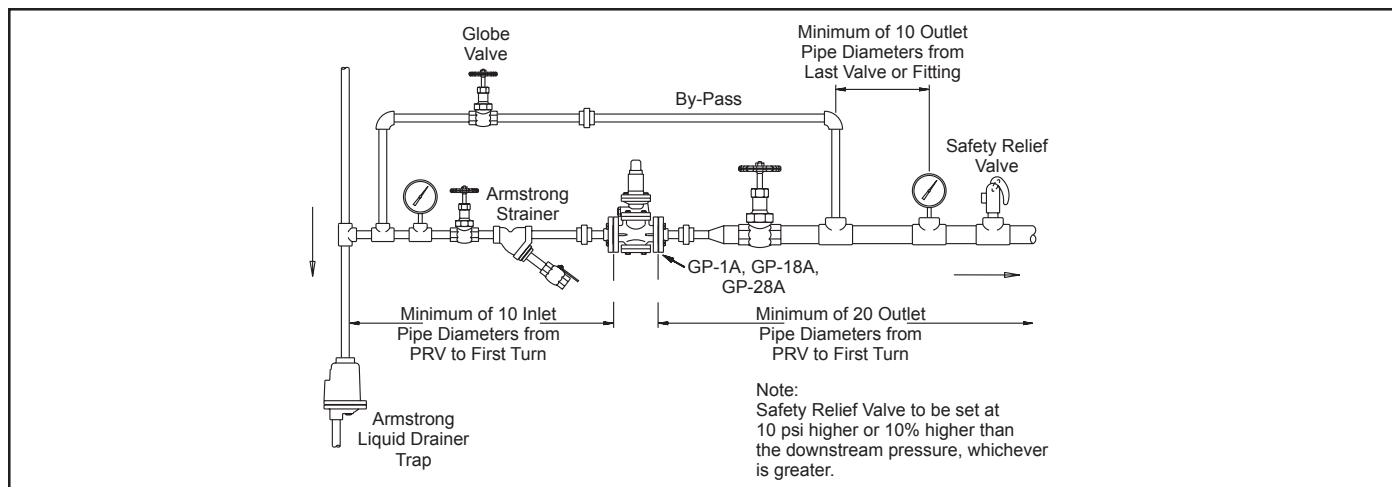




Model GP-1A, GP-18/28A Pressure Reducing Valve For Air Service

Installation and Maintenance Instructions



This bulletin should be used by experienced personnel as a guide to the installation of the Model GP-1A, GP-18/28A Pressure Reducing Valve. 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 Hints

Step 1. An Armstrong Liquid Drainer Trap is recommended to drain liquid at the inlet of the Pressure Reducing Valve (PRV).

Step 2. An Armstrong Y Strainer (20-100 mesh, depending on air quality) with blowdown valve should be installed before the PRV to reduce the chance of dirt fouling.

Step 3. Pressure gauges should be installed before and after the PRV.

Step 4. Piping a by-pass line with a globe valve around the PRV will allow system operation while the PRV is being serviced. It is also recommended to flush out system prior to start-up.

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

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

Step 7. Piping is typically line size for line size. (Reference Catalog 326)

GP-1A, GP-18/28A Startup and Adjustment Procedures

Improper adjustment of the pressure reducing valve may cause hunting, improper control and possible damage to the valve itself. Adjust the valve as follows:

Step 1. Close the gate valves before and after the pressure reducing valve and blow down the strainer. If strainer blow down valve is not available blowdown can be done through the bypass line, adjusting the opening of the bypass globe valve so as not to blow the safety relief valve. After draining, be sure to close the bypass globe valve.

Step 2. Loosen the lock nut and adjusting screw to relieve the tension on the adjusting spring.

Step 3: Adjustment must be made while steam is being consumed at least 1/2 to 3/4 of maximum flow for best results.

Step 4. Slowly open the inlet side gate valve to the full open position, and open the outlet side gate valve enough so that a little fluid can flow through.

Step 5. Slowly turn the adjusting screw clockwise until desired pressure is obtained while watching the pressure gauge at the outlet side.

Step 6. Slowly open the outlet side valve to the full open position.

Step 7. After adjustment, tighten the lock nut and replace the cap.

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 strainer (12) in the top cover is clogged by foreign matter.	Disassemble and clean the strainer.
	The piston-cylinder, clearance is clogged by foreign matter.	Disassemble and clean the piston and the cylinder. If a flaw is found, refinish the surface by using a file or sand paper.
	The valve size is smaller than what is required.	Change the size to the appropriate one.
	The adjustment is not appropriate.	Readjust according to the adjustment procedure.
	The inlet strainer is clogged by foreign matter.	Disassemble and clean the strainer.
The outlet pressure rises higher than the specified pressure.	The pressure gauge is not functioning properly.	Replace the gauge.
	The main valve or valve seat is contaminated by foreign matter.	Disassemble and clean the piston and cylinder.
	The pilot valve or the pilot valve seat is contaminated by foreign matter.	Disassemble and clean the valve or seat.
	The piston-cylinder, clearance is clogged by foreign matter.	Disassemble and clean the valve or seat.
Abnormal noise is heard.	The bypass valve is leaking.	Repair or replace the bypass valve.
	The valve size is larger than what is required.	Install the correct size valve.
	The reducing ratio is greater than 10:1.	Reduce pressure by staging with second PRV.
Others	There is a quick-responding valve near the PRV.	Provide as long a distance as possible between the two valves.
	All springs or diaphragms are damaged.	Replace all damaged springs or diaphragms.

Disassembly

Caution: Be sure that the isolation valves at inlet and outlet side of pressure reducing valve are closed and all internal pressure has been relieved before disassembly of the valve.

Pilot Valve Disassembly

- Loosen the lock nut (18) and turn the adjusting screw (17) to release the spring (21) compression.
- Remove the bolts (23) of the spring housing chamber (4). Remove the spring housing chamber, adjusting spring (21), top spring plate (16), bottom spring plate (15), and diaphragm (13).
- Remove the pilot valve assembly (one part) which consists of the pilot valve seat (11), spindle (10), spindle rings (33), valve (34), and spring (20).

Piston Disassembly

- Remove the bolts and top cover (3). Pick up the piston (8), and remove the piston ring (22).

Main Valve Disassembly

- Remove the bolts holding the bottom cover (2). Remove the bottom cover (2), main valve spring (19), and main valve (6).

Reassembly

- Make sure that the main valve and seat, pilot valve and seat have no flaws. Even a small flaw on the valve or seat may cause leaking.
- Make sure the sliding movement of piston and cylinder is smooth.
- Be sure to replace all gaskets and diaphragms.
- Reassemble in the reverse order of disassembly.

