

# Stainless Steel Direct Acting Pressure Reducing Valve SRV461/463

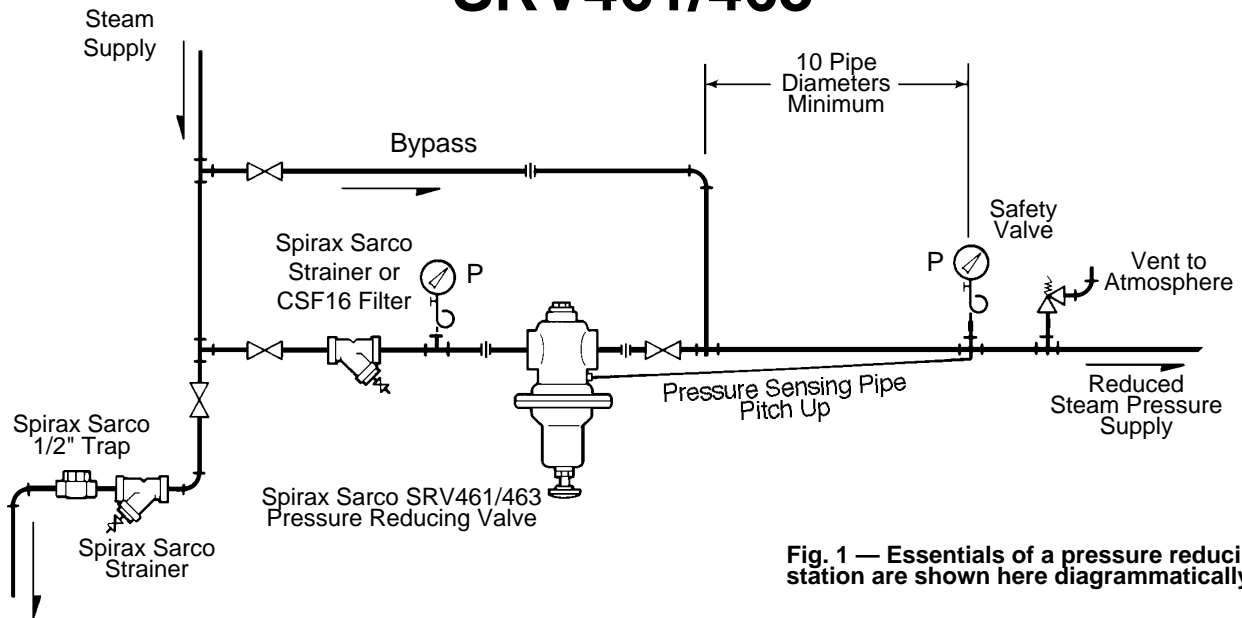


Fig. 1 — Essentials of a pressure reducing station are shown here diagrammatically.

## Installing the Valve

### Piping

1. A typical hookup sketch is shown in Fig. 1 and will aid in planning a correct installation.
2. Piping on the downstream side of the valve should be increased so as not to restrict flow.
3. Before installing the valve, make sure the piping is free of foreign material, scale, etc.
4. Make certain the arrow on valve body is pointing in the direction of flow.
5. Valve should always be installed in a horizontal position, see Fig. 1, with spring housing (2) down.

### Pressure Sensing Line

1. A 1/4" sensing line with suitable compression fittings should be used. Where downstream pressure is less than 1.5 psi, install a damping pot in the sensing line.
2. Connect the sensing line to a straight portion of the piping 10 pipe diameters from nearest fitting downstream from the valve and approximately 1 foot from elbows, tees, valves and other restrictions (See Fig. 1).
3. When the reducing valve is serving a single piece of equipment, the sensing line can be connected to the steam space of the equipment.
4. Install a small ball valve in the sensing line so that this can be closed when servicing the regulator.
5. The sensing line should be installed in the side of the downstream pipe and must be pitched downward from the pipe to the main valve.
6. To permit accurate setting of the pressure regulator, a pressure gauge should be installed as close as possible to the sensing line connection.

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## Bypass

1. A bypass connection, as shown in Fig. 1, is recommended so that the valve can be serviced without shutting down the equipment.
2. The bypass valve should be the same size as the pressure reducing valve.

## Pipeline Strainers

1. It is strongly recommended that either a Spirax Sarco filter or strainer be installed before the reducing valve.
2. If a strainer is fitted, make certain adequate clearance is provided for screen removal and blowdown connection between strainer and valve body.

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## How the SRV461 & 463 Work

Normal position before startup is with the valve held in the open position by the relaxed diaphragm or spring force. As steam or other operating fluid pass through the valve, the pressure downstream of the valve increases and is transmitted through the pressure sensing pipe to the upper side of the diaphragm, thus opposing the spring force. When the downstream pressure is at the set pressure, the forces generated by the spring and the fluid on the diaphragm are in equilibrium and the valve modulates to maintain control conditions. When the downstream pressure exceeds the set value, the forces are not balanced and the valve closes. Similarly, when the downstream pressure is below set pressure, the valve will open.

## Start-Up

1. First make certain that all stop valves are closed.
2. Check that spring is slack. If necessary, turn adjustment screw counter-clockwise to release tension.
3. Open stop valves in the following order:
  - a. Open stop valve ahead of steam trap on steam supply line. This will ensure water free steam at the regulator inlet when put into operation.
  - b. Open small ball valve on pressure sensing line.
  - c. Open downstream stop valve.
  - d. **CAUTION: OPEN INLET STOP VALVE SLOWLY TO AVOID DAMAGE FROM WATERHAMMER.**
4. Slowly adjust pilot spring by turning adjustment screw clockwise until reduced pressure required is indicated on pressure gauge downstream of valve.
5. Once the system has stabilized itself, it may be necessary to make a re-adjustment of spring.

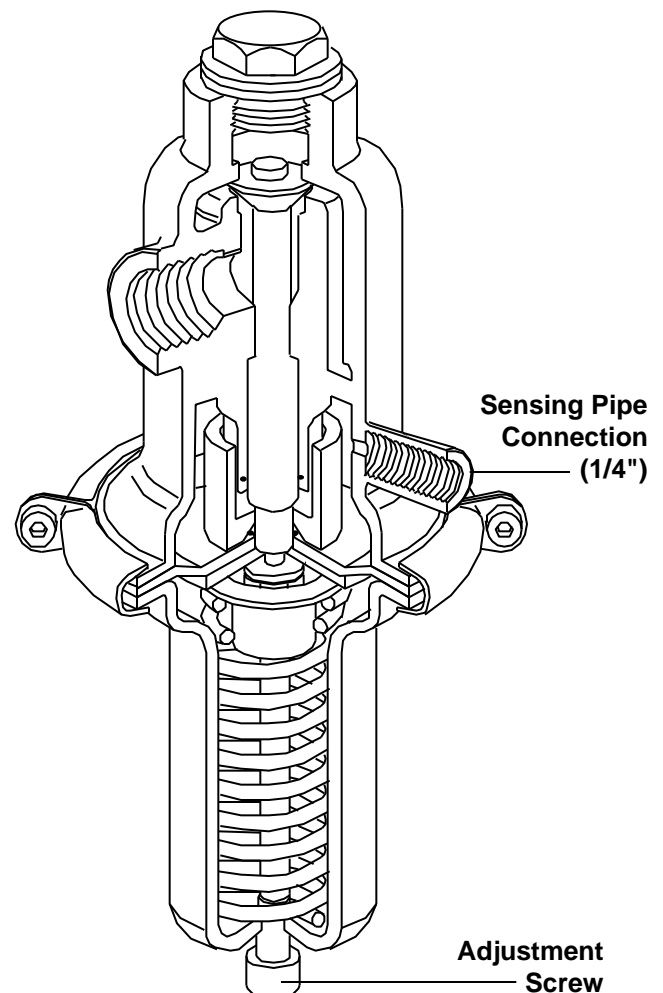
## Steam Line Drain Trap

1. To ensure proper operation of the valve and avoid premature wear, it is recommended that a suitable 1/2" Spirax Sarco steam trap (for example, a 1/2" BT6) be installed on the steam supply line. (See Fig. 1.)
2. A steam trap should also be installed in the down stream piping at the heel of each rise, between all reducing valves installed in series, and ahead of any manual or automatic valve. This will prevent condensate accumulation that can result in water-hammer damage.

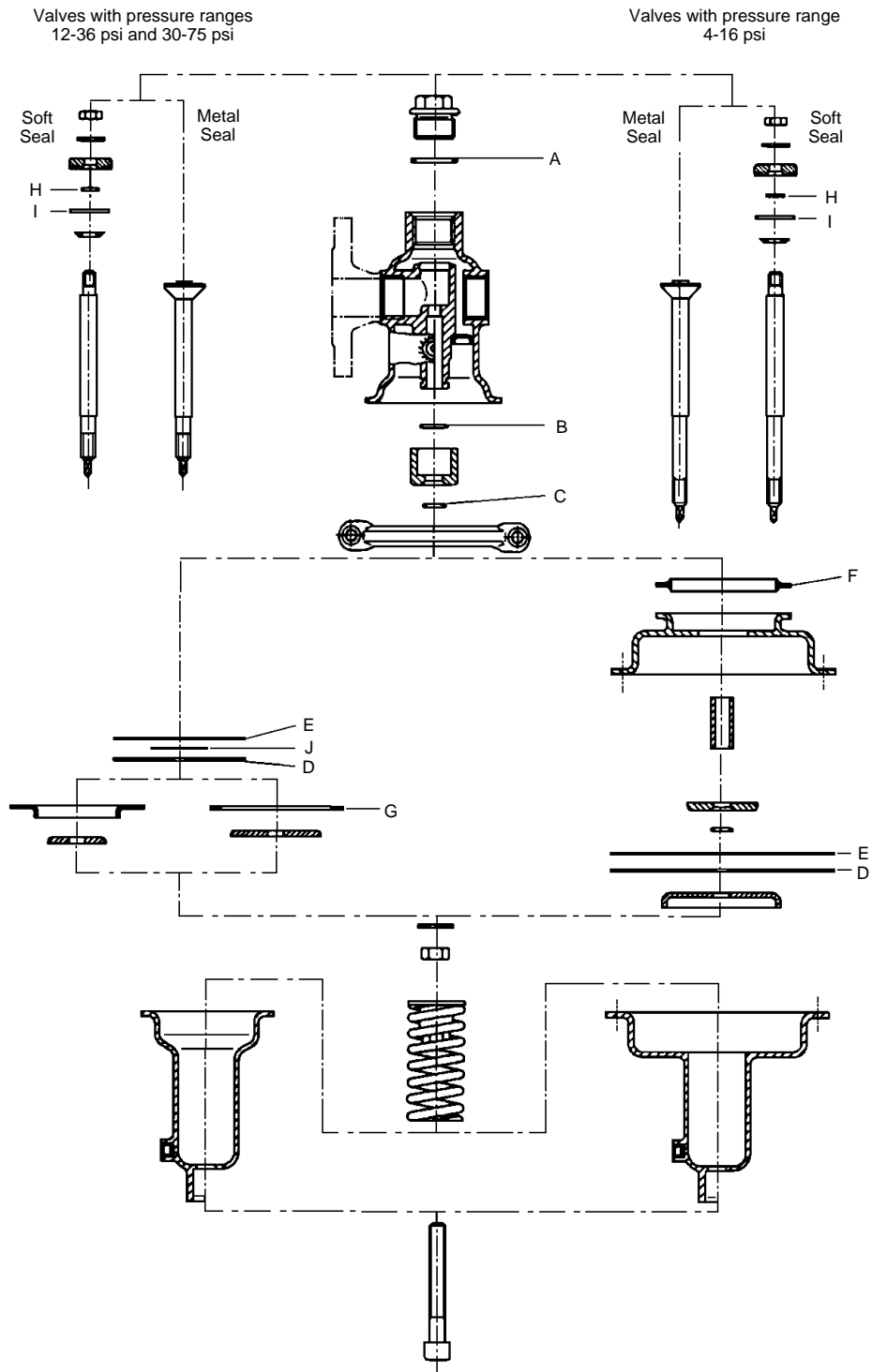
## Stop Valves

All stop valves on the supply side, as well as on the downstream side of the pressure reducing valve and sensing line, should be of the ball type so as to ensure full rated capacity and good control.

Fig. 2



**Fig. 3**



**Spare Parts**

Standard spare parts are those shown numbered in figure 3. Additional spares may be available upon request. Always order spares by using the description in the first column, and by stating size, type, pressure range and valve seal type for the reducing valve.

**Available Spare**

Repair Kit	Pressure Range	Number
Repair Kit – SRV461/463	1/2"-1" DN 15-25	A, B, C, D, E, F, G
Repair Kit – SRV461S/463S	1/2"-1" DN 15-25	A, B, C, D, E, F, G, H, I
Repair Kit – SRV461/463	1-1/4"-2" DN 32-50	A, B, C, D, E, F, G, J
Repair Kit – SRV461S/463S	1-1/4"-2" DN 32-50	A, B, C, D, E, F, G, H, I, J
Item J	Sizes 1-1/4" and larger only	

# Maintenance

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## General Inspection

While a program of planned maintenance is always to be recommended, the Spirax Sarco SRV461/463 valve will give long and trouble-free service if correctly selected, installed and kept reasonably free of dirt and foreign matter. Dirt and foreign matter are most likely to collect during installation and later trouble can be avoided by inspecting the installation after a few days. Check the following:

1. Clean all pipeline filters or strainers. (Remove elements or screens to clean.)
2. Check all joints for leakage.

## Servicing Procedure

(Refer to Fig. 3)

### Inspecting/Replacing Valve Assembly

1. Shut isolating valves upstream and downstream and shut valve on pressure sensing line. Allow valve to cool.
2. Release tension in spring by turning adjustment screw fully counter-clockwise.
3. Remove spring housing by removing body clamp.
4. Remove cap from top of valve.
5. Remove hexagon nut from underside of diaphragm and remove diaphragm assembly.
6. Pull out valve spindle and head assembly through top of valve body.
7. a. For metal seated valve, inspect and lap in head and seat if necessary.  
b. For soft seated valve, inspect, clean and replace if necessary as shown in Fig. 3.
8. Reassemble in reverse order.

**NOTE:** DO NOT USE GENERAL PURPOSE MINERAL BASED OILS OR GREASE FOR LUBRICATING EPDM O-RINGS OR DIAPHRAGM. USE ONLY A SUITABLE SILICONE BASED LUBRICANT.

## Replacing Diaphragm

1. Shut isolating valves upstream and downstream and shut valve on pressure sensing line. Allow valve to cool.
2. Release tension in spring by turning adjustment screw fully counter clockwise.
3. Remove spring housing by removing body clamp.
4. Remove cap from top of valve.
5. Remove hexagon nut from underside of diaphragm and remove diaphragm assembly.
6. Replace diaphragm and O-rings supplied in repair kit.
7. Reassemble in reverse order.

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