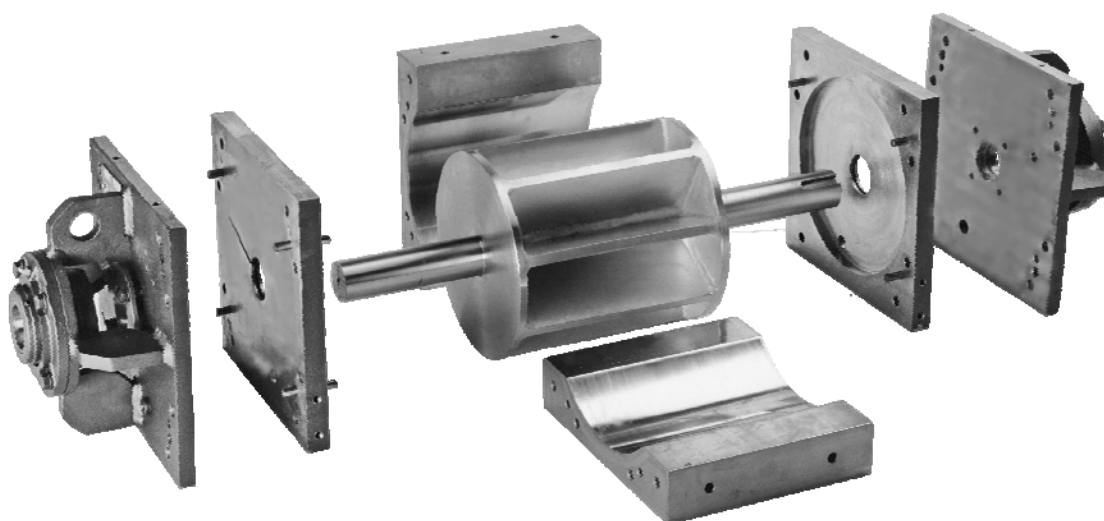


PMV[®] Rotary Valve

Service & Maintenance Manual



Size: _____

S/N: _____

Temperature: _____

Beveled Rotor: Yes / No

Rotation: CW / CCW

Rotor: Long Shaft / Short Shaft

Congratulations!

You have purchased the most rugged and durable rotary valve on the market, and you should experience long, reliable service from the Precision PMV rotary valve.

We stand ready to answer any questions and assist you as necessary to help you get the optimum performance from your PMV rotary valve. Please contact our office in Eugene, Oregon USA at (541) 484-9841.

Please carefully review all of the material in this Service & Maintenance Manual. It contains important information about the start-up and run-in of the PMV, descriptions of simple maintenance procedures, and information on ordering replacement parts.

Additional information, including **instructional videos** demonstrating several service operations, can be found on our website at www.premach.com

By fully understanding how your valve is constructed, assembled, and operated, you will be able to properly install and maintain it for long and trouble-free service.

If there is anything further that we can do to assist you, please contact us. Your feedback is important to us.

Thanks for your business!

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Safety

Safety is a primary concern at Precision Machine and Mfg., and we encourage our customers to make it their top priority also.

State and local rules vary from location to location, and it is the user's responsibility to follow those standards. These procedures are a must for the safe operation and maintenance of the Precision PMV rotary valve:

- A. Personal Protection Equipment must be worn while working on the valve.*
- B. All guards and safety devices must be in place while the valve is in operation.*
- C. If maintenance is performed with the valve in place, all appropriate lockout and tag-out devices must be in place to prevent power to the valve.*
- D. Normal operation of the valve may create burrs and sharp edges. Caution must be taken when handling the valve and its components.*
- E. The valve and many of the components are very heavy. Sufficient manpower and/or hoists must be used when they are moved.*

The safety decals, shields, and other protective features designed into the PMV rotary valve and furnished with it or recommended for it are there for your protection.

The operation and maintenance of the PMV should be restricted to only those personnel trained in its use.

The various precautions and recommendations detailed in this Manual are not necessarily all inclusive. This manual is designed to provide general safety and operational guidance relating to typical installations with which we are familiar.

If you have any safety or operational questions pertaining to the design, operation, or application of your PMV rotary valve, we encourage you to contact Precision for assistance.

Warnings

1. Lockouts required for this equipment should be installed prior to initial start-up and operation.

→ *These lockouts are **not** the responsibility of Precision Machine & Manufacturing, Inc.*

2. Rotary valves can cause severe physical injury if proper safety procedures are not observed during the course of operation, maintenance, inspection, or clearing of an equipment jam.

→ *The drive motor must be locked out before inspection or service of this equipment.*

3. Welding or burning on any part of the rotary valve is not recommended. Any distortion of the valve caused by welding or burning could cause the rotor to seize in the housing.
4. Power and control wiring should be installed by a licensed and experienced electrician to assure safe and productive operation of the PMV rotary valve.

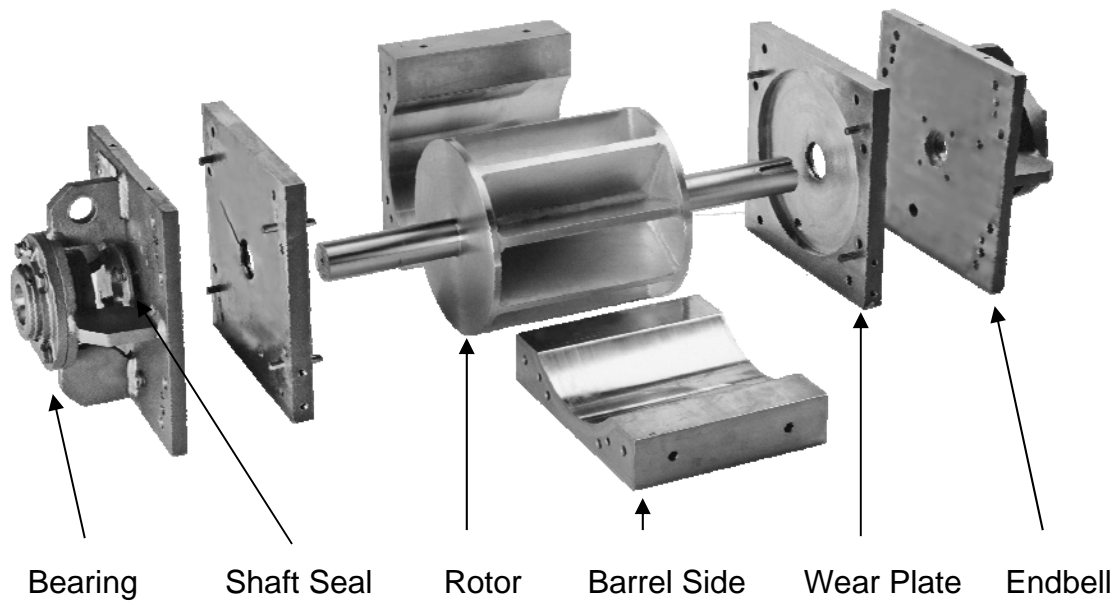
Introduction

The Precision PMV rotary valve is designed for a long service life, and ease of operation with low maintenance. Familiarization with the valve and its function is a must along with a routine maintenance plan. A rigorous maintenance schedule will optimize the efficiency and life of the valve.

The system operator should fully understand the function of the PMV rotary valve to know its proper operation. The unit serves primarily as a feeder, to feed a bulk product into process equipment or conveying equipment, or as an airlock to segregate differential pressures above and below the rotary valve.

Due to its modular design, the Precision PMV may be unfamiliar to plant personnel who may be used to a rotary valve built from a casting. The PMV design is meant to be simple to operate and repair if required.

Precision's terminology for the various PMV components is as follows:



- A. The two **endbells** are identical to one another and can be interchanged with one another if the need arises.
- B. The two **wear plates** are also identical and can be swapped end-to-end in the rotary valve if needed.
- C. Most importantly, the two **barrel sides** are identical to one another and can be swapped side-to-side. Because the barrel sides are also completely symmetrical, each barrel side can be rolled over and reversed in its place with the top edge becoming the bottom edge.
- D. A closed-end **rotor** as shown above is Precision's standard, but the company can build open-end or open-vane rotors as well if required.
- E. Precision PMV **rotors** are either a "short shaft" design, on which a belt-and-sheave or chain-and-sprocket drive is installed, or a "long shaft" design for the installation of a Nord shaft-mounted gear-motor or other shaft-mounted drive.

Precision's sizing system for the PMV's refers to the rotor diameter. A PMV-10, for example, refers to a rotary valve with a 10" rotor diameter. Other rotary valve manufacturers commonly refer to the inlet dimension or some other dimension in their terminology. Care should be exercised in sizing and specifying rotary valves to assure that like capacities are being described.

The PMV is offered in several configurations that utilize different combinations of materials and surface treatments.

	Rotor	Wear plates	Barrel sides	Endbells
Severe Duty	Tri-Braze steel	Mild steel with RW-90 coating	Tri-Braze steel with RW-90 coating	Mild steel
Ultra Duty	Tri-Braze steel with ion-nitriding surface treatment	Mild steel with ion-nitriding surface treatment	Tri-Braze steel with ion-nitriding surface treatment	Mild steel

In addition, PMV rotary valves may be constructed of 304, 316, or 2205 duplex stainless steel.

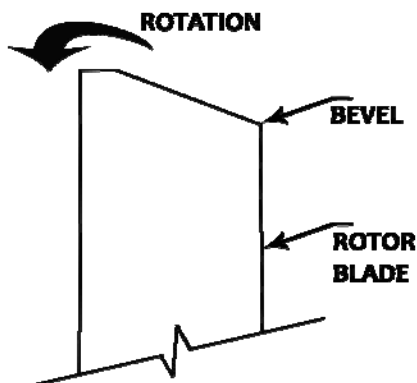
Dimensions and capacities of the PMV rotary valves are as follows:

	CFR	Shaft	Height	Width	Inlet Opening	Approx. Weight
PMV-6	0.06	1-15/16"	10.0"	11.0"	6.0" x 6.0"	250
PMV-8	0.17	1-15/16"	10.0"	11.0"	6.5" x 8.0"	275
PMV-10	0.34	1-15/16"	12.0"	12.0"	7.0" x 10.0"	350
PMV-12	0.62	1-15/16"	15.0"	15.0"	9.0" x 12.0"	525
PMV-14	1.00	2-7/16"	17.0"	18.0"	9.6" x 14.0"	750
PMV-16	1.60	2-7/16"	20.0"	21.75"	10.8" x 16.0"	1050
PMV-18	2.25	2-15/16"	22.0"	24.0"	18.0" x 18.0"	1300
PMV-20	3.10	2-15/16"	24.0"	26.0"	20.4" x 20.0"	1475
PMV-22	4.00	2-15/16"	26.0"	30.0"	22.0" x 22.0"	2300
PMV-24	5.14	3-7/16"	29.0"	32.0"	24.0" x 24.0"	3170
PMV-26	6.95	3-7/16"	32.0"	36.0"	26.0" x 26.0"	3650
PMV-28	8.78	3-15/16"	34.0"	38.0"	28.0" x 28.0"	4140
PMV-30	10.9	3-15/16"	36.0"	40.0"	30.0" x 30.0"	4600

Installation and Startup

NOTE: BEFORE ANY INSPECTION OR MAINTENANCE, YOU MUST FOLLOW STANDARD 'LOCK-OUT/TAG-OUT' PROCEDURES FOR ALL POWER SOURCES AS DEFINED BY OSHA. SEE WARNINGS

- A. Rotation** – PMV's equipped with beveled rotor vanes must turn with beveled vane edge as the trailing edge; Precision installs a directional sticker on the PMV to indicate the direction. The PMV should be installed and wired per this directional instruction.



For PMV's without beveled rotor vanes, the valve may be rotated in either direction.

- B. Clearances** – The clearance between the rotor and the barrel sides is set at Precision's factory and no field adjustment is possible.

The clearance between the rotor ends and the wear plates is also set at Precision's factory. Shipping and/or installation may cause the rotor to shift side-to-side. A rubbing noise or binding of the rotor may be an indication that the rotor has shifted and is contacting one of the wear plates. The clearance can be adjusted in the field by loosening the set screws on the bearing collars and repositioning the rotor to center it in the inlet opening and then re-tightening the set screws in their proper position.

- C. Lubrication** – Each PMV ships from Precision's factory pre-lubricated.
- D. Wiring** – Power and control wiring of the PMV rotary valve should be completed by a qualified electrician with careful attention paid to the rotation direction if the PMV is equipped with a beveled rotor.
- E. Air Purge Kit** – See Appendix #1 on page 26 for more details on the Air Purge Kit
- F. Temperature** – When an order is placed with Precision for a PMV rotary valve, the customer must specify a temperature for the material that will be passing through the valve. Most commonly, this is "ambient" meaning that material will be at roughly the same temperature

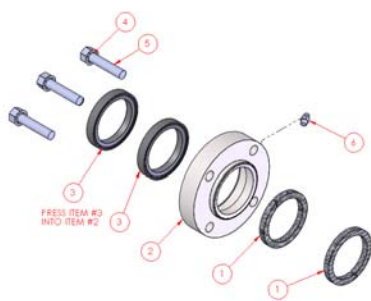
as the valve's surroundings. However, if the material is to arrive at the valve in an elevated temperature then that should be noted at the time the order is placed.

Precision will machine the rotor to a known diameter for a specified material temperature as part of the manufacturing process. This is to allow for thermal expansion in operation so that the rotor does not contact the barrel sides.

If the temperature was not correctly specified, it is possible that a rotor-to-barrel side contact can take place and this will often show up within the first few hours of operation. The most common symptom will be a regular scraping or ticking sound as the rotor turns. In more serious cases where the temperature is considerably different, it can result in the valve locking up.

G. Shaft Packing & Seal Run-In – See the exploded view parts diagrams in this manual for a detailed view of the shaft packing and seals configuration on each size of PMV.

All sizes of PMV's have two wraps of a square, graphite-impregnated packing installed inside the end bell and held in place by a seal ring. At Precision's factory, this seal ring is tightened so that the in-board lip on the seal ring just disappears inside the end bell.



PMV-6 to PMV-12

- 1 Packing Media
- 2 Seal Ring
- 3 Double-Lip Seal



PMV-14 to PMV-30

- 1 Packing Media
- 2 Seal Ring
- 3 Double-Lip Seal
- 4 Packing Gland

PMV-6's to PMV-12's have two nitrile double-lip seals pressed into the outboard side of the seal ring. PMV-14's and larger have a single nitrile double-lip seal and a wrap of a square, graphite-impregnated packing pressed into the outboard side of the seal ring and held in place by a packing gland.

After an initial 4-8 hours of operation, it is highly recommended that the four bolts holding the seal ring (and the packing gland on larger size PMV's) be checked to make sure that they are tight and have not worked loose.

Even if the four bolts are tight after an initial run-in, Precision recommends that the bolts be tightened approximately $\frac{1}{4}$ to $\frac{1}{2}$ turn in order to firmly seat the packing and seals.

Inspection and Preventative Maintenance

***NOTE:** BEFORE ANY INSPECTION OR MAINTENANCE, YOU MUST FOLLOW STANDARD 'LOCK-OUT/TAG-OUT' PROCEDURES FOR ALL POWER SOURCES AS DEFINED BY OSHA. SEE WARNINGS*

- A. Daily Inspection** – A short visual inspection of the PMV rotary valve each day will result in the early detection of any possible maintenance or operational issues so that the user will experience reliable, trouble-free performance for a long time.

The daily inspection should include looking for: 1) any evidence of material or air escaping around the shafts, 2) any evidence of material or air escaping around the inlet or discharge flanges of the rotary valve, 3) any evidence of increasing temperature in the valve, for example discolored paint or areas that are hot to the touch, and 4) any indication that grease is required.

A number of issues may also be detected by listening carefully to the valve while it is operating. Scraping or regular ticking may be an indication that the rotor has shifted. Listen carefully to the valve in operation; if the sound of metal-on-metal scraping or knocking is heard, discontinue operation, lock-out the drive, and visually inspect all components for wear or misalignment.

- B. Lubrication** - Precision recommends the use of a good-quality, all-purpose grease for lubricating the rotor bearings. The grease should be appropriate for the temperature conditions where the rotary valve is installed. Too much grease will damage bearing seals and should be avoided.

Precision recommends that the lubrication of the PMV bearings be checked bi-monthly. More frequent re-lubrication is generally not necessary but will depend on the operating conditions in the customer's location and the duty cycle for the PMV rotary valve.

In addition to lubricating the bearings, it is recommended that the lubrication of the shaft seal ring be checked on the same schedule and that the same grease be used.

- C. End Bell Clean-Out Ports** – Both end bells on a PMV are equipped with two threaded ports below the rotor shaft. The ports are capped with an Allen head plug.



Figure 1

It is a good practice to regularly remove the plugs and blow compressed air into the ports to loosen and remove any material that may have built up between the rotor ends and the wear plates. Allowing material to build up in this space will increase the wear on the PMV components. The frequency with which this operation should be done is dependent on operating conditions in the plant.

D. Shaft Packing & Seal Adjustment -

Over time, the shaft packing and seals on the PMV rotary valve will begin to lose their effectiveness due to the rotational movement of the shaft. The most obvious way to detect a loss of effectiveness is to look for visual evidence that air or the material (dust or small particles) being processed is escaping around the shaft.

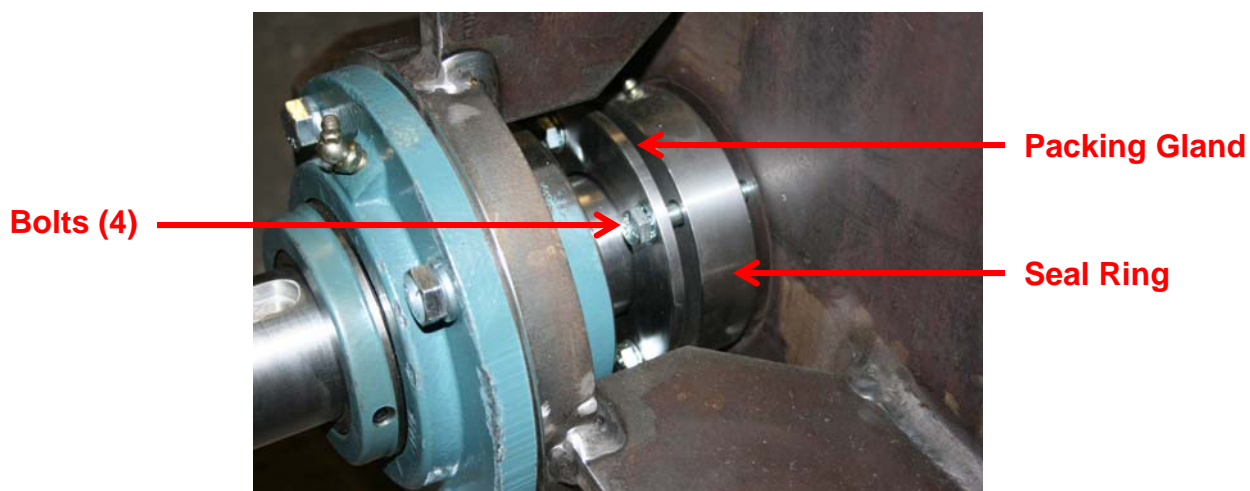


Figure 2

It is not possible for Precision to recommend a fixed period of time between adjustments as operating conditions can vary greatly.

If evidence is found that indicates that air or material is escaping around the shaft, it is recommended that the four bolts holding the seal ring (and packing gland on larger PMV's) be tightened approximately ½ turn to compress the packing. This process can then be repeated as necessary until no further adjustment is possible and the packing must be replaced.

Maintenance Procedures

NOTE: BEFORE ANY INSPECTION OR MAINTENANCE, YOU MUST FOLLOW STANDARD 'LOCK-OUT/TAG-OUT' PROCEDURES FOR ALL POWER SOURCES AS DEFINED BY OSHA. SEE WARNINGS

A. Shaft Packing & Seal Replacement - When the packing no longer responds to adjustment as described above or no longer provides an effective seal around the shaft, the shaft packing should be replaced. The steps in this procedure are as follows:

1. Wipe any excess grease or other surface contaminants off the drive shaft outboard of the shaft seal assembly; this will make it easier to slide the shaft seal assembly away from the end bell and to slide it back into place
2. Loosen and remove the bolts holding the seal ring (and packing gland, if equipped); slide the shaft seal assembly out and up against the bearing
3. Remove the remnants of the old graphite packing material and clean out the packing gland area of the end bell
4. Install two wraps of new square, graphite-impregnated packing into the end bell; see the parts diagrams in this manual for part numbers for this material
5. Reposition the seal ring (and packing gland, if equipped) up against the end bell, and sequentially tighten the bolts until the inboard lip on the seal ring just disappears evenly inside the end bell. **Do not over tighten.**
6. For PMV-6 to PMV-12 models, check to make sure that the double-lip seals which are pressed into the outboard side of the seal ring are still in place and have not become hung up along the shaft.

B. Bearing Replacement – The Dodge Type E piloted flange bearings that are used on the Precision PMV are very reliable and should provide years of dependable service. In the event that a bearing replacement is necessary, the steps in the procedure are as follows:

1. Loosen the set screw on the bearing collar
2. Remove the four bolts that hold the bearing into the end bell bearing boss and slide the bearing off the shaft
3. Slide the new bearing onto the shaft and push it up into end bell bearing boss; align the bolt holes and re-install the four bolts. The bearing will center the shaft and rotor once the bearing is firmly re-seated in the end bell bearing boss
4. Align the set screw hole with the dimple in the shaft by rotating the bearing collar.
Note: Precision dimples the shaft on only one side of the rotary valve so it is possible that there is no dimple
5. Firmly tighten the set screw after aligning with the dimple in the shaft. If there is no dimple on the shaft where the bearing is being replaced, simply tighten the set screw at any point.

C. PMV Disassembly and Reassembly – The modular design of the PMV facilitates simple disassembly and reassembly either where installed in the plant or in a workshop.

Complete or partial disassembly may be necessary to replace an individual PMV component, to clear a jammed rotor, or to clean out material build-up in the rotor pockets.

Precision normally recommends that the PMV valve be disassembled “one end at a time” rather than trying to simultaneously disassemble both ends.

The steps in the procedure are as follows:

1. Loosen and remove the set screws in the bearing collar. If the disassembly is being done where the valve is installed, carefully note the distance from one end of the shaft to the bearing – this information will be necessary to center the rotor in the last step of re-assembly.

Depending on the condition of the drive shaft, it may be necessary to remove both bearings so that the end bells and wear plates can slide off the shaft with minimal difficulty.

2. In most cases, it is not necessary to loosen and remove the bolts holding the shaft seal assembly in place on the end bell in order to disassemble the PMV. However, if it seems

that the shaft seal assembly is binding or is overly tight on the shaft it may be an advantage to loosen and remove the four bolts holding the assembly in place and slide the assembly out and up against the bearing.

3. Using a hammer or mallet and a punch, drive out the 4 alignment pins on each end bell (see figure 3.)
4. Using an Allen wrench, loosen and remove the 8 bolts in each end bell (see figure 3.) These bolts fasten the end bell, wear plate, and barrel sides together.
5. On each end bell, there are 4 jack bolt holes (see figure 3) which can be used to separate the end bell from the wear plate if the two are bound together. Insert four of the Allen head bolts into the four threaded holes. They should contact the outboard side of the wear plate; then sequentially tighten the four bolts so that they push the end bell away from the wear plate.

The jack bolt holes can also be used to help free the bearing if it is hung up the shaft. Simply continue tightening the bolts in the jack bolt holes until the end bell moves enough to push the bearing on the shaft. It may be necessary to use longer bolts than the Allen head bolts supplied with the PMV.

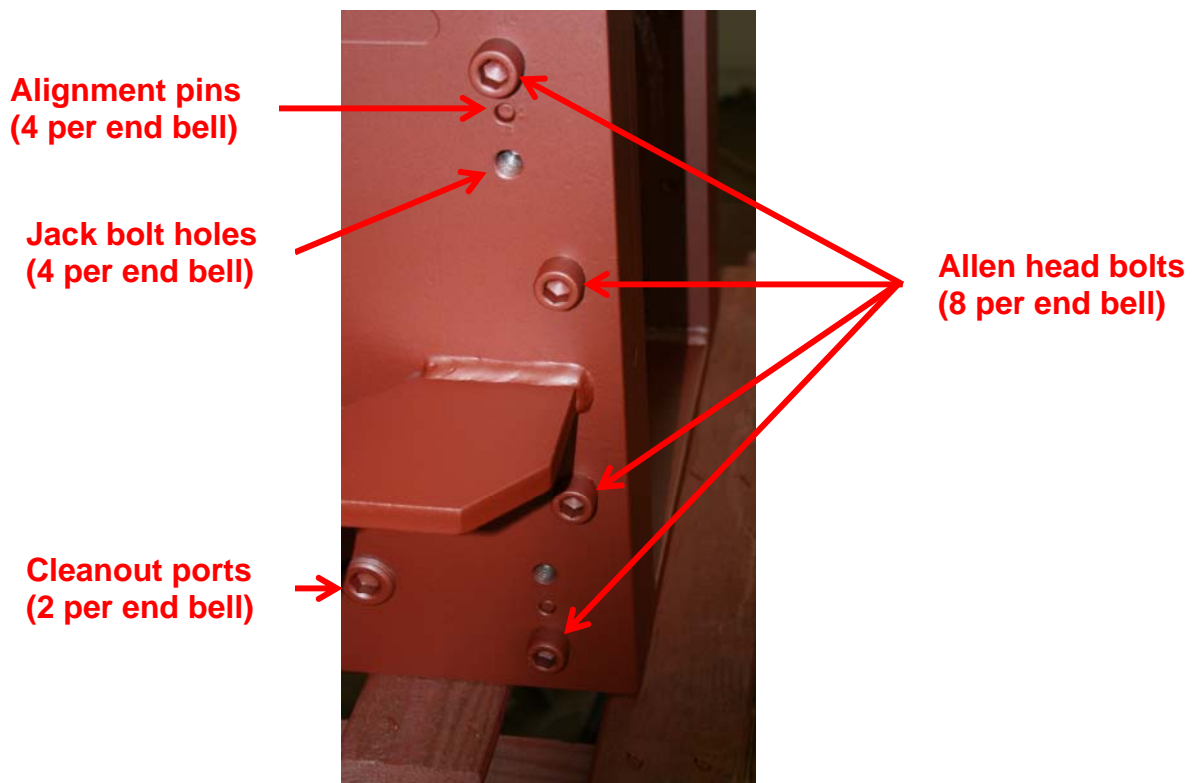


Figure 3

6. With the valve completely disassembled, individual components can be replaced as needed.
7. Reassembly begins with lining up the end bell and wear plate – make sure that the clean-out ports on both components aligned with one another and the counter-bored side of the wear plate is facing away from the end bell.
8. Tap in the four alignment pins so that they just protrude from the in-board side of the wear plate
9. Align the four alignment pins with the corresponding holes in the barrel sides
10. Once all the components are properly aligned, insert the eight Allen bolts into the holes in each end bell and sequentially tighten all the bolts.
11. The last step is to center the rotor in the valve and tighten the bearing set screws. If the re-assembly is taking place in a workshop where there is access through the inlet at the top of the PMV, using your hands or a gentle tap on the end of the shaft to align the rotor so that it is centered between the wear plates. Tighten both bearing set screws
12. If the re-assembly is being done in the valve's installed location, locate the rotor shaft end at the same distance from the bearing as the measurement that was taken in Step #1. Tighten both bearing set screws

D. Wear Plate Replacement – Disassemble the PMV as described above through step #6 and then re-assemble the valve with the new wear plates, beginning from step #7

E. Swapping & Reversing Barrel Sides – As mentioned in the Introduction, the barrel sides in a PMV are identical to one another and therefore can be interchanged with one another (see figure 5 on page 16.) The barrel sides are also symmetrical so that a barrel side can be “rolled over” with the top becoming the bottom (see figure 4 on page 16.)

It has been Precision's experience that the greatest wear on the barrel sides occurs on the top edge and on the barrel side that the rotor is turning towards. Precision refers to this as the “leading edge.” As the leading edge wears and the rotor-to-barrel side clearance increases, material or air flow may be able to escape which will decrease the valve's efficiency and increase wear on all components.

The modular design of the PMV gives the operator the possibility of using four leading edges.

Whether the plan is to swap the barrel sides or to reverse the barrel side on the leading edge, the PMV should be disassembled as described above and once the barrel sides are free the swap or reversal is easily accomplished.

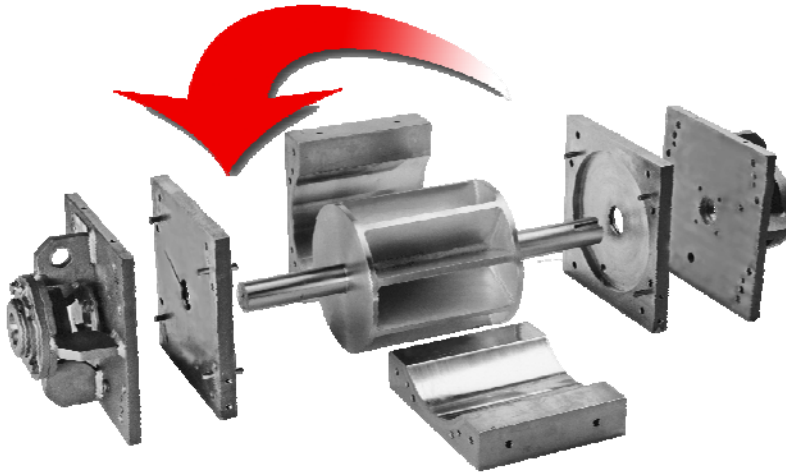


Figure 4
Reversing a barrel side top to bottom

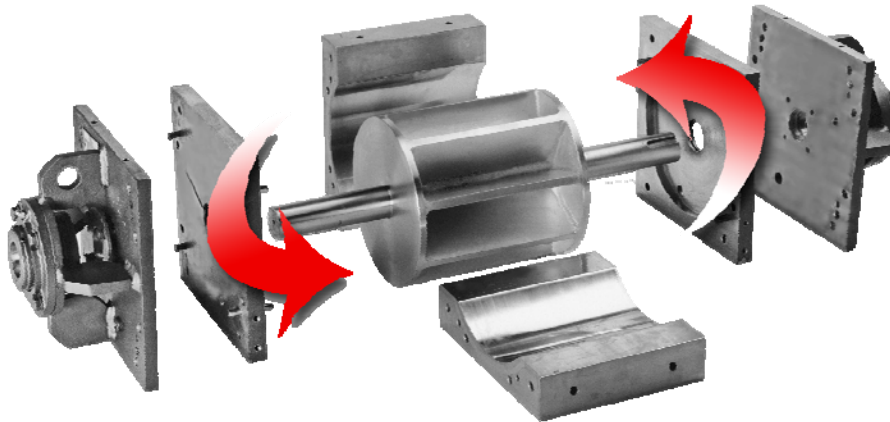


Figure 5
Swapping barrel sides side-to-side

Precision Machine & Mfg, Inc. Standard Warranty

WARRANTY

Precision Machine and Manufacturing, Inc. warrants products of its manufacture to be free from defects in material and workmanship if properly installed, maintained, and operated under normal conditions with competent supervision.

No person, agent, representative or dealer is authorized to give any warranties on behalf of Precision Machine and Manufacturing, Inc. nor to assume for Precision Machine and Manufacturing, Inc. any other liability in connection with any of Precision Machine and Manufacturing, Inc. products.

This warranty shall extend for one (1) year from date of installation provided this equipment has been put into service within ninety (90) days after shipment from Precision Machine and Manufacturing, Inc. factory. If repairs or replacements are made by the Purchaser without Precision Machine and Manufacturing, Inc. prior written consent, Precision Machine and Manufacturing, Inc. warranty shall cease to be in effect. No allowance will be granted for any repairs or alterations made by the Purchaser without Precision Machine and Manufacturing, Inc. prior written consent.

Machinery, equipment and accessories furnished by Precision Machine and Manufacturing, Inc. but manufactured by others, are warranted only to the extent of the original manufacturer's warranty to Precision Machine and Manufacturing, Inc.

Precision Machine and Manufacturing, Inc. agrees at its option to repair at the point of shipment or to replace without charge f.o.b. point of shipment, any part or parts of products of Precision Machine and Manufacturing, Inc. manufacture, which within the specified warranty period shall be proved to Precision Machine and Manufacturing, Inc. satisfaction to have been defective when shipped, provided the Purchaser promptly notified Precision Machine and Manufacturing, Inc., in writing, of such alleged defect.

Precision Machine and Manufacturing, Inc. liability to Purchaser, whether in contract or in tort arising out of warranties, representations, instructions, or defects from any cause shall be limited to repairing or replacing of the defective part or parts as aforesaid, f.o.b. point of shipment.

No liability whatsoever shall attach to Precision Machine and Manufacturing, Inc. until said products have been paid for.

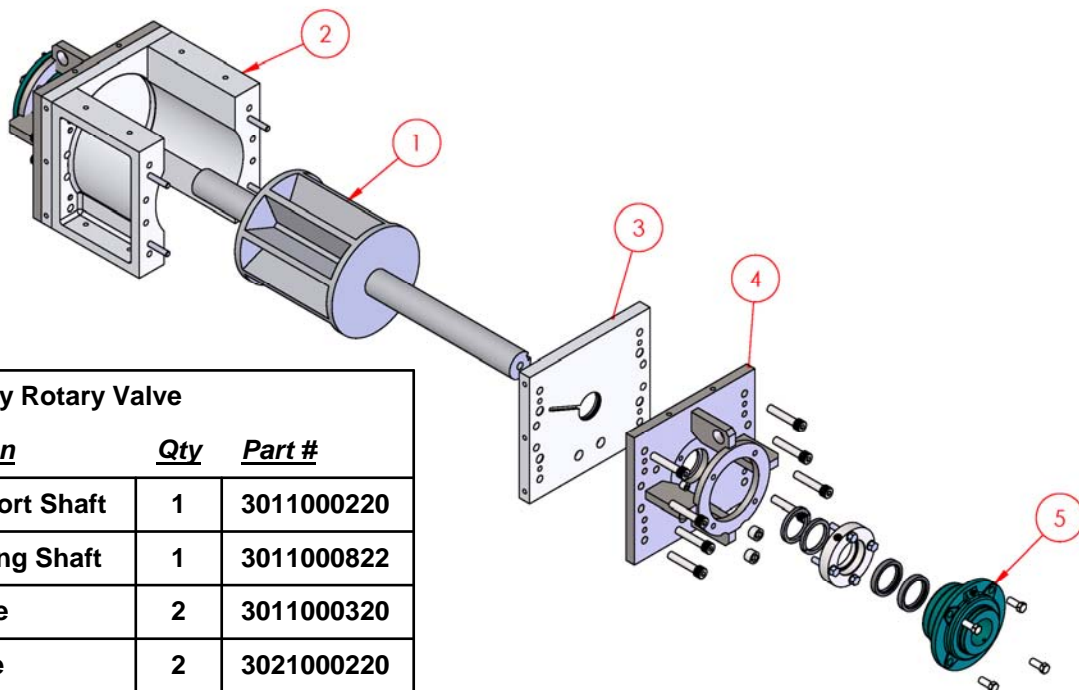
EXCEPT AS STATED IN THIS SECTION AND IN THE PRECEDING SECTION TITLED "WARRANTY" AND EXCEPT AS TO TITLE, THERE ARE NO GUARANTEES OR WARRANTIES OF MERCHANTABILITY, FITNESS, PERFORMANCE OR OTHERWISE, EXPRESS, IMPLIED OR STATUTORY, AND PRECISION MACHINE AND MANUFACTURING, INC. SHALL HAVE NO LIABILITY FOR CONSEQUENTIAL, INCIDENTAL OR OTHER DAMAGES, HOWSOEVER CAUSED.

DATE INSTALLED _____

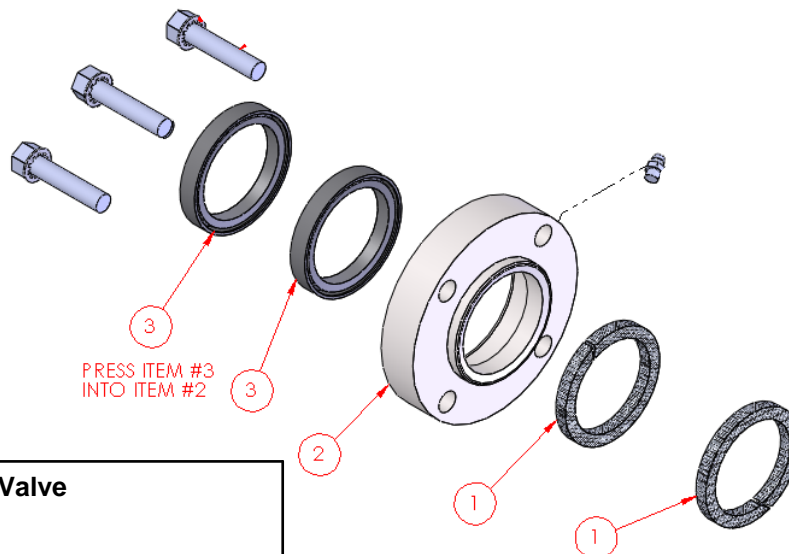
MODEL _____

SERIAL # _____

PMV-6 Severe Duty Rotary Valve – Parts List

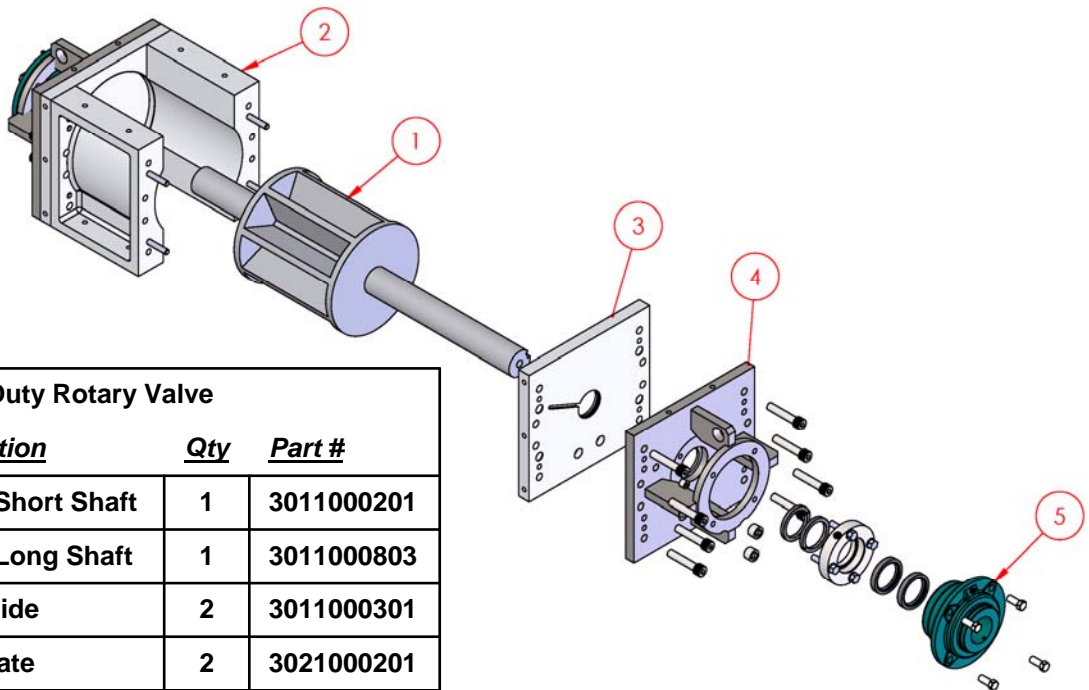


PMV-6 Severe Duty Rotary Valve			
<u>Item</u>	<u>Description</u>	<u>Qty</u>	<u>Part #</u>
1	Rotor - Short Shaft	1	3011000220
1	Rotor - Long Shaft	1	3011000822
2	Barrel Side	2	3011000320
3	Wear Plate	2	3021000220
4	End Bell	2	3011000101
5	Bearing	2	5011000102

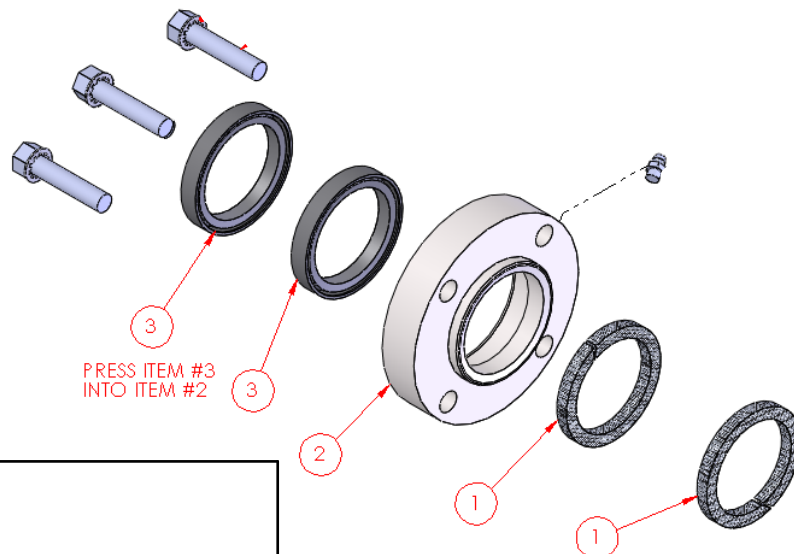


PMV-6 Severe Duty Rotary Valve			
<u>Item</u>	<u>Description</u>	<u>Qty</u>	<u>Part #</u>
1	Packing Media	4	5011001301
2	Seal Ring	2	3021000101
3	Double-Lip Seal	4	5011003901

PMV-8 Severe Duty Rotary Valve – Parts List

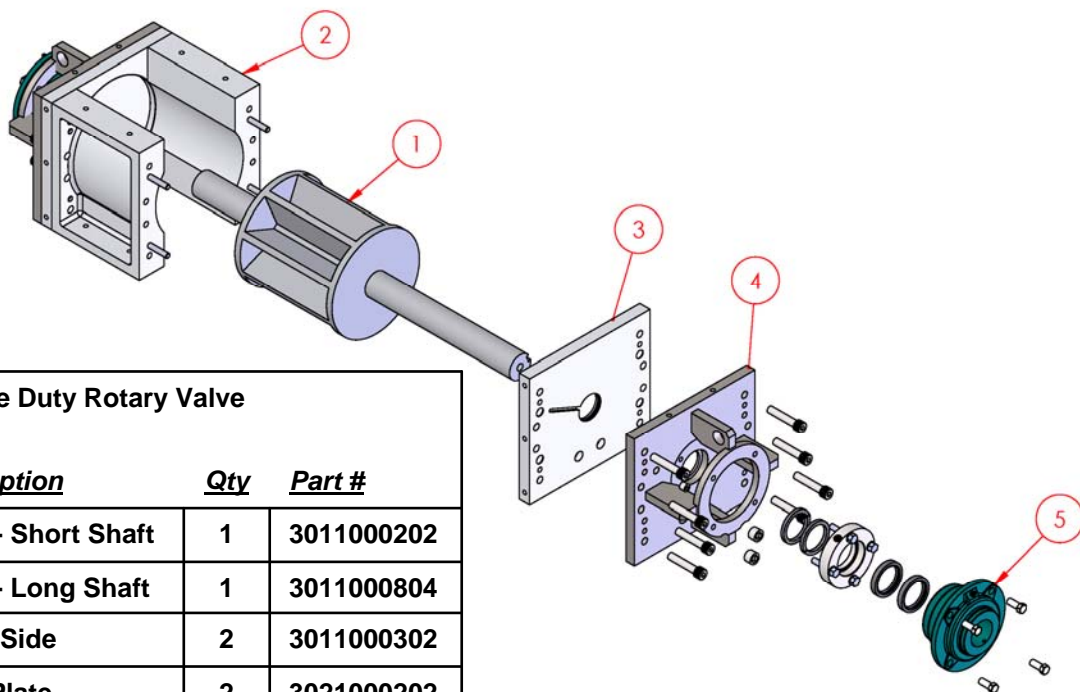


PMV-8 Severe Duty Rotary Valve			
<u>Item</u>	<u>Description</u>	<u>Qty</u>	<u>Part #</u>
1	Rotor - Short Shaft	1	3011000201
1	Rotor - Long Shaft	1	3011000803
2	Barrel Side	2	3011000301
3	Wear Plate	2	3021000201
4	End Bell	2	3011000101
5	Bearing	2	5011000102

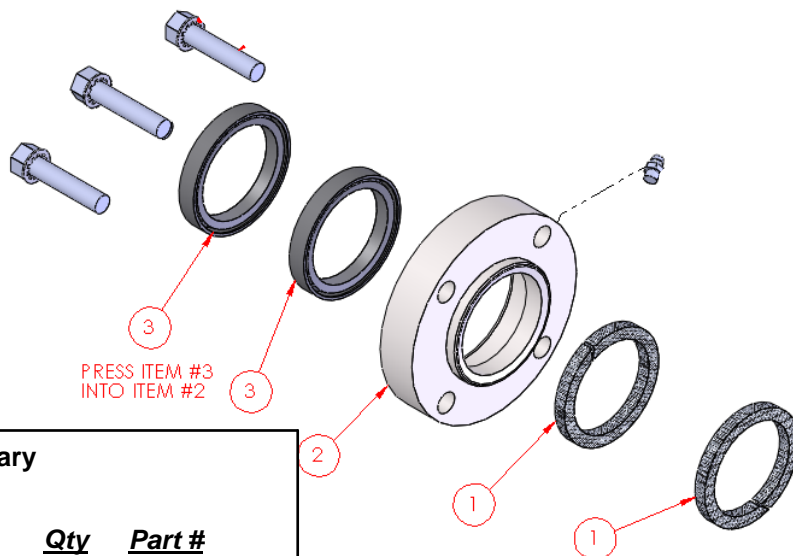


PMV-8 Severe Duty Rotary Valve			
<u>Item</u>	<u>Description</u>	<u>Qty</u>	<u>Part #</u>
1	Packing Media	4	5011001301
2	Seal Ring	2	3021000101
3	Double-Lip Seal	4	5011003901

PMV-10 Severe Duty Rotary Valve – Parts List

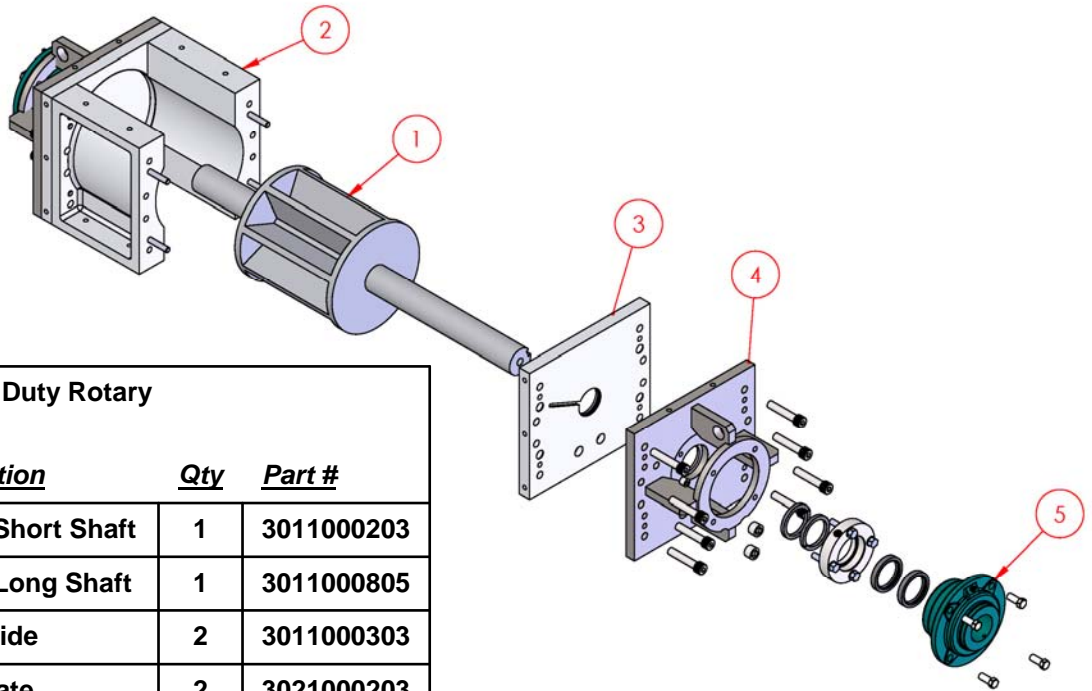


PMV-10 Severe Duty Rotary Valve			
<u>Item</u>	<u>Description</u>	<u>Qty</u>	<u>Part #</u>
1	Rotor - Short Shaft	1	3011000202
1	Rotor - Long Shaft	1	3011000804
2	Barrel Side	2	3011000302
3	Wear Plate	2	3021000202
4	End Bell	2	3011000102
5	Bearing	2	5011000102

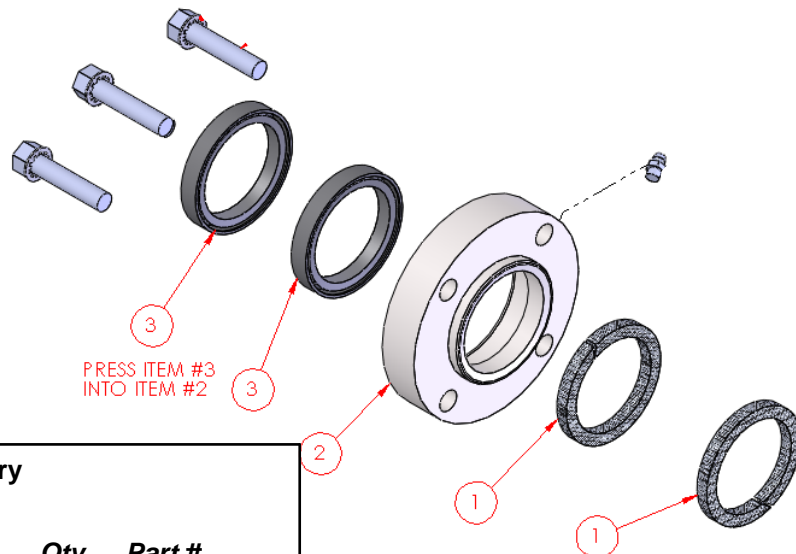


PMV-10 Severe Duty Rotary Valve			
<u>Item</u>	<u>Description</u>	<u>Qty</u>	<u>Part #</u>
1	Packing Media	4	5011001301
2	Seal Ring	2	3021000101
3	Double-Lip Seal	4	5011003901

PMV-12 Severe Duty Rotary Valve – Parts List

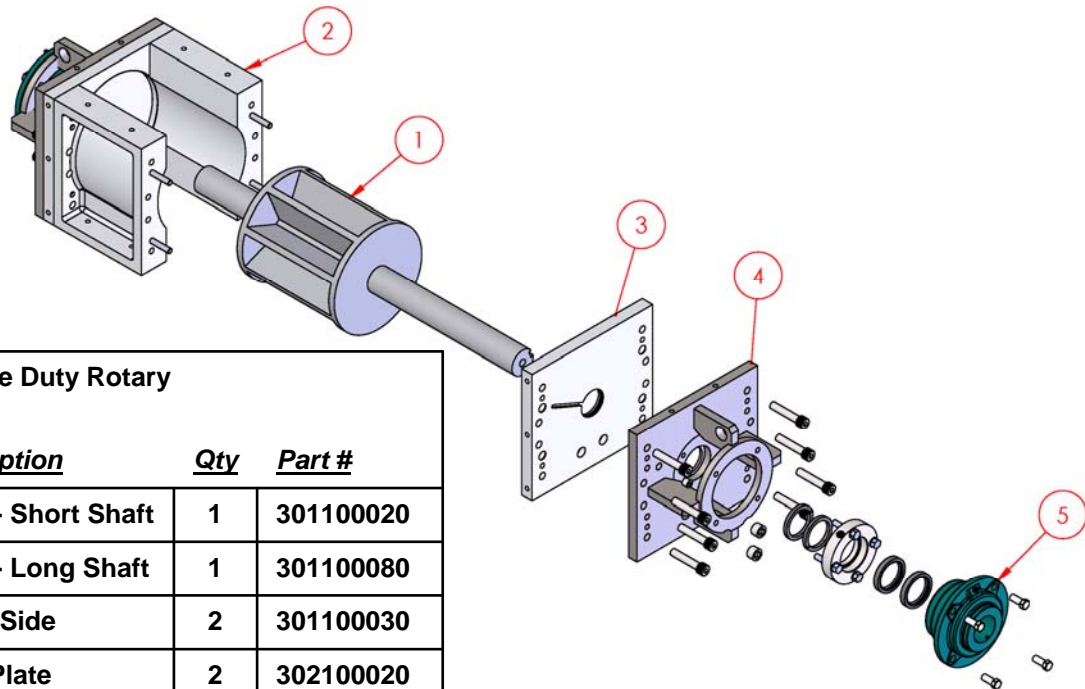


PMV-12 Severe Duty Rotary Valve			
<u>Item</u>	<u>Description</u>	<u>Qty</u>	<u>Part #</u>
1	Rotor - Short Shaft	1	3011000203
1	Rotor - Long Shaft	1	3011000805
2	Barrel Side	2	3011000303
3	Wear Plate	2	3021000203
4	End Bell	2	3011000103
5	Bearing	2	5011000102



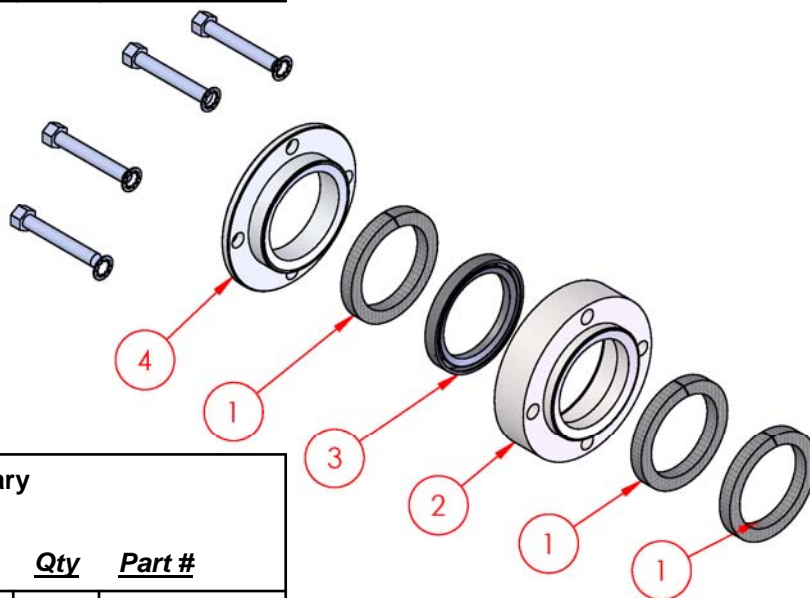
PMV-12 Severe Duty Rotary Valve			
<u>Item</u>	<u>Description</u>	<u>Qty</u>	<u>Part #</u>
1	Packing Media	4	5011001301
2	Seal Ring	2	3021000101
3	Double-Lip Seal	4	5011003901

PMV-14 Severe Duty Rotary Valve – Parts List



PMV-14 Severe Duty Rotary Valve

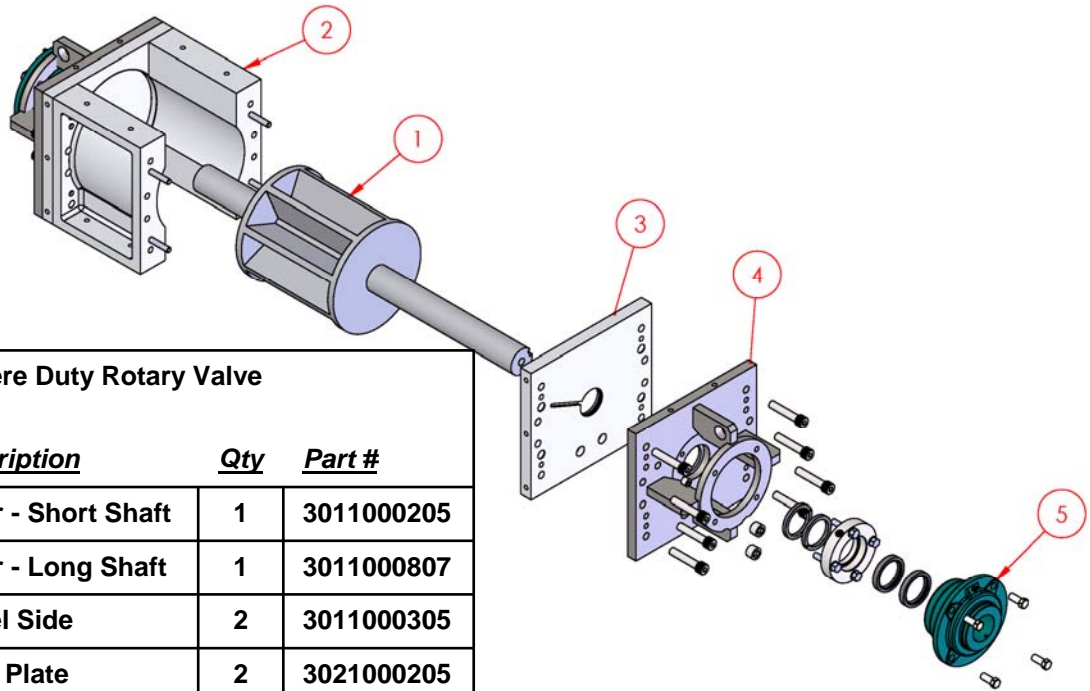
<u>Item</u>	<u>Description</u>	<u>Qty</u>	<u>Part #</u>
1	Rotor - Short Shaft	1	301100020
1	Rotor - Long Shaft	1	301100080
2	Barrel Side	2	301100030
3	Wear Plate	2	302100020
4	End Bell	2	301100010
5	Bearing	2	501100010



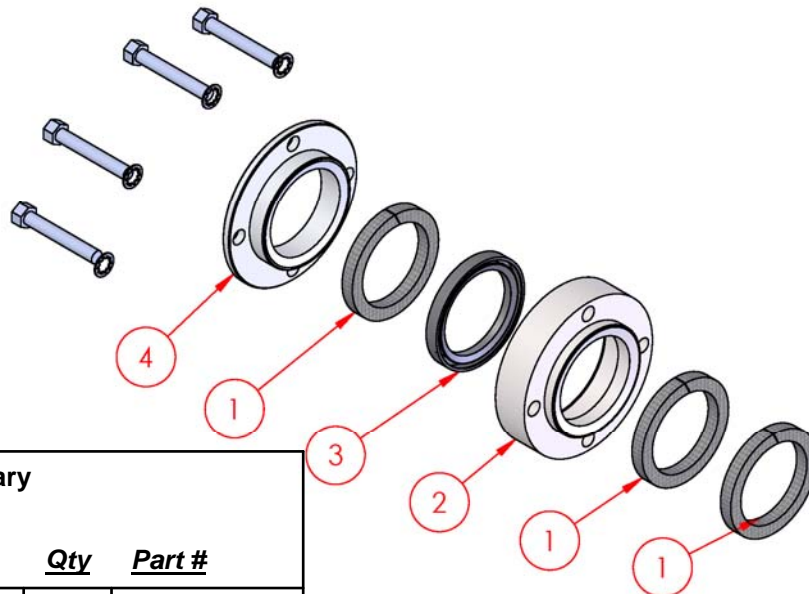
PMV-14 Severe Duty Rotary Valve

<u>Item</u>	<u>Description</u>	<u>Qty</u>	<u>Part #</u>
1	Packing Media	6	501100250
2	Seal Ring	2	302100010
3	Double-Lip Seal	2	501100390
4	Packing Gland	2	302100012

PMV-16 Severe Duty Rotary Valve – Parts List

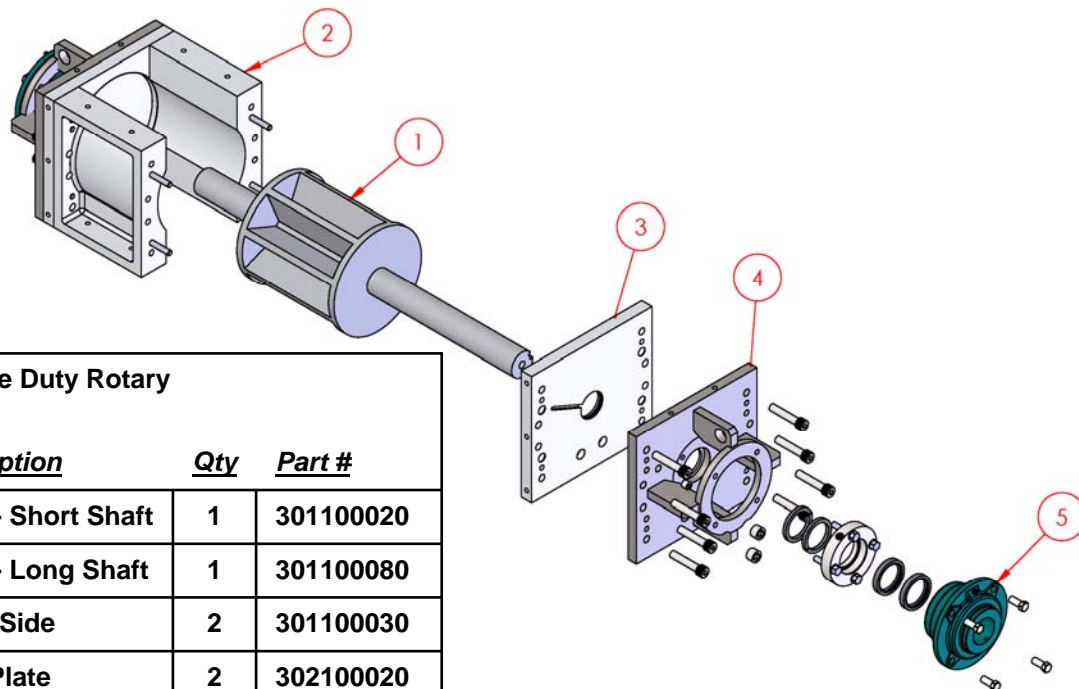


PMV-16 Severe Duty Rotary Valve			
<u>Item</u>	<u>Description</u>	<u>Qty</u>	<u>Part #</u>
1	Rotor - Short Shaft	1	3011000205
1	Rotor - Long Shaft	1	3011000807
2	Barrel Side	2	3011000305
3	Wear Plate	2	3021000205
4	End Bell	2	3011000105
5	Bearing	2	5011000104

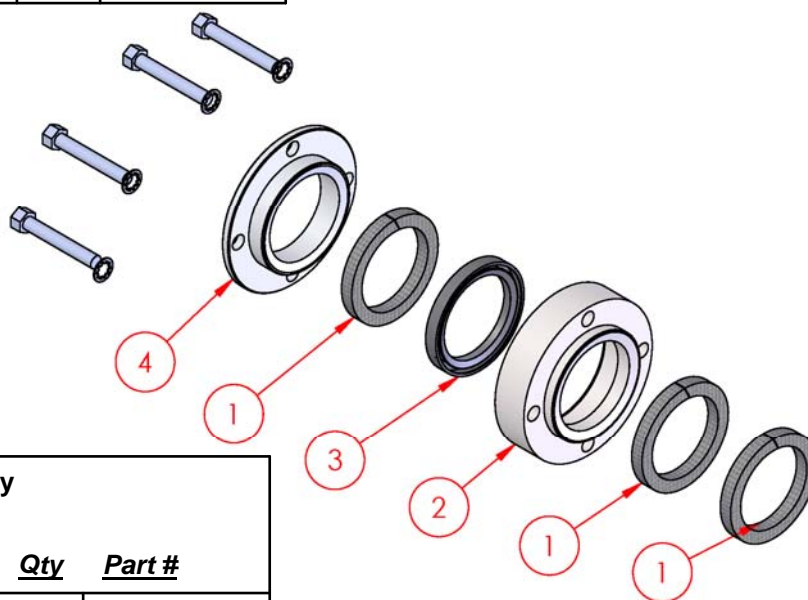


PMV-16 Severe Duty Rotary Valve			
<u>Item</u>	<u>Description</u>	<u>Qty</u>	<u>Part #</u>
1	Packing Media	6	5011002502
2	Seal Ring	2	3021000102
3	Double-Lip Seal	2	5011003902
4	Packing Gland	2	3021000121

PMV-18 Severe Duty Rotary Valve – Parts List

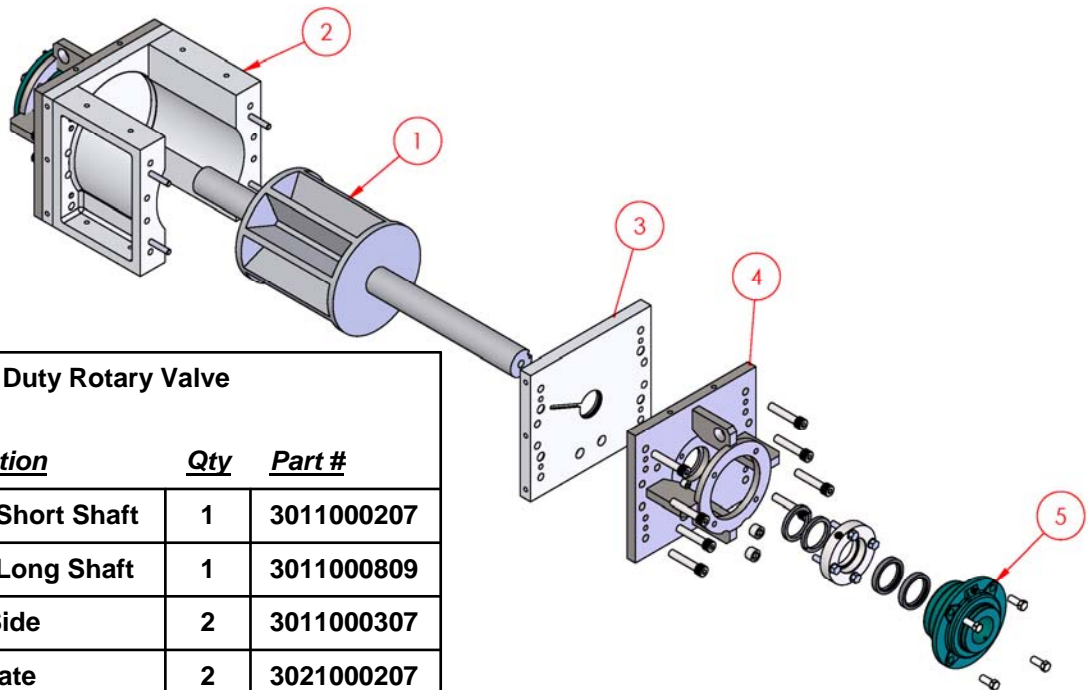


PMV-18 Severe Duty Rotary Valve			
<u>Item</u>	<u>Description</u>	<u>Qty</u>	<u>Part #</u>
1	Rotor - Short Shaft	1	301100020
1	Rotor - Long Shaft	1	301100080
2	Barrel Side	2	301100030
3	Wear Plate	2	302100020
4	End Bell	2	301100010
5	Bearing	2	501100010

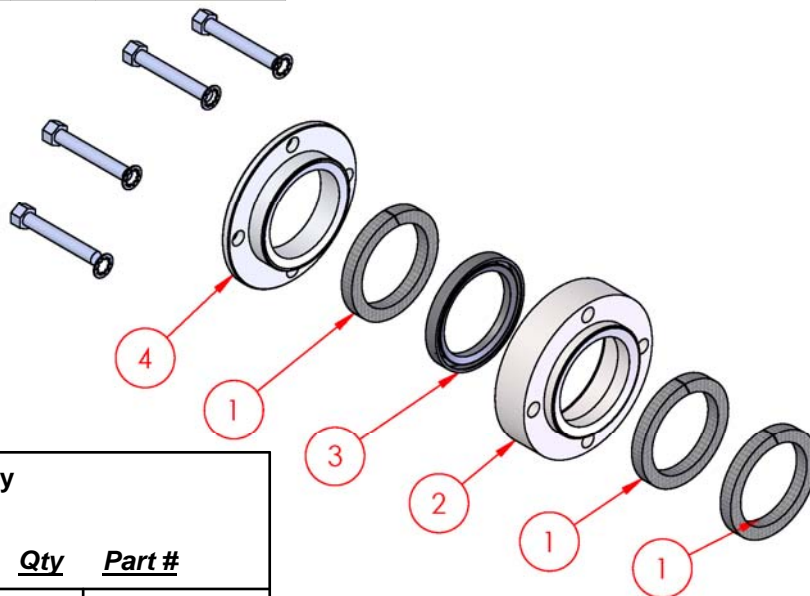


PMV-18 Severe Duty Rotary Valve			
<u>Item</u>	<u>Description</u>	<u>Qty</u>	<u>Part #</u>
1	Packing Media	6	501100250
2	Seal Ring	2	302100010
3	Double-Lip Seal	2	501100390
4	Packing Gland	2	302100012

PMV-20 Severe Duty Rotary Valve – Parts List



PMV-20 Severe Duty Rotary Valve			
<u>Item</u>	<u>Description</u>	<u>Qty</u>	<u>Part #</u>
1	Rotor - Short Shaft	1	3011000207
1	Rotor - Long Shaft	1	3011000809
2	Barrel Side	2	3011000307
3	Wear Plate	2	3021000207
4	End Bell	2	3011000107
5	Bearing	2	5011000105



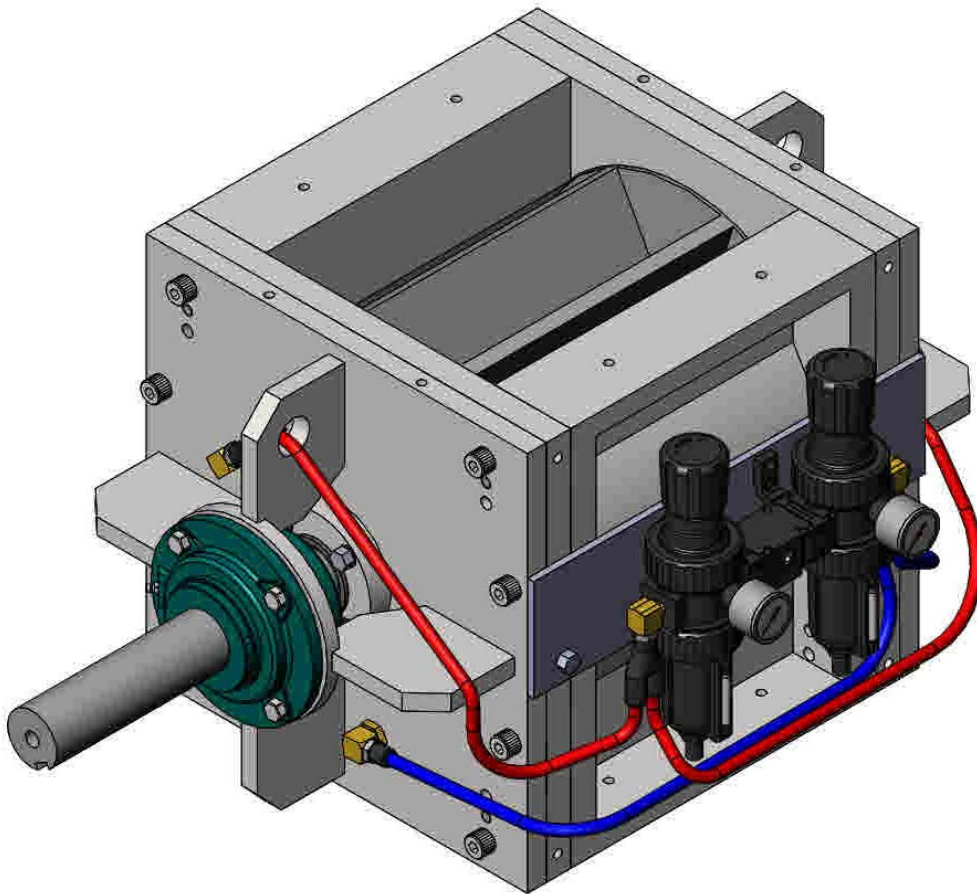
PMV-20 Severe Duty Rotary Valve			
<u>Item</u>	<u>Description</u>	<u>Qty</u>	<u>Part #</u>
1	Packing Media	6	501100250
2	Seal Ring	2	302100010
3	Double-Lip Seal	2	501100390
4	Packing Gland	2	302100012

Appendix #1 – Air Purge Kit

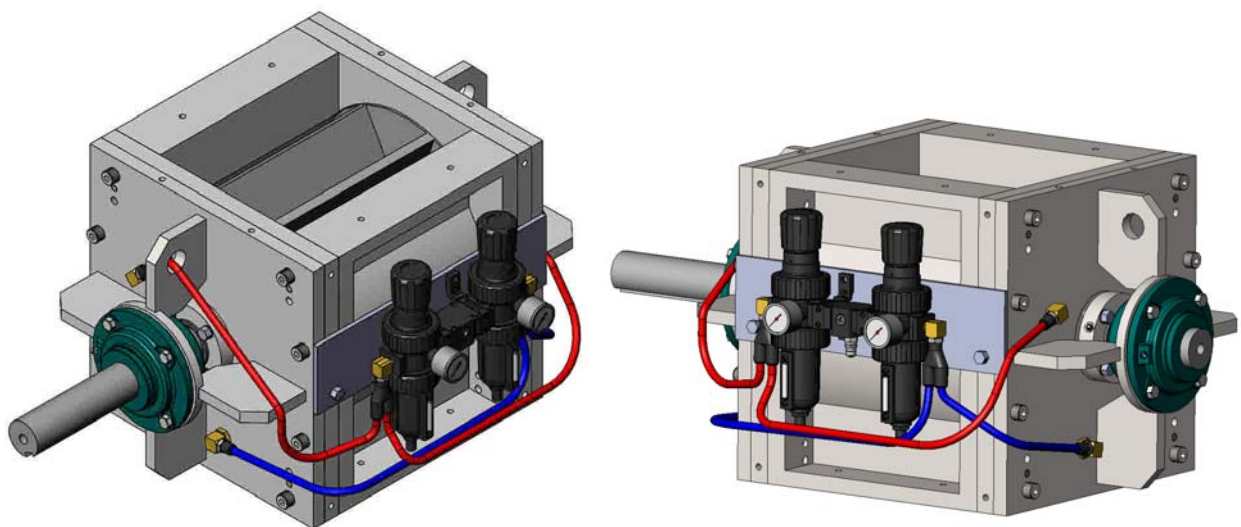
The Precision Air Purge kit can be factory-installed or field-installed. The purpose of the Air Purge kit is to bring plant-supplied compressed air to the PMV rotary valve and then plumb that air into the rotary valve in two locations:

- At the shaft, inboard of the lip seals and/or packing
- In the space between the rotor ends and the counter-bore in the wear plates

Plant air is ported into a manifold between the two (2) filter-regulator bodies and ideally should not exceed 100 psi.



Each filter-regulator is equipped with a splitter fitting and two (2) hoses that direct the compressed air to fittings in the body of the PMV rotary valve. ***It is very important that the hoses are connected exactly as shown above.***



The **right** filter-regulator body should be plumbed to the clean-out ports near the bottom of each endbell (the **blue** lines in the drawing above.) This will introduce compressed air into the open space between the ends of the rotor and the counter-bore in each wear plate. This should prevent the build-up of material in this space which could otherwise cause a braking action.

- Precision has normally found the best results are achieved if this **right** pressure regulator is set at approximately **2 psi above the pressure in the pneumatic conveying line** that the PMV is discharging into.

The **left** filter-regulator body should be plumbed to a pair of fittings installed in each endbell at approximately a 10 o'clock position (the **red** lines in the drawing above.) This fitting will direct the compressed air into a machined slot in the wear plate that terminates where the rotor shaft passes through the wear plate. Compressed air at this spot will help prevent material leakage along the shaft.

- Precision has normally found the best results are achieved if this **left** pressure regulator is set at approximately **4 psi above the pressure in the pneumatic conveying line or 2 psi above the setting on the right regulator**.
- Excessive pressure on this circuit should be avoided. Too much pressure can damage the lip seals and/or packing in the endbells or, in extreme cases, damage the rotor shaft itself.

Operation and Maintenance

The Precision Air Purge kit should require very little adjustment or maintenance if it has been properly installed. The point cannot be stressed too much that the hose routings and connections to the filter-regulators must be exactly as shown on the preceding pages.

One key to the proper functioning of the Air Purge kit is an accurate measurement of the pressure in the pneumatic conveying line below the PMV rotary valve. Precision recommends that the pressure be measured immediately upstream of where the rotary valve is installed. If an inlet or port for a gauge is not available, Precision recommends that one be installed so that an accurate understanding of the pressure can be had.

Precision recommends that only small adjustments (one psi at a time) be made to the regulator setting if the Air Purge is not producing the desired result. High pressures are not recommended.

The filter is a self-draining style and should not require periodic maintenance. However, it is recommended that the filter be disassembled, cleaned, and checked once per quarter.

Precision also recommends that each of the fittings in the PMV body be removed once per quarter and that the brass fittings and the ports in the PMV be checked to make sure that there is no obstruction or material build-up that would restrict the flow of air. Compressed air may be used to clean out any obstructions.