

Downstream Pressure Regulating Valves Series 600

Downstream Pressure regulating valves are self contained, Self Operated control devices, which use energy from the controlled system to operate and regulate pressures.

Valve Solutions manufactures a variety of pressure reducing regulators to manage downstream system pressures in low, medium, high flow applications, model features a diaphragm type, piston type

or combination of both to suit different applications.

A pressure reducing regulator maintains a desired reduced outlet pressure while providing the required fluid flow to satisfy a variable downstream demand.

The valve at which the reduced pressure is maintained is the outlet pressure setting of the regulator.

Specification

Design Code	ASME B16-34
Valve Size	15 to 150 mm (1/2" to 6")
Valve Type	Direct or Pilot Operated
Rating	ANSI 150 and 300, Higher on request
End Connection	Flanged – 15mm to 150mm (1/2" to 6") Screwed – 15mm to 50mm (1/2" to 2")
Body Material	Carbon steel, Chrome-moly steel, Stainless steel, Monel, Alloy 20, Hastelloy B/C, Duplex stainless steel, Aluminium bronze

Trim Material	Stainless steel, Duplex stainless steel, 13% Chrome steel, Monel Hastelloy B/C, Stellite
Diaphragm	Neoprene, Natural rubber, Nitrile, EDPM, Viton, Teflon.
Max. Temperature	As per the diaphragm limitations.
Seat Leakage	As per FCI-70-2 Class IV, V and VI

Design Features

- Reduces higher inlet pressure to a constant lower outlet pressure.
- Outlet pressure is accurate over a wide range of flows.
- Pilot-operated main valve is not subject to pressure fall off characteristic of direct-acting PRV's.
- Outlet pressure is adjustable over complete range of control spring.
- Range of body and diaphragm material combinations to meet the majority of requirements.
- IBR certification in Form III C available.
- Designed ruggedly to withstand shocks.
- Simple and economic design.
- Operates automatically off line pressure.
- Heavy-duty, nylon reinforced diaphragm.
- Round-shaped, soft seat seal provides drip-tight class VI closure.
- Diaphragm assembly guided top and bottom.
- Throttling seat retainer for flow and pressure stability.
- Easily maintained without removal from the line.
- Pressure adjustment by single adjusting screw.
- Replaceable seat ring.

Quality and Performance Guarantee

- Produced with Quality Systems accredited to ISO 9001 : 2008
- Full material certification available for all major component Parts.
- Full guarantee on design and Performance.
- All testing performed to the requirements of ANSI B16.34.

Regulator Types

All types of regulators generally fit in to one of the following two basic categories.

- 1 Direct Operated
- 2 Pilot Operated

The specific considerations particular to your control needs are to be carefully studied and understood to determine which method of control is the

better choice. Regulators when compared to control Valve / Instrument package have their advantages and limitations. The table below lists selected

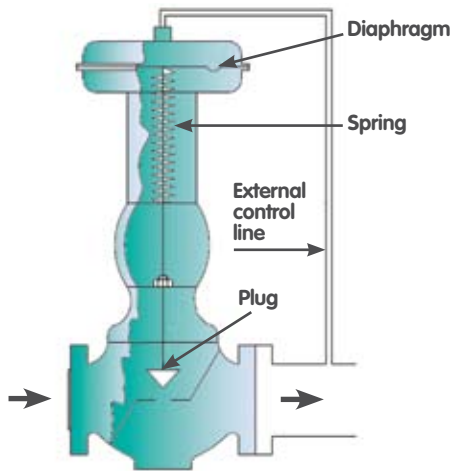
characteristics of both. The operational principal of both types of regulators is explained as follows.

A Direct Operated

In operation, a direct operated, pressure reducing regulator senses the downstream pressure through either internal pressure registration or an external control line.

This downstream pressure opposes a spring which moves the diaphragm and valve plug to change the size of the flow path

through the regulator. Characteristically direct operator regulators are adequate for narrow-range control, and where the allowable change in output pressure can be 10 to 20% of the outlet pressure setting. This 10 to 20% is typical although finer control can be achieved depending on the specific application requirement.



B Pilot Operated

A pilot operated system uses a two-path control. In two path control, the main valve diaphragm responds quickly to downstream pressure changes, causing an immediate correction in the main valve position.

At the same time, the pilot diaphragm diverts some of the reduced inlet pressure to the other side of the valve diaphragm, control the final positioning

of the main valve plug. Two-path control result in fast response. Pilot-operated regulators are preferred for broad-range control, or where the allowable change in outlet pressure is required to be less than 10 percent of the outlet pressure setting. They are also commonly used when remote set point adjustment is required for a regulator application.

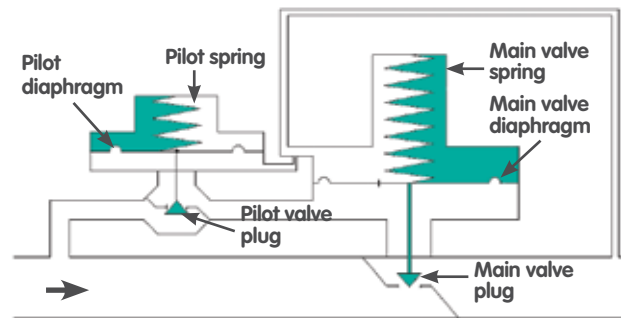


Table: Regulator Vs. Control Valve / Instrument

Selected Regulator Characteristics

- Purchase price, installation and maintenance costs are normally lower.
- Requires no additional power sources for basic operation.
- Less complex, and often lighter and more compact.
- Controller, which provides fixed-band proportional control only, is built in.

Selected Control Valve / Instrument Characteristics

- Wide variety of construction material and accessories available. Transmitting and controlling instruments are separate and may be remote mounted.
- Specific construction has broad application flexibility.
- Separate controller allows for adjustable-band proportional control with reset and/or rate optional for excellent control response.