INLINE BALANCE PRESSURE FOAM PROPORTIONER

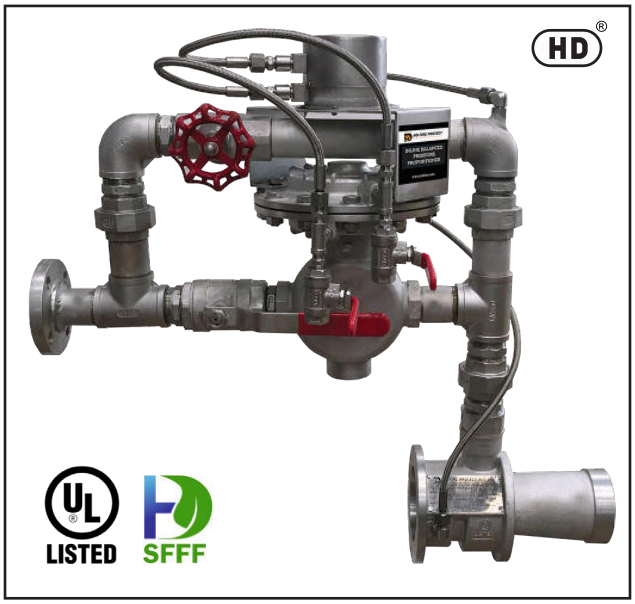
HD FIRE PROTECT LIMITED

TECHNICAL DATA

MODEL	PS - Stainless Steel* PB - Bronze PMS - Stainless Steel*# PMB - Bronze # PN - Nickel Aluminium Bronze PMN - Nickel Aluminium Bronze
PROPORTIONER SIZE	65, 80, 100, 150 & 200 NB
WORKING PRESSURE	2.1 - 16 bar (30 - 232 psi)
FACTORY HYDROSTATIC TEST PRESSURE	32 bar (464 psi)
RATIO CONTROLLER END CONNECTION	Wafer type or Flanged end suitable for connection with ANSI B 16.5, 150#
THREAD OPENING	BSPT (standard) NPT (optional)
PRESSURE SENSING HOSE	Teflon tube with Stainless Steel braided cover
TRIM CONNECTION AND VARIOUS CONTROL VALVES	Stainless Steel
FLOW	Refer Table-I and Graph
FOAM CONCENTRATE	HD AFFF 3% F-C6,3% & HD AR-AFFF 3x3-C6,3% HD AR-SFFF F3 3x3
FINISH	Red RAL 3001
APPROVAL	UL Listed
ORDERING INFORMATION	Specify: a) Model & size b) Ratio Controller type c) MOC d) Flow rate e) Percentage Induction f) Pressure Gauge type g) With or without Manual override h) Type of Foam Concentrate to be used

* Stainless Steel CF8 (SS304) is standard supply; CF8M (316), CF3 (304L) & CF3M (316L) are optional.

Only for 65 NB Size.



APPLICATION

The Inline Balance Pressure Foam Proportioner is used with positive displacement foam concentrate supply pump. The system controls accurate flow of foam concentrate into the water stream over a wide range of flow rates and pressure.

The Inline Balance Pressure Foam Proportioning System is used for simultaneous operation of multiple foam injections, even with different pressures between the two injection points with a single concentrate supply line. Various sizes of inline balance pressure proportioners can be combined to suit the flow requirement of each hazard area.

SPECIFICATION

The Inline Balance Pressure Foam Proportioning System utilizes a single, positive displacement foam concentrate supply pump, an atmospheric foam concentrate storage tank, inline balance pressure foam 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 Inline balance pressure proportioner consists of a ratio controller, diaphragm operated pressure balancing valve, duplex pressure gauge 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 inline balance pressure foam proportioner is also provided with a manual override valve, as an additional feature.

NOTE:

1. Each Inline Balance Pressure Foam Proportioner shall have a minimum of five pipe diameter of straight unobstructed pipe at upstream and downstream of the proportioner.
2. The Inline Balance Pressure Foam Proportioner horizontal mounting is standard, vertical mounting is available optionally.
3. It is recommended to have foam concentrate supply pressure gauge adjacent to inlet of foam concentrate. It is to be installed by installer.
4. The foam concentrate inlet connection can be of higher size to reduce friction loss in piping supplying foam concentrate.
5. Inline Balance Pressure Foam Proportioner is UL Listed with HD-Foam Concentrates AFFF 3F-C6,3%, AR-AFFF 3x3-C6,3% and AR-SFFF F3 3x3%. For other Foam Concentrates, contact HD Fire sales.
6. Inline Balance Pressure Foam Proportioner is supplied with Duplex gauge as standard supply and two Pressure Gauges as an optional supply.

INSPECTION AND MAINTENANCE

A qualified and trained person must commission the system. After 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 Inline 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.

FLOW RANGE (LPM)

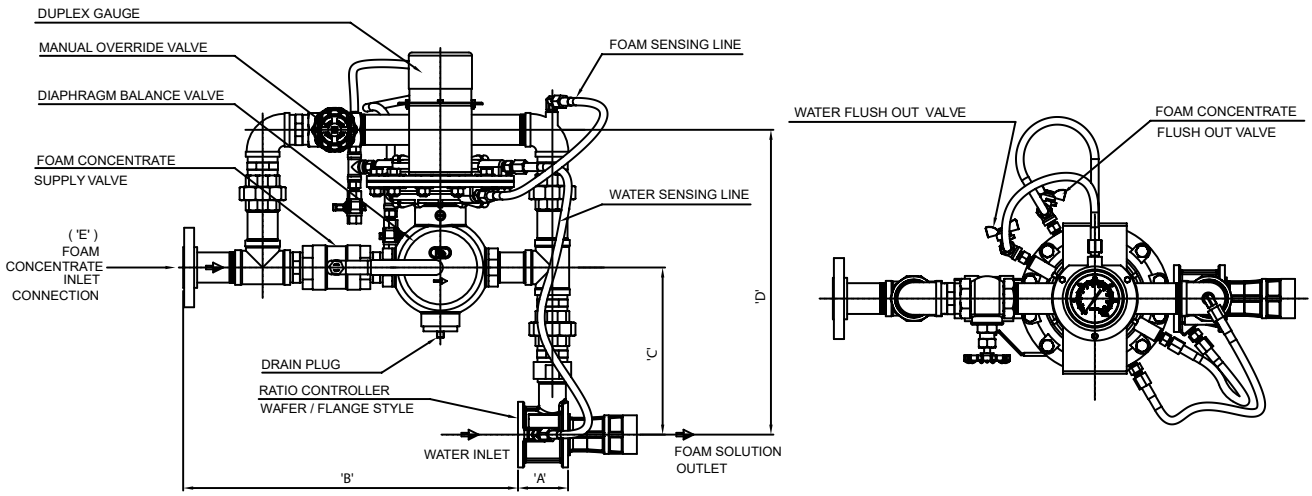
TABLE - I

Sl. No.	Model	Size	Flow in LPM		
			AFFF 3%	AR-AFFF 3X3%	AR-SFFF F3 3x3%
1	PB & PS	65 NB	401 To 1419	496 To 1476	525 To 1501
2	PN	65 NB	----	----	525 To 1501
3	PMB & PMS	65 NB	-----	182 To 659	189 To 655
4	PMN	65 NB	----	----	189 To 655
5	PB & PS	80 NB	363 To 3077	727 To 3017	950 To 3017
6	PB & PS	100 NB	655 To 6037	780 To 5999	889 To 5934
7	PB & PS	150 NB	1930 To 12267	2173 To 11658	2595 To 12057
8	PB & PS	200 NB	2960 To 16245	3543 To 16847	3803 To 16106

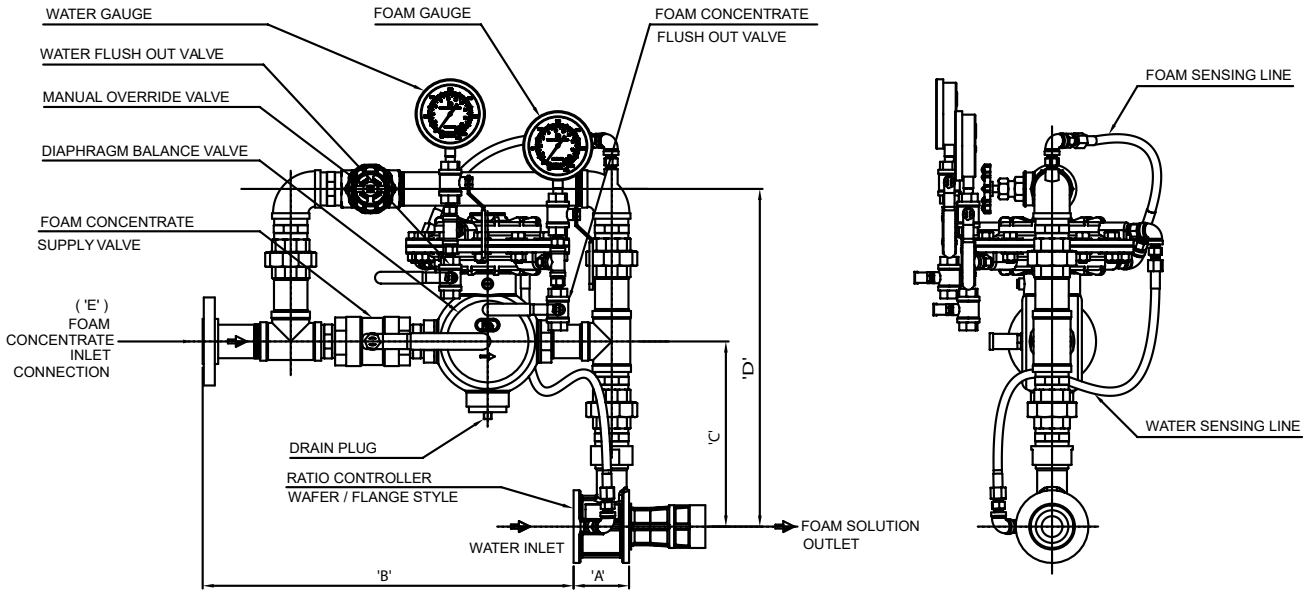
Note: Refer Catalogue No. HD263 for Ratio Controller details

INLINE BALANCE PRESSURE FOAM PROPORTIONER WITH MANUAL OVERRIDE

DUPLEX GAUGE ARRANGEMENT (Standard Supply)



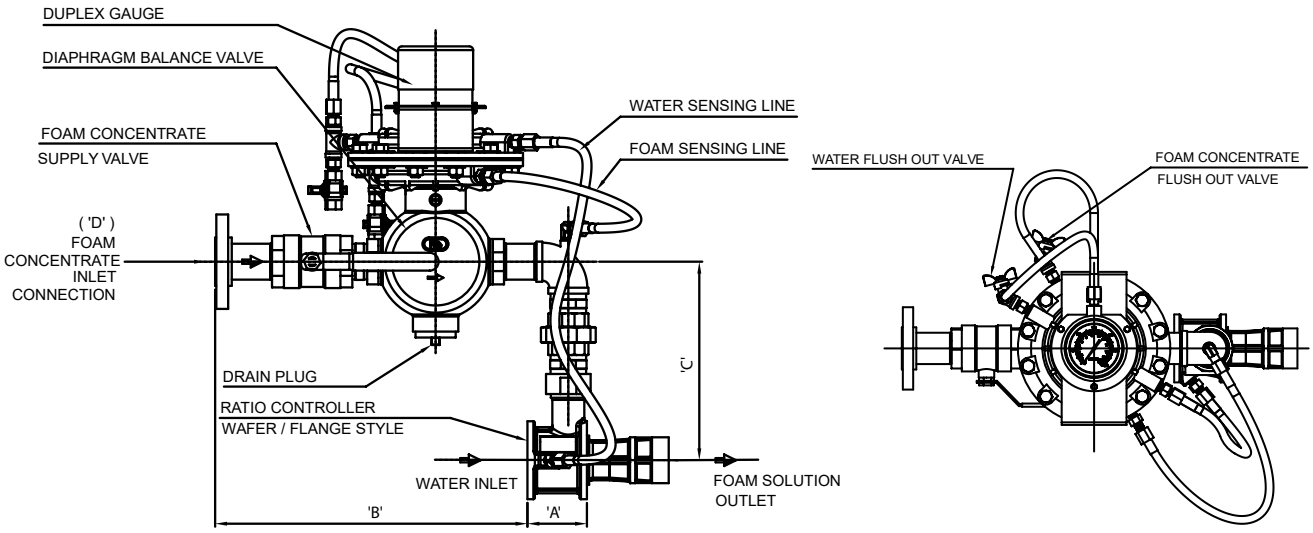
TWIN GAUGE ARRANGEMENT (Optional Supply)



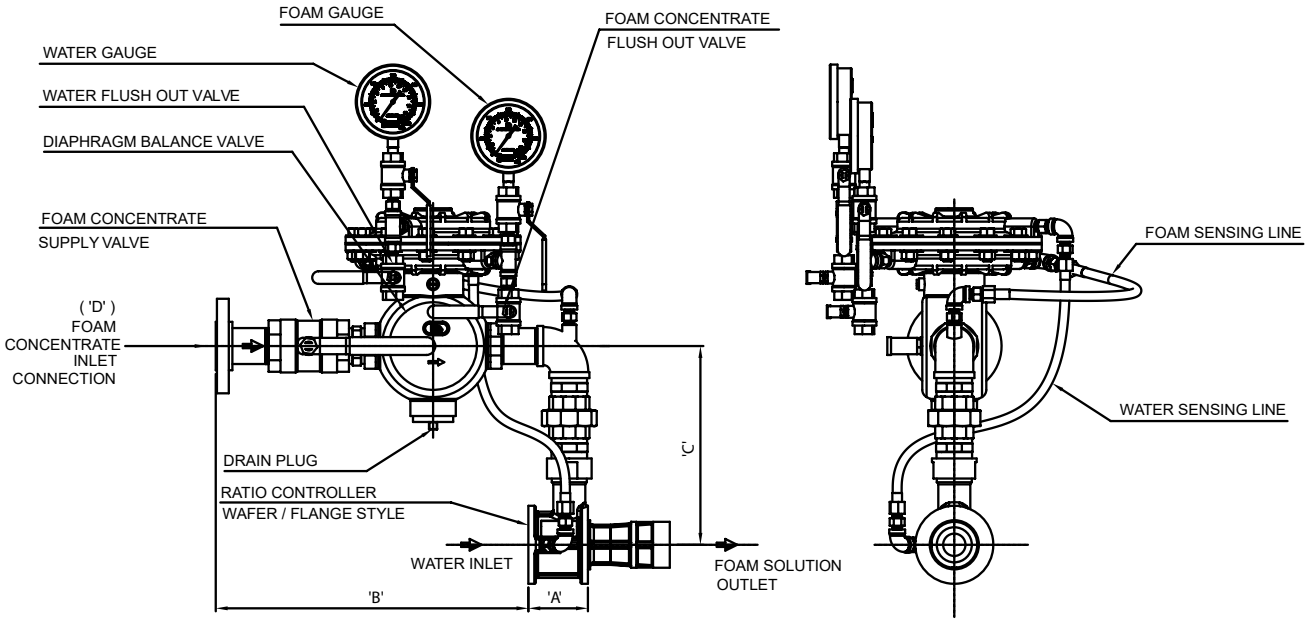
Size	Approximate Dimensions (in mm)				
	'A'	'B'	'C'	'D'	'E'
65 NB	80	535	267	487	40 NB
80 NB	107.5	508	272	492	40 NB
100 NB	126	500	293	513	40 NB
150 NB	133	525	338	583	50 NB
200 NB	130	538	365	610	50 NB

INLINE BALANCE PRESSURE FOAM PROPORTIONER WITHOUT MANUAL OVERRIDE

DUPLEX GAUGE ARRANGEMENT (Standard Supply)

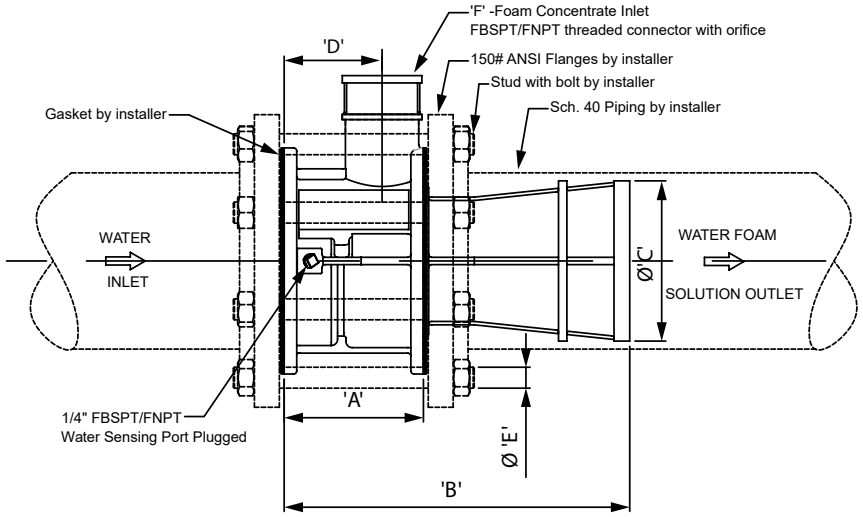


TWIN GAUGE ARRANGEMENT (Optional Supply)



Size	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

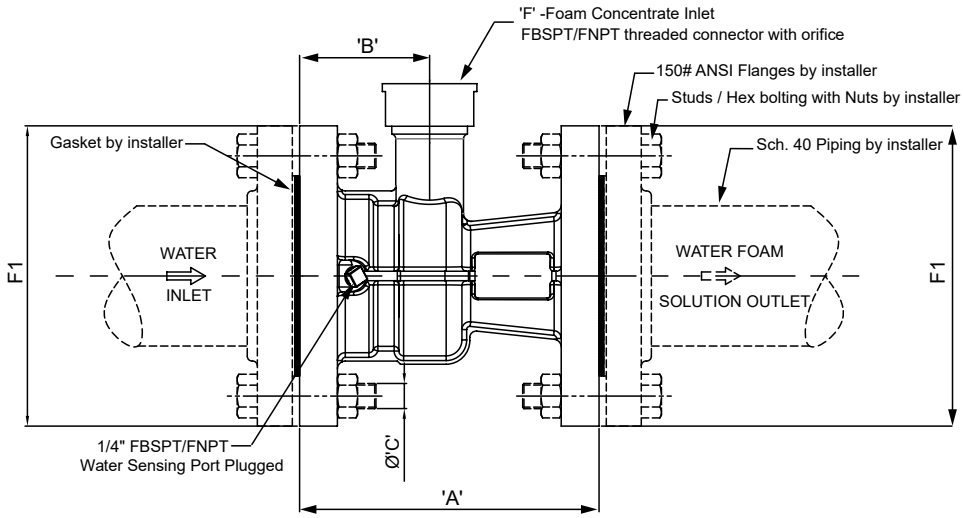
RATIO CONTROLLER (WAFER STYLE - RCW SERIES)



DIMENSIONS

Size	Approximate Dimensions (in mm)					
	'A'	'B'	Ø 'C'	'D'	Ø 'E'	'F'
2½"	80	190	Ø61.7	55	M16 x 170 LONG	1" BSPT (F)/NPT (F)
3"	107.5	190	Ø76	82.5	M16 x 200 LONG	1½" BSPT (F)/NPT (F)
4"	126	266	Ø101	90	M16 x 220 LONG	1½" BSPT (F)/NPT (F)
6"	133	330	Ø152	93.5	M20 x 230 LONG	2" BSPT (F)/NPT (F)
8"	130	340	Ø200	80	M20 X 240 LONG	2" BSPT (F)/NPT (F)

RATIO CONTROLLER (FLANGE STYLE - RCF SERIES)



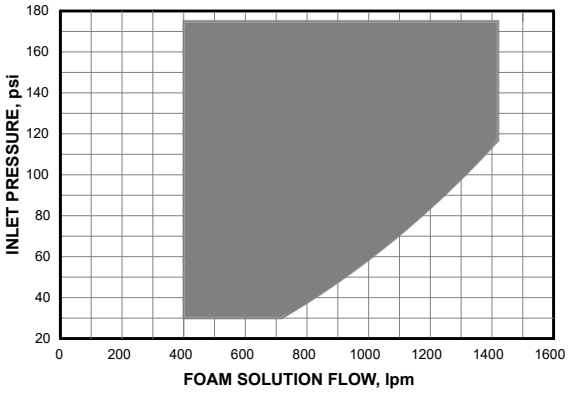
DIMENSIONS

Dimensions of Inlet / Outlet Flanges (F1) is as per ANSI B16.5 #150

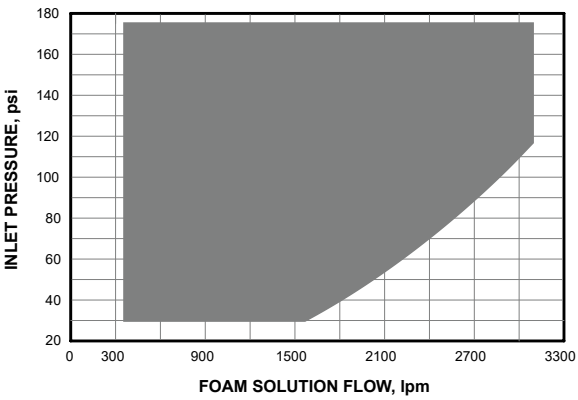
Size	Approximate Dimensions (in mm)			
	'A'	'B'	Ø 'C'	'F'
2½"	190	55	M16	1" BSPT (F)/NPT (F)
3"	190	82.5	M16	1½" BSPT (F)/NPT (F)
4"	266	90	M16	1½" BSPT (F)/NPT (F)
6"	330	93.5	M20	2" BSPT (F)/NPT (F)
8"	340	80	M20	2" BSPT (F)/NPT (F)

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

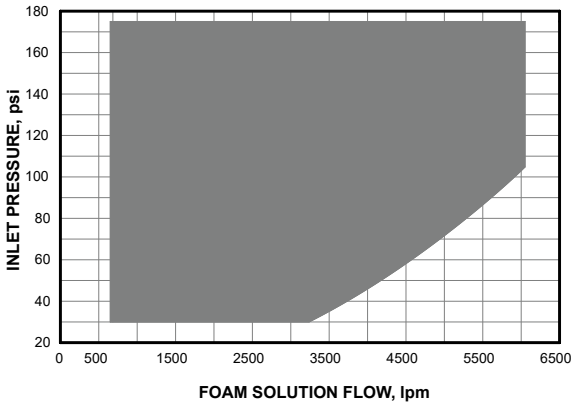
65 NB (MODEL: PB & PS)



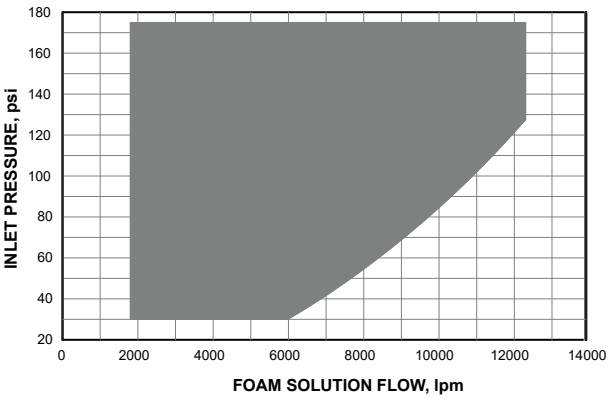
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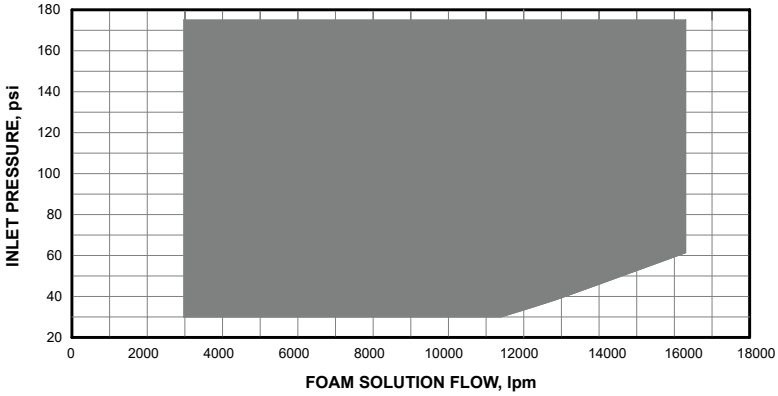
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150 NB (MODEL: PB & PS)

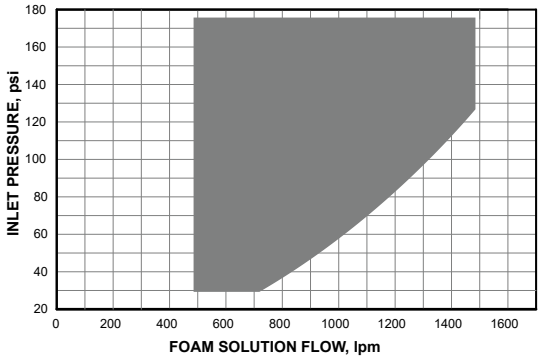


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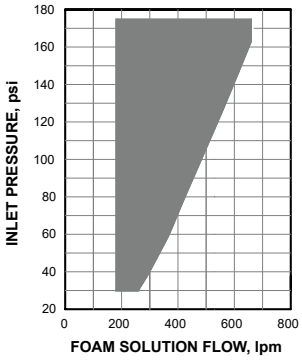


INLET PRESSURE VS FOAM SOLUTION FLOW (FOAM CONCENTRATE: AR-AFFF 3X3-C6, 3%)

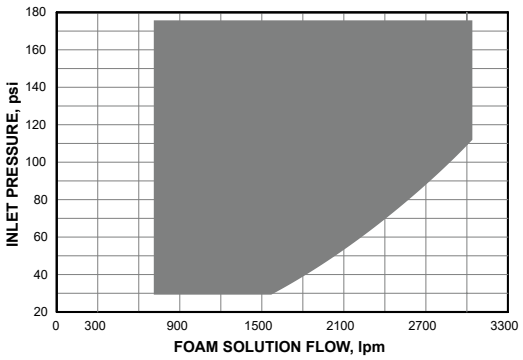
65 NB (MODEL: PB & PS)



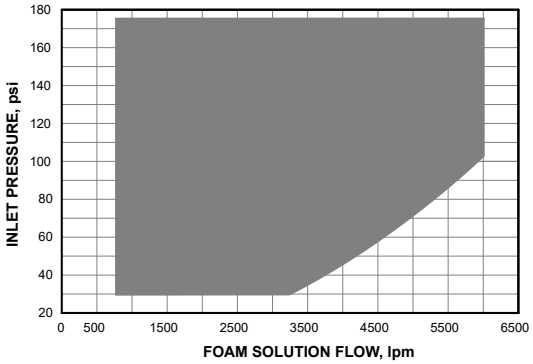
65 NB (MODEL: PMB & PMS)



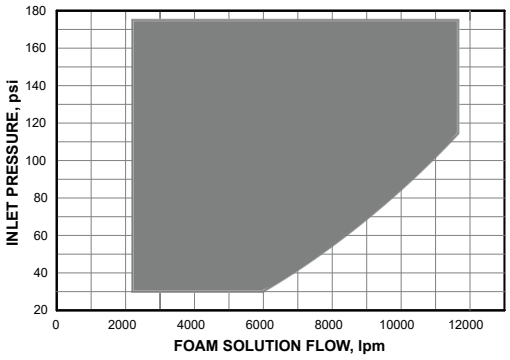
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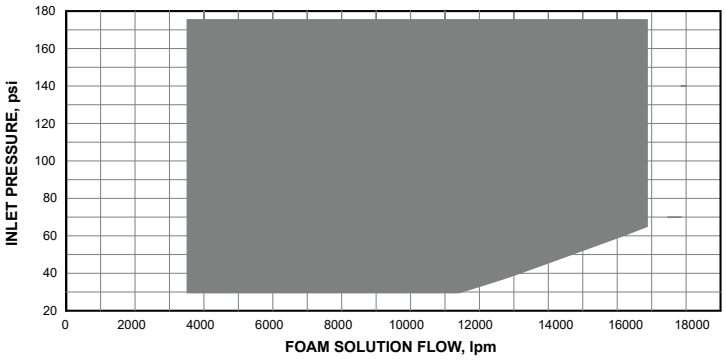
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150 NB (MODEL: PB & PS)

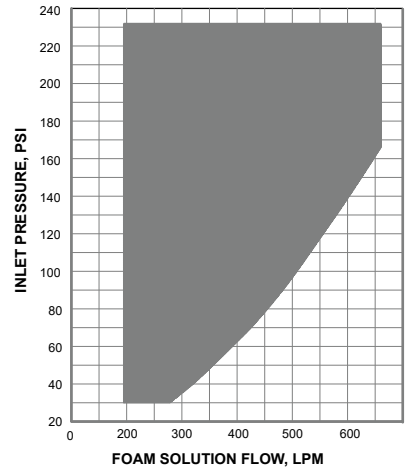


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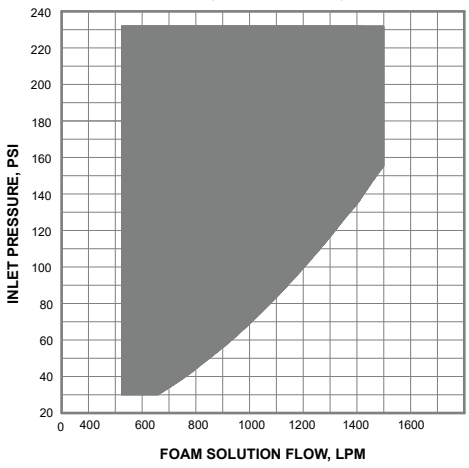


INLET PRESSURE VS FOAM SOLUTION FLOW (FOAM CONCENTRATE: AR-SFFF F3 3X3)

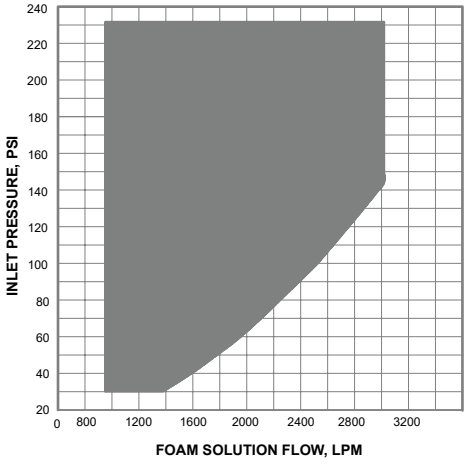
65 NB (MODEL: PMB & PMS)



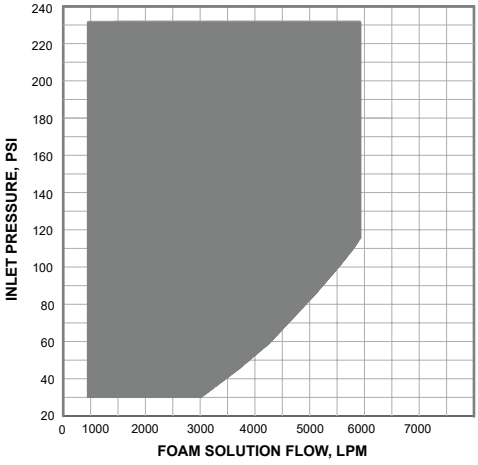
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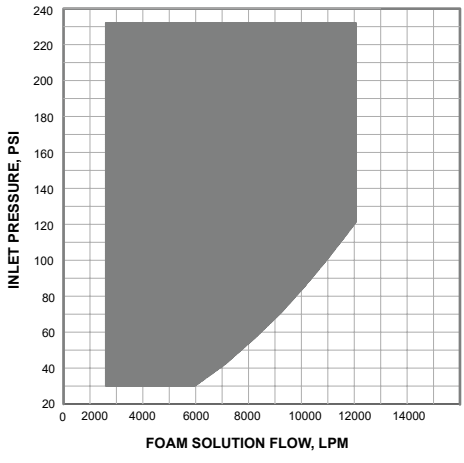
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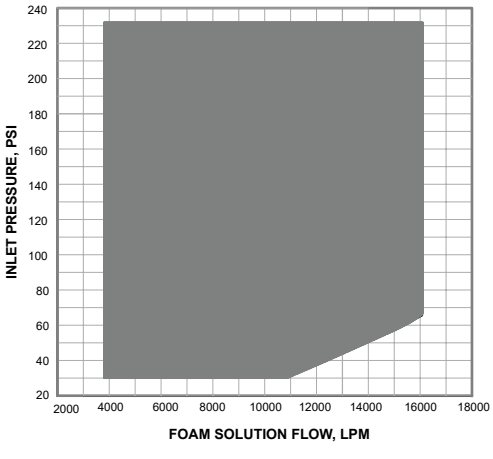
100 NB (MODEL: PB & PS)



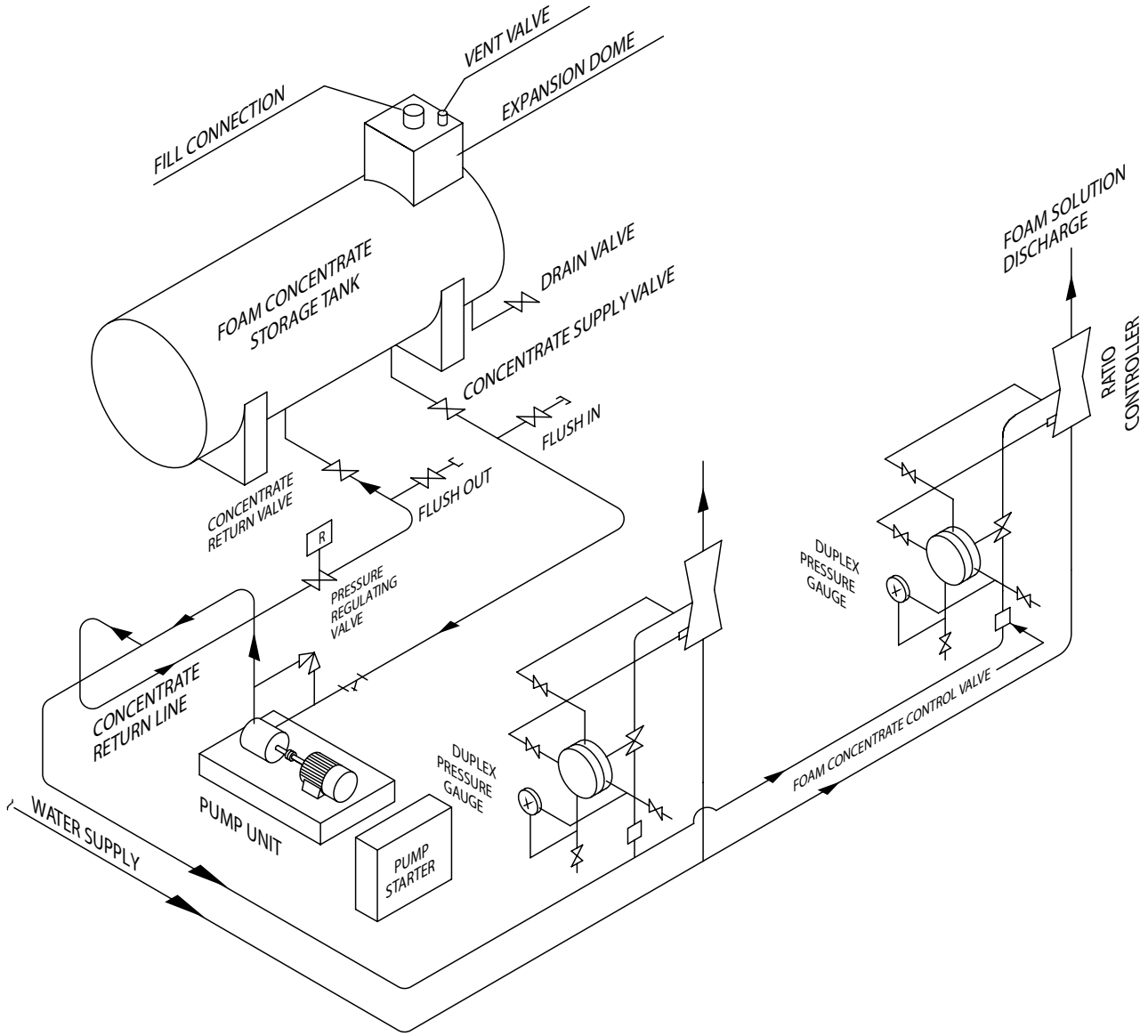
150 NB (MODEL: PB & PS)



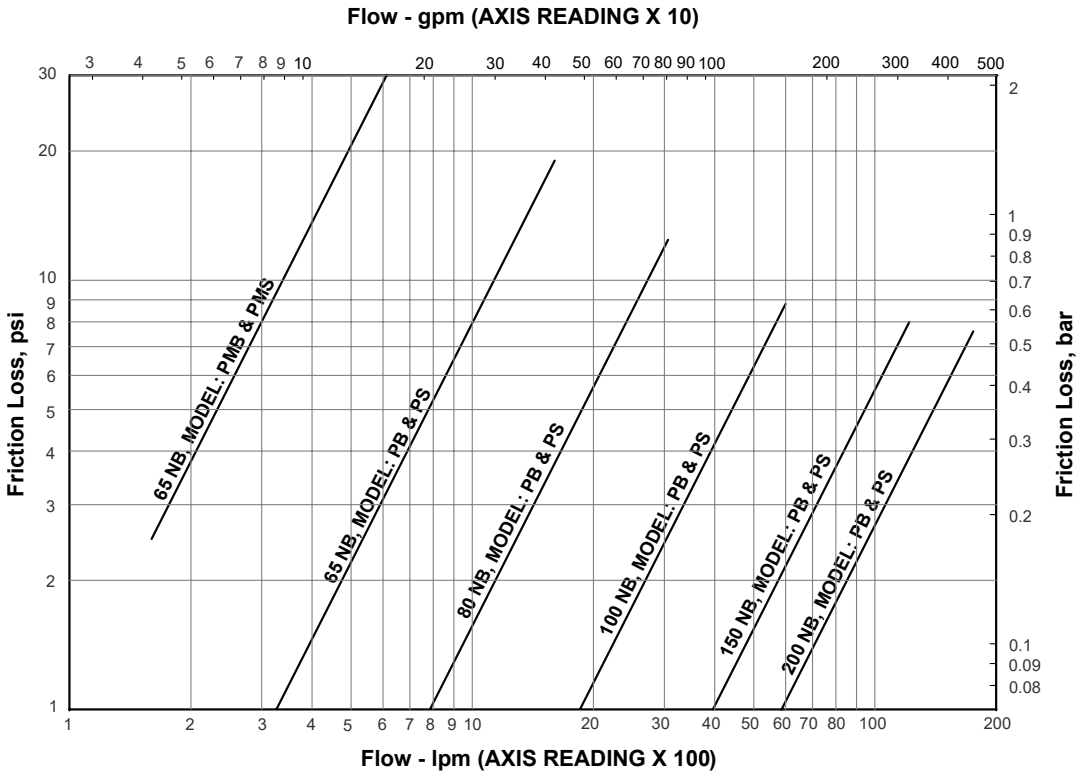
200 NB (MODEL: PB & PS)



TYPICAL INLINE BALANCE PRESSURE FOAM PROPORTIONING SYSTEM



FLOW VS PRESSURE LOSS



Note: Friction loss above 1 psi is plotted in the graph (flow range is as per given Table-V)

LIMITED WARRANTY

HD FIRE PROTECT LIMITED (Formerly known as HD FIRE PROTECT PVT. LTD.) hereby referred to as HD FIRE, warrants to the original purchaser of the fire protection products manufactured by HD FIRE and to any other person to whom such equipment is transferred, that such products will be free from defect in material and workmanship under normal use and care, for two (2) years from the date of shipment by HD FIRE. Products or Components supplied or used by HD FIRE, but manufactured by others, are warranted only to the extent of the manufacturer's warranty. No warranty is given for product or components which have been subject to misuse, improper installation, corrosion, unauthorized repair, alteration or un-maintained. HD FIRE shall not be responsible for system design errors or improper installation or inaccurate or incomplete information supplied by buyer or buyer's representatives. HD FIRE will repair or replace defective material free of charge, which is returned to our factory, transportation charge prepaid, provided after our inspection the material is found to have been defective at the time of initial shipment from our works. HD FIRE shall not be liable for any incidental or consequential loss, damage or expense arising directly or indirectly from the use of the product including damages for injury to person, damages to property and penalties resulting from any products and components manufactured by HD FIRE. HD FIRE shall not be liable for any damages or labour charges or expense in making repair or adjustment to the product. HD FIRE shall not be liable for any damages or charges sustained in the adaptation or use of its engineering data & services. In no event shall HD FIRE's product liability exceed an amount equal to the sale price.
The foregoing warranty is exclusive and in lieu of all other warranties and representation whether expressed, implied, oral or written, including but not limited to, any implied warranties or merchantability or fitness for a particular purpose. All such other warranties and representations are hereby cancelled.

NOTICE :
The equipment presented in this bulletin is to be installed in accordance with the latest publication standards of NFPA or other similar organisations and also with the provision of government codes or ordinances wherever applicable.
The information provided by us is to the best of our knowledge and belief, and consist of general guidelines only. Site handling and installation control is not in our scope. Hence we give no guarantee for result and take no liability for damages, loss or penalties whatsoever, resulting from our suggestion, information, recommendation or damages due to our product.
Product development is a continuous programme of HD FIRE PROTECT LIMITED (Formerly known as HD FIRE PROTECT PVT. LTD.) and hence the right to modify any specification without prior notice is reserved with the company.

HD FIRE PROTECT LIMITED
Protecting What Matters Most to You
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