | 1.3 | 28.7  | 29.2  | 31.1  | 36.9  |
| ASD 50S9VV    | 1-1/8 ODF        | 7.1                                                                                        | 5.0  | 3.2  | 1.8 | 7.3                      | 4.9  | 3.0  | 1.6 | 41.1  | 41.3  | 43.2  | 49.6  |
| ASD 75S11VV   | 1-3/8 ODF        | 8.6                                                                                        | 5.9  | 3.7  | 2.0 | 8.8                      | 5.8  | 3.5  | 1.8 | 50.5  | 49.6  | 50.8  | 56.7  |
| ASD 75S13VV   | 1-5/8 ODF        | 9.0                                                                                        | 6.2  | 3.9  | 2.1 | 9.3                      | 6.1  | 3.7  | 1.9 | 53.9  | 52.0  | 53.0  | 59.6  |
| ASF 28S3VV    | 3/8 ODF          | 1.2                                                                                        | 0.8  | 0.5  | 0.5 | 1.2                      | 0.8  | 0.5  | 0.4 | 7.5   | 6.3   | 6.8   | 9.9   |
| ASF 28S4VV    | 1/2 ODF          | 1.9                                                                                        | 1.3  | 0.9  | 0.8 | 2.0                      | 1.3  | 0.9  | 0.7 | 12.8  | 11.2  | 12.1  | 17.0  |
| ASF 35F5VV    | 5/8 SAE          | 2.2                                                                                        | 1.5  | 1.1  | 0.9 | 2.3                      | 1.5  | 1.0  | 0.8 | 14.6  | 12.6  | 13.6  | 18.4  |
| ASF 35S5VV    | 5/8 ODF          | 3.2                                                                                        | 2.2  | 1.6  | 1.4 | 3.3                      | 2.2  | 1.5  | 1.2 | 20.6  | 18.0  | 19.7  | 26.9  |
| ASF 45S6VV    | 3/4 ODF          | 4.7                                                                                        | 3.2  | 2.3  | 1.8 | 4.8                      | 3.1  | 2.2  | 1.6 | 30.5  | 26.7  | 28.0  | 38.3  |
| ASF 45S7VV    | 7/8 ODF          | 6.5                                                                                        | 4.8  | 3.3  | 1.9 | 6.7                      | 4.7  | 3.1  | 1.7 | 37.4  | 38.9  | 42.4  | 51.0  |
| ASF 50S9VV    | 1-1/8 ODF        | 9.2                                                                                        | 6.8  | 4.5  | 2.6 | 9.5                      | 6.7  | 4.3  | 2.3 | 59.2  | 58.3  | 62.1  | 69.5  |
| ASF 64S17VV   | 2-1/8 ODF        | 25.3                                                                                       | 18.3 | 12.6 | 7.2 | 26.0                     | 18.0 | 12.0 | 6.4 | 127.8 | 131.2 | 144.0 | 170.2 |
| ASF 75S11VV   | 1-3/8 ODF        | 11.7                                                                                       | 8.8  | 5.9  | 3.4 | 12.0                     | 8.7  | 5.6  | 3.0 | 49.9  | 72.9  | 83.4  | 95.0  |
| ASF 75S13VV   | 1-5/8 ODF        | 13.6                                                                                       | 9.7  | 6.6  | 3.8 | 14.0                     | 9.5  | 6.3  | 3.4 | 74.8  | 72.9  | 75.8  | 92.2  |
| ASK 165S-VVHH | 5/8 ODF          | 1.9                                                                                        | 1.4  | 0.8  | 0.6 | 2.0                      | 1.4  | 0.8  | 0.5 | 10.6  | 10.2  | 10.6  | 12.8  |
| ASK 166SVVHH  | 3/4 ODF          | 2.4                                                                                        | 1.7  | 1.1  | 0.7 | 2.5                      | 1.7  | 1.0  | 0.6 | 13.1  | 12.6  | 12.9  | 14.2  |
| ASK 167SVVHH  | 7/8 ODF          | 2.6                                                                                        | 1.8  | 1.2  | 0.7 | 2.7                      | 1.8  | 1.1  | 0.6 | 14.3  | 13.6  | 14.4  | 15.6  |
| ASK 306SVVHH  | 3/4 ODF          | 3.3                                                                                        | 2.3  | 1.5  | 0.9 | 3.4                      | 2.3  | 1.4  | 0.8 | 17.1  | 17.0  | 17.4  | 19.9  |
| ASK 307SVVHH  | 7/8 ODF          | 3.5                                                                                        | 2.5  | 1.6  | 0.9 | 3.6                      | 2.5  | 1.5  | 0.8 | 19.0  | 18.5  | 18.9  | 21.3  |
| ASK 309SVVHH  | 1-1/8 ODF        | 3.8                                                                                        | 2.6  | 1.7  | 0.9 | 3.9                      | 2.6  | 1.6  | 0.8 | 20.3  | 19.4  | 19.7  | 22.7  |
| CSFD 14S4VV   | 1/2 ODF          | 1.3                                                                                        | 0.9  | 0.5  | 0.3 | 1.3                      | 0.9  | 0.5  | 0.3 | 6.2   | 6.3   | 6.8   | 8.5   |
| CSFD 14S5VV   | 5/8 ODF          | 2.2                                                                                        | 1.5  | 0.9  | 0.6 | 2.3                      | 1.5  | 0.9  | 0.5 | 11.2  | 11.7  | 12.1  | 14.2  |
| CSFD 14S6VV   | 3/4 ODF          | 3.0                                                                                        | 2.1  | 13.7 | 0.8 | 3.1                      | 2.1  | 13.0 | 0.7 | 15.3  | 15.6  | 16.7  | 19.9  |
| CSFD 14S7VV   | 7/8 ODF          | 3.2                                                                                        | 2.2  | 1.5  | 0.8 | 3.3                      | 2.2  | 1.4  | 0.7 | 16.2  | 16.5  | 17.4  | 21.3  |
| CSFD 14S9VV   | 1-1/8 ODF        | 4.4                                                                                        | 3.1  | 1.9  | 1.1 | 4.5                      | 3.0  | 1.8  | 1.0 | 21.8  | 22.4  | 23.5  | 28.4  |
| SFD 13F3VV    | 3/8 SAE          | 0.7                                                                                        | 0.4  | 0.2  | 0.1 | 0.7                      | 0.4  | 0.2  | 0.1 | 4.4   | 3.9   | 3.0   | 2.8   |
| SFD 13S3VV    | 3/8 ODF          | 1.3                                                                                        | 0.8  | 0.5  | 0.2 | 1.3                      | 0.8  | 0.5  | 0.2 | 6.9   | 6.3   | 6.1   | 7.1   |
| SFD 13F4VV    | 1/2 SAE          | 1.5                                                                                        | 1.0  | 0.6  | 0.3 | 1.5                      | 1.0  | 0.6  | 0.3 | 7.5   | 7.8   | 8.3   | 9.9   |
| SFD 13S4VV    | 1/2 ODF          | 2.2                                                                                        | 1.5  | 1.1  | 0.6 | 2.3                      | 1.5  | 1.0  | 0.5 | 10.9  | 11.2  | 12.1  | 14.2  |
| SFD 13F5VV    | 5/8 SAE          | 2.4                                                                                        | 1.7  | 1.2  | 0.7 | 2.5                      | 1.7  | 1.1  | 0.6 | 11.5  | 11.7  | 12.1  | 14.2  |
| SFD 13S5VV    | 5/8 ODF          | 3.0                                                                                        | 2.1  | 1.4  | 0.8 | 3.1                      | 2.1  | 1.3  | 0.7 | 15.3  | 15.6  | 16.7  | 19.9  |
| SFD 13S6VV    | 3/4 ODF          | 4.0                                                                                        | 2.7  | 1.8  | 1.0 | 4.1                      | 2.7  | 1.7  | 0.9 | 19.9  | 20.4  | 21.2  | 25.5  |
| SFD 13S7VV    | 7/8 ODF          | 4.3                                                                                        | 3.1  | 2.0  | 1.1 | 4.4                      | 3.0  | 1.9  | 1.0 | 22.4  | 22.4  | 22.7  | 26.9  |
| SFD 27S6VV    | 3/4 ODF          | 4.0                                                                                        | 2.7  | 1.8  | 1.0 | 4.1                      | 2.7  | 1.7  | 0.9 | 19.9  | 20.4  | 21.2  | 25.5  |
| SFD 27S7VV    | 7/8 ODF          | 4.6                                                                                        | 3.2  | 2.0  | 1.1 | 4.7                      | 3.1  | 1.9  | 1.0 | 23.4  | 23.3  | 24.2  | 28.4  |
| SFD 27S9VV    | 1-1/8 ODF        | 5.1                                                                                        | 3.5  | 2.1  | 1.1 | 5.2                      | 3.4  | 2.0  | 1.0 | 26.5  | 26.2  | 26.5  | 29.8  |
| SFD 54S11VV   | 1-3/8 ODF        | 4.4                                                                                        | 2.9  | 1.8  | 1.0 | 4.5                      | 2.9  | 1.7  | 0.9 | 22.8  | 22.4  | 22.7  | 25.5  |
| SFD 54S13VV   | 1-5/8 ODF        | 4.5                                                                                        | 3.1  | 1.9  | 1.0 | 4.6                      | 3.0  | 1.8  | 0.9 | 23.1  | 22.8  | 24.2  | 28.4  |

<sup>1</sup> All ratings in accordance with ARI Standard 730-04.

<sup>2</sup> Example: 1.0 tons x 3.5 = 3.5 kW

# HERMETIC SUCTION LINE FILTER DRIER FLOW CAPACITIES

| MODEL NUMBER  | CONNECTIONS (IN) | FLOW CAPACITY IN TONS REFRIGERANT <sub>1</sub> (FOR KW, MULTIPLY TONS BY 3.5) <sub>2</sub> |      |      |      |     |        |      |      |      |     |        |      |      |      |     |
|---------------|------------------|--------------------------------------------------------------------------------------------|------|------|------|-----|--------|------|------|------|-----|--------|------|------|------|-----|
|               |                  | R-22 / R-448A / R-449A                                                                     |      |      |      |     | R-407C |      |      |      |     | R-410A |      |      |      |     |
|               |                  | EVAPORATOR TEMPERATURE (°F)                                                                |      |      |      |     |        |      |      |      |     |        |      |      |      |     |
|               |                  | 40                                                                                         | 20   | 0    | -20  | -40 | 40     | 20   | 0    | -20  | -40 | 40     | 20   | 0    | -20  | -40 |
|               |                  | PRESSURE DROP (PSI)                                                                        |      |      |      |     |        |      |      |      |     |        |      |      |      |     |
|               |                  | 3.0                                                                                        | 2.0  | 1.5  | 1.0  | 0.5 | 3.0    | 2.0  | 1.5  | 1.0  | 0.5 | 3.0    | 2.0  | 1.5  | 1.0  | 0.5 |
| ASD 28S3VV    | 3/8 ODF          | 2.3                                                                                        | 1.3  | 0.9  | 0.6  | 0.5 | 2.1    | 1.2  | 0.8  | 0.5  | 0.4 | 2.8    | 1.6  | 1.1  | 0.7  | 0.6 |
| ASD 28S4VV    | 1/2 ODF          | 3.8                                                                                        | 2.1  | 1.4  | 1.0  | 0.8 | 3.5    | 1.9  | 1.2  | 0.9  | 0.7 | 4.6    | 2.6  | 1.7  | 1.2  | 1.0 |
| ASD 35F5VV    | 5/8 SAE          | 4.4                                                                                        | 2.5  | 1.7  | 1.2  | 0.9 | 4.1    | 2.3  | 1.5  | 1.0  | 0.7 | 5.3    | 3.0  | 2.1  | 1.5  | 1.1 |
| ASD 35S5VV    | 5/8 ODF          | 5.8                                                                                        | 3.2  | 2.2  | 1.6  | 1.0 | 5.4    | 2.9  | 1.9  | 1.4  | 0.8 | 7.0    | 3.9  | 2.7  | 2.0  | 1.3 |
| ASD 45S6VV    | 3/4 ODF          | 7.0                                                                                        | 4.6  | 3.2  | 2.0  | 1.1 | 6.5    | 4.2  | 2.8  | 1.7  | 0.9 | 8.5    | 5.6  | 3.9  | 2.5  | 1.4 |
| ASD 45S7VV    | 7/8 ODF          | 9.2                                                                                        | 6.0  | 4.1  | 2.6  | 1.4 | 8.5    | 5.5  | 3.6  | 2.3  | 1.2 | 11.2   | 7.3  | 5.0  | 3.2  | 1.8 |
| ASD 50S9VV    | 1-1/8 ODF        | 13.2                                                                                       | 8.5  | 5.7  | 3.5  | 1.8 | 12.2   | 7.7  | 5.0  | 3.1  | 1.5 | 16.0   | 10.3 | 7.0  | 4.3  | 2.3 |
| ASD 75S11VV   | 1-3/8 ODF        | 16.2                                                                                       | 10.2 | 6.7  | 4.0  | 2.0 | 15.0   | 9.3  | 5.9  | 3.5  | 1.7 | 19.6   | 12.4 | 8.2  | 5.0  | 2.5 |
| ASD 75S13VV   | 1-5/8 ODF        | 17.3                                                                                       | 10.7 | 7.0  | 4.2  | 2.1 | 16.0   | 9.7  | 6.2  | 3.7  | 1.7 | 21.0   | 13.0 | 8.6  | 5.2  | 2.6 |
| ASF 28S3VV    | 3/8 ODF          | 2.4                                                                                        | 1.3  | 0.9  | 0.7  | 0.5 | 2.2    | 1.2  | 0.8  | 0.6  | 0.4 | 2.9    | 1.6  | 1.1  | 0.9  | 0.6 |
| ASF 28S4VV    | 1/2 ODF          | 4.1                                                                                        | 2.3  | 1.6  | 1.2  | 0.9 | 3.8    | 2.1  | 1.4  | 1.0  | 0.7 | 5.0    | 2.8  | 2.0  | 1.5  | 1.1 |
| ASF 35F5VV    | 5/8 SAE          | 4.7                                                                                        | 2.6  | 1.8  | 1.3  | 1.0 | 4.4    | 2.4  | 1.6  | 1.1  | 0.8 | 5.7    | 3.2  | 2.2  | 1.6  | 1.3 |
| ASF 35S5VV    | 5/8 ODF          | 6.6                                                                                        | 3.7  | 2.6  | 1.9  | 1.6 | 6.1    | 3.4  | 2.3  | 1.7  | 1.3 | 8.0    | 4.5  | 3.2  | 2.4  | 2.0 |
| ASF 45S6VV    | 3/4 ODF          | 9.8                                                                                        | 5.5  | 3.7  | 2.7  | 2.2 | 9.1    | 5.0  | 3.3  | 2.4  | 1.8 | 11.9   | 6.7  | 4.5  | 3.4  | 2.8 |
| ASF 45S7VV    | 7/8 ODF          | 12.0                                                                                       | 8.0  | 5.6  | 3.6  | 3.0 | 11.1   | 7.3  | 5.0  | 3.1  | 2.5 | 14.6   | 9.7  | 6.9  | 4.5  | 3.8 |
| ASF 50S9VV    | 1-1/8 ODF        | 19.0                                                                                       | 12.0 | 8.2  | 4.9  | 2.6 | 17.6   | 10.9 | 7.3  | 4.3  | 2.2 | 23.0   | 14.6 | 10.1 | 6.1  | 3.3 |
| ASF 64S17VV   | 2-1/8 ODF        | 41.0                                                                                       | 27.0 | 19.0 | 12.0 | 6.9 | 38.0   | 24.5 | 16.8 | 10.5 | 5.7 | 49.7   | 32.8 | 23.3 | 14.9 | 8.6 |
| ASF 75S11VV   | 1-3/8 ODF        | 16.0                                                                                       | 15.0 | 11.0 | 6.7  | 3.3 | 14.8   | 13.6 | 9.7  | 5.8  | 2.7 | 19.4   | 18.2 | 13.5 | 8.3  | 4.1 |
| ASF 75S13VV   | 1-5/8 ODF        | 24.0                                                                                       | 15.0 | 10.0 | 6.5  | 3.2 | 22.2   | 13.6 | 8.9  | 5.7  | 2.7 | 29.1   | 18.2 | 12.3 | 8.1  | 4.0 |
| ASK 165S-VVHH | 5/8 ODF          | 3.4                                                                                        | 2.1  | 1.4  | 0.9  | 0.4 | 3.2    | 1.9  | 1.2  | 0.8  | 0.3 | 4.1    | 2.6  | 1.7  | 1.1  | 0.5 |
| ASK 166SVVHH  | 3/4 ODF          | 4.2                                                                                        | 2.6  | 1.7  | 1.0  | 0.5 | 3.9    | 2.4  | 1.5  | 0.9  | 0.4 | 5.1    | 3.2  | 2.1  | 1.2  | 0.6 |
| ASK 167SVVHH  | 7/8 ODF          | 4.6                                                                                        | 2.8  | 1.9  | 1.1  | 0.6 | 4.3    | 2.5  | 1.7  | 1.0  | 0.5 | 5.6    | 3.4  | 2.3  | 1.4  | 0.8 |
| ASK 306SVVHH  | 3/4 ODF          | 5.5                                                                                        | 3.5  | 2.3  | 1.4  | 0.8 | 5.1    | 3.2  | 2.0  | 1.2  | 0.7 | 6.7    | 4.3  | 2.8  | 1.7  | 1.0 |
| ASK 307SVVHH  | 7/8 ODF          | 6.1                                                                                        | 3.8  | 2.5  | 1.5  | 0.8 | 5.7    | 3.5  | 2.2  | 1.3  | 0.7 | 7.4    | 4.6  | 3.1  | 1.9  | 1.0 |
| ASK 309SVVHH  | 1-1/8 ODF        | 6.5                                                                                        | 4.0  | 2.6  | 1.6  | 0.8 | 6.0    | 3.6  | 2.3  | 1.4  | 0.7 | 7.9    | 4.9  | 3.2  | 2.0  | 1.0 |
| CSFD 14S4VV   | 1/2 ODF          | 2.0                                                                                        | 1.3  | 0.9  | 0.6  | 0.3 | 1.9    | 1.2  | 0.8  | 0.5  | 0.2 | 2.4    | 1.6  | 1.1  | 0.7  | 0.4 |
| CSFD 14S5VV   | 5/8 ODF          | 3.6                                                                                        | 2.4  | 1.6  | 1.0  | 0.5 | 3.3    | 2.2  | 1.4  | 0.9  | 0.4 | 4.4    | 2.9  | 2.0  | 1.2  | 0.6 |
| CSFD 14S6VV   | 3/4 ODF          | 4.9                                                                                        | 3.2  | 2.2  | 1.4  | 0.7 | 4.5    | 2.9  | 1.9  | 1.2  | 0.6 | 5.9    | 3.9  | 2.7  | 1.7  | 0.9 |
| CSFD 14S7VV   | 7/8 ODF          | 5.2                                                                                        | 3.4  | 2.3  | 1.5  | 0.8 | 4.8    | 3.1  | 2.0  | 1.3  | 0.7 | 6.3    | 4.1  | 2.8  | 1.9  | 1.0 |
| CSFD 14S9VV   | 1-1/8 ODF        | 7.0                                                                                        | 4.6  | 3.1  | 2.0  | 1.0 | 6.5    | 4.2  | 2.7  | 1.7  | 0.8 | 8.5    | 5.6  | 3.8  | 2.5  | 1.3 |
| SFD 13F3VV    | 3/8 SAE          | 1.4                                                                                        | 0.8  | 0.4  | 0.2  | 0.1 | 1.3    | 0.7  | 0.4  | 0.2  | 0.1 | 1.7    | 1.0  | 0.5  | 0.2  | 0.1 |
| SFD 13S3VV    | 3/8 ODF          | 2.2                                                                                        | 1.3  | 0.8  | 0.5  | 0.2 | 2.0    | 1.2  | 0.7  | 0.4  | 0.2 | 2.7    | 1.6  | 1.0  | 0.6  | 0.3 |
| SFD 13F4VV    | 1/2 SAE          | 2.4                                                                                        | 1.6  | 1.1  | 0.7  | 0.4 | 2.2    | 1.5  | 1.0  | 0.6  | 0.3 | 2.9    | 1.9  | 1.3  | 0.9  | 0.5 |
| SFD 13S4VV    | 1/2 ODF          | 3.5                                                                                        | 2.3  | 1.6  | 1.0  | 0.6 | 3.2    | 2.1  | 1.4  | 0.9  | 0.5 | 4.2    | 2.8  | 2.0  | 1.2  | 0.8 |
| SFD 13F5VV    | 5/8 SAE          | 3.7                                                                                        | 2.4  | 1.6  | 1.0  | 0.6 | 3.4    | 2.2  | 1.4  | 0.9  | 0.5 | 4.5    | 2.9  | 2.0  | 1.2  | 0.8 |
| SFD 13S5VV    | 5/8 ODF          | 4.9                                                                                        | 3.2  | 2.2  | 1.4  | 0.8 | 4.5    | 2.9  | 1.9  | 1.2  | 0.7 | 5.9    | 3.9  | 2.7  | 1.7  | 1.0 |
| SFD 13S6VV    | 3/4 ODF          | 6.4                                                                                        | 4.2  | 2.8  | 1.8  | 1.0 | 5.9    | 3.8  | 2.5  | 1.6  | 0.8 | 7.8    | 5.1  | 3.4  | 2.2  | 1.3 |
| SFD 13S7VV    | 7/8 ODF          | 7.2                                                                                        | 4.6  | 3.0  | 1.9  | 1.0 | 6.7    | 4.2  | 2.7  | 1.7  | 0.8 | 8.7    | 5.6  | 3.7  | 2.4  | 1.3 |
| SFD 27S6VV    | 3/4 ODF          | 6.4                                                                                        | 4.2  | 2.8  | 1.8  | 1.0 | 5.9    | 3.8  | 2.5  | 1.6  | 0.8 | 7.8    | 5.1  | 3.4  | 2.2  | 1.3 |
| SFD 27S7VV    | 7/8 ODF          | 7.5                                                                                        | 4.8  | 3.2  | 2.0  | 1.1 | 7.0    | 4.4  | 2.8  | 1.7  | 0.9 | 9.1    | 5.8  | 3.9  | 2.5  | 1.4 |
| SFD 27S9VV    | 1-1/8 ODF        | 8.5                                                                                        | 5.4  | 3.5  | 2.1  | 1.1 | 7.9    | 4.9  | 3.1  | 1.8  | 0.9 | 10.3   | 6.6  | 4.3  | 2.6  | 1.4 |
| SFD 54S11VV   | 1-3/8 ODF        | 7.3                                                                                        | 4.6  | 3.0  | 1.8  | 1.0 | 6.8    | 4.2  | 2.7  | 1.6  | 0.8 | 8.9    | 5.6  | 3.7  | 2.2  | 1.3 |
| SFD 54S13VV   | 1-5/8 ODF        | 7.4                                                                                        | 4.7  | 3.2  | 2.0  | 1.0 | 6.9    | 4.3  | 2.8  | 1.7  | 0.8 | 9.0    | 5.7  | 3.9  | 2.5  | 1.3 |

<sup>1</sup> All ratings in accordance with ARI Standard 730-04.

<sup>2</sup> Example: 1.0 tons x 3.5 = 3.5 kW

# HERMETIC SUCTION LINE FILTER DRIER FLOW CAPACITIES

| MODEL NUMBER  | CONNECTIONS (IN) | FLOW CAPACITY IN TONS REFRIGERANT <sub>1</sub> (FOR KW, MULTIPLY TONS BY 3.5) <sub>2</sub> |      |      |     |                |      |      |     |     |
|---------------|------------------|--------------------------------------------------------------------------------------------|------|------|-----|----------------|------|------|-----|-----|
|               |                  | R-502                                                                                      |      |      |     | R-404A / R-507 |      |      |     |     |
|               |                  | EVAPORATOR TEMPERATURE (°F)                                                                |      |      |     |                |      |      |     |     |
|               |                  | 40                                                                                         | 20   | 0    | -20 | 40             | 20   | 0    | -20 | -40 |
|               |                  | PRESSURE DROP (PSI)                                                                        |      |      |     |                |      |      |     |     |
|               |                  | 3.0                                                                                        | 2.0  | 1.5  | 1.0 | 3.0            | 2.0  | 1.5  | 1.0 | 0.5 |
| ASD 28S3VV    | 3/8 ODF          | 2.2                                                                                        | 1.1  | 0.7  | 0.5 | 2.1            | 1.1  | 0.7  | 0.5 | 0.3 |
| ASD 28S4VV    | 1/2 ODF          | 3.7                                                                                        | 1.8  | 1.1  | 0.7 | 3.6            | 1.8  | 1.1  | 0.7 | 0.5 |
| ASD 35F5VV    | 5/8 SAE          | 4.2                                                                                        | 2.1  | 1.3  | 0.9 | 4.1            | 2.1  | 1.3  | 0.9 | 0.6 |
| ASD 35S5VV    | 5/8 ODF          | 5.6                                                                                        | 2.8  | 1.7  | 1.1 | 5.4            | 2.8  | 1.7  | 1.1 | 0.8 |
| ASD 45S6VV    | 3/4 ODF          | 6.6                                                                                        | 3.7  | 2.5  | 1.5 | 6.4            | 3.7  | 2.5  | 1.6 | 1.0 |
| ASD 45S7VV    | 7/8 ODF          | 7.7                                                                                        | 4.8  | 3.3  | 1.9 | 7.5            | 4.8  | 3.3  | 2.0 | 1.1 |
| ASD 50S9VV    | 1-1/8 ODF        | 11.0                                                                                       | 6.9  | 4.6  | 2.7 | 11.0           | 6.9  | 4.6  | 2.8 | 1.4 |
| ASD 75S11VV   | 1-3/8 ODF        | 14.0                                                                                       | 8.4  | 5.4  | 3.1 | 14.0           | 8.4  | 5.4  | 3.2 | 1.6 |
| ASD 75S13VV   | 1-5/8 ODF        | 15.0                                                                                       | 8.9  | 5.7  | 3.3 | 15.0           | 8.9  | 5.7  | 3.4 | 1.7 |
| ASF 28S3VV    | 3/8 ODF          | 2.3                                                                                        | 1.1  | 0.7  | 0.5 | 2.2            | 1.1  | 0.7  | 0.5 | 0.3 |
| ASF 28S4VV    | 1/2 ODF          | 3.9                                                                                        | 2.0  | 1.2  | 0.8 | 3.8            | 2.0  | 1.2  | 0.8 | 0.6 |
| ASF 35F5VV    | 5/8 SAE          | 4.5                                                                                        | 2.3  | 1.4  | 0.9 | 4.4            | 2.3  | 1.4  | 0.9 | 0.7 |
| ASF 35S5VV    | 5/8 ODF          | 6.3                                                                                        | 3.2  | 2.0  | 1.4 | 6.1            | 3.2  | 2.0  | 1.4 | 1.0 |
| ASF 45S6VV    | 3/4 ODF          | 9.4                                                                                        | 4.7  | 2.9  | 1.8 | 9.1            | 4.7  | 2.9  | 1.9 | 1.4 |
| ASF 45S7VV    | 7/8 ODF          | 10.0                                                                                       | 6.3  | 4.5  | 2.7 | 9.8            | 6.3  | 4.5  | 2.8 | 1.5 |
| ASF 50S9VV    | 1-1/8 ODF        | 16.0                                                                                       | 10.0 | 6.6  | 3.9 | 16.0           | 10.0 | 6.7  | 4.0 | 2.0 |
| ASF 64S17VV   | 2-1/8 ODF        | 36.0                                                                                       | 23.0 | 15.0 | 9.5 | 35.0           | 23.0 | 15.0 | 9.8 | 5.2 |
| ASF 75S11VV   | 1-3/8 ODF        | 21.0                                                                                       | 13.0 | 8.2  | 4.9 | 20.0           | 13.0 | 8.3  | 5.1 | 2.6 |
| ASF 75S13VV   | 1-5/8 ODF        | 22.0                                                                                       | 13.0 | 8.3  | 5.0 | 21.0           | 13.0 | 8.4  | 5.2 | 2.7 |
| ASK 165S-VVHH | 5/8 ODF          | 3.3                                                                                        | 1.9  | 1.2  | 0.8 | 3.2            | 1.9  | 1.2  | 0.8 | 0.3 |
| ASK 166SVVHH  | 3/4 ODF          | 4.0                                                                                        | 2.4  | 1.6  | 0.9 | 3.9            | 2.4  | 1.6  | 0.9 | 0.5 |
| ASK 167SVVHH  | 7/8 ODF          | 4.4                                                                                        | 2.6  | 1.7  | 1.0 | 4.3            | 2.6  | 1.7  | 1.0 | 0.6 |
| ASK 306SVVHH  | 3/4 ODF          | 5.2                                                                                        | 3.2  | 2.2  | 1.2 | 5.0            | 3.2  | 2.2  | 1.2 | 0.7 |
| ASK 307SVVHH  | 7/8 ODF          | 5.8                                                                                        | 3.5  | 2.3  | 1.4 | 5.6            | 3.5  | 2.3  | 1.4 | 0.7 |
| ASK 309SVVHH  | 1-1/8 ODF        | 6.2                                                                                        | 3.7  | 2.4  | 1.4 | 6.0            | 3.7  | 2.4  | 1.5 | 0.7 |
| CSFD 14S4VV   | 1/2 ODF          | 1.3                                                                                        | 0.8  | 0.5  | 0.3 | 1.3            | 0.8  | 0.5  | 0.3 | 0.2 |
| CSFD 14S5VV   | 5/8 ODF          | 2.7                                                                                        | 1.7  | 1.1  | 0.7 | 2.6            | 1.7  | 1.1  | 0.7 | 0.3 |
| CSFD 14S6VV   | 3/4 ODF          | 3.7                                                                                        | 2.3  | 1.5  | 0.9 | 3.6            | 2.3  | 1.5  | 0.9 | 0.5 |
| CSFD 14S7VV   | 7/8 ODF          | 4.0                                                                                        | 2.4  | 1.6  | 1.0 | 3.9            | 2.4  | 1.6  | 1.0 | 0.5 |
| CSFD 14S9VV   | 1-1/8 ODF        | 5.1                                                                                        | 3.1  | 2.0  | 1.3 | 4.9            | 3.1  | 2.0  | 1.3 | 0.7 |
| SFD 13F3VV    | 3/8 SAE          | 1.3                                                                                        | 0.7  | 0.4  | 0.2 | 1.3            | 0.7  | 0.4  | 0.2 | 0.1 |
| SFD 13S3VV    | 3/8 ODF          | 2.0                                                                                        | 1.1  | 0.7  | 0.4 | 1.9            | 1.1  | 0.7  | 0.4 | 0.2 |
| SFD 13F4VV    | 1/2 SAE          | 2.2                                                                                        | 1.3  | 0.9  | 0.5 | 2.1            | 1.3  | 0.9  | 0.5 | 0.3 |
| SFD 13S4VV    | 1/2 ODF          | 3.1                                                                                        | 1.9  | 1.3  | 0.8 | 3.0            | 1.9  | 1.3  | 0.8 | 0.4 |
| SFD 13F5VV    | 5/8 SAE          | 3.3                                                                                        | 2.0  | 1.4  | 0.9 | 3.2            | 2.0  | 1.4  | 0.9 | 0.5 |
| SFD 13S5VV    | 5/8 ODF          | 4.3                                                                                        | 2.7  | 1.8  | 1.1 | 4.2            | 2.7  | 1.8  | 1.1 | 0.6 |
| SFD 13S6VV    | 3/4 ODF          | 5.8                                                                                        | 3.5  | 2.3  | 1.4 | 5.6            | 3.5  | 2.3  | 1.4 | 0.7 |
| SFD 13S7VV    | 7/8 ODF          | 6.5                                                                                        | 3.9  | 2.6  | 1.4 | 6.3            | 3.9  | 2.6  | 1.5 | 0.8 |
| SFD 27S6VV    | 3/4 ODF          | 5.8                                                                                        | 3.5  | 2.3  | 1.4 | 5.6            | 3.5  | 2.3  | 1.4 | 0.7 |
| SFD 27S7VV    | 7/8 ODF          | 6.7                                                                                        | 4.1  | 2.7  | 1.5 | 6.5            | 4.1  | 2.7  | 1.6 | 0.8 |
| SFD 27S9VV    | 1-1/8 ODF        | 7.7                                                                                        | 4.6  | 3.0  | 1.6 | 7.5            | 4.6  | 3.0  | 1.7 | 0.9 |
| SFD 54S11VV   | 1-3/8 ODF        | 6.6                                                                                        | 3.9  | 2.5  | 1.4 | 6.4            | 3.9  | 2.5  | 1.5 | 0.7 |
| SFD 54S13VV   | 1-5/8 ODF        | 6.7                                                                                        | 4.0  | 2.6  | 1.5 | 6.5            | 4.0  | 2.6  | 1.6 | 0.8 |

<sup>1</sup> All ratings in accordance with ARI Standard 730-04.

<sup>2</sup> Example: 1.0 tons x 3.5 = 3.5 kW

# TAKE-APART SUCTION LINE FILTER DRIER FLOW CAPACITIES

| MODEL NUMBER | CONNECTIONS (IN) | FILTER DRIER CARTRIDGE | FLOW CAPACITY IN TONS REFRGERANT, <sup>1</sup> (FOR KW, MULTIPLY TONS BY 3.5) <sub>2</sub> |      |      |      |                          |      |      |      |
|--------------|------------------|------------------------|--------------------------------------------------------------------------------------------|------|------|------|--------------------------|------|------|------|
|              |                  |                        | R-12                                                                                       |      |      |      | R-134a / R-450A / R-513A |      |      |      |
|              |                  |                        | EVAPORATOR TEMPERATURE (°F)                                                                |      |      |      |                          |      |      |      |
|              |                  |                        | 40                                                                                         | 20   | 0    | -20  | 40                       | 20   | 0    | -20  |
|              |                  |                        | PRESSURE DROP (PSI)                                                                        |      |      |      |                          |      |      |      |
|              |                  |                        | 2                                                                                          | 1.5  | 1    | 0.5  | 2                        | 1.5  | 1    | 0.5  |
| ADKS 30013T  | 1-5/8 ODF        | (3) F 100 Filter       | 24.0                                                                                       | 17.0 | 12.0 | 7.0  | 25.0                     | 17.0 | 11.0 | 6.2  |
| ADKS 30017T  | 2-1/8 ODF        | (3) F 100 Filter       | 42.0                                                                                       | 31.0 | 20.0 | 12.0 | 43.0                     | 30.0 | 19.0 | 11.0 |
| ADKS 40017T  | 2-1/8 ODF        | (4) F100 Filter        | 44.0                                                                                       | 32.0 | 21.0 | 12.0 | 45.0                     | 31.0 | 20.0 | 11.0 |
| ADKS 40021T  | 2-5/8 ODF        | (4) F100 Filter        | 66.0                                                                                       | 48.0 | 32.0 | 19.0 | 68.0                     | 47.0 | 30.0 | 17.0 |
| ADKS 30013T  | 1-5/8 ODF        | (3) 100 cu in Core     | 19.0                                                                                       | 14.0 | 9.1  | 5.5  | 20.0                     | 14.0 | 8.7  | 4.9  |
| ADKS 30017T  | 2-1/8 ODF        | (3) 100 cu in Core     | 30.0                                                                                       | 22.0 | 15.0 | 8.7  | 31.0                     | 22.0 | 14.0 | 7.7  |
| ADKS 40017T  | 2-1/8 ODF        | (4) 100 cu in Core     | 33.0                                                                                       | 23.0 | 16.0 | 9.5  | 34.0                     | 23.0 | 15.0 | 8.4  |
| ADKS 40021T  | 2-5/8 ODF        | (4) 100 cu in Core     | 48.0                                                                                       | 35.0 | 23.0 | 14.0 | 49.0                     | 34.0 | 22.0 | 12.0 |
| BTAS 27SV    | 7/8 ODF          | A2 F Filter            | 4.7                                                                                        | 3.4  | 2.2  | 1.2  | 4.8                      | 3.3  | 2.1  | 1.1  |
| BTAS 39SV    | 1-1/8 ODF        | A3 F Filter            | 7.1                                                                                        | 5.1  | 3.4  | 1.9  | 7.3                      | 5.0  | 3.2  | 1.7  |
| BTAS 311SV   | 1-3/8 ODF        | A3 F Filter            | 7.9                                                                                        | 5.6  | 3.7  | 2.1  | 8.1                      | 5.5  | 3.5  | 1.9  |
| BTAS 313SV   | 1-5/8 ODF        | A3 F Filter            | 13.0                                                                                       | 8.9  | 5.9  | 3.4  | 13.0                     | 8.8  | 5.6  | 3.0  |
| BTAS 317SV   | 2-1/8 ODF        | A3 F Filter            | 15.0                                                                                       | 11.0 | 7.2  | 4.2  | 16.0                     | 11.0 | 6.9  | 3.7  |
| BTAS 411SV   | 1-3/8 ODF        | A4 F Filter            | 17.0                                                                                       | 12.0 | 8.0  | 4.5  | 17.0                     | 12.0 | 7.4  | 4.0  |
| BTAS 413SV   | 1-5/8 ODF        | A4 F Filter            | 20.0                                                                                       | 15.0 | 10.0 | 5.5  | 21.0                     | 14.0 | 9.1  | 4.9  |
| BTAS 417SV   | 2-1/8 ODF        | A4 F Filter            | 28.0                                                                                       | 20.0 | 13.0 | 7.5  | 29.0                     | 20.0 | 12.0 | 6.7  |
| BTAS 421SV   | 2-5/8 ODF        | A4 F Filter            | 34.0                                                                                       | 24.0 | 16.0 | 9.1  | 35.0                     | 24.0 | 15.0 | 8.1  |
| BTAS 517SV   | 2-1/8 ODF        | A5 F Filter            | 33.0                                                                                       | 24.0 | 16.0 | 9.1  | 34.0                     | 24.0 | 15.0 | 8.1  |
| BTAS 521SV   | 2-5/8 ODF        | A5 F Filter            | 44.0                                                                                       | 32.0 | 21.0 | 12.0 | 45.0                     | 31.0 | 20.0 | 11.0 |
| BTAS 525SV   | 3-1/8 ODF        | A5 F Filter            | 54.0                                                                                       | 39.0 | 25.0 | 15.0 | 56.0                     | 38.0 | 24.0 | 13.0 |
| BTAS 25SV    | 5/8 ODF          | A2 FD Filter Drier     | 2.4                                                                                        | 1.7  | 1.2  | 0.7  | 2.5                      | 1.7  | 1.1  | 0.6  |
| BTAS 27SV    | 7/8 ODF          | A2 FD Filter Drier     | 4.0                                                                                        | 2.8  | 1.9  | 1.1  | 4.1                      | 2.8  | 1.8  | 1.0  |
| BTAS 39SV    | 1-1/8 ODF        | A3 FD Filter Drier     | 5.2                                                                                        | 3.7  | 2.4  | 1.4  | 5.3                      | 3.6  | 2.3  | 1.2  |
| BTAS 311SV   | 1-3/8 ODF        | A3 FD Filter Drier     | 7.2                                                                                        | 5.2  | 3.4  | 1.9  | 7.4                      | 5.1  | 3.2  | 1.7  |
| BTAS 313SV   | 1-5/8 ODF        | A3 FD Filter Drier     | 10.0                                                                                       | 7.4  | 4.8  | 2.8  | 11.0                     | 7.3  | 4.6  | 2.5  |
| BTAS 317SV   | 2-1/8 ODF        | A3 FD Filter Drier     | 12.0                                                                                       | 8.5  | 5.7  | 3.3  | 12.0                     | 8.4  | 5.4  | 2.9  |
| BTAS 411SV   | 1-3/8 ODF        | A4 FD Filter Drier     | 15.0                                                                                       | 11.0 | 7.0  | 4.1  | 15.0                     | 11.0 | 6.7  | 3.6  |
| BTAS 413SV   | 1-5/8 ODF        | A4 FD Filter Drier     | 17.0                                                                                       | 12.0 | 7.2  | 4.2  | 16.0                     | 12.0 | 6.9  | 3.7  |
| BTAS 417SV   | 2-1/8 ODF        | A4 FD Filter Drier     | 22.0                                                                                       | 16.0 | 11.0 | 6.1  | 23.0                     | 16.0 | 10.0 | 5.4  |
| BTAS 421SV   | 2-5/8 ODF        | A4 FD Filter Drier     | 23.0                                                                                       | 17.0 | 12.0 | 6.3  | 24.0                     | 17.0 | 11.0 | 5.6  |
| BTAS 517SV   | 2-1/8 ODF        | A5 FD Filter Drier     | 27.0                                                                                       | 19.0 | 13.0 | 7.2  | 28.0                     | 19.0 | 12.0 | 6.4  |
| BTAS 521SV   | 2-5/8 ODF        | A5 FD Filter Drier     | 32.0                                                                                       | 23.0 | 15.0 | 8.8  | 33.0                     | 23.0 | 14.0 | 7.8  |
| BTAS 525SV   | 3-1/8 ODF        | A5 FD Filter Drier     | 38.0                                                                                       | 27.0 | 18.0 | 10.0 | 39.0                     | 27.0 | 17.0 | 9.2  |
| STAS 489SV   | 1-1/8 ODF        | (1) F 48 Filter        | 13.0                                                                                       | 8.0  | 5.0  | 2.0  | 13.0                     | 8.0  | 5.0  | 2.0  |
| STAS 4811SV  | 1-3/8 ODF        | (1) F 48 Filter        | 15.0                                                                                       | 10.0 | 6.0  | 3.0  | 15.0                     | 10.0 | 6.0  | 3.0  |
| STAS 4813SV  | 1-5/8 ODF        | (1) F 48 Filter        | 19.0                                                                                       | 12.0 | 7.0  | 5.0  | 20.0                     | 12.0 | 7.0  | 4.0  |
| STAS 4817SV  | 2-1/8 ODF        | (1) F 48 Filter        | 24.0                                                                                       | 15.0 | 11.0 | 6.0  | 25.0                     | 15.0 | 10.0 | 5.0  |
| STAS 4821SV  | 2-5/8 ODF        | (1) F 48 Filter        | 29.0                                                                                       | 20.0 | 14.0 | 7.0  | 30.0                     | 20.0 | 13.0 | 6.0  |
| STAS 9617SV  | 2-1/8 ODF        | (2) F 48 Filter        | 27.0                                                                                       | 18.0 | 11.0 | 6.0  | 28.0                     | 18.0 | 10.0 | 5.0  |
| STAS 9621SV  | 2-5/8 ODF        | (2) F 48 Filter        | 37.0                                                                                       | 25.0 | 16.0 | 8.0  | 38.0                     | 25.0 | 15.0 | 7.0  |
| STAS 9625SV  | 3-1/8 ODF        | (2) F 48 Filter        | 44.0                                                                                       | 30.0 | 19.0 | 10.0 | 45.0                     | 30.0 | 18.0 | 8.0  |
| STAS 489SV   | 1-1/8 ODF        | (1) 48 cu in Core      | 8.0                                                                                        | 6.0  | 4.0  | 1.0  | 8.0                      | 6.0  | 4.0  | 1.0  |
| STAS 4811SV  | 1-3/8 ODF        | (1) 48 cu in Core      | 10.0                                                                                       | 7.0  | 4.0  | 2.0  | 10.0                     | 7.0  | 4.0  | 2.0  |
| STAS 4813SV  | 1-5/8 ODF        | (1) 48 cu in Core      | 13.0                                                                                       | 8.0  | 5.0  | 3.0  | 13.0                     | 8.0  | 5.0  | 3.0  |
| STAS 4817SV  | 2-1/8 ODF        | (1) 48 cu in Core      | 17.0                                                                                       | 10.0 | 7.0  | 5.0  | 17.0                     | 10.0 | 7.0  | 4.0  |
| STAS 4821SV  | 2-5/8 ODF        | (1) 48 cu in Core      | 19.0                                                                                       | 13.0 | 8.0  | 6.0  | 20.0                     | 13.0 | 8.0  | 5.0  |
| STAS 9617SV  | 2-1/8 ODF        | (2) 48 cu in Core      | 18.0                                                                                       | 12.0 | 6.0  | 5.0  | 18.0                     | 12.0 | 6.0  | 4.0  |
| STAS 9621SV  | 2-5/8 ODF        | (2) 48 cu in Core      | 24.0                                                                                       | 17.0 | 11.0 | 6.0  | 25.0                     | 17.0 | 10.0 | 5.0  |
| STAS 9625SV  | 3-1/8 ODF        | (2) 48 cu in Core      | 27.0                                                                                       | 19.0 | 14.0 | 7.4  | 29.0                     | 23.0 | 16.0 | 7.0  |

<sup>1</sup> All ratings in accordance with ARI Standard 730-04.

<sup>2</sup> Example: 1.0 tons x 3.5 = 3.5 kW

# TAKE-APART SUCTION LINE FILTER DRIER FLOW CAPACITIES

| MODEL NUMBER | CONNECTIONS (IN) | FILTER DRIER CARTRIDGE | FLOW CAPACITY IN TONS REFRGERANT, (For kW, Multiply Tons By 3.5) <sub>2</sub> |      |      |      |      |        |      |      |      |      |        |      |      |      |      |
|--------------|------------------|------------------------|-------------------------------------------------------------------------------|------|------|------|------|--------|------|------|------|------|--------|------|------|------|------|
|              |                  |                        | R-22 / R-448A / R-449A                                                        |      |      |      |      | R-407C |      |      |      |      | R-410A |      |      |      |      |
|              |                  |                        | EVAPORATOR TEMPERATURE (°F)                                                   |      |      |      |      |        |      |      |      |      |        |      |      |      |      |
|              |                  |                        | 40                                                                            | 20   | 0    | -20  | -40  | 40     | 20   | 0    | -20  | -40  | 40     | 20   | 0    | -20  | -40  |
|              |                  |                        | PRESSURE DROP (PSI)                                                           |      |      |      |      |        |      |      |      |      |        |      |      |      |      |
| 3            | 2                | 1.5                    | 1                                                                             | 0.5  | 3    | 2    | 1.5  | 1      | 0.5  | 3    | 2    | 1.5  | 1      | 0.5  |      |      |      |
| ADKS 30013T  | 1-5/8 ODF        | (3) F-100 Filter       | 45.0                                                                          | 30.0 | 20.0 | 13.0 | 7.0  | 41.7   | 27.3 | 17.7 | 11.3 | 5.8  | —      | —    | —    | —    | —    |
| ADKS 30017T  | 2-1/8 ODF        | (3) F-100 Filter       | 77.0                                                                          | 50.0 | 35.0 | 22.0 | 12.0 | 71.4   | 45.5 | 31.0 | 19.2 | 10.0 | —      | —    | —    | —    | —    |
| ADKS 40017T  | 2-1/8 ODF        | (4) F-100 Filter       | 80.0                                                                          | 53.0 | 37.0 | 23.0 | 13.0 | 74.2   | 48.2 | 32.8 | 20.0 | 10.8 | —      | —    | —    | —    | —    |
| ADKS 40021T  | 2-5/8 ODF        | (4) F-100 Filter       | 122.0                                                                         | 80.0 | 55.0 | 34.0 | 19.0 | 113.1  | 72.7 | 48.7 | 29.6 | 15.8 | —      | —    | —    | —    | —    |
| ADKS 30013T  | 1-5/8 ODF        | (3) 100 cu in Core     | 35.0                                                                          | 23.0 | 16.0 | 10.0 | 5.5  | 32.4   | 20.9 | 14.2 | 8.7  | 4.6  | —      | —    | —    | —    | —    |
| ADKS 30017T  | 2-1/8 ODF        | (3) 100 cu in Core     | 56.0                                                                          | 37.0 | 25.0 | 16.0 | 8.8  | 51.9   | 33.6 | 22.1 | 13.9 | 7.3  | —      | —    | —    | —    | —    |
| ADKS 40017T  | 2-1/8 ODF        | (4) 100 cu in Core     | 61.0                                                                          | 40.0 | 27.0 | 17.0 | 9.5  | 56.5   | 36.4 | 23.9 | 14.8 | 7.9  | —      | —    | —    | —    | —    |
| ADKS 40021T  | 2-5/8 ODF        | (4) 100 cu in Core     | 88.0                                                                          | 58.0 | 40.0 | 25.0 | 14.0 | 81.6   | 52.7 | 35.4 | 21.8 | 11.6 | —      | —    | —    | —    | —    |
| BTAS 27SV    | 7/8 ODF          | A2F Filter             | 8.8                                                                           | 5.7  | 3.9  | 2.5  | 1.3  | 8.2    | 5.2  | 3.5  | 2.2  | 1.1  | —      | —    | —    | —    | —    |
| BTAS 39SV    | 1-1/8 ODF        | A3F Filter             | 14.0                                                                          | 8.8  | 5.9  | 3.7  | 2.0  | 13.0   | 8.0  | 5.2  | 3.2  | 1.7  | —      | —    | —    | —    | —    |
| BTAS 311SV   | 1-3/8 ODF        | A3F Filter             | 15.0                                                                          | 10.0 | 6.6  | 4.1  | 2.2  | 13.9   | 9.1  | 5.8  | 3.6  | 1.8  | —      | —    | —    | —    | —    |
| BTAS 313SV   | 1-5/8 ODF        | A3F Filter             | 24.0                                                                          | 16.0 | 11.0 | 6.6  | 3.5  | 22.2   | 14.5 | 9.7  | 5.8  | 2.9  | —      | —    | —    | —    | —    |
| BTAS 317SV   | 2-1/8 ODF        | A3F Filter             | 29.0                                                                          | 19.0 | 13.0 | 8.1  | 4.3  | 26.9   | 17.3 | 11.5 | 7.1  | 3.6  | —      | —    | —    | —    | —    |
| BTAS 411SV   | 1-3/8 ODF        | A4F Filter             | 31.0                                                                          | 20.0 | 14.0 | 8.7  | 4.6  | 28.7   | 18.2 | 12.4 | 7.6  | 3.8  | —      | —    | —    | —    | —    |
| BTAS 413SV   | 1-5/8 ODF        | A4F Filter             | 38.0                                                                          | 25.0 | 17.0 | 11.0 | 5.7  | 35.2   | 22.7 | 15.1 | 9.6  | 4.7  | —      | —    | —    | —    | —    |
| BTAS 417SV   | 2-1/8 ODF        | A4F Filter             | 53.0                                                                          | 34.0 | 23.0 | 15.0 | 7.8  | 49.1   | 30.9 | 20.4 | 13.1 | 6.5  | —      | —    | —    | —    | —    |
| BTAS 421SV   | 2-5/8 ODF        | A4F Filter             | 64.0                                                                          | 42.0 | 29.0 | 18.0 | 10.0 | 59.3   | 38.2 | 25.7 | 15.7 | 8.3  | —      | —    | —    | —    | —    |
| BTAS 517SV   | 2-1/8 ODF        | A5F Filter             | 63.0                                                                          | 41.0 | 28.0 | 18.0 | 9.4  | 58.4   | 37.3 | 24.8 | 15.7 | 7.8  | —      | —    | —    | —    | —    |
| BTAS 521SV   | 2-5/8 ODF        | A5F Filter             | 84.0                                                                          | 54.0 | 37.0 | 23.0 | 12.0 | 77.9   | 49.1 | 32.8 | 20.0 | 10.0 | —      | —    | —    | —    | —    |
| BTAS 525SV   | 3-1/8 ODF        | A5F Filter             | 103.0                                                                         | 67.0 | 46.0 | 29.0 | 15.0 | 95.5   | 60.9 | 40.7 | 25.3 | 12.5 | —      | —    | —    | —    | —    |
| BTAS 25SV    | 5/8 ODF          | A2F-D Filter Drier     | 4.6                                                                           | 3.0  | 2.0  | 1.3  | 0.7  | 4.3    | 2.7  | 1.8  | 1.1  | 0.6  | —      | —    | —    | —    | —    |
| BTAS 27SV    | 7/8 ODF          | A2F-D Filter Drier     | 7.5                                                                           | 4.9  | 3.3  | 2.1  | 1.1  | 7.0    | 4.5  | 2.9  | 1.8  | 0.9  | —      | —    | —    | —    | —    |
| BTAS 39SV    | 1-1/8 ODF        | A3F-D Filter Drier     | 10.0                                                                          | 6.3  | 4.3  | 2.7  | 1.4  | 9.3    | 5.7  | 3.8  | 2.4  | 1.2  | —      | —    | —    | —    | —    |
| BTAS 311SV   | 1-3/8 ODF        | A3F-D Filter Drier     | 14.0                                                                          | 8.9  | 6.0  | 3.8  | 2.0  | 13.0   | 8.1  | 5.3  | 3.3  | 1.7  | —      | —    | —    | —    | —    |
| BTAS 313SV   | 1-5/8 ODF        | A3F-D Filter Drier     | 20.0                                                                          | 13.0 | 8.6  | 5.4  | 2.9  | 18.5   | 11.8 | 7.6  | 4.7  | 2.4  | —      | —    | —    | —    | —    |
| BTAS 317SV   | 2-1/8 ODF        | A3F-D Filter Drier     | 23.0                                                                          | 15.0 | 10.0 | 6.3  | 3.4  | 21.3   | 13.6 | 8.9  | 5.5  | 2.8  | —      | —    | —    | —    | —    |
| BTAS 411SV   | 1-3/8 ODF        | A4F-D Filter Drier     | 28.0                                                                          | 18.0 | 13.0 | 7.8  | 4.2  | 26.0   | 16.4 | 11.5 | 6.8  | 3.5  | —      | —    | —    | —    | —    |
| BTAS 413SV   | 1-5/8 ODF        | A4F-D Filter Drier     | 29.0                                                                          | 19.0 | 14.0 | 8.1  | 4.3  | 26.9   | 17.3 | 11.5 | 7.1  | 3.6  | —      | —    | —    | —    | —    |
| BTAS 417SV   | 2-1/8 ODF        | A4F-D Filter Drier     | 43.0                                                                          | 28.0 | 19.0 | 12.0 | 6.3  | 39.0   | 25.5 | 16.8 | 10.5 | 5.2  | —      | —    | —    | —    | —    |
| BTAS 421SV   | 2-5/8 ODF        | A4F-D Filter Drier     | 44.0                                                                          | 29.0 | 20.0 | 13.0 | 6.5  | 41.0   | 26.4 | 18.0 | 11.0 | 5.4  | —      | —    | —    | —    | —    |
| BTAS 517SV   | 2-1/8 ODF        | A5F-D Filter Drier     | 51.0                                                                          | 33.0 | 22.0 | 14.0 | 7.5  | 47.3   | 30.0 | 19.5 | 12.2 | 6.2  | —      | —    | —    | —    | —    |
| BTAS 521SV   | 2-5/8 ODF        | A5F-D Filter Drier     | 61.0                                                                          | 40.0 | 27.0 | 17.0 | 9.0  | 56.5   | 36.4 | 23.9 | 14.8 | 7.5  | —      | —    | —    | —    | —    |
| BTAS 525SV   | 3-1/8 ODF        | A5F-D Filter Drier     | 72.0                                                                          | 47.0 | 32.0 | 20.0 | 11.0 | 66.7   | 42.7 | 28.3 | 17.4 | 9.2  | —      | —    | —    | —    | —    |
| STAS 489SV   | 1-1/8 ODF        | (1) F-48 Filter        | 22.0                                                                          | 14.0 | 10.0 | 6.0  | 2.0  | 20.0   | 13.0 | 9.0  | 5.0  | 2.0  | 27.0   | 17.0 | 12.0 | 7.4  | 2.5  |
| STAS 4811SV  | 1-3/8 ODF        | (1) F-48 Filter        | 28.0                                                                          | 17.0 | 12.0 | 7.0  | 3.0  | 26.0   | 15.0 | 11.0 | 6.0  | 2.0  | 34.0   | 21.0 | 15.0 | 8.6  | 3.7  |
| STAS 4813SV  | 1-5/8 ODF        | (1) F-48 Filter        | 35.0                                                                          | 20.0 | 15.0 | 8.0  | 4.0  | 32.0   | 18.0 | 13.0 | 7.0  | 3.0  | 43.0   | 24.0 | 18.0 | 9.8  | 4.9  |
| STAS 4817SV  | 2-1/8 ODF        | (1) F-48 Filter        | 47.0                                                                          | 30.0 | 20.0 | 10.0 | 5.0  | 44.0   | 27.0 | 18.0 | 9.0  | 4.0  | 57.0   | 36.0 | 24.0 | 12.0 | 6.2  |
| STAS 4821SV  | 2-5/8 ODF        | (1) F-48 Filter        | 60.0                                                                          | 40.0 | 25.0 | 15.0 | 7.0  | 56.0   | 36.0 | 22.0 | 13.0 | 6.0  | 73.0   | 48.0 | 30.0 | 18.0 | 8.6  |
| STAS 9617SV  | 2-1/8 ODF        | (2) F-48 Filter        | 50.0                                                                          | 30.0 | 20.0 | 12.0 | 6.0  | 46.0   | 27.0 | 18.0 | 10.0 | 5.0  | 61.0   | 36.0 | 24.0 | 15.0 | 7.4  |
| STAS 9621SV  | 2-5/8 ODF        | (2) F-48 Filter        | 70.0                                                                          | 43.0 | 28.0 | 17.0 | 8.0  | 65.0   | 39.0 | 25.0 | 15.0 | 7.0  | 85.0   | 52.0 | 34.0 | 21.0 | 9.9  |
| STAS 9625SV  | 3-1/8 ODF        | (2) F-48 Filter        | 83.0                                                                          | 51.0 | 33.0 | 20.0 | 10.0 | 77.0   | 46.0 | 30.0 | 18.0 | 8.5  | 101.0  | 62.0 | 41.0 | 25.0 | 12.0 |
| STAS 489SV   | 1-1/8 ODF        | (1) 48 cu in Core      | 15.0                                                                          | 9.0  | 7.0  | 4.0  | 1.0  | 14.0   | 8.0  | 6.0  | 3.0  | 1.0  | 18.0   | 11.0 | 8.5  | 4.9  | 1.2  |
| STAS 4811SV  | 1-3/8 ODF        | (1) 48 cu in Core      | 18.0                                                                          | 11.0 | 8.0  | 5.0  | 2.0  | 17.0   | 10.0 | 7.0  | 4.0  | 2.0  | 22.0   | 13.0 | 9.7  | 6.1  | 2.5  |
| STAS 4813SV  | 1-5/8 ODF        | (1) 48 cu in Core      | 23.0                                                                          | 13.0 | 10.0 | 6.0  | 3.0  | 21.0   | 12.0 | 9.0  | 5.0  | 2.0  | 28.0   | 16.0 | 12.0 | 7.4  | 3.7  |
| STAS 4817SV  | 2-1/8 ODF        | (1) 48 cu in Core      | 31.0                                                                          | 20.0 | 13.0 | 7.0  | 4.0  | 29.0   | 18.0 | 12.0 | 6.0  | 3.0  | 38.0   | 24.0 | 16.0 | 9.0  | 4.5  |
| STAS 4821SV  | 2-5/8 ODF        | (1) 48 cu in Core      | 40.0                                                                          | 27.0 | 17.0 | 10.0 | 5.0  | 37.0   | 25.0 | 15.0 | 9.0  | 4.0  | 49.0   | 33.0 | 21.0 | 12.0 | 6.2  |
| STAS 9617SV  | 2-1/8 ODF        | (2) 48 cu in Core      | 33.0                                                                          | 20.0 | 13.0 | 8.0  | 4.0  | 31.0   | 18.0 | 12.0 | 7.0  | 3.0  | 40.0   | 24.0 | 16.0 | 9.8  | 4.9  |
| STAS 9621SV  | 2-5/8 ODF        | (2) 48 cu in Core      | 47.0                                                                          | 28.0 | 18.0 | 11.0 | 6.0  | 44.0   | 25.0 | 16.0 | 10.0 | 5.0  | 57.0   | 34.0 | 22.0 | 14.0 | 7.4  |
| STAS 9625SV  | 3-1/8 ODF        | (2) 48 cu in Core      | 51.0                                                                          | 30.0 | 24.0 | 17.0 | 7.6  | 47.0   | 27.0 | 20.0 | 15.0 | 6.0  | 62.0   | 37.0 | 28.0 | 20.0 | 11.0 |

<sup>1</sup> All ratings in accordance with ARI Standard 730-04.

<sup>2</sup> Example: 1.0 tons x 3.5 = 3.5 kW

# TAKE-APART SUCTION LINE FILTER DRIER FLOW CAPACITIES

| MODEL NUMBER | CONNECTIONS (IN) | FILTER DRIER CARTRIDGE | FLOW CAPACITY IN TONS REFRGERANT <sub>1</sub> (FOR KW, MULTIPLY TONS BY 3.5) <sub>2</sub> |      |      |      |      |                |      |      |      |      |
|--------------|------------------|------------------------|-------------------------------------------------------------------------------------------|------|------|------|------|----------------|------|------|------|------|
|              |                  |                        | R-502                                                                                     |      |      |      |      | R-404A / R-507 |      |      |      |      |
|              |                  |                        | EVAPORATOR TEMPERATURE (°F)                                                               |      |      |      |      |                |      |      |      |      |
|              |                  |                        | 40                                                                                        | 20   | 0    | -20  | -40  | 40             | 20   | 0    | -20  | -40  |
|              |                  |                        | PRESSURE DROP (PSI)                                                                       |      |      |      |      |                |      |      |      |      |
|              |                  |                        | 3                                                                                         | 2    | 1.5  | 1    | 0.5  | 3              | 2    | 1.5  | 1    | 0.5  |
| ADKS 30013T  | 1-5/8 ODF        | (3) F-100 Filter       | 38.0                                                                                      | 24.0 | 16.0 | 9.9  | 5.2  | 37.0           | 24.0 | 16.0 | 10.0 | 5.5  |
| ADKS 30017T  | 2-1/8 ODF        | (3) F-100 Filter       | 64.0                                                                                      | 40.0 | 27.0 | 17.0 | 8.9  | 62.0           | 40.0 | 27.0 | 18.0 | 9.4  |
| ADKS 40017T  | 2-1/8 ODF        | (4) F-100 Filter       | 68.0                                                                                      | 43.0 | 28.0 | 17.0 | 9.2  | 66.0           | 43.0 | 29.0 | 18.0 | 9.8  |
| ADKS 40021T  | 2-5/8 ODF        | (4) F-100 Filter       | 102.0                                                                                     | 64.0 | 43.0 | 27.0 | 14.0 | 99.0           | 64.0 | 43.0 | 28.0 | 15.0 |
| ADKS 30013T  | 1-5/8 ODF        | (3) 100 cu in Core     | 30.0                                                                                      | 19.0 | 12.0 | 7.7  | 4.1  | 29.0           | 19.0 | 13.0 | 8.0  | 4.3  |
| ADKS 30017T  | 2-1/8 ODF        | (3) 100 cu in Core     | 47.0                                                                                      | 30.0 | 20.0 | 12.0 | 6.4  | 46.0           | 30.0 | 20.0 | 13.0 | 6.8  |
| ADKS 40017T  | 2-1/8 ODF        | (4) 100 cu in Core     | 51.0                                                                                      | 32.0 | 22.0 | 13.0 | 7.0  | 49.0           | 32.0 | 22.0 | 14.0 | 7.4  |
| ADKS 40021T  | 2-5/8 ODF        | (4) 100 cu in Core     | 74.0                                                                                      | 47.0 | 31.0 | 19.0 | 10.0 | 72.0           | 47.0 | 32.0 | 20.0 | 11.0 |
| BTAS 27SV    | 7/8 ODF          | A2F Filter             | 7.4                                                                                       | 4.6  | 3.1  | 1.8  | 0.9  | 7.2            | 4.6  | 3.1  | 1.9  | 1.0  |
| BTAS 39SV    | 1-1/8 ODF        | A3F Filter             | 11.0                                                                                      | 7.0  | 4.7  | 2.8  | 1.4  | 11.0           | 7.0  | 4.7  | 2.9  | 1.5  |
| BTAS 311SV   | 1-3/8 ODF        | A3F Filter             | 12.0                                                                                      | 7.8  | 5.2  | 3.1  | 1.6  | 12.0           | 7.8  | 5.2  | 3.2  | 1.7  |
| BTAS 313SV   | 1-5/8 ODF        | A3F Filter             | 20.0                                                                                      | 12.0 | 8.2  | 5.0  | 2.5  | 19.0           | 12.0 | 8.3  | 5.2  | 2.7  |
| BTAS 317SV   | 2-1/8 ODF        | A3F Filter             | 25.0                                                                                      | 15.0 | 10.0 | 6.1  | 3.1  | 24.0           | 15.0 | 10.0 | 6.3  | 3.3  |
| BTAS 411SV   | 1-3/8 ODF        | A4F Filter             | 27.0                                                                                      | 16.0 | 11.0 | 6.6  | 3.4  | 26.0           | 16.0 | 11.0 | 6.8  | 3.6  |
| BTAS 413SV   | 1-5/8 ODF        | A4F Filter             | 32.0                                                                                      | 20.0 | 13.0 | 8.1  | 4.1  | 31.0           | 20.0 | 14.0 | 8.4  | 4.4  |
| BTAS 417SV   | 2-1/8 ODF        | A4F Filter             | 44.0                                                                                      | 28.0 | 18.0 | 11.0 | 5.7  | 43.0           | 28.0 | 19.0 | 12.0 | 6.0  |
| BTAS 421SV   | 2-5/8 ODF        | A4F Filter             | 54.0                                                                                      | 34.0 | 23.0 | 14.0 | 6.9  | 52.0           | 34.0 | 23.0 | 14.0 | 7.3  |
| BTAS 517SV   | 2-1/8 ODF        | A5F Filter             | 54.0                                                                                      | 33.0 | 22.0 | 13.0 | 6.8  | 52.0           | 33.0 | 22.0 | 14.0 | 7.2  |
| BTAS 521SV   | 2-5/8 ODF        | A5F Filter             | 70.0                                                                                      | 44.0 | 29.0 | 18.0 | 9.0  | 68.0           | 44.0 | 29.0 | 18.0 | 9.6  |
| BTAS 525SV   | 3-1/8 ODF        | A5F Filter             | 87.0                                                                                      | 54.0 | 36.0 | 22.0 | 11.0 | 84.0           | 54.0 | 36.0 | 23.0 | 12.0 |
| BTAS 25SV    | 5/8 ODF          | A2F-D Filter Drier     | 3.9                                                                                       | 2.4  | 1.6  | 1.0  | 0.5  | 3.8            | 2.4  | 1.6  | 1.0  | 0.5  |
| BTAS 27SV    | 7/8 ODF          | A2F-D Filter Drier     | 6.3                                                                                       | 3.9  | 2.6  | 1.5  | 0.8  | 6.1            | 3.9  | 2.6  | 1.6  | 0.9  |
| BTAS 39SV    | 1-1/8 ODF        | A3F-D Filter Drier     | 8.1                                                                                       | 5.1  | 3.4  | 2.0  | 1.0  | 7.9            | 5.1  | 3.4  | 2.1  | 1.1  |
| BTAS 311SV   | 1-3/8 ODF        | A3F-D Filter Drier     | 11.0                                                                                      | 7.1  | 4.8  | 2.9  | 1.5  | 11.0           | 7.1  | 4.8  | 3.0  | 1.6  |
| BTAS 313SV   | 1-5/8 ODF        | A3F-D Filter Drier     | 16.0                                                                                      | 10.0 | 6.7  | 4.1  | 2.1  | 16.0           | 10.0 | 6.8  | 4.2  | 2.2  |
| BTAS 317SV   | 2-1/8 ODF        | A3F-D Filter Drier     | 19.0                                                                                      | 12.0 | 7.9  | 4.8  | 2.4  | 19.0           | 12.0 | 8.0  | 5.0  | 2.6  |
| BTAS 411SV   | 1-3/8 ODF        | A4F-D Filter Drier     | 24.0                                                                                      | 15.0 | 10.0 | 5.9  | 3.0  | 23.0           | 15.0 | 10.0 | 6.1  | 3.2  |
| BTAS 413SV   | 1-5/8 ODF        | A4F-D Filter Drier     | 25.0                                                                                      | 15.0 | 10.0 | 6.1  | 3.1  | 24.0           | 15.0 | 10.0 | 6.3  | 3.3  |
| BTAS 417SV   | 2-1/8 ODF        | A4F-D Filter Drier     | 36.0                                                                                      | 22.0 | 15.0 | 9.0  | 4.6  | 35.0           | 22.0 | 15.0 | 9.3  | 4.9  |
| BTAS 421SV   | 2-5/8 ODF        | A4F-D Filter Drier     | 37.0                                                                                      | 23.0 | 16.0 | 10.0 | 5.0  | 36.0           | 23.0 | 16.0 | 10.0 | 5.3  |
| BTAS 517SV   | 2-1/8 ODF        | A5F-D Filter Drier     | 42.0                                                                                      | 27.0 | 18.0 | 11.0 | 4.7  | 41.0           | 27.0 | 18.0 | 11.0 | 5.0  |
| BTAS 521SV   | 2-5/8 ODF        | A5F-D Filter Drier     | 52.0                                                                                      | 32.0 | 22.0 | 13.0 | 6.6  | 50.0           | 32.0 | 22.0 | 13.0 | 7.0  |
| BTAS 525SV   | 3-1/8 ODF        | A5F-D Filter Drier     | 61.0                                                                                      | 38.0 | 25.0 | 15.0 | 7.8  | 59.0           | 38.0 | 25.0 | 16.0 | 8.3  |
| STAS 489SV   | 1-1/8 ODF        | (1) F-48 Filter        | 21.0                                                                                      | 12.0 | 8.0  | 5.0  | 3.0  | 20.0           | 12.0 | 8.0  | 5.0  | 3.0  |
| STAS 4811SV  | 1-3/8 ODF        | (1) F-48 Filter        | 25.0                                                                                      | 15.0 | 10.0 | 6.0  | 4.0  | 24.0           | 15.0 | 10.0 | 6.0  | 4.0  |
| STAS 4813SV  | 1-5/8 ODF        | (1) F-48 Filter        | 31.0                                                                                      | 18.0 | 11.0 | 7.0  | 5.0  | 30.0           | 18.0 | 11.0 | 7.0  | 5.0  |
| STAS 4817SV  | 2-1/8 ODF        | (1) F-48 Filter        | 41.0                                                                                      | 25.0 | 15.0 | 9.0  | 7.0  | 40.0           | 25.0 | 15.0 | 9.0  | 7.0  |
| STAS 4821SV  | 2-5/8 ODF        | (1) F-48 Filter        | 57.0                                                                                      | 30.0 | 20.0 | 12.0 | 8.0  | 55.0           | 30.0 | 20.0 | 12.0 | 8.0  |
| STAS 9617SV  | 2-1/8 ODF        | (2) F-48 Filter        | 41.0                                                                                      | 25.0 | 15.0 | 10.0 | 7.0  | 40.0           | 25.0 | 15.0 | 10.0 | 7.0  |
| STAS 9621SV  | 2-5/8 ODF        | (2) F-48 Filter        | 62.0                                                                                      | 35.0 | 25.0 | 14.0 | 9.0  | 60.0           | 35.0 | 25.0 | 15.0 | 10.0 |
| STAS 9625SV  | 3-1/8 ODF        | (2) F-48 Filter        | 74.0                                                                                      | 42.0 | 30.0 | 17.0 | 11.0 | 72.0           | 42.0 | 30.0 | 18.0 | 12.0 |
| STAS 489SV   | 1-1/8 ODF        | (1) 48 cu in Core      | 13.0                                                                                      | 8.0  | 6.0  | 4.0  | 2.0  | 13.0           | 8.0  | 6.0  | 4.0  | 2.0  |
| STAS 4811SV  | 1-3/8 ODF        | (1) 48 cu in Core      | 18.0                                                                                      | 10.0 | 6.5  | 4.5  | 3.0  | 17.0           | 10.0 | 6.5  | 4.5  | 3.0  |
| STAS 4813SV  | 1-5/8 ODF        | (1) 48 cu in Core      | 21.0                                                                                      | 12.0 | 7.0  | 5.0  | 4.0  | 20.0           | 12.0 | 7.0  | 5.0  | 4.0  |
| STAS 4817SV  | 2-1/8 ODF        | (1) 48 cu in Core      | 28.0                                                                                      | 17.0 | 10.0 | 6.0  | 5.0  | 27.0           | 17.0 | 10.0 | 6.0  | 5.0  |
| STAS 4821SV  | 2-5/8 ODF        | (1) 48 cu in Core      | 38.0                                                                                      | 20.0 | 13.0 | 8.0  | 6.0  | 37.0           | 20.0 | 13.0 | 8.0  | 6.0  |
| STAS 9617SV  | 2-1/8 ODF        | (2) 48 cu in Core      | 28.0                                                                                      | 17.0 | 11.0 | 7.0  | 5.0  | 27.0           | 17.0 | 11.0 | 7.0  | 5.0  |
| STAS 9621SV  | 2-5/8 ODF        | (2) 48 cu in Core      | 41.0                                                                                      | 23.0 | 17.0 | 10.0 | 7.0  | 40.0           | 23.0 | 17.0 | 10.0 | 7.0  |
| STAS 9625SV  | 3-1/8 ODF        | (2) 48 cu in Core      | 49.0                                                                                      | 27.0 | 20.0 | 12.0 | 8.0  | 47.0           | 27.0 | 20.0 | 12.0 | 8.0  |

<sup>1</sup> All ratings in accordance with ARI Standard 730-04.

<sup>2</sup> Example: 1.0 tons x 3.5 = 3.5 kW





HMI 1TT5

## HMI SERIES HERMETIC MOISTURE INDICATORS

The HMI is designed to provide an accurate method of determining the moisture content of a system's refrigerant. The HMI has a unique high accuracy moisture indicator for CFC, HCFC, and HFC refrigerants.

### FEATURES

- Highest sensitivity moisture indicator available
- Hermetic construction for leak-free operation
- Single indicator for all common refrigerants
- Accurate color calibration at low ppm levels and higher temperatures
- Wide angle viewing/high visibility window for ease of monitoring
- All brass corrosion resistant body
- Solid copper connections

### SPECIFICATIONS

Maximum Working Pressure..... 680 psig (47 bar)  
 UL/CUL File Number ..... SA9566  
 Canadian CRN ..... 0F20663.5C

### MODEL NUMBER NOMENCLATURE - Example: HMI 1TT4

| SERIES                      | DESIGN       | CONNECTION TYPE                                                                                                             | CONNECTION SIZE    | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|-----------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| HMI                         | 1            | TT                                                                                                                          | 4                  |                       |                                             |                                              |
| Hermetic Moisture Indicator | 1 = Standard | FM = Female Flare X Male Flare<br>MM = Male Flare X Male Flare<br>TT = ODF Extended Ends<br>TT_MF = ODM x ODF Extended Ends | In 1/8" Increments | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### HMI SERIES HERMETIC MOISTURE INDICATORS

| CONNECTION STYLE          | CONNECTION SIZE | MODEL NUMBER | ITEM NUMBER |
|---------------------------|-----------------|--------------|-------------|
| Female Flare X Male Flare | 1/4"            | HMI 1FM2     | 065396      |
| Female Flare X Male Flare | 3/8"            | HMI 1FM3     | 065397      |
| Female Flare X Male Flare | 1/2"            | HMI 1FM4     | 065398      |
| Male Flare X Male Flare   | 1/4"            | HMI 1MM2     | 065391      |
| Male Flare X Male Flare   | 3/8"            | HMI 1MM3     | 065392      |
| Male Flare X Male Flare   | 1/2"            | HMI 1MM4     | 065393      |
| Male Flare X Male Flare   | 5/8"            | HMI 1MM5     | 065394      |
| Male Flare X Male Flare   | 3/4"            | HMI 1MM6     | 065395      |
| ODF Extended Ends         | 1/4"            | HMI 1TT2     | 065405      |
| ODF Extended Ends         | 3/8"            | HMI 1TT3     | 065406      |
| ODF Extended Ends         | 1/2"            | HMI 1TT4     | 065407      |
| ODF Extended Ends         | 5/8"            | HMI 1TT5     | 065408      |
| ODF Extended Ends         | 3/4"            | HMI 1TT6     | 065409      |
| ODF Extended Ends         | 7/8"            | HMI 1TT7     | 065410      |
| ODF Extended Ends         | 1-1/8"          | HMI 1TT9     | 065411      |

MOISTURE CONTENT COLOR CODE (PPM H<sub>2</sub>O)

| INDICATION LIQUID TEMPERATURE | DRY (DARK BLUE) |       |       | CAUTION (PURPLE) |       |       | WET (SALMON) |       |       |
|-------------------------------|-----------------|-------|-------|------------------|-------|-------|--------------|-------|-------|
|                               | 75°F            | 100°F | 125°F | 75°F             | 100°F | 125°F | 75°F         | 100°F | 125°F |
| R-12                          | 1.4             | 2.5   | 4     | 5                | 9     | 15    | 25           | 43    | 70    |
| R-134a                        | 20              | 35    | 60    | 35               | 55    | 85    | 130          | 160   | 190   |
| R-22                          | 25              | 35    | 50    | 40               | 65    | 90    | 145          | 205   | 290   |
| R-407C                        | 26              | 40    | 64    | 42               | 68    | 109   | 150          | 230   | 370   |
| R-410A                        | 30              | 55    | 75    | 50               | 85    | 120   | 165          | 290   | 420   |
| R-404A / 507                  | 15              | 25    | 45    | 33               | 50    | 80    | 120          | 150   | 180   |
| R-448A/R-449A                 | 22              | 31    | 43    | 37               | 52    | 72    | 141          | 203   | 282   |
| R-450A/R-513A                 | 13              | 18    | 25    | 22               | 30    | 42    | 82           | 118   | 164   |

| INDICATION LIQUID TEMPERATURE | DRY (DARK BLUE) |      |      |      | CAUTION (PURPLE) |      |      |      | WET (SALMON) |      |      |      |
|-------------------------------|-----------------|------|------|------|------------------|------|------|------|--------------|------|------|------|
|                               | -40°F           | -4°F | 32°F | 68°F | -40°F            | -4°F | 32°F | 68°F | -40°F        | -4°F | 32°F | 68°F |
| R-744                         | 3               | 6    | 11   | 20   | 5                | 10   | 19   | 34   | 16           | 32   | 63   | 116  |



AMI 1FM3

## AMI SERIES TAKE-APART MOISTURE INDICATORS

The AMI is designed to provide an accurate method of determining the moisture content of a system's refrigerant. The AMI has a unique high accuracy moisture indicator for CFC, HCFC and HFC refrigerants.

### FEATURES

- Highest sensitivity moisture indicator available
- Take-Apart design for easy repair
- Single indicator for all common refrigerants
- Accurate color calibration at low ppm levels and higher temperatures
- Wide angle viewing/high visibility window for ease of monitoring
- Solid copper connections

### SPECIFICATIONS

Maximum Working Pressure ..... 680 psig (47 bar)  
 UL/CUL File Number ..... SA9566  
 Canadian CRN ..... 0F20663.5C

### MODEL NUMBER NOMENCLATURE - Example: AMI 1SS4

| SERIES                        | DESIGN                                       | CONNECTION TYPE                                                                                                      | CONNECTION SIZE    | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|-------------------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| AMI                           | 1                                            | SS                                                                                                                   | 4                  |                       |                                             |                                              |
| Take-Apart Moisture Indicator | 1 = Standard Connection<br>2 = Bushing Style | FM = Female Flare X Male Flare<br>MM = Male Flare X Male Flare<br>SS = Sweat X Sweat (ODF)<br>TT = ODF Extended Ends | In 1/8" Increments | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### AMI SERIES MOISTURE INDICATORS

| CONNECTION TYPE           | CONNECTION SIZE | MODEL NUMBER | ITEM NUMBER |
|---------------------------|-----------------|--------------|-------------|
| Female Flare X Male Flare | 1/4"            | AMI 1FM2     | 048800      |
|                           | 3/8"            | AMI 1FM3     | 048801      |
|                           | 1/2"            | AMI 1FM4     | 048802      |
| Male Flare X Male Flare   | 3/8"            | AMI 1MM3     | 048804      |
|                           | 1/2"            | AMI 1MM4     | 048805      |
|                           | 5/8"            | AMI 1MM5     | 048806      |
| Sweat X Sweat (ODF)       | 1/4"            | AMI 1SS2     | 048811      |
|                           | 3/8"            | AMI 1SS3     | 048812      |
|                           | 1/2"            | AMI 1SS4     | 048813      |
|                           | 5/8"            | AMI 1SS5     | 048814      |
|                           | 7/8"            | AMI 1SS7     | 048815      |
|                           | 1-1/8"          | AMI 1SS9     | 048816      |
| ODF Extended Ends         | 1/4"            | AMI 1TT2     | 047298      |
|                           | 3/8"            | AMI 1TT3     | 042771      |
|                           | 1/2"            | AMI 1TT4     | 022302      |
|                           | 5/8"            | AMI 1TT5     | 031136      |
|                           | 7/8"            | AMI 1TT7     | 031357      |
|                           | 1-1/8"          | AMI 1TT9     | 031578      |
|                           | 1-3/8"          | AMI 1TT11    | 060255      |
| Bushing Style (ODM)       | 7/8"            | AMI 2S7      | 064167      |
|                           | 1-1/8"          | AMI 2S9      | 064168      |
|                           | 1-3/8"          | AMI 2S11     | 022303      |
|                           | 1-5/8"          | AMI 2S13     | 028388      |
|                           | 2-1/8"          | AMI 2S17     | 031219      |

MOISTURE CONTENT COLOR CODE (PPM H<sub>2</sub>O)

| INDICATION LIQUID TEMPERATURE | DRY (DARK BLUE) |       |       | CAUTION (PURPLE) |       |       | WET (SALMON) |       |       |
|-------------------------------|-----------------|-------|-------|------------------|-------|-------|--------------|-------|-------|
|                               | 75°F            | 100°F | 125°F | 75°F             | 100°F | 125°F | 75°F         | 100°F | 125°F |
| R-12                          | 1.4             | 2.5   | 4     | 5                | 9     | 15    | 25           | 43    | 70    |
| R-134a                        | 20              | 35    | 60    | 35               | 55    | 85    | 130          | 160   | 190   |
| R-22                          | 25              | 35    | 50    | 40               | 65    | 90    | 145          | 205   | 290   |
| R-407C                        | 26              | 40    | 64    | 42               | 68    | 109   | 150          | 230   | 370   |
| R-410A                        | 30              | 55    | 75    | 50               | 85    | 120   | 165          | 290   | 420   |
| R-404A / 507                  | 15              | 25    | 45    | 33               | 50    | 80    | 120          | 150   | 180   |
| R-448 / 449                   | 22              | 31    | 43    | 37               | 52    | 72    | 141          | 203   | 282   |
| R-450A / R513A                | 13              | 18    | 25    | 22               | 30    | 42    | 82           | 118   | 164   |

| INDICATION LIQUID TEMPERATURE | DRY (DARK BLUE) |      |      |      | CAUTION (PURPLE) |      |      |      | WET (SALMON) |      |      |      |
|-------------------------------|-----------------|------|------|------|------------------|------|------|------|--------------|------|------|------|
|                               | -40°F           | -4°F | 32°F | 68°F | -40°F            | -4°F | 32°F | 68°F | -40°F        | -4°F | 32°F | 68°F |
| R-744                         | 3               | 6    | 11   | 20   | 5                | 10   | 19   | 34   | 16           | 32   | 63   | 116  |

AMI SERIES PARTS

| DESCRIPTION                                                           | MODEL NUMBER | ITEM NUMBER |
|-----------------------------------------------------------------------|--------------|-------------|
| Lens cap                                                              | 12740-1      | 021371      |
| "O" Ring                                                              | PS-1525-2    | 020877      |
| Lens Assembly Kit (Consists of Lens Assembly, Lens Cap, and "O" Ring) | X-12978-1    | 027511      |



A-IHL 13S

## A-IHL SERIES MOISTURE INDICATORS

The A-IHL saddle design moisture indicator is used for large diameter tubing in CFC, HCFC and HFC refrigerants.

### FEATURES

- Saddle design
- Solid copper connections
- Replaceable moisture indicator
- Eliminates the need for bypass installation - positive reaction to system moisture levels

### SPECIFICATIONS

Maximum Working Pressure..... 680 psig (47 bar)  
 UL/CUL File Number ..... SA9566  
 Canadian CRN ..... 0F20663.5C

### MODEL NUMBER NOMENCLATURE - Example: A-IHL 9S

| SERIES                                   | CONNECTION SIZE    | CONNECTION TYPE | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|------------------------------------------|--------------------|-----------------|-----------------------|---------------------------------------------|----------------------------------------------|
| A-IHL                                    | 9                  | S               |                       |                                             |                                              |
| Large Diameter Tubing Moisture Indicator | In 1/8" Increments | S = ODF         | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### A-IHL SERIES MOISTURE INDICATORS

| CONNECTION TYPE | CONNECTION SIZE | LENGTH | MODEL NUMBER | ITEM NUMBER |
|-----------------|-----------------|--------|--------------|-------------|
| ODF             | 1-1/8"          | 6.31"  | A-IHL 9S     | 060853      |
| ODF             | 1-3/8"          | 7.12"  | A-IHL 11S    | 061030      |
| ODF             | 1-5/8"          | 7.87"  | A-IHL 13S    | 061031      |
| ODF             | 2-1/8"          | 8.68"  | A-IHL 17S    | 061032      |



APD 165SB

APD SERIES PULSATION DAMPENER / MUFFLER

The APD Series is designed to reduce noise and vibration on the compressor discharge lines.

FEATURES

- Compact size
- Full flow fittings
- Solid copper connections
- Corrosion resistant epoxy powder paint finish
- Rugged steel shells for vibration resistance
- Shock resistant steel shell construction

SPECIFICATIONS

Maximum Working Pressure..... 680 psig (47 bar)  
Operating Range ..... -40°F/C to +250°F (121 °C)  
UL/CUL File Number ..... SA5760

MODEL NUMBER NOMENCLATURE - Example: APD 054SB

| SERIES             | UNIT SIZE    | CONNECTION SIZE    | CONNECTION STYLE   | BAFFLES                                 | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|--------------------|--------------|--------------------|--------------------|-----------------------------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| APD                | 05           | 4                  | S                  | B                                       |                       |                                             |                                              |
| Pulsation Dampener | In Cubic In. | In 1/8" Increments | S = ODF<br>F = SAE | B = With Baffles<br>(Omit for Standard) | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

APD SERIES MUFFLERS

| INLET X OUTLET CONNECTION SIZE | BAFFLES | MODEL NUMBER | ITEM NUMBER |
|--------------------------------|---------|--------------|-------------|
| 1/2" X 1/2" ODF                | Yes     | APD 054SB    | 049651      |
| 3/8" X 3/8" ODF                | No      | APD 163S     | 059144      |
| 5/8" X 5/8" ODF                | Yes     | APD 165SB    | 060119      |
| 7/8" X 7/8" ODF                | Yes     | APD 167SB    | 061042      |
| 1-1/8" X 1-1/8" ODF            | No      | APD 309S     | 056989      |



A-AS 597

## A-AS SERIES SUCTION ACCUMULATORS

The A-AS protects the compressor from liquid slugging and is used with CFC, HCFC and HFC refrigerants. It is available for systems through 28 tons nominal capacity.

- Designed to operate in a range of +40°F to -40°F evaporator temperature
- Fusible plug on larger diameter units
- Solid copper connections
- Corrosion resistant epoxy powder paint finish
- Inlet deflector directs refrigerant flow to prevent internal splashing and aid in the collection of refrigerant oil

### SPECIFICATIONS

Maximum working pressure ..... 450 psig (31 bar)  
 Fusible plug temperature ..... 430°F (221°C)  
 UL/CUL file number ..... SA 10225  
 Canadian CRN ..... 0H20236-5C

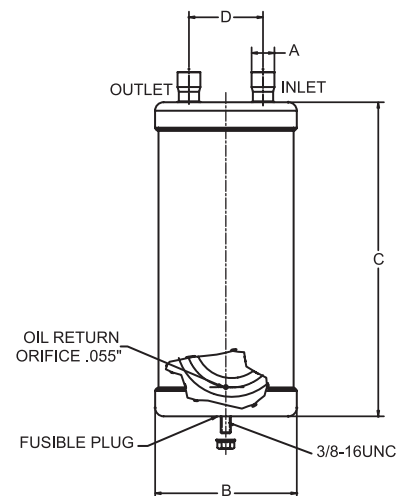
### MODEL NUMBER NOMENCLATURE - Example: A-AS 3125

| SERIES               | ACCUMULATOR SUCTION | DIAMETER     | HEIGHT       | FITTING SIZE                    | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                                        |
|----------------------|---------------------|--------------|--------------|---------------------------------|-----------------------|---------------------------------------------|------------------------------------------------------------------|
| A                    | AS                  | 3            | 12           | 5                               |                       |                                             |                                                                  |
| Suction Accumulators |                     | In Cubic In. | In Cubic In. | Fitting Size In 1/8" Increments | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>P1 = Pallet Pack<br>(Omit for Individual Pack) |

### A-AS SERIES SUCTION ACCUMULATORS

| (B) DIAMETER (IN) | (C) HEIGHT (IN) | (A) FITTING SIZE | (D) FITTING SEPARATION (IN) | FLOW CAPACITY TONS (+40°F) |        | HOLDING CAPACITY (LBS) 50% OF SYSTEM CHARGE 40°F LIQUID |                |        |                 |                 | MODEL NUMBER | ITEM NUMBER |
|-------------------|-----------------|------------------|-----------------------------|----------------------------|--------|---------------------------------------------------------|----------------|--------|-----------------|-----------------|--------------|-------------|
|                   |                 |                  |                             | R-404A                     | R-410A | R-22 / R-134a                                           | R-404A / R-507 | R-410A | R-448A / R-449A | R-450A / R-513A |              |             |
| 3                 | 8               | 1/2" ODF         | 1.63                        | 1.7                        | 2.4    | 1.5                                                     | 1.5            | 2.1    | 1.4             | 1.4             | A-AS 384     | 060819      |
| 3                 | 10              | 5/8" ODF         | 1.63                        | 2.6                        | 3.7    | 2.0                                                     | 2.0            | 2.6    | 1.8             | 1.9             | A-AS 3105    | 060963      |
| 3                 | 12              | 5/8" ODF         | 1.63                        | 2.6                        | 3.7    | 3.0                                                     | 2.5            | 3.1    | 2.8             | 2.9             | A-AS 3125    | 060812      |
| 3                 | 12              | 3/4" ODF         | 1.63                        | 3.5                        | 4.9    | 3.0                                                     | 2.5            | 3.1    | 2.8             | 2.9             | A-AS 3126    | 060813      |
| 3                 | 14              | 5/8" ODF         | 1.63                        | 2.6                        | 3.7    | 3.5                                                     | 3.0            | 3.6    | 3.2             | 3.3             | A-AS 3145    | 060964      |
| 3                 | 14              | 3/4" ODF         | 1.63                        | 3.5                        | 4.9    | 3.5                                                     | 2.8            | 3.6    | 3.2             | 3.3             | A-AS 3146    | 060965      |
| 4                 | 6               | 1/2" ODF         | 2.50                        | 1.7                        | 2.4    | 2.5                                                     | 2.0            | 2.8    | 2.3             | 2.4             | A-AS 464     | 060967      |
| 4                 | 6               | 5/8" ODF         | 2.50                        | 2.6                        | 3.7    | 2.5                                                     | 2.0            | 2.8    | 2.3             | 2.4             | A-AS 465     | 060821      |
| 4                 | 10              | 5/8" ODF         | 2.50                        | 2.6                        | 3.7    | 4.0                                                     | 3.5            | 4.6    | 3.7             | 3.8             | A-AS 4105    | 060966      |
| 4                 | 10              | 3/4" ODF         | 2.50                        | 3.5                        | 4.9    | 4.0                                                     | 3.5            | 4.6    | 3.7             | 3.8             | A-AS 4106    | 060820      |
| 5                 | 9               | 3/4" ODF         | 2.75                        | 3.5                        | 4.9    | 6.0                                                     | 5.5            | 6.5    | 5.5             | 5.7             | A-AS 596     | 060824      |
| 5                 | 9               | 7/8" ODF         | 2.75                        | 6.4                        | 8.9    | 6.0                                                     | 5.5            | 6.5    | 5.5             | 5.7             | A-AS 597     | 060818      |
| 5                 | 12              | 3/4" ODF         | 2.75                        | 3.5                        | 4.9    | 8.0                                                     | 7.5            | 8.6    | 7.4             | 7.7             | A-AS 5126    | 060822      |
| 5                 | 12              | 7/8" ODF         | 2.75                        | 6.4                        | 8.9    | 8.0                                                     | 7.5            | 8.6    | 7.4             | 7.7             | A-AS 5127    | 060823      |
| 5                 | 13              | 7/8" ODF         | 2.75                        | 6.4                        | 8.9    | 8.5                                                     | 8.0            | 9.3    | 7.9             | 8.1             | A-AS 5137    | 060814      |
| 5                 | 13              | 1-1/8" ODF       | 2.75                        | 10.3                       | 14.5   | 8.5                                                     | 8.0            | 9.3    | 7.9             | 8.1             | A-AS 5139    | 060815      |
| 5                 | 17              | 1-1/8" ODF       | 2.75                        | 10.3                       | 14.5   | 12.0                                                    | 10.0           | 12.2   | 11.1            | 11.5            | A-AS 5179    | 060817      |
| 5                 | 17              | 1-3/8" ODF       | 2.75                        | 16.4                       | 23     | 12.0                                                    | 10.0           | 12.2   | 11.1            | 11.5            | A-AS 51711   | 060816      |
| 6                 | 11              | 7/8" ODF         | 2.94                        | 6.4                        | 8.9    | 10.0                                                    | 9.0            | 11.4   | 9.2             | 9.6             | A-AS 6117    | 060825      |
| 6                 | 13              | 7/8" ODF         | 2.94                        | 6.4                        | 8.9    | 12.8                                                    | 11.5           | 13.4   | 11.8            | 12.3            | A-AS 6137    | 060826      |
| 6                 | 13              | 1-1/8" ODF       | 2.94                        | 10.3                       | 14.5   | 12.8                                                    | 11.5           | 13.4   | 11.8            | 12.3            | A-AS 6139    | 060968      |
| 6                 | 14              | 1-3/8" ODF       | 2.94                        | 16.4                       | 23     | 14.1                                                    | 12.6           | 14.5   | 13.0            | 13.5            | A-AS 61411   | 060827      |
| 6                 | 17              | 1-5/8" ODF       | 2.94                        | 24.8                       | 34.9   | 17.3                                                    | 15.5           | 17.6   | 16.0            | 16.6            | A-AS 61713   | 060969      |
| 6                 | 20              | 1-5/8" ODF       | 2.94                        | 24.8                       | 34.9   | 20.6                                                    | 18.4           | 20.7   | 19.0            | 19.7            | A-AS 62013   | 060828      |
| 6                 | 25              | 1-5/8" ODF       | 2.94                        | 24.8                       | 34.9   | 25.8                                                    | 23.1           | 25.9   | 23.8            | 24.7            | A-AS 62513   | 060970      |

### DIMENSIONAL DATA



Capacity  
Tables







BVS 078 806758

## BV SERIES BALL VALVES

The BVE/BVS Series refrigeration ball valves isolate suction, discharge, and liquid lines during maintenance shutdown periods.

### FEATURES

- Forged brass body with extended copper ODF connections
- Compact, lightweight, hermetic welded design
- Compatible with all A1 class and A2L class refrigerants/lubricants, as well as R-290 and R-744
- Full port design below 2" port size
- Bi-directional flow characteristics
- Valve stem cap retained by strap attached to main body
- Integrated access valve available on all sizes
- Low operating friction design

### SPECIFICATIONS

Maximum Working Pressure..... 650 psig (45 bar)  
 Fluid Temperature Range..... -40°F/C to 250°F (121°C), 302°F (150°C) short term  
 UL/CUL File Number ..... SA5312  
 Canadian CRN ..... 0C21506.513467890YTN

### MODEL NUMBER NOMENCLATURE - Example: BVE 118 806739

| SERIES            | ACCESS VALVE      | CONNECTION SIZE                                                                        |                                                                                   | UNIQUE IDENTIFIER |
|-------------------|-------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------|
| BV                | E                 | 118                                                                                    |                                                                                   | 806739            |
| Ball Valve Series | E = No<br>S = Yes | '014 = 1/4"<br>'038 = 3/8"<br>'012 = 1/2"<br>'058 = 5/8"<br>'034 = 3/4"<br>'078 = 7/8" | '118 = 1-1/8"<br>'138 = 1-3/8"<br>'158 = 1-5/8"<br>'218 = 2-1/8"<br>'258 = 2-5/8" |                   |

### BV SERIES BALL VALVES

| CONNECTION SIZE AND TYPE | PORT SIZE | LAY IN LENGTH (IN) | WITHOUT ACCESS VALVE |             | WITH ACCESS VALVE |             |
|--------------------------|-----------|--------------------|----------------------|-------------|-------------------|-------------|
|                          |           |                    | MODEL NUMBER         | ITEM NUMBER | MODEL NUMBER      | ITEM NUMBER |
| 1/4" ODF                 | Full Port | 4.72               | BVE 014 806730       | 806730      | BVS 014 806750    | 806750      |
| 3/8" ODF                 | Full Port | 4.72               | BVE 038 806732       | 806732      | BVS 038 806752    | 806752      |
| 1/2" ODF                 | Full Port | 5.00               | BVE 012 806734       | 806734      | BVS 012 806754    | 806754      |
| 5/8" ODF                 | Full Port | 5.00               | BVE 058 806736       | 806736      | BVS 058 806756    | 806756      |
| 3/4" ODF                 | Full Port | 6.18               | BVE 034 806737       | 806737      | BVS 034 806757    | 806757      |
| 7/8" ODF                 | Full Port | 6.18               | BVE 078 806738       | 806738      | BVS 078 806758    | 806758      |
| 1-1/8" ODF               | Full Port | 6.65               | BVE 118 806739       | 806739      | BVS 118 806759    | 806759      |
| 1-3/8" ODF               | Full Port | 9.09               | BVE 138 806741       | 806741      | BVS 138 806761    | 806761      |
| 1-5/8" ODF               | Full Port | 10.91              | BVE 158 806742       | 806742      | BVS 158 806762    | 806762      |
| 2-1/8" ODF               | 2" Port   | 11.69              | BVE 218 806744       | 806744      | BVS 218 806764    | 806764      |
| 2-5/8" ODF               | 2" Port   | 11.69              | BVE 258 806745       | 806745      | BVS 258 806765    | 806765      |

### BV-SERIES PARTS LIST

| DESCRIPTION                                                           | QUANTITY (PER PACK) | MODEL NUMBER | ITEM NUMBER |
|-----------------------------------------------------------------------|---------------------|--------------|-------------|
| BV Series Small Locking Seal Caps for Valve Sizes 1/4" Thru 7/8"      | 10 pcs.             | BV 806770    | 806770      |
| BV Series Medium Locking Seal Caps for Valve Sizes 1-1/8" Thru 1-3/8" | 10 pcs.             | BV 806771    | 806771      |
| BV Series Large Locking Seal Caps for Valve Sizes 1-5/8" Thru 2-5/8"  | 10 pcs.             | BV 806772    | 806772      |



BVSS 012

## BVSS SERIES BALL VALVES

The BVSS Series refrigeration ball valves isolate suction, discharge, and liquid lines during maintenance shut down periods.

### FEATURES

- Forged brass body with hermetic weld design
- Copper ODF connections with standard lengths for field retrofit installations
- Compatible with all A1 class refrigerants and R32
- Full port design on all sizes
- Bi-directional flow characteristics
- Integrated access valve on all sizes (core is pre-installed)
- Brass locking seal caps

### SPECIFICATIONS

Maximum Working Pressure..... 650 psig (45 bar)  
 Fluid Temperature Range..... -40°F/°C to 250°F (121°C), 302°F (150°C) short term  
 UL/CUL File Number ..... SA32723

### MODEL NUMBER NOMENCLATURE - Example: BVSS 012

| SERIES     | CONNECTION SIZE                                      |                                                          |                                                              |
|------------|------------------------------------------------------|----------------------------------------------------------|--------------------------------------------------------------|
| BVSS       | 012                                                  |                                                          |                                                              |
| Ball Valve | 014 = 1/4"<br>038 = 3/8"<br>012 = 1/2"<br>058 = 5/8" | 034 = 3/4"<br>078 = 7/8"<br>118 = 1-1/8"<br>138 = 1-3/8" | 158 = 1-5/8"<br>218 = 2-1/8"<br>258 = 2-5/8"<br>318 = 3-1/8" |

### BALL VALVE SERIES COMPARISON

| FEATURE          | BVSS      | BVS                        | BVE |
|------------------|-----------|----------------------------|-----|
| Access Valve     | Yes       | Yes                        | —   |
| Refrigerants     | A1, R32   | A1 & A2L, R290, R744       |     |
| Full Port        | All sizes | 1/4" through 1-5/8" only   |     |
| Locking Seal Cap | Brass     | Plastic w/ retaining strap |     |
| Length           | Standard  | —                          |     |
| Mounting Holes   | —         | Yes                        |     |

### BVSS SERIES BALL VALVES

| CONNECTION SIZE AND TYPE | PORT SIZE | OVERALL LENGTH (IN) | MODEL NUMBER | ITEM NUMBER |
|--------------------------|-----------|---------------------|--------------|-------------|
| 1/4" ODF                 | Full Port | 4.41                | BVSS 014     | 081013      |
| 3/8" ODF                 | Full Port | 4.96                | BVSS 038     | 081014      |
| 1/2" ODF                 | Full Port | 5.02                | BVSS 012     | 081015      |
| 5/8" ODF                 | Full Port | 5.91                | BVSS 058     | 081016      |
| 3/4" ODF                 | Full Port | 6.46                | BVSS 034     | 081017      |
| 7/8" ODF                 | Full Port | 7.46                | BVSS 078     | 081018      |
| 1-1/8" ODF               | Full Port | 8.23                | BVSS 118     | 081019      |
| 1-3/8" ODF               | Full Port | 9.69                | BVSS 138     | 081020      |
| 1-5/8" ODF               | Full Port | 10.98               | BVSS 158     | 081021      |
| 2-1/8" ODF               | Full Port | 12.60               | BVSS 218     | 081022      |
| 2-5/8" ODF               | Full Port | 14.84               | BVSS 258     | 081023      |
| 3-1/8" ODF               | Full Port | 16.14               | BVSS 318     | 081024      |



ACK 4

## ACK SERIES CHECK VALVE

The ACK check valve is a normally closed magnetic check valve that prevents reverse refrigerant flow in liquid lines and compressor discharge lines.

### FEATURES

- Copper connection sizes 1/4" through 2-5/8"
- Hermetic spun copper design
- Magnetic checking action
- Built-in 30 mesh stainless steel strainer
- Can be installed in any position
- Compatible with all A1 and A2L class refrigerants, as well as R-290 and R-744

### SPECIFICATIONS

Maximum Working Pressure ..... 680 psig (47 bar)  
 Maximum Working Pressure (ACK-4 & -6 only) ..... 800 psig (55 bar)  
 Approvals ..... UL/CUL File Number SA5312  
 Canadian CRN ..... 0C21506.513467890YTN

### MODEL NUMBER NOMENCLATURE - Example: ACK-4

| SERIES             | CONNECTION SIZE                       |
|--------------------|---------------------------------------|
| ACK                | 4                                     |
| Check Valve Series | Copper ODF Connection Size (in 1/16") |

### ACK SERIES CHECK VALVES

| CONNECTION<br>SIZE & TYPE<br>(IN) | NOMINAL TONS LIQUID & SUCTION 40°F @ 1 PSI, DISCHARGE 2 PSI |         |                          |         |           |        |         |           |                 |         | Cv   | MODEL NUMBER | ITEM NUMBER |
|-----------------------------------|-------------------------------------------------------------|---------|--------------------------|---------|-----------|--------|---------|-----------|-----------------|---------|------|--------------|-------------|
|                                   | R22                                                         |         | R-404A / R-448A / R-449A |         |           | R-410A |         |           | R-450A / R-513A |         |      |              |             |
|                                   | LIQUID                                                      | SUCTION | LIQUID                   | SUCTION | DISCHARGE | LIQUID | SUCTION | DISCHARGE | LIQUID          | SUCTION |      |              |             |
| 1/4 ODF                           | 2.60                                                        | 0.40    | 1.77                     | 0.34    | 0.59      | 2.59   | 0.48    | 0.80      | 1.79            | 0.28    | 0.9  | ACK 4        | 064985      |
| 3/8 ODF                           | 3.10                                                        | 0.60    | 2.11                     | 0.50    | 1.20      | 3.09   | 0.72    | 1.63      | 2.14            | 0.42    | 1    | ACK 6        | 064986      |
| 1/2 ODF                           | 9.40                                                        | 1.20    | 6.39                     | 1.01    | 2.23      | 9.37   | 1.44    | 3.01      | 6.48            | 0.84    | 3.1  | ACK 8        | 064987      |
| 5/8 ODF                           | 13.00                                                       | 1.40    | 8.84                     | 1.18    | 2.67      | 12.96  | 1.68    | 3.61      | 8.96            | 0.98    | 3.6  | ACK 10       | 064988      |
| 3/4 ODF                           | 27.00                                                       | 3.30    | 18.36                    | 2.77    | 5.82      | 26.92  | 3.96    | 7.87      | 18.62           | 2.31    | 8    | ACK 12       | 064989      |
| 7/8 ODF                           | 29.00                                                       | 3.70    | 19.72                    | 3.11    | 6.71      | 28.91  | 4.44    | 9.08      | 20.00           | 2.59    | 9.2  | ACK 14       | 064990      |
| 1-1/8 ODF                         | 51.00                                                       | 6.00    | 34.68                    | 5.04    | 10.55     | 50.85  | 7.20    | 14.27     | 35.16           | 4.20    | 15.4 | ACK 18       | 064991      |
| 1-3/8 ODF                         | 79.00                                                       | 9.50    | 53.72                    | 7.98    | 17.73     | 78.76  | 11.4    | 23.98     | 54.47           | 6.65    | 23.8 | ACK 22       | 064992      |
| 1-5/8 ODF                         | 102.00                                                      | 17.00   | 69.36                    | 14.28   | 26.04     | 101.69 | 20.4    | 35.21     | 70.33           | 11.89   | 24.2 | ACK 26       | 064993      |
| 2-1/8 ODF                         | 213.00                                                      | 30.00   | 144.84                   | 25.20   | 41.13     | 212.36 | 36.00   | 55.62     | 146.86          | 20.99   | 38.7 | ACK 34       | 064994      |
| 2-5/8 ODF                         | 375.00                                                      | 50.00   | 255.00                   | 42.00   | 50.70     | 373.88 | 60.00   | 68.56     | 258.56          | 34.98   | 71.7 | ACK 42       | 064995      |



A-FC 6221717H

## A-FC / A-WC HIGH EFFICIENCY CENTRIFUGAL OIL SEPARATOR

The High Efficiency Centrifugal Oil Separator is used in ultra-low temperature systems with long refrigerant lines or inherent oil return problems. It is also used on multiple compressor racks for supermarkets and air conditioning systems for use with CFCs, HCFCs, HFCs, and their lubricants. A-WC Series is suitable for use with R-410A.

### FEATURES

- Internal oil collection screen
- Hermetic welded or accessible bolted flange construction
- Corrosion resistant epoxy powder paint
- High efficiency (99%) centrifugal separation

### SPECIFICATIONS

Maximum Working Pressure

A-FC ..... Flanged Models 450 psi (31 bar)

A-WC ..... Welded Models 600 psi (41 bar)

UL/CUL File Number ..... SA8547

Canadian CRN ..... 0H20236-5C

### MODEL NUMBER NOMENCLATURE - Example: A-FC 10272121H

| SERIES                | STYLE                     | CENTRIFUGAL           | SHELL DIAMETER        | LENGTH              | INLET CONNECTION   | OUTLET CONNECTION  | LEG HEIGHT                                                 | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                                | PACK TYPE                                        |
|-----------------------|---------------------------|-----------------------|-----------------------|---------------------|--------------------|--------------------|------------------------------------------------------------|-----------------------|-------------------------------------------------|--------------------------------------------------|
| A                     | F                         | C                     | 10                    | 27                  | 21                 | 21                 | H                                                          |                       |                                                 |                                                  |
| A-WC /<br>A-FC Series | F = Flanged<br>W = Welded | Centrifugal<br>Design | Diameter in<br>Inches | Length in<br>Inches | In 1/8" Increments | In 1/8" Increments | H = 10"<br><br>(Omit for 5" Standard,<br>2.95" or no legs) | Blank<br>Thru<br>-99  | G = Customer Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

### A-WC / A-FC SERIES OIL SEPARATORS

| F = FLANGED<br>W = WELDED | DIAMETER (IN) | OVERALL LENGTH (IN) | CONNECTION SIZE (ODF) | LEG HEIGHT (IN) | DISCHARGE MAXIMUM (CFM) | MAXIMUM CAPACITY OF REFRIGERATION AT EVAPORATOR TEMPERATURE (TONS/kW) |              |                                 |              |                |              |        |       | MODEL NUMBER                | ITEM NUMBER |
|---------------------------|---------------|---------------------|-----------------------|-----------------|-------------------------|-----------------------------------------------------------------------|--------------|---------------------------------|--------------|----------------|--------------|--------|-------|-----------------------------|-------------|
|                           |               |                     |                       |                 |                         | R-134a / R-450A / R-513A                                              |              | R-22 / R-407C / R-448A / R-449A |              | R-404A / R-507 |              | R-410A |       |                             |             |
|                           |               |                     |                       |                 |                         | -40°F                                                                 | +40°F        | -40°F                           | +40°F        | -40°F          | +40°F        | -40°F  | +40°F |                             |             |
| F                         | 6             | 22                  | 1-3/8"                | 5.0             | 15.9                    | 12.2 (42.8)                                                           | 14.9 (52.4)  | 17.6 (61.9)                     | 21.10 (73.9) | 16.8 (59.1)    | 22.1 (77.9)  | —      | —     | A-FC 6221111 <sup>1</sup>   | 065930      |
| F                         | 6             | 27                  | 1-3/8"                | 10.0            | 15.9                    | 12.2 (42.8)                                                           | 14.9 (52.4)  | 17.6 (61.9)                     | 21.10 (73.9) | 16.8 (59.1)    | 22.1 (77.9)  | —      | —     | A-FC 6221111H <sup>1</sup>  | 065931      |
| F                         | 6             | 22                  | 1-5/8"                | 5.0             | 24.4                    | 18.7 (65.6)                                                           | 22.8 (80.3)  | 27.0 (94.8)                     | 32.2 (113.2) | 25.8 (90.6)    | 33.9 (119.3) | —      | —     | A-FC 6221313 <sup>1</sup>   | 065362      |
| F                         | 6             | 27                  | 1-5/8"                | 10.0            | 24.4                    | 18.7 (65.6)                                                           | 22.8 (80.3)  | 27.0 (94.8)                     | 32.2 (113.2) | 25.8 (90.6)    | 33.9 (119.3) | —      | —     | A-FC 6221313H <sup>1</sup>  | 065932      |
| F                         | 6             | 22                  | 2-1/8"                | 5.0             | 31.3                    | 23.9 (84.0)                                                           | 29.2 (102.8) | 34.5 (121.4)                    | 41.2 (145.0) | 33.3 (116.0)   | 43.5 (152.8) | —      | —     | A-FC 6221717 <sup>1</sup>   | 065933      |
| F                         | 6             | 27                  | 2-1/8"                | 10.0            | 31.3                    | 23.9 (84.0)                                                           | 29.2 (102.8) | 34.5 (121.4)                    | 41.2 (145.0) | 33.3 (116.0)   | 43.5 (152.8) | —      | —     | A-FC 6221717H <sup>1</sup>  | 065934      |
| F                         | 8             | 24                  | 2-1/8"                | 5.0             | 38.1                    | 29.1 (102.3)                                                          | 35.6 (125.1) | 42.0 (147.8)                    | 50.2 (176.5) | 40.1 (141.2)   | 52.9 (186.1) | —      | —     | A-FC 8241717 <sup>1</sup>   | 065276      |
| F                         | 8             | 29                  | 2-1/8"                | 10.0            | 38.1                    | 29.1 (102.3)                                                          | 35.6 (125.1) | 42.0 (147.8)                    | 50.2 (176.5) | 40.1 (141.2)   | 52.9 (186.1) | —      | —     | A-FC 8241717H <sup>1</sup>  | 065935      |
| F                         | 10            | 27                  | 2-5/8"                | 5.0             | 66.1                    | 50.5 (177.5)                                                          | 61.7 (217.1) | 72.9 (256.5)                    | 87.1 (306.3) | 69.7 (245.0)   | 91.8 (322.8) | —      | —     | A-FC 10272121 <sup>1</sup>  | 065936      |
| F                         | 10            | 32                  | 2-5/8"                | 10.0            | 66.1                    | 50.5 (177.5)                                                          | 61.7 (217.1) | 72.9 (256.5)                    | 87.1 (306.3) | 69.7 (245.0)   | 91.8 (322.8) | —      | —     | A-FC 10272121H <sup>1</sup> | 065937      |

A-WC / A-FC SERIES OIL SEPARATORS <CONT'D>

| F = FLANGED<br>W = WELDED | DIAMETER (IN) | OVERALL LENGTH (IN) | CONNECTION SIZE (ODF) | LEG HEIGHT (IN) | DISCHARGE MAXIMUM (CFM) | MAXIMUM CAPACITY OF REFRIGERATION AT EVAPORATOR TEMPERATURE (TONS/kW) |              |                                 |               |                |               |              |              | MODEL NUMBER   | ITEM NUMBER |
|---------------------------|---------------|---------------------|-----------------------|-----------------|-------------------------|-----------------------------------------------------------------------|--------------|---------------------------------|---------------|----------------|---------------|--------------|--------------|----------------|-------------|
|                           |               |                     |                       |                 |                         | R-134a / R-450A / R-513A                                              |              | R-22 / R-407C / R-448A / R-449A |               | R-404A / R-507 |               | R-410A       |              |                |             |
|                           |               |                     |                       |                 |                         | -40°F                                                                 | +40°F        | -40°F                           | +40°F         | -40°F          | +40°F         | -40°F        | +40°F        |                |             |
| F                         | 12            | 35                  | 3-1/8"                | 10.0            | 88.9                    | 67.9 (238.9)                                                          | 83.1 (292.1) | 98.1 (345.2)                    | 117.2 (412.2) | 93.7 (329.7)   | 123.5 (434.4) | —            | —            | A-FC 12302525H | 065938      |
| W                         | 4             | 17                  | 7/8"                  | 3.0             | 6.7                     | 5.1 (18.1)                                                            | 6.3 (22.1)   | 7.4 (26.2)                      | 8.9 (31.2)    | 7.1 (25.0)     | 9.4 (32.9)    | 12.2 (42.8)  | 13.8 (48.3)  | A-WC 41777     | 065895      |
| W                         | 4             | 19                  | 1-1/8"                | 3.0             | 11.6                    | 8.8 (31.0)                                                            | 10.8 (38.0)  | 12.8 (44.9)                     | 15.2 (53.6)   | 12.2 (42.8)    | 16.1 (56.4)   | 20.9 (73.4)  | 23.7 (83.3)  | A-WC 41999     | 065896      |
| W                         | 6             | 18                  | 1-3/8"                | —               | 15.9                    | 12.2 (42.8)                                                           | 14.9 (52.4)  | 17.6 (61.9)                     | 21.0 (73.9)   | 16.8 (15.1)    | 22.1 (77.9)   | 28.8 (101.2) | 32.7 (114.9) | A-WC 6181111   | 066094      |
| W                         | 6             | 18                  | 1-5/8"                | —               | 24.4                    | 18.7 (65.6)                                                           | 22.8 (80.3)  | 27.0 (94.8)                     | 32.2 (113.2)  | 25.8 (90.6)    | 33.9 (119.3)  | 44.1 (155.1) | 50.1 (176.0) | A-WC 6181313   | 066095      |
| W                         | 6             | 18                  | 2-1/8"                | —               | 31.3                    | 23.9 (84.0)                                                           | 29.2 (102.8) | 34.5 (121.4)                    | 41.2 (145.0)  | 33.0 (116.0)   | 43.5 (152.8)  | 56.5 (198.6) | 64.1 (225.4) | A-WC 6181717   | 066096      |

<sup>1</sup> Replaceable Float

A-WC / A-FC SERIES PARTS LIST

| DESCRIPTION                                                                                                                             | MODEL NUMBER      | ITEM NUMBER |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------|
| Oil Separator Flange Gasket                                                                                                             | OIL SEPARATOR KIT | 065849      |
| Flange with Integral Float Assembly and Flange Gasket, Repairs A-FC, AF, AC and R Series S1900 Standard and 5200 Helical Oil Separators | FLOAT REPAIR KIT  | 065847      |





A-WZ 55889

## A-F / A-W / A-WZ SERIES OIL SEPARATORS

The A-W and A-F are used for multiple compressor racks in supermarkets and air conditioning systems for use with HCFCs, HFCs and their lubricants

### FEATURES

- Hermetic welded or accessible bolted flange construction
- Solid copper connections for A-W and A-F
- Nickel plated steel connections for A-WZ
- Corrosion resistant epoxy powder paint

### SPECIFICATIONS

|                               |                      |                            |
|-------------------------------|----------------------|----------------------------|
| Maximum Working Pressure..... | A-W / A-F.....       | 450 psi (31 bar)           |
|                               | A-WZ.....            | 4" shell 600 psig (41 bar) |
|                               | A-WZ.....            | 6" shell 680 psig (47 bar) |
| UL/CUL File Number.....       | A-W / A-F.....       | SA10468                    |
|                               | A-WZ.....            | SA8547                     |
| Canadian CRN.....             | (Excludes A-WZ)..... | 0H20236-5C                 |
| CE Marking.....               | A-WZ.....            | PED 97/3EC                 |

### MODEL NUMBER NOMENCLATURE - EXAMPLE: A-F 579213

| SERIES           | CONNECTION FLARE                      | STYLE                                                  | UNIQUE IDENTIFIER | CONNECTION SIZE    | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|------------------|---------------------------------------|--------------------------------------------------------|-------------------|--------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| A                |                                       | F                                                      | 5792              | 13                 |                       |                                             |                                              |
| A-W / A-F Series | X - 3/8" flare<br>Omit for 1/4" flare | F = Flanged<br>W = Welded<br>WZ = Welded High Pressure |                   | In 1/8" Increments | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### A-F, A-W OIL SEPARATORS

| F = FLANGED<br>W = WELDED | MAXIMUM WORKING<br>PRESSURE (PSI) | SHELL DIAMETER (IN) | LENGTH (IN) | CONNECTION SIZE (ODF) | DISCHARGE MAXIMUM<br>(CFM) | PRE-CHARGE AMOUNT (OZ) | MAXIMUM CAPACITY OF REFRIGERATION AT EVAPORATOR TEMPERATURE (TONS/KW) |                |                                   |                |                |                | MODEL<br>NUMBER         | ITEM<br>NUMBER |
|---------------------------|-----------------------------------|---------------------|-------------|-----------------------|----------------------------|------------------------|-----------------------------------------------------------------------|----------------|-----------------------------------|----------------|----------------|----------------|-------------------------|----------------|
|                           |                                   |                     |             |                       |                            |                        | R-134a /<br>R-450A / R-513A                                           |                | R-22 /<br>R-407C / R-448A /R-449A |                | R-404A / R-507 |                |                         |                |
|                           |                                   |                     |             |                       |                            |                        | -40°F/C                                                               | +40°F<br>(4°C) | -40°F/C                           | +40°F<br>(4°C) | -40°F/C        | +40°F<br>(4°C) |                         |                |
| F                         | 450                               | 4                   | 10.5        | 1/2"                  | 1.49                       | 17                     | 1.0 (3.5)                                                             | 1.8 (6.2)      | 1.5 (5.3)                         | 2.0 (7.1)      | 1.5 (5.3)      | 2.0 (7.0)      | A-F 58824               | 060877         |
| F                         | 450                               | 6                   | 15          | 5/8"                  | 3.42                       | 17                     | 3.3 (11.5)                                                            | 4.5 (15.9)     | 4.5 (15.9)                        | 5.5 (19.5)     | 4.0 (14.2)     | 5.5 (19.0)     | A-F 58855               | 060878         |
| F                         | 450                               | 4                   | 18          | 7/8"                  | 6.05                       | 17                     | 4.8 (16.8)                                                            | 6.5 (23.0)     | 7.0 (24.8)                        | 8.0 (28.3)     | 6.5 (23.0)     | 8.5 (30.0)     | A-F 58877               | 060879         |
| F                         | 450                               | 4                   | 21.25       | 1-1/8"                | 8.28                       | 17                     | 6.5 (23.0)                                                            | 8.5 (30.1)     | 9.0 (31.9)                        | 11.0 (37.2)    | 8.5 (30.1)     | 11.0 (38.0)    | A-F 58889               | 060759         |
| F                         | 450                               | 4                   | 21.38       | 1-3/8"                | 9.99                       | 17                     | 8.0 (28.3)                                                            | 11.5 (40.7)    | 11.5 (40.7)                       | 14.0 (47.8)    | 10.5 (37.2)    | 14.0 (49.0)    | A-F 589011              | 060760         |
| F                         | 450                               | 4                   | 21.75       | 1-5/8"                | 10.66                      | 17                     | 9.5 (33.6)                                                            | 13.3 (46.9)    | 14.0 (49.6)                       | 17.7 (62.0)    | 14.0 (49.6)    | 17.0 (60.0)    | A-F 589213              | 060761         |
| F                         | 450                               | 6                   | 29.12       | 1-5/8"                | 23.93                      | 21                     | 11.8 (41.6)                                                           | 16.0 (56.6)    | 16.0 (56.6)                       | 18.0 (63.7)    | 17.5 (62.0)    | 23.0 (81.0)    | A-F 579213 <sup>1</sup> | 060875         |
| F                         | 450                               | 6                   | 29.31       | 2-1/8"                | 30.93                      | 21                     | 18.0 (63.7)                                                           | 25.6 (89.4)    | 25.0 (88.5)                       | 30.0 (106.0)   | 26.0 (92.0)    | 34.0 (121.0)   | A-F 579417 <sup>1</sup> | 060876         |
| W                         | 450                               | 4                   | 10.75       | 1/2"                  | 1.49                       | 17                     | 1.0 (3.5)                                                             | 1.8 (6.2)      | 1.5 (5.3)                         | 2.0 (7.1)      | 1.5 (5.3)      | 2.0 (7.0)      | A-W 55824               | 060933         |
| W                         | 450                               | 4                   | 13.2        | 5/8"                  | 3.42                       | 17                     | 3.3 (11.5)                                                            | 4.5 (15.9)     | 4.5 (15.9)                        | 5.5 (19.5)     | 4.0 (14.2)     | 5.5 (19.0)     | A-W 55855               | 060934         |
| W                         | 450                               | 4                   | 15          | 7/8"                  | 6.05                       | 17                     | 4.8 (16.8)                                                            | 6.5 (23.0)     | 7.0 (24.8)                        | 8.0 (28.3)     | 6.5 (23.0)     | 8.5 (30.0)     | A-W 55877               | 060931         |
| W                         | 450                               | 4                   | 16.25       | 1-1/8"                | 8.28                       | 17                     | 6.5 (23.0)                                                            | 8.5 (30.1)     | 9.0 (31.9)                        | 11.0 (37.2)    | 8.5 (30.1)     | 11.0 (38.0)    | A-W 55889               | 060974         |
| W                         | 450                               | 4                   | 19.5        | 1-3/8"                | 9.99                       | 17                     | 8.0 (28.3)                                                            | 11.5 (40.7)    | 11.5 (40.7)                       | 14.0 (47.8)    | 10.5 (37.2)    | 14.0 (49.0)    | A-W 559011              | 060930         |
| W                         | 450                               | 4                   | 19.88       | 1-5/8"                | 10.66                      | 17                     | 9.5 (33.6)                                                            | 13.3 (46.9)    | 14.0 (49.6)                       | 17.7 (62.0)    | 14.0 (49.6)    | 17.0 (60.0)    | A-W 559213              | 060975         |
| W                         | 450                               | 6                   | 15.75       | 1-3/8"                | 12.27                      | 20                     | 9.5 (33.4)                                                            | 13.7 (48.2)    | 13.0 (45.8)                       | 14.0 (49.8)    | 11.0 (38.7)    | 19.0 (66.9)    | A-W 569011              | 060978         |
| W                         | 450                               | 6                   | 19          | 1-5/8"                | 14.51                      | 20                     | 11.8 (41.6)                                                           | 16.0 (56.6)    | 16.0 (56.6)                       | 18.0 (63.7)    | 17.5 (62.0)    | 23.0 (81.0)    | A-W 569213              | 060979         |
| W                         | 450                               | 6                   | 19.5        | 2-1/8"                | 21.29                      | 20                     | 18.0 (63.7)                                                           | 25.6 (89.4)    | 25.0 (88.5)                       | 30.0 (106.0)   | 26.0 (92.0)    | 34.0 (121.0)   | A-W 569417              | 060980         |

<sup>1</sup> REPLACEABLE FLOAT

## A-WZ OIL SEPARATORS

| F = FLANGED W = WELDED | MAXIMUM WORKING PRESSURE (PSI) | SHELL DIAMETER (IN) | LENGTH (IN) | CONNECTION SIZE (ODF) | DISCHARGE MAXIMUM (CFM) | PRE-CHARGE AMOUNT (OZ) | MAXIMUM CAPACITY OF REFRIGERATION AT EVAPORATOR TEMPERATURE (TONS/KW) |             |                                 |             |                |             |             |              | MODEL NUMBER | ITEM NUMBER |
|------------------------|--------------------------------|---------------------|-------------|-----------------------|-------------------------|------------------------|-----------------------------------------------------------------------|-------------|---------------------------------|-------------|----------------|-------------|-------------|--------------|--------------|-------------|
|                        |                                |                     |             |                       |                         |                        | R-134a / R-450A / R-513A                                              |             | R-22 / R-407C / R-448A / R-449A |             | R-404A / R-507 |             | R-410A      |              |              |             |
|                        |                                |                     |             |                       |                         |                        | -40°F/C                                                               | +40°F (4°C) | -40°F/C                         | +40°F (4°C) | -40°F/C        | +40°F (4°C) | -40°F/C     | +40°F (4°C)  |              |             |
| W                      | 600                            | 4                   | 10.88       | 1/2"                  | 1.49                    |                        | 1.0 (3.5)                                                             | 1.8 (6.2)   | 1.5 (5.3)                       | 2.0 (7.1)   | 1.5 (5.3)      | 2.0 (7.0)   | 2.7 (9.0)   | 3.1 (11.0)   | A-XWZ 55824  | 66680       |
| W                      | 600                            | 4                   | 10.88       | 1/2"                  | 1.49                    | 17                     | 1.0 (3.5)                                                             | 1.8 (6.2)   | 1.5 (5.3)                       | 2.0 (7.1)   | 1.5 (5.3)      | 2.0 (7.0)   | 2.7 (9.0)   | 3.1 (11.0)   | A-WZ 55824   | 66135       |
| W                      | 600                            | 4                   | 13.31       | 5/8"                  | 3.42                    | 17                     | 3.3 (11.5)                                                            | 4.5 (15.9)  | 4.5 (15.9)                      | 5.5 (19.5)  | 4.0 (14.2)     | 5.5 (19.0)  | 7.4 (26.0)  | 8.4 (29.0)   | A-WZ 55855   | 66136       |
| W                      | 600                            | 4                   | 15.13       | 7/8"                  | 6.05                    | 17                     | 4.8 (16.8)                                                            | 6.5 (23.0)  | 7.0 (24.8)                      | 8.0 (28.3)  | 6.5 (23.0)     | 8.5 (30.0)  | 11.0 (38.0) | 12.0 (43.0)  | A-WZ 55877   | 66137       |
| W                      | 600                            | 4                   | 16.38       | 1-1/8"                | 8.28                    | 17                     | 6.5 (23.0)                                                            | 8.5 (30.1)  | 9.0 (31.9)                      | 11.0 (37.2) | 8.5 (30.1)     | 11.0 (38.0) | 15.0 (52.0) | 17.0 (59.0)  | A-WZ 55889   | 66138       |
| W                      | 600                            | 4                   | 19.63       | 1-3/8"                | 9.99                    | 17                     | 8.0 (28.3)                                                            | 11.5 (40.7) | 11.5 (40.7)                     | 14.0 (47.8) | 10.5 (37.2)    | 14.0 (49.0) | 19.0 (66.0) | 21.0 (75.0)  | A-WZ 559011  | 66139       |
| W                      | 680                            | 6                   | 15.5        | 1-1/8"                | 10.05                   | 25                     | 7.7 (27.0)                                                            | 9.4 (33.0)  | 11.1 (39.0)                     | 13.3 (46.6) | 10.6 (37.3)    | 14.0 (49.1) | 18.2 (63.9) | 20.6 (72.5)  | A-WZ 56909   | 66140       |
| W                      | 680                            | 6                   | 18.5        | 1-1/8"                | 10.05                   | 25                     | 7.7 (27.0)                                                            | 9.4 (33.0)  | 11.1 (40.0)                     | 13.3 (46.6) | 10.6 (37.3)    | 14.0 (49.1) | 18.2 (63.9) | 20.6 (72.5)  | A-WZ 56929   | 66142       |
| W                      | 680                            | 6                   | 15.75       | 1-3/8"                | 12.27                   | 25                     | 9.4 (33.0)                                                            | 11.5 (40.3) | 13.5 (47.6)                     | 16.2 (56.9) | 12.9 (45.5)    | 17.0 (60.0) | 22.2 (77.9) | 25.1 (88.4)  | A-WZ 569011  | 66141       |
| W                      | 680                            | 6                   | 18.5        | 1-5/8"                | 14.51                   | 25                     | 11.1 (39.0)                                                           | 13.6 (47.7) | 16.0 (56.3)                     | 19.1 (67.3) | 15.3 (53.8)    | 20.2 (70.9) | 27.4 (96.4) | 30.9 (108.8) | A-WZ 569213  | 66143       |

## A-WC / A-FC SERIES PARTS LIST

| DESCRIPTION                                                                                                                             | MODEL NUMBER      | ITEM NUMBER |
|-----------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------|
| Oil Separator Flange Gasket                                                                                                             | OIL SEPARATOR KIT | 065849      |
| Flange with Integral Float Assembly and Flange Gasket, Repairs A-FC, AF, AC and R Series S1900 Standard and 5200 Helical Oil Separators | FLOAT REPAIR KIT  | 065847      |



DETAILED  
PRODUCT  
DRAWINGS





A-FL 0401704S04S-921

## A-FL ULTRA HIGH PERFORMANCE COALESCENT OIL SEPARATOR

The A-FL Coalescent Oil Separator provides unmatched efficiency and performance for a wide variety of refrigeration air-conditioning systems where oil migration is a concern. The Coalescent design employs a glass fiber filter cartridge for optimal separation and filtration and incorporates a built-in oil reservoir to reduce the need for additional piping and external components. This design enables the Coalescent Oil Separator to maintain stable, optimal performance at low system load levels, consistently preventing oil migration and improving system energy efficiency across all conditions.

### FEATURES

- Internal filter cartridge provides optimal oil separation and 0.3 micron filtration
- Accessible bolted flange construction with replaceable filter
- Corrosion resistant epoxy powder paint
- High efficiency (99%) coalescent separation and contaminant removal

### SPECIFICATIONS

Maximum Working Pressure..... 650 psig (45 bar)  
UL/CUL File Number ..... SA8547

### MODEL NUMBER NOMENCLATURE - Example: A-FL 0401704S04S

| SERIES      | STYLE                     | COALESCENT           | SHELL<br>DIAMETER                                 | LENGTH            | INLET<br>CONNECTION SIZE | INLET<br>CONNECTION TYPE | OUTLET<br>CONNECTION SIZE | OUTLET<br>CONNECTION TYPE | SEQUENTIAL<br>IDENTIFIER | CUSTOMER<br>SPECIAL                         | PACK<br>TYPE                               |
|-------------|---------------------------|----------------------|---------------------------------------------------|-------------------|--------------------------|--------------------------|---------------------------|---------------------------|--------------------------|---------------------------------------------|--------------------------------------------|
| A           | F                         | L                    | 040                                               | 17                | 04                       | S                        | 04                        | S                         |                          |                                             |                                            |
| A-FL Series | F = Flanged<br>W = Welded | Coalescent<br>Design | Diameter<br>in Inches<br>(XX.X)<br><br>040 = 4.0" | In Inches<br>(XX) | In 1/8"<br>Increments    | S=ODF                    | In 1/8" Increments        | S=ODF                     | Blank Thru -999          | G = Customer Special<br>(Omit for Standard) | B1=Bulk Pack<br>(Omit for Individual Pack) |

### A-FL COALESCENT OIL SEPARATORS

| DIAMETER (IN) | CONNECTION SIZE (ODF) | LENGTH (IN) | OIL CONNECTION | MAXIMUM CAPACITY OF REFRIGERATION AT EVAPORATOR TEMPERATURE - TONS (kW) |             |                                                      |             |                                                  |             |               |             | OIL PRE-CHARGE<br>AMOUNT - LITERS (OZ) | MODEL NUMBER         | ITEM NUMBER |
|---------------|-----------------------|-------------|----------------|-------------------------------------------------------------------------|-------------|------------------------------------------------------|-------------|--------------------------------------------------|-------------|---------------|-------------|----------------------------------------|----------------------|-------------|
|               |                       |             |                | R-22 / R-407C<br>/ R-444B / R-448A<br>/ R-449A                          |             | R-134a / R-450A<br>/ R-513A / R-1234yf<br>/ R-1234ze |             | R-404A / R-507A<br>/ R-452A / R-407A<br>/ R-407F |             | R-410A / R-32 |             |                                        |                      |             |
|               |                       |             |                | -40°F/C                                                                 | +40°F (4°C) | -40°F/C                                              | +40°F (4°C) | -40°F/C                                          | +40°F (4°C) | -40°F/C       | +40°F (4°C) |                                        |                      |             |
| 4             | 1/2"                  | 17.0        | 1/4" SAE       | 1.1 (3.8)                                                               | 6.3 (22.1)  | 0.6 (2.1)                                            | 4.1 (14.4)  | 1.0 (3.5)                                        | 6.5 (22.8)  | 1.7 (5.9)     | 9.2 (32.4)  | 1.7 (58)                               | A-FL 0401704S04S-921 | 096869      |
| 4             | 5/8"                  | 19.5        | 1/4" SAE       | 1.6 (5.6)                                                               | 8.9 (31.3)  | 0.9 (3.2)                                            | 5.8 (20.4)  | 1.5 (5.3)                                        | 9.1 (32.1)  | 2.4 (8.6)     | 12.9 (45.7) | 2.1 (71)                               | A-FL 0402005S05S-922 | 1837021     |
| 4             | 7/8"                  | 19.5        | 1/4" SAE       | 2.2 (7.7)                                                               | 12.4 (43.5) | 1.2 (4.2)                                            | 8.1 (28.4)  | 2.1 (7.3)                                        | 12.7 (44.7) | 3.4 (11.9)    | 18.1 (63.6) | 2.1 (71)                               | A-FL 0402007S07S-923 | 1837013     |

### A-FL SERIES PARTS LIST

| DESCRIPTION                                                                 | FOR USE WITH A-FL MODEL                     | MODEL NUMBER | ITEM NUMBER |
|-----------------------------------------------------------------------------|---------------------------------------------|--------------|-------------|
| Filter Replacement Kit for Coalescent Oil Separator - 2.5" Filter Assembly  | 1/2" Connection Models (-921)               | A-FL FL1     | 1818867     |
| Filter Replacement Kit for Coalescent Oil Separator - 4.75" Filter Assembly | 5/8" & 7/8" Connection Models (-922 & -923) | A-FL FL2     | 1836977     |
| Replacement Flange Gasket for A-FL Coalescent Oil Separator                 | All Models                                  | A-FL GASKET1 | 1843798     |



AOR-2

AOR SERIES OIL RESERVOIRS

The AOR oil reservoir is a holding vessel for stand-by oil necessary for the operation of commercial refrigeration systems. It is a direct replacement of popular competitive models.

FEATURES

- Two sight glasses with floating ball indicators - 2 gallon model
- Three sight glasses with floating ball indicators - 4 gallon model
- 3/8" flare roto-lock valves on top and bottom
- Corrosion resistant epoxy powder paint finish
- Standard mounting stud 3/8 x 16 TPI

SPECIFICATIONS

Maximum Working Pressure..... 450 psi (31 bar)  
UL/CUL File Number ..... SA8547

MODEL NUMBER NOMENCLATURE - Example: AOR 3

| SERIES     | GALLONS | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|------------|---------|-----------------------|---------------------------------------------|----------------------------------------------|
| AOR        | 3       |                       |                                             |                                              |
| AOR Series |         | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

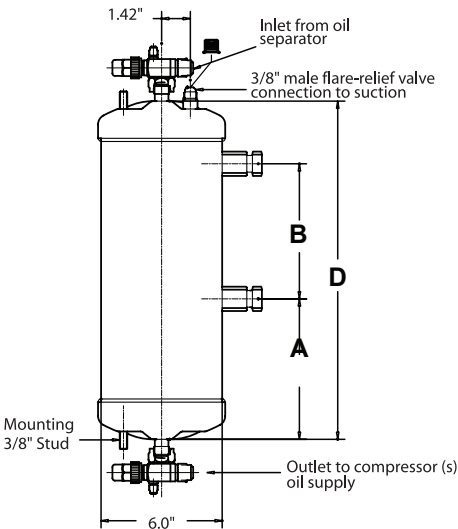
AOR OIL RESERVOIRS

| TOTAL VOLUME (GALS) | A LEVEL VOLUME (GALS) | B LEVEL VOLUME (GALS) | C LEVEL VOLUME (GALS) | A (IN) | B (IN) | C (IN) | D (IN) | SIGHT GLASS | MODEL NUMBER | ITEM NUMBER |
|---------------------|-----------------------|-----------------------|-----------------------|--------|--------|--------|--------|-------------|--------------|-------------|
| 2                   | 3/4                   | 1-1/2                 | —                     | 7      | 6.7    | —      | 16.75  | 2           | AOR 2        | 64950       |
| 3                   | 2/3                   | 1-2/3                 | 2-2/3                 | 6.5    | 9      | 9      | 28.25  | 3           | AOR 3        | 65981       |
| 3                   | 2/3                   | 2-2/3                 | —                     | 6.5    | 18     | —      | 28.25  | 2           | AOR 3-01     | 65283       |
| 4                   | 2/3                   | 2                     | 3-1/3                 | 7      | 12     | 12     | 34.75  | 3           | AOR 4        | 64951       |

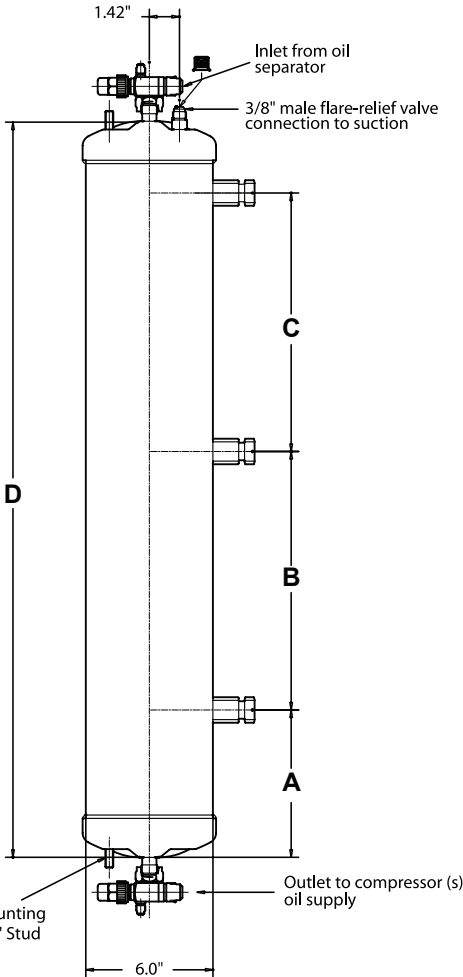
AOR SERIES PARTS LIST

| DESCRIPTION                                                                                   | MODEL NUMBER | ITEM NUMBER |
|-----------------------------------------------------------------------------------------------|--------------|-------------|
| AOR Oil Reservoirs Mounting Kit w/ Mounting Brackets, Self-Tapping Bolts & Mounting Stud Nuts | KD-40014     | 066002      |

AOR-2, AOR 3-01



AOR-3, AOR-4





AOF 023S



AOFD 553



AOF 303

## AOF / AOFD SERIES HIGH EFFICIENCY OIL FILTERS / DRIERS

The AOF is designed to protect the compressor from dirt and all solid contaminants including metallic magnetic particles. It is ideal for burnout/clean-up situations. Select models contain desiccant for moisture removal.

### FEATURES

- Compatible with all oils
- Take-apart model features quick change filter cartridge
- Corrosion resistant epoxy powder paint finish
- 100% efficient to 4 micron particles; 99% efficient to 3 micron particles
- Take-apart model 3/8 ODF, Hermetic model 3/8" SAE Connections
- High debris capacity with low pressure drop
- AOFD contains desiccant for moisture removal

### SPECIFICATIONS

Maximum Working Pressure ..... Hermetic 680 psi (47 bar)  
 ..... Take-apart 480 psi (33 bar)  
 UL/CUL File Number ..... SA7175

### MODEL NUMBER NOMENCLATURE - Example: AOFD 553

| SERIES                     | DESICCANT                                | UNIQUE IDENTIFIER | CONNECTION SIZE    | CONNECTION STYLE        | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|----------------------------|------------------------------------------|-------------------|--------------------|-------------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| AOF                        | D                                        | 55                | 3                  |                         |                       |                                             |                                              |
| High Efficiency Oil Filter | D = Desiccant<br>(Omit for No Dessicant) |                   | In 1/8" Increments | S = ODF<br>Omit for SAE | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### AOF HIGH EFFICIENCY OIL FILTER

| TYPE             | DESICCANT | CONNECTION SIZE | CONNECTION TYPE | ACCESS VALVE | LAY-IN (IN) | DIAMETER (IN) | MODEL NUMBER | ITEM NUMBER |
|------------------|-----------|-----------------|-----------------|--------------|-------------|---------------|--------------|-------------|
| Hermetic         | No        | 3/8"            | SAE             | No           | 9.63        | 3.06          | AOF 303      | 064952      |
| Take-Apart*      | No        | 3/8"            | ODF             | Single       | 7.38        | 2.5           | AOF 023S     | 062784      |
| Filter Cartridge | —         | —               | —               | —            | —           | —             | F 023        | 064799      |
| Hermetic         | Yes       | 3/8"            | SAE             | Dual         | 9.62        | 3.17          | AOFD 553     | 062829      |

\* Filter Cartridge not included

### AOFD WATER CAPACITY TABLE

| REFRIGERANT     | DROPS @ 125 F |
|-----------------|---------------|
| R-22            | 497           |
| R-134a          | 518           |
| R-404A          | 518           |
| R-407C, R-410A  | 435           |
| R-448A / R-449A | 430           |
| R-450A / R-513  | 480           |
| R-744           | 563           |



OMC D120S

## OMB / OMC SERIES OIL MANAGEMENT CONTROL

The OMB/C prevents compressor burnout and system downtime by maintaining a proper compressor crankcase oil level. Ideal for all brands of semi-hermetic compressors and recommended for Copeland Scroll™.

### FEATURES

- Compressor lockout feature alerts repeated low oil for early system diagnosis and resolution
- Easy monitoring with visual alarm and multi-color status lights
- Hall-effect sensing technology unlike optical sensors, eliminates false detection of possible oil foaming
- System debris retention magnet for reliable control
- Oil level float ball in sight glass allows quick visual indication
- Simple to install with adapters available for various compressor types
- OMC Series offers optional side sight glass that provides oil level view from multiple directions, multiple voltage ratings to eliminate need for stepdown transformer and a self-contained electrical enclosure with conduit connections for field service wiring

### OMB/C SERIES OIL MANAGEMENT CONTROL SPECIFICATIONS

| SPECIFICATIONS                             | OMB                                                                                                          | OMC                                  | OMC CO2                                              |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------------------|------------------------------------------------------|
| Maximum Working Pressure (MWP)             | 870 psig (60 bar)                                                                                            |                                      | 1885 psig (130 bar)                                  |
| Solenoid min/max OPD                       | 0/350 psig (0/24 bar)                                                                                        |                                      | 0/1450 psig (0/100 bar)                              |
| Supply Voltage                             | 24V 50/60 Hz                                                                                                 | 120V or 220-240V, 50/60 Hz           | 24, 120V OR 220-240V, 50/60 Hz                       |
| Solenoid Coil                              | EMF                                                                                                          |                                      |                                                      |
| Current Consumption                        | 0.6 Amp (24V)                                                                                                | 0.15 Amp (120V), 0.07 Amp (220-240V) | 0.6 Amp (24V) 0.15 Amp (120V)<br>0.07 Amp (220-240V) |
| Time Delay for Low Level Signal            | 10 Seconds                                                                                                   |                                      |                                                      |
| Time Delay After Setpoint Recovery         | 5 Seconds                                                                                                    |                                      |                                                      |
| Alarm Delay Time (Including Alarm Contact) | 120 Seconds                                                                                                  |                                      |                                                      |
| Alarm Switch                               | SPDT                                                                                                         |                                      |                                                      |
| Alarm Contact Rating                       | 10A @ 120VAC 50/60 Hz, 5A @ 250VAC 50/60 Hz, 3A @ 30VDC                                                      |                                      |                                                      |
| Refrigerant Compatibility                  | Class A1 (incl. subcritical CO2); Class A2L R-1234yf, R-1234ze, R-32, R-452B, R-454A, R-454B, R-454C, R-455A |                                      | Transcritical CO2                                    |
| Oil Temperature                            | -40°F/C to 180°F (82°C) Maximum                                                                              |                                      |                                                      |
| Ambient Temperature - Storage              | -40°F/C to 120°F (49°C) Maximum                                                                              |                                      |                                                      |
| Ambient Temperature - Intermittent Duty    | -40°F/C to 120°F (49°C) Maximum                                                                              |                                      |                                                      |
| Oil Supply Fitting                         | 1/4" Male SAE                                                                                                |                                      |                                                      |
|                                            | (Brass)                                                                                                      |                                      |                                                      |
| Agency                                     | UL/CUL File Number MP604                                                                                     |                                      |                                                      |

**MODEL NUMBER NOMENCLATURE** - Example: OMC D120CO2S

| SERIES                                     | CONFIGURATION                                        | COIL VOLTAGE                                                   | APPLICATION                                                                                    | STRAINER                               |
|--------------------------------------------|------------------------------------------------------|----------------------------------------------------------------|------------------------------------------------------------------------------------------------|----------------------------------------|
| OMB                                        | D                                                    | 120                                                            | CO2                                                                                            | S                                      |
| OMB = Oil Management Control               | JB = Junction Box<br>MO = Grommet with Leads         | 24 = 24V 50/60 Hz                                              | K5 = For Copeland K5 Compressor with Adapter<br>(Omit for Standard)                            | S = Strainer<br>(Omit for No Strainer) |
| OMC = Oil Management Control Multi-Voltage | D = Dual Sight Glass<br>S = Single Sight Glass (OEM) | 24 = 24V 50/60Hz<br>120 = 120V 50/60 Hz<br>240 = 240V 50/60 Hz | CO2 = Transcritical CO2<br>K5 = For Copeland K5 Compressor with Adapter<br>(Omit for Standard) | S = Strainer<br>(Omit for No Strainer) |

**NOTE:** It is recommended that an oil filter be installed on the oil inlet line to further protect the system from contaminants even when the oil management control contains an inlet strainer.

**OMB/C SERIES OIL MANAGEMENT CONTROLS**

| COIL VOLTAGE          | APPLICATION       | CONFIGURATION      | INLET STRAINER | MODEL NUMBER | ITEM NUMBER  |
|-----------------------|-------------------|--------------------|----------------|--------------|--------------|
| 24 VAC, 50/60 Hz      | Standard          | Junction Box       | No             | OMB JB24     | 065365       |
| 24 VAC, 50/60 Hz      | Standard          | Grommet With Leads | No             | OMB MO24     | 065366       |
| 120 VAC, 50/60 Hz     | Standard          | Dual Sight Glass   | Yes            | OMC D120S    | 096806       |
| 220-240 VAC, 50/60 Hz | Standard          | Dual Sight Glass   | Yes            | OMC D240S    | 096807       |
| 24 VAC, 50/60 Hz      | Transcritical CO2 | Dual Sight Glass   | Yes            | OMC D24CO2S  | 1815412      |
| 120 VAC, 50/60 Hz     | Transcritical CO2 | Dual Sight Glass   | Yes            | OMC D120CO2S | 1815404      |
| 220-240 VAC, 50/60 Hz | Transcritical CO2 | Dual Sight Glass   | Yes            | OMC D240CO2S | OMC D240CO2S |

**NOTE:** For aftermarket replacement, models with INLET STRAINER replace the previous models that had no strainer.

**OM SERIES PARTS LIST**

| DESCRIPTION                                   | MODEL NUMBER | ITEM NUMBER |
|-----------------------------------------------|--------------|-------------|
| OM Strainer Assembly 1/4" Inlet Filter Screen | X-11176-7    | 048638      |
| AMI / OM Sight Glass O-Rings 50 Count         | PS-1525-2    | 020877      |
| OM Mounting O-Rings (3 Pieces)                | KS-30368-1   | 064812      |



See oil controls  
adapter page for  
available adapters



W-OLC-2

# W-OLC SERIES MECHANICAL OIL LEVEL CONTROL

The W-OLC controls the oil level in the compressor crankcase with a float operated valve and keeps the oil level at the compressor manufacturer recommended level.

**FEATURES**

- Corrosion resistant epoxy powder paint finish
- Universal slotted holes for faster installation
- Hard stop design to prevent damage during adjustments

**SPECIFICATIONS**

Maximum Working Pressure..... 450 psi (31 bar)  
Maximum Operating Pressure Differential ..... 90 psi (6 bar)  
UL/CUL File Number ..... SA8547  
Canadian CRN .....0E21791.513467890YTN

**MODEL NUMBER NOMENCLATURE** - Example: W-OLC-2-4

| SERIES       | SIGHT GLASS                                                                       | EQUALIZER                                                                     | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                                | PACK TYPE                                        |
|--------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------|-----------------------|-------------------------------------------------|--------------------------------------------------|
| W-OLC        | -2                                                                                |                                                                               |                       |                                                 |                                                  |
| W-OLC Series | 2 = 1/2 Sight Glass<br>4 = 1/4 Sight Glass<br>2-4 = 1/4 to 1/2 level (adjustable) | N = No Equalizer Line<br>E = 2 Equalizer Lines<br>(Omit for 1 Equalizer Line) | Blank Thru -99        | G = Customer Special<br><br>(Omit for Standard) | B1 = Bulk Pack<br><br>(Omit for Individual Pack) |

**W-OLC SERIES OIL MANAGEMENT CONTROL**

| SIGHT GLASS LEVEL             | MODEL NUMBER | ITEM NUMBER |
|-------------------------------|--------------|-------------|
| 1/2 Sight Glass               | W-OLC-2      | 064953      |
| 1/4 Sight Glass               | W-OLC-4      | 064954      |
| 1/4 to 1/2 level (adjustable) | W-OLC-2-4    | 065170      |



See oil controls  
adapter page for  
available adapters

Instruction  
Sheet



## OIL MANAGEMENT CONTROL ADAPTERS

| DESCRIPTION                                                                                 | MODEL NUMBER | ITEM NUMBER | ADAPTER TORQUE TO COMPRESSOR | DRAWING                                                                                                   |
|---------------------------------------------------------------------------------------------|--------------|-------------|------------------------------|-----------------------------------------------------------------------------------------------------------|
| Screw Adapter<br>3/4" x 14 NPTF                                                             | KS-30376     | 065668      | 30 - 40 ft - lbs             | <p>1.825</p> <p>3/4" NPTF</p> <p>ADDITIONAL FLANGE RING INCLUDED</p>                                      |
| Screw Adapter<br>1-1/8" x 18 UNEF-2A THD<br>All Except Transcritical CO2                    | KS-30398     | 066692      | 37 - 44 ft-lbs               | <p>2.339</p> <p>1.594</p> <p>1 1/8-18 UNEF-2A THD</p>                                                     |
| Screw Adapter 1 1/8" x 18<br>UNEF-2A THD<br>5 Hole Flange Required<br>For Transcritical CO2 | KS-30399     | 066910      | 37 - 44 ft-lbs               | <p>2.339</p> <p>1.594</p> <p>1 1/8-18 UNEF-2A THD</p>                                                     |
| Screw Adapter, Female Nut<br>1-3/4" x 12 UNF - 2B THD                                       | KS-30385     | 066078      | 30 - 40 ft - lbs             | <p>2.000 HEX</p> <p>1 3/4-12 UNF-2B THD</p> <p>3/4" NPTF</p> <p>ADDITIONAL FLANGE RING INCLUDED</p>       |
| Rotalock Adapter<br>1-1/4" x 12 UNF-2B THD<br>Includes injection tube for K5 compressors    | KS-30394-2   | 066650      | 80 ft - lbs                  | <p>1.143</p> <p>1.500</p> <p>1 1/4-12 UNF-2B THD</p> <p>Ø1.595</p>                                        |
| Rotalock Adapter<br>1-1/4" x 12 UNF-2B THD<br>Includes injection tube for K5 compressors    | KS-30394-1   | 066652      | 80 ft - lbs                  | <p>2.057</p> <p>1.500 HEX</p> <p>1 1/4-12 UNF-2B THD</p> <p>Ø1.595</p> <p>OIL INJECTION TUBE INCLUDED</p> |
| Adapter for<br>Copeland Semi-Hermetic                                                       | KS-30348     | 063521      | 120 in - lbs                 | <p>1.65</p> <p>2.36</p>                                                                                   |
| Screw Adapter<br>1-1/2" x 18 UNEF - 2A THD                                                  | KS-30381     | 065982      | 30 - 40 ft - lbs             | <p>1 1/2-18 UNEF-2A THD</p> <p>3/4" NPTF</p> <p>ADDITIONAL FLANGE RING INCLUDED</p>                       |

Install oil control to adapter flange (1/4" x 20 UNC x 1" hex bolt) at 120 in-lbs.



## DCFM CHARGE CALCULATIONS

**EXAMPLE:**

System: ..... 9.5 tons, R-404A  
 Evaporator Temperature: ..... 25°F  
 Condensing Temperature: ..... 115°F

**EXAMPLE:**

$.618 \frac{\text{DCFM}}{\text{ton}} \times 9.5 \text{ ton} = 5.871 \text{ CFM}$   
 Oil Separator selected: AF-58877  
 DCFM = Cubic feet per minute

In the table for R-404A, search for the value corresponding to the temperatures of evaporation and condensation. This is the DCFM/ton factor. At 25°F evaporator temperature and 115°F condensing temperature, the DCFM/ton is .618. Multiply this by the system tonnage. Use the resulting value to select the proper oil separator. DCFM values can be found on the oil separator catalog pages. Select an oil separator with a capacity greater than or equal to the value obtained.

NOTE: The connection of the separator must never be less than the diameter of the discharge line.

|                              |     | R-22                            |       |       |       |       |       |       |       |       |
|------------------------------|-----|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|                              |     | OIL SEPARATOR DCFM / TON FACTOR |       |       |       |       |       |       |       |       |
|                              |     | CONDENSING TEMPERATURE (°F)     |       |       |       |       |       |       |       |       |
|                              |     | 130                             | 125   | 120   | 115   | 110   | 105   | 100   | 95    | 90    |
| EVAPORATING TEMPERATURE (°F) | -40 | 0.633                           | 0.659 | 0.687 | 0.717 | 0.750 | 0.786 | 0.824 | 0.865 | 0.910 |
|                              | -35 | 0.626                           | 0.652 | 0.680 | 0.710 | 0.743 | 0.778 | 0.816 | 0.857 | 0.902 |
|                              | -30 | 0.619                           | 0.645 | 0.673 | 0.704 | 0.736 | 0.771 | 0.809 | 0.850 | 0.894 |
|                              | -25 | 0.613                           | 0.639 | 0.667 | 0.697 | 0.729 | 0.764 | 0.802 | 0.843 | 0.887 |
|                              | -20 | 0.607                           | 0.633 | 0.660 | 0.690 | 0.723 | 0.758 | 0.795 | 0.836 | 0.880 |
|                              | -15 | 0.601                           | 0.626 | 0.654 | 0.684 | 0.716 | 0.751 | 0.788 | 0.829 | 0.873 |
|                              | -10 | 0.595                           | 0.621 | 0.648 | 0.678 | 0.710 | 0.745 | 0.782 | 0.822 | 0.866 |
|                              | -5  | 0.589                           | 0.615 | 0.642 | 0.672 | 0.704 | 0.739 | 0.776 | 0.816 | 0.859 |
|                              | 0   | 0.584                           | 0.609 | 0.637 | 0.666 | 0.698 | 0.733 | 0.770 | 0.809 | 0.853 |
|                              | 5   | 0.578                           | 0.604 | 0.631 | 0.661 | 0.693 | 0.727 | 0.764 | 0.803 | 0.846 |
|                              | 10  | 0.573                           | 0.599 | 0.626 | 0.656 | 0.687 | 0.721 | 0.758 | 0.797 | 0.840 |
|                              | 15  | 0.568                           | 0.594 | 0.621 | 0.650 | 0.682 | 0.716 | 0.752 | 0.792 | 0.834 |
|                              | 20  | 0.564                           | 0.589 | 0.616 | 0.645 | 0.677 | 0.710 | 0.747 | 0.786 | 0.828 |
|                              | 25  | 0.559                           | 0.584 | 0.611 | 0.640 | 0.672 | 0.705 | 0.742 | 0.781 | 0.823 |
|                              | 30  | 0.555                           | 0.580 | 0.607 | 0.636 | 0.667 | 0.700 | 0.736 | 0.775 | 0.817 |
|                              | 35  | 0.550                           | 0.575 | 0.602 | 0.631 | 0.662 | 0.696 | 0.732 | 0.770 | 0.812 |
|                              | 40  | 0.546                           | 0.571 | 0.598 | 0.627 | 0.658 | 0.691 | 0.727 | 0.765 | 0.807 |
|                              | 45  | 0.542                           | 0.567 | 0.594 | 0.623 | 0.653 | 0.687 | 0.722 | 0.761 | 0.802 |

|                              |     | R-134a                          |       |       |       |       |       |       |       |       |
|------------------------------|-----|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|                              |     | OIL SEPARATOR DCFM / TON FACTOR |       |       |       |       |       |       |       |       |
|                              |     | CONDENSING TEMPERATURE (°F)     |       |       |       |       |       |       |       |       |
|                              |     | 130                             | 125   | 120   | 115   | 110   | 105   | 100   | 95    | 90    |
| EVAPORATING TEMPERATURE (°F) | -40 | 0.998                           | 1.032 | 1.070 | 1.113 | 1.159 | 1.210 | 1.266 | 1.328 | 1.395 |
|                              | -35 | 0.980                           | 1.015 | 1.053 | 1.095 | 1.141 | 1.192 | 1.248 | 1.310 | 1.377 |
|                              | -30 | 0.963                           | 0.998 | 1.036 | 1.078 | 1.124 | 1.175 | 1.231 | 1.292 | 1.359 |
|                              | -25 | 0.946                           | 0.981 | 1.019 | 1.062 | 1.108 | 1.158 | 1.214 | 1.275 | 1.341 |
|                              | -20 | 0.930                           | 0.965 | 1.004 | 1.046 | 1.092 | 1.142 | 1.197 | 1.258 | 1.324 |
|                              | -15 | 0.915                           | 0.950 | 0.988 | 1.030 | 1.076 | 1.126 | 1.181 | 1.241 | 1.307 |
|                              | -10 | 0.900                           | 0.935 | 0.973 | 1.015 | 1.061 | 1.111 | 1.166 | 1.226 | 1.291 |
|                              | -5  | 0.886                           | 0.921 | 0.959 | 1.001 | 1.047 | 1.096 | 1.151 | 1.210 | 1.275 |
|                              | 0   | 0.872                           | 0.907 | 0.945 | 0.987 | 1.032 | 1.082 | 1.136 | 1.195 | 1.260 |
|                              | 5   | 0.859                           | 0.894 | 0.932 | 0.973 | 1.019 | 1.068 | 1.122 | 1.181 | 1.245 |
|                              | 10  | 0.846                           | 0.881 | 0.919 | 0.960 | 1.006 | 1.055 | 1.108 | 1.167 | 1.231 |
|                              | 15  | 0.834                           | 0.869 | 0.906 | 0.948 | 0.993 | 1.042 | 1.095 | 1.153 | 1.217 |
|                              | 20  | 0.822                           | 0.857 | 0.894 | 0.936 | 0.980 | 1.029 | 1.082 | 1.140 | 1.203 |
|                              | 25  | 0.810                           | 0.845 | 0.883 | 0.924 | 0.968 | 1.017 | 1.070 | 1.127 | 1.190 |
|                              | 30  | 0.799                           | 0.834 | 0.871 | 0.912 | 0.957 | 1.005 | 1.057 | 1.115 | 1.177 |
|                              | 35  | 0.789                           | 0.823 | 0.861 | 0.901 | 0.945 | 0.993 | 1.046 | 1.103 | 1.165 |
|                              | 40  | 0.778                           | 0.813 | 0.850 | 0.890 | 0.934 | 0.982 | 1.034 | 1.091 | 1.153 |
|                              | 45  | 0.768                           | 0.803 | 0.840 | 0.880 | 0.924 | 0.971 | 1.023 | 1.080 | 1.141 |

|                              |     | R-404A                          |       |       |       |       |       |       |       |       |
|------------------------------|-----|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|                              |     | OIL SEPARATOR DCFM / TON FACTOR |       |       |       |       |       |       |       |       |
|                              |     | CONDENSING TEMPERATURE (°F)     |       |       |       |       |       |       |       |       |
|                              |     | 130                             | 125   | 120   | 115   | 110   | 105   | 100   | 95    | 90    |
| EVAPORATING TEMPERATURE (°F) | -40 | 0.751                           | 0.759 | 0.771 | 0.787 | 0.807 | 0.830 | 0.856 | 0.885 | 0.918 |
|                              | -35 | 0.731                           | 0.740 | 0.753 | 0.770 | 0.790 | 0.814 | 0.840 | 0.870 | 0.903 |
|                              | -30 | 0.712                           | 0.722 | 0.736 | 0.754 | 0.775 | 0.798 | 0.825 | 0.855 | 0.888 |
|                              | -25 | 0.694                           | 0.705 | 0.720 | 0.738 | 0.760 | 0.784 | 0.811 | 0.841 | 0.874 |
|                              | -20 | 0.677                           | 0.689 | 0.705 | 0.724 | 0.745 | 0.770 | 0.797 | 0.827 | 0.860 |
|                              | -15 | 0.661                           | 0.674 | 0.691 | 0.710 | 0.731 | 0.756 | 0.783 | 0.814 | 0.847 |
|                              | -10 | 0.646                           | 0.660 | 0.677 | 0.696 | 0.718 | 0.743 | 0.771 | 0.801 | 0.834 |
|                              | -5  | 0.632                           | 0.646 | 0.664 | 0.683 | 0.706 | 0.731 | 0.758 | 0.789 | 0.822 |
|                              | 0   | 0.618                           | 0.633 | 0.651 | 0.671 | 0.694 | 0.719 | 0.747 | 0.777 | 0.810 |
|                              | 5   | 0.605                           | 0.621 | 0.639 | 0.659 | 0.682 | 0.708 | 0.735 | 0.766 | 0.799 |
|                              | 10  | 0.593                           | 0.609 | 0.628 | 0.648 | 0.671 | 0.697 | 0.725 | 0.755 | 0.788 |
|                              | 15  | 0.581                           | 0.598 | 0.617 | 0.638 | 0.661 | 0.686 | 0.714 | 0.745 | 0.778 |
|                              | 20  | 0.570                           | 0.587 | 0.606 | 0.628 | 0.651 | 0.676 | 0.704 | 0.735 | 0.768 |
|                              | 25  | 0.560                           | 0.577 | 0.596 | 0.618 | 0.641 | 0.667 | 0.695 | 0.725 | 0.758 |
|                              | 30  | 0.550                           | 0.568 | 0.587 | 0.609 | 0.632 | 0.658 | 0.686 | 0.716 | 0.749 |
|                              | 35  | 0.540                           | 0.558 | 0.578 | 0.600 | 0.623 | 0.649 | 0.677 | 0.707 | 0.740 |
|                              | 40  | 0.532                           | 0.550 | 0.570 | 0.591 | 0.615 | 0.641 | 0.669 | 0.699 | 0.732 |
|                              | 45  | 0.523                           | 0.542 | 0.562 | 0.583 | 0.607 | 0.633 | 0.661 | 0.691 | 0.723 |

|                              |     | R-407C                          |       |       |       |       |       |       |       |       |
|------------------------------|-----|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
|                              |     | OIL SEPARATOR DCFM / TON FACTOR |       |       |       |       |       |       |       |       |
|                              |     | CONDENSING TEMPERATURE (°F)     |       |       |       |       |       |       |       |       |
|                              |     | 130                             | 125   | 120   | 115   | 110   | 105   | 100   | 95    | 90    |
| EVAPORATING TEMPERATURE (°F) | -40 | 0.669                           | 0.695 | 0.722 | 0.753 | 0.786 | 0.822 | 0.862 | 0.905 | 0.952 |
|                              | -35 | 0.659                           | 0.684 | 0.712 | 0.743 | 0.776 | 0.812 | 0.851 | 0.894 | 0.941 |
|                              | -30 | 0.649                           | 0.674 | 0.702 | 0.733 | 0.766 | 0.802 | 0.841 | 0.884 | 0.930 |
|                              | -25 | 0.640                           | 0.665 | 0.693 | 0.723 | 0.756 | 0.792 | 0.831 | 0.874 | 0.920 |
|                              | -20 | 0.630                           | 0.656 | 0.684 | 0.714 | 0.747 | 0.782 | 0.821 | 0.864 | 0.910 |
|                              | -15 | 0.621                           | 0.647 | 0.675 | 0.705 | 0.738 | 0.773 | 0.812 | 0.854 | 0.900 |
|                              | -10 | 0.613                           | 0.638 | 0.666 | 0.696 | 0.729 | 0.764 | 0.803 | 0.845 | 0.891 |
|                              | -5  | 0.605                           | 0.630 | 0.658 | 0.688 | 0.720 | 0.756 | 0.794 | 0.836 | 0.882 |
|                              | 0   | 0.597                           | 0.622 | 0.650 | 0.680 | 0.712 | 0.748 | 0.786 | 0.828 | 0.873 |
|                              | 5   | 0.589                           | 0.614 | 0.642 | 0.672 | 0.704 | 0.740 | 0.778 | 0.819 | 0.864 |
|                              | 10  | 0.582                           | 0.607 | 0.635 | 0.664 | 0.697 | 0.732 | 0.770 | 0.811 | 0.856 |
|                              | 15  | 0.575                           | 0.600 | 0.627 | 0.657 | 0.689 | 0.724 | 0.762 | 0.803 | 0.848 |
|                              | 20  | 0.568                           | 0.593 | 0.620 | 0.650 | 0.682 | 0.717 | 0.755 | 0.796 | 0.840 |
|                              | 25  | 0.561                           | 0.586 | 0.614 | 0.643 | 0.675 | 0.710 | 0.748 | 0.788 | 0.833 |
|                              | 30  | 0.555                           | 0.580 | 0.607 | 0.637 | 0.669 | 0.703 | 0.741 | 0.781 | 0.825 |
|                              | 35  | 0.549                           | 0.574 | 0.601 | 0.631 | 0.662 | 0.697 | 0.734 | 0.774 | 0.818 |
|                              | 40  | 0.543                           | 0.568 | 0.595 | 0.625 | 0.656 | 0.691 | 0.728 | 0.768 | 0.812 |
|                              | 45  | 0.537                           | 0.563 | 0.590 | 0.619 | 0.650 | 0.685 | 0.722 | 0.762 | 0.805 |

|                              |     | R-410A                          |       |       |       |       |       |       |       |       |  |
|------------------------------|-----|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|                              |     | OIL SEPARATOR DCFM / TON FACTOR |       |       |       |       |       |       |       |       |  |
|                              |     | CONDENSING TEMPERATURE (°F)     |       |       |       |       |       |       |       |       |  |
|                              |     | 130                             | 125   | 120   | 115   | 110   | 105   | 100   | 95    | 90    |  |
| EVAPORATING TEMPERATURE (°F) | -40 | 0.397                           | 0.415 | 0.433 | 0.453 | 0.475 | 0.498 | 0.523 | 0.549 | 0.578 |  |
|                              | -35 | 0.392                           | 0.410 | 0.429 | 0.449 | 0.470 | 0.493 | 0.518 | 0.544 | 0.573 |  |
|                              | -30 | 0.388                           | 0.405 | 0.424 | 0.444 | 0.465 | 0.488 | 0.513 | 0.539 | 0.568 |  |
|                              | -25 | 0.383                           | 0.401 | 0.419 | 0.439 | 0.461 | 0.484 | 0.508 | 0.535 | 0.563 |  |
|                              | -20 | 0.379                           | 0.397 | 0.415 | 0.435 | 0.456 | 0.479 | 0.504 | 0.530 | 0.559 |  |
|                              | -15 | 0.375                           | 0.392 | 0.411 | 0.431 | 0.452 | 0.475 | 0.500 | 0.526 | 0.554 |  |
|                              | -10 | 0.371                           | 0.388 | 0.407 | 0.427 | 0.448 | 0.471 | 0.495 | 0.522 | 0.550 |  |
|                              | -5  | 0.367                           | 0.385 | 0.403 | 0.423 | 0.444 | 0.467 | 0.491 | 0.518 | 0.546 |  |
|                              | 0   | 0.364                           | 0.381 | 0.400 | 0.420 | 0.441 | 0.463 | 0.488 | 0.514 | 0.542 |  |
|                              | 5   | 0.360                           | 0.378 | 0.396 | 0.416 | 0.437 | 0.460 | 0.484 | 0.510 | 0.538 |  |
|                              | 10  | 0.357                           | 0.374 | 0.393 | 0.413 | 0.434 | 0.456 | 0.480 | 0.506 | 0.534 |  |
|                              | 15  | 0.354                           | 0.371 | 0.390 | 0.410 | 0.431 | 0.453 | 0.477 | 0.503 | 0.531 |  |
|                              | 20  | 0.351                           | 0.368 | 0.387 | 0.406 | 0.427 | 0.450 | 0.474 | 0.500 | 0.527 |  |
|                              | 25  | 0.348                           | 0.365 | 0.384 | 0.404 | 0.425 | 0.447 | 0.471 | 0.496 | 0.524 |  |
|                              | 30  | 0.345                           | 0.363 | 0.381 | 0.401 | 0.422 | 0.444 | 0.468 | 0.494 | 0.521 |  |
|                              | 35  | 0.343                           | 0.360 | 0.379 | 0.398 | 0.419 | 0.441 | 0.465 | 0.491 | 0.518 |  |
|                              | 40  | 0.340                           | 0.358 | 0.376 | 0.396 | 0.417 | 0.439 | 0.463 | 0.488 | 0.516 |  |
|                              | 45  | 0.338                           | 0.356 | 0.374 | 0.394 | 0.414 | 0.437 | 0.460 | 0.486 | 0.513 |  |

|                              |     | R-448A                          |       |       |       |       |       |       |       |       |  |
|------------------------------|-----|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|                              |     | OIL SEPARATOR DCFM / TON FACTOR |       |       |       |       |       |       |       |       |  |
|                              |     | CONDENSING TEMPERATURE (°F)     |       |       |       |       |       |       |       |       |  |
|                              |     | 130                             | 125   | 120   | 115   | 110   | 105   | 100   | 95    | 90    |  |
| EVAPORATING TEMPERATURE (°F) | -40 | 0.662                           | 0.684 | 0.709 | 0.736 | 0.766 | 0.799 | 0.835 | 0.875 | 0.917 |  |
|                              | -35 | 0.651                           | 0.673 | 0.698 | 0.725 | 0.756 | 0.788 | 0.824 | 0.863 | 0.906 |  |
|                              | -30 | 0.640                           | 0.663 | 0.688 | 0.715 | 0.745 | 0.778 | 0.814 | 0.853 | 0.895 |  |
|                              | -25 | 0.630                           | 0.652 | 0.677 | 0.705 | 0.735 | 0.768 | 0.803 | 0.842 | 0.885 |  |
|                              | -20 | 0.620                           | 0.642 | 0.668 | 0.695 | 0.725 | 0.758 | 0.793 | 0.832 | 0.874 |  |
|                              | -15 | 0.610                           | 0.633 | 0.658 | 0.686 | 0.716 | 0.748 | 0.784 | 0.822 | 0.864 |  |
|                              | -10 | 0.601                           | 0.624 | 0.649 | 0.677 | 0.706 | 0.739 | 0.774 | 0.813 | 0.855 |  |
|                              | -5  | 0.592                           | 0.615 | 0.640 | 0.668 | 0.698 | 0.730 | 0.765 | 0.804 | 0.845 |  |
|                              | 0   | 0.583                           | 0.607 | 0.632 | 0.659 | 0.689 | 0.722 | 0.757 | 0.795 | 0.836 |  |
|                              | 5   | 0.575                           | 0.599 | 0.624 | 0.651 | 0.681 | 0.713 | 0.748 | 0.786 | 0.828 |  |
|                              | 10  | 0.568                           | 0.591 | 0.616 | 0.643 | 0.673 | 0.705 | 0.740 | 0.778 | 0.819 |  |
|                              | 15  | 0.560                           | 0.583 | 0.609 | 0.636 | 0.666 | 0.698 | 0.732 | 0.770 | 0.811 |  |
|                              | 20  | 0.553                           | 0.576 | 0.601 | 0.629 | 0.658 | 0.690 | 0.725 | 0.762 | 0.803 |  |
|                              | 25  | 0.546                           | 0.569 | 0.594 | 0.622 | 0.651 | 0.683 | 0.718 | 0.755 | 0.796 |  |
|                              | 30  | 0.539                           | 0.563 | 0.588 | 0.615 | 0.644 | 0.676 | 0.711 | 0.748 | 0.788 |  |
|                              | 35  | 0.533                           | 0.556 | 0.581 | 0.609 | 0.638 | 0.670 | 0.704 | 0.741 | 0.781 |  |
|                              | 40  | 0.527                           | 0.550 | 0.575 | 0.602 | 0.632 | 0.663 | 0.697 | 0.734 | 0.774 |  |
|                              | 45  | 0.521                           | 0.544 | 0.569 | 0.596 | 0.626 | 0.657 | 0.691 | 0.728 | 0.768 |  |

|                              |     | R-449A                          |       |       |       |       |       |       |       |       |  |
|------------------------------|-----|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|                              |     | OIL SEPARATOR DCFM / TON FACTOR |       |       |       |       |       |       |       |       |  |
|                              |     | CONDENSING TEMPERATURE (°F)     |       |       |       |       |       |       |       |       |  |
|                              |     | 130                             | 125   | 120   | 115   | 110   | 105   | 100   | 95    | 90    |  |
| EVAPORATING TEMPERATURE (°F) | -40 | 0.622                           | 0.648 | 0.676 | 0.707 | 0.739 | 0.774 | 0.812 | 0.853 | 0.898 |  |
|                              | -35 | 0.614                           | 0.640 | 0.668 | 0.698 | 0.730 | 0.765 | 0.803 | 0.844 | 0.888 |  |
|                              | -30 | 0.606                           | 0.632 | 0.659 | 0.689 | 0.722 | 0.757 | 0.794 | 0.835 | 0.879 |  |
|                              | -25 | 0.598                           | 0.624 | 0.651 | 0.681 | 0.713 | 0.748 | 0.785 | 0.826 | 0.869 |  |
|                              | -20 | 0.590                           | 0.616 | 0.644 | 0.673 | 0.705 | 0.740 | 0.777 | 0.817 | 0.860 |  |
|                              | -15 | 0.583                           | 0.608 | 0.636 | 0.666 | 0.697 | 0.732 | 0.769 | 0.808 | 0.851 |  |
|                              | -10 | 0.576                           | 0.601 | 0.629 | 0.658 | 0.690 | 0.724 | 0.760 | 0.800 | 0.843 |  |
|                              | -5  | 0.569                           | 0.594 | 0.621 | 0.651 | 0.682 | 0.716 | 0.753 | 0.792 | 0.835 |  |
|                              | 0   | 0.562                           | 0.587 | 0.615 | 0.644 | 0.675 | 0.709 | 0.745 | 0.784 | 0.827 |  |
|                              | 5   | 0.556                           | 0.581 | 0.608 | 0.637 | 0.668 | 0.702 | 0.738 | 0.777 | 0.819 |  |
|                              | 10  | 0.549                           | 0.575 | 0.601 | 0.630 | 0.661 | 0.695 | 0.731 | 0.769 | 0.811 |  |
|                              | 15  | 0.543                           | 0.568 | 0.595 | 0.624 | 0.655 | 0.688 | 0.724 | 0.762 | 0.804 |  |
|                              | 20  | 0.538                           | 0.563 | 0.589 | 0.618 | 0.648 | 0.682 | 0.717 | 0.755 | 0.797 |  |
|                              | 25  | 0.532                           | 0.557 | 0.583 | 0.612 | 0.642 | 0.675 | 0.711 | 0.749 | 0.790 |  |
|                              | 30  | 0.527                           | 0.551 | 0.578 | 0.606 | 0.636 | 0.669 | 0.704 | 0.742 | 0.783 |  |
|                              | 35  | 0.521                           | 0.546 | 0.572 | 0.600 | 0.631 | 0.663 | 0.698 | 0.736 | 0.777 |  |
|                              | 40  | 0.516                           | 0.541 | 0.567 | 0.595 | 0.625 | 0.658 | 0.692 | 0.730 | 0.771 |  |
|                              | 45  | 0.512                           | 0.536 | 0.562 | 0.590 | 0.620 | 0.652 | 0.687 | 0.724 | 0.765 |  |

|                              |     | R-507A                          |       |       |       |       |       |       |       |       |  |
|------------------------------|-----|---------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|                              |     | OIL SEPARATOR DCFM / TON FACTOR |       |       |       |       |       |       |       |       |  |
|                              |     | CONDENSING TEMPERATURE (°F)     |       |       |       |       |       |       |       |       |  |
|                              |     | 130                             | 125   | 120   | 115   | 110   | 105   | 100   | 95    | 90    |  |
| EVAPORATING TEMPERATURE (°F) | -40 | 0.747                           | 0.753 | 0.763 | 0.777 | 0.795 | 0.816 | 0.841 | 0.869 | 0.900 |  |
|                              | -35 | 0.726                           | 0.733 | 0.745 | 0.760 | 0.778 | 0.800 | 0.825 | 0.853 | 0.884 |  |
|                              | -30 | 0.707                           | 0.715 | 0.727 | 0.743 | 0.762 | 0.784 | 0.810 | 0.838 | 0.869 |  |
|                              | -25 | 0.688                           | 0.698 | 0.711 | 0.727 | 0.747 | 0.770 | 0.795 | 0.824 | 0.855 |  |
|                              | -20 | 0.671                           | 0.681 | 0.695 | 0.712 | 0.733 | 0.755 | 0.781 | 0.810 | 0.841 |  |
|                              | -15 | 0.654                           | 0.666 | 0.680 | 0.698 | 0.719 | 0.742 | 0.768 | 0.797 | 0.828 |  |
|                              | -10 | 0.638                           | 0.651 | 0.666 | 0.685 | 0.705 | 0.729 | 0.755 | 0.784 | 0.816 |  |
|                              | -5  | 0.624                           | 0.637 | 0.653 | 0.672 | 0.693 | 0.716 | 0.743 | 0.772 | 0.803 |  |
|                              | 0   | 0.610                           | 0.624 | 0.640 | 0.659 | 0.681 | 0.705 | 0.731 | 0.760 | 0.792 |  |
|                              | 5   | 0.596                           | 0.611 | 0.628 | 0.647 | 0.669 | 0.693 | 0.720 | 0.749 | 0.780 |  |
|                              | 10  | 0.584                           | 0.599 | 0.617 | 0.636 | 0.658 | 0.682 | 0.709 | 0.738 | 0.770 |  |
|                              | 15  | 0.572                           | 0.588 | 0.606 | 0.625 | 0.647 | 0.672 | 0.698 | 0.727 | 0.759 |  |
|                              | 20  | 0.561                           | 0.577 | 0.595 | 0.615 | 0.637 | 0.662 | 0.688 | 0.718 | 0.749 |  |
|                              | 25  | 0.550                           | 0.567 | 0.585 | 0.605 | 0.628 | 0.652 | 0.679 | 0.708 | 0.740 |  |
|                              | 30  | 0.540                           | 0.557 | 0.576 | 0.596 | 0.619 | 0.643 | 0.670 | 0.699 | 0.731 |  |
|                              | 35  | 0.531                           | 0.548 | 0.567 | 0.587 | 0.610 | 0.634 | 0.661 | 0.690 | 0.722 |  |
|                              | 40  | 0.528                           | 0.545 | 0.564 | 0.585 | 0.607 | 0.632 | 0.659 | 0.688 | 0.719 |  |
|                              | 45  | 0.513                           | 0.531 | 0.550 | 0.571 | 0.594 | 0.618 | 0.645 | 0.674 | 0.705 |  |



16E09-101

# 16E DIGITAL REFRIGERATION TEMPERATURE CONTROL

*Superior temperature control and accuracy for both **refrigeration and heating** applications.*

**FEATURES**

- Multiple input voltages (24/120/208/240 volts) with no common wire required on electrical loads greater than 2.5 amps uninterrupted
- Reduces inventory - replaces most competitive mechanical and electronic Refrigeration controls
- Electronic temperature accuracy/digital display
- Alarm output (with selectable delay - up to 99 minutes)
- Adjustable anti-short cycle delay, Set-point locking function
- Multiple sensor option can be used with 1 or 4 sensors

Voltage .....24, 120, 208, 240 VAC  
Full Load Amps .....16A at 120 VAC, 9.2A at 208 VAC, 8A at 240 VAC  
Non-Inductive Amps .....16 Amps  
Minimum Load .....1 Amp @ 24 VAC  
Set-point Range.....-40°F to 200°F (-40° to 104°C)  
Differential Range..... 1° to 30°F (1° to 30°C)  
Switch Action ..... SPDT  
Dimensions ..... 6.75"H X 3.00"W X 2.57"D  
UL/CUL File Number .....E12615

**16E ELECTRONIC REFRIGERATION TEMPERATURE CONTROL**

| RANGE        | DIFFERENTIAL | SWITCH ACTION | MODEL NUMBER | ITEM NUMBER |
|--------------|--------------|---------------|--------------|-------------|
| -40 to 220°F | 1 to 30°F    | SPDT          | 16E09-101    | 16E09-101   |

**PARTS AND ACCESSORIES**

| DESCRIPTION                          | MODEL NUMBER | ITEM NUMBER |
|--------------------------------------|--------------|-------------|
| Replacement 7.5-ft NTC remote sensor | F136-0114    | F136-011400 |



1609-90

## 1600 SERIES REFRIGERATION TEMPERATURE CONTROLS

*Provide positive control of refrigeration applications where remote control is desired.*

### FEATURES

- Hydraulic action element
- Dustproof steel case with top and bottom knockouts
- Temperature dial graduated in °F and °C and can be adjusted through cover
- High electrical ratings allow operation of most equipment without use of relays or motor starters
- Model 1609-90 for use in zoning systems where all thermostats control a common compressor and a separate solenoid refrigerant valve in each zone. 16A60 manual reset freeze protection

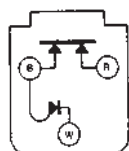
### SPECIFICATIONS

Bulb Mounting ..... Clamp included with all models except 1609-90  
 Finish..... Grey  
 Dimensions ..... 5.38"H X 2.31"W X 2.57"D  
 Agency ..... UL/CUL

### 1600 SERIES REFRIGERATION TEMPERATURE CONTROLS

| RANGE                     | DIFFERENTIAL                   | CAPILLARY LENGTH | BULB SIZE      | SWITCH ACTION | MOTOR RATING<br>(FULL LOAD) 120 VAC | MOTOR RATING<br>(FULL LOAD) 240 VAC | MODEL NUMBER | ITEM NUMBER |
|---------------------------|--------------------------------|------------------|----------------|---------------|-------------------------------------|-------------------------------------|--------------|-------------|
| -20 to 50°F (-29 to 10°C) | Adj. 3 to 25°F (2 to 14°C)     | 8 ft.            | 5-3/4" X 3/8"  | Close on Rise | 7.4A                                | 3.7A                                | 1609-90      | 16 09 090S1 |
| -30 to 90°F (-34 to 32°C) | Adj. 3.5 to 40°F (2 to 22°C)   | 5 ft.            | 5-3/16" X 3/8" | Close on Rise | 16.0A                               | 8.0A                                | 1609-101     | 16 09 101S1 |
| -30 to 90°F (-34 to 32°C) | Adj. 3.5 to 40°F (2 to 22°C)   | 10 ft.           | 5-3/16" X 3/8" | Close on Rise | 16.0A                               | 8.0A                                | 1609-103     | 16 09 103S1 |
| -30 to 90°F (-34 to 32°C) | Adj. 3.5 to 40°F (2 to 22°C)   | 20 ft.           | 5-3/16" X 3/8" | Close on Rise | 16.0A                               | 8.0A                                | 1609-104     | 16 09 104S1 |
| -30 to 90°F (-34 to 32°C) | Adj. 3.5 to 40°F (2 to 22°C)   | 5 ft.            | 5-3/16" X 3/8" | Close on Rise | 16.0A                               | 8.0A                                | 1609-105 ①   | 16 09 105S1 |
| -30 to 90°F (-34 to 32°C) | Adj. 4.5 to 40°F (2.5 to 22°C) | 8 ft.            | 5-3/16" X 3/8" | SPDT          | 7.4A                                | 3.7A                                | 1687-9       | 16 87 009S1 |
| -30 to 50°F (-34 to 10°C) | Manual Reset                   | 10 ft.           | 5-3/16" X 3/8" | Open on Fall  | 7.4A                                | 3.7A                                | 16A60-9      | 16A60 009S1 |

① Knob adjustment.

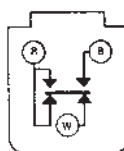


#### HH2C CONTACT STRUCTURE

HH2C Rated Controls

#### SWITCH ACTION

Double pole, single throw.  
 B terminal is common.  
 B-R and B-W contacts both close on a rise of temperature.



#### SPDT CONTACT STRUCTURE

SPDT Rated Controls

#### SWITCH ACTION

R-B Open on Rise  
 R-W Close on Rise



201-8

200 SERIES REFRIGERATION TEMPERATURE CONTROLS

Designed for use in garages, factories, warehouses and similar commercial and industrial installations.

FEATURES

- Handles inductive and non-inductive loads
- No leveling required and mounts in any position
- Quick response to temperature changes
- Nickel plated element

SPECIFICATIONS

Dimensions ..... 5.38"H + 2.50"coil X 2.32"W X 2.57"D  
Finish..... Grey  
UL/CUL File Number ..... SA749

200 SERIES REFRIGERATION TEMPERATURE CONTROLS

| RANGE                     | DIFFERENTIAL                 | SWITCH ACTION | MOTOR RATING<br>(FULL LOAD) 120 VAC | MOTOR RATING<br>(FULL LOAD) 240 VAC | RESISTIVE<br>(NON-INDUCTIVE) 120 VAC | RESISTIVE<br>(NON-INDUCTIVE) 240 VAC | MODEL NUMBER | ITEM NUMBER |
|---------------------------|------------------------------|---------------|-------------------------------------|-------------------------------------|--------------------------------------|--------------------------------------|--------------|-------------|
| 20 to 90°F (-6 to 32°C)   | Adj. 3 to 20°F (1.5 to 11°C) | Close on Rise | 16.0A                               | 8.0A                                | 25.0A                                | 22.0A                                | 201-8        | 02 01 008S1 |
| -30 to 90°F (-34 to 32°C) | Adj. 3 to 20°F (1.5 to 11°C) | Close on Rise | 16.0A                               | 8.0A                                | 25.0A                                | 22.0A                                | 201-20       | 02 01 020S1 |

See White-Rodgers General Information for full electrical ratings. 201-8 and 201-20 are rated FGH.



PS1-X5A

## PS1 SERIES PRESSURES SWITCH SINGLE CONTROL

*PS1 Single Pressure Controls are designed for use on high and low pressure applications in refrigeration, air conditioning and heat pump systems, providing single-device control of the compressor or other electrical device.*

### FEATURES

- Adjustable pressures and differentials
- Narrow adjustable differential depending on model
- Range and differential pointer in units bar and psig
- Range and differential individually lockable by tab
- High rated SPDT contacts for all versions
- Captive terminal and cover screws
- Manual toggle for system checkout and override
- Automatic and manual reset versions available

### SPECIFICATIONS

Electrical Ratings ..... SPDT Switch Rated for 12 FLA and 72 LRA  
 .....at 240 VAC and 16 FLA and 96 LRA at 120 VAC  
 UL/CUL File Number .....E85974,  
 .....CE per (LVD) Low Voltage Directive

### MODEL NUMBER NOMENCLATURE - Example: PS1-X3A

| SERIES                            | FUNCTION                                         |                                             | PRESSURE RANGE                                                                                              | CONNECTION TYPE                                                     | SEQUENTIAL IDENTIFIER | CUSTOMER SPECIAL                            | PACK TYPE                                    |
|-----------------------------------|--------------------------------------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------|---------------------------------------------|----------------------------------------------|
| PS1                               | -X                                               |                                             | 3                                                                                                           | A                                                                   |                       |                                             |                                              |
| Single Adjustable Pressure Switch | X = Auto Reset<br>Y = Manual Reset<br>- External | External Range and Differential Adjustments | 3 = 9"Hg to 102 psig (0.3 to 7 bar)<br>4 = 29 to 290 psig (2 to 20 bar)<br>5 = 87 to 464 psig (6 to 32 bar) | A = 1/4" SAE Male Flare<br>K = 1 m (3 ft.) Cap Tube, 1/4" Flare Nut | Blank Thru -99        | G = Customer Special<br>(Omit for Standard) | B1 = Bulk Pack<br>(Omit for Individual Pack) |

### PS1 PRESSURE SWITCH SERIES SINGLE CONTROL

| CONTROL TYPE LOW / HIGH | FUNCTION     | PRESSURE RANGE (PSIG)         | DIFFERENTIAL (PSIG) | FACTORY SETTING (PSIG) | CONNECTION TYPE                     | MODEL NUMBER | ITEM NUMBER |
|-------------------------|--------------|-------------------------------|---------------------|------------------------|-------------------------------------|--------------|-------------|
| Low                     | Auto Reset   | 4.4 to 102 psig, 0.3 to 7 bar | 15 to 73 psig       | 49/65 psig             | 1/4" SAE Male Flare                 | PS1-X3A      | 099022      |
| Low                     | Manual Reset | 4.4 to 102 psig, 0.3 to 7 bar | 15 to 73 psig       | 49/65 psig             | 1m (3 ft.) Cap Tube, 1/4" Flare Nut | PS1-X3K      | 099024      |
| High                    | Auto Reset   | 87 to 464 psig, 6 to 32 bar   | 44 to 218 psig      | 141/280 psig           | 1/4" SAE Male Flare                 | PS1-X5A      | 099026      |
| High                    | Manual Reset | 87 to 464 psig, 6 to 32 bar   | 44 to 218 psig      | 230/290 psig           | 1m (3 ft.) Cap Tube, 1/4" Flare Nut | PS1-X5K      | 099027      |
| High                    | Manual Reset | 87 to 464 psig, 6 to 32 bar   | Fixed               | 290 psig               | 1m (3 ft.) Cap Tube, 1/4" Flare Nut | PS1-Y5K      | 099030      |



PS2-Y7A

## PS2 SERIES PRESSURE SWITCH DUAL CONTROL

PS2 Dual Pressure Controls are designed for use on high and low pressure applications in refrigeration, air conditioning, and heat pump systems. This control reacts to changes in either low or high side pressures, providing single-device control of the compressor or other electrical device.

### FEATURES

- Adjustable pressures and differentials
- Narrow adjustable differential depending on model
- Range and differential pointer in units bar and psig
- Range and differential individually lockable by tab
- High rated SPDT contacts for all versions
- Captive terminal and cover screws
- Manual toggle for system checkout and override
- Factory installed wire bridge for reduced installation effort
- High side convertible from manual to auto reset.
- Automatic and manual reset models available

### SPECIFICATIONS

Electrical Ratings ..... SPDT Switch Rated for 12 FLA and 72 LRA at 240 VAC  
 .....and 16 FLA and 96 LRA at 120 VAC  
 UL/CUL File Number ..... E85974  
 .....CE per (LVD) Low Voltage Directive

### MODEL NUMBER NOMENCLATURE - Example: PS2-Y7A

| SERIES                          | FUNCTION                                                 |                                             | PRESSURE RANGE                                                                              | CONNECTION TYPE                                                                                                             |
|---------------------------------|----------------------------------------------------------|---------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| PS2                             | -Y                                                       |                                             | 7                                                                                           | A                                                                                                                           |
| Dual Adjustable Pressure Switch | X = Auto Reset                                           | Internal range and differential adjustments | 7 = Left Side: 9"Hg to 102 psig (-0.3 to 7 bar)<br>Right Side: 87 to 464 psig (6 to 32 bar) | A = 1/4" SAE Male Flare<br>K = 1 m (3 ft.) Cap Tube, 1/4" Flare Nut<br>L = 1 m (3 ft.) Cap Tube, 1/4" ODM Solder Connection |
|                                 | Y = Low Side: Auto Reset<br>High Side: Convertible Reset | External range and differential adjustments |                                                                                             |                                                                                                                             |

### PS2 PRESSURE SWITCH DUAL CONTROL

| FUNCTION     | LOW PRESSURE SIDE             |                    |                 | HIGH PRESSURE SIDE |              |                 | CONNECTION TYPE                       | MODEL NUMBER | ITEM NUMBER |
|--------------|-------------------------------|--------------------|-----------------|--------------------|--------------|-----------------|---------------------------------------|--------------|-------------|
|              | PRESSURE RANGE                | DIFFERENTIAL RANGE | FACTORY SETTING | PRESSURE RANGE     | DIFFERENTIAL | FACTORY SETTING |                                       |              |             |
| Auto Reset   | 4.4 to 102 psig, 0.3 to 7 bar | 15 to 73 psig      | 49/65 psig      | 87 to 464 psig     | Fixed        | 290 psig        | 1/4" SAE Male Flare                   | PS2-Y7A      | 099008      |
| Manual Reset | 4.4 to 102 psig, 0.3 to 7 bar | 15 to 73 psig      | 49/65 psig      | 87 to 464 psig     | Fixed        | 290 psig        | 1 m (3 ft.) Cap Tube w/1/4" Flare Nut | PS2-Y7K      | 099009      |





PSC-W6S 0097793

## PSC SERIES MINI PRESSURE CONTROL

The PSC Mini Pressure Control is a commercial grade control with a standard plug connectible design that simplifies installation and service. Typical applications include high pressure limit/alarm, condenser fan cycling, low pressure limit/alarm, low pressure cycling, defrost termination/fan delay, and rupture guard alarm.

### FEATURES

- Mini-size 2"X 1-1/2" X 2-3/4"
- Standard SPDT switch action
- Automatic or manual reset
- Models available with high temperature bellows and built-in pressure pulsation snubber for direct head mount high pressure sensing/limit applications
- Plug connectible with hub for 1/2" flexible conduit
- Factory preset to customer desired pressure specifications
- Precise, repeatable settings
- Narrow differential "Micro" switch available on low pressure models

### SPECIFICATIONS

Electrical Rating Standard Switch..... SPDT Standard Switch - High/Low Pressure  
 ..... Load Contact: 6 FLA - 36 LRA - 120/240 VAC  
 ..... Pilot Duty: 240 VAC @ 120, 480 Va @ 240 VAC  
 Electrical Rating Micro Switch..... Micro Switch - Low Pressure  
 ..... 2.5 FLA - 15 LRA - 120/240 VAC  
 ..... Pilot Duty: 120 Va @ 120, 240 Va @ 240 VAC  
 Ambient Temperature ..... Storage -30° to +160°F, Operating -20° to +140°F  
 Low Pressure - Single Diaphragm Maximum Media Temperature .....150°F  
 High Pressure - Bellows Design Maximum Media Temperature .....300°F  
 ..... Internal Pressure Pulsation Snubber Available For Direct Head Mount  
 Weight ..... Approximately 0.25 lb. Depending on Configuration  
 Compatibility .....HFC, HCFC, CFC  
 Worldwide Approvals ..... UL/CUL/VDE/TUV  
 UL/CUL File Number .....E85974

### MODEL NUMBER NOMENCLATURE - Example: PSC-W6S 0097793

| SERIES                | FUNCTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | PRESSURE RANGE / CONTACTS                                                                                                                                                                                                  | PRESSURE CONNECTIONS                                                                                                                                                                                         | UNIQUE IDENTIFIER |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| PSC                   | -W                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 6                                                                                                                                                                                                                          | S                                                                                                                                                                                                            | 0097793           |
| Mini Pressure Control | <p>A = Pressure Control, Automatic, high or low pressure applications (single diaphragm option, 158°F rating, range 1-5 only, without snubber) (bellows option, 300°F rating, with snubber, range 6 only)</p> <p>B = Pressure Cut-Out, External Manual Reset, din/tuv approved (double diaphragm option, 158°F, without snubber, range 1-5) (bellows option, 300°F rating, with snubber, range 6 only)</p> <p>R = Pressure Control, External Manual Reset, high or low pressure applications (single diaphragm option, 158°F rating, range 1-5 only, without snubber) (bellows option, 300°F rating, with snubber, range 6 only)</p> <p>W = Pressure Limiter, Automatic, din/tuv approved (double diaphragm option, 158°F, without snubber, range 1-5) (bellows option, 300° F rating, with snubber, range 6 only)</p> | <p>Standard Contacts</p> <p>1 = low pressure 15" hg to 90 psig</p> <p>5 = high pressure 100 to 465 psig</p> <p>6 = high pressure 145 to 623 psig</p> <p>Microswitch Contacts</p> <p>J = low pressure 15" hg to 90 psig</p> | <p>K = 1m (3 ft) cap tube with 1/4" flare nut (range 1-5)</p> <p>I = 1m (3 ft) cap tube with 1/4" odm solder connection (range 1-5)</p> <p>S = 1/4" female flare fitting, schrader depressor (range 1-6)</p> |                   |

PSC SERIES MINI PRESSURE CONTROL

| HIGH<br>EVENT<br>RANGE<br>(PSIG) | DIFFERENTIAL<br>RANGE<br>(PSID) | PRESSURE<br>SETTING | RESET<br>FUNCTION                 | PRESSURE CONNECTION                                                                            | ELECTRICAL<br>CONNECTION                                          | ELECTRICAL<br>RATINGS | MAXIMUM<br>OVER<br>PRESSURE | MOUNTING<br>OPTIONS        | MODEL NUMBER                 | ITEM<br>NUMBER |
|----------------------------------|---------------------------------|---------------------|-----------------------------------|------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-----------------------|-----------------------------|----------------------------|------------------------------|----------------|
| LOW PRESSURE CONTROLS            |                                 |                     |                                   |                                                                                                |                                                                   |                       |                             |                            |                              |                |
| 15 to 90                         | 9 Low/15 High                   | 5/15                | Auto                              | 1/4" Female Flare with Schrader Depressor Range 1-6                                            | DIN Plug with 1/2" NPTF Hub for Flex Conduit Connection 36" Cable | 6 FLA/36 LRA          | 360 psig                    | Free Standing Direct Mount | PSC-A1S 0097849              | 097849         |
| 15 to 90                         | 4 Low/7 High                    | 1.5/6               | Auto                              | 1/4" Female Flare with Schrader Depressor Range 1-6                                            | DIN Plug with 1/2" NPTF Hub for Flex Conduit Connection 36" Cable | 2.5 FLA/15 LRA        | 360 psig                    | Free Standing Direct Mount | PSC-AJS 0097815 <sup>1</sup> | 097815         |
| HIGH PRESSURE CONTROLS           |                                 |                     |                                   |                                                                                                |                                                                   |                       |                             |                            |                              |                |
| 145 to 623                       | 72 Low/87 High                  | 395                 | Pressure Cut-Out, External Manual | 1/4" Female Flare with Schrader Depressor Plus Stainless Steel Bellows with Snubber, Range 1-6 | DIN Plug with 1/2" NPTF Hub for Flex Conduit Connection 36" Cable | 6 FLA/36 LRA          | 695 psig                    | Free Standing Direct Mount | PSC-B6S 0097998              | 097998         |
| 145 to 623                       | 72 Low/87 High                  | 320/395             | Pressure Limiter, Auto            | 1/4" Female Flare with Schrader Depressor Plus Stainless Steel Bellows with Snubber, Range 1-6 | DIN Plug with 1/2" NPTF Hub for Flex Conduit Connection 36" Cable | 6 FLA/36 LRA          | 695 psig                    | Free Standing Direct Mount | PSC-W6S 0097793              | 097793         |

<sup>1</sup> Micro-Switch Construction.



FD113-ZUK

# FD113-ZUK OIL PRESSURE SAFETY

The FD113 Oil Pressure Safety Control senses the effective oil pressure on pressure lubricated compressors. If inadequate oil pressure exists, a time delay is energized. If the oil pressure does not recover to safe levels within the time delay setting, the compressor is shut down.

## FEATURES

- Pressure range adjustable from 4 to 65 psid; Timer start pressure - timer stop pressure is 3 psid above timer start pressure
- A SPDT switch is used in the pressure portion of the control which allows the addition of a safe-light when desired
- Electronic timer is time-adjustable from 20 to 150 seconds supply voltage - 24 to 240 Volt AC/DC; timing unaffected by voltage or ambient temperature variations
- A SPDT manual reset switch is used in the timer module; Upon time-out, the compressor is stopped and an alarm circuit is energized; To restart the compressor and de-energize the alarm circuit, the reset button is pushed
- A factory installed Jumper allows the FD113 to be powered from a single source power; Should separate circuits be desired for the timer and lockout switch, the Jumper can be removed

## SPECIFICATIONS

Approvals ..... UL/CUL File Number E85974, VDE 0631/0660  
..... TÜV, CE 73/23/EWG, CE 93/68/EWG

| ADJUSTABLE<br>PRESSURE RANGE (PSID) | ADJUSTABLE TIME DELAY                          | SUPPLY VOLTAGE   | PRESSURE CONNECTORS                     | MODEL NUMBER | ITEM NUMBER |
|-------------------------------------|------------------------------------------------|------------------|-----------------------------------------|--------------|-------------|
| 4-65                                | 20 to 150 Seconds (Factory-Set at 120 Seconds) | 24 to 240V AC/DC | (2) 3/16" Capillary with 1/4" Flare Nut | FD113-ZUK    | 097456      |



FSY-43S 0097782

## FSY SERIES ELECTRIC FAN SPEED CONTROL

The FSY Fan Speed Control controls the head pressure in air - cooled condensers and is designed for use with permanent split capacitor and shaded pole fan motors.

### FEATURES

- Connector includes 2 m. cable installed (FSF and FSO)
- Connector turnable (in 90° steps)
- Compact design
- State-of-the-art electronics
- Direct mount - Easily retrofit to suitable motor
- Low pressure turn off operation
- Adjustable pressure setting
- Multiple FSX controls can be used in parallel on multi - circuit condensers
- 2 Cable types: FSF-N15 with internal circuit design to comply with EC-Directive 89/336/EC (Electromagnetic compatibility requirements for Europe)
- FSO-N15, standard with internal voltage spike and over current protection

### SPECIFICATIONS

Nominal current ..... 0.1 to 4 A max up to 104°F (40°C) + 0.1 to 2.5 A max up to 140°F (60°C)  
 Starting Current ..... Max 8 Amp  
 Temperature Range..... Storage and transportation 30°C to 70°C  
 ..... Ambient temperature -20°C to 55°C,  
 ..... Medium temperature -20°C to 70°C  
 Supply Voltage ..... 230 VAC + 15-20%  
 Enclosure ..... Provide enclosure to protect from direct rain,  
 ..... sunlight and external damage  
 Weight ..... 3.5 ounces  
 Approvals ..... UL/CUL file number E183816 CE low voltage  
 ..... directive 72/23/EC connector per DIN 43650

### MODEL NUMBER NOMENCLATURE - Example: FSY-43S 0097782

| SERIES            | CUT OFF MODE  | MAX CURRENT RATING                        | PRESSURE RANGE                                                                                    | PRESSURE CONNECTION                                         | UNIQUE IDENTIFIER |
|-------------------|---------------|-------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------|-------------------|
| FS                | Y             | -4                                        | 3                                                                                                 | S                                                           | 0097782           |
| Fan Speed Control | Y = 0, 1A min | 4 = 4 Amps maximum at 104°F ambient temp. | 3 = 12.4 to 28.4 (128- to 411 psig), modulating band 66 psig, factory setting 16.1 bar (233 psig) | S = 1/4" SAE female (7/16" -20 UNF) with Schrader Depressor |                   |

### FSY SERIES ELECTRIC FAN SPEED CONTROL

| CURRENT RATING                                            | ADJUSTABLE RANGE (PSIG) | MODULATING BAND (PSIG) | FACTORY SETTING (PSIG) | PRESSURE CONNECTION                                          | VOLTAGE          | MODEL NUMBER    | ITEM NUMBER |
|-----------------------------------------------------------|-------------------------|------------------------|------------------------|--------------------------------------------------------------|------------------|-----------------|-------------|
| 4 (4 Amps Maximum at 104°F Ambient Operating Temperature) | 180 to 411              | 66                     | 233                    | S = (1/4" SAE Female, 7/16" -20 UNF with Schrader Depressor) | 230 VAC + 15-20% | FSY-43S 0097782 | 097782      |

### FSY SERIES PARTS LIST

| DESCRIPTION                                              | MODEL NUMBER   | ITEM NUMBER |
|----------------------------------------------------------|----------------|-------------|
| FSY Temperature Pressure Control DIN Connector (EMC)     | FSF-N15 804640 | 097995      |
| FSO Temperature Pressure Control DIN Connector(Standard) | FSO-N15 804630 | 097775      |

## A GUIDE TO THE WHITE-RODGERS NUMBERING SYSTEM

Older models start with the dash in the basic Model Number, then working to the left, eliminate all letters. The number remaining will give you the Series and Control Category listed in the box below.

**EXAMPLE: 1F95-1291** ..... Leave out the letter F, the number remaining is 195 or a 100 series of room thermostats

**EXAMPLE: 21D18-3** ..... Leave out the letter D, the number remaining is 2118 or a 2100 series of pre-packaged kits

| SERIES | CONTROL CATEGORY                      | SERIES | CONTROL CATEGORY          | SERIES | CONTROL CATEGORY                 |
|--------|---------------------------------------|--------|---------------------------|--------|----------------------------------|
| 100    | Room Thermostats                      | 900    | Flame Detectors           | 2400   | Sequencers and Time Delay Relays |
| 200    | Space Thermostats                     | 1000   | Temperature Controls      | 2500   | Solenoid Gas Valves              |
| 300    | Fan or Limits                         | 1100   | Hot Water Controls        | 3000   | Mercury Flame Sensors            |
| 400    | Limits, Fans and Temperature Controls | 1300   | Zone Valves and Hydronics | 3400   | Commercial Motor Actuators       |
| 500    | Fan, Limit or Fan and Limits          | 1600   | Refrigeration Temperature | 3600   | Combination Gas Manifold Valves  |
| 600    | Oil Controls                          | 1700   | Refrigeration Temperature | 3700   | Gas Water Heater Controls        |
| 700    | Miscellaneous Controls                | 2000   | Motorized Zone Dampers    | 3900   | Commercial Economizers           |
| 800    | Relays                                | 2100   | Pre-Packaged Kits         | 5000   | Ignition Components              |

### MODEL AND TYPE NUMBER EXAMPLES

| SERIES | 100      | 800       | 3600       | Allows for up to 100 basic models in each                                                                                                                 |
|--------|----------|-----------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| MODEL  | 165      | 848       | 3603       | Basic model number within a series                                                                                                                        |
| MODEL  | 1A65     | 8B48      | 36C03      | Letter after first or second digit of model number identifies another control model after the basic model, which allows expansion of the numbering system |
| MODEL  |          | 8B48A     | 36C03U     | Letter after Model number (or absence of letter) identifies operator coil voltage* (see table below)                                                      |
| TYPE   | 1A65-641 | 8B48A-217 | 36C03U-333 | Dash number identifies a specific device within a control model. Model number plus dash number/type number                                                |

### VOLTAGE DESIGNATIONS (60 HZ)

| CODE *    | VOLTAGE  | VOLTAGE DESIGNATIONS ON GAS VALVES & SWITCHING RELAYS |          |            |  |
|-----------|----------|-------------------------------------------------------|----------|------------|--|
| No Letter | 24 VAC   | No Letter —                                           | 24 VAC   | 36C03-333  |  |
| A         | 120 VAC  | Letter A —                                            | 120 VAC  | 36C03A-310 |  |
| E         | 208 VAC  | Letter E —                                            | 208 VAC  | 24A06E-1   |  |
| G         | 240 VAC  | Letter G —                                            | 240 VAC  | 24A06G-1   |  |
| U         | 750mv DC | Letter U —                                            | 750mv DC | 36C03U-333 |  |
| Z         | SPECIAL  | Letter Z —                                            | SPECIAL  | 24A06Z-1   |  |

\* These designations only apply to power consuming devices that operate at a specific voltage (relays, solenoids, gas valves, motors, etc.) They are not used with thermostats or temperature controls.

### PIPE SIZE DESIGNATIONS (Gas valves only)

| PIPE SIZE          | SUFFIX NO.   |
|--------------------|--------------|
| 3/8 x 3/8          | 1 thru 49    |
| 1/2 x 1/2 INV. FL. | 50 thru 74   |
| 3/4 x 1/2          | 75 thru 90   |
| 1/2 x 3/8          | 100 thru 199 |
| 1/2 x 1/2          | 200 thru 299 |
| 1/2 x 3/4          | 300 thru 399 |

### SINGLE STAGE MECHANICAL LOW VOLTAGE THERMOSTAT LEGEND

|                      | VERTICAL | HORIZONTAL | EXAMPLE    |
|----------------------|----------|------------|------------|
| Snap Action Contacts | C        | D          | 1C30, 1D35 |
| *Mercury Bulb Switch | E        | F          | 1E30, 1F56 |

\* Mercury bulb thermostats are no longer produced. See current models for specifications.

## ELECTRIC &amp; GAS CONVERSION &amp; CAPACITY TABLES

## ELECTRIC

CONVERSION TABLE FOR  
WATTS – AMPERES – VOLTS

| WATTS | VOLTAGE (AC - SINGLE PHASE) |      |      |      |
|-------|-----------------------------|------|------|------|
|       | 120                         | 208  | 240  | 277  |
|       | AMPERES                     |      |      |      |
| 500   | 4.2                         | 2.4  | 2.1  | 1.8  |
| 1000  | 8.3                         | 4.8  | 4.2  | 3.6  |
| 1500  | 12.5                        | 7.2  | 6.3  | 5.4  |
| 2000  | 16.7                        | 9.6  | 8.3  | 7.2  |
| 2500  | 20.9                        | 12   | 10.4 | 9    |
| 3000  | 25                          | 14.4 | 12.5 | 10.8 |
| 3500  | 29.2                        | 16.8 | 14.6 | 12.6 |
| 4000  | 33.3                        | 19.2 | 16.7 | 14.4 |
| 4500  | 37.5                        | 21.6 | 18.8 | 16.3 |
| 5000  | 41.7                        | 24   | 20.8 | 18   |

## VARIATIONS OF OHMS LAW

$$I \text{ (Amps)} = \frac{P \text{ (Watts)}}{E \text{ (Volts)}} = \frac{E \text{ (Volts)}}{R \text{ (Ohms)}}$$

$$R \text{ (Resistance)} = \frac{E \text{ (Volts)}}{I \text{ (Amps)}} = \frac{P \text{ (Watts)}}{I^2 \text{ (Amps)}}$$

$$E \text{ (Volts)} = I \text{ (Amps)} \times R \text{ (Ohms)} = \frac{P \text{ (Watts)}}{I \text{ (Amps)}}$$

$$P \text{ (Watts)} = I^2 \text{ (Amps)} \times R \text{ (Ohms)} = I \text{ (Amps)} \times E \text{ (Volts)}$$

## GAS

## CONVERSION FACTORS FOR GAS VALVE CAPACITIES

| TOTAL HEATING VALUE (BTU/CU.) | SPECIFIC GRAVITY | CONVERSION FACTOR<br>MULTIPLY LISTED CAPACITY BY: |
|-------------------------------|------------------|---------------------------------------------------|
| Less than 800                 | 0.6              | 0.516                                             |
| 800 to 950                    | 0.7              | 0.765                                             |
| 2500 (LP Gas)                 | 1.53             | 1.62                                              |

## RATE OF FLOW OF GASES THROUGH ORIFICES

Table for **NATURAL GAS** at 3.5"W.C. with 1000 Btu/Cu. Ft.,  
.65 Specific Gravity and .82 orifice coefficient.

| DRILL SIZE | DIAMETER IN. | NATURAL GAS (BTU/HR) | DRILL SIZE | DIAMETER (INCHES) | NATURAL GAS (BTU/HR) |
|------------|--------------|----------------------|------------|-------------------|----------------------|
| 56         | 0.0465       | 5,359                | 26         | 0.147             | 53,500               |
| 54         | 0.055        | 7,510                | 22         | 0.157             | 61,100               |
| 52         | 0.0635       | 10,000               | 18         | 0.1695            | 71,200               |
| 46         | 0.081        | 16,250               | 12         | 0.189             | 88,600               |
| 42         | 0.0935       | 21,680               | 6          | 0.204             | 103,200              |
| 38         | 0.1015       | 25,530               | 2          | 0.221             | 121,100              |
| 34         | 0.111        | 30,550               | A          | 0.234             | 135,700              |
| 31         | 0.12         | 35,690               | E(1/4)     | 0.25              | 154,900              |
| 30         | 0.1285       | 40,900               |            |                   |                      |

MAXIMUM WIRE LENGTHS  
FOR SELF-GENERATION SYSTEMS

| WIRE SIZES | MAX. LENGTH<br>(2-WIRE CABLE) | MAXIMUM COMBINED LENGTH<br>(2 SINGLE WIRES) |
|------------|-------------------------------|---------------------------------------------|
| No. 18     | 30 ft.                        | 60 ft.                                      |
| No. 16     | 50 ft.                        | 100 ft.                                     |
| No. 14     | 80 ft.                        | 160 ft.                                     |

Because of the small amount of power available on self-generating systems, the gas valve may not operate if there is too much resistance in the circuit. Therefore, choose a location that does not require any more wire than the recommended lengths shown in the table above.

## HEAT &amp; POWER EQUIVALENTS

|                         |              |
|-------------------------|--------------|
| 1 Btu .....             | 252 calories |
| 1 Btu/Hr .....          | 0.293 watts  |
| 1 Watt .....            | 3.413 Btu/Hr |
| 1 KW (1000 Watts) ..... | 3413 Btu/Hr  |
| 1 Hp .....              | 0.746 KW     |

## PRESSURE CONVERSION TABLE

|                  |                                        |
|------------------|----------------------------------------|
| 1" Water .....   | 0.361 lbs/sq.in. or 0.0735 in. Mercury |
| 1" Mercury ..... | 13.6 in. water or 0.491 lbs/sq. in.    |
| 1 PSI .....      | 2.77 in. water or 2.036 in. Mercury    |

## BTU CONTENT OF FUELS

|                        |                          |
|------------------------|--------------------------|
| Natural Gas .....      | 950 to 1,150 Btu/Cu. Ft. |
| Butane Gas .....       | 3,200 Btu/Cu. Ft.        |
| Propane (LP) Gas ..... | 2,500 Btu/Cu. Ft.        |
| No. 2 Oil .....        | 140,000 Btu/Gallon       |

Table for **PROPANE (LP) GAS** at 11.0"W.C. with 2500 Btu/Cu. Ft.  
1.53 Specific Gravity and .80 orifice coefficient.

| DRILL SIZE | DIAMETER IN. | LP GAS (BTU/HR) | DRILL SIZE | DIAMETER IN. | LP GAS (BTU/HR) |
|------------|--------------|-----------------|------------|--------------|-----------------|
| 70         | 0.028        | 5,490           | 46         | 0.081        | 45,800          |
| 67         | 0.032        | 7,150           | 44         | 0.086        | 51,600          |
| 64         | 0.036        | 9,050           | 42         | 0.0935       | 61,100          |
| 61         | 0.039        | 10,600          | 38         | 0.1015       | 72,000          |
| 58         | 0.042        | 12,300          | 34         | 0.111        | 86,200          |
| 56         | 0.0465       | 15,100          | 30         | 0.1285       | 115,300         |
| 54         | 0.055        | 21,200          | 26         | 0.147        | 151,000         |
| 52         | 0.0635       | 28,200          | 22         | 0.157        | 172,000         |
| 50         | 0.07         | 34,200          | 18         | 0.1695       | 200,500         |
| 48         | 0.076        | 40,400          |            |              |                 |

# FULL ELECTRICAL RATINGS OF WHITE-RODGERS CONTROLS

Any number of motors may be operated from one control provided that neither the sum of the full load currents nor the sum of the locked rotor currents are greater than the rating of the control. If the electric load consists of an oil burner motor and ignition transformer in parallel, the motor current plus the transformer current cannot exceed the values shown.

## MOTOR (AMPS)

| POWER SUPPLY AND LOAD | SIMPLIFIED RATING CODE OF WHITE-RODGERS CONTROLS |     |    |     |      |      |    |    |      |      |      |       |      |
|-----------------------|--------------------------------------------------|-----|----|-----|------|------|----|----|------|------|------|-------|------|
|                       | FG                                               | FGH | HT | HTV | HH   | B    | CF | CL | FB   | SPDT | R    | HH2C  |      |
|                       |                                                  |     |    |     |      |      |    |    |      |      |      | WHITE | RED  |
| 120 VAC Full Load     | 14                                               | 16  | 14 | 10  | 7.4  | 7.4  | 8  | 10 | 7.4  | 7.4  | 3.2  | 7.4   | 7.4  |
| 120 VAC Locked Rotor  | 84                                               | 84  | 84 | 60  | 44.5 | 44.5 | 48 | 60 | 44.5 | 44.5 | 19.2 | 44.5  | 44.5 |
| 240 VAC Full Load     | 7                                                | 8   | 7  | 6   | 3.7  | 3.7  | 6  | 6  | 3.7  | 3.7  | 1.5  | 3.7   | 3.7  |
| 240 VAC Locked Rotor  | 42                                               | 42  | 42 | 36  | 22.2 | 22.2 | 36 | 36 | 22.2 | 22.2 | 9.6  | 22.2  | 22.2 |

## VALVES, RELAYS, MOTOR STARTERS (AMPS)

| POWER SUPPLY  | SIMPLIFIED RATING CODE OF WHITE-RODGERS CONTROLS |       |     |     |     |       |     |     |       |       |     |       |     |
|---------------|--------------------------------------------------|-------|-----|-----|-----|-------|-----|-----|-------|-------|-----|-------|-----|
|               | FG                                               | FGH   | HT  | HTV | HH  | B     | CF  | CL  | FB    | SPDT  | R   | HH2C  |     |
|               |                                                  |       |     |     |     |       |     |     |       |       |     | WHITE | RED |
| 0.3 to 12v DC | ①                                                | ①     | ①   | 1.0 | ①   | ①     | ①   | 1.0 | ①     | ①     | ①   | ①     | ①   |
| 25 VAC        | 5.6                                              | 5.6   | 5.6 | 6.0 | 2.9 | 2.9   | 3.2 | 4.0 | 2.9   | 2.9   | 1.2 | 2.9   | 2.9 |
| 120 VAC       | 5.6                                              | 5.6   | 5.6 | 6.0 | 2.9 | 2.9   | 3.2 | 4.0 | 2.9   | 2.9   | 1.2 | 2.9   | 2.9 |
| 240 VAC       | 2.8                                              | 2.8   | 2.8 | 2.4 | 1.4 | 1.4   | 2.4 | 2.4 | 1.4   | 1.4   | 0.6 | 1.4   | 1.4 |
| 600 VAC       | 125VA                                            | 125VA | ①   | ①   | ①   | 125VA | ①   | ①   | 125VA | 125VA | ①   | ①     | ①   |

## ELECTRIC HEATERS (AMPS)

| POWER SUPPLY | SIMPLIFIED RATING CODE OF WHITE-RODGERS CONTROLS |      |      |      |     |      |     |      |      |      |     |       |     |
|--------------|--------------------------------------------------|------|------|------|-----|------|-----|------|------|------|-----|-------|-----|
|              | FG                                               | FGH  | HT   | HTV  | HH  | B    | CF  | CL   | FB   | SPDT | R   | HH2C  |     |
|              |                                                  |      |      |      |     |      |     |      |      |      |     | WHITE | RED |
| 120 VAC      | 25.0                                             | 25.0 | 14.0 | 10.0 | 7.4 | 25.0 | 8.0 | 10.0 | 25.0 | 24.0 | 5.0 | ②     | ②   |
| 240 VAC      | 22.0                                             | 22.0 | 7.0  | 6.0  | 3.7 | 20.0 | 6.0 | 6.0  | 20.0 | 20.0 | 2.5 | ②     | ②   |
| 277 VAC      | 18                                               | 18   | ①    | ①    | ①   | 18   | ①   | ①    | 18   | ①    | ①   | ②     | ②   |

## LAMPS (WATTS)

| POWER SUPPLY | SIMPLIFIED RATING CODE OF WHITE-RODGERS CONTROLS |      |      |     |     |     |     |     |     |      |     |       |     |
|--------------|--------------------------------------------------|------|------|-----|-----|-----|-----|-----|-----|------|-----|-------|-----|
|              | FG                                               | FGH  | HT   | HTV | HH  | B   | CF  | CL  | FB  | SPDT | R   | HH2C  |     |
|              |                                                  |      |      |     |     |     |     |     |     |      |     | WHITE | RED |
| 120 VAC      | 1000                                             | 1000 | 1000 | 700 | 500 | 500 | 700 | 700 | 500 | 500  | 200 | ②     | ②   |
| 240 VAC      | 1000                                             | 1000 | 1000 | 800 | 500 | 500 | 800 | 800 | 500 | 500  | 200 | ②     | ②   |

① Indicates that control CANNOT be used on that power supply and load. ② Indicates that control is not likely to be used on that power supply and load. 125VA means 125 volt amperes; for example: 125VA at 440 volts would be 125 ÷ 440 equals 0.28 amperes

## HORSEPOWER AMPERE TABLE

Electrical ratings of White-Rodgers controls are always given in amperes. In general, these ampere ratings correspond to the various horsepower ratings given in the table.

The ampere rating of all motors will not necessarily correspond to the horsepower rating shown in the table. Therefore, the control device selected must have a rating that is equal to (or greater than) the actual full load and locked rotor currents of the motor.

| APPROXIMATE HORSEPOWER | FULL LOAD | LOCKED ROTOR | FULL LOAD | LOCKED ROTOR |
|------------------------|-----------|--------------|-----------|--------------|
| 1/10                   | 3         | 18.0         | 1.5       | 9            |
| 1/8                    | 3.8       | 22.8         | 1.9       | 11.4         |
| 1/8                    | 4.4       | 26.4         | 2.2       | 13.2         |
| 1/4                    | 5.8       | 34.8         | 2.9       | 17.4         |
| 1/3                    | 7.2       | 43.2         | 3.6       | 21.6         |
| 1/2                    | 9.8       | 58.8         | 4.9       | 29.4         |
| 3/4                    | 13.8      | 82.8         | 6.9       | 41.4         |
| 1                      | 16        | 96.0         | 8         | 48           |
| 1-1/2                  | 20        | 120.0        | 10        | 60           |
| 2                      | 24        | 144.0        | 12        | 72           |
| 3                      | 34        | 204.0        | 17        | 102          |



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