

NEW-FLOW

**ISO 9001
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NEW-FLOW

MANUFACTURE OF DIAPHRAGM PRESSURE REGULATORS
PR-SERIES
AND CONTROL INSTRUMENTS

Instruction Manual



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1.0 DESCRIPTION

Application

The PR Series is a pressure regulating valve that are suitable for pressure control of air, gas, steam, water, oil and similar fluids requiring constant outlet pressure between 10 and 150 psig.

Technical Data

Differential Pressure: Up to 150psi on water, air, oil, gas, steam, and chemicals

Inlet Pressure: maximum 2.07 Mpa (300psi)

Body Material: CF8M

Diaphragm Material: Neoprene+Nylon;
Neoprene+Nylon/Teflon lining;
Newlon (PTFE based, max. 230°C)

Seat Material: Viton or FFKM

Plug & Trim Material: SS316

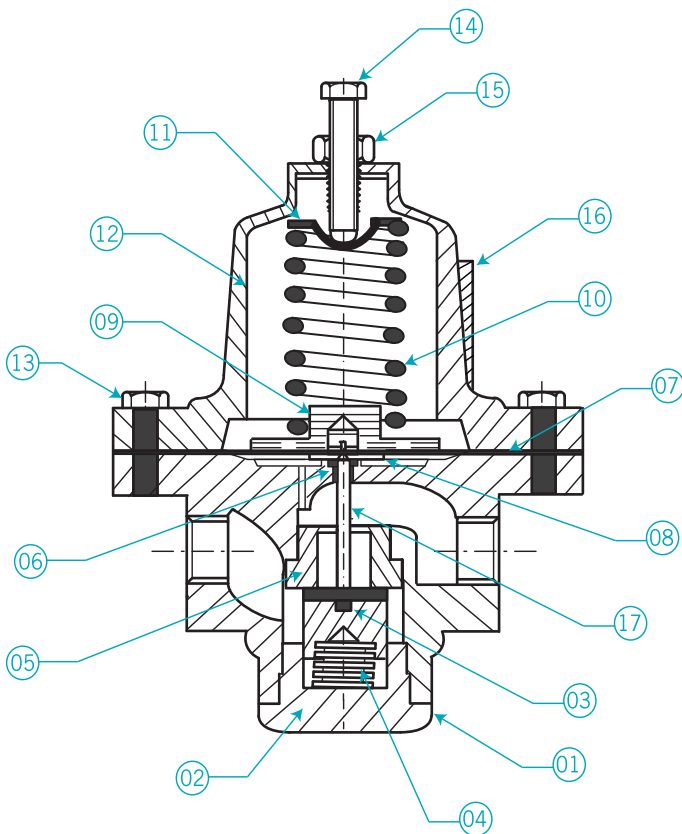
Operating Temperature: -40°C to +100°C

Adjustable Outlet Pressure in Range:

A	B	C
10~55 psi	40~85 psi	70~150 psi

CV: ½"-2; ¾" & 1"-3.6; 2"-12

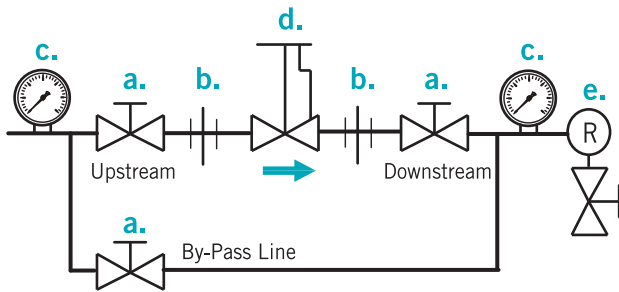
Parts List & Material



Item	Parts Name	Material	Qty
01	Body	CF8M	1
02	Bottom Cap	SS316	1
03	Plug Assembly	SS316	1
04	Return Spring	SS316	1
05	Orifice	SS316	1
06	Bushing	SS316	1
07	Diaphragm	Option: (as below) Neoprene + Nylon Neoprene + Nylon/Teflon lining Newlon (PTFE based, max. 230°C)	1
08	Lower Diaphragm Plate	SS316	1
09	Upper Diaphragm Plate	SS316 (CS for size 1½" & 2")	1
10	Range Spring	JISG3522	1
11	Spring Seat	SS316	1
12	Spring Housing	SS316	1
13	Fixed Bolt	SS304	1
14	Adjusting Screw Bolt	SS304	1
15	Lock Nut	SS304	1
16	Nameplate	SS304	1
17	Stem	SS316	1

2.0 INSTALLATION & NOTICE

Installation



- a. Shut off valve
b. Pipe union
c. Pressure gauge
d. Diaphragm pressure regulator (PR)
e. Relief valve

STEPS.:

1. Before installing the pressure regulator, use an air compressor to clean out debris, welding scale, metal scraps and all other foreign materials inside pipes and components.
2. Install shut-off valves, pressure gauges, and by-pass line according to the installation figure as above for easy adjustment proper testing and operation.
3. When placing thread sealant on pipe ends, remove any excess thread sealant. Do Not allow any thread sealant to enter the pressure regulator and pipes.
4. Install a strainer at the entrance point of the pressure regulator (upstream side) to prevent debris and all other foreign materials from entering the pressure regulator. Use a strainer with size 0.033 screen mesh.
5. Install the pressure regulator at the highest point of a horizontal pipeline, so that upstream and downstream can have good emissions. By doing so it also prevents water hammer, and the pressure regulator can function effectively at regulating flow.
6. Align the arrow on the pressure regulator with the flow direction (flow through the pressure regulator is in the direction indicated by the arrow on the pressure regulator). Once direction is properly aligned, it doesn't affect three operation of the pressure regulator whether the regulator is installed horizontally or vertically.
7. To achieve the optimal performance, it is necessary to install a section of straight (not curved) 90mm (3.5") pipe at both upstream and downstream entrances of the pressure regulator. Straight pipes must be installed right at the entrance points.
8. If possible, please install a relief valve at downstream, and make the pressure setting of the relief valve 15 psi higher than the pressure setting of the pressure regulator (that is 15 psi higher than the set pressure).
9. If severe turbulent flow exists in pipes, it is recommended to accumulator.
10. The pressure regulator must operate within the allowable pressure and temperature limit.

Start Up and Adjustment

1. Open the downstream shut-off valve completely (open all the way).
2. Slowly open the upstream shut-off valve.
3. Slowly close and open the downstream shut-off valve several times to ensure the pressure regulator can operate smoothly.
4. While keeping the downstream shut-off valve open, slowly tighten the adjusting screw for pressure adjustment until to the desired pressure set point shows up on the pressure range.
5. To change pressure setting, turn the adjusting screw clockwise to increase pressure and counterclockwise to reduce pressure.
6. To change pressure setting, because of the operation pressure is higher than the demand pressure, it has to turn on the relief valve and adjust the screw counterclockwise, and then turn off the relief valve. Repeat the Step.5 again.

Maintenance

NOTICE.

Before uninstalling any component or connection, make sure that there is no more pressure inside the pressure regulator. Please follow the suggested steps as below and refer to the "Installation" for maintenance.

1. Close the upstream shut-off valve.
2. Release pressure inside the pressure regulator toward downstream. Be careful of not letting pressure flow backward toward upstream (backpressure).
3. Wait until the pressure regulator indicates Zero pressure to close the downstream shut-off valve.

Troubleshooting

Problem scenario 1: Unstable Control

It could be that:

- (a.) Regulator valve size is too large. When valve size is too large, it can cause the fluid to flow backward, turbulence or hammering sound. It also causes a decrease in the usable pressure range. Please select a suitable pipe size.
- (b.) The pressure regulator is clogged and cannot be close completely. It needs to be serviced or replaced.
- (c.) Too much debris accumulated at plugs. Clean out the debris.

Problem scenario 2: Unable to Maintain P

(unable to maintain the pressure after pressure adjustment)

It could be that:

- (a.) Filter or pipeline is clogged.
- (b.) The valve size is too small for the requested flow rate.