

DRP SERIES

Dry ROCKING PISTON Vacuum Pumps

Models DRPC-4 DRPS-7

INSTALLATION
OPERATION

MANUAL



WARNING

**DO NOT OPERATE BEFORE
READING MANUAL**



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FORWARD

This manual contains installation, operation, maintenance and troubleshooting information for the Model DRPC-4 & DRPS-7 Rocking Piston DRY Vacuum Pumps. Please read it in its entirety before operating the pump.

Our Vacuum Pumps are designed to ensure safety when used properly. It is the responsibility of the user to follow safety-related warnings, cautions, notes and other requirements described in this manual.

Returned equipment will not be accepted by our company without prior authorization. Prior to shipping please call for a returned goods authorization number (RGA).

Our company reserves the right to cancel the warranty if the pump is disassembled without authorization, if pump fluids are used that are not compatible with the design and materials used in the manufacturer of the pump, and if unauthorized spare parts are used.

WARNING

The pumps associated with this manual use industrial systems including heavy Current/Voltage installations. Depending on the operating conditions, particularly where dangerous conditions may be present, improper handling could lead to severe personal injury or property damage.

Those responsible for safety of the installation must therefore insure that:

- ONLY QUALIFIED PERSONNEL ARE ALLOWED TO WORK ON THE MACHINE(S).
- THESE PERSONS ALWAYS HAVE AT THEIR DISPOSAL THE SUPPLIED OPERATING INSTRUCTIONS AND OTHER PRODUCT DOCUMENTATION WHEN DOING SUCH WORK, AND THEY UNDERTAKE TO FOLLOW ANY SUCH INSTRUCTIONS CONSTANTLY.
- NONQUALIFIED PERSONNEL ARE NOT PERMITTED TO WORK ON OR NEAR THE MACHINE(S).
- ALL WORK DONE ON ANY ELECTRICAL DEVICES AND ASSOCIATED EQUIPMENT (including motors, control panels, circuit panels, etc) MUST PERFORMED BY A PROPERLY TRAINED AND CERTIFIED ELECTRICIAN.
- THE WARNINGS, CAUTIONS, AND INSTRUCTIONS DISCUSSES IN THIS MANUAL CANNOT COVER ALL POSSIBLE CONDITIONS AND SITUATIONS THAT MAY OCCUR. IT MUST BE UNDERSTOOD BY THE OPERATOR THAT COMMON SENSE AND CAUTION ARE FACTORS THAT CANNOT BE BUILT INTO THIS PRODUCT, BUT MUST BE SUPPLIED BY THE OPERATOR.

SAFETY PRECAUTIONS

CAUTION: Never operate the pump if it has a damaged cord or plug. If the unit is not working properly, has been damaged or has fallen in water, please return to US Vacuum for examination and repair.

CAUTION: Keep cord away from heated surfaces. Never block any air openings or place on a soft surface where air 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 foreign material.

CAUTION: Do not use this pump in oxygen service. Wear safety goggles or glasses when operating this product. Identify intake and discharge of the pump before using.

CAUTION: This pump is thermally protected and can automatically restart when the protector resets. Always disconnect power source before servicing. All electrical products generate heat, to avoid serious burns, never touch the unit during or immediately after operation.

CAUTION: Do not disassemble. Disassembly or attempted repairs if accomplished incorrectly can create electrical shock hazard. Refer servicing to a qualified service provider only.

CAUTION: Unit is provided with a three-pronged plug. Be sure to connect pump to a grounded outlet only. Do not use this product where it can fall or be pulled into water or other liquids.

CAUTION: Do not use in or near explosive atmospheres where aerosol products are being used. Do not pump anything other than atmospheric air.

FOR INDOOR USE ONLY

SPECIFICATIONS

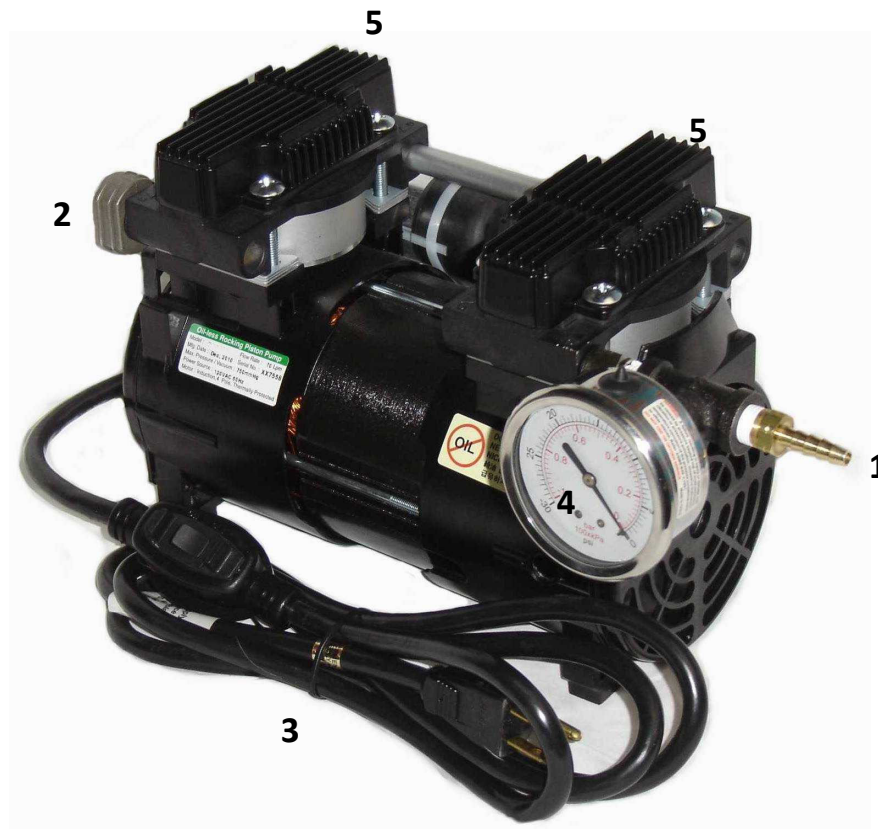
Pump Model		DRPC-4	DRPS-7
Displacement	CFM	3.7	7
Ultimate Vacuum	In. Hg	29.5"Hg	29.5"Hg
Motor	Hp	0.67Hp (500W)	0.67Hp (500W)
Motor type		Capacitor Start w/ thermal protection & cooling fan; 120 v, 60hz	
Noise Level	dBa	58	
Inlet connection	in.	1/4"	1/4"
Dimensions	mm	9.84" (L) x 5.12 (W) x 7.99 (H)	
Pump Weight	Lbs.	20	20
Dimensions	mm	250 x 130 x 200	250 x 130 x 200

DESCRIPTION

The principle of a ROCKING PISTON pump can be viewed as a combination of a reciprocating piston and diaphragm designs. The rocking piston pump mounts a piston rigidly on top of a diaphragms' eccentric connecting rod. The piston is surrounded by a sealing cup made of high grade aluminum for strength and heat dissipation. The sealing cup functions both as a sealing equivalent to the rings of a piston compressor-and as a guide member for the rod. The sealing cup expands as it travels upwards, thus maintaining contact with the cylinder wall and compensating for the rocking motion.

The rocking piston pump combines with best from the reciprocating and diaphragm designs. The diaphragm allows for quiet, compact and oil-less operation while the reciprocating motion of the pump allows for high compression, thus high vacuum performance.

- 1= INLET HOSE BARB
- 2= DISCHARGE MUFFLER
- 3= POWER CORD W/ ON-OFF SWITCH
- 4= VACUUM GAUGE
- 5= PUMPING HEADS



GENERAL

UNPACKING

Inspect the box and pump carefully for any signs of damage incurred in transit and report with-in 7 days of receipt. Since all our pumps are shipped F.O.B. our factory, such damage is the responsibility of the carrier and reported to them. The inlet & exhaust of the pumps are covered with plastic caps to prevent dirt and other foreign substances from entering the pump. Leave the caps in place until you are ready to pipe the pump to your equipment.

The pump comes with a 120v power cord w/ N. American plug, 0-30"Hg vacuum gauge, mini ball valve and hose barb.

LOCATION

The pump comes with rubber feet attached to the pump and are excellent for mounting on semi-flexible surfaces such as a bench top; they help isolate noise and eliminate creeping...mount only on a horizontal plane.

Locate the pump in a clean, dry and well ventilated area; make sure not to block ventilation ports on the motor Housing. The pump should be placed where the surrounding temperature remains between 10-40 Deg C (50-104 Deg F). Always check to insure location choice is protected from direct or indirect moisture contact. Install the pump at the highest point within the system to prevent possible water condensate from entering the pump.

POWER REQUIREMENTS

Power source for the pump is 115v, 60hz only. Serious damage may occur if connected to an improper voltage supply. Pump comes with a grounded power plug and must be plugged into an outlet properly grounded.

Overload Protection: The motor is supplied with thermal overload protection as an aid to minimize motor failure. Overload protection is standard on all DRP vacuum pumps and is automatic. Automatic reset protection is designed to reset itself after a predetermined cooling period. If the fault to the drive remains unaltered, the motor will cycle on and off until fault is corrected.

Power cord: If necessary to use an extension cord, use a 3-wire extension cord that has a 3-blade grounding plug and a 3-slot receptacle. Make certain the extension cord wire size is not less than 18 gauge for 25 feet, 16 gauge for 50 feet and 14 gauge for 100 feet. An undersized cord will cause a drop in line voltage resulting in loss of power and overheating.

VACUUM CONNECTION

All DRP pumps come with a suction hose barb which will accept a 1/4" I.D. rubber hose. Hose clamps should be used to hold the hose in place.

VACUUM GAUGE

A 0-30"Hg vacuum gauge comes standard with all DRP vacuum pumps. The gauge is referenced to local barometric pressure, thus variability of maximum vacuum reading will occur from day to day.

START-UP

Before attaching the pump to a system it is well to familiarize yourself with the function and action of the vacuum pump that you purchased. Review the power requirements and safety warnings mentioned in the front of this manual.

Take every precaution to prevent foreign particulates from entering the pump. Particulates will damage the pumps' performance. Install a particulate filter in the foreline of the pump if particulates are present.

WARNING:

THE PUMP IS NOT RECOMMENDED FOR PUMPING ACID, BASE OR ORGANIC VAPORS OR GASES. PUMPING FLAMMABLE VAPORS OR GASES CAN LEAD TO SERIOUS SAFETY HAZARD LEADING TO FIRE OR EXPLOSION

LEAK DETECTION

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 this pump can be located by slightly pressuring the system and painting the suspected area with a thick soap solution. Escaping air will produce soap bubbles.

OPERATING VACUUM RANGE

The pumps are designed to operate from atmosphere to their maximum vacuum level on the intake side TO 27.5"Hg (DRPS-7) and 29.5"Hg (DRPC-4)

SHUTDOWN PROCEDURES

After use, it is recommended to run the pump for about 2 minutes disconnected from the vacuum process. The air pumped through the vacuum pump will purge out water vapor or droplets of water condensate that may have formed on the inside of the pump.

NOTE:

When the pumps are turned off while under vacuum, the pump must be vented or the suction pressure increased to a level of at least 24-25"Hg before the pump can be turned back on again. If the pump is off and excessive vacuum is maintained (>25"Hg) on the suction port, the vacuum pump will have trouble restarting and/or damage the motor.

TROUBLESHOOTING

TROUBLE

The pump does not reach “blank-off” pressure or takes too long to evacuate the system.

Possible cause: The vacuum system or vacuum piping is not leak tight.

Remedy: Check the hose and pipe connections for possible leak. Tighten fittings

Possible cause: The pump inlet is plugged.

Remedy: Clean inlet and install an inlet filter if the problem repeats frequently.

Possible cause: Debris in valves

Remedy: Remove debris and check valves for damage

Possible cause: Damages gaskets

Remedy: Replace gaskets if necessary.

Possible cause: Loose head screws

Remedy: Tighten head screws

TROUBLE

The pump is loud

Possible cause: Debris in valves

Remedy: Remove debris and check valves for damage

Possible cause: Damages gaskets

Remedy: Replace gaskets if necessary.

Possible cause: Loose head screws

Remedy: Tighten head screws

TROUBLE

The pump will not start

Possible cause: The motor does not have the proper supply voltage caused by use of an undersized extension cord.

Remedy: Plug pump into wall outlet without extension cord and test. If pump starts, use higher gauge extension cord.

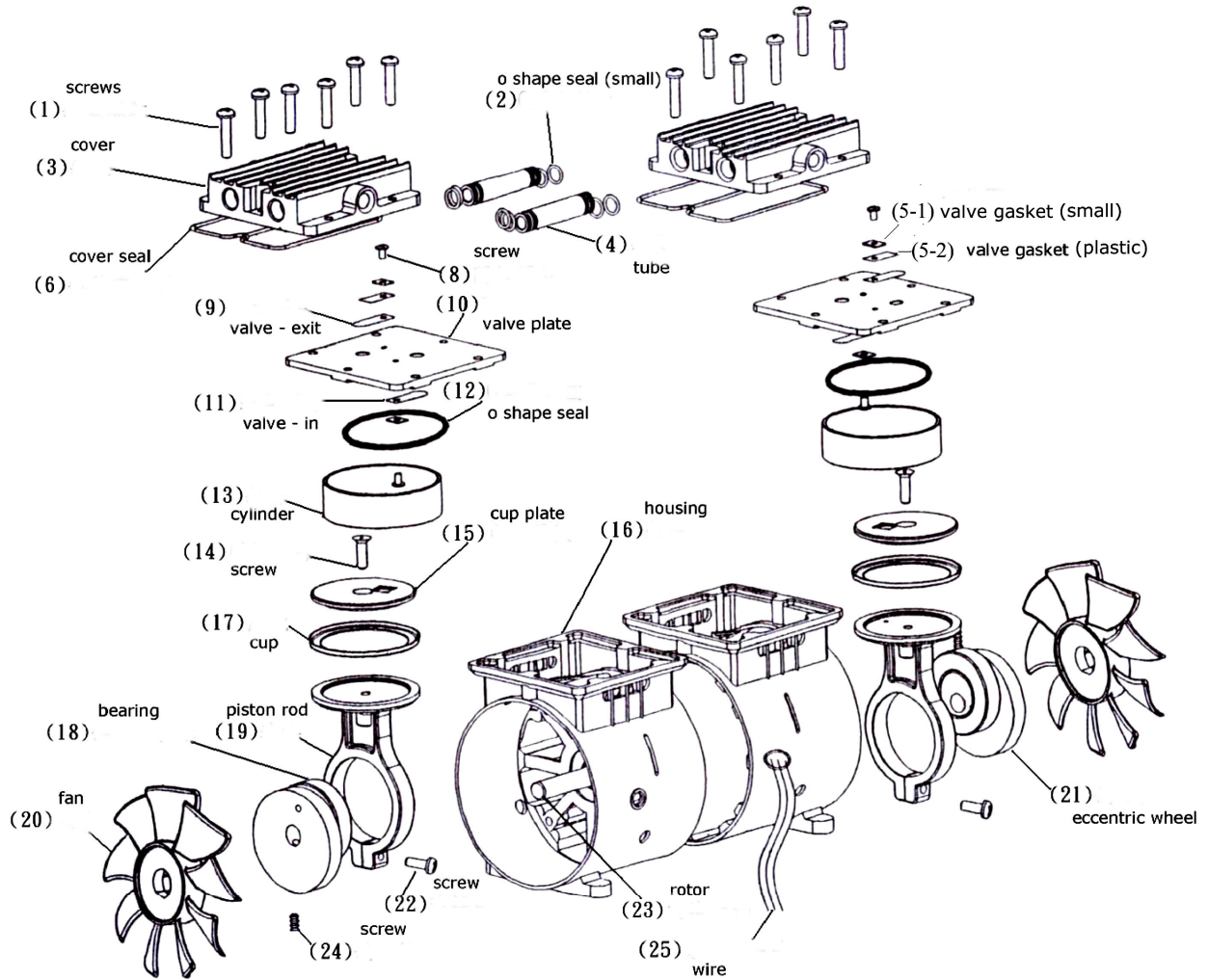
Possible cause: The motor thermal switch has tripped due to high temperature operation.

Remedy: Pump will restart automatically once pump cools down.

Possible cause: Motor hums, but will not start. Capacitor has failed or foreign material has become lodged inside the pump.

Remedy: Clean out obstruction inside pump or return to US Vacuum for servicing

MODEL DRPC-4 & DRPS-7



REPAIR KIT PT# DRP4.7.RKIT

Repair kit includes item nos: 5-1, 5-2, 6, 9, 11, 12, 13, 17

WARRANTY– VACUUM PRODUCTS

Subject to terms and conditions hereinafter set forth and set forth in General Terms of Sale, US Vacuum Pumps LLC (the seller) warrants products of its manufacturer, when shipped, and its work (including installation & start-up) when performed, will be of good quality and will be free from defects in material and workmanship. This warranty applies only to sellers equipment, under use and service in accordance with seller's written instructions, recommendations and ratings for installation, operating, maintenance and service of products for a period of 12 months. Because of varying conditions of installation and operation, all guarantees of performance are subject to plus or minus 5% variation.

THIS WARRANTY EXTENDS ONLY TO BUYER AND/OR ORIGINAL END USER, AND IN NO EVENT SHALL THE SELLER BE LIABLE FOR PROPERTY DAMAGE SUSTAINED BY A PERSON DESIGNATED BY THE LAW OF ANY JURISDICTION AS A THIRD PARTY BENEFICIARY OF THIS WARRANTY OR ANY OTHER WARRANTY HELD TO SURVIVE SELLER'S DISCLAIMER.

All accessories furnished by seller but manufactured by others (motor) will bear only that manufacturer's standard warranty.

All claims for defective products, parts, or work under this warranty must be made in writing immediately upon discovery and, in any event within one (1) year from date of shipment of the applicable item by seller. Unless done with prior written consent of seller, any repairs, alterations or disassembly of sellers equipment shall void warranty. Installation and transportation costs are not included and defective items must be held for seller's inspection and returned to sellers Ex-works point upon request.

THERE ARE NO WARRANTIES, EXPRESSED, IMPLIED OR STATUTORY WHICH EXTENDS BEYOND THE DESCRIPTION ON THE FACE HEREOF, INCLUDING WITHOUT LIMITATION, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS OF PURPOSE.

After buyers submission of a claim as provided above and its approval, seller shall at its option either repair or replace its product, part, or work at the original Ex-works point of shipment, or refund an equitable portion of the purchase price.

The products and parts sold hereunder are not warranted for operation with erosive or corrosive materials or those which may lead to a build-up of material within the product supplied, nor those which are incompatible with the materials of construction. The buyer shall have no claim whatsoever and no product or part shall be deemed to be defective by reason of failure to resist erosive or corrosive action nor for problems resulting from build-up of material within the unit nor for problems due to incompatibility with the materials of construction.

Any improper use, operation beyond capacity, substitution of parts not approved by seller, or any alteration or repairs by others in such manner as in sellers judgment affects the product materially and adversely shall void this warranty.

No employee or representative of seller other than an officer of US Vacuum Pumps LLC is authorized to change this warranty in any way or grant any other warranty. Any such change by an officer of the company must be in writing.

In no event shall buyer be entitled to incidental or consequential damages. Any action for breach of this agreement must commence within (1) year after the cause of action has occurred.

NOTES