

## **Installation Instructions PERMCO #400-AS**

### **Prepare Valve for Installation:**

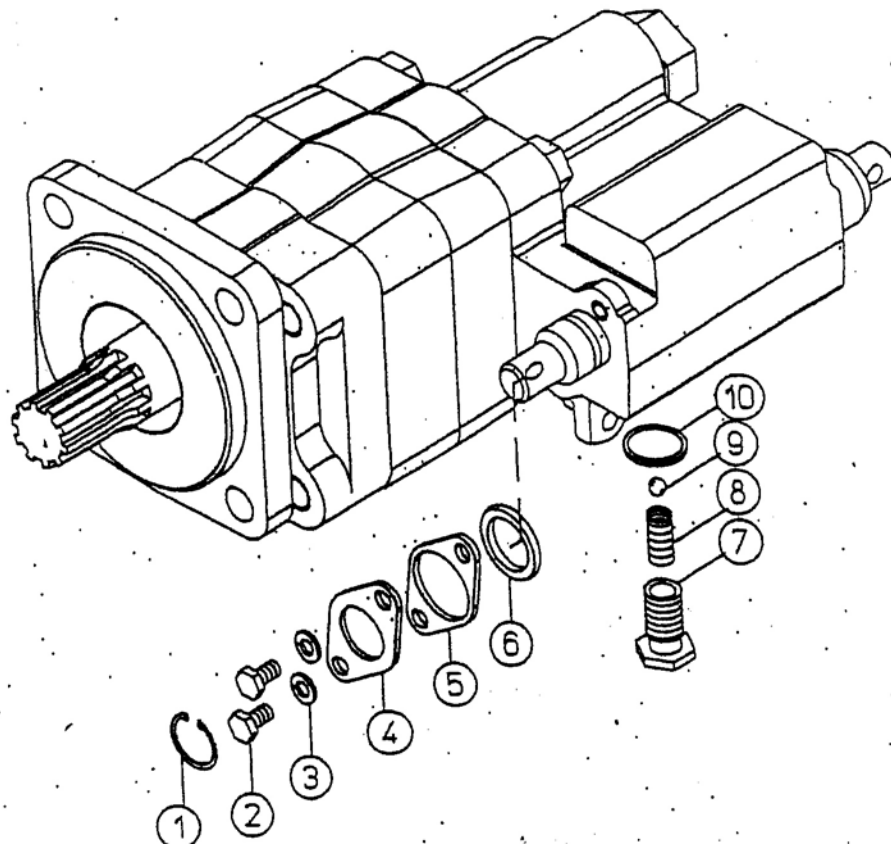
1. Refer to figure 1 on page 2 for proper valve preparation instructions.
2. Make sure that valve spool and valve face are free of any foreign particles.

### **Prepare Cylinder for Installation**

1. Remove the two 5/16-18 cap screws from rear of cylinder. This will disassemble cylinder into 3 pieces:
  - a.) Mounting Bracket with Socket head Cap screw
  - b.) Cylinder Body Assembly with O-Ring
  - c.) Rear Cover Plate with O-Ring

### **Installation of Cylinder: (Refer to Figure 2 on page 3)**

1. Slide bracket over shaft with recess of bracket facing pump. Make sure O-Ring seat is in recess of bracket. Attach to pump with (2) socket head cap screws using a 3/16" hex wrench.
2. Rotate pump shaft to align hole in shaft with the setscrew located inside the middle air port of the cylinder body. Slide cylinder body assembly over shaft.
3. Secure to pump by screwing setscrew through pump shaft using 5/32" hex wrench, tighten firmly.
4. Place rear cover plate with o-ring onto end of cylinder body and install cap screws, torque to 10 ft/lbs.
5. Test alignment of cylinder by removing pipe plug from rear cover, inserting a 3/16" hex wrench through cover and rotating shaft clockwise. Shaft should rotate freely. Replace pipe plug using a thread sealant.

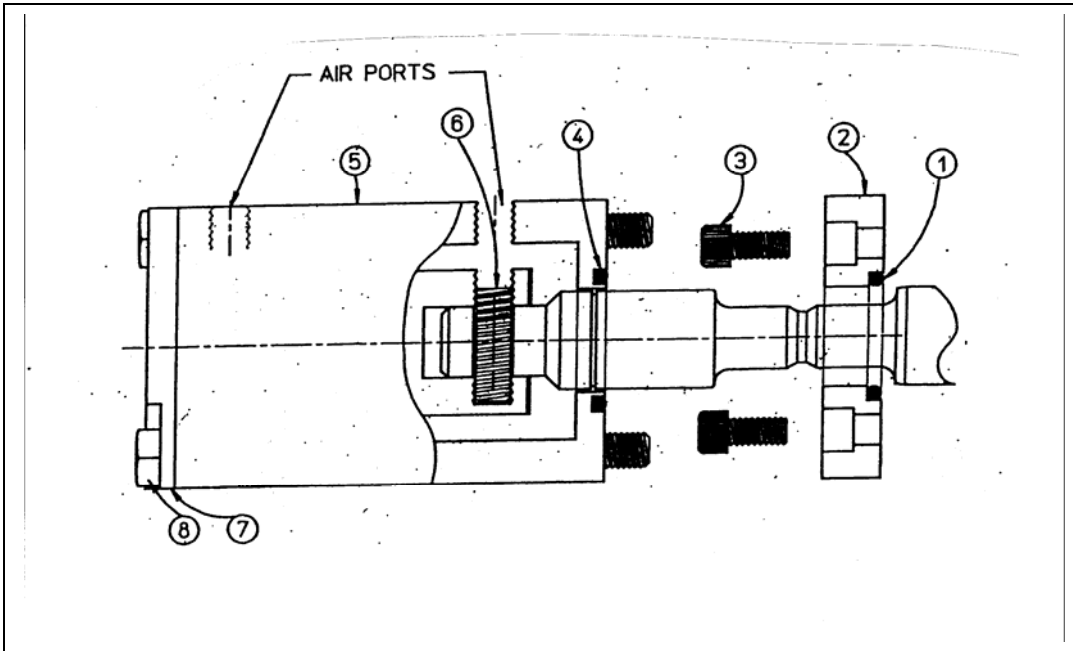


**Figure 1: Valve Preparation**

1. It is extremely important that the pump is **UPSIDE DOWN** (SEE ATTACHED DRAWING). Upside down is the position that the detent is facing downwards. **FAILURE TO DO THIS MAY CAUSE THE DETENT BALL TO FALL WITHIN THE VALVE HOUSING AND MOVE INTO THE ROTATING GROUP CAUSING PREMATURE FAILURE!**
2. With the pump in the downward position, loosen the plug (7) with an 11/16 wrench and remove the detent assembly (8 & 9).
3. Detent spring and ball will fall straight down and out of pump.
4. Re-insert the plug with o-ring.
5. It should be noted that you will also remove 1 through 6 when attaching the air shift. Air shift kit (400-AS) should include new o-ring (6).

## Instructions for installing air shift to DM400

400-AS



**Figure 2: Cylinder Installation**

1. Place small o-ring (1) in groove in o-ring retainer plate (2).
2. Bolt retainer plate (2) to pump with o-ring (1) against pump with cap screw (3).
3. Place larger o-ring (4) in cylinder body (5).
4. Screw set screw (6) thru the piston and spool.
5. Bolt assembly to retainer plate with long cap screw (8).

Part No.	Description	Qty
1	Small o-ring	1
2	o-ring retainer	1
3	1/4 x 20 cap screw	2
4	Large o-ring	1
5	Cylinder Body	1
6	Set Screw	1
7	Cover Plate	1
8	5/16 x 18 cap screw	2