

Only qualified personnel should perform maintenance.



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

All instructions, illustrations and item numbers classify the manual operated SV-50 Directional Control Valve. Refer to specific installation drawing for corresponding items.

Repair Procedure

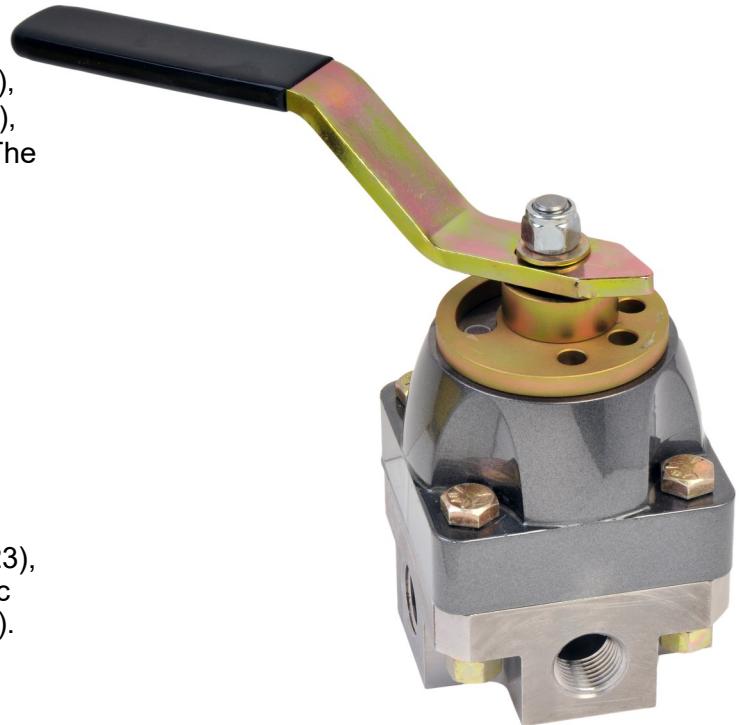
Preparation

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. Protect the sealing surfaces of the Body (18), Housing (17), Shaft (11), Thrust Washers (7), and Ball Bearings (9) during disassembly. The lapped surfaces of the Rotor (10) and Seal Rings (6) should always be oriented up and must NEVER come in contact with any hard surface.
3. All O-rings and Back-up Rings are recommended to be replaced at a minimum. See the parts list for kit contents.

Disassembly

1. Remove and set aside the Handle (13, 20, 23), Spacer (15) Retaining Ring (14), Detent Disc (12), detent Spring (16), and Ball Bearing (5).
2. Install in vice or other fixture with Shaft end oriented down.
3. Remove the Body Bolts, Lock washers and Nuts (19, 21, 22).

4. Remove the Body (18) and place on work bench with Seal Rings facing up. Carefully remove Seal Rings (6) and Wave Springs (8) from Body; ensuring to not damage the seal ring glands of the body.
5. Remove the Rotor (10), Thrust Washers (7) and Ball Bearings (9) from the Housing (17).
6. Turn the Housing over with the Shaft (11) up and push the Shaft through the Housing.



Inspection

Clean all parts thoroughly before inspection. Remove and discard all O-rings and Back-up Rings.

Inspect Body:

- Port threads must be free of nicks and excessive wear.
- O-ring groove in Body must be free of scratches and pitting (corrosive intrusions).
- Seal Ring gland I.D. must be free of scratches and pitting.

Inspect Rotor and Seal Rings:

- Lapped surfaces must have no dull spots, pitting, scratches or undercuts.

Inspect Thrust Washers and Ball Bearings:

- Groove of Thrust Washer must be free of pitting and scratches.
- Ball Bearings should be smooth and free of scratches and pitting.

Inspect Housing:

- There must not be any wear in Shaft hole.
- The O-ring groove in the Housing must be free of scratches and pitting.
- The Grease Fitting and its threads must not be worn or damaged.

Inspect Shaft, Handle, and Detent Disc parts:

- The Shaft's threads must not be damaged.
- The Shaft must not have wear on the diameter where it contacts the Housing.
- The detent ball and spring are generally reusable if not excessively corroded.
- The Detent Disc should not show wear in the detent holes or at the Shaft connection.
- Check that the fit is tight between the Shaft, Handle, and Detent Disc.

Reassembly

1. Before replacing the seals and rebuilding the valve, apply a light coating of lubricant to all O-ring grooves.

2. Replace all O-rings and Back-up Rings on Seal Rings and Shaft, lubricating generously.
3. Place the Housing up-side-down and apply lubricant to the internal surfaces of the Housing. Install the O-ring in the recess above the internal bushing of the Housing and apply lubricant. Then install the Shaft.
4. Lubricate the groove of each Thrust Washer. Place one lubricated Thrust Washer in the recess of the Housing. Then add the ball bearings, distributing evenly. Place the other well lubricated Thrust Washer on top of the balls.
5. Place the Rotor in the Housing in the orientation shown, engaging the pins with the holes on the backside of the Rotor.
6. Place the Body facing up. With the lapped surface of the Seal Rings facing up, install the Wave Springs then Seal Rings in each of the recesses within the Body.
7. Install the lubricated face seal O-ring in the groove of the Housing. Insert the Body Bolts and place the assembled Body on the Housing, using the Bolts as guides.
8. Fasten all Bolts with Lock washers and Nuts, torquing evenly to 40 - 60 lb.-ft.
9. Grease the detent spring hole on the top of the Housing. Insert the spring and ball, then install the Detent Disc. Replace the Retaining Ring and install the Spacer and Handle.

Maintenance

ShearFlo® Valves require little maintenance other than the inspections and refurbishment described here, dependent on usage and system condition.

Valves in water service can be lubricated by applying grease at the grease fitting located on the Housing. Use a water resistant lubricant. If water soluble oil is used in the hydraulic system, greasing is not generally required.

ID NO.	PART NO.	DESCRIPTION	QTY	KIT
1	23-1125	O-RING	1	a
2	23-1337	O-RING	3	a
3	23-1414	BACK-UP RING	3	a
4	23-1415	O-RING	1	a
5	40-0049	BALL BEARING	1	
6	40-0219	SEAL RING	3	b
7	40-0227	THRUST WASHER	2	d
8	40-0237	WAVE SPRING	3	b
9	40-0259	BALL BEARING	20	d
10	(TABULATED)	ROTOR	1	c
11	40-0275	SHAFT	1	
12	40-0277	DETENT DISC	1	
13	40-0280	HANDLE	1	
14	40-0289	RETAINER RING	1	
15	40-0292	SPACER	1	
16	40-0296	SPRING	1	
17	40-0353	HOUSING	1	
18	(Contact PacSeal)	BODY	1	
19	50-0078	NUT	4	
20	50-0092	LOCKNUT	1	
21	50-0098	BODY BOLT	4	
22	50-0103	LOCKWASHER	4	
23	50-0107	WASHER	1	
24	50-0176	GREASE FITTING	1	
25	50-0237	GRIP	1	

KIT KEY	KIT DESCRIPTION	KIT PART NUMBERS		
		SELECTOR	MANIPULATOR	BYPASS
a	O-RING KIT		40-1851	
b	SEAL KIT (INCLUDES a)		40-1538	
c	MINOR REPAIR KIT (INCLUDES a, b)	40-1544	40-1619	40-1776
d	MAJOR REPAIR KIT (INCLUDES a, b, c)	40-1543	40-1569	40-1777

PART NO.	ROTOR DESCRIPTION
40-0262	SELECTOR
40-0265	MANIPULATOR
40-0264	BYPASS
40-0387	OPEN CENTER
40-2246	ALL BLOCK

