

## MANIFOLD DE 4 VIAS

### ADVERTÊNCIA

Siga corretamente os procedimentos de segurança quando trabalhe com equipamentos e gases refrigerantes. Óculos de proteção devem ser usados a todo instante. Gás refrigerante e vapores dos mesmos podem causar danos e irritar os olhos, nariz e garganta. Evitar inalação ou contato com a pele. Sempre coloque a mangueira longe de você ou de outra pessoa ao seu redor. Desconecte as mangueiras com cuidado, podem estar sob forte pressão de gás refrigerante. Procedimentos inadequados podem causar com que o gás refrigerante sob alta pressão exploda violentamente. Este instrumento foi projetado para ser usado por técnicos profissionais, no ramo de refrigeração e ar condicionado. Revise a literatura sobre a informação de segurança proporcionado pelo fabricante de gás refrigerante para se informar do manuseio seguro e correto, assim como das instruções de como proceder em caso de urgência.

### INSTRUÇÕES

#### I. Remover o ar das mangueiras

1. Conectar as mangueiras como se observa com as válvulas do Manifold fechadas.
2. Conectar sem ajustar as mangueiras 1 & 2 ao compressor e as válvulas de serviço.
3. Abrir as válvulas A e B do Manifold.
4. Abrir a válvula do tanque do gás refrigerante.
5. Abrir lentamente a válvula C do Manifold até que o gás refrigerante escape das conexões das válvulas de ser viço H e L.
6. Ajustar as porcas da mangueira 1 e 2 nas conexões das válvulas de serviço L e H.

#### II. Checar a pressão do sistema

1. Conectar as mangueiras como se observa com as válvulas do Manifold fechadas.
2. Abrir as válvulas de serviços L e H no compressor.

#### I. Remover o ar das mangueiras

1. Conectar as mangueiras como se observa com as válvulas do Manifold fechadas.
2. Conectar sem ajustar as mangueiras 1 & 2 ao compressor e as válvulas de serviço.
3. Abrir as válvulas A e B do Manifold.
4. Abrir a válvula do tanque do gás refrigerante.
5. Abrir lentamente a válvula C do Manifold até que o gás refrigerante escape das conexões das válvulas de serviço H e L.
6. Ajustar as porcas da mangueira 1 e 2 nas conexões das válvulas de serviço L e H.

#### II. Checar a pressão do sistema

1. Conectar as mangueiras como se observa com as válvulas do Manifold fechadas.
2. Abrir as válvulas de serviços L e H no compressor.

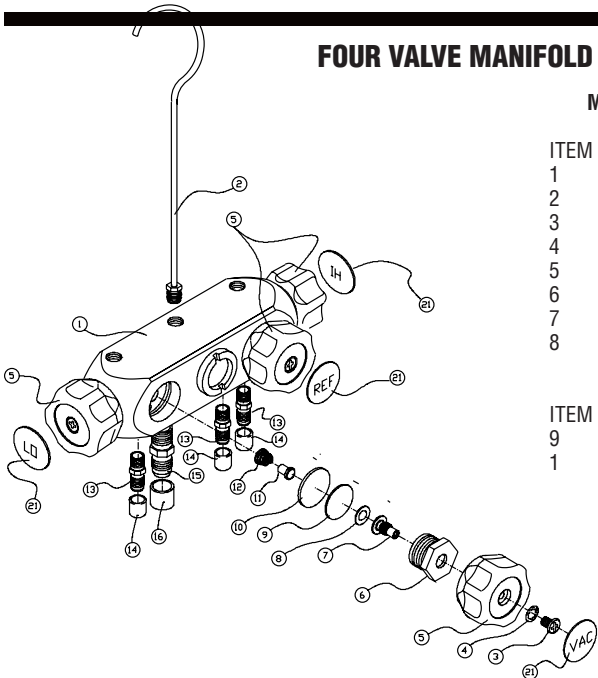
### FOUR VALVE MANIFOLD PARTS

#### M4XH4 DIAPHRAGM VALVE REPAIR KIT (4 VALVES)

ITEM	DESCRIPTION	QTY.
1	KNOB LABELS - HI, LO, REF, VAC	4
2	KNOB SCREW	4
3	LOCK WASHER	4
4	SWIVEL VALVE	4
5	NYLON DIAPHRAGM	4
6	DIAPHRAGM	4
7	SPRING PIN	4
8	SPRING	4

#### MXK REPLACEMENT KNOB KIT

ITEM	DESCRIPTION	QTY.
9	VALVE KNOB	1
1	KNOB LABELS - HI, LO, REF, VAC	4



#70-895 REV B

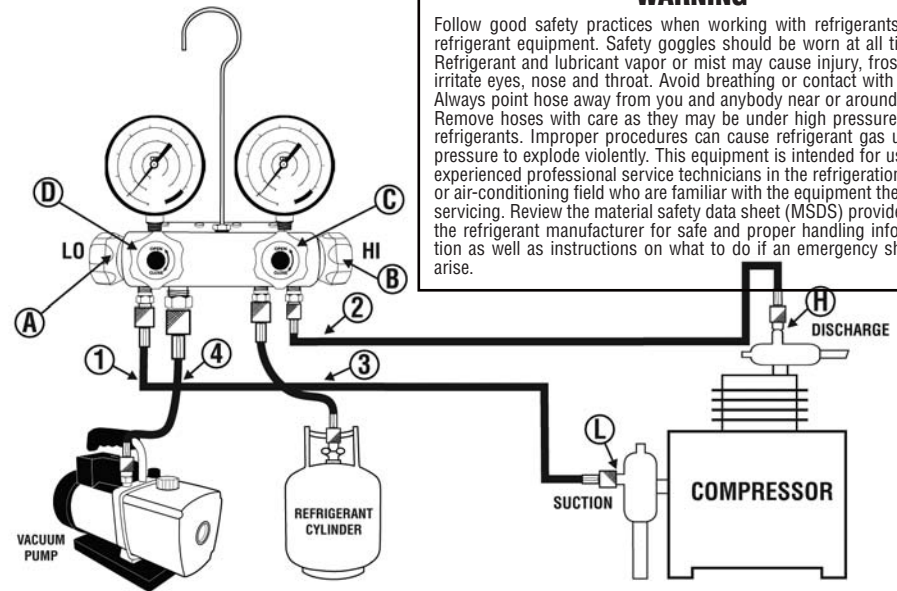
cps®

FOUR VALVE  
MANIFOLD SERIES

PRO-SET®

### WARNING

Follow good safety practices when working with refrigerants and refrigerant equipment. Safety goggles should be worn at all times. Refrigerant and lubricant vapor or mist may cause injury, frostbite, irritate eyes, nose and throat. Avoid breathing or contact with skin. Always point hose away from you and anybody near or around you. Remove hoses with care as they may be under high pressure with refrigerants. Improper procedures can cause refrigerant gas under pressure to explode violently. This equipment is intended for use by experienced professional service technicians in the refrigeration and or air-conditioning field who are familiar with the equipment they are servicing. Review the material safety data sheet (MSDS) provided by the refrigerant manufacturer for safe and proper handling information as well as instructions on what to do if an emergency should arise.



### INSTRUCTIONS

#### I. To purge hoses with refrigerant gas

1. Connect hoses as shown with all valves closed on MANIFOLD.
2. Loosely connect 1 & 2 hoses to COMPRESSOR & service ports respectively.
3. Open A & B valves on MANIFOLD.
4. Open valve on REFRIGERANT Tank.
5. Slowly open C valve on MANIFOLD until gas escapes from H & L service valve connections.
6. Tighten 1 & 2 hose nuts on L & H service valve connections.

#### II. To monitor system pressures

1. Connect hoses as shown with all valves closed on MANIFOLD.
2. Open L & H service valves on COMPRESSOR.

#### III. To charge system with vapor on suction side

1. Connect hoses as shown with all valves closed on MANIFOLD.
2. Purge hoses as in step I.
3. Open REFRIGERANT tank valve.
4. Open C valve on MANIFOLD.
5. Open A valve on MANIFOLD.
6. Open L service valve.

#### IV. To evacuate system

1. Connect hoses as shown with all valves closed on MANIFOLD.
2. Start VACUUM pump.
3. Open D valve on MANIFOLD.
4. Open A & B valves on MANIFOLD.
5. Open L & H service valves on COMPRESSOR.

Toll free technical assistance 1-800-277-3808

#### WORLD HEADQUARTERS U.S.A.

1010 East 31st Street, Hialeah, FL 33013, USA Tel: 305-687-4121; 1-800-277-3808; Fax: 305-687-3743  
www.cpsproducts.com e-mail: cpsproducts.com

#### CANADA

Tel: 905-358-3124  
Fax: 905-358-7187

#### BELGIUM

Tel: (323) 281 30 40  
Fax: (323) 281 65 83

#### AUSTRALIA

Tel: +61 8 8340 7055  
Fax: +61 8 8340 7033

#### SINGAPORE

Tel: (65) 6846 1056  
Fax: (65) 6846 1057

## MANIFOLDS A QUATRE VANNES

### ADVERTÊNCIA

Il est indispensable de bien suivre les pratiques de sécurité correctes quand vous travaillez avec des réfrigérants et avec de l'équipement pour réfrigérants. Portez toujours des lunettes de sécurité. Un réfrigérant et des vapeurs de lubrifiants peuvent causer des injures, des brûlures et des irritations aux yeux, au nez et à la gorge. Évitez de les inhaler ou le contact avec la peau. Ne pointez jamais un flexible envers vous ou envers quelqu'un proche de vous. Dévissez les flexibles toujours avec prudence, parce qu'ils peuvent être sous pression de réfrigérants. Des procédures incongrues peuvent causer un réfrigérant à exploser violemment. Cet équipement est fait pour être employé uniquement par des techniciens du service froid et climatisation, des professionnels qui connaissent l'usage. Vérifiez la fiche de sécurité du fabricant de réfrigérant pour connaître l'usage propre et sûr et la réaction dans le cas d'une urgence.

### INSTRUCTIONS

#### I. Purger les tuyaux de charge avec du réfrigérant

1. Connectez les tuyaux comme démontré avec toutes les vannes du MANIFOLD fermées
2. Branchez légèrement tuyaux 1 & 2 au COMPRESSEUR & vannes de service
3. Ouvrez vannes A & B au MANIFOLD
4. Ouvrez le robinet de la bouteille de REFRIGERANT
5. Ouvrez lentement vanne C au manifold jusqu'à ce que du réfrigérant sort des vannes HP et BP
6. Fixez fermement les écrous des tuyaux 1. & 2. aux raccords de vannes L & H (BP & HP)

#### II. Contrôler la pression

1. Raccordez les tuyaux comme démontré ; toutes les vannes du manifold sont fermées
2. Ouvrez les vannes de service L&H (BP&HP) du compresseur

#### III. Remplir le système de vapeur du côté aspiration

1. Raccordez les tuyaux comme démontré ; toutes les vannes du manifold sont fermées
2. Purgez les tuyaux – voir point I.
3. Ouvrez le robinet de la bouteille de réfrigération
4. Ouvrez la vanne C (Ref) du manifold
5. Ouvrez la vanne A (BP) du manifold
6. Ouvrez la vanne L (BP) du compresseur

#### IV. Evacuer le système

1. Raccordez les tuyaux comme démontré ; toutes les vannes du manifold sont fermées
2. Mettez en marche la pompe à vide
3. Ouvrez vanne D (Vac) du manifold
4. Ouvrez vannes A & B

## MANIFOLD DE 4 VIAS

### ADVERTENCIA

Seguros procedimientos cuando trabaje con gases refrigerantes y equipos. Lentas de protección deben usarse en todo momento. Gas refrigerante y vapores de los mismos pueden causar daño e irritar los ojos, nariz y garganta. Evitar inhalación o contacto con la piel. Siempre coloque la manguera lejos de usted u otra persona o de su alrededor. Desconecte las mangueras con cuidado, podrían estar bajo fuerte presión de gas refrigerante. Procedimientos inadecuados podrían causar que el gas refrigerante bajo alta presión explote violentamente. Este equipo está diseñado para ser usado por técnicos profesionales en el campo de la refrigeración o aire acondicionado. Revise la literatura sobre información de seguridad proporcionado por el fabricante de gas refrigerante para informarse en el manejo seguro y correcto del gas refrigerante así como de las instrucciones en cómo actuar en caso de una emergencia

### INSTRUCCIONES

#### I. Remover el aire de las mangueras

1. Conectar las mangueras como se muestra con las válvulas del MANIFOLD cerradas.
2. Conectar sin ajustar las mangueras 1 & 2 al compresor y a las válvulas de servicio
3. Abrir las válvulas A y B del MANIFOLD
4. Abrir la válvula del tanque de gas refrigerante.
5. Abrir lentamente la válvula C del MANIFOLD hasta que el gas refrigerante escape de las conexiones de las válvulas de servicio H y L.
6. Ajustar las tuercas de la manguera 1 y 2 en las conexiones de las válvulas de servicio L y H.

#### II. Revisar la presión en el sistema

1. Conectar las mangueras como se muestra con las válvulas del MANIFOLD cerradas.
2. Abrir las válvulas de servicio L y H en el compresor

#### III. Cargar el sistema con vapor en el área de succión

1. Conectar las mangueras como se muestra con las válvulas del MANIFOLD cerradas.
2. Remover el aire de las mangueras según el procedimiento I
3. Abrir la válvula del tanque de gas refrigerante.
4. Abrir la válvula C del MANIFOLD
5. Abrir la válvula A del MANIFOLD
6. Abrir la válvula de servicio L.

#### IV. Evacuación de gas refrigerante del sistema

1. Conectar las mangueras como se muestra con las válvulas del MANIFOLD cerradas.
2. Iniciar el vacío
3. Abrir la válvula D del MANIFOLD
4. Abrir las válvulas A y B del MANIFOLD
5. Abrir las válvulas de servicio L y H en el compresor

## 4-VENTIL-PRÜFARMATUR

### ADVERTÊNCIA

Beachten Sie die notwendigen Sicherheitsbestimmungen bei dem Umgang mit den Kältemitteln und den Kälte- o. Klimaanlage. Eine Schutzbrille sollte immer getragen werden. Kältemittel- und Öldämpfe sind die möglichen Ursachen von Verletzungen, Erfrierungen, und Erkrankungen von Nase, Hals und Augen. Vermeiden Sie unbedingt das Einatmen von Kältemittel oder den Kontakt mit der Haut. Den Kältemittel-Füllschlauch immer von sich und anderen Personen entfernt halten, damit keine Personen mit austretenden Kältemittel verletzt werden können. Entfernen Sie den Kältemittel-Füllschlauch mit äußerster Vorsicht von den möglichen Anschlüssen, denn diese können unter hohem Kältemitteldruck stehen. Bei unsachgemäßen Umgang, kann unter Druck stehendes Kältemittel zu Explosionen führen. Diese Ausrüstung ist nur für den geschulten Fachmann der Kälte- u. Klimatechnik bestimmt. Überprüfen Sie diese Materialien nach den geltenden Sicherheitsbestimmungen, welche bei den verschiedenen Herstellern angefordert werden können Informieren Sie sich über die Handhabung bei eventuellen Notfällen mit Kältemitteln.

### INSTRUCTIONS

#### I. Reinigen der Füllschläuche mit Kältemittelgas

1. Verbinden Sie die Füllschläuche wie dargestellt mit allen Ventilen geschlossen and der Prüfarmatur.
2. Nicht festverschraubte Verbindung der Füllschläuche 1 & 2 in dieser Reihenfolge an dem Kompressor und dem Service-Anschluss herstellen.
3. Öffnen Sie die Ventile A & B an der Prüfarmatur
4. Öffnen Sie das Ventil an der Kältemittelflasche
5. Langsam das Ventil C an der Prüfarmatur öffnen bis Gas aus den Ventilverbindungen H & L entweicht
6. Die Verschraubung an dem Ende der Schläuche 1 & 2 an den Service-Ventilen L & H fest anziehen

#### II. Die Systemdrücke überprüfen

1. Verbinden Sie die Füllschläuche wie dargestellt mit allen Ventilen geschlossen an der Prüfarmatur
2. Öffnen Sie die Service-Ventile L & H an dem Kompressor

#### III. Befüllen des Systems mit Gas an der Saugseite von dem Kompressor

1. Verbinden Sie die Füllschläuche wie dargestellt mit allen Ventilen geschlossen an der Prüfarmatur
2. Reinigen der Füllschläuche wie unter Schritt II. dargestellt
3. Öffnen Sie das Ventil an der Kältemittelflasche
4. Öffnen Sie das Ventil C an der Prüfarmatur
5. Öffnen Sie das Ventil A an der Prüfarmatur
6. Öffnen Sie das Service-Ventil L

#### IV. Das System evakuieren

1. Verbinden Sie die Füllschläuche wie dargestellt mit allen Ventilen geschlossen an der Prüfarmatur
2. Starten Sie die Vakuumpumpe
3. Öffnen Sie das Ventil D an der Prüfarmatur
4. Öffnen Sie die Ventile A & B an der Prüfarmatur
5. Öffnen Sie die Service-Ventile L & H an dem Kompressor

## VIERWEG MANIFOLD SERIE

### OPGELET

Volg de goede veiligheidsvoorschriften wanneer u werkt met koelgassen en gereedschappen in de koeltechniek. Draag altijd een veiligheidsbril. Dampen van koel- en smeermiddelen kunnen wonden veroorzaken, bevriezing, en ook ogen, keel en neus irriteren. Vermijd inademen of huidcontact. Richt de vulslangen nooit in uw richting, alsook niet naar personen in uw buurt. Vulslangen steeds voorzichtig losmaken, want zij kunnen onder hoge druk staan van een koelgas. Fout gebruik kan veroorzaken dat een koelgas onder druk tot een hevige ontploffing komt. Dit gereedschap is enkel bedoeld voor gebruik door ervaren service technici in koeltechniek en airconditioning, mensen die het gebruik ervan kennen. Herbekijk de gevarencode (Material Safety Data Sheet) die door de fabricant van de koelgassen wordt ter beschikking gesteld, voor veilig en correct gebruik en ook voor wat te doen in geval van nood.

### INSTRUCTIES

#### I. Purgeren van vulslangen met koelgas

1. Sluit de slangen aan zoals aangegeven met alle kranen van de manifold gesloten
2. Connecteer lichtjes slangen 1 & 2 aan de compressor service ports
3. Open valves A & B van de manifold
4. Open de kraan van de koelmiddelfles
5. Open langzaam valve C van de manifold totdat er gas ontsnapt uit de service ports H & L aan de compressor
6. Draai dan stevig de moeren 1 & 2 toe van de vulslangen aan de service ports H & L

#### II. Controle van de drukverschillen in de installatie

1. Sluit alle vulslangen aan zoals aangegeven met alle kranen van de manifold gesloten
2. Open service valves L & H aan de compressor

#### III. De installatie vullen met damp aan de zuigzijde

1. Sluit alle vulslangen aan zoals aangegeven met alle kranen van de manifold gesloten
2. Purgeer de slangen zoals in punt I.
3. Open de kraan van de koelmiddelfles
4. Open valve C aan de manifold
5. Open valve A aan de manifold
6. Open valve L aan de manifold

#### IV. Evacueren van de installatie

1. Sluit alle vulslangen aan zoals aangegeven met alle kranen van de manifold gesloten
2. Start de vacuum pomp
3. Open C valve aan de manifold
4. Open A & B valves aan de manifold
5. Open L & H service valves aan de manifold

# **CPS**<sup>®</sup> **VG200**

## **DIGITAL VACUUM GAUGE**

Instruction Manual



# **VG200**

The **VG200** is the state of the art digital electronic vacuum gauge designed to accurately monitor the entire evacuation process from start to finish. The VG200 has been designed to be rugged and reliable. The VG200 incorporates 2 keys and a LCD display. One key simply turns the unit ON and OFF. The other key allows the user to change between MICRONS, MILLIBAR, TORR and INCHES HG VAC any time during the operation of the unit. An advanced ambient compensating design automatically compensates for varying temperature conditions with no manual adjustments needed.

***INCLUDED:***

***gauge hook, adapter "T-fitting" and a padded vinyl case.***

## VACUUM LEVEL INDICATORS

### **Atmospheric Pressure to 25”hg vac**

-Indicated by the top bars are energized.

### **Pressure between 25” hg vac to 100,001 microns**

-Indicated by the top, middle bars are energized.

### **Pressure between 100,000 and 76,001 microns**

-Indicated by the top, middle and bottom bars energized

### **Pressure between 76,000 to 50,001microns**

-Indicated by the middle and bottom bars are energized.

### **Pressure between 50,000 and 25,001 microns**

-Indicated by the bottom bars energized

### **Pressure between 25,000 microns and 0 microns**

-Displayed as a number on the LCD display

## OPERATION

The versatility of the VG200 design allows the technician to attach the unit in the following configurations:

- a) **Connect directly to the service manifold gauge set** (using the included “T-fitting”).
- b) **Connect directly to the refrigerant system service ports** (using the included “T-fitting”).
- c) **Connect directly to one of the two of the refrigerant systems service ports.**
- d) **Connect directly to the vacuum pump** (using the included “T-fitting”).
- e) **Mount directly on to a 4 or 5 valve manifold.**

After attaching the VG200 in one of the above recommended configurations, depress the ON key to activate the unit. Upon start up, the LCD will display the software version number. Once the LCD displays a moving cursor or vacuum level, depress the unit’s key until the desired units or measure are shown. Next, initiate the evacuation process (start vacuum pump) and monitor the VG200 until the desired micron level is achieved.

## BATTERY INDICATOR

(with BAR GRAPH power level indicator)

The battery indicator is shown on the LCD as a battery shape with a 3 segment Power Level Bar Graph:



100% ( 3 segments ) of Bar Graph-	Battery at 100% to 80%
67% ( 2 segments ) of Bar Graph-	Battery at 80% to 60%
33% ( 1 segment ) of Bar Graph-	Battery at 60% to 20%
0% ( 0 segments ) of Bar Graph-	Battery at 20% to 5%
Dashes across the Display-	Battery below 5%, replace

*Note: If the Low Battery indicator cannot be resolved with a new battery, See Sensor Maintenance section.*

## VACUUM PUMP CHECK

Contaminants quickly form in the oil of a vacuum pump. The contaminated oil can severely inhibit the performance of a pump and eventually cause damage to the pump itself. The VG200 incorporates a unique vacuum pump check designed to test the performance of a vacuum pump **BEFORE** it is used to evacuate a system. Simply attach the VG200 directly to the vacuum pump and watch the display as it measures the performance of the vacuum pump.

*Note: Different sizes and brands of vacuum pumps will experience varied results. Check the specifications published by the manufacturer of your vacuum pump to determine the ultimate vacuum level your pump can achieve. Many published specifications state that pumps rated between 2 & 8 CFM should experience an ultimate vacuum between 15 and 50 microns.*

## SENSOR MAINTENANCE

*Note: If the Low Battery indicator does not de-energize after replacing with a brand new battery, the VG200 sensor is saturated with Oil or other contaminants. Please proceed with the cleaning processing below.*

The VG200 incorporates an easy to clean thermistor sensor, which cannot be damaged from exposure to positive pressure or oil mist. To clean the VG-200's thermistor sensor, simply invert the unit and pour approximately 1 tablespoon of **100% DENATURED ALCOHOL** directly into the sensor housing. Gently shake the unit to produce a swirling effect of the cleaning solution in the housing. Then, pour the remaining cleaning solution out. Repeat this procedure until the alcohol appears to be clean and clear of oil when removed from the sensor housing. Then, allow the sensor to air dry (**DO NOT BLOW DRY**). Check the gasket located inside the nut during sensor maintenance. If the gasket appears to be torn or deformed, replace it with a new gasket (CPS P/N:HXG, includes 10 replacements).

## SPECIFICATIONS

### **SENSOR:**

**TYPE:** Self-heated thermistor bridge with integral temperature compensation from 0 to 50 °C (32 to 122 °F).

**OPERATING PRESSURE RANGE:** Atmospheric pressure to 0 microns  
Maximum Working pressure: 600 PSIG

**BURST PRESSURE:** 3000 PSIG

**OPERATING RANGE:** Atmospheric to 0 microns

**ACCURACY:** +/- 10% of Reading.

**OPERATING TEMPERATURE RANGE:** Compensated (accuracy as stated):  
0°C TO 50°C (32°F TO 122°F) Non-compensated (add +/- 0.5% error for every °C outside compensated range): 0 to 50°C (-22 to 158°F)

**OPERATING & STORAGE HUMIDITY:** 0-95%, non-condensing.

**STORAGE TEMPERATURE:** -40 to 85°C (-40 to 185°F)

**POWER SOURCE:** One 9 volt alkaline battery (ANSI 1604AC – IEC 6LR61)

**BATTERY LIFE:** 20 hours of continuous use. Instrument shuts itself off after 5 minutes of operation.

**WEIGHT:** 153 g. (5.5 oz.) excluding the battery.

**DIMENSIONS:** 68 mm. diameter by 40 mm. deep by 124 mm. overall height (2.7" dia. by 1.6" deep by 5" overall height).

**MECHANICAL CONNECTION:** Standard 1/4" female SAE refrigerant hose type with core depressor.

**BATTERY INDICATOR:** Battery symbol with 3 segment Power Level Bar Graph.

# cps<sup>®</sup>

## **PRO-SET<sup>®</sup>**

### **VACUUM PUMP**



#### **MODELS**

**VP2S, VP3S, VP6S SINGLE STAGE**

**VP2D, VP3D, VP6D TWO STAGE**

**VP8D, VP10D, VP12D TWO STAGE**

ENGLISH..... 1-8

FRAÇAIS..... 9-16

DEUTSCH..... 17-24

ESPAÑOL..... 25-32

**TO BE OPERATED BY  
QUALIFIED PERSONNEL ONLY!**

***OPERATION MANUAL***

# TABLE OF CONTENTS

INTRODUCTION	2, 3
GENERAL SAFETY INSTRUCTIONS	4
SPECIFICATIONS	5
VACUUM PUMP OPERATION	6
ROUTINE MAINTENANCE	6
TROUBLE SHOOTING CHART	7
WARRANTY & CONTACT INFORMATION	8

## INTRODUCTION

Thank you for purchasing the CPS® PRO-SET® VP Single or Dual Stage series vacuum pump. The VP series vacuum pumps have been specifically designed for air-conditioning and refrigeration service work. The VP series utilizes an electrical motor and oil filled rotary vacuum pump cartridge.

The following are additional features:

- 2 Stage operation – provides a higher evacuation level and faster evacuation times.
- Two stage models equipped with gas ballast valve.
- Multi-voltage operation – the vacuum pump can be quickly converted to 115 or 230-volt operation.
- Sure grip handle – ergonomically designed for portability.
- Solid rubber base for improved shock resistance.
- Air cooled motors for operating under high temperature conditions
- Ultimate vacuum ratings of 15 microns (2 stage) and 100 microns (1 stage)
- Multiple intake connections for user preference.
- Oil Drain port – for easy vacuum pump oil maintenance.
- Vacuum Pump Oil Level sight glass – visual check for oil level & oil purity.

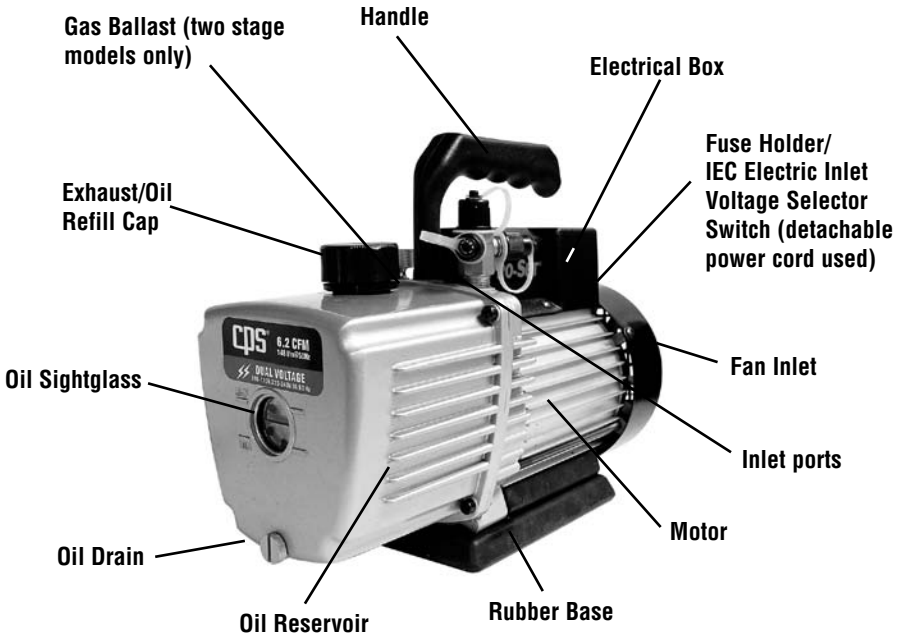
To help you get a good start, please continue to carefully read the balance of this manual. This manual contains important information on the proper procedures for operating this equipment. Please pay close attention to the safety information, Warnings, and Cautions provided throughout this manual. Always remember “Safety First”.

### UNIT CONSIST OF:

- Pro-Set® model vacuum pump
- Power Cord Set (115 volt)
- 500 ml vacuum pump oil
- Operation Manual



## VACUUM PUMP PARTS



## INITIAL PREPARATION

1. The VP series is equipped with a dual voltage motor. Make sure the voltage selector switch is set for the desired voltage operation.
2. The vacuum pump is shipped without oil in the reservoir. Remove the exhaust/oil fill cap and add oil until it is seen in the middle of the oil sight glass. Re-secure cap.
3. Remove the 1/4" inlet service port cap, turn on the vacuum pump. After 15 seconds, replace 1/4 cap back on inlet port.
4. Re-check vacuum pump oil level. Add or remove oil if necessary.

To achieve good final vacuum levels, the oil level should be visually seen through sight glass.

**CAUTION: DO NOT RUN THIS EQUIPMENT WITH LOW OR NO OIL. RUNNING THIS EQUIPMENT WITH NO LUBRICATION WILL CAUSE PREMATURE FAILURE.**

**VACUUM PUMP IS NOW READY FOR USE.**

# GENERAL SAFETY INSTRUCTIONS

**ONLY QUALIFIED SERVICE PERSONNEL SHOULD OPERATE THIS UNIT. SOME COUNTRIES MAY REQUIRE THE USER TO BE LICENSED. PLEASE CHECK WITH YOUR LOCAL GOVERNMENT AGENCY.**

**DANGER** - Avoid breathing refrigerant vapors and lubricant vapor or mist. Breathing high concentration levels may cause heart arrhythmia, loss of consciousness, or even cause suffocation.

**DANGER** - ELECTRICAL SHOCK HAZARD - Always disconnect power source when servicing this equipment.

**WARNING** - Do not operate the vacuum pump on systems under pressure. Damage to the pump may occur.

**CAUTION** - All hoses may contain liquid refrigerant under pressure. Contact with refrigerant may cause frostbite or other related injuries. Wear proper personal protective equipment such as safety goggles and gloves. When disconnecting any hose, please use extreme caution.

**CAUTION** - Avoid breathing refrigerant vapors and/lubricant mist. Exposure may irritate eyes, nose, throat and skin. Please read the manufacturers Material Safety Data Sheet for further safety information on refrigerants and lubricants.

**CAUTION** - To reduce the risk of fire, avoid the use of extension cords thinner than NO. 14 awg. (1,5mm<sup>2</sup>) to prevent the overheating of this cord please keep length to a minimum.

**CAUTION** - Do not use this equipment in the vicinity of spilled or open containers of gasoline or other flammable substances. Make certain that all safety devices are functioning properly before operating the equipment.

**CAUTION: THIS EQUIPMENT IS INTENDED FOR USE OF FINAL EVACUATION OF A REFRIGERANT SYSTEM. THE EVACUATION OF MATERIALS ABOVE 5 PSIG MAY CONTAMINATE OR DAMAGE THE VACUUM PUMP.**

**CAUTION: DO NOT RUN THIS EQUIPMENT WITH LOW OR NO OIL. RUNNING THIS EQUIPMENT WITH NO LUBRICATION WILL CAUSE PREMATURE FAILURE.**



# SPECIFICATIONS

MODEL#	VP2S	VP3S	VP6S	VP2D	VP3D	VP6D	VP8D	VP10D	VP12D
STAGES	1		2						
MOTOR SIZE (HP) RPM @ 50/60Hz	1/5 1440/1720	1/4 1440/1720	1/3 1440/1720	1/4 1440/1720	1/3 1440/1720	1/2 2880/3440	2/3 2880/3440	2/3 2880/3440	3/4 2880/3440
DIMENSIONS (inches)	13"x5.3"x10"		13.7"x5.6"x10.4"		13"x5.3"x10"		15"x6.2"x11.2"		
WEIGHT	18.11 lb/8.2 kg	19.44 lb/8.8 kg	24.75 lb/11.2 kg	21.66 lb/9.8 kg	25.42 lb/11.5 kg	25.42 lb/11.5 kg	32.95 lb/14.5 kg	34.26 lb/15.5 kg	36.47 lb/16.5 kg
OPERATING TEMPERATURE RANGE	0°C (32°F) to 52°C (125°F)								
POWER SOURCE	Dual Operation (switchable) 110-120/220-240 VAC 50/60Hz								
ULTIMATE VACUUM	100 MICRON			15 MICRON					
OIL CAPACITY	13.5 oz/400 ml	13 oz/380 ml	17 oz/500 ml	12 oz/350 ml	15 oz/450 ml	15 oz/450 ml	13.5 oz/400 ml	14 oz/425 ml	15 oz/450 ml
CONSTRUCTION	Heavy gauge aluminum chassis with solid rubber base and rubber lined steel handle								
OVERLOAD PROTECTION	Motor Thermally and Fuse protected								
CONTROL SYSTEM	On-Off Switch								
FREE AIR DISPLACEMENT	1.92 CFM@60Hz 45 l/m@50Hz	3.15 CFM@60Hz 75 l/m@50Hz	5.85 CFM@60Hz 138 l/m@50Hz	1.92 CFM@60Hz 45 l/m@50Hz	3.16 CFM@60Hz 75 l/m@50Hz	6.25 CFM@60Hz 148 l/m@50Hz	7.9 CFM@60Hz 186 l/m@50Hz	10.0 CFM@60Hz 236 l/m@50Hz	11.8 CFM@60Hz 278 l/m@50Hz
INTAKE FITTINGS	1/4", 3/8" SAE & 1/2" ACME								
GAS BALLAST	No			Yes					

# VACUUM PUMP OPERATION

**WARNING: Do not operate on systems under pressure. Damage to the pump may occur.**

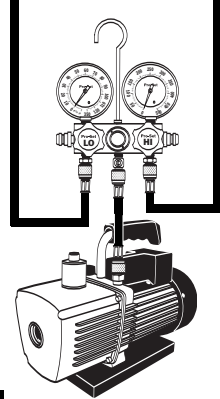
1. Check the correct power supply outlet to be used.
2. The VP series is equipped with a dual voltage motor. Make sure the voltage selector switch is set for the desired voltage operation.

**Caution: The motor will overheat and trip the thermal protector if the voltage selector and the power supply voltage do not match.**

3. Connect the correct power cord from vacuum pump IEC inlet to power supply outlet.
4. Check oil level in vacuum pump
5. Connect vacuum pump as shown in Diagram.
6. Open manifold valves.
7. Turn vacuum pump power switch "ON".
8. Run vacuum pump until final vacuum level is met.
9. Once the final vacuum level is reached, close manifold valves, turn power switch "OFF".

**VACUUM OPERATION COMPLETE**

**A/C EQUIPMENT  
BEING SERVICED**  
LOW SIDE SERVICE PORT      HIGH SIDE SERVICE PORT



## ROUTINE MAINTENANCE

It is recommended to change the vacuum pump oil after 50 hours of usage. The purity of the oil will determine the final vacuum level achieved. Always use the CPS recommended vacuum pump oil (VPOQ/VPOP/VPOG). The oil provided with the pump has been specially blended to maintain maximum viscosity at normal running temperatures as well as cold weather starts.

### OIL CHANGE PROCEDURES:

1. Be sure the pump oil is warmed up. if not warm, turn vacuum pump "ON" for 10 minutes.
2. Make sure vacuum pump is not plugged in.
3. Remove the oil drain cap and drain the contaminated oil into a suitable container. Tilt the vacuum pump toward the oil drain port.
4. Once all the oil has been drained, re-secure the oil drain cap back onto the oil drain port.
5. Remove the exhaust/oil fill cap and add oil until it is seen in the middle of the oil sight glass. Re-secure exhaust/oil fill cap.

# TROUBLE SHOOTING CHART

CONDITION	POSSIBLE PROBLEM	SOLUTION
<b>UNUSUALLY NOISY</b>	<ol style="list-style-type: none"> <li>1. Bad Bearings</li> <li>2. Loose Motor Bolts</li> <li>3. Coupling Drive</li> <li>4. Dirty, low, or improper oil</li> <li>5. Air leaks in connections</li> </ol>	<ol style="list-style-type: none"> <li>1. Replace motor</li> <li>2. Tighten Bolts</li> <li>3. Adjust or replace coupling</li> <li>4. Replace oil</li> <li>5. Fix leaks</li> </ol>
<b>HIGH TEMPERATURE</b>	<ol style="list-style-type: none"> <li>1. Low or improper voltage</li> <li>2. Worn bearings</li> <li>3. Low oil level</li> </ol>	<ol style="list-style-type: none"> <li>1. Check power source voltage</li> <li>2. Replace motor</li> <li>3. Add or replace</li> </ol>
<b>POOR VACUUM</b>	<ol style="list-style-type: none"> <li>1. System leaks</li> <li>2. Low oil level</li> <li>3. Dirty oil</li> <li>4. Air leaks at connection</li> <li>5. Air leak through seal</li> <li>6. Worn rotary mechanism</li> </ol>	<ol style="list-style-type: none"> <li>1. Fix leaks</li> <li>2. Add or replace oil</li> <li>3. Flush and replace oil</li> <li>4. Fix leaks</li> <li>5. Replace shaft seal</li> <li>6. Replace cartridge</li> </ol>
<b>OIL LEAKS</b>	<ol style="list-style-type: none"> <li>1. Oil leaks through exhaust</li> <li>2. Oil leaks through shaft seal</li> <li>3. Oil leaks through reservoir</li> <li>4. System vented pressure through pump</li> <li>5. Pump tipped over</li> </ol>	<ol style="list-style-type: none"> <li>1. Oil level too high</li> <li>2. Replace shaft seal</li> <li>3. Tighten bolts or replace gasket</li> <li>4. Check oil level</li> <li>5. Check oil level</li> </ol>
<b>PUMP DOES NOT START</b>	<ol style="list-style-type: none"> <li>1. No power to motor</li> <li>2. Damaged motor</li> <li>3. Thermal cutout</li> </ol>	<ol style="list-style-type: none"> <li>1. Check fuses in IEC panel.</li> <li>2. Replace motor.</li> <li>3. Wait for thermal switch to reset. Check for cause of thermal.</li> </ol>
<b>THERMAL CUTOUT</b>	<ol style="list-style-type: none"> <li>1. Low or incorrect voltage</li> <li>2. Cold weather</li> <li>3. Dirty Oil</li> </ol>	<ol style="list-style-type: none"> <li>1. Check voltage, move voltage selector switch to correct setting</li> <li>2. Start and run vacuum pump with the intake fitting open for 1 minute to warm up oil.</li> <li>3. Flush and replace oil.</li> </ol>

## WARRANTY & REPAIR POLICY

**CPS® Products, INC.** guarantees that all products are free of manufacturing and material defects to the original owner for one year from the date of purchase. If the equipment should fail during the guarantee period it will be repaired or replaced (at our option) at no charge. This guarantee does not apply to equipment that have been altered, misused, or returned solely in need of field service maintenance. All products being returned for warranty repair must be accompanied by an original bill of sale and customer contact information. All repaired equipment will carry an independent 90 day warranty. This repair policy does not include equipment that is determined to be beyond economical repair.



### **CPS PRODUCTS, INC.**

1010 East 31st Street, Hialeah, Florida 33013, USA,  
Tel: 305-687-4121; 1-800-277-3808, Fax: 305-687-3743  
www.cpsproducts.com. e-mail: cpssales@cpsproducts.com

### **CPS CANADA**

4605 Chrysler Ave. Niagara Falls, Ontario L2E 3V6  
Phone - 905-358-3124; Fax - 905-358-7187  
Toll Free - 1-866-629-3895; e-Mail: cpscanada@bellnet.ca

### **CPS PRODUCTS N.V**

Krijgsbaan 241, 2070 Zwijndrecht, Belgium  
Tel: (323) 281 30 40; Fax: (323) 281 65 83

### **CPS AUSTRALIA PTY. LTD.**

109 Welland Avenue, Welland, South Australia 5007  
Tel: +61 8 8340 7055, Fax: +61 8 8340 7033  
e-mail: sales@cpsaustralia.com.au

### **CPS ASIA**

Ruby Industrial Complex #06-10, Genting Block 80 Genting Lane  
Singapore 349565  
Tel: (65) 8461056, Fax: (65) 8461054  
e-mail: cpsasia@singnet.com.sg