

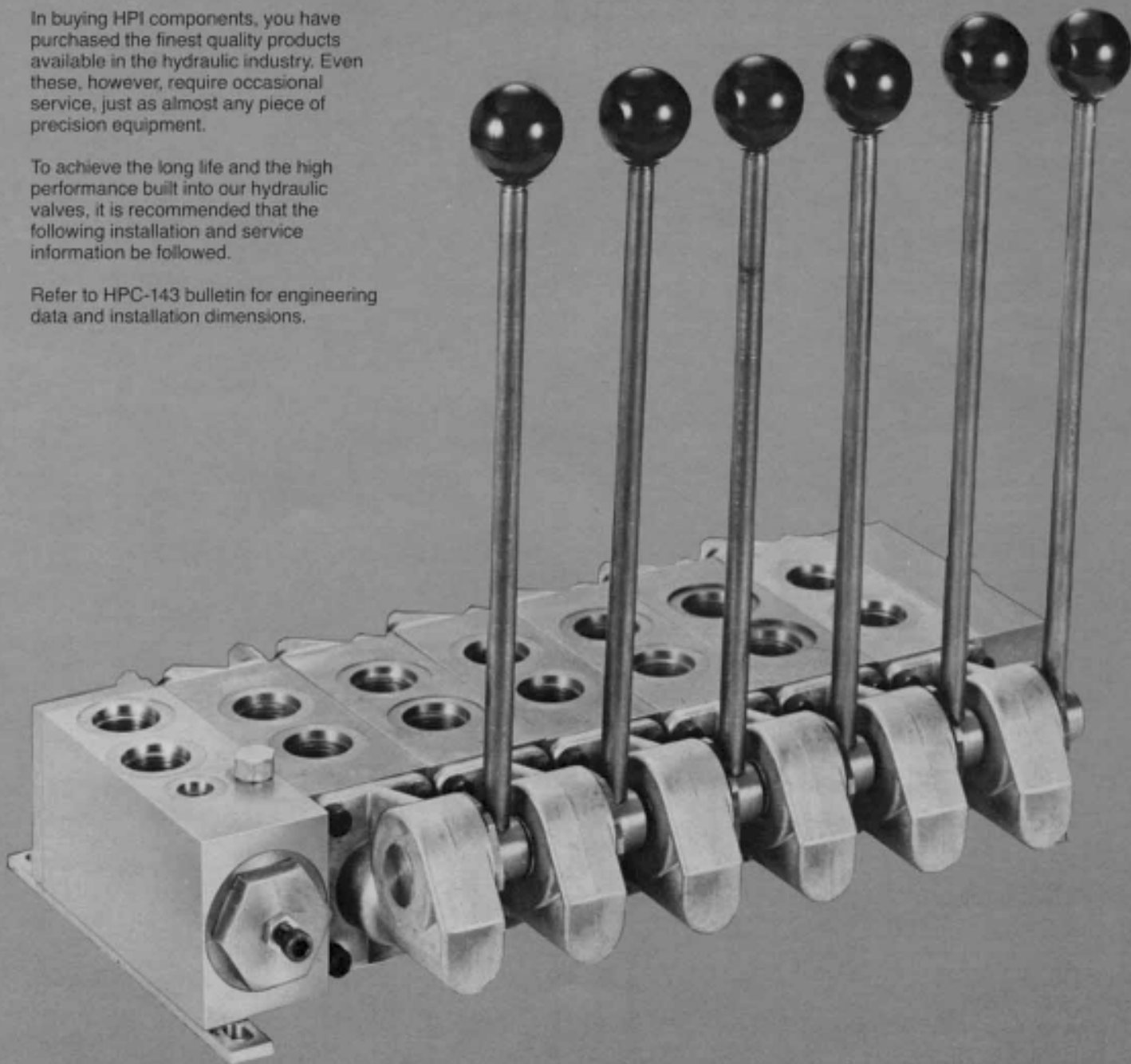
# SERVICE AND PARTS LIST

## HPI Stackable Valve 10 Series Manual (MHV), Remote Hydraulic (MOV)

In buying HPI components, you have purchased the finest quality products available in the hydraulic industry. Even these, however, require occasional service, just as almost any piece of precision equipment.

To achieve the long life and the high performance built into our hydraulic valves, it is recommended that the following installation and service information be followed.

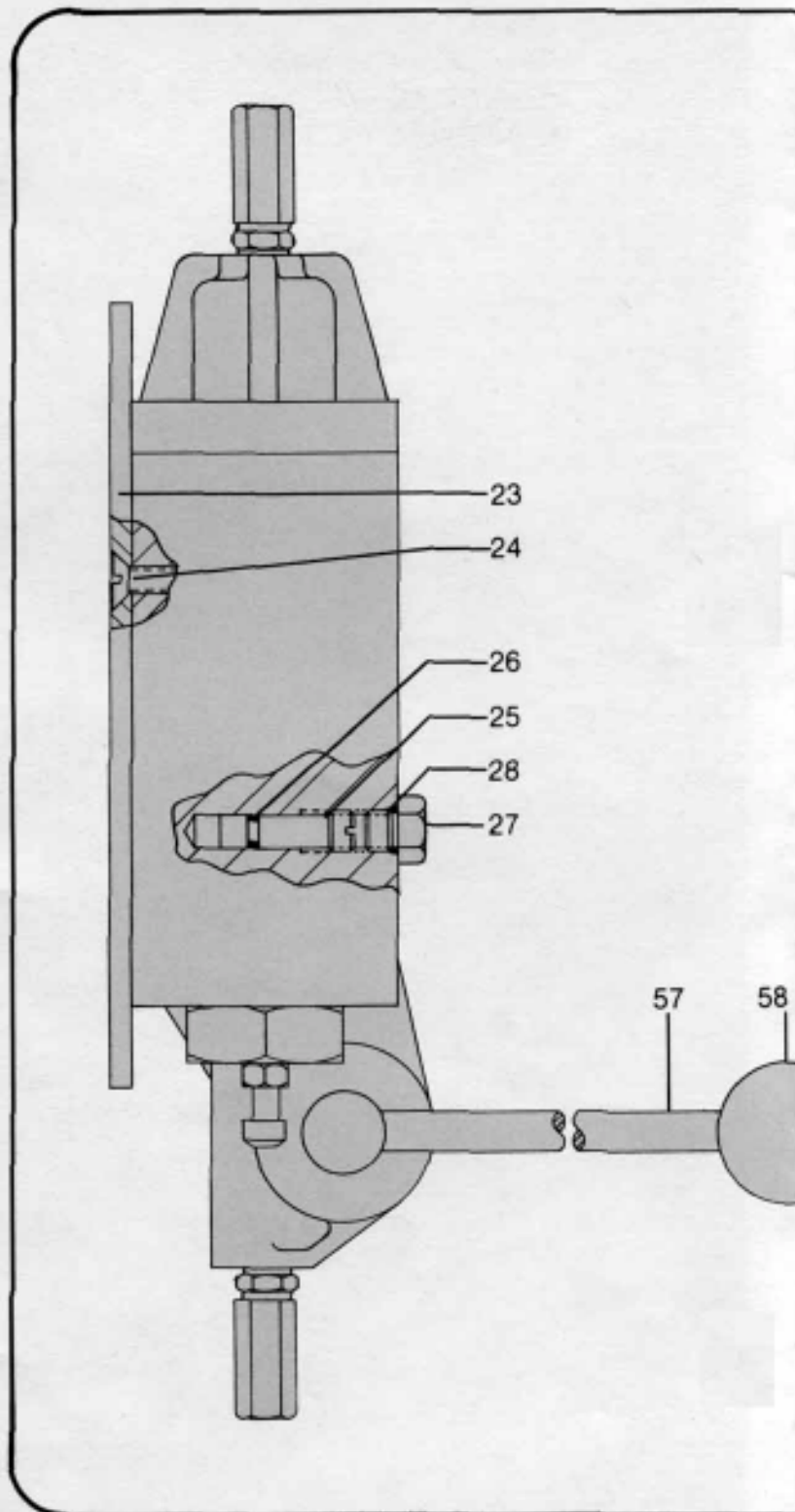
Refer to HPC-143 bulletin for engineering data and installation dimensions.



# Parts List

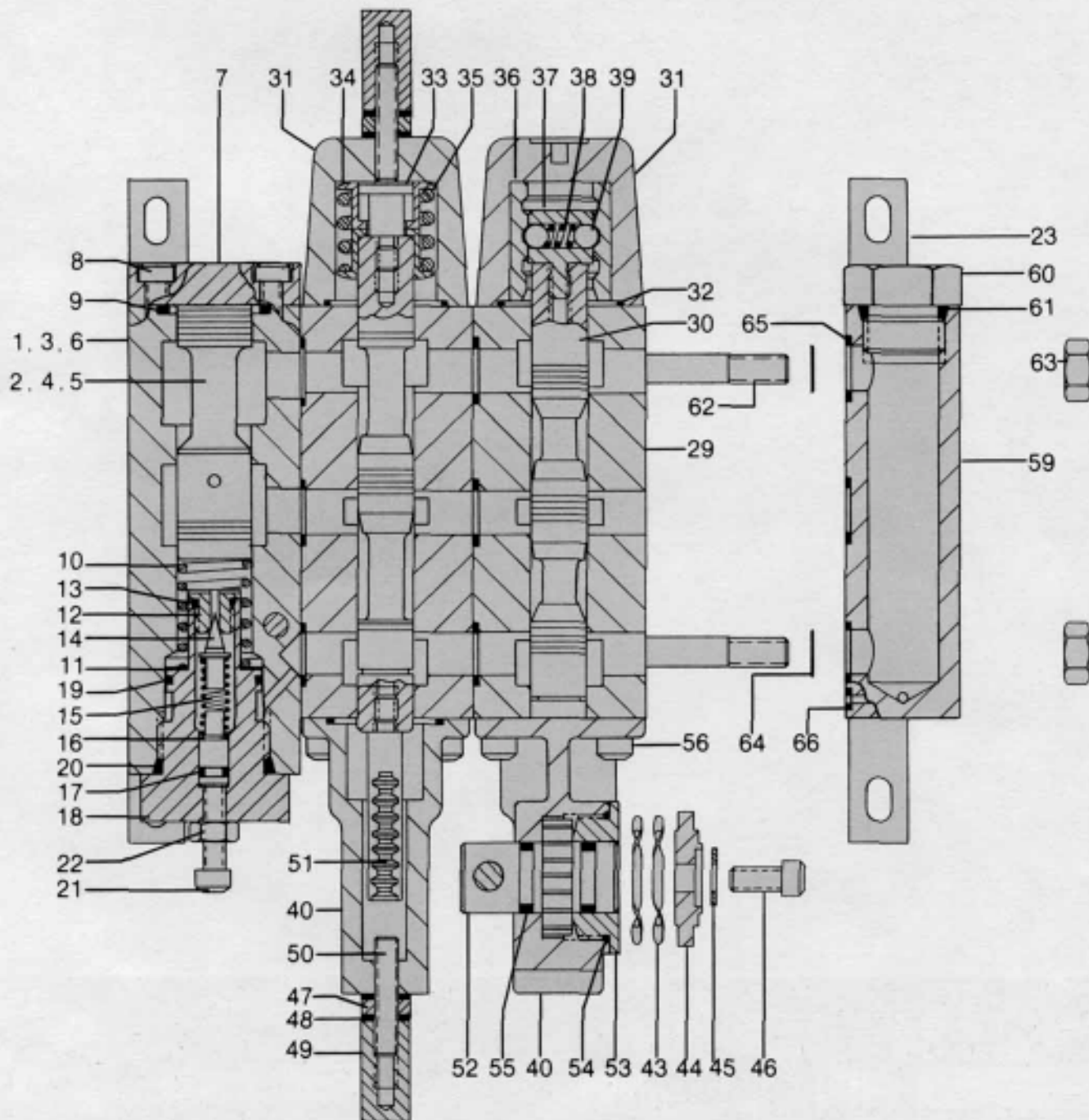
Item No.	Description	Part Number	Qty.	Remarks
1	Body, MUV Std. -X -R -RX	75100-01 75100-02 75100-03 75100-04	1	Order as set
2	Spool, MUV	15018-01	1	
3	Body, MDM Std. -X	75100-05 75100-06	1	(Not Shown) Order as set
4	Nozzle, MDM	15000-12	1	
5	Spool, MDM	15017-01	1	
6	An Inlet	15001-01	1	(Not Shown)
7	End Cap	15014-01	1	
8	Screw	25059-06	4	
9	O-Ring, Buna N Viton	25011-20 25031-20	1	
10	Bias Spring, -3 -6 & -9	25040-03 25040-04	1	50 psi 85 & 100 psi
11	Shim	25034-02	2	Use only on -9 (100 psi)
12	Seat	15026-02	1	
13	O-Ring	25009-04	1	
14	Poppet	15025-01	1	
15	Spring, -T Std.	25040-01 25040-02	1	0-1500 psi 1000-5000 psi
16	Adjusting Piston	15024-01	1	
17	O-Ring, Buna N Viton	25000-08 25030-08	1	
18	Cartridge body	15023-02	1	
19	O-Ring, Buna N Viton	25010-20 25030-20	1	
20	O-Ring	25009-14	1	
21	Relief Adj. Screw, -L -T & -S	25059-07 25059-08	1	3000 psi 1500 & 5000 psi
22	Lock Nut	25025-26	1	
23	Mounting Bracket	15030-01	1	Inlet Outlet
24	Screw	25051-05	2 2	Inlet Outlet
25	Throttle, MUV MDM	15022-01 15022-02	1	(Not Shown)
26	O-Ring, Buna N Viton	25000-07 25030-07	1	
27	Plug, SAE-3	15031-03	1	75013-03 Assembly
28	O-Ring	25009-03	1	
29	Body (4-way), Std. -Y MOV	75100-07 75100-08 75100-12	1	Order as set
30	Spool (4-way), A1 A2 & A3 C1 C2 & C3	15019-01 15019-02 15019-11 15019-12	1	Order as set
31	End Cap, Std. Stk. Control High Pressure High Pressure w/stk. cont. MOV High Pressure MOV	25035-01 25035-02 25120-01 25120-02 25035-03	1	(Not Shown) (Not Shown) (Not Shown) (Not Shown)
32	O-Ring, Buna N Viton	25010-26 25030-26	2	
33	Spool End	15020-01	1	
34	Spring Cup	15029-02	2	
35	Spring	25040-07	1	
36	Detent Ring, -R (3 pos) -T (2 pos) -B (1 pos)	15040-03 15040-02 15040-01	1	
37	Detent End	15041-01	1	
38	Spring	25040-08	1	
39	Ball	25046-08	2	
40	Handle Cap, Std. Stk. Control High Pressure  High Pressure w/Stk. Control  MOV-L High Pressure MOV-L	25036-01 25036-02 25121-01  25121-02  25036-03 25121-04	1	N.S. Rack Support Req'd.  N.S. Rack Support Req'd. (Not Shown)  N.S. Rack Support Req'd.
41	Rack Support Screw	25060-05	1	(Not Shown)
42	Rack Support Washer	25008-36	1	(Not Shown)
43	Friction Lock Wave Spring	25106-15	2	
44	Friction Ring	15054-01	1	
45	Washer	25034-04	1	
46	Screw	25059-06	1	
47	Nut	25025-25	1	
48	Sealing Washer	25008-35	2	
49	Acorn Nut	15036-01	1	
50	Set Screw	25090-14	1	
51	Rack	15039-01	1	
52	Pinion	15038-01	1	
53	Carrier	15037-01	1	
54	O-Ring	25000-26	1	
55	O-Ring, Buna N Viton	25001-13 25031-13	2	

Item No.	Description	Part Number	Qty.	Remarks
56	Screw	25059-06	4	Per End Cap
57	Handle, Std. Optional 9.75" dia.	25028-01 25122-01	1	
58	Knob Std. Optional 1.5" dia.	25024-01 25024-02	1	
59	Outlet, Std. -Z	75100-09 75100-10	1	
60	Plug, SAE-10	15031-10	1	75013-10 Assembly
61	O-Ring	25009-10	1	
62	Stud No. of 4-ways			
	0	25013-20	3	
	1	25013-21		
	2	25013-22		
	3	25013-23		
	4	25013-24		



Item No.	Description	Part Number	Qty.	Remarks
Stud No. of 4-Ways Con't				
5		25013-25		
6		25013-26		
7		25013-27		
8		25013-28		
63	Nut	25025-30	3	
64	Shim	25034-01	3	3 per 4-way 3 per inlet
65	O-Ring, Buna N Viton	25010-15 25030-15	3	3 per 4-way 3 per outlet
66	O-Ring, Buna N Viton	25010-08 25030-08	3	1 per 4-way 1 per outlet
Cartridge Relief Valve				
	-T, Buna N	75123-01		
	-T, Viton	75123-04		

Item No.	Description	Part Number	Qty.	Remarks
Cartridge Relief Valve Con't				
	-L, Buna N	75123-02		
	-L, Viton	75123-05		
	-S, Buna N	75123-03		
	-S, Viton	75123-06		
Seal Kit, Buna N, MUV MDM MHV AP				
		75140-02		
		75140-01		
		75140-03		
		75140-04		
Seal & Spring Kit, Buna N, MUV MDM MHV				
		75140-22		
		75140-21		
		75140-23		



## INSTALLATION AND MAINTENANCE

### GENERAL

Fluid Viscosity: 35 SSU to 1750 SSU

Temperature: -40° F to +180° F

Seals: Buna N standard. Specify Viton if required

Return Line Pressure: 500 psi maximum

### INSTALLATION

**Tie Bolts:** Care should be taken to prevent stressing the assembly by over-tightening the tie bolts which may result in spool jams. Always use a torque wrench to tighten. Torque to 132 inch-pounds.

**Mounting:** When mounting a valve be sure that the mounting bolts or connection pipe-work do not over-stress the assembly.

**Sealing Compounds:** No sealing compounds are required as all ports are SAE straight thread o-ring ports.

**Port Preference:** If one of the user ports (A or B) will be handling a higher return flow, it is preferable to connect the higher flow to the B port. This will provide a more direct path to the tank port.

**Handle Position:** The handle position may be changed as follows: remove the four screws from the handle cap assembly, remove the handle cap (while lifting slightly upwards). Then, rotate the handle to the desired position. Slip the handle cap back into position, and replace the four screws.

### START-UP

**Pressure Setting:** Before starting the pump, the relief valve adjustment should be fully unscrewed. Then, with the pump running and one of the functions dead-headed, adjust the maximum system pressure by turning in the relief valve adjustment.

**Bleeding:** Air in the system will impair control and may cause dangerous movement of a load. At start-up the hydraulic system should be bled at as many points as possible.

**Dampening:** The dampening throttle is factory set. If adjustment is required, remove the protective screw cap and adjust the throttle screw slightly. Keep in mind that the dampening throttle will affect the response time of the compensator. If the throttle is completely closed, the compensator and the relief valve will be completely eliminated from the circuit.

## Trouble-Shooting

### SYSTEM PRESSURE TOO LOW:

- open dampening throttle, clean or replace as necessary
- remove and clean relief valve cartridge, replace as necessary
- remove inlet section spool, inspect, deburr, clean. Slacken tie bolts and tighten to correct torque. Replace body and spool as necessary.

### LOAD DOES NOT MOVE OR MOVES AT LOW SPEEDS:

- open dampening throttle, clean or replace as necessary
- readjust relief valve setting using a pressure gauge
- return line flow may be restricted. Check for correct plumbing

### LOAD MOVES ERRATICALLY:

- open dampening throttle, clean or replace as necessary
- air in system: Bleed at as many points as possible
- negative load: employ counterbalance or braking valves.

### POOR CONTROL:

- handle of MHV stiff or sloppy: slacken four screws of handle end cap, lightly tap the end cap up or down, and retighten screws.
- open dampening throttle, clean or replace as necessary
- air in system: bleed at as many points as possible
- incorrect 4-way spool (rated for higher flow than pump is delivering): employ stroke controls, replace body and spool with one rated for the correct maximum flow

### SPOOL OF DIRECTIONAL VALVE DOES NOT SHIFT:

- rack and pinion mechanism damaged: replace
- spool jammed: loosen tie rods and retighten to correct torque. Check for missing shims. Remove spool, inspect, deburr, and clean. Replace spool and body as necessary.



**HPI Operation**  
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