

DIAPHRAGM VALVE BACK PRESSURE SERVICE

NPR140

Approvals: UL, ULC

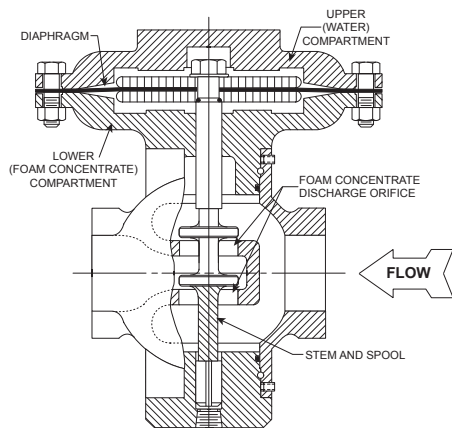
- Seawater Compatible
- Balanced Pressure Control Valve Applications
- Free Floating Self Lubricated Spool
- Flow Range 10 - 250 GPM (38 - 946 LPM)
- Integral Flushing Ports



Description

The 1½" and 2" Back Pressure Regulating Diaphragm Valves are an integral part of the Balanced Pressure Proportioning type system. The valves are designed to balance the foam concentrate pressure to the water pressure at the ratio controller inlet by controlling the foam concentrate pressure at the inlet of the valve. Balance is achieved by regulating the volume of foam concentrate discharged back to the concentrate storage tank.

The diaphragm valve shall have a diaphragm chamber divided into upper (water) and lower (foam) compartments, separated by a flexible diaphragm. The diaphragm assembly includes a spool that moves to increase or decrease the discharge orifice area of the valve. The valve senses water and



foam concentrate pressure at the ratio controller. As the water supply pressure increases, the pressure in the upper compartment increases forcing the diaphragm and its spool downward, causing the discharge orifice to close. As the valve orifice closes, the foam concentrate flow through the valve decreases causing flow to the ratio controller to increase until the foam concentrate pressure at the inlet to the valve is equal to the water pressure. Conversely, if the water pressure decreases, the pressure in the upper compartment decreases forcing the diaphragm and its spool upward, which causes the valve discharge orifice to gradually increase until the pressures are equalized. Valve operation is direct, requiring no manual activation.

Features

- May be used with either fresh or salt water
- Operates automatically
- Heavy-duty, nylon reinforced diaphragm isolates upper chamber water operating pressure from lower chamber foam line pressure
- Diaphragm assembly, guided top and bottom, is the only moving part
- Bronze construction with stainless steel internals for corrosion resistance and compatibility with all foam concentrates

Applications

Pressure control for ratio controllers in balance pressure proportioning systems.

Specifications

The Back Pressure Diaphragm Valve shall be a globe pattern, diaphragm actuated valve designed for modulating service. When used as part of the balanced pressure proportioning system, it shall monitor the water and foam concentrate pressure at the inlet of the ratio controller in order to maintain equal pressures. The valve shall modulate to throttle the flow of foam concentrate through the valve, thereby controlling the foam concentrate pressure at the inlet to the ratio controller. Because it is designed for modulating service it does not provide positive shut-off in the closed position.

The valve body and diaphragm chamber shall be constructed of cast bronze and shall have female NPT connections. It shall be available in a 1½" and 2" size. The valve shall have dual spools with two machined seats to allow higher flows through the valve with minimal loss. The stem and spools shall be cast stainless steel and shall be of a one-piece design. The diaphragm chamber shall have two ¼" NPT tapped ports 180° opposed in both chambers to allow for installation of the sensing connections and to allow complete flushing of the chamber. The diaphragm separating the upper and lower compartments shall be nylon reinforced Buna-N with non-wicking scrim. Stainless steel plates shall be vulcanized to diaphragm to insure leak

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free operation. All hardware shall be stainless steel.

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Technical Data

Material of Construction:

- Body:
Bronze, ASTM B584
- Diaphragm Chamber:
Bronze, ASTM B584
- Spool:
Stainless Steel, 303
- Diaphragm Plate:
Stainless Steel

Diaphragm:
Reinforced Buna-N

O-Rings:
Buna-N

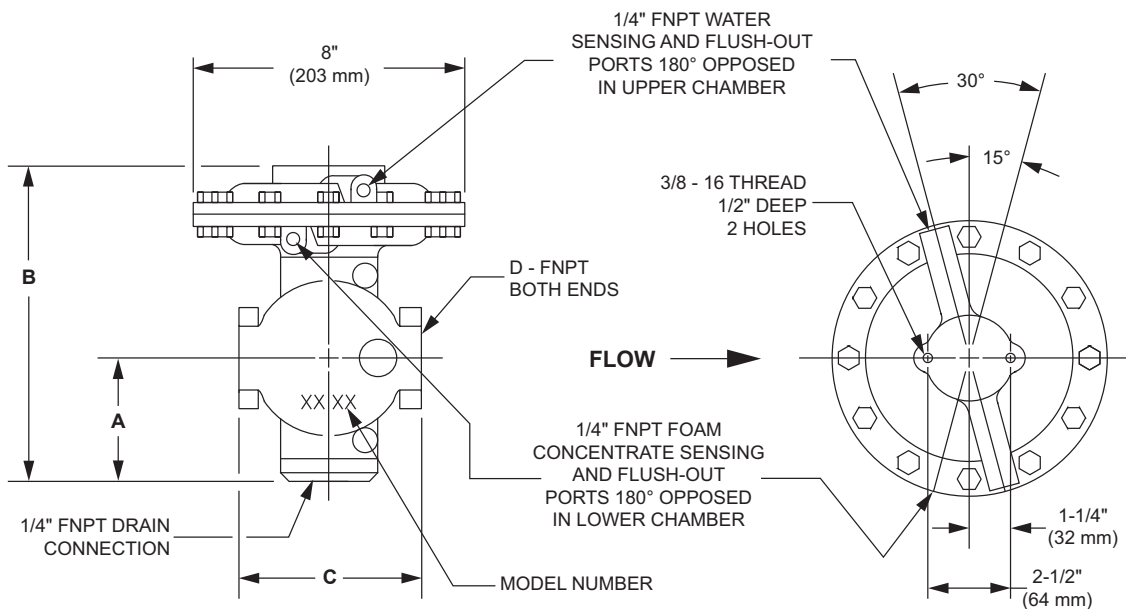
Hardware:
Stainless Steel

Pressure Rating:
250 psi (17.2 bar)

Max. Temp. Rating:
150° F (66°C)

Finish:
None

DIMENSIONS					
Size	A	B	C	D	C _v
1-1/2"	3-9/16 (90)	9-3/32 (231)	5-3/8 137	1-1/2	27 (102)
2"	3-3/4 (95)	9-1/2 (241)	6-7/8 (175)	2	45 (170)
Dimensions - Inches (mm)				Flow - gpm (lpm)	



ORDERING INFORMATION

Part Number	Description	Connection	Flow Range		Weight	
			gpm	lpm	lb	kg
1231-1412-2	1-1/2" Diaphragm Valve	NPT	10-135	38-511	35	16
1231-1413-5	2" Diaphragm Valve	NPT	10-250	38-946	36	16.3