Spence D Series Pressure Reducing Valve

Figure 1. *D Series Pressure Reducing Valve*

Features

- **Accurate Regulation Unaffected by Service Conditions**
- **Easy In-line Maintenance**
- **Five Spring Ranges for Improved Control**

Introduction

D Series pressure reducing valves are designed for air and steam services. They are direct-acting and are used on small delivery systems where pilot-operated regulators are not practical to use.

The vavle is single-seated, normally open, spring-loaded and diaphragm-operated. Delivery pressure is transmitted to the diaphragm through an internal control port connecting the outlet side of the valve body with the diaphragm chamber.

Specifications

This section lists the specifications for D Series pressure reducing valve. Factory specification are stamped on the nameplate fastened on the valve at the factory.

Available Types
Type D: ± 1 psi / 0.07 bar control of delivery pressure from 3 to 150 psi / 0.21 to 10.3 bar
Type D2: ± 2 psi / 0.14 bar control of delivery pressure from 100 to 300 psi / 6.89 to 20.7 bar

Valve Sizes
NPS 1/4, 3/8 and 1/2 / DN 8, 10 and 15

End Connection Styles
NPT

Maximum Temperature(1)
750°F / 400°C

Spring Pressure Rating(1)
Cast Iron: 250 psig / 17.2 bar at 400°F / 204°C
Cast Steel: 600 psig / 41.4 bar at 750°F / 400°C

Spring Pressure Ranges(1)
Type D
3 to 20 psig / 0.21 to 1.38 bar
5 to 50 psig / 0.34 to 3.45 bar
10 to 100 psig / 0.69 to 6.89 bar
20 to 150 psig / 1.38 to 10.3 bar
Type D2
100 to 300 psig / 6.89 to 20.7 bar

Construction Materials
Body: Cast Steel or Cast Iron
Stem, Seat, Disc and Diaphragm: Stainless steel
Spring: Inconel®
Gasket: Grafoil

Options
Enclosed Spring Chamber
Composition Disc
Wall Bracket
Adjusting Handwheel
Locking Device

Application
Pressure Regulating for Steam Distribution
Regulating for Fluid, Gas and Vapor
Process Control
Processes with Small, Relatively Steady Flow Rates

Approximate Weight
Type D: 7.3 lbs / 3.3 kg
Type D2: 10.6 lbs / 4.8 kg

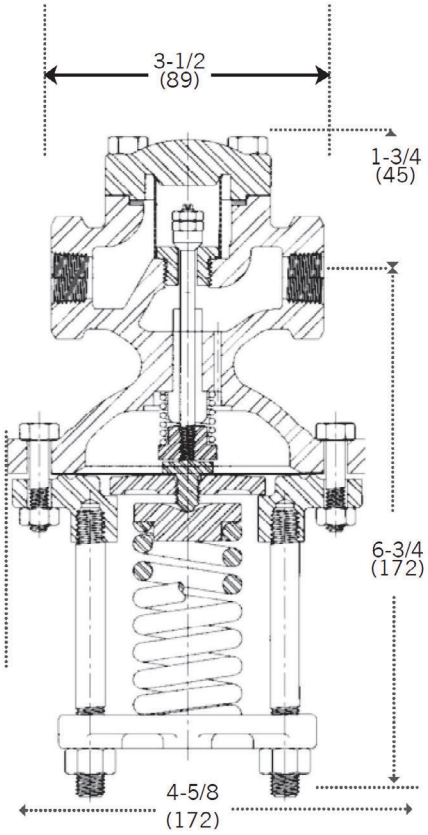
1. The pressure/temperature limits in this Bulletin and any applicable standard or code limitation should not be exceeded.

Principle of Operation

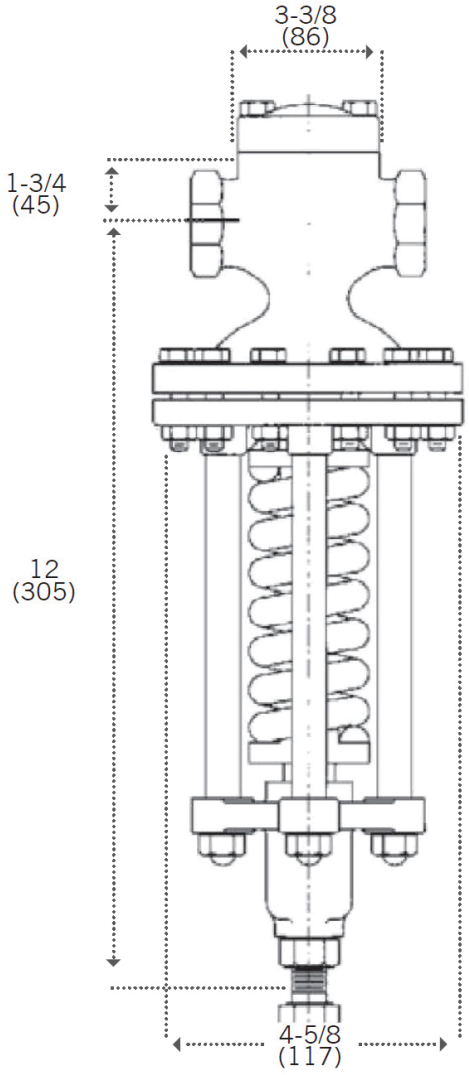
When steam is turned on, the valve is in the wide open position. Steam flowing to the system creates a rising delivery pressure which feeds back through the control port to the underside of the diaphragm. As pressure on diapragm approaches a balance with the force exerted by the adjusting spring, the disc is throttled to a position where just enough steam flows to maintain the set delivery pressure.

Installation

- Carefully clear inlet piping system of foreign matter and mount regulator with the flow arrow pointing in the direction of flow.
- Preferred position for D Series valve is in a horizontal line with spring down. When so mounted, the tendency of sediment to settle in the control ports is practically eliminated.



TYPE D



TYPE D2

in. / mm

***Figure 2**. D Series Pressure Reducing Valve Dimension*

Ordering Information

When ordering, complete the ordering guide on this page. Refer to the Specifications section. Review the description to the right of each specification and the information in each referenced table or figure. Specify your choice whenever a selection is offered.

Ordering Guide

Configuration (Select One)
- ☐ Type D
- ☐ Type D2

Body Material (Select One)
- ☐ Cast Iron
- ☐ Cast Steel

Spring Ranges (Select One)
Type D
- ☐ 3 to 20 psig / 0.21 to 1.38 bar
- ☐ 5 to 50 psig / 0.34 to 3.45 bar
- ☐ 10 to 100 psig / 0.69 to 6.89 bar
- ☐ 20 to 150 psig / 1.38 to 10.3 bar

Type D2
- ☐ 100 to 300 psig / 6.89 to 20.7 bar

SpenceValve.com

Emerson Automation Solutions

Americas
McKinney, Texas 75070 USA
T +1 800 558 5853
+1 972 548 3574

Europe
Bologna 40013, Italy
T +39 051 419 0611

Asia Pacific
Singapore 128461, Singapore
T +65 6777 8211

Middle East and Africa
Dubai, United Arab Emirates
T +971 4 811 8100

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