MAINTENANCE INSTRUCTIONS
SVS AND SVT DIRECTIONAL CONTROL VALVES

Only qualified personnel should perform maintenance.

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

Note

The directions given here are generic; refer to specific assembly drawing for details as some parts may be different.

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 face sealing surfaces of the body and housing, the shaft, thrust washers and balls during disassembly. Lapped surfaces of the rotor and seal rings should 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

NOTE: To replace only fluid end components, the body may separately be disassembled from the rotor housing. Omit steps 1-2 in disassembly.

NOTE: To fully refurbish the valve, the rotor and actuator housing will also have to be disassembled. Care must be taken to note orientation of the components. Be sure to use a bin to capture small parts, especially the ball bearings, as the actuator housing is pulled loose.

1. Remove the handle to access the shaft nut washer and o-ring, and remove.
2. Carefully pull the actuator housing straight up. Loose parts may fall out!
3. Turn the body and rotor housing over with the ports facing up and unscrew the body bolts.
4. Carefully pull the body away from the rotor, be careful not to damage the sealing surfaces of the rotor and seal rings.
5. Remove the rotor, thrust washers and ball bearings from the actuator housing.
6. If the actuator housing has been disassembled, turn the rotor housing over and push the shaft through the housing and remove the o-ring.

NOTE: the shaft will be retained in the housing assembly if the shaft nut has not been removed.

Inspection

Clean all parts thoroughly before inspection. Remove and discard all o-rings and backups.

Inspect Body:

- Port threads should be free of nicks and excessive wear.
- O-ring groove in body free of scratches and pitting.
- Seal ring gland I.D. must have no 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:

- Thrust washer should be free of pitting or scratches in the bearing groove.
- Balls should be round, smooth and free of scratches or pitting.

Inspect Housings:

- No wear in shaft I.D.
- Detent ball and spring are generally reusable if not excessively worn.
- Detent should not show wear in the detent holes or at shaft connection.
- O-ring groove in housing free of scratches and pitting.

Inspect Shaft and Handle:

- Threads on shaft are not damaged
- Shaft have minimal wear on the diameter where it contacts the housing.
- Check that the fit is tight between the shaft and the actuator housing, and with the detent disc.

Reassembly

1. Before replacing the seals and rebuilding the valve, apply a light coating of lubricant on internal surfaces.
2. Replace all o-rings and back-up rings on seal rings and shaft, lubricating generously.
3. Place the rotor housing face up and apply lubricant to the internal surfaces. Install the o-ring in the recess above the bushing and install the shaft.
4. Place the lubricated thrust washer in the recess in the housing, add the ball bearings, distributing evenly, and install the second lubricated thrust washer.
5. Place the rotor in the rotor housing in the original orientation, engaging the pins into the holes on the backside of the rotor.
6. Place the body face up and install the wave springs and seal rings in each recess on the body, with the lapped surface of the seal rings facing out.
7. Install the lubricated face seal o-ring on the groove on the housing. Insert the body bolts and place the assembled body on the housing, using the bolts as guides.
8. Fasten all body bolts with lockwashers, torquing evenly.
9. Turn the assembly so that the rotor housing is upright with the shaft extending upward.
10. Thoroughly grease the o-ring and back-up ring with the bronze bushing, and install on the protrusion of the rotor housing.
11. Lightly grease the thrust washer and add all of the ball bearings, using grease to keep the parts from sliding. Add the second thrust washer.

12. Install the detent spring and ball. Add the detent disc in the original orientation.

13. Slide the actuator housing onto the components, and carefully engage the o-ring and back-up ring taking care to ease them inside without cutting the elastomer.

14. Fasten the nut and lockwasher on the shaft and snug it up.

15. Install the final o-ring and the handle.

Maintenance

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

Kit contents:

a: O-ring Kit

b: Seal Kit, includes O-ring Kit

c: Minor Repair Kit, includes Seal Kit

d: Major Repair Kit, includes Minor Repair Kit

ID	Description	Qty	Kit
1	O-RING	1	a
2	O-RING	5	a
3	BACK-UP RING	8	a
4	O-RING	1	a
5	O-RING	1	a
6	BACK-UP RING	1	a
7	SEAL RING	4	b
8	THRUST WASHER, ROTOR	2	d
9	WAVE SPRING	4	b
10	BALL BEARING	21	d
11	SPRING, DETENT	1	d
12	THRUST WASHER, ACTUATOR	2	d
13	BALL BEARING, ACTUATOR	45	d
14	HANDLE	1	
15	HOUSING, ACTUATOR	1	
16	BUSHING	1	d
17	DETENT DISC	1	
18	ROTOR	1	c
19	HOUSING, ROTOR	1	
20	BODY	1	
21	SHAFT	1	
22	LOCKNUT	1	
23	WASHER	1	
24	SCREW	4	
25	LOCKWASHER	4	
26	SCREW	4