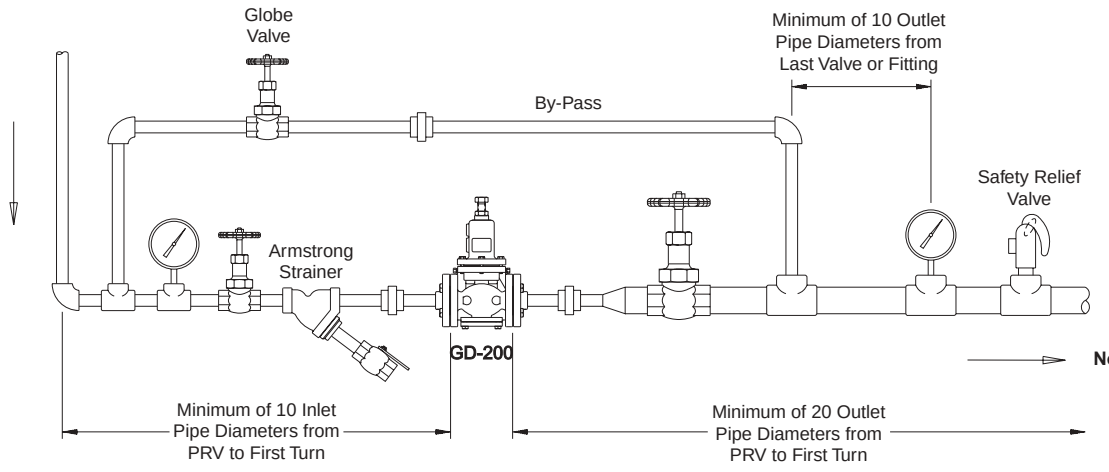
Model GD-200, 200H, 200S Pressure Reducing Valve

Installation and Maintenance Instructions

Typical Piping For Gas and Liquid (Water)



Note:
Safety Relief Valve to be set at 10 psi higher or 10% higher than the downstream pressure, whichever is greater.

This bulletin should be used by experienced personnel as a guide to the installation of Models GD-200, 200H, and 200S Pressure Reducing Valves. Selection or installation of equipment should always be accompanied by competent technical assistance. You are encouraged to contact Armstrong International, Inc. or its local representative for additional information.

Installation Instructions

1. For air service a liquid drainer should be used to keep air as dry as possible before the valve.
2. An Armstrong Y-Strainer (100 mesh recommended) should be installed before the PRV to reduce the chance of dirt fouling.
3. Pressure gauges should be installed before and after the PRV.
4. Piping a bypass line with a globe valve around the PRV will allow system operation while the PRV is being serviced.
5. Do not install quick opening or closing valves downstream of PRV.
6. Install the PRV with the flow in the direction of the arrow on the body.

Startup and Adjustment Procedures

Follow the steps below, and slowly turn the adjusting screw to the desired set pressure. Incorrect adjustment may cause hunting, water hammer, etc., resulting in damage to the valve and other equipment:

1. Close the isolation valve at inlet and outlet side of the pressure reducing valve, and take sufficient time not to blow the safety valve, blow off the fluid to remove foreign matter via the by-pass line. After blowing it down close the by-pass line isolation valve.
2. Slowly open the isolation valve at the inlet side of the pressure reducing valve, and adjust the travel of the isolation valve at the outlet side of the pressure reducing valve so that a little fluid flows.
3. Loosen the lock nut, and slowly turn the adjusting screw (clockwise to increase, counterclockwise to reduce) while observing the pressure gauge on the outlet side.
4. Slowly open the isolation valve at the outlet of the pressure reducing valve, and readjust the desired pressure.
5. After adjustment, tighten the lock nut.

Troubleshooting Guide

Problem	Causes	Solution
Pressure does not reach the desired value.	1. Incorrect pressure is being used. 2. The connecting pipe is plugged with foreign matter. 3. Nominal size is too small for the specifications. 4. Pressure is not adjusted correctly. 5. Strainer installed before pressure reducing valve is plugged. 6. Pressure gauge is broken.	1. Correct the pressure. 2. Disassemble and clean the connecting pipe. 3. Change the nominal size appropriately. 4. Observe the adjustment procedures and readjust pressure. 5. Disassemble and clean strainer screen. 6. Replace gauge.
Reduced pressure raises above the adjusted valve pressure.	1. Foreign matter exists between main valve and main valve seat, or scratches exist. 2. The o-rings are damaged. 3. By-pass valve is leaking.	1. Disassemble and remove the foreign matter. When any scratches are identified, lap the main valve and main valve seat. 2. Replace the o-rings. 3. Repair or replace by-pass valve.
Abnormal noise is heard.	1. Valve size is too large for the application. 2. Pressure reducing ratio is too large. 3. Air in liquid. 4. An abrupt OPEN/CLOSE valve is located too close to the pressure reducing valve.	1. Change to the appropriate size for application. 2. Reduce pressure in two stages. 3. Air eliminator or vent. 4. Allow as much space as possible between the valves.
Other	1. Springs and diaphragm are worn.	1. Replace the springs and diaphragm.

Important Notes:

- Foreign matter and scale in a pipe may cause most pressure reducing valve problems on start up. Make sure all foreign matter is removed from the piping.
- Valve trouble may happen due to a faulty pressure gauge, fluid leakage from a by-pass valve, failure to close the by-pass valve, a plugged strainer, etc.

Disassembly

Note: Be sure that all internal pressure has been discharged before disassembling and inspecting the valve. In case of a high temperature application, be sure to cool the valve before disassembling and inspecting. *Failure to do so may result in injury or burns due to residual pressure or spillage around the valve. (Refer to Figures 1-1 & 1-2).

1. Relieve the pipe pressure completely, and make sure there is zero pressure.
2. Slightly loosen the lock nut and turn the adjusting screw counterclockwise to relieve the adjusting spring (Unload the spring).
3. Remove the hexagon bolts from the spring chamber, remove the spring chamber, and take out the adjusting spring and spring plate.
4. To remove the diaphragm “hold” the spindle and remove the hexagon nut.
5. To remove the retainer, loosen and remove the retainer guide clamping bolt and pull the retainer guide.
6. To remove the valve seat, pull the spindle up.

Note: To remove the retainer guide easily, screw the retainer guide clamping bolt to retainer guide and pull it apart. Install the spring plate and the hexagon nut to spindle again and pull the spring plate.

Reassembly

1. Make sure that the diaphragm, the valve seat and the valve have no flaws.
2. After confirming there are no flaws on the o-ring, apply silicone grease to the o-ring.
3. Install the spring chamber after confirming whether the border of the diaphragm is properly fitted in the groove of the body.
4. There is a gap between retainer guide and body and it shows these parts positioned correctly. Tighten the bolts evenly and be sure not to tighten too hard.

Figure 1-1
Exploded View Of
GD-200 (1/2 - 2")

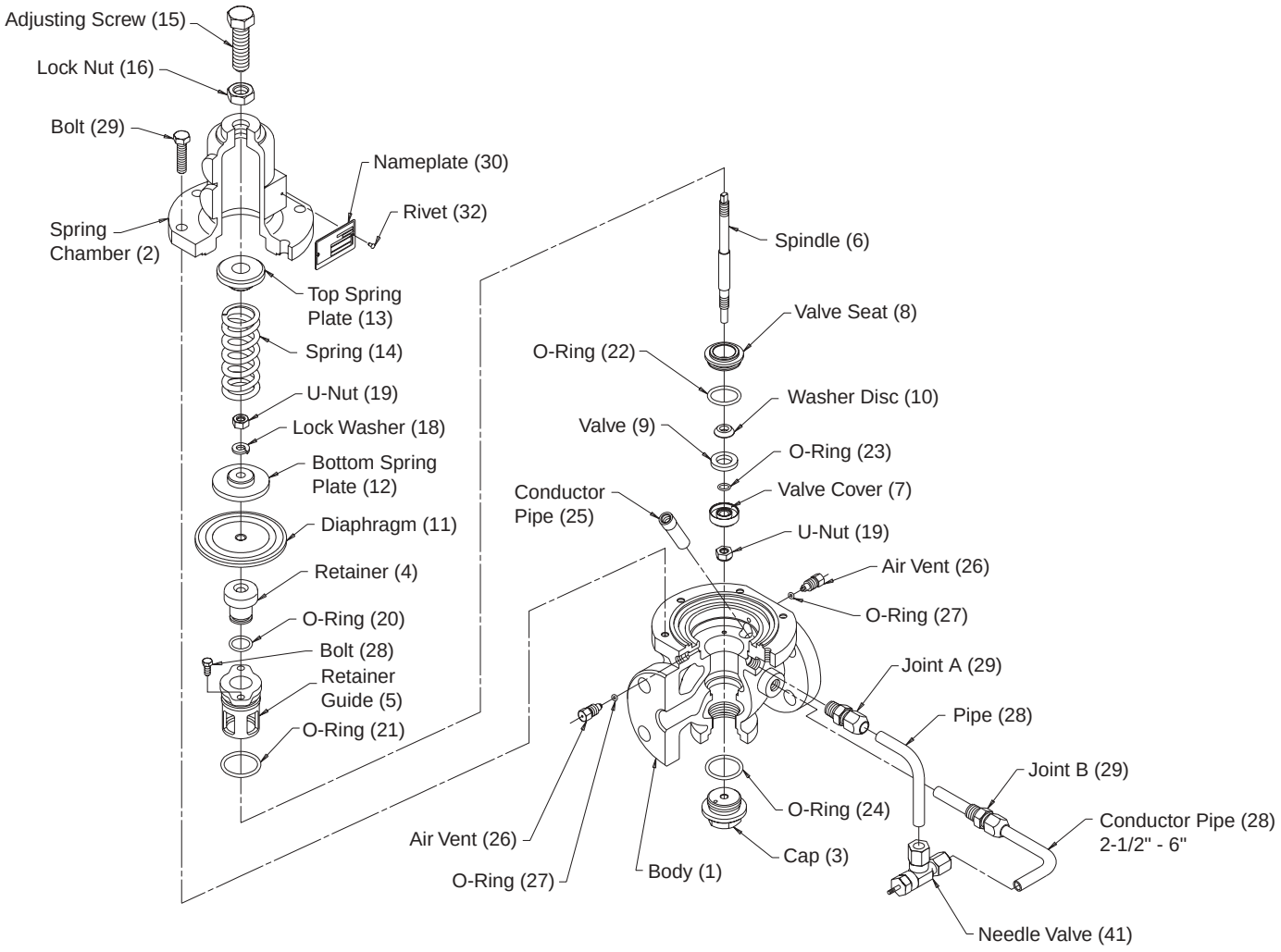
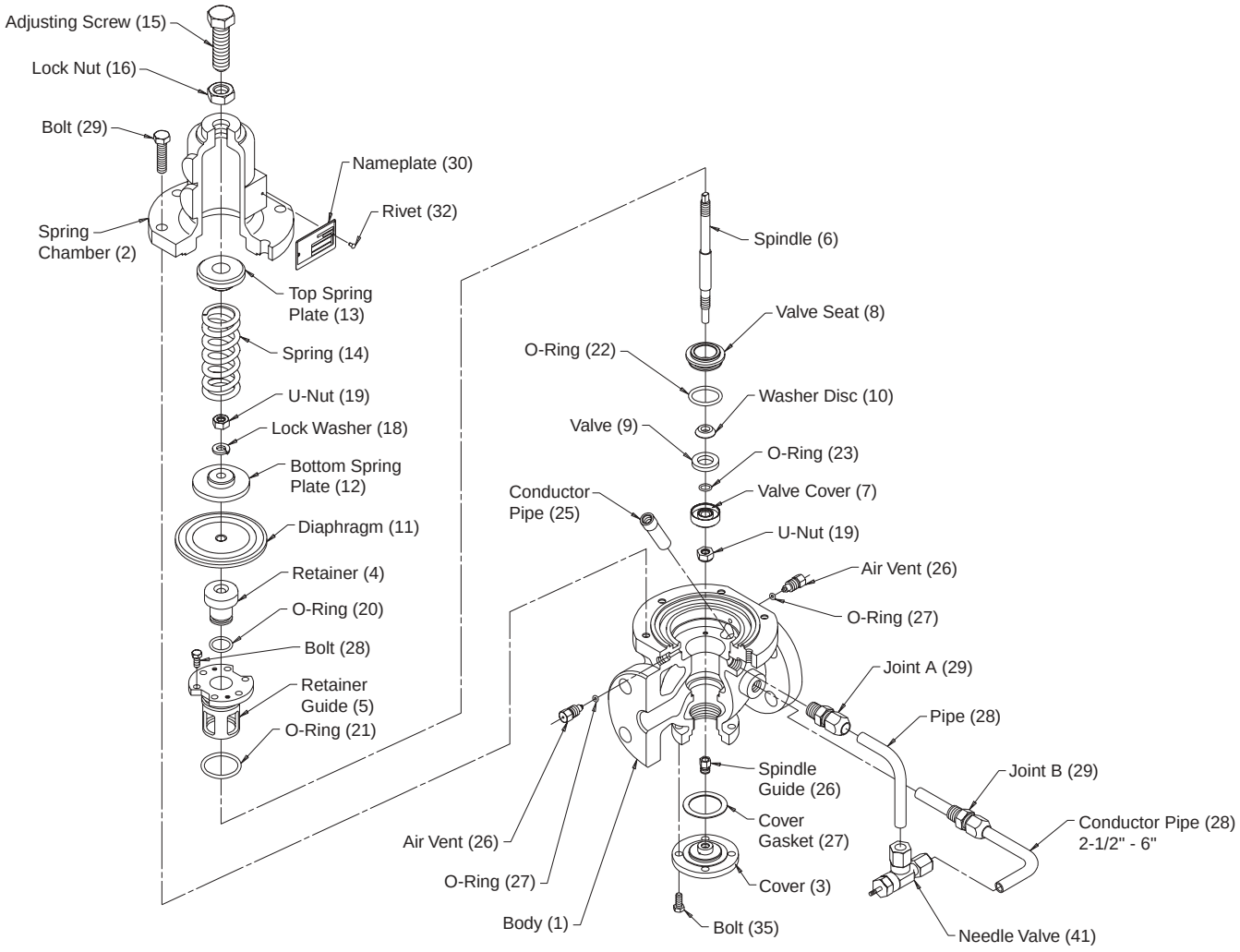


Figure 1-2
Exploded View Of
GD-200 (2-1/2 - 4")



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