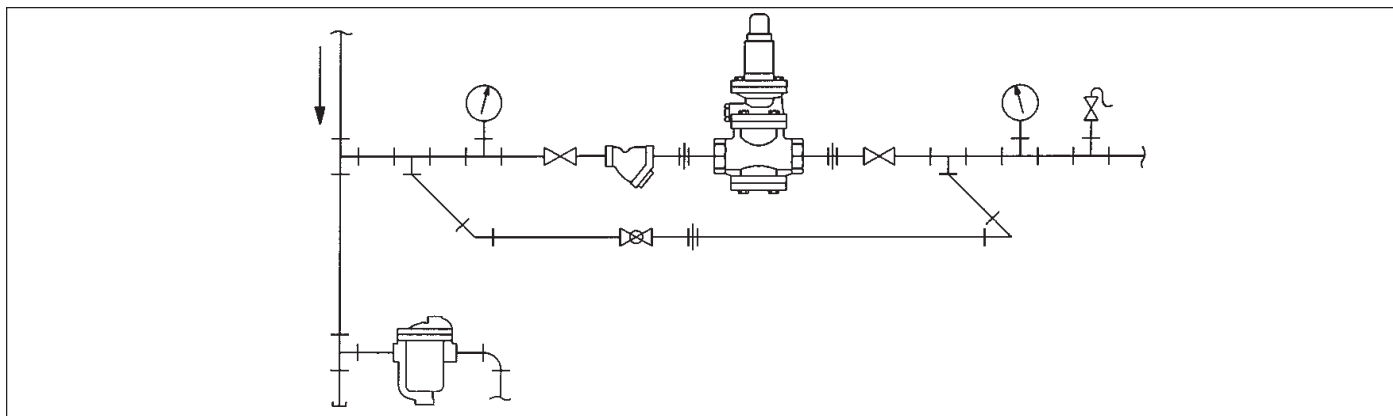


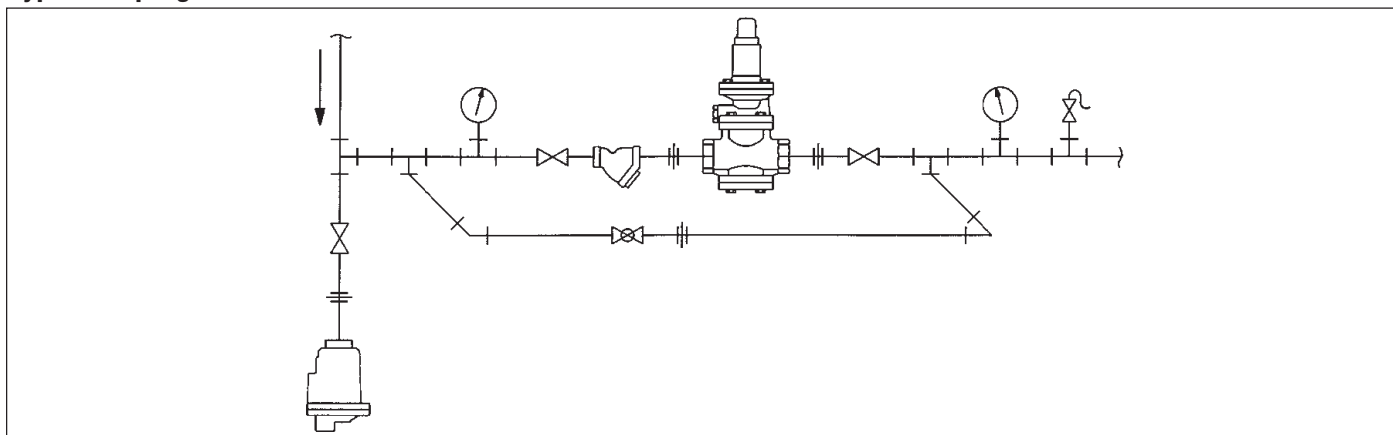


MODEL GP-1, 18, 28 and 1000 INSTALLATION & MAINTENANCE INSTRUCTIONS

Typical Piping For Steam



Typical Piping For Gas



This bulletin should be used by experienced personnel as a guide to the installation of the Models GP-1, GP-18, GP-28 and GP-1000 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 sales representative for additional information.

Start-Up and Adjusting 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:

1. Close the gate valves before and after the pressure reducing valve and blow fluid leisurely through the bypass line, adjusting the opening of the bypass globe valve so as not to blow the safety relief valve if installed. After draining, be sure to close the bypass globe valve.
2. Loosen the lock nut and adjusting screw to relieve the tension on the adjusting spring.
3. **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.
4. **Slowly** turn the adjusting screw **clockwise** until desired pressure is obtained while watching the pressure gauge at the outlet side.
5. **Slowly** open the outlet side valve to the full open position.

6. Adjust pressure again after system stabilizes and when there is a load on the system. Turning the adjusting screw: - Clockwise **increases** pressure, counter-clockwise **decreases** pressure.
7. After adjustment, tighten the lock nut and replace the cap.

DISASSEMBLY PROCEDURE FOR GP-1, GP-18, GP-28 and GP-1000 (Refer to diagram on page 2)

Prior to disassembly, make sure that gate valves before and after the PRV are closed, and that there is no residual pressure in the PRV.

Disassembly of the Pilot Valve

1. Remove the cap (5), slightly loosen the lock nut (18), and turn the adjusting screw (17) counterclockwise to unload the adjusting spring (21).
2. Remove the hexagon bolts (23) from the spring housing (4), remove the spring housing, and take out parts 14, 15, 16 and the diaphragm (13). Take out the diaphragm by using a

Troubleshooting Guide and Disassembly Instructions

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 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, finish 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 adjusting procedure (page 1). |
| | The inlet strainer is clogged by foreign matter. | Disassemble and clean the strainer. |
| The outlet pressure rises higher than the specified pressure. | The main valve or the valve seat is contaminated by foreign matter. | Disassemble and clean the valve and seat. |
| | The pilot valve or the pilot valve seat is contaminated by foreign matter. | Disassemble and clean the pilot valve and seat. |
| | The piston-cylinder clearance is clogged by foreign matter. | Disassemble and clean the valve or the seat. |
| | The bypass valve is leaking. | Repair or replace the bypass valve. |
| Abnormal noise is heard. | 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. |
| | Water hammer. | Install a drip trap at the reducing valve inlet. |
| | There is a quick-responding valve near the PRV. | Provide as long a distance as possible between the two valves. |
| Others | All springs or diaphragms are damaged. | Replace all damaged springs or diaphragms. |

tool with a sharp edge applied to the notch of the diaphragm.

3. Take out the pilot valve seat (11) by removing the pilot valve seat from the center of the top cover (3) by using a ring spanner or socket wrench. Then pick out the pilot valve (10) and the spring (20).

Piston Disassembly

1. Remove the hexagon bolts (23) from the top cover (3), and the top cover from the body, and pull out the piston (8) and the cylinder (9).

Main Valve Disassembly

1. Remove the hexagon bolts (23) from the bottom cover (2), and the bottom cover from the body, and take out the spring (19) and the main valve (6).

Notes to Re-assemble

1. Make sure that the main valve, the valve seat, the pilot valve and the pilot valve seat have no flaws. Even a small flaw on the seats may cause leakage.
2. Make sure that sliding movement is smooth.
3. Be sure to replace all gaskets and diaphragms with new ones. (If cutting a new gasket (28) or (26) make sure it is the same thickness as the old gasket).

