Model GD-50
Pressure Reducing Valve
Installation and Maintenance Instructions

This bulletin should be used by experienced personnel as a guide to the installation of the Model GD-50 Pressure Reducing Valve. Selection or installation of equipment should always be accomplished by competent technical assistance. You are encouraged to contact Armstrong-Yoshitake, Inc., or it's local sales representative for additional information.

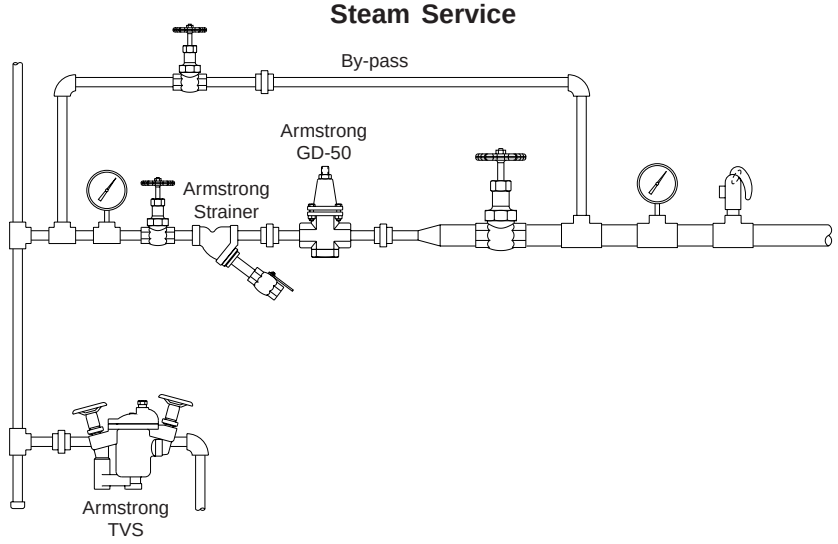

Figure 1-1

Note: For air or gas service replace steam trap with an Armstrong Liquid Drainer.

Installation Instructions

1. An Armstrong Inverted Bucket Steam Trap is recommended to drain condensate at the inlet of the Pressure Reducing Valve (PRV).

2. An Armstrong Y Strainer (20-100 mesh, depending on system dirt) 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. If system cannot be turned off to service PRV then piping a by-pass line with a high quality globe valve around the PRV will allow manual system operation while the PRV is being serviced.

5. Do not install quick opening or closing valves downstream of the PRV.

6. Install the PRV with the flow in the direction of the arrow on the body.

GD-50 Adjustment

Note: Improper adjustment of the PRV may cause hunting, improper control and possible damage to the PRV. Damaged pressure gauges, leaking by-pass valves, or clogged inlet strainers may cause problems similar to that of a malfunctioning PRV.

Start-up and Adjustment Procedures

1. Open valve on drip leg to allow inverted bucket steam trap to drain condensate on PRV inlet.

2. Open the blowdown valve on the inlet strainer and blow out the condensate until only steam is blowing to atmosphere. If a blowdown valve is not installed then close the gate valves before and after after PRV. Open the by-pass valve slowly in the by-pass line and blow the system down. Care should be taken not to open the by-pass valve completely to prevent the safety relief valve from popping off (if one is installed). After blowing down the system, close the by-pass valve.

3. Loosen the jam nut on the adjusting screw (See Figure 2-1) to allow adjustment.

4. Slowly open the inlet side gate valve to the fully open position, and partially open the outlet side valve so only a small amount of steam can pass.

Note: Downstream usage must be present in order to set any pressure reducing valve (40 - 60% is optimum).

5. Using a 5/16" allen wrench on the adjusting screw (See Figure 2-1) turn clockwise until the pressure desired is achieved on the down stream gauge.

6. Slowly open the outlet gate valve to full open.

7. Adjust pressure again after system stabilizes. Turning the adjusting screw: - Clockwise **increases** pressure, counter-clockwise **decreases** pressure.

8. Tighten the adjusting screw jam nut after adjustment is completed and system pressure stabilized.

Troubleshooting Guide

Problem	Causes	Solutions
The desired pressure cannot be obtained	The inlet pressure is too low or too high.	Change the pressure to the appropriate level.
	The valve size is smaller than what is required.	Change the valve size to the appropriate one.
	The adjustment is not appropriate.	Readjust according to the adjusting procedure. (See adjustment procedure).
	The inlet strainer is clogged by foreign matter.	Disassemble and clean the screen.
	The pressure gauge is out of order.	Replace the pressure gauge.
The outlet pressure rises higher than the specified pressure.	The valve and the valve seat are contaminated by foreign matter.	Disassemble and clean the valve and seat or replace valve and seat.
	The sensing port of the outlet pressure is clogged with foreign matter.	Disassemble and clean the sensing orifice, valve and the valve seat.
	The by-pass valve is leaking.	Repair or replace the by-pass valve.
	The bellows has been damaged.	Disassemble and inspect bellows for cracks or breaks.
Abnormal noise is heard.	The reducing ratio is larger than 10:1.	Reduce pressure in two stages.
	Water hammer (for steam service).	Install a steam trap before the reducing valve.
	There is a quick-responding valve near the PRV.	Provide as much distance as possible between the two valves.
	The valve may be oversized.	Verify sizing and change out valve if needed.

Disassembly Procedures

1. Eliminate pressure from inside the valve. Make sure the valve us completely free from pressure.
2. Turn the adjusting screw counterclockwise to make the adjusting spring free (not loaded)
3. Remove the 4 bolts and take away the spring housing. Take out the spring and bellows.
4. Unscrew (counterclockwise) the cap and take out the spring, screen and valve from the body.

Figure 2-1