

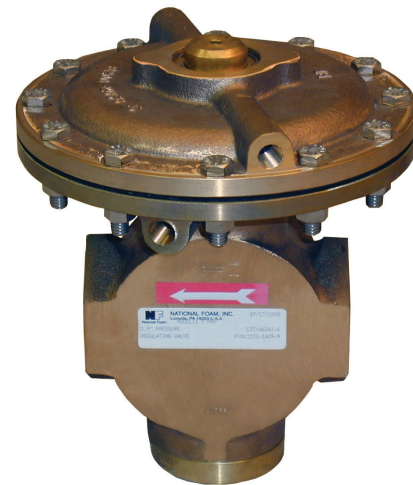
# DIAPHRAGM VALVE

## PRESSURE REDUCING SERVICE

NPR250

Approvals: UL, ULC

- Seawater Compatible
- Use In ILBP Systems
- Free Floating Self Lubricating Spool
- Flow Range 10-250 GPM (38 - 946 LPM)
- Integrated Flushing Ports



### Description

The 1-1/2" and 2" Pressure Reducing Diaphragm Valves are an integral part of the In-Line Balanced Pressure Proportioning type system and are designed to balance the foam concentrate pressure to the water pressure, at the ratio controller inlet, by controlling the foam concentrate discharge pressure of the valve. Balance is achieved by regulating the volume of foam concentrate discharged to the ratio controller.

The diaphragm valve shall have a diaphragm chamber divided into an upper (water) and lower (foam) compartment, separated by a flexible diaphragm. The diaphragm assembly includes a spool which 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 (water) compartment increases forcing the diaphragm and its spool downward, causing the discharge orifice to open. As the valve orifice opens, the foam concentrate flow through the valve increases until the foam concentrate pressure is equal to the water pressure. Conversely, if the water pressure decreases, the pressure in the upper (water) compartment decreases, forcing the diaphragm and its spool upward, causing the valve discharge orifice to gradually close until the pressures are equalized.

Valve operation is direct, requiring no manual activation. A manual override feature is available as an option, for use if the system will not balance automatically

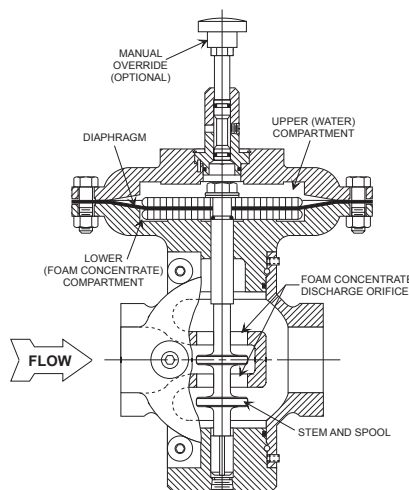
### Applications

- Pressure control for remotely mounted ratio controllers in ILBP proportioning systems

### Specifications

The Pressure Reducing Diaphragm Valve shall be a globe pattern, diaphragm actuated valve designed for modulating service. When used as part of an ILBP proportioning system, it shall monitor the water and foam concentrate pressure, at the inlet of a remotely mounted 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 1-1/2" 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 (2) 1/4" 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 is comprised of a



### Features

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

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### Specifications (cont.)

proprietary thermoplastic elastomer with superior chemical compatibility. All hardware shall be stainless steel.

The valve can be furnished with an optional manual override feature. Manual override shall have a brass body with stainless steel stem. Operation of the manual override shall force the valve discharge orifice to the open position. This allows for manual regulation of the foam concentrate flow by a separate manual valve. Manual override shall be factory installed when ordered with valve but shall be capable of being field installed on standard valve.

### Listings and Approvals

- UL Listed
- ULC Listed

### Technical Data

#### Materials of Construction:

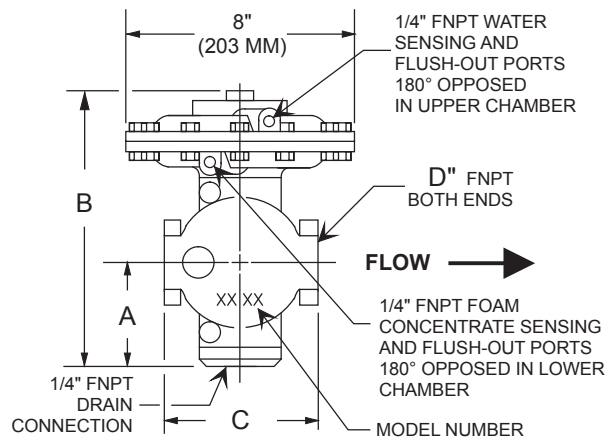
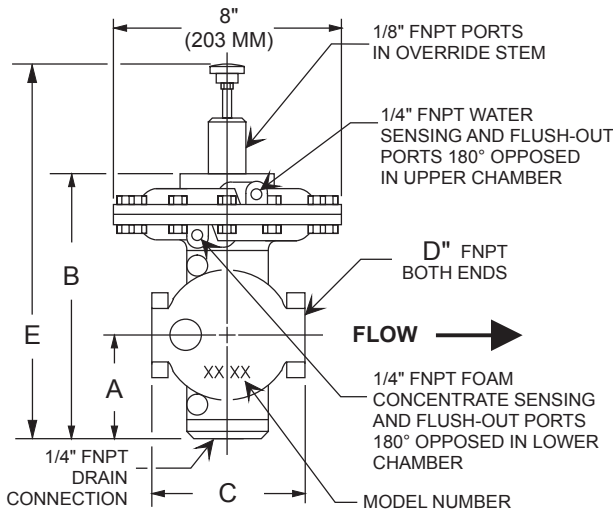
Body .....Bronze, ASTM B584  
 Diaphragm Chamber .....Bronze, ASTM B584  
 Spool .....Stainless Steel, 303  
 Diaphragm Plate .....Stainless Steel  
 Diaphragm .....Proprietary Thermoplastic Elastomer

O-Rings.....Buna-N  
 Hardware .....Stainless Steel  
 Manual Override  
 Body: ..... Bronze, ASTM B62  
 Manual Override  
 Stem: .....Stainless Steel, 303  
 Manual Override  
 Handle: .....Plastic  
 Pressure Rating:..... 250 PSI (17.2 Bar)  
 Max Temp:..... Rating 150° F (66° C)  
 Finish:.....None

### Options

Manual Override

Dimensions						
Size	A	B	C	D	E	C <sub>v</sub>
1-1/2"	3-9/16 (90)	9-3/8 (238)	5-3/8 (137)	1-1/2	13-3/8 (340)	27 (102)
2"	3-3/4 (95)	9-5/8 (245)	6-7/8 (175)	2	13-7/8 (353)	45 (170)
Dimensions- Inched (MM)				Flow – GPM (LPM)		



### ORDERING INFORMATION

Part Number	Description	Connection	Flow Range	Weight	
				Lbs	Kg
1231-1409-9	1-1/2" Diaphragm Valve	NPT	10-135 GPM (38-511 LPM)	35	16.0
1231-1413-8	2" Diaphragm Valve	NPT	10-250 GPM (38-946 LPM)	36	16.3
1231-1410-0	1-1/2" Diaphragm Valve w/ MOR	NPT	10-135 GPM (38-511 LPM)	37	16.8
1231-1413-9	2" Diaphragm Valve w/ MOR	NPT	10-250 GPM (38-946 LPM)	38	17.2