

Installation Sheet, Injection Pump Double Slipper Seal Rebuild Kit

Discharge Valve Assembly

1. To disassemble the discharge valve, carefully remove the retainer clip (Item 7). Hold the assembly together so the valve does not come apart unexpectedly.

FIGURE 1. Discharge Valve Assembly

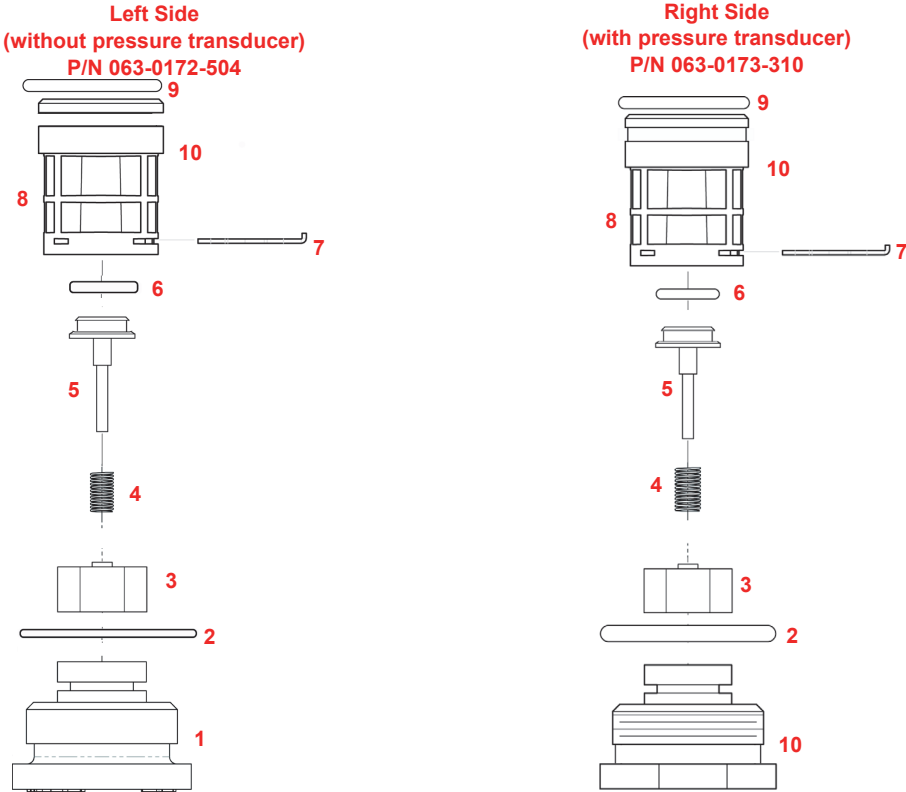


TABLE 1. Discharge Valve Assembly Parts

Item Number	Description	Raven Part Number
1	Fitting, Plug	107-0171-519
2	O-Ring	219-0002-912
3	Guide, Poppet	107-0159-934
4	Spring	314-0000-006
5	Poppet	107-0159-935
6	O-Ring (Viton)	219-0007-011
7	Clip, Retainer	107-0171-576
8	Valve Body, Discharge	106-0159-621
9	O-Ring (Viton)	219-0002-018
10	FTG Plug Pressure Transducer	107-0171-955

Intake Valve Assembly

1. Remove the retainer clip (Item 8).

FIGURE 2. Intake Valve Assembly (P/N 063-0173-677)

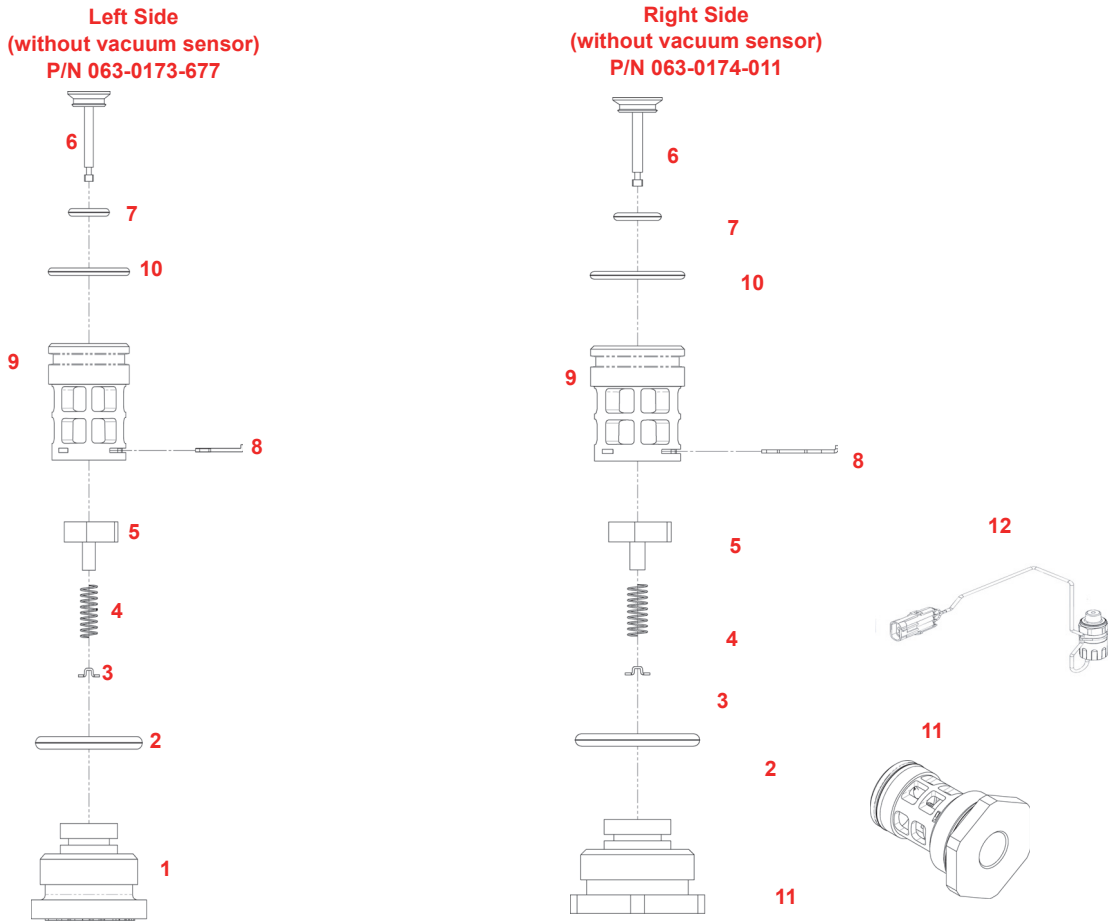


TABLE 2. Intake Valve Assembly Parts

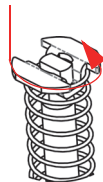
Item Number	Description	Raven Part Number
1	Fitting, Plug	107-0171-519
2	O-Ring	219-0002-912
3	Retainer, Intake	107-0171-459
4	Spring	314-0000-005
5	Guide, Poppet	107-0171-092
6	Stem, Poppet	107-0171-447
7	O-Ring (Viton)	209-0007-011
8	Clip, Retainer	107-0171-576
9	Valve Body Intake	106-0159-719
10	O-Ring (Viton)	219-0002-018
11**	Fitting, Plug, Pressure Transducer	107-0171-955
12	Vacuum Switch	063-0171-035

*For Use with P/N 063-0173-677

**For Use with P/N 063-0174-011

2. Remove the plug (Item 1 or 11 depending on configuration).
3. Hold the poppet (Item 6) securely in the body (Item 9).
4. Depress the spring retainer (Item 3) and turn 90°.

FIGURE 3. Spring Retainer Disassembly



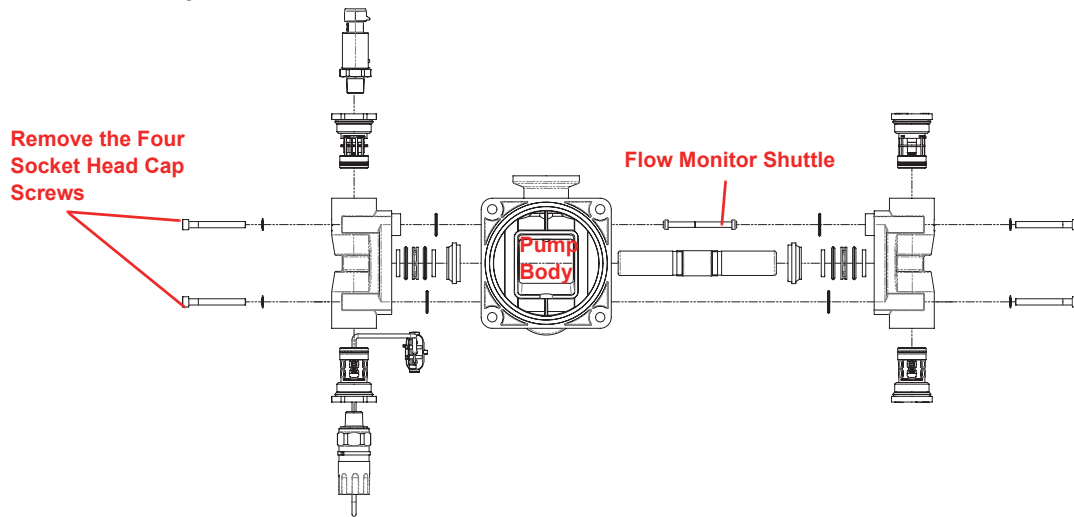
5. Carefully lift the spring retainer off the poppet.

Piston Seal Replacement

1. Empty any product from the injection module tank.
2. Flush the pump with water.
3. Disconnect the plumbing and wiring from the pump.
4. Remove the four socket head screws to separate the pump from the motor.

5. Remove the four socket head cap screws that secure each pump head to the pump body.

FIGURE 4. Pump Head to Motor



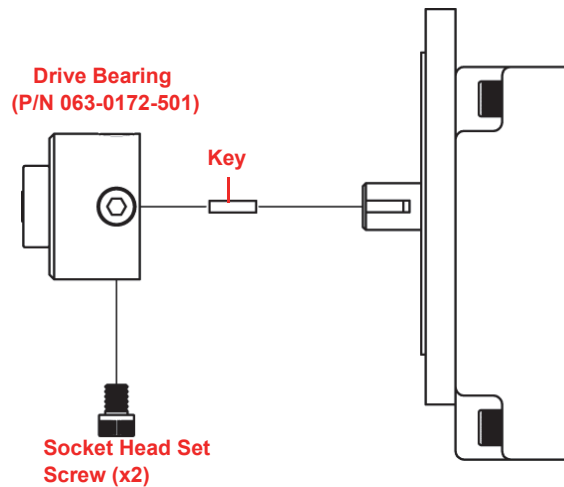
6. Remove the pump heads.

Note: Do not lose the flow monitor shuttle assembly when the pump heads are removed. Refer to FIGURE 4.

Pump Drive Bearing Assembly

1. Remove the 2-1/4" - 20 socket head set screws from the drive bearing assembly and retainer.

FIGURE 5. Drive Bearing Assembly

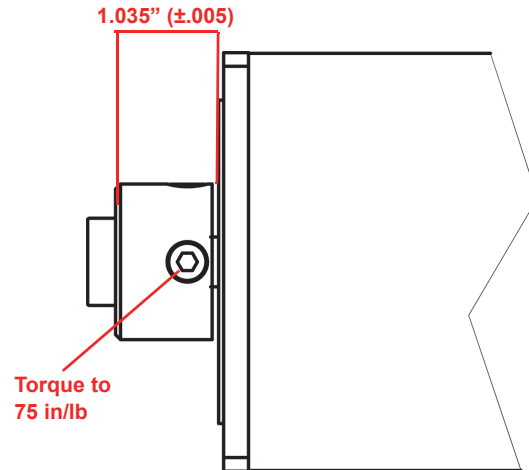


2. Pry the bearing assembly off the motor.

Note: Keep the 1/8" x 1/8" x 1/2" long key.

3. Replace the pump drive bearing. Use the key to secure the bearing in place.
4. Install two 1/4" - 20 socket head screws into the drive bearing assembly.
5. Space the drive bearing 1.035" (± 0.005) away from the motor face.

FIGURE 6. Installed Set Screws

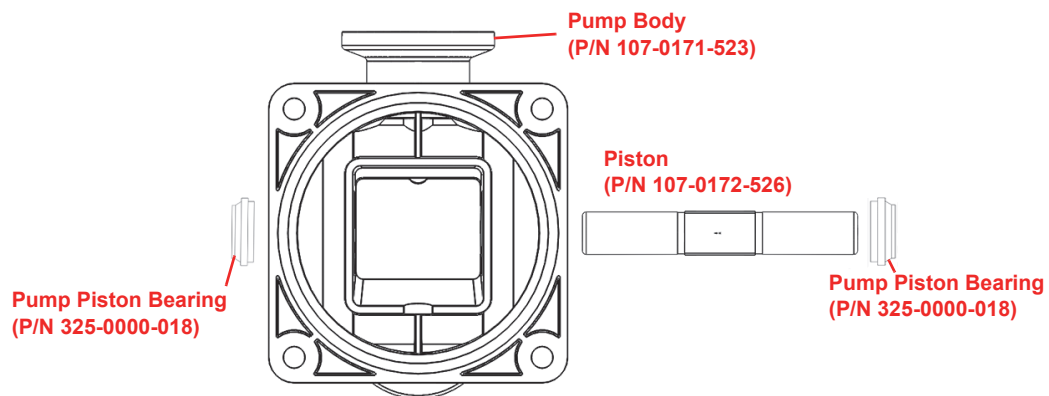


6. Tighten the 1/4" - 20 socket head set screws to 75 in/lbs.

Piston Installation

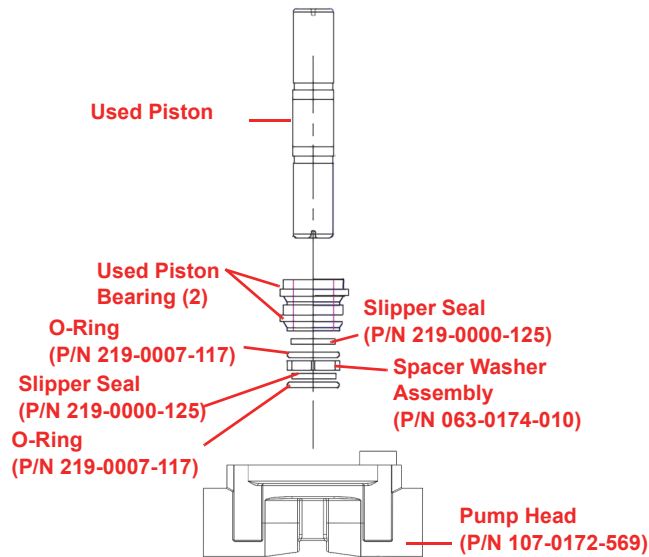
1. Lubricate the inside of the new pump bearings.
2. Install the piston bearings and piston into the pump body.
3. Center the piston in the pump body with the piston slot facing out.
4. Lubricate the piston slow with general purpose grease.
5. Assembly the pump body to the pump motor and secure. Torque the pump mounting bolts to 41 in/lbs.
6. Proceed to slipper seal installation.

FIGURE 7. Pump Assembly



Slipper Seal Installation

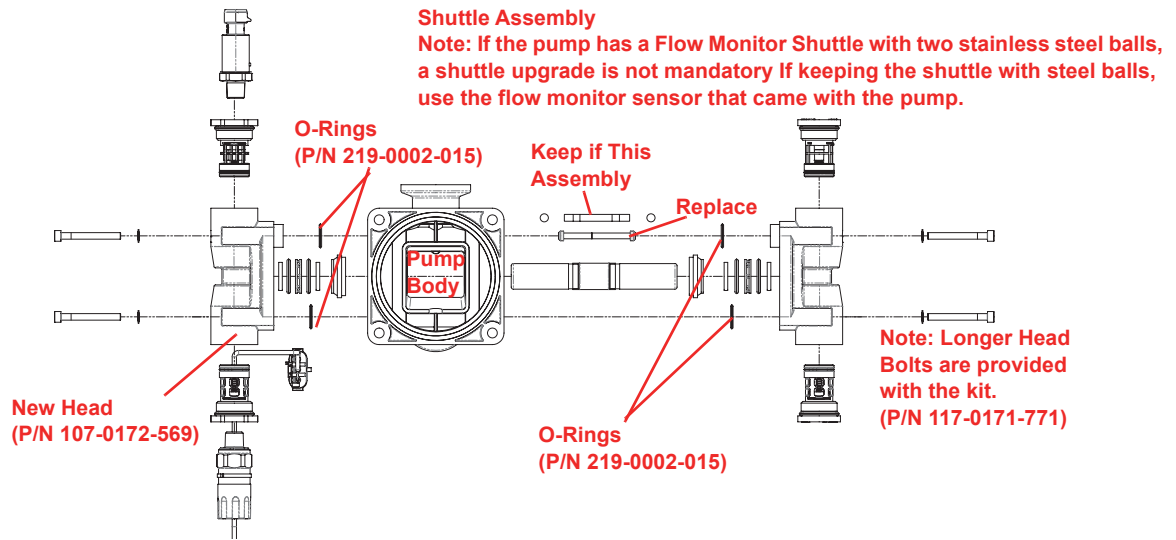
FIGURE 8. Slipper Seal Installation



1. Clean the used piston from the pump. The clean piston will be used during slipper seal installation.
2. Clean the used piston bearings from the pump. The clean piston bearings will be used during slipper seal installation.
3. Lubricate the inside of both slipper seals and slipper seal O-rings with general purpose grease.
4. Slide the two use piston bearings onto the used piston.
5. Slide a lubricated slipper seal and O-ring onto the piston.
6. Slide a spacer washer onto the piston.
7. Slide a lubricated slipper seal and O-ring onto the piston.
8. Press the assembly into the pump head.
9. While holding one of the piston bearings against the pump head, remove only the piston from the pump head.
10. Verify the slipper seals and spacer washer remained in the head and did not move out of position.

Head Installation

FIGURE 9. New Head Installation



Note: If desired, there is a flow monitor upgrade kit available for older models that have the flow monitor with two stainless steel balls. For low volume pumps, use kit P/N 117-0171-755. For high volume kits, use kit P/N 117-0171-756.

Upgrading the Flow monitor to the non-adjustable version using the kits mentioned will improve the flow monitor's ability to detect flow, especially at low flow rates with thinner viscosity. Since adjustment is not needed, installation is simplified.

1. Install new upper and lower O-rings in the pump body.
2. Install the shuttle into the pump body.
3. Push the assembled pump head onto the new piston in the pump and secure.
4. Repeat Steps 1 through 4 on the other end of the pump.
5. Torque all pump heads bolts to 17 in/lbs.

