



**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-100 Directional Control Valve. Refer to specific installation drawing for corresponding items.*

### **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 (19), Housing (12), Shaft (13), Thrust Washers (8), and Ball Bearings (10) during disassembly. The lapped surfaces of the Rotor (7) 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 (15, 23, 20), Spacer (18) Retaining Ring (16), Detent Disc (14), detent Spring (17), and Ball Bearing (11).
2. Install in vice or other fixture with Shaft end oriented down.
3. Remove the Body Bolts, Lockwashers and Nuts (21, 22, 24).

4. Remove the Body and place on work bench with Seal Rings facing up. Carefully remove Seal Rings and Wave Springs (9) from Body; ensuring to not damage the seal ring glands of the body.
5. Remove the Rotor, Thrust Washer and Ball Bearings from the Housing.
6. Turn the Housing over with the Shaft 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 Lockwashers and Nuts, torqueing evenly to 60 - 85 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.

Item No.	Part No.	Description	Qty	Kit
1	23-1122	O-Ring	1	a
2	23-1331	Back-Up Ring	6/3	a
3	23-1332	O-Ring	3	a
4	23-1352	O-Ring	1	a
5	23-1363	O-Ring	1	a
6	(Tabulated)	Seal Ring	3	b
7	(Tabulated)	Rotor	1	c
8	40-0009	Thrust Washer	2	d
9	40-0027	Wave Spring	3	b
10	40-0049	Ball Bearing	26	d
11	40-0174	Detent Ball	1	
12	40-0175	Housing	1	
13	40-0178	Shaft	1	
14	40-0180	Detent Disc	1	
15	40-0284	Handle	1	
16	40-0288	Retainer Ring	1	
17	40-0773	Spacer	1	
18	40-0295	Spring, Detent	1	
19	40-0982	Body, Inline Ported	1	
20	50-0093	Shaft Locknut	1	
21	50-0100	Body Bolt	4	
22	50-0104	Lock Washer	4	
23	50-0108	Shaft Washer	1	
24	50-0110	Body Nut	4	
25	50-0176	Grease Fitting	1	
26	50-0236	Grip	1	

Kit Key	Kit Description	Part Number			
		Selector	Manipulator	Bypass	
a	O-ring Kit	3 ksi			40-1852
		6 ksi			40-1854
b	Seal Kit (includes a)	3 ksi			40-1512
		6 ksi			40-1797
c	Minor Repair Kit (includes a, b)	3 ksi	40-1511	40-1554	40-1539
		6 ksi	40-1798	40-1799	40-1800
d	Major Repair Kit (includes a, b, c)	3 ksi	40-1510	40-1576	40-1577
		6 ksi	40-1801	40-1802	40-1803

Part No.	Description
40-0008	Rotor, Selector
40-0223	Rotor, Manipulator
40-0130	Rotor, Bypass
40-0130	Rotor, Open Center
40-2258	Rotor, All Block
40-0007	Seal Ring, 3 ksi
40-0825	Seal Ring, 5 ksi

