# **VACUUM PUMP SYSTEMS**

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TAI 9360 BULLET

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HOSE ADAPTERS, Valves and Parts

BULLET X YELLOW

YELLOW JACKET®

**BULLET<sup>®</sup> Vacuum Pump** 

A two-stage rotary vane oil-sealed pump that pulls down to 25 microns or better

ELLOW ACKET

X

**SYSTEM TOOLS** 



The BULLET<sup>®</sup> pulls down to 25 microns or better, protecting from contaminants and non-condensable gasses in the HVAC system, which can damage components, reduce efficiency and cause system failure.

- Wide mouth oil reservoir port for easier, cleaner filling. Doubles as pump exhaust; threaded to attach garden hose for exhausting to remote location
- Large oil sight glass for easy monitoring of oil level
- Large brass oil drain for easy access to fast oil changes
- Internal intake check valve to help prevent oil backup into the system during a power failure
- · Heavy-duty rotors and bearings

- Intake filter screen keeps damaging particles from entering the pump
- · Heavy-duty steel handle for well-balanced carrying
- Tethered port caps stay with the pump
- Stable base; wide-stance metal with rubber overlay
- Two year warranty
- Made in the USA

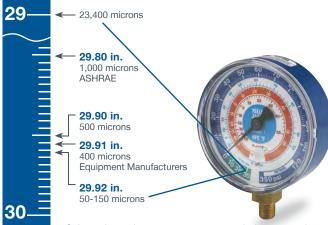
| Domestic                      | Model 93603   | Model 93605   | Model 93600   |
|-------------------------------|---|---|---|
| Free air displacement         | 3.0 cfm   | 5.0 cfm   | 7.0 cfm   |
| Number of stages              | 2-stage rotary vane   | 2-stage rotary vane   | 2-stage rotary vane   |
| Field blankoff                | 25 microns  | 25 microns  | 25 microns  |
| Intake                        | 1/4" x 3/8" x 3/8"  | 1/4" x 3/8" x 3/8"  | 1/4" x 3/8" x 3/8"  |
| Motor                         | 1/2 hp - 1725 rpm   | 1/2 hp - 1725 rpm   | 1/2 hp - 1725 rpm   |
| Thermal overload protection   | Yes   | Yes   | Yes   |
| Voltage (single phase)        | 115V/60 Hz  | 115V/60 Hz  | 115V/60 Hz  |
| Power cord                    | 6' - motor mounted switch - U.S. plug                       | 6' - motor mounted switch - U.S. plug                       | 6' - motor mounted switch - U.S. plug                       |
| Oil capacity                  | 33.5 oz. (0.991 L)  | 30 oz. (0.9 L)  | 28 oz. (0.828 L)  |
| Dimensions                    | 16.25" L x 6.25" W x 8.25" H<br>(41.3 cm x 15.9 cm x 21 cm) | 16.25" L x 6.25" W x 8.25" H<br>(41.3 cm x 15.9 cm x 21 cm) | 16.25" L x 6.25" W x 8.25" H<br>(41.3 cm x 15.9 cm x 21 cm) |
| Net weight                    | 29.1 lbs. (13.2 kg)   | 30.0 lbs. (13.6 kg)   | 31.6 lbs. (14.3 kg)   |
| Export                        | EU/UK 93613; AU/NZ 93623                                    | EU/UK 93615; AU/NZ 93625                                    | EU/UK 93610; AU/NZ 93620                                    |
| Detachable IEC Cord type      | EU/UK AU/NZ   | EU/UK AU/NZ   | EU/UK AU/NZ   |
| Free air displacement         | 85/70 L/M   | 142/120 L/M   | 200/165 L/M   |
| Motor CE                      | 1/2 hp - 1725 rpm/1425 rpm                                  | 1/2 hp - 1725/1425 rpm                                      | 1/2 hp - 1725/1425 rpm                                      |
| Voltage (dual phase)          | 115/230V / 50-60 Hz   | 115/230V / 50-60 Hz   | 115/230V / 50-60 Hz   |
| Dimensions                    | 17" L x 6.25" W x 8.25" H<br>(43.2 cm x 15.9 cm x 21 cm)    | 17" L x 6.25" W x 8.25" H<br>(43.2 cm x 15.9 cm x 21 cm)    | 17" L x 6.25" W x 8.25" H<br>(43.2 cm x 15.9 cm x 21 cm)    |
| Net weight 32.1 lbs (14.6 kg) |   | 33 lbs (15 kg) 34.5 lbs (15.7 kg)                           |   |

### **HOW TO MEASURE AN "ADEQUATE" VACUUM**

Many contractors pull the refrigerant out and think the work is done. In reality, when you get to 29 inches of vacuum (the green zone on your gauge), you are only half finished. Once the recovery machine has done its work, it's time to finish off the job with a vacuum pump.

#### Standard Lo-Side Gauge

Shows vacuum in inches. A  $\pm$ 1% gauge would be accurate to  $\pm$ 7600 microns when calibrated at a full vacuum (which is generally not the case with this type of gauge).



Only an electronic vacuum gauge can precisely measure the level at which non-condensable gas is removed from system.

#### Why a Vacuum Pump?

ASHRAE recommends evacuation to below 1000 microns for moisture removal and below 500 microns after replacing a compressor. Some equipment manufacturers call for evacuation to 400 microns to ensure that harmful water vapor is removed from the system.

When you have water vapor in your system, the risk of icing up capillary tubing and expansion valves becomes much higher. A high quality vacuum pump will be able to take you down to 200-500 microns. With the system almost completely free from water vapor, you are ready to put the refrigerant back in the system. A thorough approach to evacuation ensures longer equipment life and reduced risk of problems.

#### Use a Vacuum Gauge to Read Vacuum Down to 25 Microns

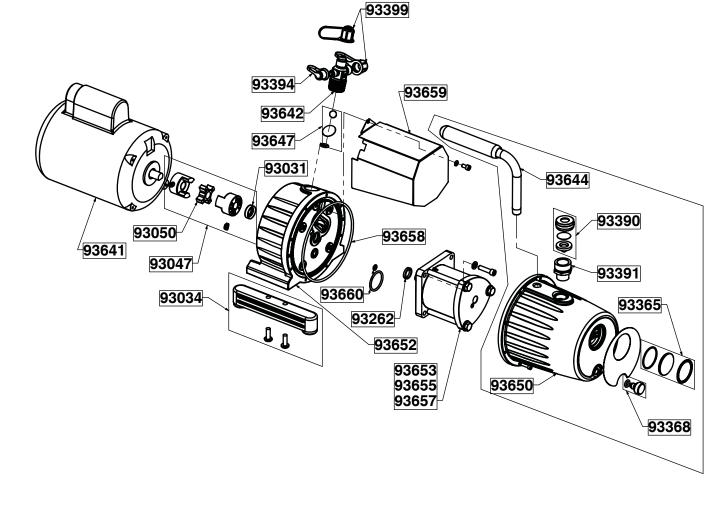
1000 microns equal only 0.039 inches of mercury, a measurement that cannot be made with a mechanical gauge, or determined by evacuation time or the sound of the pump. A popular tool that can measure vacuum at evacuation levels below 1000 microns is an electronic vacuum gauge.

The best place to measure vacuum is at the system, not at the pump. With a combination vacuum/charging valve, you can attach the electronic vacuum gauge directly to the system and isolate it from the pump, hoses and manifold for a true indication of the vacuum in the system. With a digital vacuum gauge, you can see the last evidence of moisture being removed and witness that the system has been dried out.

### **BULLET® REPLACEMENT PARTS**

| LLE   | T <sup>®</sup> replacement parts   |  | Built 2   | 010 - 2013  |
|-------|--|--|---|---|
| PC#   | Description  |  | UPC#  | Description   |
| 031   | Shaft seal   |  | 93633   | BULLET 3 cfm (85 L/M) cartridge   |
| 034   | Universal pump leg (1)   |  | 93635   | BULLET 5 cfm (142 L/M) cartridge  |
| 8047  | Drive coupling (including spider)  |  | 93637   | BULLET 7 cfm (200 L/M) cartridge  |
| 8050  | Coupling spider for 93047  |  | 93643   | BULLET pump cover gasket  |
| 8115* | 8' long U.S. cord  |  | 93646   | BULLET cartridge baffle   |
| 3262  | Cartridge locate ring  |  | 93648   | BULLET cartridge gaskets  |
| 3365  | Sight glass  |  | 93649   | BULLET pump cover assembly  |
| 3368  | Oil drain  |  | 93661**   | BULLET conversion kit   |
| 3390  | Oil fill cap   |  | Built 2   | 2014  |
| 3391  | Oil fill fitting   |  | UPC#  | Description   |
| 3394  | 1/4" Flare cap and strap   |  | 93653   | BULLET 3 cfm (85 L/M) cartridge   |
| 3399  | 3/8" Flare cap and strap   |  | 93655   | BULLET 5 cfm (142 L/M) cartridge  |
| 3513  | 1/2 hp motor (115-230V / 50-60 Hz)   |  | 93657   | BULLET 7 cfm (200 L/M) cartridge  |
| 3641  | 1/2 hp Motor 115V/60HZ   |  | 93658   | BULLET pump cover gasket  |
| 3642  | 3/8", 3/8" and 1/4" Male flare intake fitting  |  | 93659   | BULLET cartridge baffle   |
| 3644  | BULLET pump handle   |  | 93660   | BULLET cartridge gaskets  |
| 3647  | BULLET anti-suckback assembly  |  | 93650   | BULLET pump cover assembly  |
| 6431* | 8' long EU cord (detachable IEC-320)   |  | 93652   | Complete BULLET mounting body   |
| 5432* | 8' long UIK cord (detachable IEC-320)  |  | **BULLET conversion kit includes all parts required |   |
|       | * Damaged supply cords must be replaced by special<br>assemblies available from the manufacturer or its distributors | 93658, 93659, 93660, 93650 and 93652 (2010-2 |   | 2010-2013 BULLET pumps to 2014- BULLET pumps. Inc<br>93658, 93659, 93660, 93650 and 93652 (2010-2013 mou<br>body not available) |

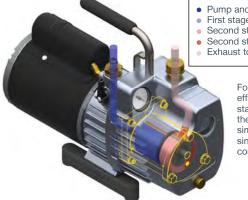
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# 4, 6, 8, & 11 SUPEREVAC<sup>™</sup> VACUUM PUMPS





Pump and first stage intake First stage compression

- Second stage intake
- Second stage compression

Exhaust to atmosphere

For increased efficiency, the first stage exhausts into the second stage similar to using two single stage pumps connected together.

# The SUPEREVAC<sup>™</sup> vacuum pump is a highly efficient, two-stage rotary vane oil-sealed pump field-rated at 15 microns or better.

- Isolation valve for oil changes without losing vacuum in the system
- Built-in vacuum indicator gauge
- Wide-mouth oil reservoir port for easier, cleaner filling. Doubles as pump exhaust—threaded to attach garden hose for exhausting to remote location
- Large oil sight glass for easy monitoring of oil level
- Large brass oil drain for easy access to fast oil changes
- Gas ballast valve keeps oil cleaner, longer during evacuation of wet systems
- Internal intake check valve to help prevent oil backup into the system during a power failure
- Intake filter screen keeps damaging particles from entering the pump
- Heavy duty rotors and bearings
- Heavy duty steel handle with lift hook for wellbalanced carrying
- Tethered port caps stay with the pump
- Metal with rubber overlay base for stability
- Made in the USA

| Domestic                                       | Model 93540  | Model 93560  | Model 93580  | Model 93590   |
|--|--|--|--|---|
| Free air displacement                          | 4.0 cfm  | 6.0 cfm  | 8.0 cfm  | 11.0 cfm  |
| Number of stages                               | 2-stage rotary vane  | 2-stage rotary vane  | 2-stage rotary vane  | 2-stage rotary vane                                       |
| Field blankoff                                 | 15 microns   | 15 microns   | 15 microns   | 15 microns  |
| Intake   | 1/4" and 3/8" Male flare                                   | 1/4" and 3/8" Male flare                                   | 1/4" and 1/2" Male flare                                   | 1/4" and 1/2" Male flare                                  |
| Motor  | 1/2 hp - 1725 rpm  | 1/2 hp - 1725 rpm  | 1/2 hp - 1725 rpm  | 1/2 hp - 1725 rpm   |
| Thermal overload protection                    | Yes  | Yes  | Yes  | Yes   |
| Voltage (single phase)                         | 115V/60 Hz   | 115V/60 Hz   | 115V/60 Hz   | 115V/60 Hz  |
| Power cord                                     | 6' - motor mounted switch                                  | 6' - motor mounted switch                                  | 6' - motor mounted switch                                  | 6' - motor mounted switch                                 |
| Oil capacity                                   | 36 oz.   | 34 oz.   | 47 oz.   | 44 oz.  |
| Dimensions                                     | 16" L x 6" W x 11.5" H<br>(40.6 cm X 15.2 cm X 29.2 cm)    | 16" L x 6" W x 11.5" H<br>(40.6 cm X 15.2 cm X 29.2 cm)    | 17.5" L x 6" W x 11.5" H<br>(44.5 cm X 15.2 cm X 29.2 cm)  | 17.5" L x 6" W x 11.5" H<br>(44.5 cm X 15.2 cm X 29.2 cm) |
| Net weight                                     | 30.3 lbs. (13.7 kg)  | 31.2 lbs. (14.2 kg)  | 32.5 lbs. (14.8 kg)  | 34.1 lbs. (15.4 kg)                                       |
| Export   | Model 9354x  | Model 9356x  | Model 9358x  | Model 9359x   |
| Free air displacement                          | 113/95 L/M   | 170/142 L/M  | 225/190 L/M  | 310/260 L/M   |
| Motor  | 1/2 hp - 1725/1425 rpm                                     | 1/2 hp - 1725/1425 rpm                                     | 1/2 hp - 1725/1425 rpm                                     | 1/2 hp - 1725/1425 rpm                                    |
| Motor voltage (dual phase)                     | 115/230V / 50-60 Hz  | 115/230V / 50-60 Hz  | 115/230V / 50-60 Hz  | 115/230V / 50-60 Hz                                       |
| Dimensions                                     | 16.75" L x 6" W x 11.5" H<br>(42.5 cm X 15.2 cm X 29.2 cm) | 16.75" L x 6" W x 11.5" H<br>(42.5 cm X 15.2 cm X 29.2 cm) | 18.25" L x 6" W x 11.5" H<br>(46.4 cm X 15.2 cm X 29.2 cm) | 18.25" L x 6" W x 11.5" H<br>(46.4 cm X 15.2 cm X 29.2 cm |
| Net weight                                     | 33.2 lbs. (15.1 kg)  | 33.9 lbs. (15.4 kg)  | 35.5 lbs. (16.1 kg)  | 37.0 lbs. (16.8 kg)                                       |
| Model #  | 93542 (95 L/M at 50 Hz)                                    | 93562 (142 L/M at 50 Hz)                                   | 93582 (190 L/M at 50 Hz)                                   | 93592 (260 L/M at 50 Hz)                                  |
| US plug  | (113 L/M at 60 Hz)   | (170 L/M at 60 Hz)   | (225 L/M at 60 Hz)   | (310 L/M at 60 Hz)  |
| Factory voltage setting                        | 230V   | 230V   | 230V   | 230V  |
| Model # Euro plug                              | 93543 (95 L/M at 50 Hz)                                    | 93563 (142 L/M at 50 Hz)                                   | 93583 (190 L/M at 50 Hz)                                   | 93593 (260 L/M at 50 Hz)                                  |
| Factory voltage setting                        | 230V   | 230V   | 230V   | 230V (EU/UK plug)   |
| Model #  | 93544 (95 L/M at 50 Hz)                                    | 93564 (142 L/M at 50 Hz)                                   | 93584 (190 L/M at 50 Hz)                                   |   |
| AU/NZ plug                                     | (113 L/M at 60 Hz)   | (170 L/M at 60 Hz)   | (225 L/M at 60 Hz)   |   |
| Factory voltage setting                        | 230V   | 230V   | 230V   |   |
| Model # UK Plug (6)<br>Factory voltage setting | 93547 (95 L/M at 50 Hz)<br>230V                            | 93567 (142 L/M at 50 Hz)<br>230V                           | 93587 (190 L/M at 50 Hz)<br>230V                           |   |

All parts listed will not work with NH<sub>3</sub>.

# SUPEREVAC<sup>™</sup> REPLACEMENT PARTS



| SuperEvac <sup>™</sup> replacement parts |                              |  |  |
|--|------------------------------|--|--|
| UPC#                                     | 2005-present 4, 6, 8, 11 cfm |  |  |
| Pump                                     | oil cover                    |  |  |
| 93370                                    | Handle assembly              |  |  |
| 93390                                    | Oil fill cap with seal       |  |  |
| 93391                                    | Oil fill fitting             |  |  |
| 93365                                    | Oil sight glass              |  |  |
| 93368                                    | Drain/gas ballast plug       |  |  |
|  |                              |  |  |

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| UPC#    | 2005-present 4, 6, 8, 11 cfm                            |
|---------|---|
| Vacuu   | m cartridge   |
|         | 4 cfm cartridge complete                                |
| 93561   | 6 cfm cartridge complete                                |
|         | 8 cfm cartridge complete                                |
| 93591   | 11 cfm cartridge complete                               |
|         | ting body   |
|         | Shaft seal  |
|         | 0-30" Vacuum indicator                                  |
| 93012   | Vacuum gauge lens                                       |
|         | Drain/gas ballast plug                                  |
| 93398   | "O" ring for gas ballast/drain plug                     |
| 93392   | 1/4" Male flare x 1/8" NPT fitting                      |
| 93377   | 4 and 6 cfm intake fitting (3/8" Male flare x 3/4" NPT) |
| 93393   | 8 and 11 cfm intake fitting (1/2" Male flare x 3/4" NPT |
| 93394   | 1/4" Flare cap  |
| 93399   | 4 and 6 cfm 3/8" flare cap                              |
| 93395   | 8 and 11 cfm 1/2" flare cap                             |
| 93366   | Blank-off handle  |
| 93367   | Complete parts for blank-off handle                     |
| 93401   | Blank-off rebuild kit                                   |
| 93508   | Intake port gasket                                      |
| Motor   |   |
| 93513   | 1/2 hp motor 115-230V / 50-60 Hz                        |
| 93505   | 1/2 hp - 115V/60 Hz* (includes parts listed below)      |
| 93099   | 8/32 x 7-1/4" Motor bolts (4)                           |
| 93117   | Rocker style switch                                     |
| 93115   | 6' Long cord  |
| Final a | assembly parts  |
| 93506   | 8/32 x 5/8" Socket head screws                          |
| 93507   | Oil cover gasket  |
| 93047   | Drive coupling  |
| 93050   | Coupling spider   |
| 93034   | Right or left leg assembly with screws                  |
| Repla   | cement vanes (4 pak)                                    |
| 93372   | For 2.0 cfm 93420                                       |
| 93374   | For 4.0 cfm (113 L/M) 93440 and 93540                   |
| 93376   | For 6.0 cfm (170 L/M) 93460 and 93560                   |
| 93378   | For 8.0 cfm (225 L/M) 93480 and 93580                   |
| 93375   | For 11.0 cfm (310 L/M) 93590                            |
|         | 93370   |
| 9301    | 1   |
| 930     |   |

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**RECOVERY MACHINES** 

SYSTE AGUUM

VACUUM AND Charging Hoses

HOSE ADAPTERS, Valves and Parts

**CHARGING** Systems

GAUGES

### SUPEREVAC<sup>™</sup> PUMP FOR AMMONIA SYSTEMS



Designed and built to the same quality specifications as other SuperEvac<sup>m</sup> pumps. Features a pump exhaust that doubles as an oil fill port.

Model 93530 Model 93533\* 8.0 cfm 190 L/M (50 Hz) Free air displacement Number of stages 2-stage rotary vane 2-stage rotary vane Field blankoff 15 microns 15 microns Intake 1/2" Male pipe 1/2" Male pipe Motor 1/2 hp - 1725 rpm 1/2 hp - 1425 rpm (50 Hz) Thermal overload Yes Yes Voltage 115V/60 Hz 115/230V 50 Hz\* Power cord 6' - rocker style switch 6' - rocker style switch Oil capacity 47 oz. 47 oz. Dimensions 17.5" L x 6.0" W x 11.5" H 18.25" L x 6.0" W x 11.5" H Net weight 36.2 lbs. (16.4 kg) 38.8 lbs. (17.6 kg)

\* The 93533 is factory wired for 230V. It can also be configured for 115V. Remove the motor switch plate and make connections as shown on the motor label.

# **BELT DRIVE VACUUM PUMPS** (0.88-17.7 cfm) by Hyvac Products

These two-stage pumps are lab rated at 0.1 micron and feature large oil capacity, vented exhaust, standard belt guards, motor capacitors and automatic overload protection. Optional exhaust filters available.



| UPC#                   | 80200           | 80210           | 80220           | 80230           | 80240           |
|------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| cfm - free air (L/M)   | 0.88 (25)       | 2.79 (79)       | 5.6 (160)       | 10.6 (310)      | 17.7 (500)      |
| Ultimate vacuum (lab)  | 0.1 micron      |
| Stages                 | 2               | 2               | 2               | 2               | 2               |
| Motor hp (ODP)         | 1/4             | 1/3             | 1/2             | 1               | 1-1/2           |
| Voltage (single phase) | 115V/60 Hz      |
| Pump rpm               | 580             | 525             | 525             | 525             | 550             |
| Oil capacity           | 1 quart         | 1-1/2 quart     | 2.5 quarts      | 3.5 quarts      | 4.5 quarts      |
| Gas ballast            | Standard        | Standard        | Standard        | Standard        | Standard        |
| Intake O.D.            | 9/16"           | 7/8"            | 1-1/4"          | 1-5/16"         | 1-13/16"        |
| Dimensions (L x W x H) | 15" x 10" x 11" | 18" x 12" x 11" | 18" x 13" x 16" | 18" x 16" x 19" | 21" x 20" x 20" |
| Shipping weight        | 70 lbs.         | 110 lbs.        | 135 lbs.        | 154 lbs.        | 242 lbs.        |

For special electrical requirements, contact factory. Some 50 Hz available for export.

### **VACUUM PUMP OIL**

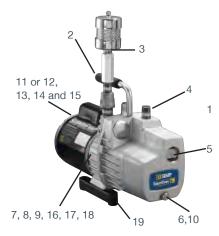
YELLOW JACKET vacuum pump oil is specially refined and formulated for extremely low vapor pressure and high pump efficiency at all temperature conditions to help keep your pump running for years.

SDS sheet on website

| UPC#  | Description                       |
|-------|-----------------------------------|
| 93091 | Pint of vacuum oil - 24 per case  |
| 93092 | Quart of vacuum oil - 12 per case |
| 93096 | Gallon of vacuum oil - 6 per case |



### SUPEREVAC<sup>™</sup> PUMP FOR AMMONIA SYSTEMS REPLACEMENT PARTS



| SUPERE  | evac™ replacement parts                     |
|---------|---|
| UPC#    | Description                                 |
| Pump    | Oil Cover                                   |
| 93351   | 1. Complete cover (parts listed below)      |
| 93370   | 2. Handle with screw                        |
| 93386   | 3. Exhaust filter assembly                  |
| 93359   | 4. Oil fill/intake fitting                  |
| 93365   | 5. Oil sight glass                          |
| 93358   | 6. Oil drain/ballast plug                   |
| Vacuu   | m Cartridge                                 |
| 93531   | 7. Complete cartridge with oil cover gasket |
| Mount   | ing Body                                    |
| 93355   | 8. Complete body (parts listed below)       |
| 93354   | 9. Shaft seal                               |
| 93398   | 10. "O" ring for gas ballast/drain plug     |
| Motor   |   |
| 93513   | 11. 1/2 hp motor 115-230V / 50-60 Hz        |
| 93505   | 12. 1/2 hp - 115V/60 Hz*                    |
| 93099   | 13. 8/32 x 7-1/4" Motor bolts (4)           |
| 93117   | 14. Rocker style switch                     |
| 93115   | 15a. 8' Long cord                           |
| 95431   | 15b. 8' Long EU cord (detachable IEC-320)   |
| 95432   | 15c. 8' Long UK cord (detachable IEC-320)   |
| Final a | ssembly parts                               |
| 93506   | 16. 8/32 x 5/8" Flat head screws            |
| 93507   | 17. Oil cover gasket                        |
| 93047   | 18. Drive coupling                          |

93034 19. Right or left leg assembly with screws

### OIL EXHAUST FILTER

Screws onto the pump exhaust to eliminate oil mist. Use on SuperEvac<sup>™</sup> and BULLET<sup>™</sup> pumps.

| UPC#  | Description         |
|-------|---------------------|
| 93386 | Exhaust filter      |
| 93387 | Replacement element |

Cuum Pump Systems

**CHARGING HOSES** VACUUM AND

**VALVES AND PARTS** HOSE ADAPTERS,

CHARGING SYSTEMS

### SUPEREVAC<sup>™</sup> EVACUATION MANIFOLDS



SUPEREVAC<sup>™</sup> manifolds are engineered as system components for the SUPEREvac pumps to help decrease vacuum time by over 50 percent and improve micron readings. Mounts with 1/2" or 3/8" Female flare guick coupler and provides easy connections for two 3/8" vacuum hoses.

- Flutterless<sup>™</sup> gauge
- · Non-restricting, full flow valves for fast vacuum
- Convenient 1/4 turn full flow
- Extra port for electronic gauge
- Now includes step-down adapter to connect to 3/8" pump intake

#### 3/8" Female flare coupler UPC# Description 93851 Single valve with 1/4" Schrader mount with 3/8" Female flare 93852 Single valve with lo-side gauge mount with 3/8" Female flare 93853 Two valves with lo-side gauge mount with 3/8" Female flare 19011 CH-11 gasket (10 pak) Pump step-down adapter - 1/2" Female flare to 3/8" Male flare 19131

#### 1/2" Female flare coupler UPC# Description

| UPC#      | Description  |
|-----------|--|
| Additiona | l replacement parts  |
|           |  |
| 19133     | Pump step-up adapter - 3/8" Female flare to 1/2" Male flare  |
| 19015     | CH-80 gasket (10-pak)  |
| 93860     | Two valves with lo-side gauge mount with 1/2" Female flare   |
| 93855     | Single valve with lo-side gauge mount with 1/2" Female flare |
| 93850     | Single valve with 1/4" Schrader mount with 1/2" Female flare |

| 0PC#  | Description                             |
|-------|---|
| 19030 | 3/8" "O" ring (10 pak)                  |
| 19096 | Ball valve replacement handles (2 pak)  |
| 40272 | 1/4" Male flare with Schrader for 93850 |
| 41139 | 3/8" Male flare x 1/4" NPT Male fitting |
| 49016 | Blue compound °F gauge                  |
| 77921 | 1/4" Flare x 1/8" NPT Male elbow        |
| 93211 | 3/8" Flare cap with gasket              |
| 93854 | 1/2" Flare connector                    |
| 93847 | 3/8" Flare connector for 93846          |
| 93858 | 3/8" Flare connector for 93851-53       |

### SUPEREVAC<sup>™</sup> EVACUATION SYSTEMS I, II & III



All system components are available separately, but system pricing makes I, II and III attractive buys.

All systems include a two-valve manifold and two 3/8" vacuum hoses for a fast vacuum. Vacuum valves, included with all systems, allow core removal and system isolation. This combination reduces vacuum time by over 50 percent compared to using a regular 1/4" manifold and evacuating through only one side.

System II adds 69075 electronic gauge and standard ratchet wrench to the basic System I.

System III adds a 6 or 8 cfm SuperEvac<sup>™</sup> pump to System II.

| UPC# for 1/2"    | Description   | UPC# for 3/8"    |
|------------------|---|------------------|
| 93865            | System I: 2-valve manifold, 2<br>16248 48" vacuum hoses, 2 valves                   | 93866            |
| 93875            | System II: all of above plus<br>69075 electronic vacuum gauge<br>and ratchet wrench | 93876            |
| 93886<br>(8 cfm) | System III: all of above plus<br>a SuperEvac pump                                   | 93885<br>(6 cfm) |
|                  | CH-11 gasket (10 pak)   | 19011            |
| 19015            | CH-80 gasket (10 pak)   |                  |

### 1/4" AND 5/16" BALL VALVE 4-IN-1 VACUUM/CHARGE VALVE & CORE TOOL



a system does four jobs:

- 1. Vacuum valve. Extra 1/4" side port on 18975 to attach electronic micron vacuum gauge right at system for greater accuracy. Working pressure of 800 psi.
- 2. Core removal access. Lets you evacuate and charge through an unrestricted line for increased speed and higher vacuum.
- 3. Core replacement.
- 4. Recovery valve. Core removal speeds recovery process.

Made in the USA

For more details see page 32.

| UPC#  | Description                                 |
|-------|---|
| 18971 | 1/4" Vacuum/charge valve without side port  |
| 18975 | 1/4" Vacuum/charge valve with side port     |
| 18981 | 5/16" Vacuum/charge valve without side port |
| 18985 | 5/16" Vacuum/charge valve with side port    |

WIRELESS AND INSTRUMENTS ELECTRONIC

> **INSTRUMENTS** HEATING

SYSTEM TOOLS

### **SUPEREVAC<sup>™</sup> LCD VACUUM GAUGE** Full range from atmosphere to 1 micron

The SUPEREvac<sup>™</sup> LCD vacuum gauge combines thermocouple sensor technology with advanced electronics for precise readings and repeatability not found with thermistor sensors or analog meters.

Thermocouple technology has long been proven in laboratory and precision industrial instrumentation for sensing the deep vacuum range. Thermocouple sensors are factory calibrated and exhibit few of the electronic variances of thermistor sensors found in many other electronic gauges. Durable molded case with storage for sensor, cable and brass connector.

#### **Specifications**

Response time: 3 seconds Calibration: Automatic Warm up: 3 seconds Sensor cable: 5.5' (167 cm) coiled Sensor connection: 1/4" Male flare Maximum pressure: To avoid sensor damage, do not exceed 5 psig Operating temperature range: 32° to 120°F (0° to 49°C) Display: 0.5" LCD with battery check Automatic shut-off: Yes Power: D cell battery, 70 hours continuous battery life Dimensions: 9" x 12.25" x 2.37" (230 mm x 310 mm x 60 mm) Accuracy: ± 20% of reading

| UPC#  | Description  |
|-------|--|
| 69075 | SuperEvac <sup>™</sup> LCD vacuum gauge full range complete in case      |
| 69067 | Optional ball valve to add to sensor 1/8" NPT Female x 1/4" Female flare |
| 69071 | Brass connector 1/4" Female flare x 1/4" Female flare                    |
| 69073 | Replacement sensor for 69070, 69075                                      |
| 19110 | Optional coupler to add to sensor 1/8" NPT Female x 1/4" Female flare    |
| 69058 | Replacement cord   |



#### Thermocouple sensor features:

- No adjustments or warm-up. Stays calibrated after on/off switching and long evacuations
- Automatic battery compensation
- Automatic ambient temperature compensation
- Replacement sensor requires no calibration

#### LCD gauge features:

- Automatic off 20 minutes after power up and no change
- Normal handling and jarring will not affect the LCD reading
- · Case protects electronic circuitry and sensor
- Calibration standards traceable to NIST
- Precision circuitry controls sensor and translates sensor input into micron readings
- Made in the USA

### DIGITAL LCD ECONOMY VACUUM GAUGE



This product is protected by one or more of U.S. Patent Number: 6,779,350; 6,832,491; 7,073,346; 7,310,965; and 7,428,822.

The digital LCD economy vacuum gauge indicates air and moisture have been removed from the system. Track down the 14 level bargraph from atmosphere to 25 microns to know that the system is clean and the vacuum pump is performing properly. Packaged complete with 9V alkaline battery and hanging hook.

- Unique thermal conductivity sensor automatically compensates for temperature with no calibration
- Simple On/Off controls
- Easy-to-clean sensor handles 450 psi positive pressure
- Rugged contractor-grade construction with tough ABS housing and solid state circuitry for accuracy
- Automatic battery saver shuts gauge off after 20 minutes with no reading changes
- Low battery indicator
- Calibration standards traceable to NIST
- Patented technology
- Made in the USA

To keep the 69080 vacuum gauge accurate, it is best to avoid oil contamination. Keep the sensor vertical whenever possible and connect the gauge directly to the system, away from the pump.

| UPC#  | Description   |
|-------|---|
| 69080 | Digital LCD vacuum gauge with battery, hook and pouch |
| 69081 | Replacement soft-sided protective case                |
| 69079 | Replacement battery door and screw                    |
| 69095 | Tee fitting   |

**CHARGING** SYSTEMS

AND DETECTORS

**.EAK MONITORS** 

### **DIGITAL VACUUM GAUGE** Seven units of vacuum for confidence

This easy-to-use gauge shows that air and moisture have been removed from the system. Simple push of a button changes the display readout between 7 units of measurement. Each displays from atmosphere to 10 microns (bargraph indication above 25000 microns) of vacuum to let you know that your vacuum pump is clean and performing properly. If the sensor gets dirty, simply plug a new sensor into the gauge, run through a quick calibration process and be back on the job within minutes.



This product is protected by one or more of U.S. Patent Number: 6,779,350; 6,832,491; 7,073,346; 7,310,965; and 7,428,822.

- Unique patented thermal conductivity sensor automatically compensates for temperature
- Replaceable, cleanable, plug-in sensor (Part #69087) handles 450 psi positive pressure
- Displays seven different units of vacuum (microns, milliTorr, Torr, millimeters of mercury, millibar, kiloPascal and Pascal)
- 12" coiled sensor cord stretches to 24" for easy reach, connectivity and readability of display
- Low battery indicator
- Automatic shut-off after 20 minutes
- Calibration standards traceable to NIST
- 32° to 122°F (0° to 50°C) operating temperature range
- 14 oz. (392 g) with battery
- Approximately 25 hours continuous battery life
- Accuracy ±20% of reading
- Made in the USA

#### UPC# Description

|       | -  |
|-------|--|
| 69086 | Hand-held vacuum gauge with fabric carry pouch               |
| 69087 | Replacement sensor for older models without detachable cords |
| 69088 | Replacement cable for original version - not detachable      |
| 40819 | Replacement cable for new version - detachable               |
| 69101 | Replacement sensor and cord assembly                         |
| 69091 | Replacement fabric pouch                                     |

### VACUUM PUMP ADAPTER 💻

Convert a 3/8" or 1/2" vacuum pump intake into flare and Acme compatible fittings.



| UPC#  | Description  |
|-------|--|
| 36018 | 1/2" Pump adapter with 1/4" flare and 1/2" Acme Male fittings    |
| 19015 | 1/2" Replacement gaskets for 36018 (10 pak)                      |
| 36019 | 3/8" Pump adapter with 1/4" flare<br>and 1/2" Acme Male fittings |
| 19011 | 3/8" Replacement gaskets for 36019 (10 pak)                      |

### **VACUUM PUMP INTAKE** REDUCER ADAPTER



| UPC# Description  |  |
|---|--|
| 19030 Rubber gasket "O" ring (10 pak) for 19130 and 19133 |  |
| 19130 3/8" Female fl. x 1/4" Male fl. adapter             |  |
| 19131 1/2" Female fl. x 3/8" Male fl. adapter             |  |
| 19132 1/2" Female fl. x 1/4" Male fl. adapter             |  |
| 19133 3/8" Female fl. x 1/2" Male fl. adapter             |  |
| 19160 1/2" Female fl. x 1/2" Male Acme adapter            |  |
| 93058 Rubber gasket "O" ring for 19131, 19132 and 19160   |  |

## **HEAT GUN**

600° and 1000°F settings. Shockproof and tough housing is durable and lightweight. Use for:

- Coil defrosting
- Faster vacuums
- Drying out condensation in motors, clutches, etc.

Kits include gun, adapters and case.

| UPC#  | Description                       |
|-------|-----------------------------------|
| 69092 | Heat gun kit 115V - UL, CSA       |
| 69093 | Heat gun kit 230V - Euro plug, CE |

## **MECHANICAL VACUUM GAUGES**



Mechanical vacuum gauges for system installation. Bourdon tube type gauge. 1/8" NPT Male bottom fitting. CAUTION: Handle gauges carefully to assure full service life. See page 53 for further details.

| UPC#  | Description  |
|-------|--|
| 69044 | 3 1/8" Vacuum gauge 0-30 inHg/760-0 Torr (mm)                    |
| 69045 | 3 1/8" Vacuum gauge European version (1000-0 millibar/30-0 inch) |

WIRELESS AND

INSTRUMENTS ELECTRONIC

**NSTRUMENTS** 

HEATING

LEAK MONITORS AND DETECTORS

SYSTEM TOOLS