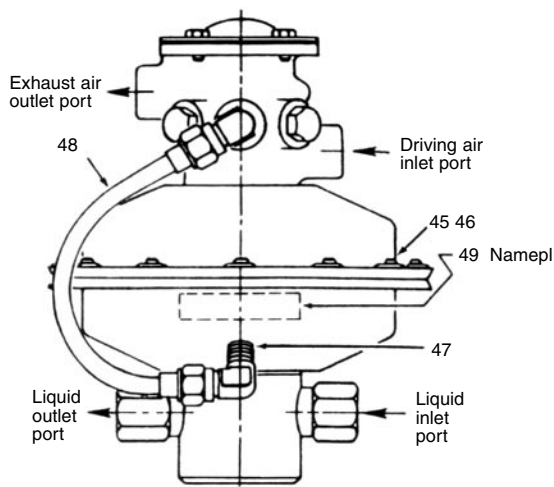


8.0 IPB AND SUPPLEMENTAL DATA

8239 Illustrated Parts Breakdown (IPB) enclosed to provide additional data on the S-216-J(-) basic pump. Other pump data may be included as required.



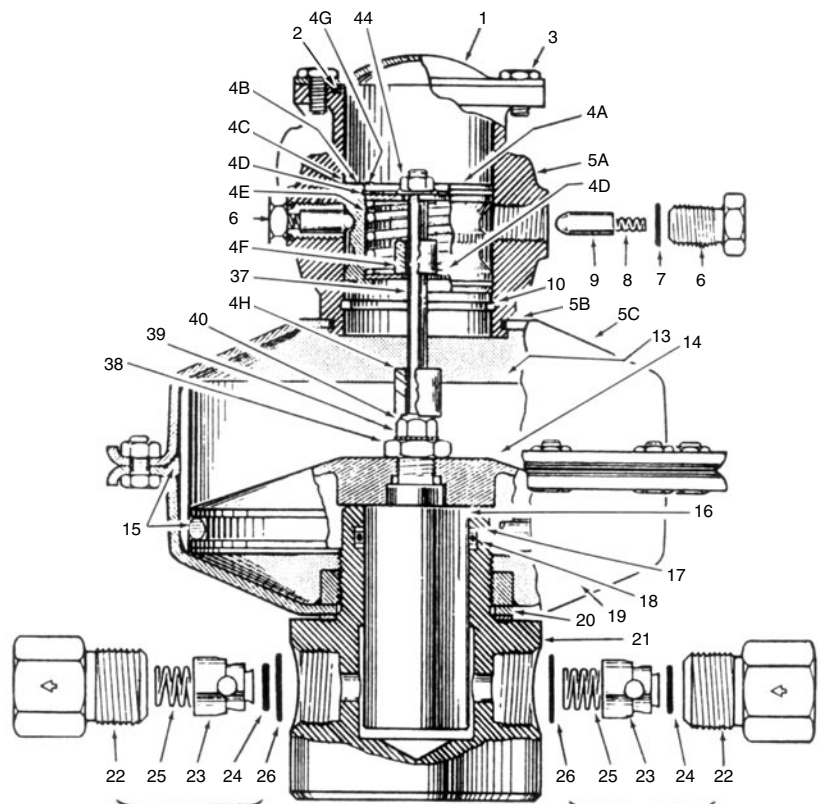
OVERHAUL KIT

The Overhaul Kit contains replacement parts including Inlet and Outlet Check Valve O-rings and Springs; Detent Springs, Pins and O-rings; Shuttle Valve Rings and O-rings as well as other O-rings, Retainers, and Connecting Self-Locking Nut and Washer.

The kits listed below apply only to standard pumps with elastomeric type seals. Standard kit seals are nitrile. Optional kits with neoprene, Viton® and EPR seals are available. In the kit numbers listed below, the two digits after the dash indicate the choice of optional seal materials. The first of those digits indicates the pump ratio while the second indicates the seal materials.

00000-X X = pump ratio
 00000-X1 1 = nitrile seals
 00000-X3 3 = Viton® seals
 00000-X4 4 = EPR seals

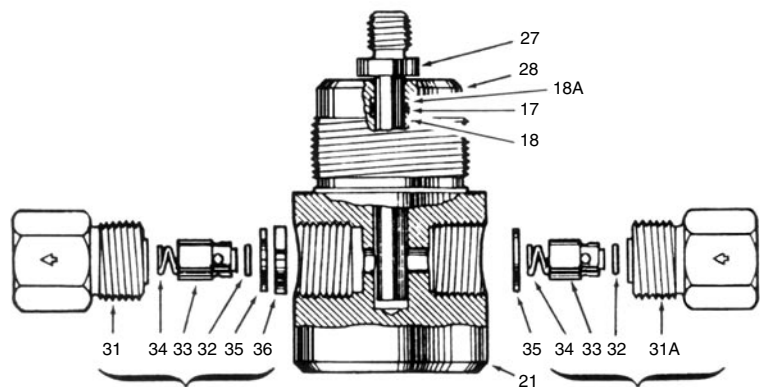
Ordering Example: An Overhaul Kit with neoprene seals is needed for an S-216-J-30. The standard kit is 90680-31 with the 3 indicating a 30 ratio pump and the 1 indicating nitrile seals. Change the last digit from 1 to 2 to indicate neoprene seals. The new number for the Overhaul Kit is 90680-32.



OUTLET Check Valve Assembly
10:1 through 100:1

INLET Check Valve Assembly
10:1 through 100:1

With liquid body/piston seals for 10:1 to 30:1 ratio pumps.



OUTLET Check Valve Assembly
125:1 through 300:1

INLET Check Valve Assembly
125:1 through 300:1

With liquid body/piston seals for 35:1 to 300:1 ratio pumps.

Pump Model Number	Reference Number	Overhaul Kit Number
S-216-J-10	79293-11	90680-11
S-216-J-20	77894-11	90680-21
S-216-J-30	77894-21	90680-31
S-216-J-35	77895-81	90680-41
S-216-J-60	77895-11	90680-51
S-216-J-100	77895-21	90680-61
S-216-J-125	77895-61	90680-01
S-216-J-125	77895-61001	90680-01001
S-216-J-150	77895-31001	90680-71001
S-216-J-200	77895-41001	90680-81
S-216-J-300	77895-51001	90680-91

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Item No	Model Number	Part Name	Pump Ratio Dash Number									
			-10	-20	-30	-35	-60	-100	-125	-150	-200	-300
	S-216-J-10 S-216-J-20 S-216-J-30 S-216-J-35 S-216-J-60 S-216-J-100 S-216-J-125 S-216-J-125 S-216-J-150 S-216-J-200 S-216-J-300	Pump Assy., 10:1 Ratio (79293-11) Pump Assy., 20:1 Ratio (77894-11) Pump Assy., 30:1 Ratio (77894-21) Pump Assy., 35:1 Ratio (77895-81) Pump Assy., 60:1 Ratio (77895-11) Pump Assy., 100:1 Ratio (77895-21) Pump Assy., 125:1 Ratio (77895-61) Pump Assy., 125:1 Ratio (77895-61001) Pump Assy., 150:1 Ratio (77895-31001) Pump Assy., 200:1 Ratio (77895-41001) Pump Assy., 300:1 Ratio (77895-51001)	•	•	•	•	•	•	•	•	•	•
	Part No.											
1	S-216-17-1	Cover air valve	1	1	1	1	1	1	1	1	1	1
2	91417-138	O-ring	1	1	1	1	1	1	1	1	1	1
3	MS90725-3	Screw cap, 1/4-20 X 1/2 long	4	4	4	4	4	4	4	4	4	4
4	90535-1	Air valve and housing assembly										
—	90654-1	Shuttle Assembly (See Note 1)										
4A	90522	Shuttle	1	1	1	1	1	1	1	1	1	1
4B	91417-029	O-ring	2	2	2	2	2	2	2	2	2	2
4C	90524	Ring	2	2	2	2	2	2	2	2	2	2
4D	92247	Flange	2	2	2	2	2	2	2	2	2	2
4E	90600	Spring	1	1	1	1	1	1	1	1	1	1
4F	92249	Guide sleeve	1	1	1	1	1	1	1	1	1	1
4G	90685	Snap ring	1	1	1	1	1	1	1	1	1	1
4H	92248	Stop sleeve	1	1	1	1	1	1	1	1	1	1
—	90651-1	Body and housing assembly (See Note 1)	1	1	1	1	1	1	1	1	1	1
5A	78216-1	Body (See Note 2)	1	1	1	1	1	1	1	1	1	1
5B	91417-023	Gasket (See Note 2)	1	1	1	1	1	1	1	1	1	1
5C	S-216-19	Upper housing (See Note 2)	1	1	1	1	1	1	1	1	1	1
6	78238	Detent bolt	4	4	4	4	4	4	4	4	4	4
7	79552-5	Detent O-ring	4	4	4	4	4	4	4	4	4	4
8	S-216-24	Detent spring	4	4	4	4	4	4	4	4	4	4
9	82871	Detent pin	4	4	4	4	4	4	4	4	4	4
10	S-216-56	Stop	1	1	1	1	1	1	1	1	1	1
13	S-216-13	Cylinder	1	1	1	1	1	1	1	1	1	1
14	S-216-4	Air piston	1	1	1	1	1	1	1	1	1	1
15	79550-60	O-ring, 70 shore	2	2	2	2	2	2	2	2	2	2
16	S-216-61-10SS	Liquid piston	1									
17	79551-3-1*	O-ring, 90 shore, nitrile	1									
18	MS28783-3	Packing retainer, Teflon®	2									
—	89801-10	Body and housing assembly (See Note 3)	1									
19	89800	Lower housing	1									
20	S-216-20-1	Gasket	1									
21	89775	Liquid body	1									
16	S-216-10-20	Liquid piston		1								
17	79550-25-1*	O-ring, 90 shore, nitrile		1								
18	MS28782-25	Packing retainer, Teflon		2								
—	89801-20	Body and housing assembly (See Note 3)		1								
19	89793	Lower housing		1								
20	S-216-20	Gasket		1								
21	77893	Liquid body		1								
16	S-216-10-30	Liquid piston			1							
17	79550-20-1*	O-ring, 90 shore, nitrile			1							
18	MS28782-20	Packing retainer, Teflon			2							
—	89801-30	Body and housing assembly (See Note 3)			1							
19	89793	Lower housing			1							
20	S-216-20	Gasket			1							

*Seal Materials: Neoprene, Viton and EPR.

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Item No	Model Number	Part Name	Pump Ratio Dash Number									
			-10	-20	-30	-35	-60	-100	-125	-150	-200	-300
16	S-216-10-35	Liquid piston				1						
17	79550-17-1*	O-ring, 90 shore, nitrile				1						
18	MS28782-17	Packing retainer, Teflon				1						
18A	90098-35	Back-up ring				1						
—	89801-35	Body and housing assembly (See Note 3)				1						
19	89793	Lower housing				1						
20	S-216-20	Gasket				1						
21	77888	Liquid body				1						
—	89803-60-1	Piston, body and housing assembly (See Note 4)					1					
19	89793	Lower housing					1					
20	S-216-20	Gasket (See Note 4)					1					
—	77890-11	Piston and body assembly					1					
16	S-216-10-60	Liquid piston (See Note 4)					1					
21	77888-1	Liquid body (See Note 4)					1					
17	79550-14-1*	O-ring, 90 shore, nitrile					1					
18	MS28782-14	Packing retainer, Teflon					1					
18A	90098-60	Back-up ring					1					
—	89803-100-1	Piston, body and housing assembly (See Note 4)						1				
19	89793	Lower housing						1				
20	S-216-20	Gasket (See Note 4)						1				
—	77890-21	Piston and body assembly						1				
16	S-216-11-100	Liquid piston (See Note 4)						1				
21	77888-2	Liquid body (See Note 4)						1				
17	79550-12-1*	O-ring, 90 shore, nitrile						1				
18	MS28782-12	Packing retainer, Teflon						1				
18A	90098-100	Back-up ring										
—	89803-125-1	Piston, body and housing assembly (See Note 4)							1			
19	89793	Lower housing							1			
20	S-216-20	Gasket (See Note 4)							1			
—	77890-61	Piston and body assembly							1			
16	S-216-11-125	Liquid piston							1			
21	77889-2	Liquid body							1			
17	79550-11-1*	O-ring, 90 shore, nitrile							1			
18A	90098-125	Back-up ring							2			
—	89803-150-1	Piston, body and housing assembly (See Note 4)								1		
19	89793	Lower housing								1		
20	S-216-20	Gasket (See Note 4)								1		
—	77890-31	Piston and body assembly								1		
16	S-216-11-150	Liquid piston								1		
21	77889-3	Liquid body)								1		
17	79550-10-1*	O-ring, 90 shore, nitrile								1		
18A	90098-150	Back-up ring								2		
—	82650-21	Valve assembly, outlet (3/8 NPT thread)	1	1	1	1	1	1				
—	82651-21	Valve assembly, inlet (3/8 NPT thread) (See Note 7)	1	1	1	1	1	1				
22	88906	Check valve body (See Note 7)	1	1	1	1	1	1				
—	79420-3	Poppet assembly (See Note 7)	1	1	1	1	1	1				
23	79420-1	Poppet (See Note 7)	1	1	1	1	1	1				
24	79550-8-1*	Packing O-ring, 90 shore, nitrile (See Note 7)	1	1	1	1	1	1				
25	S-216-23	Spring (See Note 7)	1	1	1	1	1	1				
26	91417-019	O-ring, 70 shore, nitrile	1	1	1	1	1	1				
—	89803-200-1	Piston, body and housing assembly (See Note 4)									1	
19	89793	Lower housing									1	
20	S-216-20	Gasket									1	
—	77890-41	Piston and body assembly									1	
27	S-216-11-200	Liquid piston									1	
28	77889	Liquid body									1	
17	79550-8-1*	O-ring, 90 shore, nitrile									1	
18	MS28782-8	Packing retainer, Teflon									1	
18A	90098-200	Back-up										

*Seal Materials: Neoprene, Viton and EPR.

Item No	Model Number	Part Name	Pump Ratio Dash Number									
			-10	-20	-30	-35	-60	-100	-125	-150	-200	-300
—	89803-300-1	Piston, body and housing assembly (See Note 4)										1
19	89793	Lower housing										1
20	S-216-20	Gasket										1
—	77890-51	Piston and body assembly										1
27	S-216-11-300	Liquid piston										1
28	77889-1	Liquid body										1
17	91417-011-1*	O-ring, 90 shore, nitrile										1
18	MS28782-6	Packing retainer, Teflon										1
18A	90098-300	Back-up ring										1
—	82648-11	Valve assembly, outlet (9/16 NBS thread)							1	1	1	1
—	82649-11	Valve assembly, inlet (1/4 NPT thread)							1	1	1	1
31	89298-1	Outlet Check valve body (See Note 7)							1	1	1	1
31A	89298	Inlet Check valve body (See Note 7)							1	1	1	1
32	79550-5-1*	Packing O-ring, 90 shore, nitrile (See Note 7)							1	1	1	1
33	89297	Poppet (See Note 7)							1	1	1	1
34	S-216-63	Spring (See Note 7)							1	1	1	1
35	S-216-28-10	Inlet check valve gasket (See Note 7)							1	1	1	1
—	S-216-28-8	Outlet check valve gasket (See Note 7)							1	1	1	1
36	S-216-27-4	Outlet check valve seat only (See Note 7)							1	1	1	1
37	90523	Connecting rod	1	1	1	1	1	1	1	1	1	1
38	93776-1	Plain nut, 1/2-20	1	1	1	1	1	1	1	1	1	1
39	MS35335-33	Washer/Lock, external tooth, 1/4	1	1	1	1	1	1	1	1	1	1
40	78259	Shifting nut	1	1	1	1	1	1	1	1	1	1
44	90686	Self-locking nut, 1/4-28	1	1	1	1	1	1	1	1	1	1
45	MS90725-3	Screw cap, 1/4-20 X 1/2 long	12	12	12	12	12	12	12	12	12	12
46	MS51967-2	Plain nut, 1/4-20	12	12	12	12	12	12	12	12	12	12
47	93594	Elbow, 90°	2	2	2	2	2	2	2	2	2	2
48	88501	Tube assembly	1	1	1	1	1	1	1	1	1	1
49	80063-2	Nameplate	1	1	1	1	1	1	1	1	1	1

Notes

- 90654-1 shuttle assembly and 90651-1 body and housing assembly may be purchased as an assembled set.
- 90651-1 body and housing assembly, consisting of body (5A), gasket (5B) and upper housing (5C), is available only as an assembled set.
- 10 through -35 pumps: lower housing (19), gasket (20) and liquid body (21) are available only as an assembled set.
- 60 through -300 pumps: liquid body (21), liquid piston (16), O-ring (17), retainers (18), back-up rings (18A and 30A), lower housing (19) and gasket (20) are available only as an assembled set. O-rings, retainers and back-up rings can be ordered separately.
- Each liquid body and lower housing assembly (See Notes 3 and 4) is provided with an accurately located port (hole) for tube assembly (48) and elbow (47).
- Seal materials listed in the Parts List are nitrile. Neoprene, Viton and EPR seals are available. Specify seal materials when ordering.
- Detail parts are identified in the inlet and outlet check valve assemblies.