



REFILL STATION REBUILD KIT  
P/N 14270NOS



INSTRUCTION SHEET  
P/N 199R10338

## 1.0 DISASSEMBLY

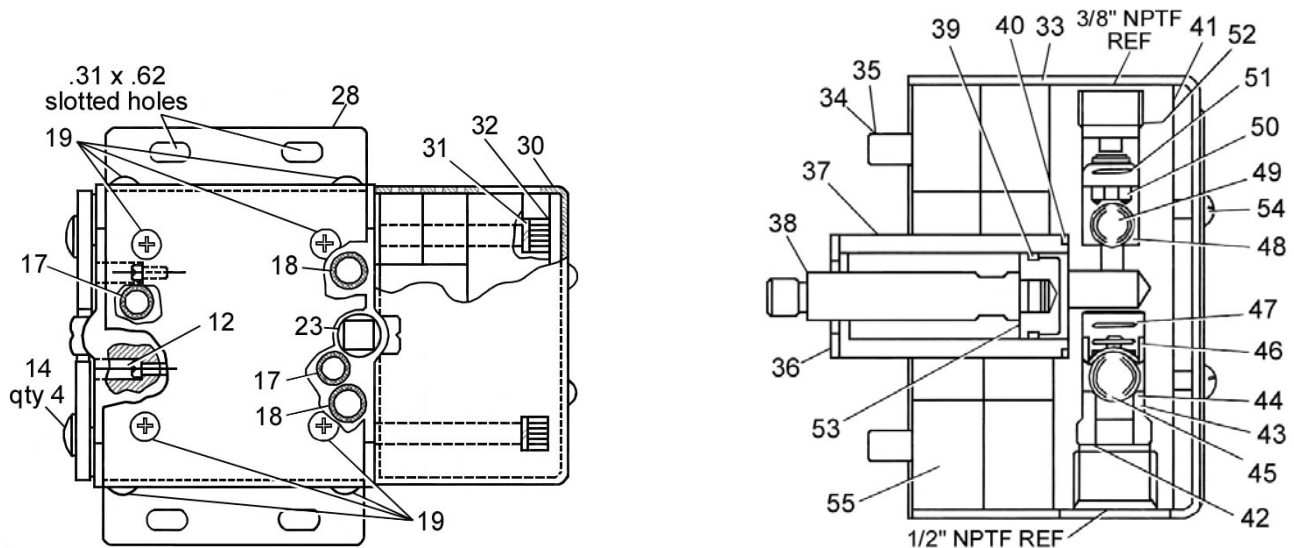
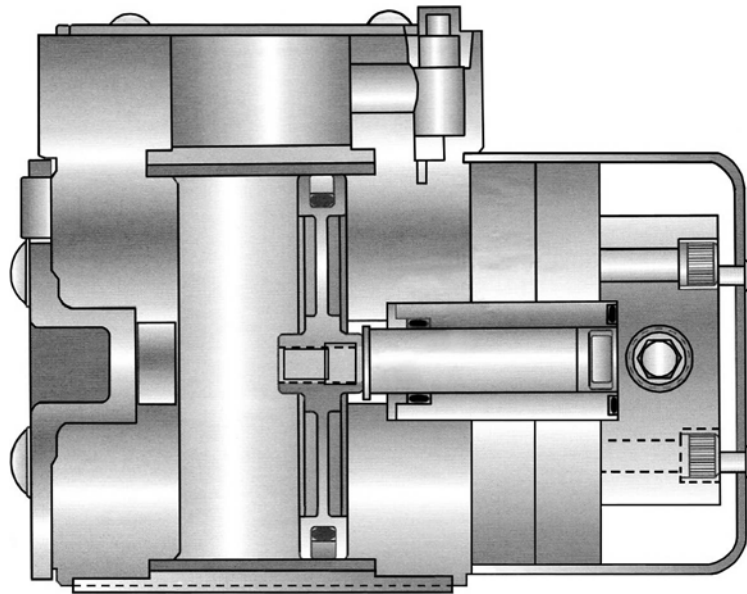
This procedure describes the removal of the air module from the fluid module and complete disassembly of the pump. The number following the part name in parenthesis corresponds to the item number in the NOS refill station illustrated parts breakdown.

1. When the pump is disassembled, air and liquid modules should be kept together and handled carefully to avoid damage to precision machined surfaces.
2. To wash metal parts, use Stoddard dry cleaning solvent per Federal Specification P-D-680 of MIL-F-7024, Type II or use any quality commercial solvent that is available.

The pump disassembly and reassembly can be done with the following standard hand tools:

- A. Phillips head screwdriver
- B. Blade-type screwdriver
- C. Ratchet wrench with 5/8" dia. extension hex socket
- D. Standard Allen wrench set
- E. Small adjustable wrench
- F. Retainer ring pliers

Power equipment and special tools can be used at the user's discretion.



Item No.	Description	Qty.
1	End plate, air	1
2	End plate	1
3	Cylinder, air	1
4	Air piston	1
5	Piston, pilot valve	2
6	Spring	2
7	O-ring nitrile 90SH .145" I.D.	2
8	Air valve assembly	1
9	Plug, pilot valve	2
10	Plug, air motor	1
11	Plug, air motor	1
12	SOC/HD #8-32 x 2.50" LB.	2
13	Plug, hollow hex. 1/16"-27	2
14	Truss HD. Phillips 5/16"-18 x 3/4" LG.	6
15	SOC/HD 5/16"-18 x 3.75" LG.	4
16	Hex nut 5/16"-18 self lck.	4
17	O-ring nitrile 70SH .364" I.D.	4
18	O-ring nitrile 70SH .426" I.D.	2
19	Truss HD. Phillips #10-24 x 3/8" LG.	12
20	N/A	N/A
21	Seal system	1
22	O-ring nitrile 70 SH .489" I.D.	1
23	Cap plug 3/8" NPT	1
24	O-ring nitrile 70SH .114" I.D.	2
25	O-ring nitrile 70SH 1.049" I.D.	1
26	Push on ring 5005-31-H	2
27	O-ring nitrile 70SH 3.989" I.D.	2
28	Enclosure motor	1
29	O-ring nitrile 70SH .120" I.D.	2
30	Decal	1
31	Nameplate, air motor	1
32	Decal, patent pending	1
33	Enclosure muffler	1
34	Lock washer hi-collar 5/16	4
35	SOC/HD 5/16"-18 x 2.75" LG.	4
36	Retainer, seal	1
37	Cylinder, high pressure (21:1)	1
38	Piston rod (5, 10, & 21:1)	1
39	Seal	1
40	O-ring Teflon coated (PFA) 1.051"	1
41	Plate, high pressure (21, 34, & 64:1)	1
42	Seat, inlet check valve (21, 34, & 64:1)	1
43	Ring, back-up	1
44	O-ring Teflon coated (PFA) .489"	1
45	Ball 1/2" dia. grade 100	1
46	Guide, ball	1
47	Spring, compression	1
48	Seat, semi-soft O/L C.V.	1
49	Ball 7/16" dia. grade 100	1
50	Guide, ball	1
51	Spring, inlet & outlet check	1
52	Retainer O/L C.V. (21, 34, & 64:1)	1
53	Piston, high pressure (5, 10, & 21:1)	1
54	RD/HD Phillips #10-24 x 1/2" LG.	3
55	Muffler, media	2

## 1.1 Disassembly Procedure

1. Unscrew the three round head screws (54) to remove the muffler enclosure (33). See Figure 1.
2. Unscrew the four socket head screws (35) to remove the lockwashers (34), high pressure plate (41), and muffler media (55). See Figure 2.



Figure 1

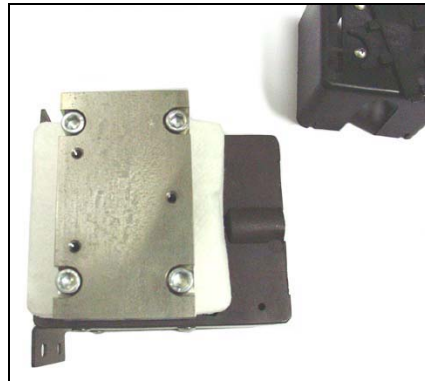


Figure 2

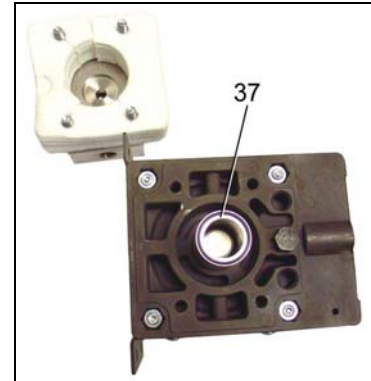


Figure 3

3. Remove the high pressure cylinder (37) by gently rocking and pulling outward. Use caution to prevent damaging the cylinder, piston, or mating surfaces. See Figure 3.

**Note: To replace the high pressure seal only, go to section 4.0.**

4. Remove the four truss head screws (14) to remove air motor plug (10). See Figure 4.
5. Insert 5/8" socket through port in endplate (2) engaging hex connection on air piston (4). Use adjustable wrench on the flats of the liquid piston rod/piston (38) and turn counterclockwise to remove. See Figures 5 & 6.



Figure 4



Figure 5



Figure 6

6. Use bench vise to hold high pressure plate while assembling and disassembling. Cushion vise jaws with soft aluminum plates to prevent scratching high pressure plate.
7. Remove the retainer (52) with an Allen Wrench. Remove the ball (49), ball guide (50), and spring (51).
8. Remove check valve seat (42) with Allen wrench, remove ball (45), ball guide (46), and spring (47). See Figure 7.

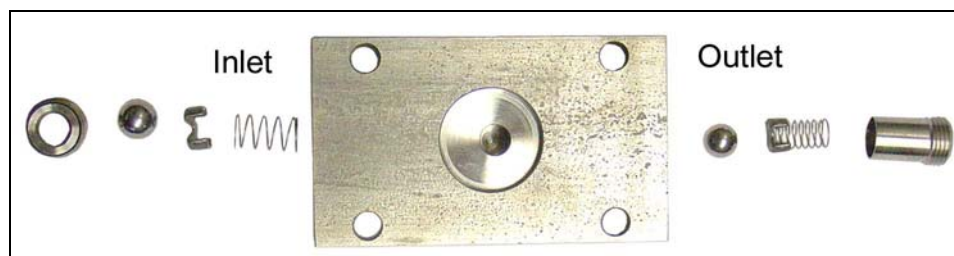


Figure 7

**This completes the disassembly of the liquid module.**



9. Remove truss head screws (19) 12 places to remove enclosure (28) and O-rings (17) 2 and (18) 2. See Figure 8 & 9.
10. Remove socket head bolts (12) 2 ea. & (15) 4 ea. See Figure 10.



Figure 8

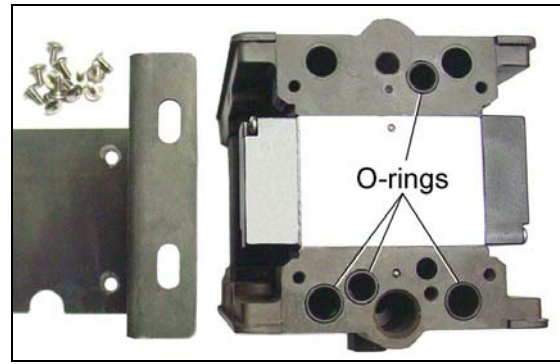


Figure 9

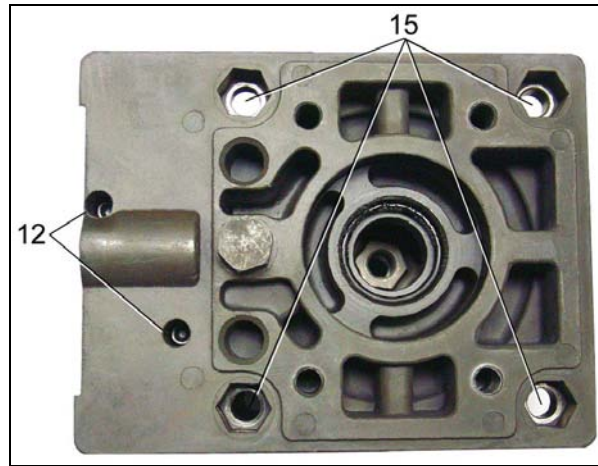


Figure 10

11. Gently tap housing assemblies (1) and (2) with leather or rubber mallet to remove from air cylinder (3) and air valve assembly (8) taking care not to lose O-rings (29) and (22) or damage air valve assembly (8). Remove air piston (4) and seal system (21) from air cylinder (3). See Figures 11 & 12.

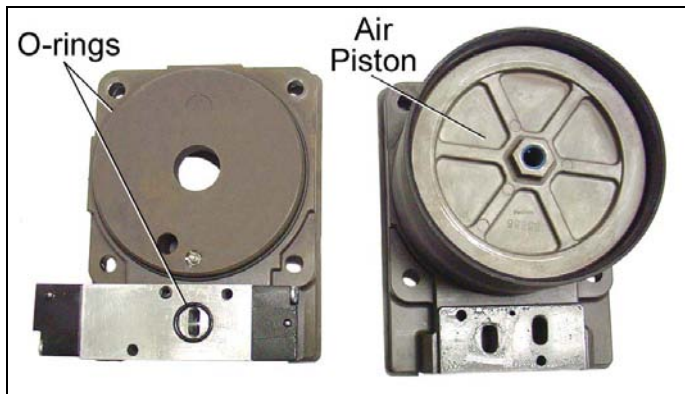
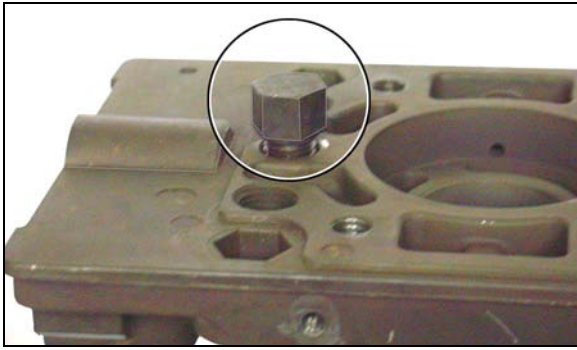


Figure 11

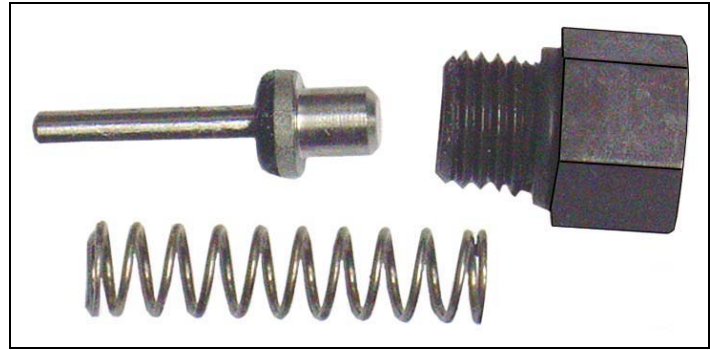


Figure 12

This completes disassembly of the air module.



**Figure 13**



**Figure 14**

12. Remove plug (9), spring (6), piston (5), and O-ring (7) from endplates (1) and (2). See Figures 13 & 14.
13. Rotate plate and using a small blade-type screwdriver, remove push-on ring (26). Using an O-ring removal tool, remove O-ring (24). See Figure 15.



**Figure 15**

## **2.0 CLEANING AND INSPECTION**

1. Remove remaining O-rings from sub-assemblies and wash all metal parts in solvent with the exception of air valve assembly (8). Dry parts thoroughly with soft lint free cloth or clean compressed air.
2. Check air valve assembly (8) for free movement and cleanliness. If contaminated, air valve may be soaked in filtered kerosene to remove contamination and air dried. If free movement is not restored, the refill pump must be replaced.
3. Inspect all parts under a strong light for any evidence of distortion (springs), cracks, pitting, scoring or galling.
4. Inspect all threaded parts for chipped, crossed, or stripped threads.
5. Inspect inlet and outlet check balls and seating areas for nicks, scratches, burrs, excessive wear, or corrosion.

## **3.0 REPAIR AND REPLACEMENT**

1. Polish metal parts to remove minute imperfections, minor scratches, or scoring. Use wet-or-dry paper grit # 600.
2. Fluid piston (38) and cylinder (37). Carefully polish piston to remove minor scratches or nicks. Use grit # 600. Polish cylinder with hone to remove minor imperfections. Use a very fine polishing stone. If there is any evidence of galling or if imperfections cannot be easily removed, the refill pump must be replaced.
3. Clean all repaired parts in solvent as described in Step 1 of the Cleaning & Inspection section preceding.
4. If any metal parts fail to pass inspection or are damaged or worn beyond simple repair, the refill pump must be replaced.
5. Replace all O-rings, seals, seal retainers, and springs at each overhaul. Overhaul kits contain all the necessary parts to properly overhaul the pump.

## 4.0 REASSEMBLY

1. Before reassembling pump, wash metallic parts thoroughly in solvent and dry. Pump should be assembled on a clean work bench in a dust-free area to prevent contamination.
2. Reassemble endplates (1) and (2) by installing O-ring (24) and push-on ring (26) with a straight steel pin.
3. Install O-ring (7) on pilot valve piston (5). Lightly lubricate pilot piston with Vaseline, hydraulic coil or petroleum per Federal Specification VV-P-236 and insert in pilot valve port in endplates (1) and (2). Insert spring (6) over pilot valve piston (5). Install O-ring (17) on plug (9) and thread into port in endplate over spring. Torque 30 to 40 inch pounds. Install O-rings (27) onto end caps (1) and (2).
4. Install seal system (21) onto air piston (4). Note: Seal may be heated by immersion in hot water to facilitate installation. Insert air piston/seal assembly into air cylinder (3).
5. Install air piston/seal/air cylinder on to endplate (1) assembly.
6. Lubricate seal (29) with petroleum jelly to hold in place and install in O-ring groove on gasketed side of air valve (8).
7. Place end plate (1) on bench with cylinder facing up and place air valve (8) gasketed side down over ports in end plate making sure that gasket guides fit into holes in end plate (1) and O-ring (29) is in position.
8. Lubricate seal (22) and (29) and place in O-ring grooves in air valve (8).
9. Place end plate (2) over cylinder (3) and air valve (8) and press down to engage. Install socket head bolts (12) and tighten hand tight.
10. Rotate air motor to an upright position and install bolts (15) and nuts (16). Torque to 120 in./lbs. Torque bolts (12) to 20 in./lbs.
11. Lubricate O-rings (17) 2 and (18) 2 and place in grooves in end plates (1) and (2). Place enclosure (28) over air module and fasten top first with 4 screws (19). Torque to 20 in./ lbs. Install remaining screws (19) 8 ea. in side panels and torque to 10 in./lbs.
12. Insert 5/8" socket through port in end plate (2) engaging hex connection on air piston (4). Screw piston/rod (38) into air piston (4) using adjustable wrench on the flats of the liquid piston/rod (38). Torque to 120 in./ lbs. If torque patch on piston/rod (38) is worn, piston may be secured by using a drop of Loctite. Install seal (39) onto piston (53). Install O-ring (40) in cylinder (37) as shown.
13. Assemble inlet and outlet check valves into high pressure plate as detailed in the Step 7 of the Disassembly Procedure.
14. Install high pressure cylinder (37) carefully to prevent damage to high pressure seal (39).
15. Place high pressure plate (41) and check valve assembly over high pressure cylinder making sure that outlet check valve is properly oriented and install screws (35) and lockwashers (34). Tighten screws (35) to 100 in./lbs. making sure that high pressure plate (41) remains parallel to air motor plate (1).
16. Install muffler media over screws (35) and cylinder (37) between high pressure plate (41) and air motor module.
17. Install muffler enclosure (33) with three round head screws (54) and tighten to 10 in./lbs.
18. Install air motor plug (10) with four truss head screws (14) and tighten to 5 in./lbs.

**This completes the pump assembly.**



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