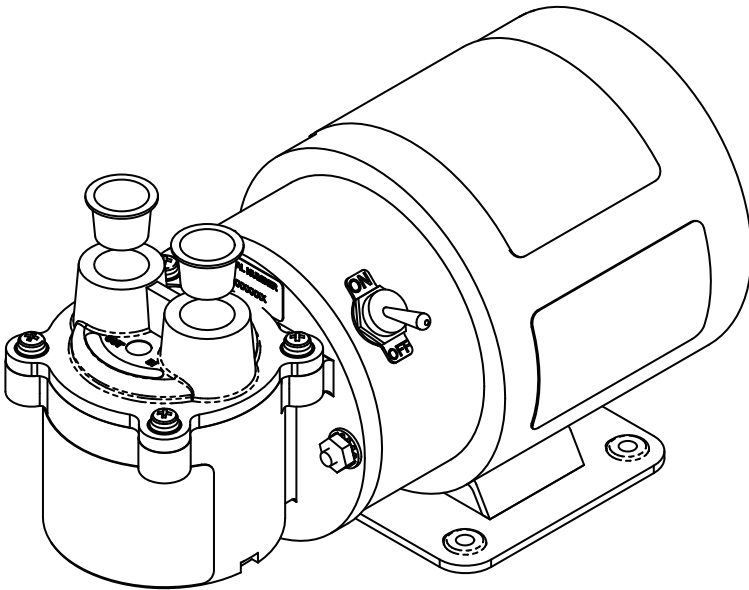


# Cole-Parmer®

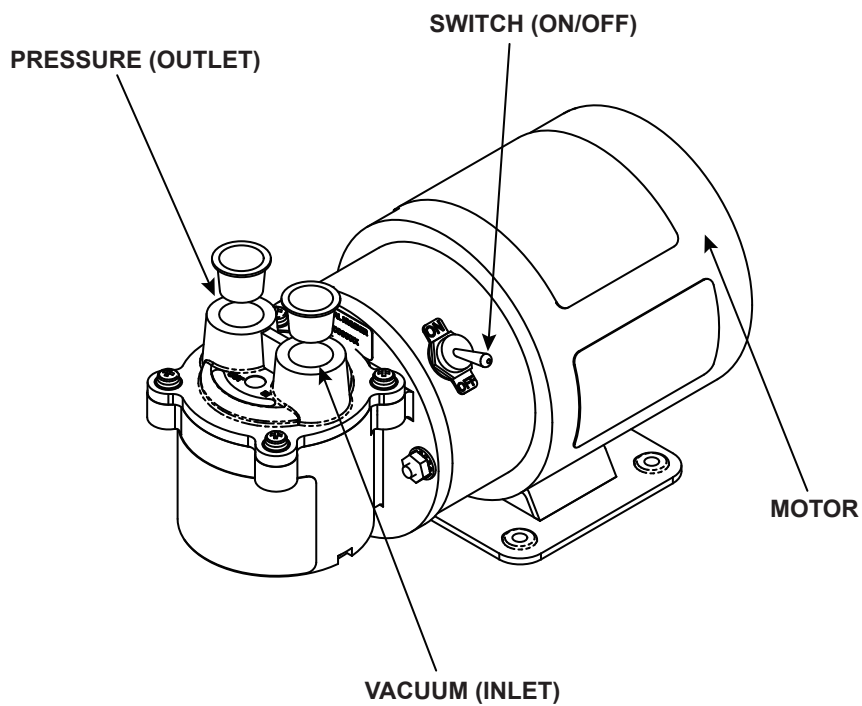
## VP-200 SERIES VACUUM/PRESSURE PUMP



### 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 Pump  
(07532-40 & 07532-45)

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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 diaphragm-operated VP-200 Pump is designed for pressure, suction and gas circulating applications. 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 media being pumped will come in contact with VALOX® and FKM rubber. Polyethylene fittings are supplied. This provides much better chemical resistance than conventional aluminum or stainless steel pumps. The Pumps are available for 115 VAC or 230 VAC applications and are intended for either industrial or commercial use.

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.

The polyethylene fittings provided with the pump will accept 3/8" I.D. flexible tubing.

Figure 1 shows the typical flow characteristics of the 07532-40 pump as related to pressure and vacuum. The corresponding flow data for the 07532-45 (230 VAC) Pump is 5/6 of that shown.

**Note:** Even though model 07532-45 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 07532-40; however, the available torque will decrease. All VP-200 pumps 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.

## OPERATING INSTRUCTIONS

Model 07532-40 is supplied complete with a three-prong grounded plug.

Model 07532-45 is supplied with a two-prong grounded European-type plug.

For starting pump, be sure that the power switch is in the OFF position. Plug in the device and turn the switch to the ON position.

For turning off pump, turn the switch to the OFF position.

Please note: This motor, when operated as outlined in this manual, will have hot surfaces. This condition is normal.



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

Rubber grommet feet are attached to the pump. Rubber grommet feet are excellent for applications involving a semi-exible surface such as a bench top; they help to isolate noise and eliminate creeping.

The pump should be placed on a horizontal plane. The 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 surrounding temperature remains between 0°C and 40°C (32°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.

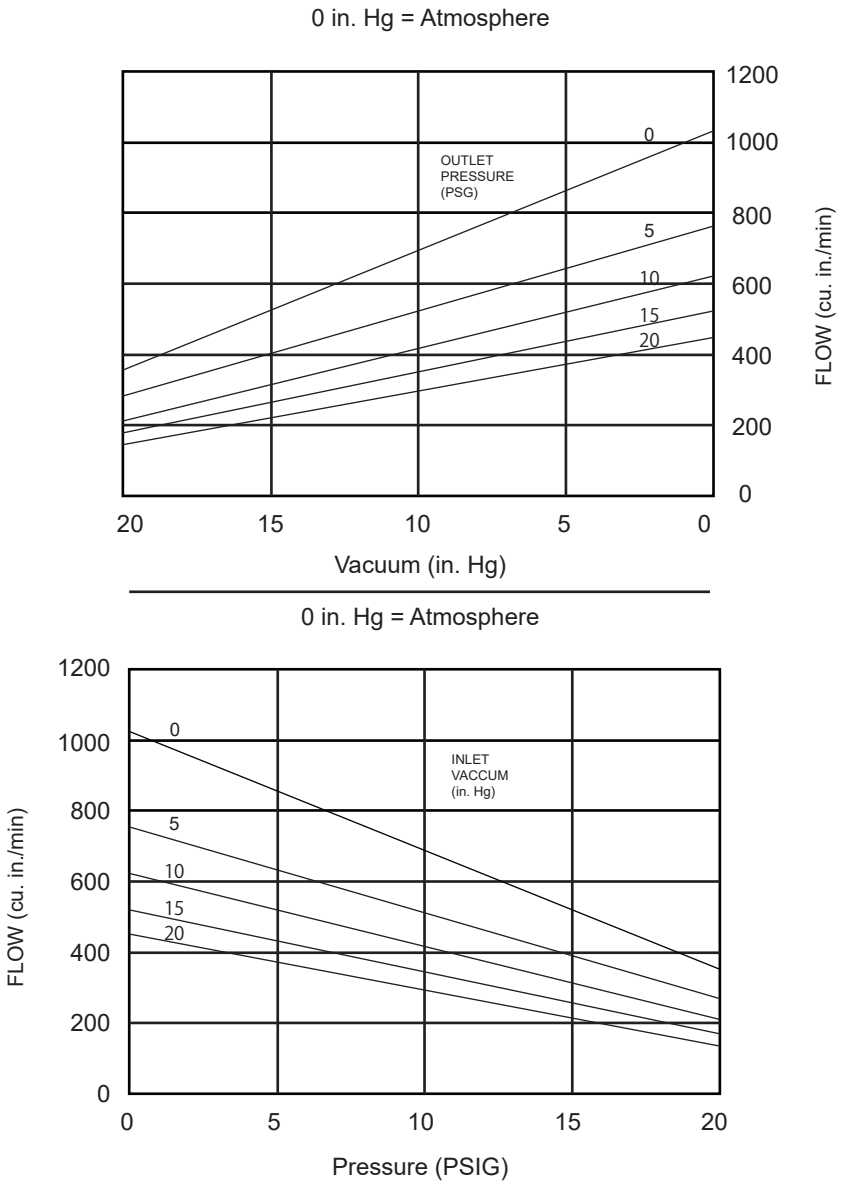


Figure 1



## **GROUNDING INSTRUCTIONS FOR 07532-40**

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.

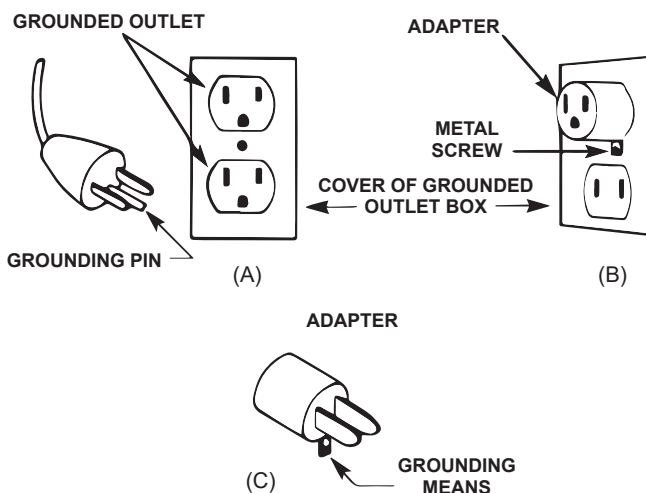


Figure 2

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

### **GROUNDING INSTRUCTIONS FOR 07532-45**

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.

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

Wrap the PTFE sealing tape supplied around the fitting thread (to eliminate any possible leakage) and assemble into the port.

**DO NOT OVERTIGHTEN!** Use only a single turn of tape—hand tighten—then give one more turn with a wrench. Instead of the standard fittings supplied with the pump, any other appropriate system can be attached to the pump.



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

A muffler can be used at the outlet to decrease the noise level if desired. Usually, a three foot length of tubing at both ends is more than adequate for quiet operation. If the air or gas being pumped is relatively dirty, use of an air filter is desirable. Otherwise, excessive amounts of dust and other particles will collect at the valve seats. This may interfere with the proper seating of the valves and will decrease flow, pressure and vacuum characteristics and may make the flow values erratic. Sudden changes in the diameter of system tubes, fittings, bends and other obstructions will increase pressure and/or vacuum in the system and will decrease the available flow. Intentional reduction in flow can be achieved by a simple valve or pinching of the tube at the inlet (preferred for the diaphragm life) or outlet systems.



***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.***

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.



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

## **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.

## SPECIFICATIONS

### MODEL No.

### 07532-40

### 07532-45

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)	203.2 x 101.6x108.0 mm	203.2 x 101.6x108.0 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	2.7kg	2.7kg
Electrical Requirements	115V 60 Hz 1.3A 1PH 0.02HP	230 V 50 Hz 0.75A 1PH 0.02HP
Plug Type	USA	European
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	UL1450,CSA C22.2,No.68	EN 1012-2 & EN 60204 (2006/42/EC) EN 61000-6-2 (2014/30/EU) 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

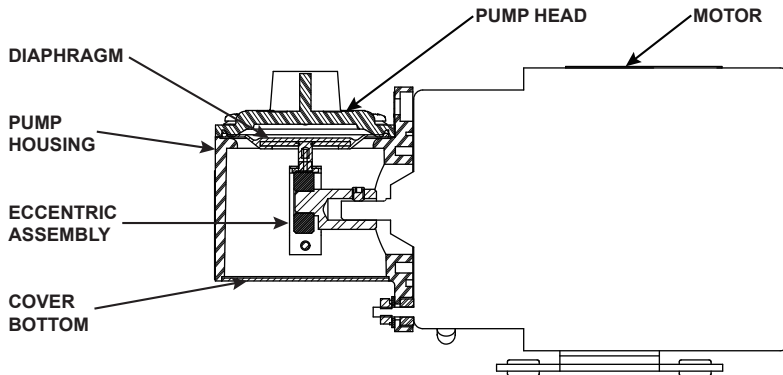


Figure 3 - Pump Main Components Diagram

## 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.

## 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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UK  
T: +44 (0) 1480 272279  
E: uk.sales@antylia.com  
W: coleparmer.co.uk

Germany  
T: +49 (0) 9377 92030  
E: de.sales@antylia.com  
W: coleparmer.de

France  
T: +33 (0) 1486 37800  
E: fr.sales@antylia.com  
W: coleparmer.fr

Italy  
T: +39 (0) 284349215  
E: it.sales@antylia.com  
W: coleparmer.it

Other  
T: +1 847 549 7600

India  
T: +9122 61394444  
E: info@coleparmer.in  
W: coleparmer.in

China  
T: +1 847 549 7600  
E: sales@antylia.com  
W: coleparmer.com

USA  
T: +1 847 549 7600  
E: sales@antylia.com  
W: coleparmer.com

Canada  
T: +514 355 6100  
E: info@antylia.ca  
W: coleparmer.ca

**Cole-Parmer®**  
an antylia scientific company

625 East Bunker Ct.,  
Vernon Hills, IL 60061  
US

Manufactured by Cole-Parmer Laboratory Equipment (Shanghai) Company  
Address: Building 17, No. 700 Xinfu Road, Songjiang District, Shanghai,  
China, 201611



Version B