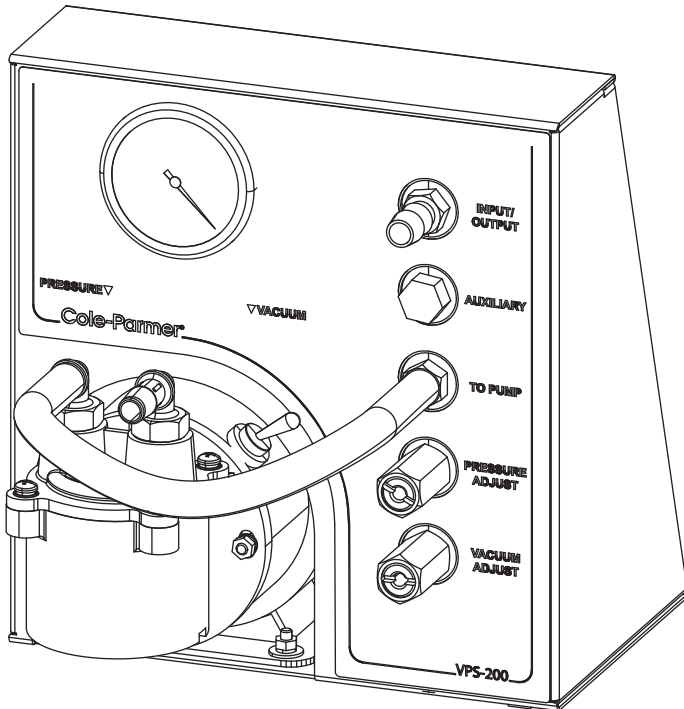


# Cole-Parmer®

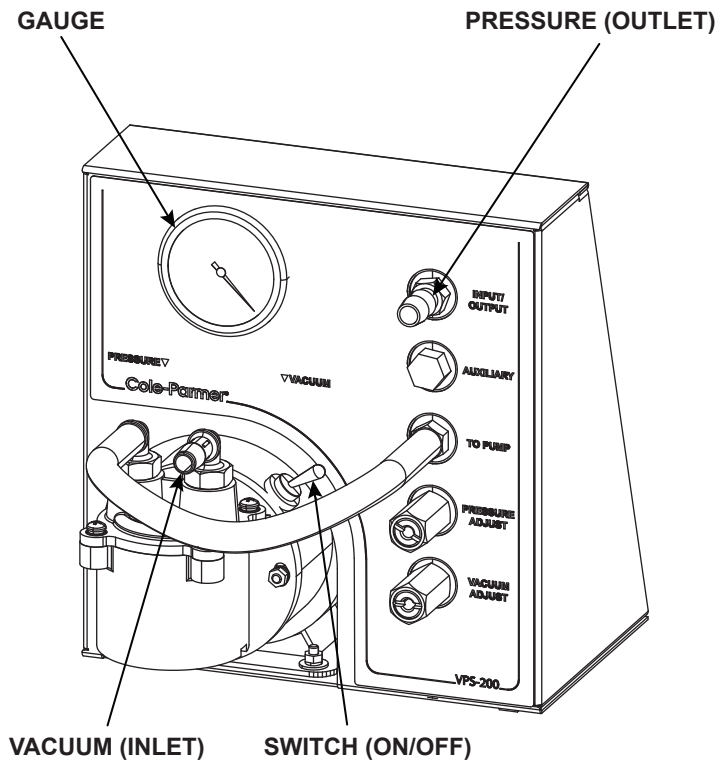
## VP-200 SERIES VACUUM/PRESSURE STATION



## INSTRUCTION MANUAL

## **SAVE THESE INSTRUCTIONS**

To reduce the risks of fire or explosion, electrical shock, and the injury to persons, read and understand all instructions included in this manual.



VP-200 Series Vacuum/Pressure Station  
(07532-80 & 07532-85)

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## SAFETY PRECAUTIONS



***DANGER: IMPROPER USE OF GROUNDING PLUG CAN RESULT IN A RISK OF ELECTRIC SHOCK.***



***DANGER: UNPLUG THE POWER CORD BEFORE ANY CLEANING OPERATION IS STARTED.***



***CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK - USE INDOORS ONLY.***



***WARNING: PRESSURIZED GAS SHOULD NOT BE USED FOR THE SUPPLY AS A HAZARDOUS BURSTING CONDITION COULD DEVELOP IN THE PUMP HEAD.  
USE ONLY GASES CONTAINED AT ATMOSPHERIC PRESSURE.***



***CAUTION: HOT SURFACE. DO NOT TOUCH.***



***CAUTION: DO NOT OPERATE THE PUMP IF THE PRESSURE PORTS OF THE HEAD ARE IN A BLOCKED CONDITION.***



***CAUTION: DO NOT USE METAL FITTINGS WITH ANY VACUUM/PRESSURE PUMP.***



***WARNING: RISK OF HOT SURFACE.***



***WARNING: RISK OF ELECTRO-MAGNETIC FIELD.***



***READ THE INSTRUCTION MANUAL.***

## DESCRIPTION

The Vacuum/Pressure Station is designed to provide a convenient, portable source of regulated vacuum and/or pressure for bench-top laboratory or commercial use. Each function is regulated independently by clearly identified valves and the easy-to-read compound function gauge eliminates the need for an elaborate plumbing network. The convoluted diaphragm and the unique pump cavity are designed to provide extended diaphragm life by minimizing stress, wear and heat buildup. This has been done while ensuring and optimizing pressure and vacuum characteristics.

The brushless motor is totally enclosed, thermally protected and has sealed ball bearings. No regular maintenance is required. A six-foot length, three conductor power supply cord is supplied with the unit and the 115 VAC rated motor is a U.L. recognized component.

Figure 1 shows the typical flow characteristics of the 115 VAC station as related to pressure and vacuum. The corresponding flow data for the 230 VAC station is 5/6 of that shown.

**Note:** Even though the 07532-85 station is designed for 230 VAC, 50 Hz applications, it can be used on 230 VAC, 60 Hz. In this case, the flow data will increase to that of the 07532-80 station; however, the available torque will decrease. All units are intended to be started without a load (both ports open to the atmosphere). If either a vacuum or pressure exists, the pump may not start. Always consider material compatibility before running any service through the Vacuum/Pressure Station.

The materials in contact with the service are as follows

- Pump - VALOX® (polyester) and FKM rubber
- Manifold chamber and fittings - PVC, silicone, linear polyethylene and 303 stainless steel.
- Pressure/Vacuum Gauge - Bronze tubing and brass socket.

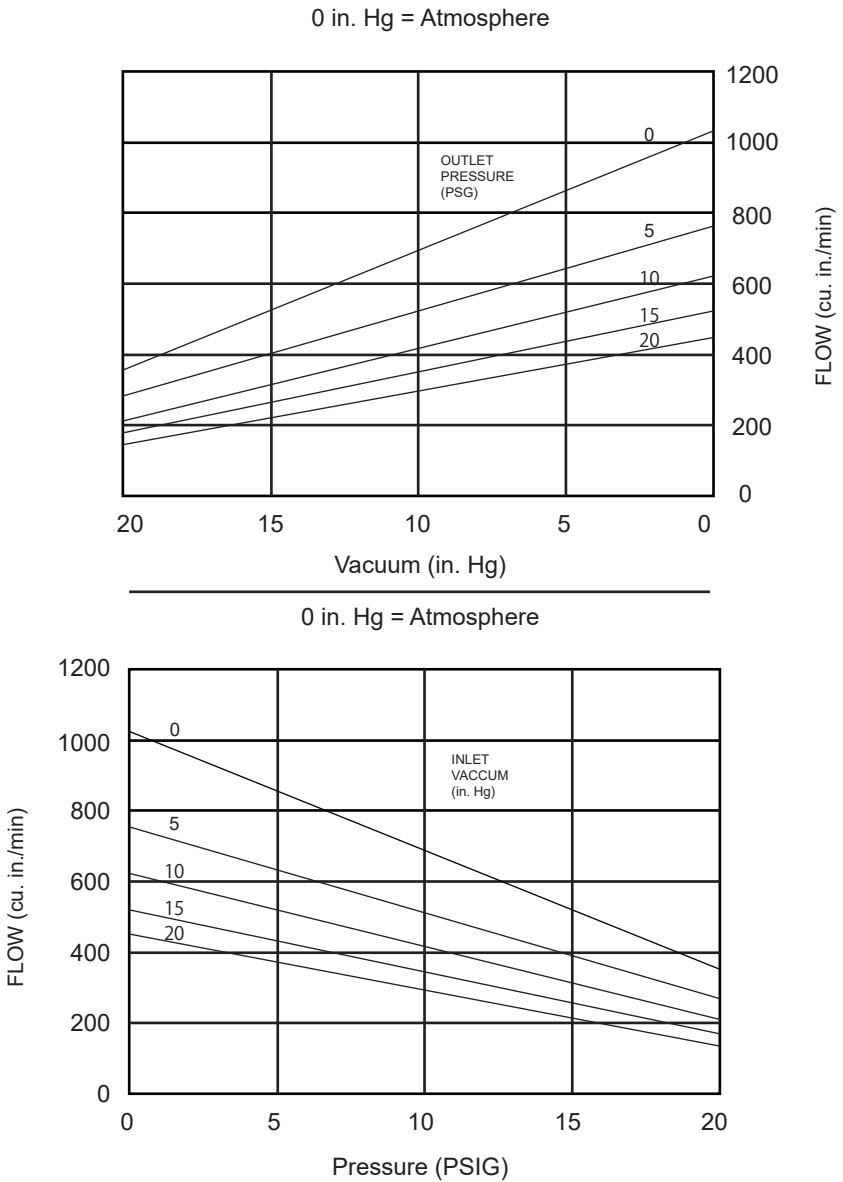


Figure 1

## OPERATING INSTRUCTIONS

The pump supplied with the Vacuum/Pressure Station must always be plugged into a grounded outlet. Both models are supplied complete with a grounded plug and an on/off rocker switch.

## GROUNDING INSTRUCTIONS FOR 07532-80

This product must be grounded. In the event of an electrical short circuit, grounding reduces the risk of electric shock by providing an escape wire for the electric current. This product is equipped with a cord having a grounding wire with an appropriate grounding plug and must be plugged into an outlet that is properly installed and grounded in accordance with all local codes and ordinances.



***DANGER: IMPROPER USE OF A GROUNDING PLUG CAN RESULT IN A RISK OF ELECTRIC SHOCK.***

If repair or replacement of the cord or plug is necessary, do not connect the grounding wire to either flat blade terminal. The wire with insulation that is green, with or without yellow stripes, is the grounding wire. Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the product is properly grounded. Do not modify the plug provided; if it will not fit the outlet, have the proper outlet installed by a qualified electrician.

This product is for use on a nominal 120 volt circuit and has a grounding plug that looks like the plug illustrated in Figure 2(A). A temporary adapter, which looks like the adapter illustrated in Figure 2(B) and (C) may be used to connect this plug to a 2-pole receptacle if a properly grounded outlet is not available. The temporary adapter should only be used until a properly grounded outlet can be installed by a qualified electrician. The green colored rigid ear or lug extending from the adapter must be connected to a permanent ground such as a properly grounded outlet box cover. Whenever the adapter is used, it must be held in place by a metal screw.



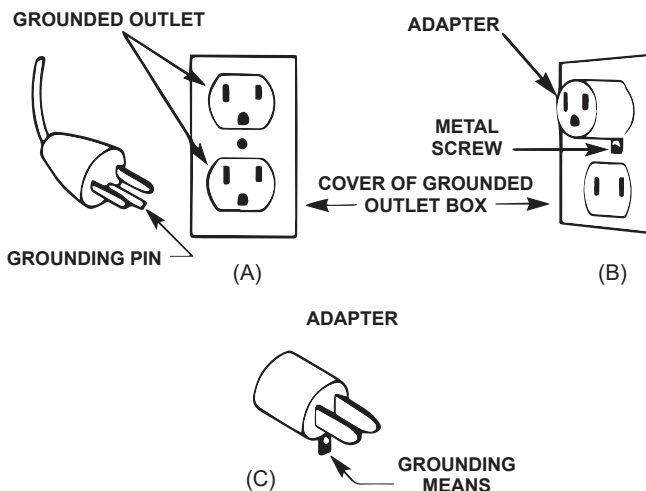


Figure 2

**NOTE:** In Canada, the use of a temporary adapter is not permitted by the Canadian Electric Code.

## GROUNDING INSTRUCTIONS FOR 07532-85

Refer to a qualified electrician to install the proper plug on the motor cord and to supply the proper electrical outlet.

## EXTENSION CORDS

Use only a 3-wire extension cord that has a 3-blade grounding plug and a 3-slot receptacle that will accept the plug on the product. Make sure your extension cord is in not damaged. When using an extension cord, be sure to use one heavy enough to carry the current your product will draw. For lengths less than 100 ft, 18AWG, 3 conductor extension cords shall be used. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating. Table 1 shows the current size to use, depending on cord length and nameplate ampere rating. If in doubt, use the next heavier gage. **NOTE:** The smaller the gage number, the heavier the cord.

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**Table 1**  
**Minimum guage for extension cords**

Ampere Rating range	Voltage	Length of cord in feet								
	120V	25ft	50ft	100ft	150ft	200ft	250ft	300ft	400ft	500ft
	240V	50ft	100ft	200ft	300ft	400ft	500ft	600ft	800ft	1000ft
0 - 2		18	18	18	16	16	14	14	12	12
2 - 3		18	18	16	14	14	12	12	10	10
3 - 4		18	18	16	14	12	12	10	10	8
4 - 5		18	18	14	12	12	10	10	8	8
5 - 6		18	16	14	12	10	10	8	8	6
6 - 8		18	16	12	10	10	8	6	6	6
8 - 10		18	14	12	10	8	8	6	6	4
10 - 12		16	14	10	8	8	6	6	4	4
12 - 14		16	12	10	8	6	6	6	4	2
14 - 16		16	12	10	8	6	6	4	4	2
16 - 18		14	12	8	8	6	4	4	2	2
18 - 20		14	12	8	6	6	4	4	2	2

## OPERATION

(Refer to Figure 3 for port labeling)

For pressure delivery, the manifold port marked “TO PUMP” should be connected via the 9-inch long tube to the pump port marked “FOR PRESSURE”, with the pressure regulated by the valve marked “PRESSURE ADJUST”. The “INPUT/OUTPUT” port should be connected to suitable containers for receiving pressurized air or gas. If a medium other than ambient air is to be pressurized, the source of supply should be connected to the pump inlet port marked “FOR VACUUM”.



***CAUTION: DO NOT OPERATE THE PUMP IF THE PRESSURE PORTS OF THE HEAD ARE IN A BLOCKED CONDITION.***



***WARNING: PRESSURIZED GAS SHOULD NOT BE USED FOR THE SUPPLY AS A HAZARDOUS BURSTING CONDITION COULD DEVELOP IN THE PUMP HEAD.***

***USE ONLY GASES CONTAINED AT ATMOSPHERIC PRESSURE.***

To draw a regulated vacuum from a source, first connect the source of supply to the port marked “INPOT/OUTPOT” and then connect the port marked “TO PUMP” to the pump inlet marked “FOR VACUUM”. If the Vacuum/Pressure Station was previously used for pressure delivery, be sure all pressure are relieved before disconnecting any tubing from the port(s) marked “FOR PRESSURE” and/or “INPUT/OUTPUT”. This can be done best by stopping the pump and gradually relieving the pressure by turning the “PRESSURE ADJUST” valve screw counterclockwise until the gauge reads zero.

The motor is supplied with an internal thermal overload switch which may trip if something happens to the pump. If this should occur, check the pump to ensure that everything is normal. Allow the motor to cool for approximately 30 minutes, and then restart. If the overload trips again, return the complete unit to your dealer for repair.

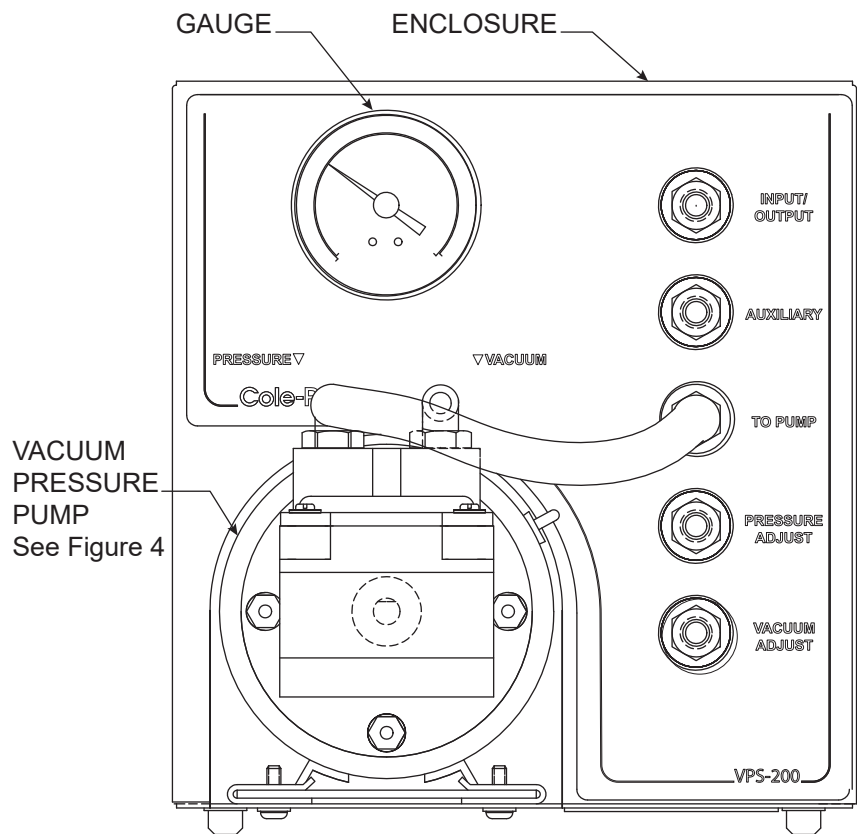


Figure 3

## STORAGE

When the pump is not in use, store it in a clean, dry area. If ports on the pump are open, cover them to keep dust and dirt from entering. Wipe the power cord down with a dry towel and inspect for cracks in the insulation after each use. Have the cord repaired, if found defective, prior to reusing.



***DANGER: UNPLUG THE POWER CORD BEFORE ANY CLEANING OPERATION IS STARTED.***

## SPECIFICATIONS

MODEL No.	07532-80	07532-85
Max. Vacuum	20.0 (±0.01) in.Hg* 508(±0.2) mm Hg*	20.0 (±0.01) in.Hg* 508(±0.2) mm Hg*
Dimensions (L x W x H)	243.6 x 203.2x221.9 mm	243.6 x 203.2x221.9 mm
Dimensions-Motor (L x W x H)	133.4 x 101.6x108.0 mm**	133.4 x 101.6x108.0 mm**
Motor	1/50 HP at 1550 RPM	1/50 HP at 1300 RPM
Port Connections	3/8" NPT	3/8" NPT
Weight	4.0kg	4.0kg
Electrical Requirements	115V 60 Hz 1.3A 1PH 0.02HP	230 V 50 Hz 0.75A 1PH 0.02HP
Plug Type	USA	IEC Socket, EU/UK leads
Air Displacement	0.61(±0.01) CFM 17.2(±0.2) L/min 1050(±10) cu in/min	0.52(±0.01)CFM 14.7 (±0.2) L/min 900(±10) cu in/min
Maximum Pressure	18 (±0.01) psig*** 12.4X10 <sup>4</sup> Pa***	18 (±0.01) psig*** 12.4X10 <sup>4</sup> Pa***
Operating Temperature Range	0° to 40° C (32° to 104° F)	0° to 40° C (32° to 104° F)
Humidity range:	10% to 90% non-condensing	10% to 90% non-condensing
Altitude:	Less than 2000 m	Less than 2000 m
Pollution Degree: (Indoor usage -lab,office)	Pollution Degree 2	Pollution Degree 2
Noise Level	≤70 (±2) dB @ 1 meter	≤70 (±2) dB @ 1 meter
Enclosure rating	IP20 per IEC 60529	IP20 per IEC 60529
Compliance		(BS)EN 1012-2 & (BS)EN 60204(2006/42/EC) (BS)EN 61000-6-2(2014/30/EU) (BS)EN 61000-6-4(2014/30/EU)

\*Intermittent or Continuous Duty

\*\*Polyethylene fittings not included in height dimensions

\*\*\*Intermittent Duty: Limit output to 18 psig - Continuous Duty: Limit output to 16 psig

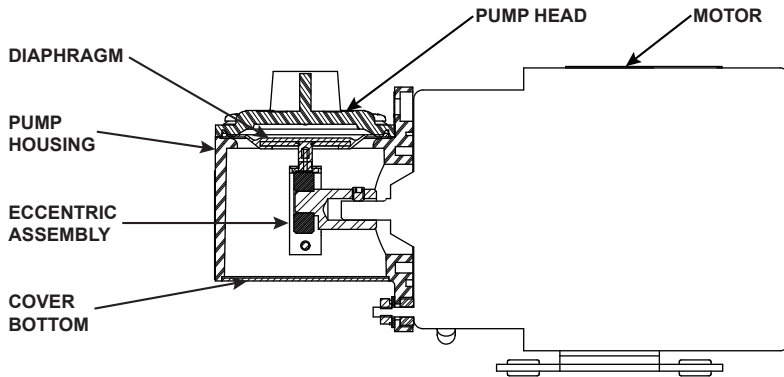


Figure 4 - Pump Main Components Diagram

## HELPFUL HINTS

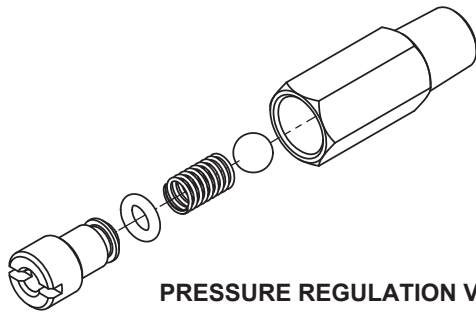
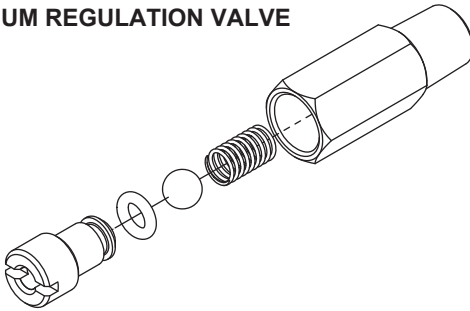
If it is necessary to draw a vacuum or to pressurize two lines simultaneously, the plastic pipe plug in the “AUXILIARY” port can be replaced by any tube fitting with a standard 1/4 NPT male pipe thread on one end. Be sure, however, to use a pipe thread sealant or tape on the male threads to insure a leak-free fit.

The Station has been designed so the pump head can be serviced without removing the pump from the Station.

The easiest way to remove the silicone tubing from a barbed fitting is to grasp the tubing around the fitting and twist it back and forth two or three times. This releases the natural vacuum between the tube and the fitting and minimizes stretching of the tubing.

## REGULATION VALVES

### VACUUM REGULATION VALVE



### PRESSURE REGULATION VALVE

Figure 5

The regulation valves should occasionally be inspected for contamination (the frequency of inspections depends on the application). by removing the adjustment screw, spring and ball bearing from each valve body - see Figure 5. Look for dirt or grit around the venting holes in the adjustment screw and the valve body and around the valve seating surface. These areas can easily be cleaned with a cotton swab or clean cloth.

If the vacuum cannot be regulated by adjusting the “VACUUM ADJUST” valve, the valve’s O-ring has probably been damaged. Remove the adjustment screw and replace the O-ring with a new one (part number B-1169-0011). Always use caution when disassembling the regulation valves to avoid losing the valve ball and spring after the adjustment screw has been removed. When

reassembling, remember that in the “VACUUM ADJUST” valve, the spring goes back in first. followed by the ball and then the adjustment screw, and in the “PRESSURE ADJUST” valve, the ball must go in before the spring.

The regulation valves can be adjusted with any narrow flat instrument such as a small coin or the head of a key if a screwdriver is not available.

## MAINTENANCE



***DANGER: UNPLUG POWER CORD BEFORE ANY CLEANING OPERATION IS STARTED.***

For diaphragm replacement:

- Disassemble top part of the Pump Head.
- Unscrew the diaphragm and install the new diaphragm.
- Reassemble the Pump Head.
- It is good practice to replace the Pump Head when the diaphragm is replaced. This ensures new, clean valves and maximum performance. Dirty valves will reduce performance.
- Do not disassemble the pump housing from the motor. Proper assembly (factory-adjusted) is critical for proper pump performance.
- Keep the pump enclosure clean by using a mild detergent solution. Never immerse or use excessive fluid when cleaning the pump.



## REPLACEMENT PARTS LIST

Vacuum Regulation Valve Assembly	B-2067
Pressure Regulation Valve Assembly	B-2066

## PUMP HEAD REPLACEMENT PARTS LIST

Item	Part No.
Service Kit	07531-99
(FKM diaphragm, two retainers, two valves and plastic head)	
Service Kit replacement	07531-98
(FKM diaphragm)	
Service Kit Eccentric Assembly	07530-75
(Eccentric and bearing)	
Service Kit Housing	07530-78
Service Kit Diaphragm Shaft	07530-79
Service Kit Cover Bottom	07530-83
Pump Head Assembly (VALOX®)	07530-77

## SPECIAL APPLICATIONS

Technical information and advice concerning the use of this product in specific applications may be obtained from our Engineering Department. If volume justifies, modifications can be made to adapt the unit to special customer applications. OEM inquiries are welcome and encouraged.

**NOTE:** The manufacturer reserves the right to make improvements in design, construction and appearance of our products without notice.

## **WARRANTY**

This product is warranted against defects in material or workmanship, and at the option of the manufacturer or distributor, any defective product will be repaired or replaced at no charge, or the purchase price will be refunded to the purchaser, provided that: (a) the warranty claim is made in writing within the period of time specified on this warranty card, (b) proof of purchase by bill of sale or receipted invoice is submitted concurrently with the claim and shows that the product is within the applicable warranty period, and (c) the purchaser complies with procedures for returns set forth in the general terms and conditions contained in the manufacturer's or distributor's most recent catalog.

This warranty shall not apply to: (a) defects or damage resulting from: (i) misuse of the product, (ii) use of the product in other than its normal and customary manner, (iii) accident or neglect, (iv) improper testing, operation, maintenance, service, repair, installation, or storage, (v) unauthorized alteration or modification, or (b) post-expiration dated materials.

THIS WARRANTY IS THE EXCLUSIVE REMEDY OF THE PURCHASER, AND THE MANUFACTURER AND DISTRIBUTOR DISCLAIM ALL OTHER WARRANTIES, WHETHER EXPRESS, IMPLIED, OR STATUTORY, INCLUDING WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. NO EMPLOYEE, AGENT, OR REPRESENTATIVE OF THE MANUFACTURER OR DISTRIBUTOR IS AUTHORIZED TO BIND THE MANUFACTURER OR DISTRIBUTOR TO ANY OTHER WARRANTY. IN NO EVENT SHALL THE MANUFACTURER OR DISTRIBUTOR BE LIABLE FOR INCIDENTAL, INDIRECT, SPECIAL OR CONSEQUENTIAL DAMAGES.

***THE WARRANTY PERIOD FOR THIS PRODUCT IS ONE (1) YEAR FROM DATE OF PURCHASE.***

## **PRODUCT RETURN**

To limit charges and delays, contact the seller or Manufacturer for authorization and shipping instructions before returning the product, either within or outside of the warranty period. When returning the product, please state the reason for the return. For your protection, pack the product carefully and insure it against possible damage or loss. Any damages resulting from improper packaging are your responsibility.

## **TECHNICAL ASSISTANCE**

If you have any questions about the use of this product, contact the Manufacturer or authorized seller.

Warranty Registration



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