

Only qualified personnel should perform maintenance.



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

All instructions, illustrations and item numbers refer to the manual operated regulator, KR-100 "R". 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. Critical surfaces to protect during disassembly are the inside diameter of the Piston Guide (26), the inside diameters of the Seal Container (14), the lapped sealing surfaces of the Seal Rings (12 and 16), and the lapped surfaces of the Flow Plates (19 and 20). Lapped surfaces 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.
4. Standard tools required are a 5/16" hex key, 5/32" hex key, and wire cutters..
5. Special tools used in "Reassembly" are: a blunt ended rod for seating back-up rings (Step 4), medium strength (blue) threadlocker (Step 8), and a flat spacer about 3/32" thick for assembling the Inlet & Vent and Blind Flanges (Steps 9 and 11).



Disassembly

1. To relieve the compression on the internal operator springs loosen the Locking Handle (22) and rotate the Adjusting Handle (23) counter-clockwise until the resistance is fully relieved. Springs must be loose to safely remove the Adjustment Head (32).
2. With a 5/16" hex key, loosen and remove the socket head cap screws (37) affixing the Adjustment Head. Remove the Adjustment Head/internal operator assembly by lifting, tilting and holding the Spring Plate (21) to clear the Piston Guide (26). Remove Springs (28 and 29) , Spring Guide (31) and Spring Plate. Clean barrel and all parts.
3. Remove the screws (37) from the three Inlet & Vent Flanges (33) and Blind Flange (34) using a 5/16" hex key. Carefully remove said Flanges and attached Flow Plates.
4. Remove the Flow Plates (19 and 20) from the Flanges by unfastening the screws (35) with a 5/32" hex key. **Always store Flow Plates with lapped surface facing UP.**
5. From both sides of the Body, remove the Seal Rings (12 and 16), Valve Cage (17), Compression and Wave Springs (13 and 18) from the Seal Container (14). Carefully set these aside. **Always store Seal Rings with lapped surface facing UP.**
6. Unfasten the remaining screws holding the Outlet Flange (25) and Lower Flange (24) then remove said flanges.
7. Using a soft tool, lightly tap the bottom of the Seal Container to loosen the Piston Guide (26) from the Body. Lift this assembly through the top of the Body.
8. If the Seal Container is to be replaced, remove the piston retaining bolt (37) and Piston (15). Take care not to scratch the Piston.
9. Remove all O-rings and back-up rings. Clean all parts with a degreaser and wipe with clean rags.
10. Inspect all lapped surfaces for scratches, dings or dull spots that would prevent them from reuse. Inspect the bores of the Seal Container, Body, and Piston Guide for linear scratches that would propagate leaks.

Reassembly

1. Before replacing the seals and rebuilding the regulator, apply a light coating of lubricant to all O-ring grooves.
2. Replace all O-rings and back-up rings on Seal Rings, Flow Plates, Piston, Piston Guide and Flanges, lubricating generously.
3. Install the Piston on the Seal Container and tighten the retaining bolt.
4. Carefully install the Valve Cage, Wave Spring and Vent Seal Ring from one side of the Seal Container, then repeat with the Supply Seal Ring. Ensure to not scratch the sealing surfaces of the Seal Container and Seal Ring. If the back-up ring catches, then use a soft and blunt tool to help compress it around the Seal Ring while installing it in the Seal Container. From the opposite side, install the remaining Wave and Compression Springs and Seal Rings.
5. Slide the Piston Guide over the Piston until it is snug with the O-ring and back-up rings of the Piston.
6. Prior to installing the Seal Container, install the Lower Flange (24) and its O-ring (5) on the Body and tighten all screws evenly.
7. Slide the Seal Container assembly down into the top of the Body, making sure the Seal Container faces are parallel with the opposing ports.

8. Install the Flow Plates with installed and lubricated O-ring (11) on their respective Flanges, using the screws and medium strength (blue) threadlocker. The Flanges must have the O-rings (4 and 10) seated in the face grooves before fastening to the Flow Plates. Use rags to protect the lapped surface and edges of the Flow Plate.
9. Important! To protect the Seal Rings in the Seal Container during reassembly, ease the Flow Plates into one side of the Body using a 3/16" thick spacer between each Flange and the Body to prevent over-travel. Remove the spacer.
14. Rotate the Handle down to its original position and tighten the Locking Handle to it. The regulator is now ready for normal operation. Some adjustment of the operator may be necessary to achieve the desired output. To increase or decrease pressure, rotate the Adjusting Handle clockwise or counter-clockwise, respectively. Always tighten the Locking Handle to the Adjusting Handle after setting the regulator.

Actual model not shown



10. Insert the screws (37) and tighten evenly around each Flange. The Flow Plates should be in light contact with the Seal Rings.
11. Important! In the same manner as Step 9, install the Flanges on the opposite side using the spacer to prevent the Flow Plate from hitting the Seal Rings. Orient the Flange before seating it against the Seal Rings. Remove the spacer then evenly tighten all socket screws.
12. Install the Outlet Flange (25) and its O-ring (1), evenly tightening all screws.
13. Reassemble the internal operator Springs, Spring Plate and Ball Guide into the barrel of the Adjustment Head using a light coat of grease. Lower the operator assembly with screws onto the Body and evenly tighten the socket screws.

Maintenance

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

Kit Key	Kit Description	Kit Part No.
a	O-ring Kit	40-1506
b	Seal Kit	40-1589
c	Minor Repair Kit	40-1505
d	Major Repair Kit	40-1556

Item No.	Part No.	Description	Qty.	Kit
1	23-1126	O-Ring	1	a
2	23-1322	Backup Ring	2	a
3	23-1323	O-Ring	4	a
4	23-1326	O-Ring	4	a
5	23-1330	O-Ring	2	a
6	23-1331	Backup Ring	2	a
7	23-1332	O-Ring	1	a
8	23-1333	O-Ring	1	a
9	23-1334	O-Ring	1	a
10	23-1335	O-Ring	8	a
11	23-1336	O-Ring	4	a
12	40-0014	Seal Ring, Supply	2	b
13	40-0110	Compression Spring	1	b
14	40-0111	Seal Container	1	d
15	40-0112	Piston	1	
16	40-0113	Seal Ring, Vent	2	b
17	40-0114	Valve Cage	1	b
18	40-0115	Wave Spring	2	b
19	40-0117	Flow Plate, Supply	2	c
20	40-0118	Flow Plate, Vent	2	c
21	40-0134	Spring Plate	1	
22	40-0135	Lock Handle	1	
23	40-0136	Adjusting Screw & Handle	1	
24	40-0137	Flange, Lower	1	
25	40-0138	Flange, Outlet	1	
26	40-0139	Piston Guide	1	
27	40-0140	Plug, Adjustment Head	1	
28	40-0143	Spring, Outer	1	
29	40-0144	Spring, Inner	1	
30	40-0148	Body, KR-100	1	
31	40-0300	Spring Guide	1	
32	40-0388	Adjustment Head	1	
33	40-0958	Flange, Inlet & Vent	3	
34	40-0959	Flange, Blind	1	
35	50-0067	Bolt, SHCS	8	b
36	50-0068	Bolt, SHCS	1	
37	50-0069	Bolt, SHCS	28	
38	50-0239	Grip, Handle	3	

