



**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-200 Directional Control Valve. Refer to specific installation drawing for corresponding items.*

### **Preparation**

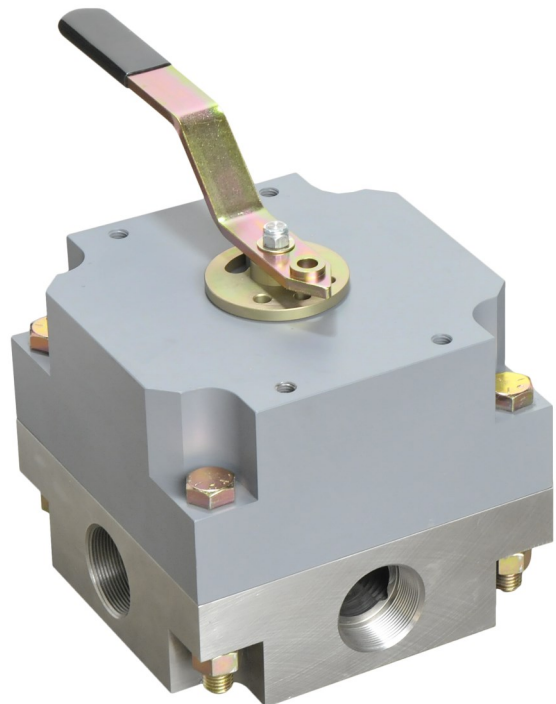
1. Prepare a clean surface for disassembly, free of dust, grease, grit, etc. A vise is not necessary, but helpful. Have rags, degreasing solvent and lubricant available.
2. Protect the sealing surfaces of the Body (12), Housing (19), Shaft (18), Thrust Washers (15), and Ball Bearings (6) during disassembly. The lapped surfaces of the Rotor (14) and Seal Rings (13) 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 (8, 23, 20), Spacer (11) Retaining Ring (9), Detent Disc (17), Detent Spring (10), and Ball Bearing (7).
2. Install valve in vice or other fixture with Shaft end oriented down.
3. Remove the Body Bolts, Lock Washers 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 (16) 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.

**CAUTION: HEAVY EQUIPMENT. USE APPROPRIATE LIFTING TOOLS AND FORM TO PREVENT INJURY.**



**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, flats, and pins 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 65 - 100 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.

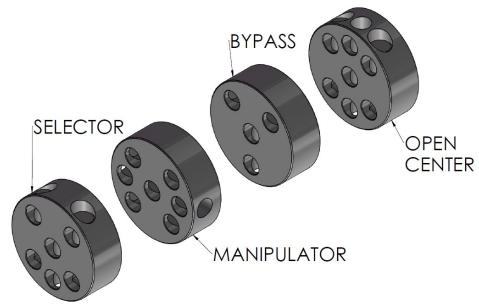
Valves in storage or water service can be lubricated by applying grease at the grease fitting located on the Housing. Use a water resistant lubricant. If water soluble oil is used in the hydraulic system, greasing is not generally required.

# Maintenance Instructions

# SV-200 DIRECTIONAL CONTROL VALVES

Item No.	Part No.	Description	Qty.	Kit
1	23-1122	O-Ring	1	a
2	23-1336	O-Ring	3	a
3	23-1352	O-Ring	1	a
4	23-1550	O-ring	1	a
5	23-1551	Backup Ring	3	a
6	40-0092	Ball, Bearing	34	d
7	40-0174	Ball, Detent	1	
8	40-0284	Handle, Remote	1	
9	40-0288	Retaining Ring	1	
10	40-0295	Spring	1	
11	40-0773	Spacer, Housing	1	
12	(Call PacSeal)	Body	1	
13	40-4467	Seal Ring		b
14	(Tabulated)	Rotor	1	c
15	40-2574	Thrust Washer	1	d
16	40-2598	Wave Spring	3	b
17	40-4740	Detent Disc	1	
18	40-4741	Shaft	1	
19	40-4743	Housing	1	
20	50-0093	Nut, Shaft	1	
21	50-0102	Bolt	4	
22	50-0105	Lock Washer	4	
23	50-0108	Washer, Shaft	1	
24	50-0111	Hex Nut	4	
25	50-0176	Grease Fitting	1	
26	50-0236	Grip, Handle	1	

Kit Key	Kit Description	Specification	Kit Part Numbers by Rotor Type		
			Selector	Manipulator	Bypass
a	O-ring Kit	2000 psi		40-4768	
b	Seal Kit (includes a)	2000 psi		40-4769	
c	Minor Repair Kit (includes a, b)	2000 psi	40-3096	Not Released	Not Released
d	Major Repair Kit (includes a, b, c)	2000 psi	40-4507	Not Released	Not Released



Part No.	Description
40-2573	Rotor, Selector
NR	Rotor, Manipulator
NR	Rotor, Bypass
NR	Rotor, Open Center

