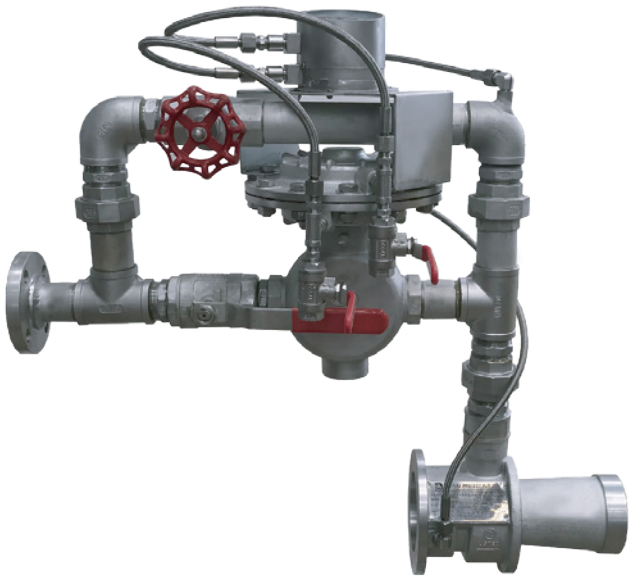
In-line BALANCE PRESSURE FOAM PROPORTIONER

MODEL: NF-IBP SERIES

APPLICATION

The In-line Balance Pressure Foam Proportioner are used with positive displacement foam concentrate supply pump. The system controls accurately the flow of foam concentrate into the water stream over a wide range of flow rate and pressure.

The In-line Balance Pressure Foam Proportioning System is used for simultaneous operation of the multiple foam injection even with different pressures between the two injection point with a single concentrate supply line. Various sizes of in-line balance pressure proportioner can be combined to suit the flow requirement of each hazard area.



SPECIFICATION

In-line balance pressure proportioning system utilizes a single, positive displacement foam concentrate supply pump, an atmospheric foam concentrate storage tank, in-line balance proportioner, and a foam concentrate regulating valve. The pressure regulating valve is mounted on foam concentrate return line to the foam concentrate storage tank. The valve regulates the foam concentrate supply pressure. The In-line balance pressure proportioner consists of a ratio controller, diaphragm operated pressure balancing valve, water and foam gauges, and pressure sensing hose of Teflon tube with stainless steel braided cover, interconnecting trim fittings with various control and flush valves. The water inlet pressure and foam concentrate pressure at metering orifice is sensed by a diaphragm valve and it automatically balances the concentrate supply to provide accurately proportioned water foam solution over a wide range of flow conditions.

A foam concentrate supply valve is also provided as an optional item. The system requires foam concentrate supply pressure of minimum 25 psi and maximum of 40 psi. higher than the water supply pressure. The In-line balance pressure proportioner is also provided with a manual balancing valve

**NOTES:*

- *Each In-line Balance Pressure Proportioner shall have a minimum of five pipe diameter of straight unobstructed pipe at upstream and downstream of the proportioner.*
- *The In-line Balance Pressure Proportioner horizontal mounting is standard supply and vertical mounting is optional supply.*
- *It is recommended to have foam concentrate supply pressure gauge adjacent to inlet of foam concentrate (E). It is to be installed by installer.*
- *The foam concentrate line connecting to inlet of (E) can be of higher size to reduce friction loss in piping supplying foam concentrate.*
- *In-line Balance Proportioner is UL Listed with NAFFCO Foam Concentrate AFFF 3-C6,3% and AR-AFFF 3 x 3-C6,3%.*
- *In-line Balance Proportioner is supplied with Duplex gauge as standard supply and two Pressure Gauges as optional supply.*

INSPECTION AND MAINTENANCE

A qualified and trained person must commission the system. After a few initial successful tests, an authorized person must be trained to perform the inspection and testing of the system. It is recommended to carry out physical inspection of the system at least once in a week. The inspection should verify that all the valves are in their proper position as per the system requirement and no damage has taken place to any component.

The system where foam concentrate piping is maintained in charged condition, the provision should be made to flow foam through each In-line Balance Proportioner at least once in six weeks. The system should be fully tested at least once in a year or in accordance with applicable NFPA codes, or in accordance to the guidelines of the organization having local jurisdiction.

TECHNICAL INFORMATION

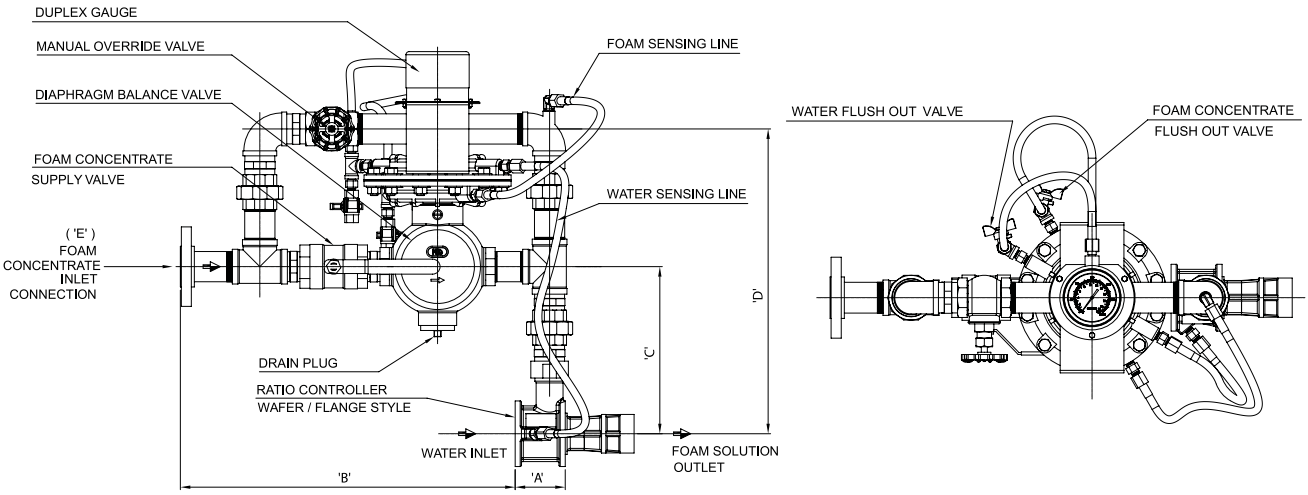
Material	NFIBP-SS-Stainless Steel * NFIBP-B-Bronze NFIBP-MS-Stainless Steel*# NFIBP-MB-Bronze #
Size	65, 80, 100, 150 & 200 NB
Maximum Service Pressure	14 bar (200 psi) 12 bar (175 psi)-UL Listed
Mimimum Working Pressure	2.8 bar (40 psi)
Ratio Controller Mounting Type	Wafer type or Flanged end ANSI B 16.5
Thread Opening	BSPT/NPT optional
Pressure Sensing Hose	TEFLON tube with Stainless Steel braided cover
Trim Connection and Various Control Valves	Stainless Steel
Factory Hydrostatic Test Pressure	25 kg/cm^2 (350 psi)
Finish	Red RAL 3001
Ordering Information	Specify • Model Number • Flow rate • Percentage Induction • Type of Foam Concentrate used

**NOTES:*

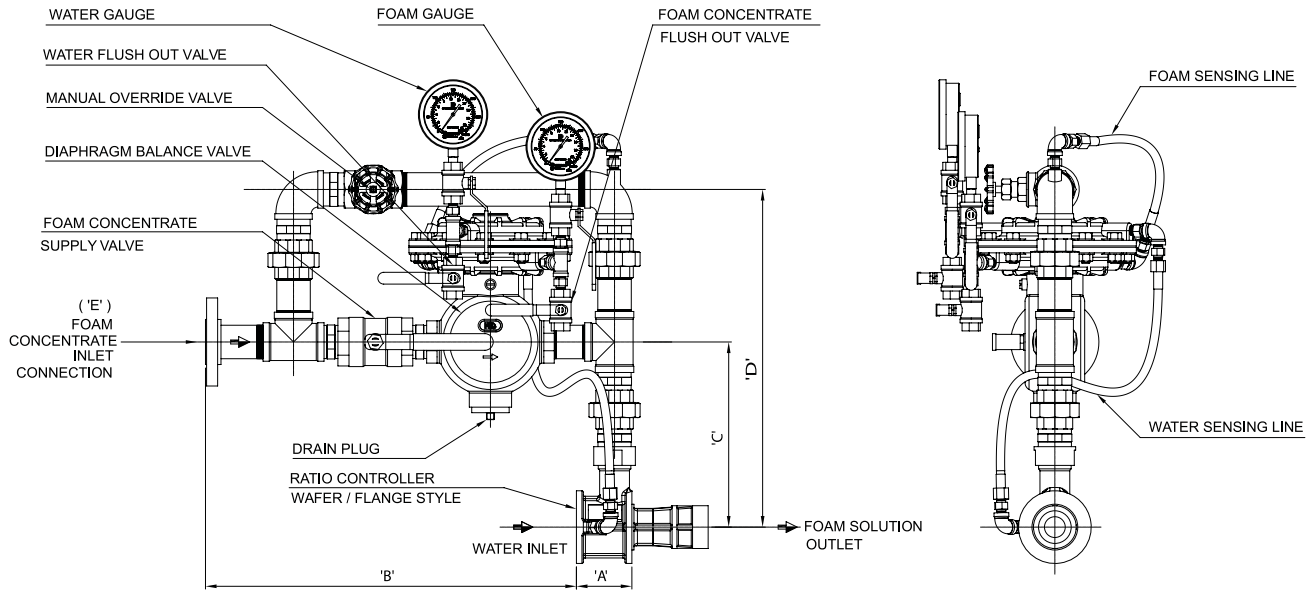
- ** Stainless Steel CF8 (304) is standard supply; CF8M (316), CF3 (304L) & CF3M (316L) are optional supply.*
- *# Only for 65 NB Size.*

IN-LINE BALANCE PRESSURE PROPORTIONER WITH MANUAL OVERRIDE

DUPLEX GAUGE ARRANGEMENT (Optional Supply)



TWIN GAUGE ARRANGEMENT (Standard Supply)

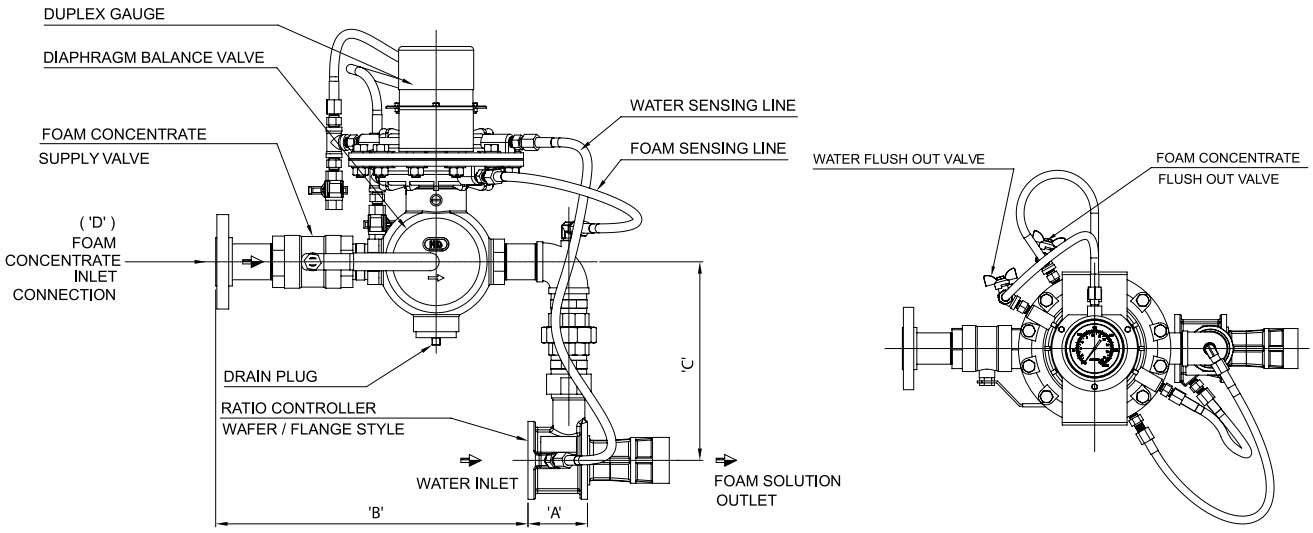


Model	Approximate Dimensions (in mm)				
	A	B	C	D	E
65 NB	80	535	267	487	40 NB
80 NB	107.5	508	272	492	40 NB
100 NB	126	500	293	513	40 NB
150 NB	133	525	338	583	50 NB
200 NB	130	538	365	610	50 NB

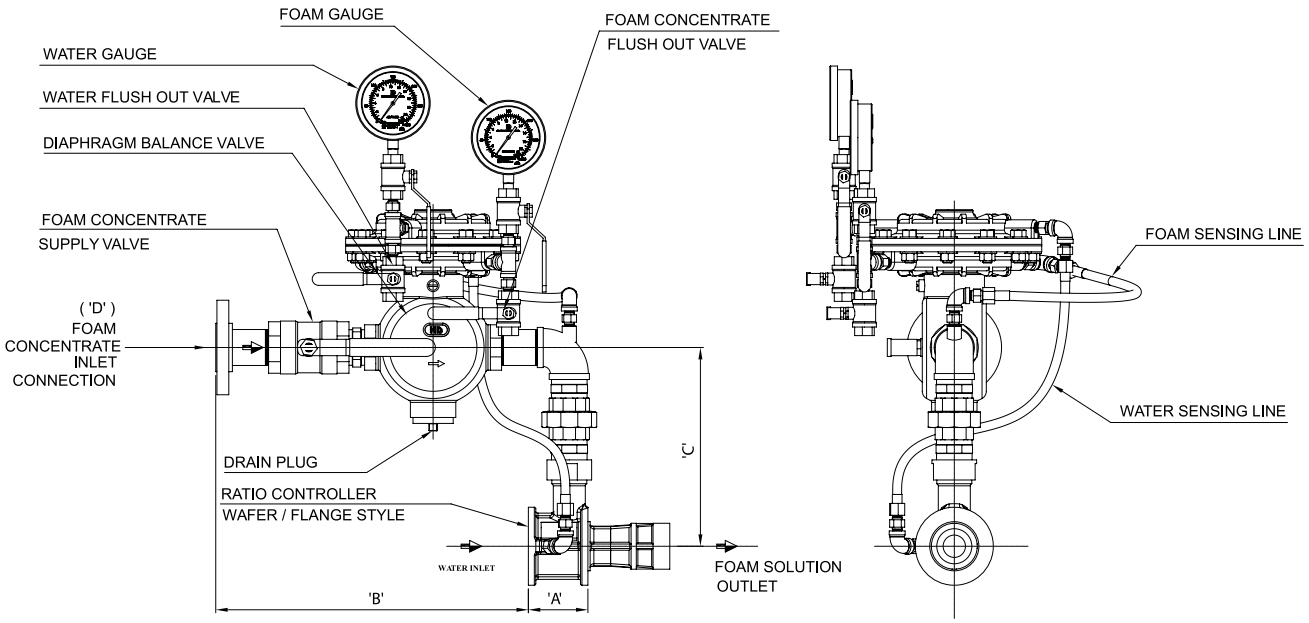
DIMENSIONS in mm (Approximate)

IN-LINE BALANCE PRESSURE PROPORTIONER WITHOUT MANUAL OVERRIDE

DUPLEX GAUGE ARRANGEMENT (Optional Supply)



TWIN GAUGE ARRANGEMENT (Standard Supply)



Model	Approximate Dimensions (in mm)			
	A	B	C	D
65 NB	80	420	267	40 NB
80 NB	107.5	390	272	40 NB
100 NB	126	382	293	40 NB
150 NB	133	393	338	50 NB
200 NB	130	408	365	50 NB

DIMENSIONS in mm (Approximate)

FLOW RANGE (LPM)

RATIO CONTROLLER (WAFER STYLE-WRC SERIES)

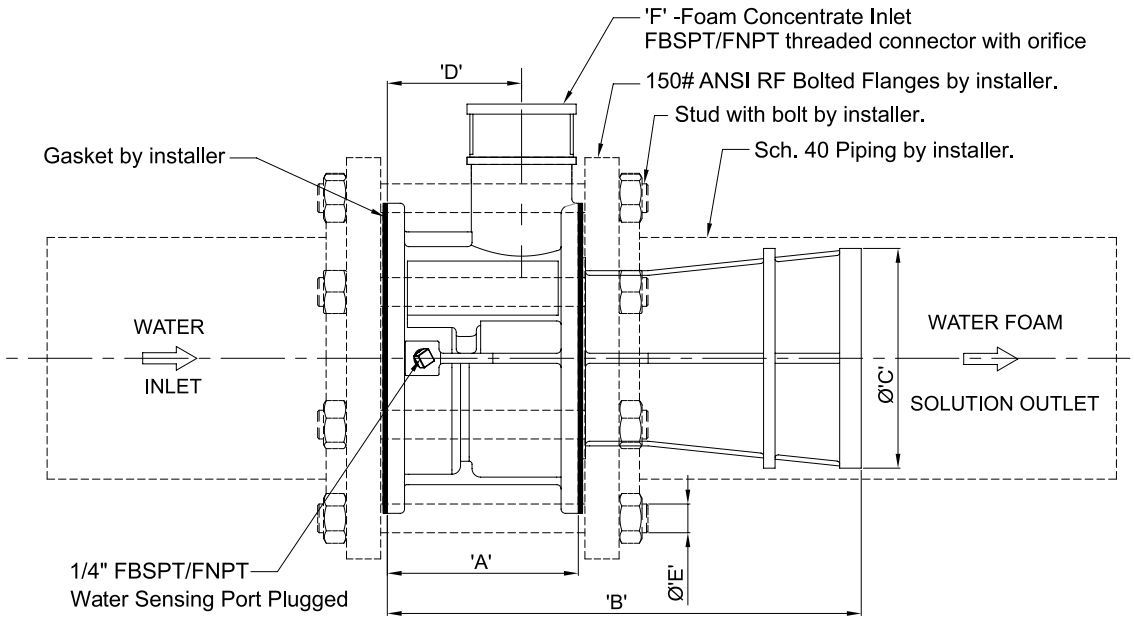


TABLE-V

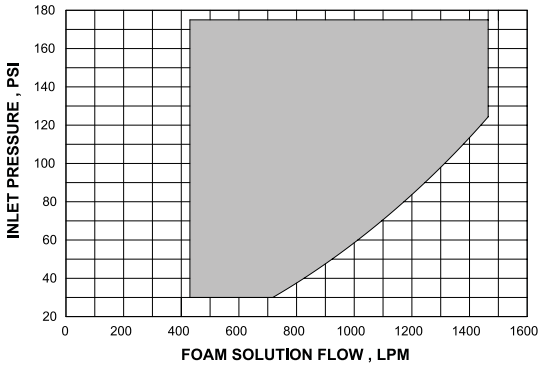
Sl. No.	In-line Balance Proportioner Model	Size	Flow in LPM	
			AFFF 3%	AR-AFFF 3 x 3%
1	NFIBP-SS and NFIBP-B	65	401 to 1419	496 to 1476
2	NFIBP-MS, NFIBP-MB	65	--	182 to 659
3	NFIBP-SS and NFIBP-B	80	363 to 3077	727 to 3017
4	NFIBP-SS and NFIBP-B	100	655 to 6037	780 to 5999
5	NFIBP-SS and NFIBP-B	150	1930 to 12267	2173 to 11658
6	NFIBP-SS and NFIBP-B	200	2960 to 16245	3543 to 16847

DIMENSION

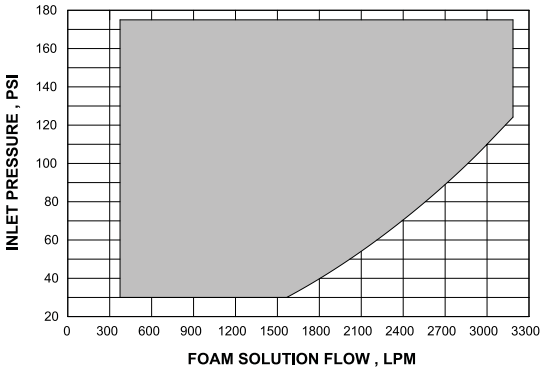
Size	Approximate Dimensions (in mm)					
	'A'	'B'	Ø 'C'	'D'	Ø 'E'	'F'
8"	130	340	Ø200	80	M20 x 240 Long	2" BSP (F)/NPT (F)
6"	133	330	Ø152	93.5	M20 x 230 Long	2" BSP (F)/NPT (F)
4"	120	266	Ø101	90	M16 x 220 Long	1 ½" BSP (F)/NPT (F)
3"	107.5	190	Ø76	82.5	M16 x 200 Long	1 ½" BSP (F)/NPT (F)
2 ½"	80	190	Ø61.7	55	M16 x 170 Long	1" BSP (F)/NPT (F)

INLET PRESSURE VS FOAM SOLUTION FLOW
(FOAM CONCENTRATE: AFFF-C6, 3%)

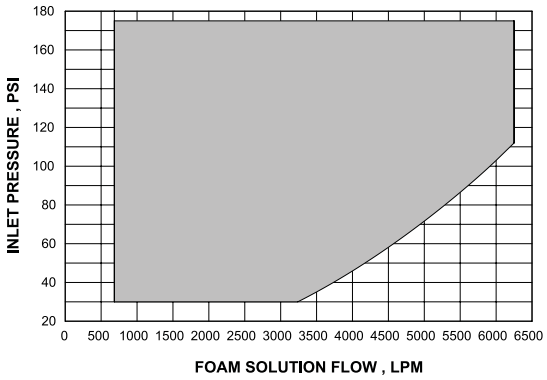
65 NB (MODEL: NFIBP-SS AND NFIBP-B)



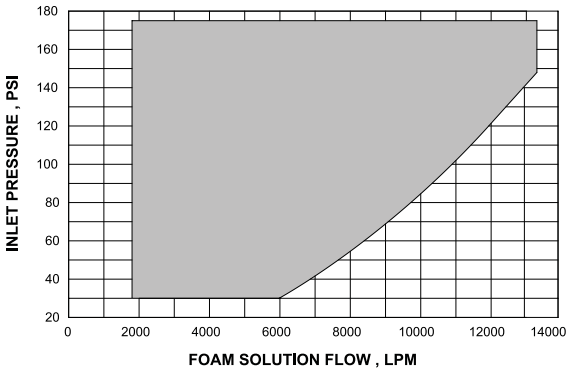
80NB (MODEL: NFIBP-SS AND NFIBP-B)



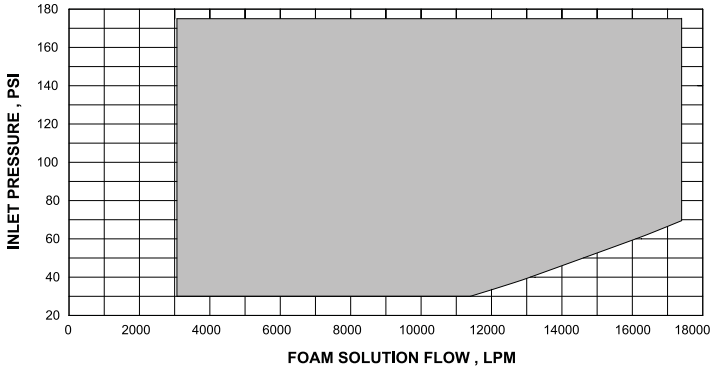
100 NB (MODEL: NFIBP-SS AND NFIBP-B)



150NB (MODEL: NFIBP-SS AND NFIBP-B)

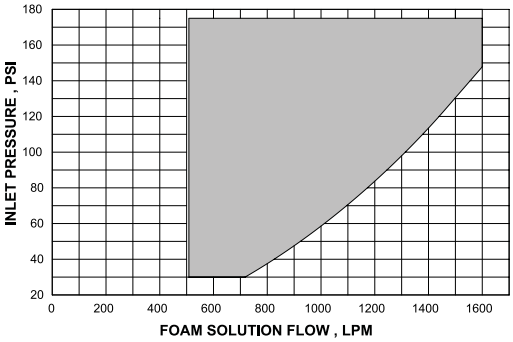


200 NB (MODEL: NFIBP-SS AND NFIBP-B)

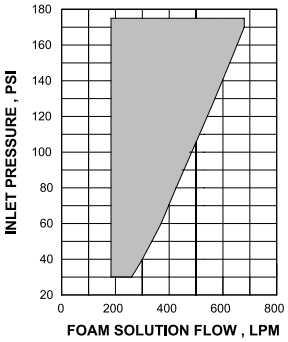


INLET PRESSURE VS FOAM SOLUTION FLOW
(FOAM CONCENTRATE: AR-AFFF 3 X 3-C6, 3%)

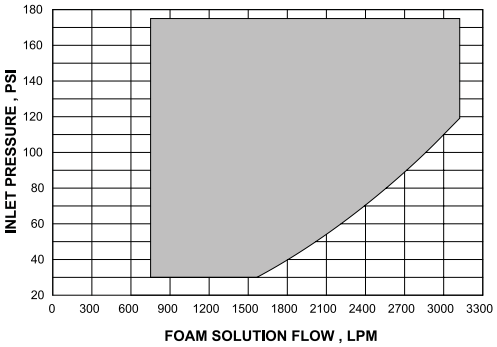
65 NB (MODEL: NFIBP-SS AND NFIBP-B)



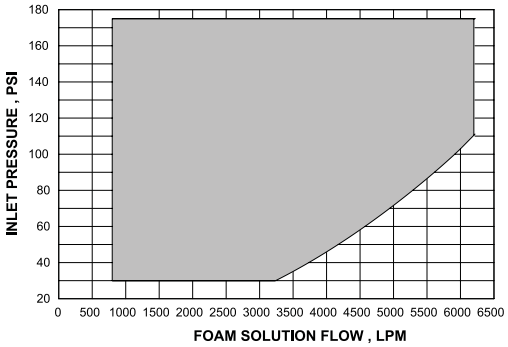
65 NB (MODEL: NFIBP-MS, NFIBP-MB)



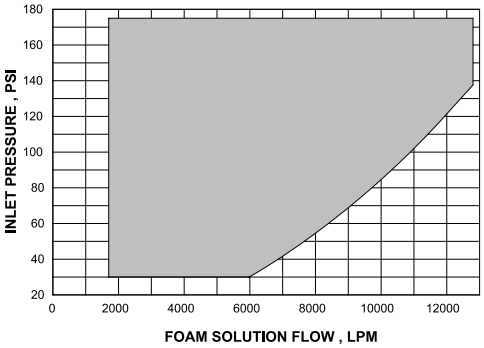
80 NB (MODEL: NFIBP-SS AND NFIBP-B)



100 NB (MODEL: NFIBP-SS AND NFIBP-B)



150 NB (MODEL: NFIBP-SS AND NFIBP-B)



200 NB (MODEL: NFIBP-SS AND NFIBP-B)