

**Only qualified personnel should perform maintenance.**



**Be sure that system pressure has been VENTED prior to disassembly.**

## Assembly Instructions

### Preparation

1. Prepare a clean surface for disassembly, free of dust, grease, grit, etc. A vise is not necessary, but helpful. Have rags, degreasing solvent and lubricant available.
2. All O-rings and gaskets are recommended to be replaced at a minimum. See the parts list for kit contents.
3. Special items include RTV sealant, silicon grease.
4. Arrange O-rings in order of size. smallest to largest. Referring to the item number on the drawing (page 3) they are:

27, 26, 25, 11, 10, 16, 18

### Hydraulic Side

1. Diaphragm Plate Assembly: start by placing lower diaphragm plate 5 on flat surface and then align diaphragm 3 with lower diaphragm plate. Place upper diaphragm plate on diaphragm with countersink side facing up.
2. Loosely install two flat head socket screws 23 at 12 and 6 o'clock. Begin filling remaining countersink holes with RTV sealant, and install remaining flat head screws through the RTV. Remove the first two screws and fill those holes with RTV and replace and tighten all screws. Remove excess RTV with a rag. RTV must be given 24 hours to cure!



3. Hydraulic side bushing assembly: install o-ring 10 on piston 9 and o-ring 11 on bushing 12, lubricating piston with silicon grease. Install greased piston into bushing with hex head side facing up. **IMPORTANT!** Install mud seal 8 after installing piston into bushing (so as not to trap air between piston and mud seal.)
4. Top plate/body assembly: install bushing assembly into body 1. Position diaphragm plate assembly on body with screws 7 facing up. Place conical spring 6 on center with the narrow portion of the conical spring making contact with the diaphragm plate. Align the top plate with the diaphragm/body and install screws 7.

**Air Side**

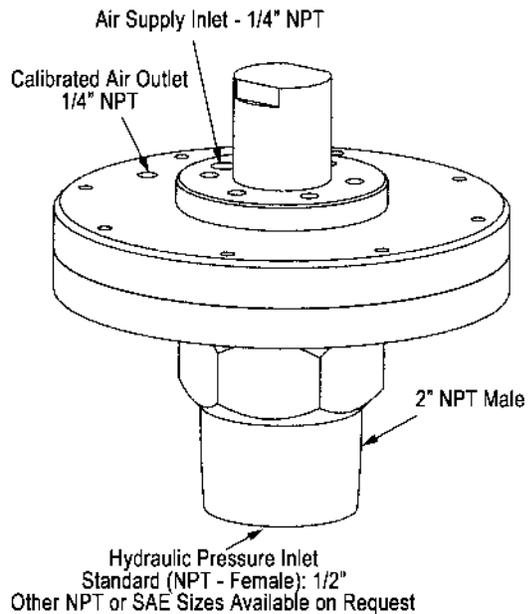
NOTE: Do not use any grease on air side o-rings or parts because clogging of the air ports will occur. All air side components must be cleaned of any and all debris.

5. Air valve plug: install one o-ring 18 onto groove of air valve body 17 closest to the threads. Drop o-ring 26 into plug body through the bore and make sure the o-ring sits flush on the bottom of the air valve body inside diameter. Insert the poppet 13 into the air valve body 17 with poppet o-ring groove protruding out of bottom of the air valve body. Insert coil spring 14 into the air valve body (make sure the poppet is centered inside the coil spring). Install o-ring 16 onto air valve plug 15 and install into air valve body. Hold the poppet to prevent it from receding when installing o-ring 27 onto poppet.
  
6. Air inlet flange assembly: install o-ring 25 onto the air inlet flange 20. Lightly oil the o-ring 16 on air valve plug 15 and with threaded side of air inlet flange facing up, install air valve plug o-ring first. Turn air valve body until the o-ring groove protrudes out of the bottom of the air inlet flange. Install o-ring 18 onto air valve body; oil lightly and back out carefully until air valve plug body sits flush with the air inlet flange.

the “air supply inlet” and the other for a receiver gauge to the “air outlet”.

**WARNING:** a receiver gauge is a 1:100 false reading gauge (1 psi hydraulic = 100 psi on the gauge), displaying hydraulic pressure in terms of the air pressure on the outlet. This is not a high pressure gauge! *Do not exceed the maximum pressure shown on the gauge face.*

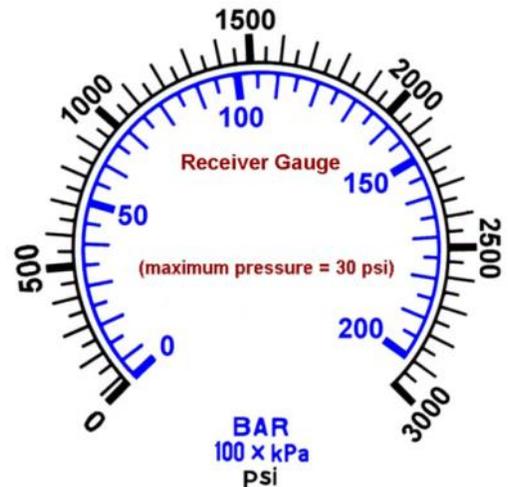
2. Use Teflon tape on a 1/2” NPT fitting for the hydraulic supply and install into the body.
  
3. Remove the jam nut 24 and adjustment cap 22 in order to access the air valve body 17.



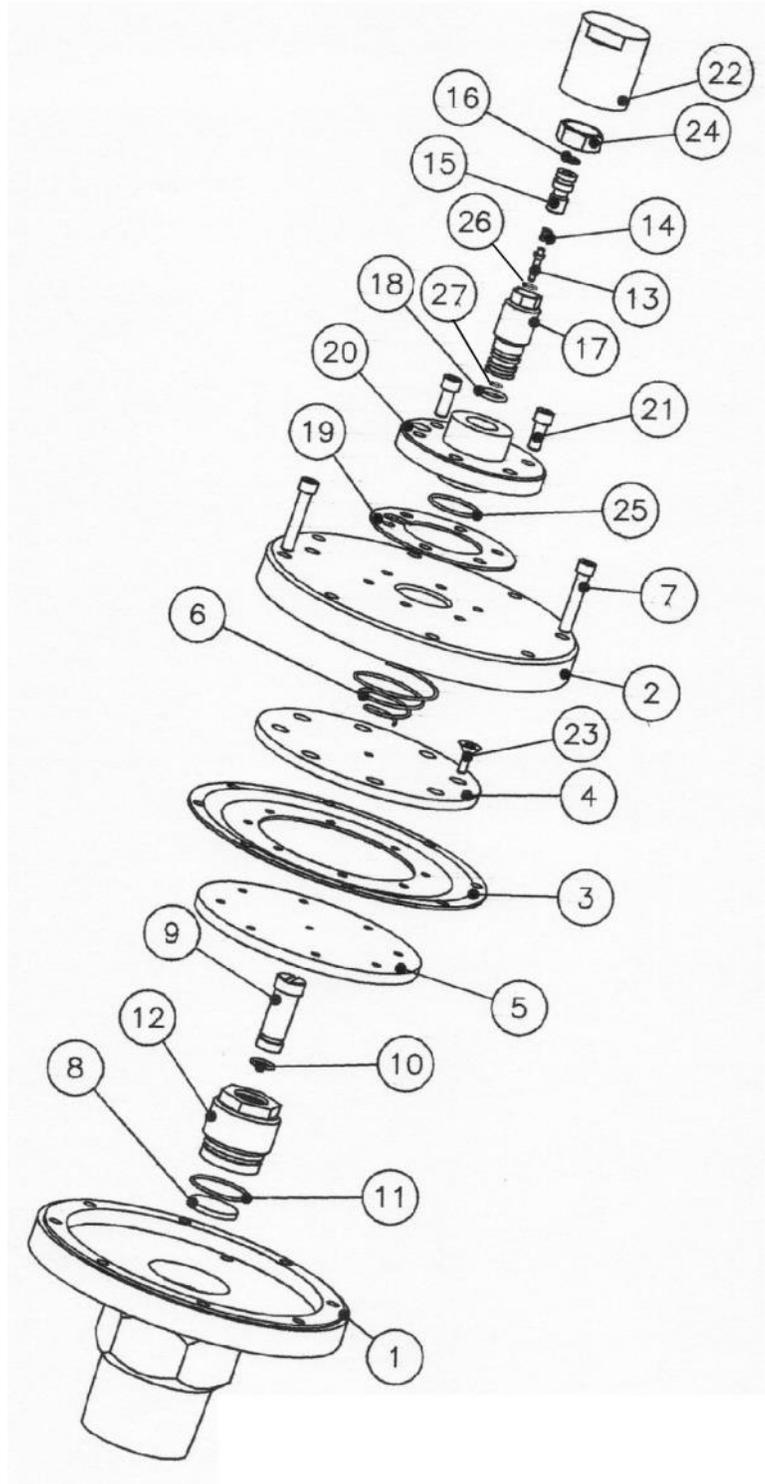
**Adjustment Procedure**

NOTE: Available hydraulic pressure should be 3000 psi and air supply 60 psi minimum. The scope of this procedure does not include configuration of the hydraulic power source, however proper controls and gauges are required to properly adjust the transmitter.

1. Using Teflon tape wrap the threads of (2) 1/4” NPT air fittings, one to supply air pressure to



Item	Part #	Description	Qty
1	40-0511	BODY	1
2	40-0512	TOP PLATE	1
3	40-0513	DIAPHRAGM	1
4	40-0514	UPPER DIAPHRAGM PLATE	1
5	40-0515	LOWER DIAPHRAGM PLATE	1
6	40-0516	SPRING DIAPHRAGM PLATE	1
7	50-0147	SCREW	8
8	40-0517	MUD SEAL	1
9	40-0518	PISTON	1
10	23-1344	O-RING	2
11	23-1400	O-RING	1
12	40-0519	BUSHING	1
13	40-0520	AIR VALVE POPPET	1
14	40-0521	COIL SPRING	1
15	40-0522	AIR VALVE PLUG	1
16	23-1338	O-RING	1
17	40-0523	AIR VALVE BODY	1
18	23-1333	O-RING	2
19	40-0524	GASKET	1
20	40-0525	AIR INLET FLANGE	1
21	50-0228	SCREW	6
22	40-0526	ADJUSTMENT CAP	1
23	50-0286	FLAT HEAD SOCKET SCREW	8
24	50-0124	JAM NUT	1
25	23-1403	O-RING	1
26	23-1445	O-RING	1
27	23-1502	O-RING	1



4. Apply hydraulic pressure to transmitter and inspect for leaks. Air leaks can be heard, or use a soap solution to detect.
5. Adjust the air valve body to calibrate the transmitter such that the reading on the receiver gauge approximates the hydraulic supply pressure (-300 psi / +0 psi). Rotate the air valve body clockwise to increase air outlet pressure and counterclockwise to decrease. Never increase air outlet reading greater than the hydraulic supply.
6. When desired pressure reading has been attained on the air outlet gauges and no leaks have been detected, vent the hydraulic pressure and monitor the air receiver gauge to make sure it resets to zero quickly. If it takes longer than 1 second to reset to zero, the air valve body is threaded too far and must be backed out to reduce pressure; repeat steps 4 and 5.

When the transmitter has been successfully calibrated, install and tighten the jam nut and adjustment cap.

## Troubleshooting

### Receiver Gauge won't return to zero

1. Air valve body has been adjusted too far down.

### Receiver Gauge won't track hydraulic pressure properly.

1. Receiver gauge and/or hydraulic gauge is defective.

**Air Leaks:** Any hissing, drop in pressure or rapid gauge needle movements are a clear indication that an air leak is present.

1. Dirt or debris is interfering with an o-ring seal and its seating surface.
2. Damaged O-rings.
3. Inadequate amount of RTV sealant applied to

diaphragm assembly.

4. Inadequate or uneven tightening of bolts on air inlet flange or body bolts.
5. 1/4" NPT fittings are threaded too deeply into the body or air inlet flange, which results in contacting the diaphragm plate.

**Hydraulic Leaks:** Weepage from underside the body will indicate a hydraulic leak that has gone past the mud seal.

1. Bushing o-ring is damaged and has failed.
2. Piston o-ring is damaged and has failed.

## Technician Notes: