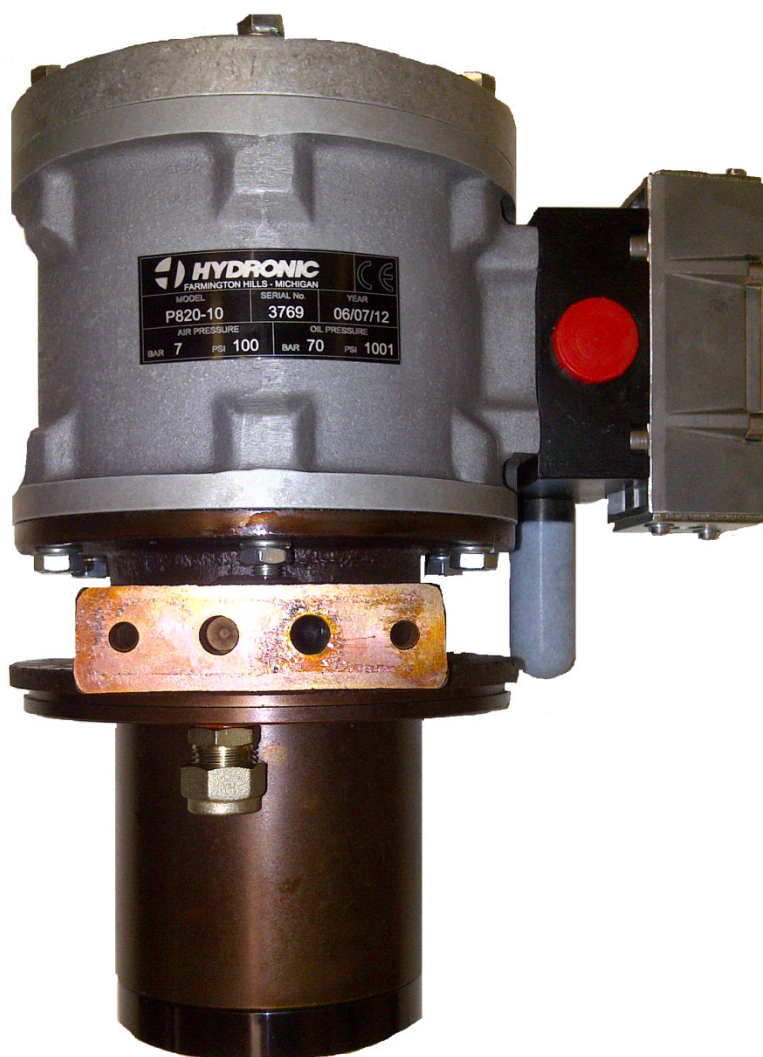




Air Driven Hydraulic Pumps and Intensifiers

P820 Repair Manual

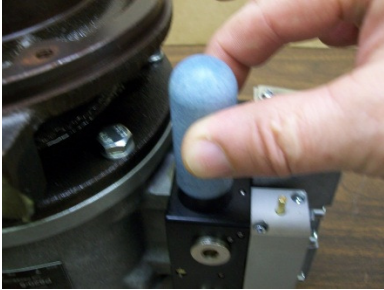


Hydronic Corporation, 2034 Fruit St, Algonac, MI 48001 United States of America

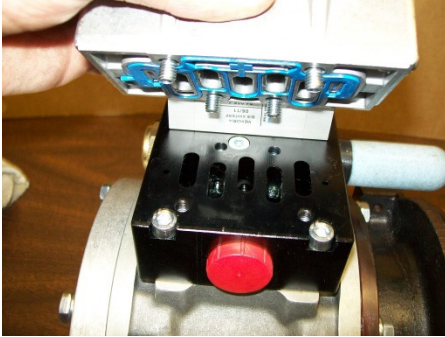
 (810) 794 4935 www.hydroniccorp.com

P820 Seal Replacement (Rebuild) Procedure

1. Remove muffler on oil chamber side. (Item # 138)



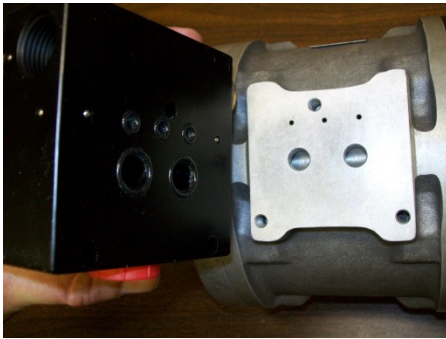
2. Remove Air Valve. (Item # 135)



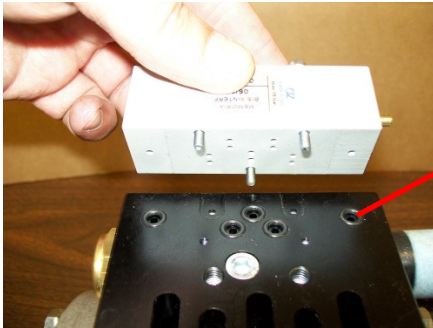
3. Remove memory valve. (Item # 136)



4. Remove air manifold. (Item #131)



5. Replace the 5 O-Rings on the air valve side of manifold. (Item # 133)



O-Rings that need to be replaced

6. Replace the 5 O-Rings on the pump side of manifold. (Item #'s 132, 133)



O-Rings that need to be replaced

7. Replace seal on air valve.



8. Remove, clean, dry and replace breather on air manifold. (Item #139)



9. Remove all of the 13mm bolts holding the air chamber to oil chamber. There should be 5 total. (Item #26)



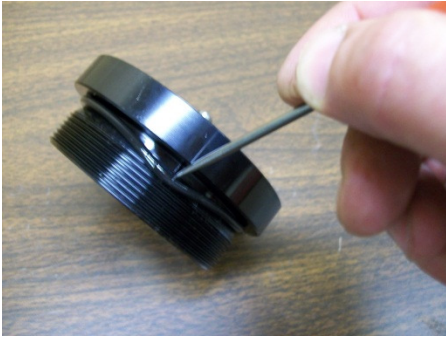
10. Lay pump on its back. Using a spanner wrench, remove suction check valve.



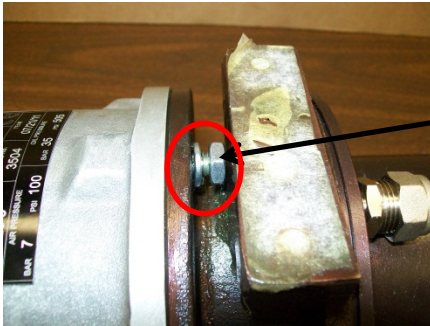
11. Remove and replace inner O-Ring (Item 42) from suction check valve.



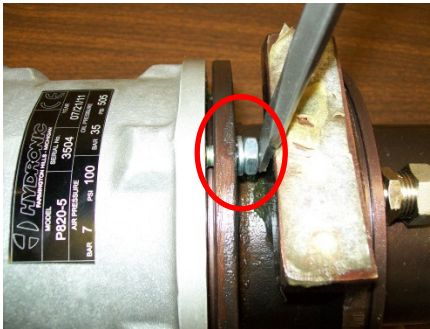
12. Remove and replace outer O-Ring (Item 37) from suction check valve.



13. Loosen the 13mm nut just to the end of the stud. (Item 36)



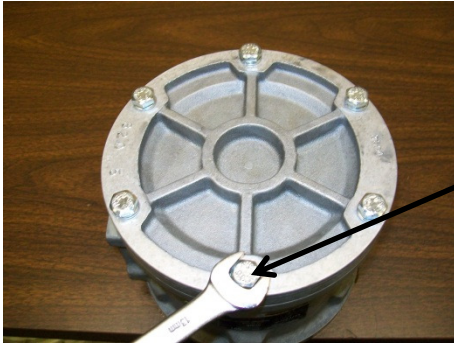
14. Pry on 13mm nut to separate air chamber (Item #19) from oil chamber (Item 25) and remove nut and washer.



15. Carefully pry between air and oil chambers and then pull air chamber off.



16. Remove the 13mm bolts from top of air chamber. There are 6 total. (Item 13)



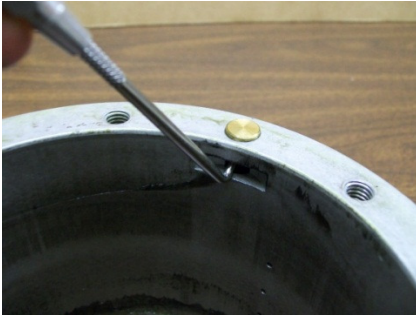
17. Using a wood or plastic hammer handle or something similar, knock off cap (Item 14) of air chamber from inside. Inspect the inside of the air chamber for scratches.



18. Remove and replace O-Ring from air chamber cap. (Item 15)



19. Using a 90° angled pick, remove both brass plugs from the air chamber. There is one on each end. (Item 20)



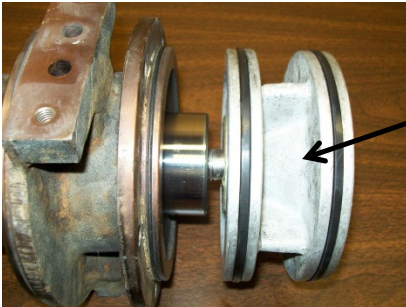
20. Remove and replace O-Rings from brass plugs and replace in air chamber.
(Item 21)
21. Replace cap on air chamber on end without stud. Tighten the (6) 13mm bolts in a "star" pattern.



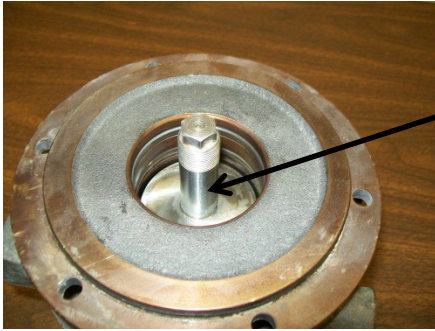
22. Remove castle nut from piston assembly (Item 17).



23. Remove air piston (Item 18) from oil piston (Item 29).



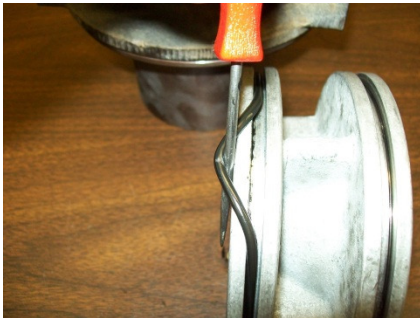
24. Remove oil piston (Item 29) form oil chamber.



25. Carefully cut Teflon seals (Item 16) without nicking the aluminum air piston and remove them.

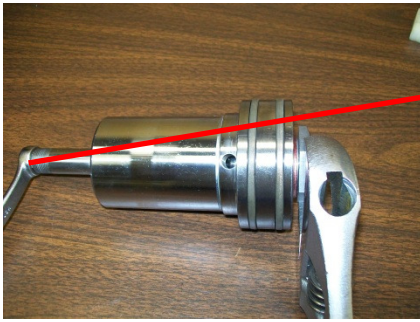


26. Carefully remove O-Rings (Item 100) from air piston. Inspect the air piston for damage.



27. Install O-Rings in grooves of air piston.
28. Using fingers or Teflon block ONLY, install new Teflon seals in grooves of air piston. Seals will stay stretched.

29. Remove internal check valve (Items 31-35) from oil piston.



THIS IS A 13 mm BOLT

30. Carefully cut and remove seals (Item 30) from oil piston.



31. Carefully remove O-Rings from oil piston. Inspect oil piston for damage.



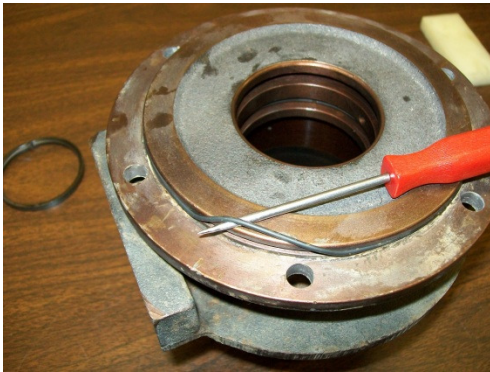
32. If there are any scratches on the piston, run your fingers across them and see if they are palpable. If so, the piston needs to be replaced.
33. Install new O-Rings in grooves of oil piston.



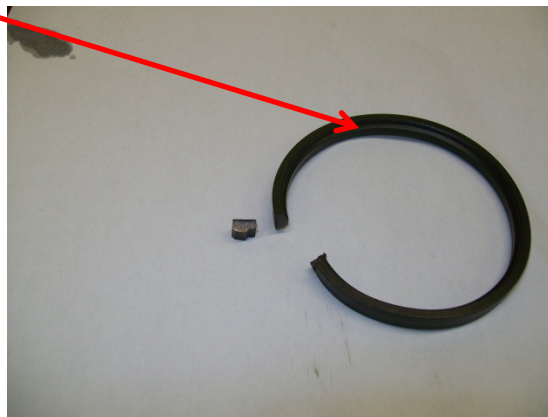
34. Using fingers or Teflon block ONLY, install new Teflon seals in grooves of oil piston. The seals will remain stretched.



35. Remove and replace bonded washer (Item 34) on internal check valve seat and reassemble.
36. Being careful not to damage oil chamber, remove the 2 seals and 3 O-Rings. Inspect the oil chamber for damage.



37. Install 3 new O-Rings in the 3 grooves of the oil chamber.
38. Fold new Teflon oil seal (Item 23) and install in grooves of oil chamber. For pumps that have "lipped" seals, the lip faces down as an oil scraper.



39. Use something smooth and round to smooth out the seals.

40. Install oil piston into oil chamber. Be careful not to cut the Teflon seals. Take this step slow. Use something to go around and push the seals into the grooves as you push piston in to chamber. Remember, seals are at both ends.
41. Use liquid thread sealant on threads and reduced area of oil piston.

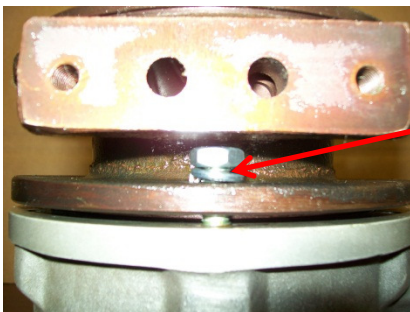


42. Install air piston with concave side out.

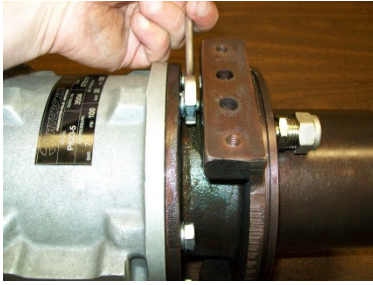


THIS SIDE OUT

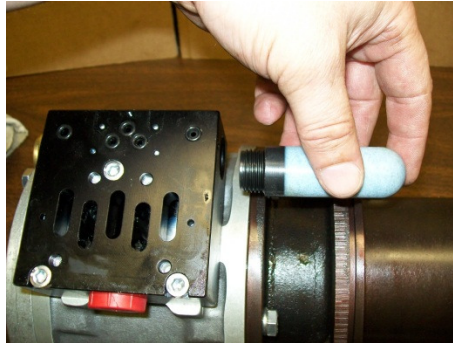
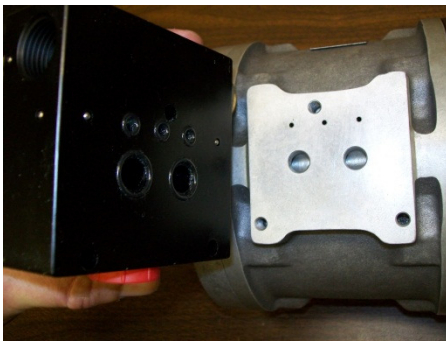
43. Add a small amount of more sealant to threads and install castle nut. Make sure to tighten well.
44. Reinstall suction check valve (Items 31-35).
45. Reinstall air chamber. Make sure stud is at hole by oil ports. Do not assemble completely until lock washer and nut are on. Do not tighten the nut.



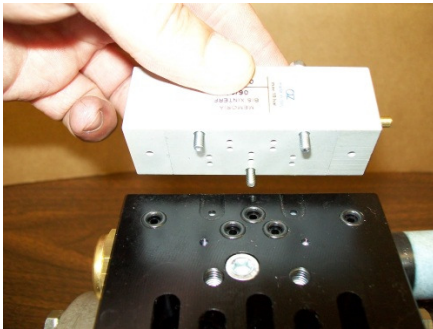
46. Reinstall (5) bolts with lock washers and tighten. Tighten the nut from the previous step.



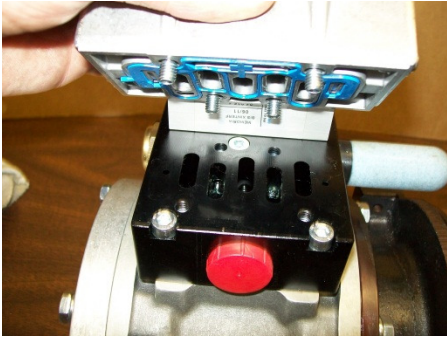
47. Reinstall air manifold with open muffler port pointing at oil chamber and tighten it down. Install the muffler.



48. Reinstall memory valve and tighten.



49. Reinstall air valve and tighten.

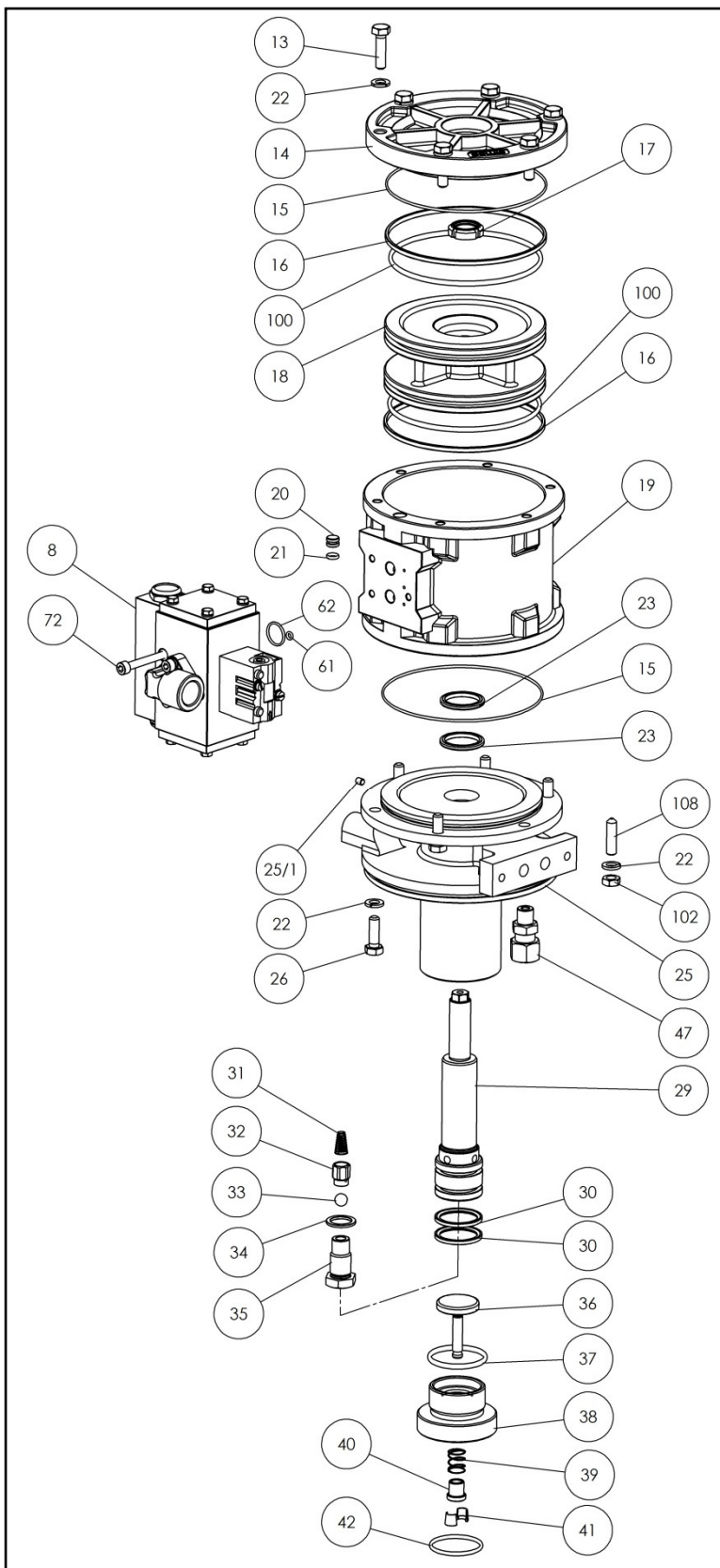


50. Finally, test the pump and inspect for leaks.

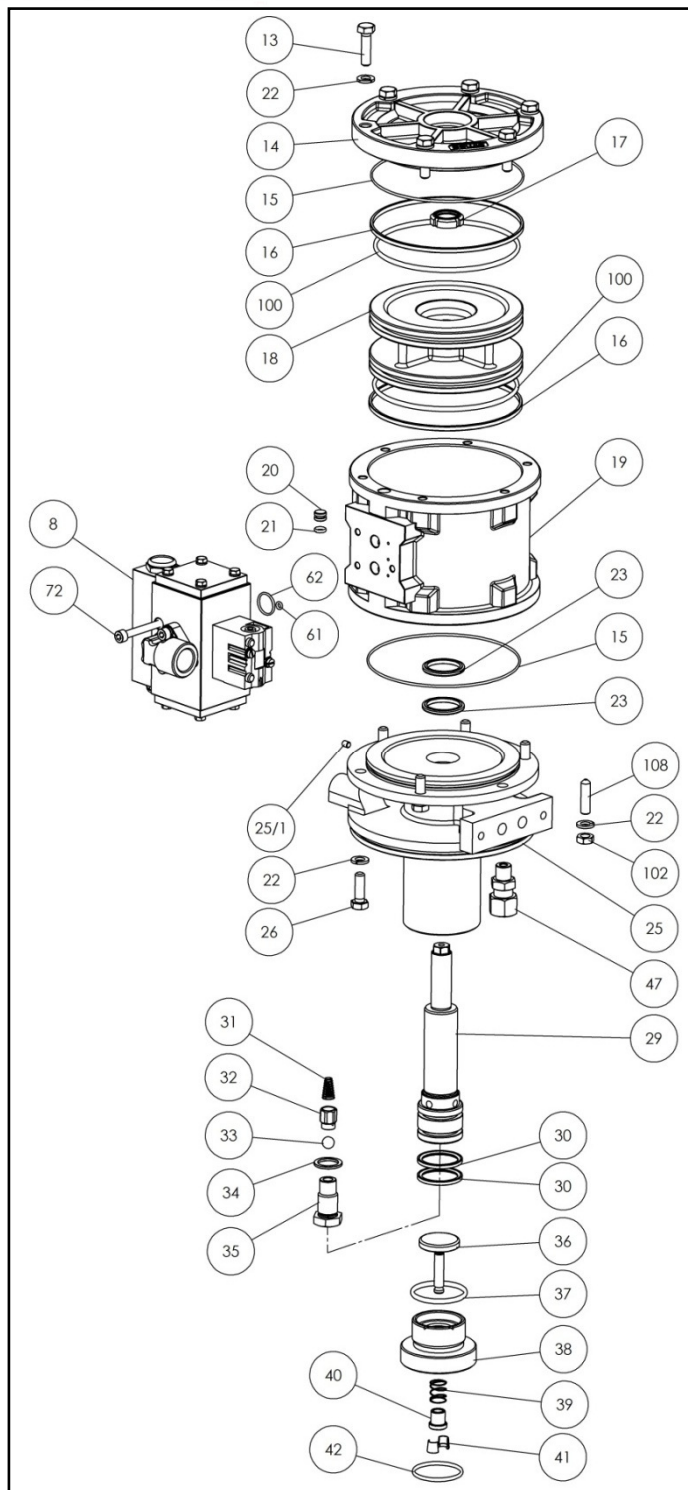
Note: Items listed with an asterisk * on the parts diagram are included in the seal kit

Pump

ITEM	CODE	DESCRIPTION	Qty
8	BH10026A	PILOT VALVE	1
13	3.094.0207	SCREW	6
14	5.086.0006	HEAD	1
15	*	3.051.0075 O-RING	2
16	*	3.051.0076 SEAL RING	2
17	3.045.0204	RING-NUT	1
18	5.068.0045	PISTON	1
19	5.018.0030	JACKET	1
20	5.084.0002	PLUG	2
21	*	3.051.0083 O-RING	2
22	3.072.0104	WASHER	12
23	*	3.051.0088 SEAL RING – Ratio 5:1	2
23	*	3.051.0086 SEAL RING – Ratio 10:1	2
23	*	3.051.0085 SEAL RING – Ratio 20:1	2
23	*	3.051.0234 SEAL RING – Ratio 30:1	2
23	*	3.051.0011 SEAL RING – Ratio 40:1	2
25	5.028.0030	PUMP BODY – Ratio 5:1	1
25	5.028.0029	PUMP BODY – Ratio 10:1	1
25	5.028.0028	PUMP BODY – Ratio 20:1	1
25	5.028.0057	PUMP BODY – Ratio 30:1	1
25	5.028.0027	PUMP BODY – Ratio 40:1	1
25/1	3.094.0411	SCREW	1
26	3.094.0208	SCREW	5
29	5.068.0049	PISTON – Ratio 5:1	1
29	5.068.0048	PISTON – Ratio 10:1	1
29	5.068.0047	PISTON – Ratio 20:1	1
29	5.068.0177	PISTON – Ratio 30:1	1
29	5.068.0046	PISTON – Ratio 40:1	1
30	*	3.051.0096 SEAL RING – Ratio 5:1	2
30	*	3.051.0094 SEAL RING – Ratio 10:1	2
30	*	3.051.0092 SEAL RING – Ratio 20:1	2
30	*	3.051.0173 SEAL RING – Ratio 30:1	2
30	*	3.051.0090 SEAL RING – Ratio 40:1	2
31	5.064.0028	SPRING – Ratio 5:1 & 10:1	1
31	5.064.0029	SPRING – Ratio 20:1, 30:1 & 40:1	1
32	5.046.0007	CENTERING BALL – Ratio 5:1 & 10:1	1
32	5.046.0006	CENTERING BALL – Ratio 20:1, 30:1 & 40:1	1
33	3.076.0006	BALL – Ratio 5:1 & 10:1	1
ITEM	CODE	DESCRIPTION	Qty



33		3.076.0002	BALL – Ratio 20:1, 30:1 & 40:1	1
34	*	3.052.0010	WASHER – Ratio 5:1 & 10:1	1
34	*	3.052.0003	WASHER – Ratio 20:1, 30:1 & 40:1	1
35		5.094.0303	SCREW – Ratio 5:1 & 10:1	1
35		5.094.0302	SCREW – Ratio 20:1, 30:1 & 40:1	1
36		5.066.0011	VALVE PIVOT	1
37	*	3.051.0127	O-RING – Ratio 5:1 & 10:1	1
37	*	3.051.0055	O-RING – Ratio 20:1, 30:1 & 40:1	1
38		5.028.0032	VALVE SEAT – Ratio 5:1 & 10:1	1
38		5.028.0031	VALVE SEAT – Ratio 20:1, 30:1 & 40:1	1
39		5.064.0030	SPRING	1
40		5.013.0008	CENTERING BALL	1
41		3.006.0006	SEMI-CONE	2
42	*	3.051.0079	O-RING	1
47		3.070.0006	CONNECTOR	1
61	*	3.051.0002	O-RING	2
62	*	3.051.0082	O-RING	2
72		3.094.0018	SCREW	3
100	*	3.051.0077	O-RING	2
102		3.031.0016	NUT	1
108		3.094.0404	SCREW	1



Air Valve Manifold

ITEM		CODE	DESCRIPTION	Qty
131		5.065.0052	BLOCK	1
132	*	3.051.0109	O-RING	2
133	*	3.051.0130	O-RING	8
134		3.094.0026	SCREW	3
135		4.091.0020	CONTROL VALVE	1
136		4.091.0028	PILOT VALVE	1
137		3.094.0061	SCREW	3
138		3.070.0096	SILENCER	1
139		3.070.0068	SILENCER	1
140		3.070.0028	PLUS	2

