



# STERIFLOW

a division of Jordan Valve

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## I & M JSRHF Series (5, 7.5 & 10 Cv)

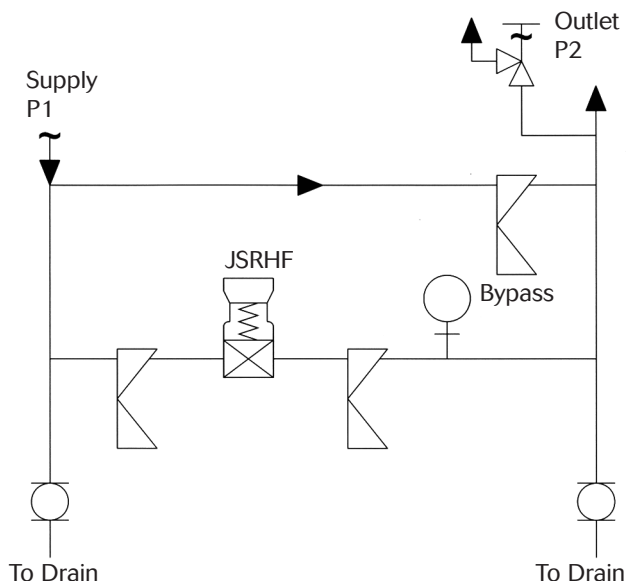
### *Installation & Maintenance Instructions for JSRHF Series (5, 7.5, & 10 Cv Models) Sanitary Valves*

**Warning:** Steriflow Sanitary Regulators must only be used, installed and repaired in accordance with these Installation & Maintenance Instructions. Observe all applicable public and company codes and regulations. In the event of leakage or other malfunction, call a qualified service person; continued operation may cause system failure or a general hazard. Before servicing any valve, disconnect, shut off, or bypass all pressurized fluid. Before disassembling a valve, be sure to release all spring tension.

#### **Please read these instructions carefully!**

Your Steriflow/Jordan product will provide you with long, trouble-free service if it is correctly installed and maintained. Spending a few minutes now reading these instructions can save hours of trouble and downtime later. When making repairs, use only genuine Steriflow Valve parts, available for immediate shipment from the factory.

#### **Ideal Installation**



#### **Preferred Installation**

**Caution!** Installation of adequate overpressure protection is recommended to protect the regulator from overpressure and all downstream equipment from damage in the event of regulator failure.

1. An inlet block valve should always be installed.
2. If service application is continuous such that shut-down is not readily accomplished, it is recommended that an inlet block valve, outlet block valve, and a manual bypass valve be installed. Sanitary diaphragm or ball valves are usually recommended.
3. A sanitary outlet pressure gauge should be located

approximately ten pipe diameters downstream, and within sight. If you have ordered your JSRHA with an outlet gauge option, please note that the outlet pressure as registered on the gauge in the valve may be slightly higher than a gauge located x diameters downstream, with the difference typically no more than 0.5psig.

4. All installations should include a downstream relief device if the inlet pressure could exceed the pressure rating of any downstream equipment or the maximum outlet pressure rating of the unit.
5. Flow Direction: install so that the flow direction matches the inlet/outlet marking on the main regulator body (14).
6. For best performance, install in well drained horizontal pipe.
7. Basic regulator – regulator may be rotated around the pipe axis 360°. Recommended position is with knob (13) vertical upwards.
8. Regulators are not to be buried underground.
9. For insulated piping systems, recommendation is to not insulate regulator.

#### **Principles of Operation**

1. Movement occurs as pressure variations register on the diaphragm (8). The registering pressure is the outlet, P2, or downstream pressure. The spring (5) opposes diaphragm (8) movement. As outlet pressure drops, the range spring (5) pushes the diaphragm (8) down, opening the plug (3) against return spring (4) pressure; as outlet pressure increases, the diaphragm (8) pushes up and the return spring (4) closes the plug (3).
2. A complete diaphragm (8) failure will cause the regulator to fail open.

#### **Start Up**

**Caution!** Do not exceed the maximum rated pressure of the regulator if installed for a hydrostatic test. Isolate the unit if the test is above the valve rating. (Valve rating is 300 psi @ 100°F).

1. Start with the block valves closed. A bypass valve may be used to maintain outlet pressure in the downstream system without changing the following steps.
2. Relax the range spring (12) by turning the adjusting knob (14) counter clockwise (CCW) until there is no noticeable spring tension.
3. If it is a "hot" piping system, and equipped with a bypass valve, slowly open the bypass valve to pre-heat the system piping and to allow slow expansion of the piping. Closely monitor outlet (downstream) pressure via gauge to ensure no over-pressurizing. Note: if no bypass valve is installed, extra caution should be used in starting up a cold system; i.e. do everything slowly.
4. Crack open the outlet (downstream) block valve.
5. Slowly open the inlet (upstream) block valve observing the outlet (downstream) pressure gauge. Determine if the regulator is flowing. If not, slowly rotate the regulator adjusting knob (14) clockwise (CW) until flow begins.
6. Continue to slowly open the inlet (upstream) block valve until fully open.
7. Continue to slowly open the outlet (downstream) block valve, especially when the downstream piping isn't pressurized. If the outlet (downstream) pressure exceeds the desired pressure, close the block valve and go to Step 2, then return to Step 4.
8. When flow is established steady enough that the outlet (downstream) block is fully open, begin to slowly close the bypass valve if installed.
9. Develop system flow to a level near its expected normal rate, and reset the regulator set point by turning the adjusting knob (14) CW to increase outlet pressure, or CCW to reduce outlet pressure.
10. Reduce system flow to a minimum level and observe set point. Outlet pressure will rise from the set point of Step 9.

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## Shutdown

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1. On systems with a bypass valve, and where system pressure is to be maintained as the regulator is shut-down, slowly open the bypass valve while closing the inlet (upstream) block valve. (When on bypass, the system pressure must be constantly observed and manually regulated.) Close the outlet (downstream) block valve. CAUTION! Do not walk away and leave a bypassed regulator unattended.
2. If the regulator and system are to both be shut down, slowly close the inlet (upstream) block valve. Close the outlet (downstream) valve only if regulator removal is required.

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## Maintenance

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**Warning! System Under Pressure.** Prior to performing any maintenance, isolate the regulator from the system and relieve all pressure. Failure to do so could result in personal injury.

### A. General

1. Maintenance procedures hereinafter are based upon removal of the regulator unit from the pipeline where installed.
2. Owner should refer to owner's procedures for removal, handling, cleaning and disposal of non-reusable parts, i.e. gaskets, o-rings, etc.
3. Refer to Figure 1 for diaphragm subassembly.

### B. Trim Replacement

Note: Valve should be removed from the system to perform trim replacement but can be accomplished in line. Caution! To prevent damage to body, use soft jaws when placing the body in a vise. Position so that vise closes over flats on the body, if possible.

1. Relax the range spring (12) by turning the adjusting knob (14) CCW until there is no noticeable spring tension.
2. Remove bottom plate (16) by removing quantity 6 – HHCS, 5/16-18 X 7/8" (19). Dispose of o-ring (7) [will be replaced by new o-ring that comes with plug assembly (2 3 4)].
3. Remove spring housing (11) by removing quantity 8 – HHCS, 5/16-18 X 1" (17). Remove spring guide (15), range spring (12), and diaphragm assembly (5 6 10).
4. Remove 3/8-24 hex nut (18) from plug/plug guide assembly (2 3 4 8 9 18). Care should be taken, as plug assembly (2 3 4) will drop from the bottom of the valve once hex nut (18) is removed.
5. Use old plug assembly (2 3 4) to push plug guide (9) out of the top of the valve body (1). Replace o-ring (8) on plug guide (9). Remove return spring (13) from valve body (1).
6. Place new plug assembly (2 3 4) back in valve body (1). Slide return spring (13) over top of plug assembly (2 3 4) in top of valve. Replace plug guide (9) with new o-ring (8) installed into opening in top of body (1) and push stem (3) through hole in plug guide (9). Secure plug assembly (2 3 4) and plug guide (9) with 3/8-24 hex nut (18). Torque to 20 in-lbs.
7. Replace diaphragm assembly (5 6 10), range spring (12), and spring guide (15). Replace spring housing (11) and secure with quantity 8 – HHCS, 5/16-18 X 1" (17) (note: be sure to apply Krytox GPL 206, NSF H1 rated thread lubricant -anti seize compound to HHCS). Torque to 20 ft-lbs.
8. Replace o-ring (7) and put the bottom plate (16) back on the valve and securing with quantity 6 – HHCS, 5/16-18 X 7/8" (19) (note: be sure to apply Krytox

GPL 206, NSF H1 rated thread lubricant -anti seize compound to HHCSI. Torque to 20 ft-lbs.

9. Bench test unit for suitable operation. Note: Regulators are not tight shutoff devices. Even if pressure builds up beyond set point, a regulator may or may not develop bubble tight shutoff.
10. Pressurize with air and spray liquid leak detector around body (1) and spring housing (11) to test for leakage. Ensure that an outlet pressure is maintained during this leak test of at least mid-range spring level: i.e. 0-50 psig (0-3,5 barg) range, 25 psig (1,75 barg) test pressure minimum.

### C. Diaphragm Replacement

Note: Valve should be removed from the system to perform trim replacement but can be accomplished in line. Caution! To prevent damage to body, use soft jaws when placing the body in a vise. Position so that vise closes over flats on the body, if possible.

1. Relax the range spring (12) by turning the adjusting knob (14) CCW until there is no noticeable spring tension.
2. Remove spring housing (11) by removing quantity 8 – HHCS, 5/16-18 X 1" (17).
3. Remove spring guide (15), range spring (12), and diaphragm assembly (5 6 10).
4. Disassemble the diaphragm assembly (5 6 10).
5. Clean all reusable parts according to owner's procedures.
6. Inspect and replace any necessary parts. Note: Use only parts manufactured and supplied by Steriflow Valve for these products.

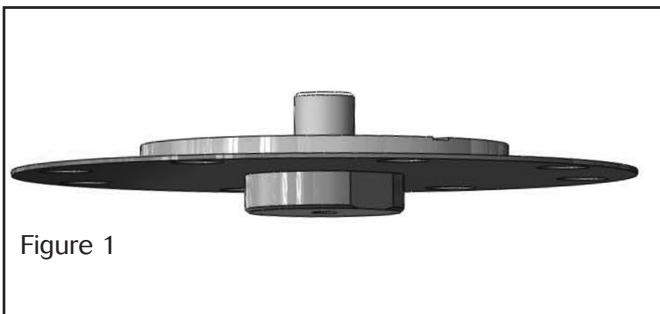


Figure 1

7. Reassemble diaphragm subassembly (5 6 10) by replacing the diaphragm (5) and the upper diaphragm plate (10) over the threads of the lower diaphragm plate (6). Tighten 3/8-24 hex nut (18) on top off upper diaphragm plate until the diaphragm (5) just starts to deform or umbrella. This is done by holding the lower diaphragm plate (6) in a vise.
8. Place the diaphragm subassembly (5 6 10) back into the valve body (1).
9. Place the spring (12) followed by the spring guide (15) on top of the diaphragm subassembly (5 6 10).
10. Center the spring housing (11) over the spring (12) and spring guide (15) and secure using quantity 8 – HHCS, 5/16-18 X 1" (17) [note: be sure to apply

Krytox GPL 206, NSF H1 rated thread lubricant -anti seize compound to HHCSI. Torque to 20 ft-lbs.

11. Pressurize with air and spray liquid leak detector around body (1) and spring housing (11) to test for leakage. Ensure that an outlet pressure is maintained during this leak test of at least mid-range spring level: i.e. 0-50 psig (0-3,5 barg) range, 25 psig (1,75 barg) test pressure minimum.

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## Troubleshooting

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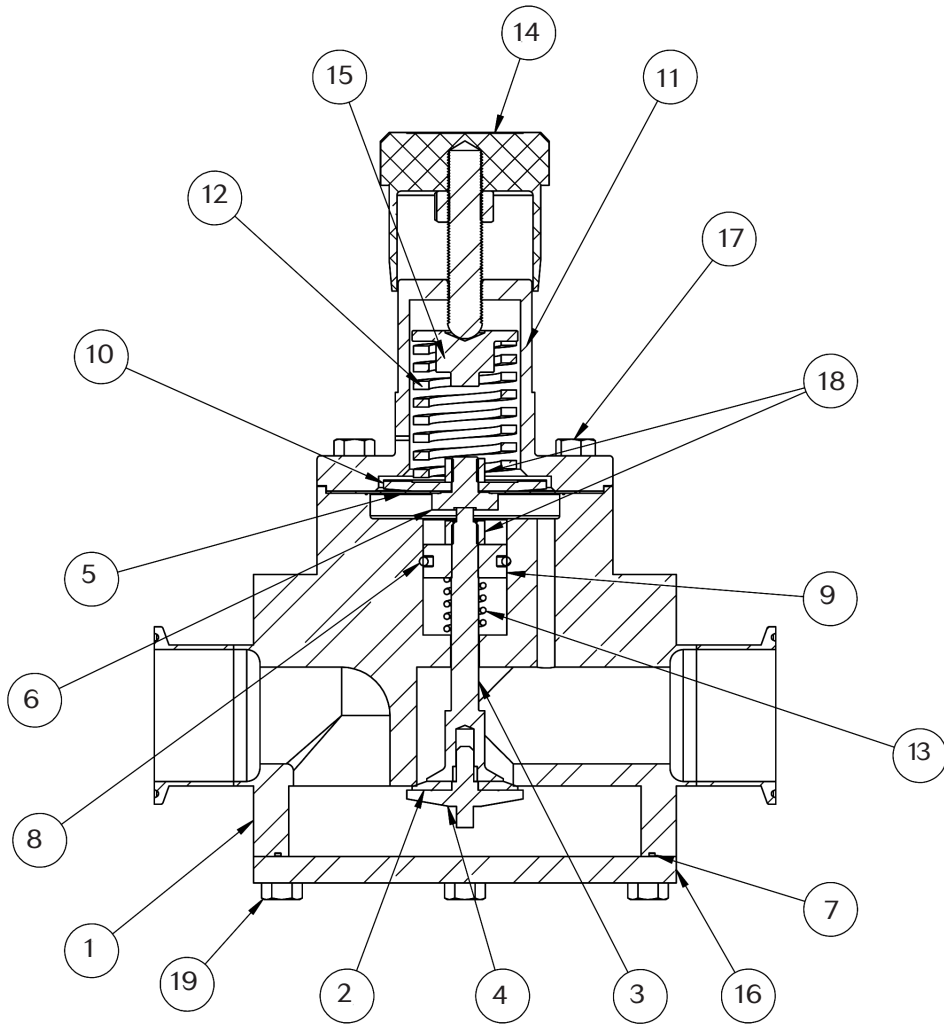
### 1. Erratic Operation; Chattering

- A. Oversize regulator; inadequate rangeability
  1. Check actuator flow conditions, re-size regulator for minimum and maximum flow.
  2. Increase flow rate.
  3. Decrease regulator pressure drop; decrease inlet pressure by placing a throttling orifice in inlet piping.
  4. Install next step higher range spring. Before replacing regulator, contact factory
- B. Worn poppet; inadequate guiding
  1. Replace trim (possible body replacement)
- C. Weakened/broken return spring.
  1. Determine if corrosion is causing. Replace return spring.

### 2. Regulator can't pass sufficient flow

- A. Regulator not closing tightly
  1. Inspect the seat of the plug sub-assembly, replace if worn.
- B. Downstream blockage
  1. Check system; isolate (block flow at regulator inlet - not outlet.
  2. Relocate regulator if necessary
- C. No pressure relief protection
  1. Install safety relief valve, or rupture disc.
- D. Restricted diaphragm movement
  1. Ensure no moisture in spring chamber at temperature below free point.

## Cross Section View



Item No.	Description	Quantity
1	Body	1
2	Soft Seat	1
3	Stem	1
4	Retainer	1
5	Diaphragm	1
6	Lower Diaphragm Plate	1
7	O-Ring	1
8	O-Ring	1
9	Plug Guide	1
10	Upper Diaphragm Plate	1
11	Spring Housing	1
12	Range Spring	1
13	Return Spring	1
14	Adjusting Knob Assembly	1
15	Spring Guide	1
16	Bottom Plate	1
17	HHCS, 5/16-18 x 1"	8
18	3/8-24 Hex Nut	2
19	HHCS, 5/16-18 x 7/8"	6

## How to Order a Repair Kit

Model		Size		Kit		1&2	3&4	5&6	7
JSRHF	—	100	—	Kit	/				

Model	
JSRHF	High Purity Gas Pressure Reducing Valve

Size	
075	3/4"
100	1"
150	1-1/2"
200	2"

Kit	
	Kit

1 & 2	O-Ring
1E	USP VI - EPDM 2.5 - 3.5 Cv
1V	USP VI - VIT 2.5 - 3.5 Cv
1K	USP VI - KLRZ 2.5 - 3.5 Cv
1S	USP VI - SIL 2.5 - 3.5 Cv
2E	USP VI - EPDM 5 - 10 Cv
2V	USP VI - VIT 5 - 10 CV
2K	USP VI - KLRZ 5 - 10 Cv
2S	USP VI - SIL 5 - 10 Cv
ZZ	Non-Standard

3 & 4	Trim / Seat
T1	6L / PTFE (Cv 2.5 & 3.5)
T2	6L / PTFE (Cv 5)
T3	6L / PTFE (Cv 7.5)
T4	6L / PTFE (Cv 10)
ZZ	Non-Standard

5 & 6	Diaphragm Material
J1	075 - 150 JLN 2.5 - 3.5 Cv
J2	100 - 200 JLN 5 - 10 Cv
ZZ	Non-Standard

7	Accessories
S	Clean for Oil Free
X	Clean for Oxygen
0	None
Z	Non-Standard

Kit	
Kit	Repair Kit