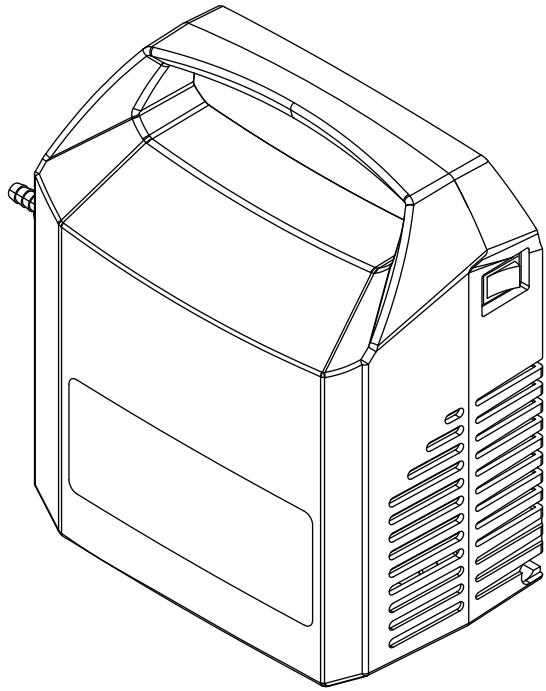
Cole-Parmer®

VPS-200 SERIES VACUUM/PRESSURE PUMP (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.

INSTRUCTION
WARNING AND CAUTION
PLEASE READ BEFORE OPERATION

While reading your manual, please pay close attention to areas labeled:
WARNING AND CAUTION.
The description of each is found below.

WARNING

Warnings are given where failure to observe instruction could result in injury or death to people.

CAUTION

Cautions are found where failure to observe the instruction couldresult in damage to the equipment, associated equipment and process.

These units confirm to the SI International system of units of measurement.

The following symbol of warning will be found on the pump.


Caution - Refer to accompanying documents


Caution - Risk of electrical shock


Caution - Hot surface


Double Insulated


OFF (Power)

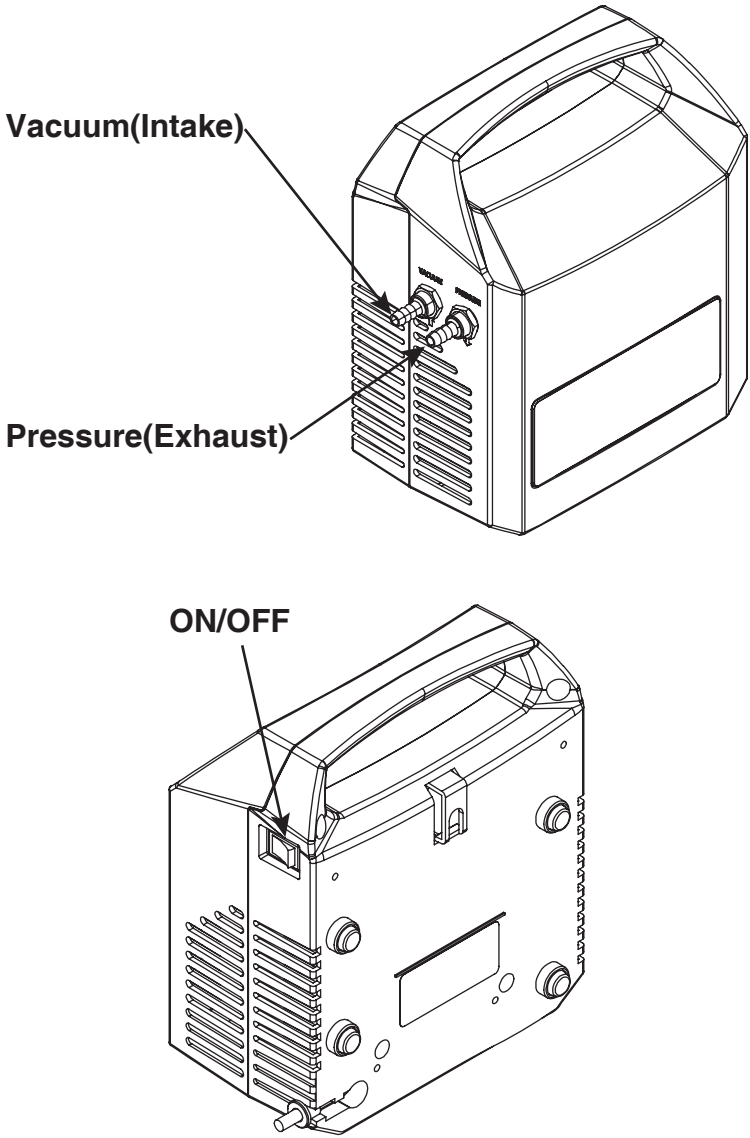
ON (Power)


Warning - Risk of electro-magnetic field

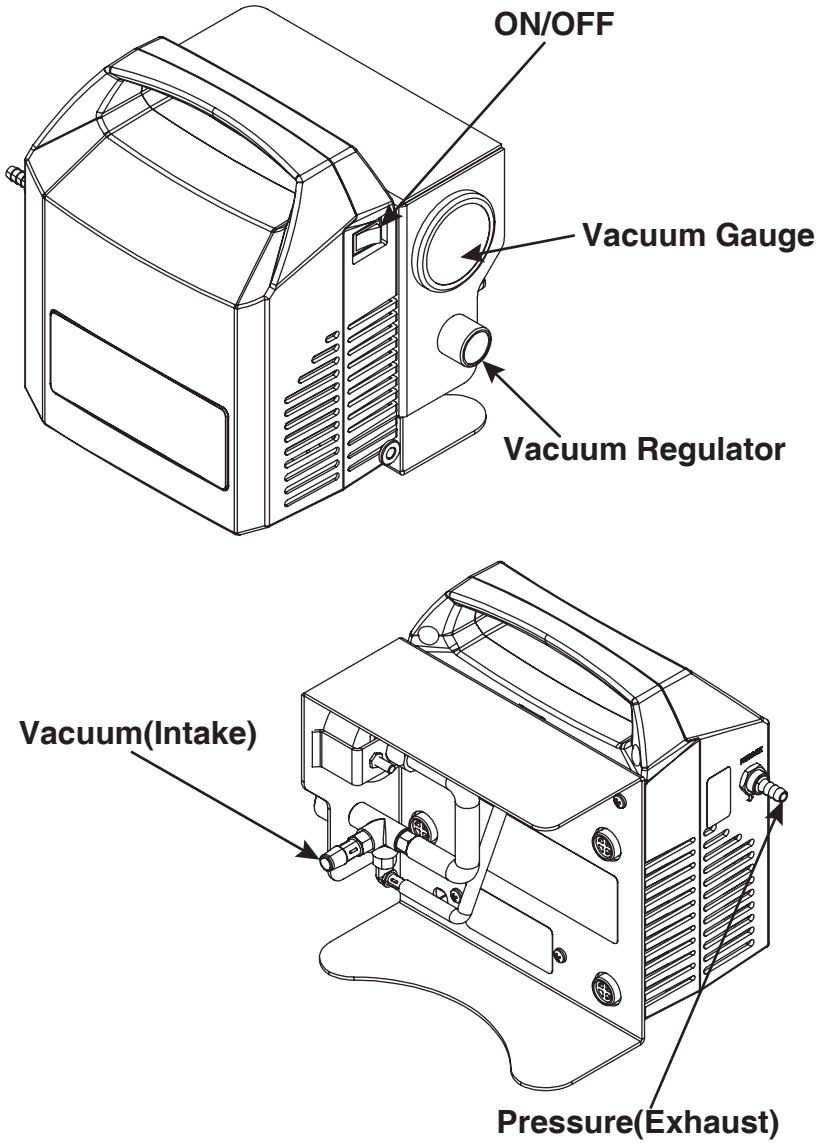

Read the Instruction Manual

WARNING

Motor includes a self resetting thermal cutout and the pump could restart without actuation under fault condition.



VPS-200 Series Vacuum/Pressure Pump
(79202-00 & 79202-05)



VPS-200 Series Vacuum/Pressure Pump Station
(79202-30 & 79202-35)

TABLE OF CONTENTS

SECTION 1: SAFETY INFORMATION

1.10 CAUTION: TO PREVENT INJURY...

1.11 Never operate this product if it has a damaged cord or plug. If it is not working properly, has been dropped, damaged or has fallen into water, please return the product to a Cole-Parmer service center for examination and repair.

1.12 Keep the cord away from heated surfaces. All electrical products generate heat. To avoid serious burns never touch unit during or immediately after operation.

1.13 Never block any air openings or place it on a soft surface where the openings may be blocked. The air openings are for ventilation of the motor inside the housing. Keep all air openings free of lint, dirt and other foreign objects.

1.14 Models of 79202 are thermally protected and can automatically restart when the protector resets. Always disconnect power source before servicing.

1.15 Never drop or insert fingers or any other object into any openings.

1.16 Do not operate this product where oxygen is being administered.

1.17 Wear safety glasses and goggles when operating this product. Never point any air nozzle or air sprayer toward another person or any part of the body.

1.18 Use only in well ventilated areas.

1.19 Do not use any tools or attachments without first determining maximum air pressure for that tool or attachment. Be sure to properly identify intake and discharge before using pump. See Section 2.70.

WARNING

Do not fill the collection jar above the safe fill level line indicated on the jar.

1.20 CAUTION: TO REDUCE RISK OF ELECTRICAL SHOCK...

1.21 Do not disassemble. Disassembly or attempted repairs if accomplished incorrectly can create electrical shock hazard. Refer servicing to qualified service agencies only.

1.22 Keep the pump away from sharp objects.

1.23 Keep the power cord untwisting when this product is in use.

1.30 WARNING: TO REDUCE RISK OF ELECTROCUTION...

1.31 Do not use this product in or near area where it can fall or be pulled into water or other liquids.

1.32 Do not reach for this product if it has fallen into liquid. Unplug immediately.

1.33 For indoor use only. Never operate this product outdoors in the rain or in a wet area.

1.40 DANGER: TO REDUCE RISK OF EXPLOSION OR FIRE...

1.41 Do not use this pump in or near explosive atmospheres or where aerosol (spray) products are being used.

1.42 Do not pump anything other than atmospheric air.

1.43 Do not pump combustible liquids or vapors with this product or use in or near an area where ammable or explosive liquids or vapors may exist.

1.44 Do not use this product near flames.

WARNING

Failure to observe the above safety precautions could result in severe bodily injury, including death in extreme cases.

SECTION 2: INSTALLATION

2.10 INTRODUCTION

2.11 The pumps are available for 115 VAC or 230 VAC applications and are intended for either industrial or commercial use.

2.21 This manual has been compiled not only for the care and maintenance of the Cole-Parmer Vacuum/Pressure Pump now in your possession, but as a helpful reference and guide to prevent many problems which may occur if used improperly.

2.20 UNPACKING

2.21 Carefully remove the Vacuum/Pressure Pump from the shipping case. Preserve all paperwork for future reference. If damage has occurred from shipment a claim must be filed with the carrier immediately; preserve the shipping carton for inspection by the carrier. If you are required to communicate with your dealer or Cole-Parmer, be sure to include your order numbers for quick identification. Do not return the pump to the factory without first calling for a returned goods number.

2.30 PUMP MOUNTING

2.31 Rubber feet are attached to the pump. Rubber feet are excellent for applications involving a semi-exible surface such as a bench top; they help to isolate noise and eliminate creeping. The Vacuum/Pressure Pump should be placed on a horizontal plane which the rubber feet contact with.

2.40 PUMP LOCATION

2.41 The Vacuum/Pressure Pump should be located preferably in a clean, dry, and well ventilated area. Please be sure not to block the ventilation holes located on the motor housing. The system should be placed where the

housing. The system should be placed where the surrounding temperature remains between 10°C and 40°C (50°F and 104°F). Always check to insure the location chosen is protected from direct or indirect moisture contact. Cole-Parmer recommends that the pump be installed at the highest point within the system to prevent possible water condensate from entering the pump.The pump should be located as closely to its system in order to utilize it most efficiently.

WARNING

The motor is thermally protected and will automatically restart unexpectedly when the overload device resets. Don't pump ammable or explosive gases or vapors or operate this pump in an atmosphere containing ammable or explosive gases or vapors.

2.50 ELECTRICAL POWER

2.51 Power Source Review

Review the power source and the motor rating to be sure they agree in voltage, phase, and frequency. Serious damage may occur to the motor if it is connected to an improper voltage.

Please Note: For Model 79202-00 and 79202-30, the pumps have a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not change the plug in any way.

Please Note: For Model 79202-05 and 79202-35, the pumps are connected with a power cable with IEC plug for for connection of the mains lead. The pumps are supplied with two mains leads fitted. One lead has a U.K. 3 pin plug and the other has a 2-pin “Shuko” plug for connection to the mains. Choose the lead appropriate for your electrical installation and discard the other. The U.K. mains lead is protected by a 10A fuse mounted in the plug top.

2.52 Servicing of Double-Insulated Product

In a double-insulated product, two systems of insulation are provided instead of grounding. No grounding means is provided on a double-insulated product, nor should a means for grounding to be added to the product. Servicing of a double-insulated product requires extreme care and knowledge of the system and should be done only by qualified service personnel. Replacement parts for the double-insulated product must be identical to those parts in the product.

2.53 Overload Protection

This pump has a self resetting thermal protector. If the motor should overheat, the protector will shut the unit off. If this should occur, check the pump to ensure that everything is normal. Unplug device and allow to cool for 10 minutes. Plug in and restart. If the overload trips again, return the complete unit to your dealer for repair.

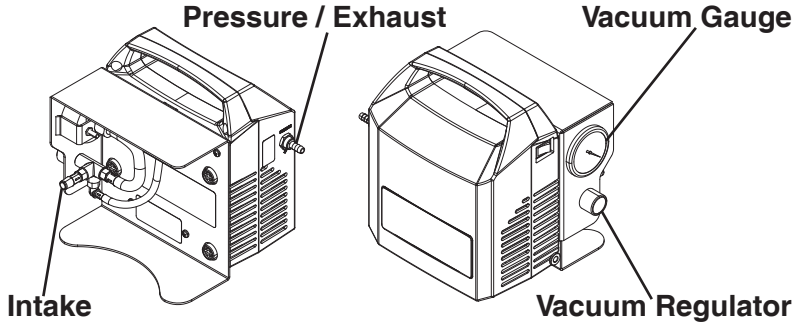
2.60 VACUUM CONNECTIONS

2.61 For best results, Cole-Parmer recommends the length of the tubing between the pump and the chamber be kept as small as possible.

2.70 INTAKE AND DISCHARGE PROVISION

2.71 For the Vacuum/Pressure Pump Station Models 79202-30 & 79202-35, the vacuum regulator and vacuum dial gauge is attached to the bracket. The vacuum regulator allows the vacuum level to be set between roughly atmospheric pressure and the maximum vacuum allowed for the pump model. The regulator allows discharge pressure to be set between atmospheric and the maximum possible for the pump model. Model 79202 is equipped with a pressure port.

Note: Adjusting the vacuum regulators will affect the performance of the pump.



2.80 VACUUM GAUGES

2.81 The Vacuum/Pressure Pump Station Models 79202-30 & 79202-35 come with dial vacuum gauges. The vacuum gauge gives negative pressure - That is pressure below atmospheric. The reference point for the gauge is atmospheric pressure. Please keep in mind that atmospheric pressure tends to vary from day to day. As a result of this variability, the dial vacuum gauge will indicate slightly different maximum vacuum readings from day to day.

SECTION 3: OPERATION

3.10 STARTING PROCEDURES

3.11 Starting a Cole-Parmer Vacuum/Pressure Pump Station
Before attaching the pump to a system, familiarize yourself with the function and action of the Vacuum/Pressure Pump Station that you have acquired. Review the power requirements as described in Section 2.50. Cole-Parmer recommends running the pump for a few minutes to warm it up, before use. The warm-up improves the pumps ability to handle humid air. Set the device on a level, sturdy surface so the controls can be easily reached and adjusted.

1. Be sure that the power switch is in the OFF position. Plug in the device and turn the switch to the ON position.
2. Block the intake hose barb and allow the gauge to reach stable vacuum level. (For 79202-30 & 79202-35)
3. Set vacuum level by turning the regulator knob counter-clockwise to increase vacuum or clockwise to decrease vacuum. (For 79202-30 & 79202-35)

Note: This procedure should be performed each time you use this device.

3.12 Cleaning The Device

1. Make sure the ON/OFF switch is in the OFF position.
2. Unplug the device from the wall outlet and allow suction level to drop.
3. Wipe the outside of the case with a clean, damp cloth after each use.

3.20 LEAK DETECTION

3.21 The importance of eliminating all leaks in a vacuum system is obvious. The pump must remove this added volume of leaked gas to maintain the desired vacuum. Leaks for these pumps can be located by slightly pressuring the system and painting the suspected area with a thick soap solution. Escaping air will produce soap bubbles.

3.30 OPERATING PRESSURE RANGE

3.31 The Vacuum/Pressure Pump are designed to be run from slightly below atmospheric to their maximum vacuum level on the intake side. The pumps also may be run from atmospheric to their maximum rated pressure rating. Consult the Specification Table for the ratings of your specific model (See Section 6, Specifications).

3.40 SHUTDOWN PROCEDURES

3.41 After use, Cole-Parmer recommends the pump be run for about 2 minutes disconnected from the vacuum process. The air pumped through the mechanism will purge out water vapor or droplets of water condensate that may have formed on the inside of the pump. This purge of the pump mechanism helps prevent corrosion. For turning of pump, turn the switch to the OFF position.

SECTION 4: MAINTENANCE

4.10 MAINTENANCE PROCEDURES

4.11 Maintaining a Cole-Parmer Vacuum/Pressure Pump
These units are 100% oil-free. The pump employs a non-lube piston and cylinder. No maintenance is necessary for the bearings. All bearings are sealed and permanently lubricated. Lubrication should not be attempted. The units are built for continuous duty operation with the quietness and durability of a diaphragm, but with piston performance The Pump has a service free life-time of 2,000 to 3,000 hours. The Pump is not field serviceable.

4.12 Storage
When the pump is not in use, store in a clean, dry area. 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.

SECTION 5: TROUBLESHOOTING

5.10 VACUUM PROBLEMS

5.11 Leakage, contamination, and unusual outgassing are the general causes of problems associated with poor vacuum. To operate at maximum efficiency, a system must be thoroughly clean. If the system is completely clean and free from leaks and unwarranted vacuum problems still exist, the Air Admiral should be checked. A simple criterion for the condition of the pump is the determination of its maximum vacuum capability. This can be accomplished by blocking of the intake and reading the vacuum level on the gauge.

5.20 PRESSURE PROBLEMS

5.21 Leakage and contamination are the general causes of problems associated with poor pressure. To operate at maximum efficiency a system must be thoroughly clean. If the system is completely clean and free from leaks and unwarranted pressure problems still exist, the Pump should be checked by a service technician.

5.30 TROUBLE SHOOTING GUIDE

Symptoms	Possible Cause	Remedies
Reduced/low vacuum	1. Regulator improperly 2. Air leak	1. Set regulator vacuum level following operating instructions. 2. Check the tubing and connectoes for possible leaks. Attach, tighten or replace.
Device does not start	1. Power cord not plugged in. 2. Defective switch. 3. Vacuum still exists in system.	1. Plug in the power cord. 2. Contact your service center or distributor. 3. Disconnect tubing from the intake hose barb to release vacuun. Reconnect tubing and turn on the device.
Gauge reads incorrectly	1. Faulty gauge	1. Contact your service center for repair
Device runs gauge reads zero	1. Gauge tubing not connected or is leaking	1. Check the tubing and connectors for possiblr leaks. Attach tighten or replace.
Device stops running during use	1. Device overheated 2. Blown fuse or circuit breaker in household circuit. 3. Low voltage to device	1. Unplug device and allow to cool for 10 minutes. Plug in and restart. 2. Replace fuse or reset breaker. 3. Too many motor operated appliances on same circuit.

SECTION 6: SPECIFICATION

6.10 SPECIFICATION TABLE

MODEL No.	79202-00	79202-05
Maximum Vacuum	21.3(±0.01) in.Hg 541(±0.2) mm Hg	21.3(±0.01) in.Hg 541(±0.2)) mm Hg
Dimensions (L x W x H)	184.2 x 109.2x 215.3 mm	184.2 x 109.2x 215.3 mm
Port Connections	1/4" hose barb	1/4" hose barb
Motor	1/11.5 hp (65w) shaded pole	1/11.5 hp (65w) shaded pole
Weight	1.6kg	1.6kg
Electrical Requirements	115V 60Hz 1Ph	230V 50Hz 1Ph
Plug Type	USA	IEC Socket, EU/UK leads
Air Displacement	0.37 (±0.01)CFM 10.5 (±0.2) L/min	0.31 (±0.01)CFM 8.8 (±0.2) L/min
Maximum Pressure	33 (±0.01) psig* 22.8X10^4 Pa	33 (±0.01) psig* 22.8X10^4 Pa
OperatingTemperature Range	0~40 (°C)	0~40 (°C)
Humidity range:	10% to 90% non-condensing	10% to 90% non-condensing
Noise Level	≤70 (±2) dB @ 1 meter	≤70 (±2) dB @ 1 meter
Compliance	UL1450,CSA C22.2,No.68	(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 Duty: Limit output to 33 psig - Continuous Duty: Limit output to 10 psig

MODEL No.	79202-30	79202-35
Maximum Vacuum	21.3(±0.01) in.Hg 541(±0.2) mm Hg	21.3(±0.01) in.Hg 541(±0.2)) mm Hg
Dimensions (L x W x H)	230.5 x 178.7x 216.5 mm	230.5 x 178.7x 216.5 mm
Port Connections	1/4" hose barb	1/4" hose barb
Motor	1/11.5 hp (65w) shaded pole	1/11.5 hp (65w) shaded pole
Weight	2.8kg	2.8kg
Electrical Requirements	115V 60Hz 1Ph	230V 50Hz 1Ph
Plug Type	USA	IEC Socket, EU/UK leads
Air Displacement	0.37 (±0.01)CFM 10.5 (±0.2) L/min	0.31 (±0.01)CFM 8.8 (±0.2) L/min
Maximum Pressure	33 (±0.01) psig* $22.8X10^4$ Pa	33 (±0.01) psig* $22.8X10^4$ Pa
OperatingTemperature Range	0~40 (°C)	0~40 (°C)
Humidity range:	10% to 90% non-condensing	10% to 90% non-condensing
Noise Level	≤70 (±2) dB @ 1 meter	≤70 (±2) dB @ 1 meter
Compliance	UL1450,CSA C22.2,No.68	(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 Duty: Limit output to 33 psig - Continuous Duty: Limit output to 10 psig

SECTION 7: WARRANTY

This Cole-Parmer product is warranted to be free from defects in material and workmanship. This liability of Cole-Parmer under this warranty is limited to servicing, adjusting, repairing, or replacing any unit or component part which in the judgment of Cole-Parmer has not been misused, abused, or altered in any way or damaged by ingestion of foreign material causing impaired performance or rendering it inoperative. Foreign material includes solids, corrosive gases, and recondensed water or solvent vapor. No other warranties are expressed or implied. The method of executing this warranty: servicing, adjusting, repairing, or replacing, shall be at the discretion of Cole-Parmer. Vacuum pumps that have been operated within a vacuum system, or other system, for any period, however short, will be repaired under this warranty rather than replaced.

The warranty is effective for one year from the date of original purchase when:

1. Get warranty registration and state the reason for the return.
2. The product is returned to the factory or other designated service centers, freight prepaid.
3. The product in our judgment is defective through no action or fault of the user.

If the product has become defective through misuse, abuse, alteration, or ingestion of foreign material, repairs will be billed regardless of the age of the product. In this event, an estimate of the repair costs will be submitted and authorization of these charges will be required before the product is repaired and returned.

Warranty Registration

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