

# INLINE BALANCE PRESSURE FOAM PROPORTIONER

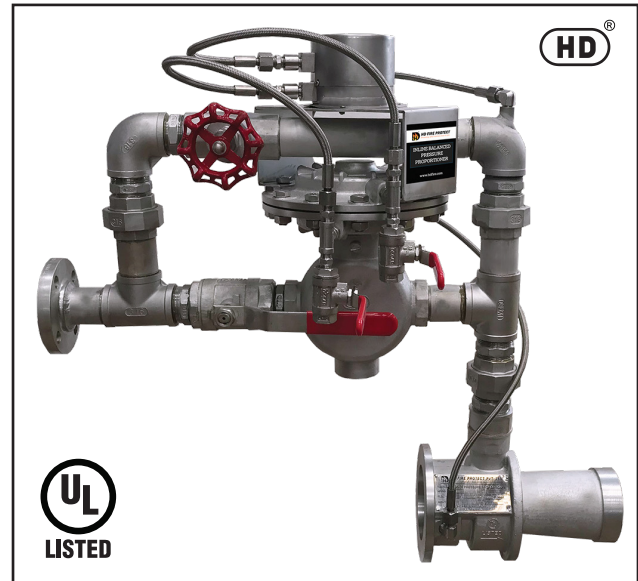


## TECHNICAL DATA

MODEL	PS - Stainless Steel* PB - Bronze PMS - Stainless Steel*# PMB - Bronze #
PROPORTIONER SIZE	65, 80, 100, 150 & 200 NB
MAXIMUM SERVICE PRESSURE	14 bar (200 psi) 12 bar (175 psi) - UL Listed
MINIMUM WORKING PRESSURE	2.8 bar (40 psi)
RATIO CONTROLLER END CONNECTION	Wafer type or Flanged end suitable for connection with ANSI B 16.5, 150#
THREAD OPENING	BSPT/ NPT optional
PRESSURE SENSING HOSE	Teflon tube with Stainless Steel braided cover
TRIM CONNECTION AND VARIOUS CONTROL VALVES	Stainless Steel
FLOW	Refer Table-V and Graph
FOAM CONCENTRATE	HD AFFF 3% F-C6,3% & HD AR-AFFF 3x3-C6,3%
FACTORY HYDROSTATIC TEST PRESSURE	25 bar (350 psi)
FINISH	Red RAL 3001
APPROVAL	UL Listed
ORDERING INFORMATION	Specify: a) Model b) Flow rate c) Percentage Induction d) Type of Foam Concentrate 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 rate and pressure.

The Inline Balance Pressure Foam Proportioning System is used for simultaneous operation of the multiple foam injections even with different pressures between the two injection point 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 supply and vertical mounting is optional supply.
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 Concentrate AFFF 3% F-C6,3% and AR-AFFF 3x3-C6,3%. 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.

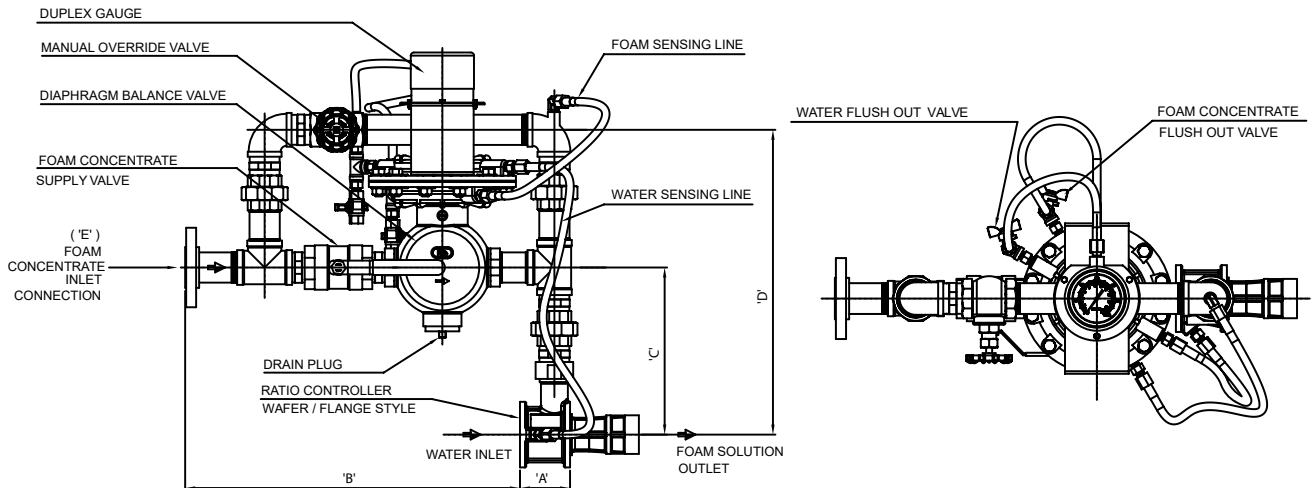
## **INSPECTION AND MAINTENANCE**

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.

## INLINE BALANCE PRESSURE FOAM PROPORTIONER WITH MANUAL OVERRIDE

### DUPLEX GAUGE ARRANGEMENT (Standard Supply)



### TWIN GAUGE ARRANGEMENT (Optional Supply)

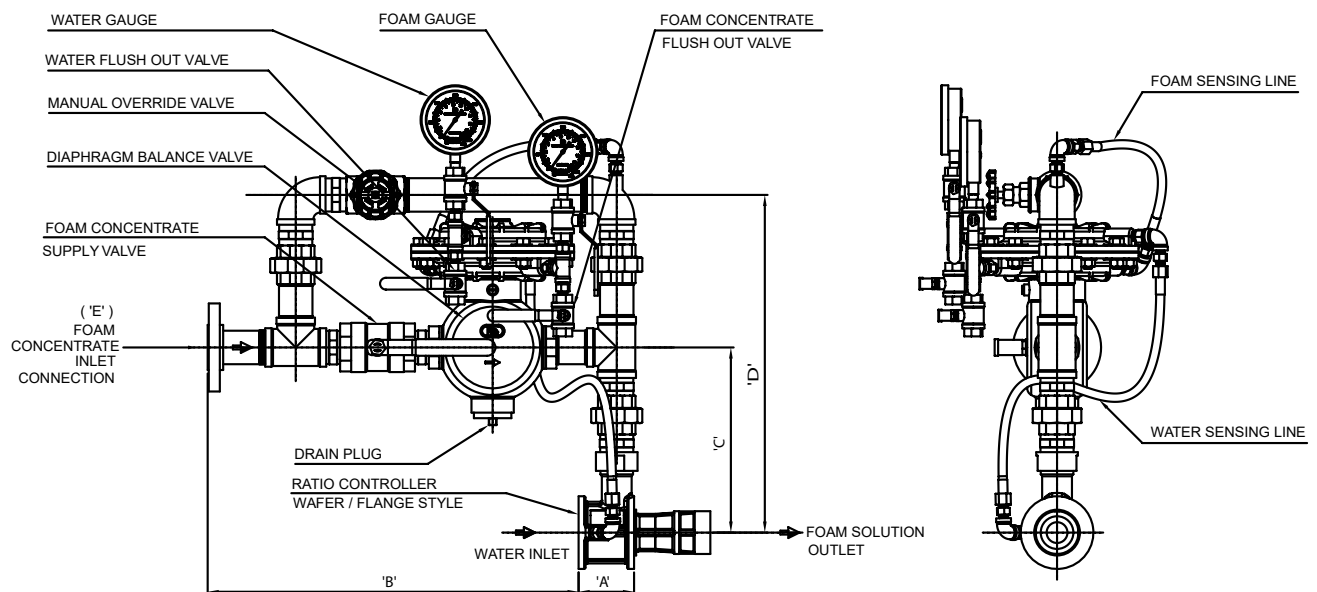
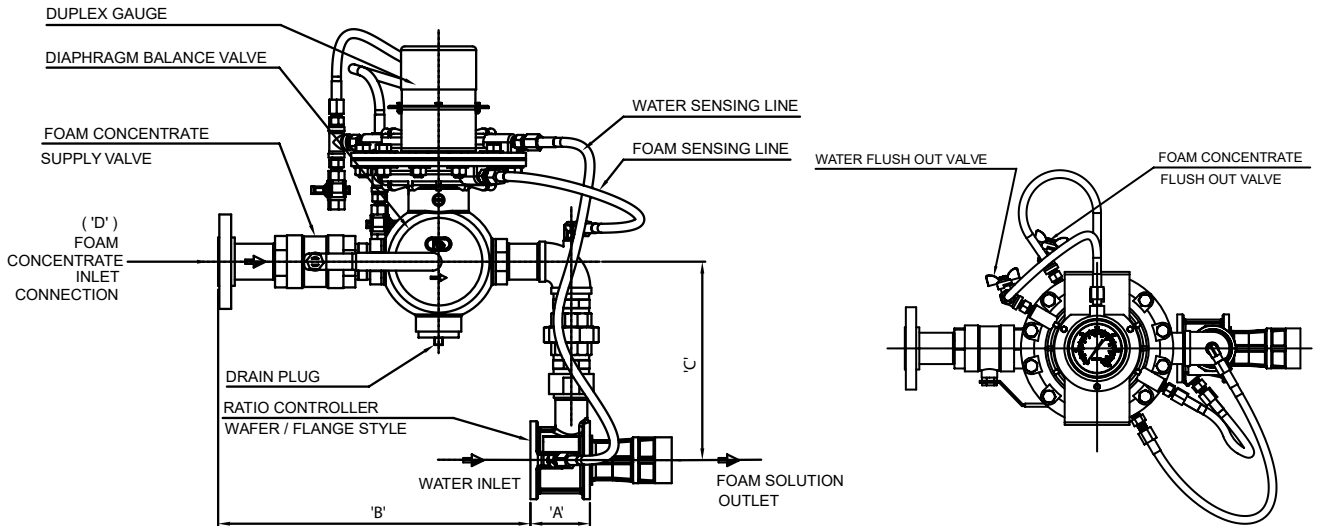


TABLE - I

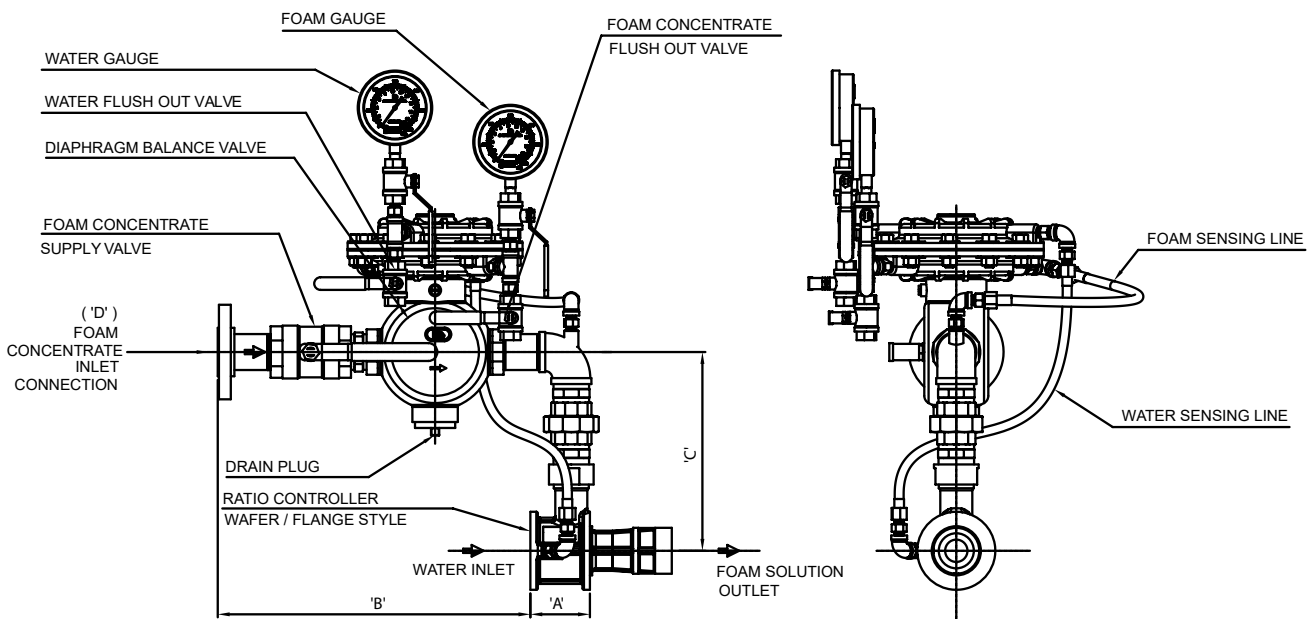
Size	Approximate Dimensions (in mm)				
	'A'	'B'	'C'	'D'	'E'
65 NB	80	535	267	487	40 NB
80 NB	107.5	508	272	492	40 NB
100 NB	126	500	293	513	40 NB
150 NB	133	525	338	583	50 NB
200 NB	130	538	365	610	50 NB

**INLINE BALANCE PRESSURE FOAM PROPORTIONER WITHOUT MANUAL OVERRIDE**

**DUPLEX GAUGE ARRANGEMENT (Standard Supply)**



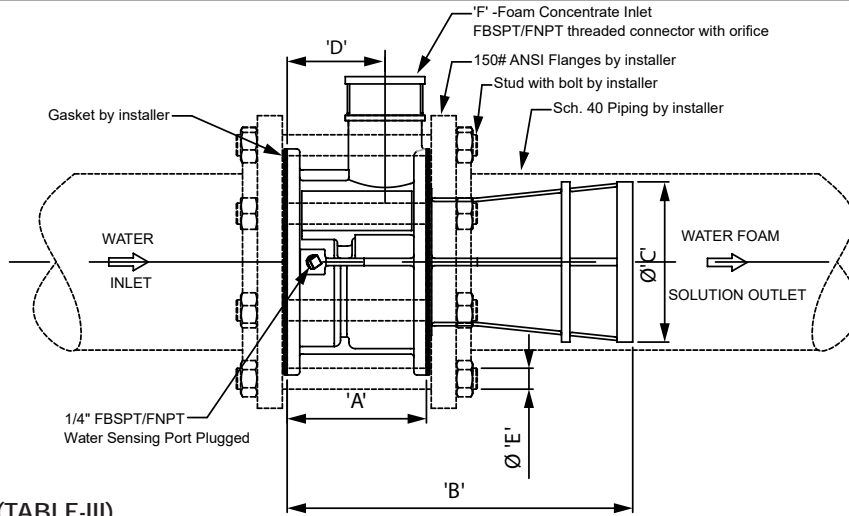
**TWIN GAUGE ARRANGEMENT (Optional Supply)**



**TABLE - II**

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

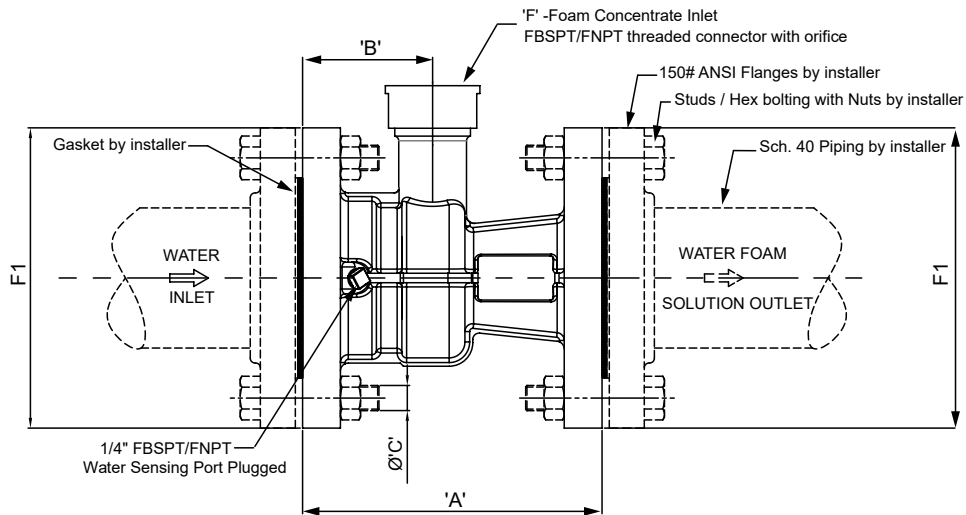
### RATIO CONTROLLER (WAFER STYLE - RCW SERIES)



**DIMENSIONS (TABLE-III)**

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 (TABLE-IV)**

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)

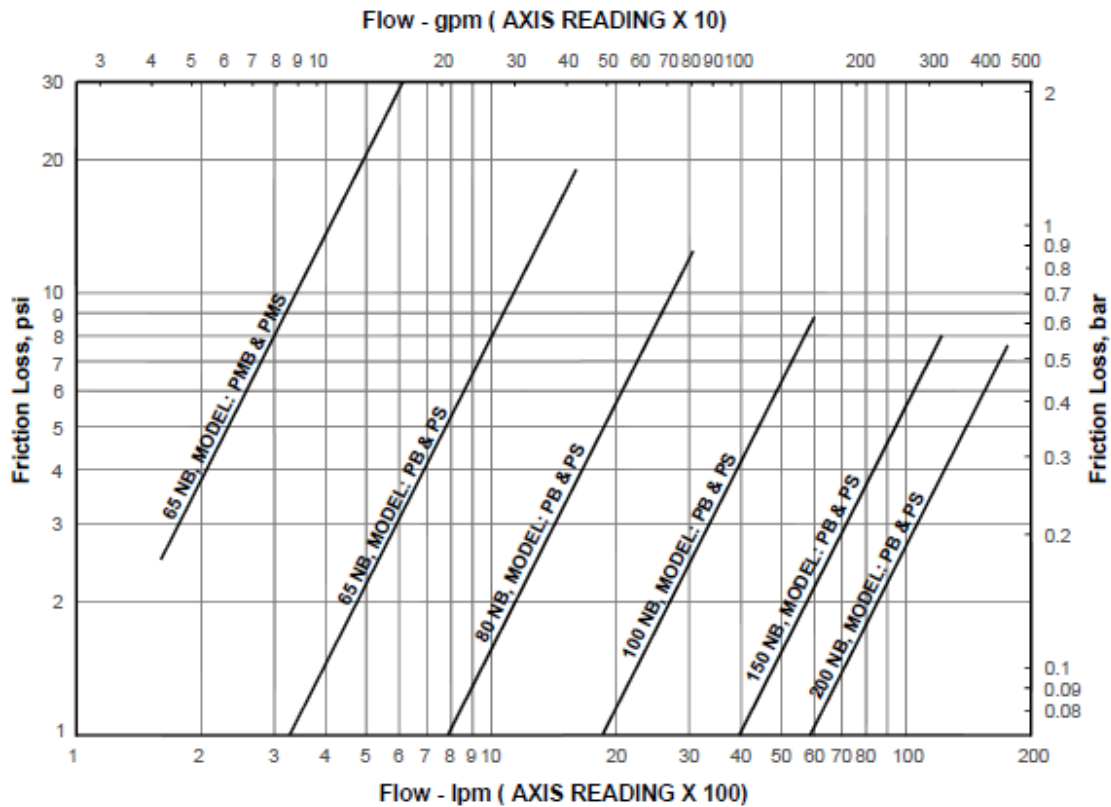
## FLOW RANGE (LPM)

TABLE - V

Sl. No.	Inline Balance Pressure Foam Proportioner Model	Size	Flow in LPM	
			AFFF 3%	AR-AFFF 3X3%
1	PB & PS	65 NB	401 to 1419	496 TO 1476
2	PMB & PMS	65 NB	-----	182 TO 659
3	PB & PS	80 NB	363 TO 3077	727 TO 3017
4	PB & PS	100 NB	655 TO 6037	780 TO 5999
5	PB & PS	150 NB	1930 TO 12267	2173 TO 11658
6	PB & PS	200 NB	2960 TO 16245	3543 TO 16847

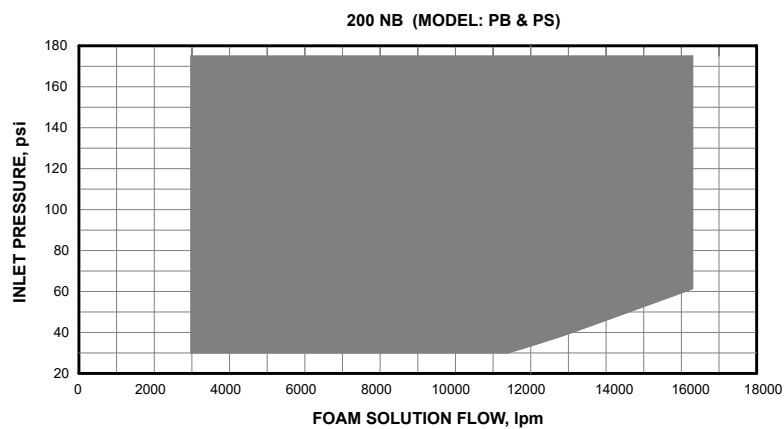
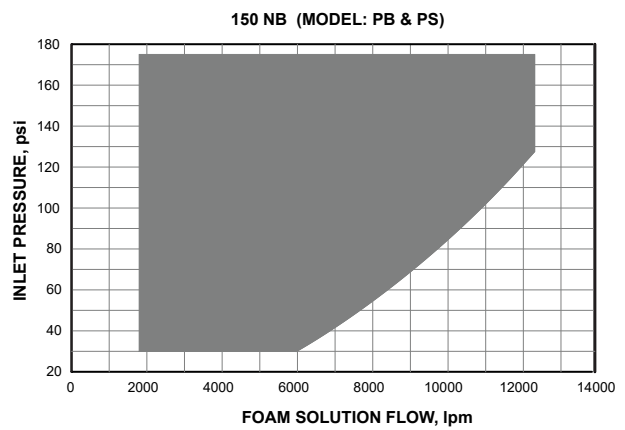
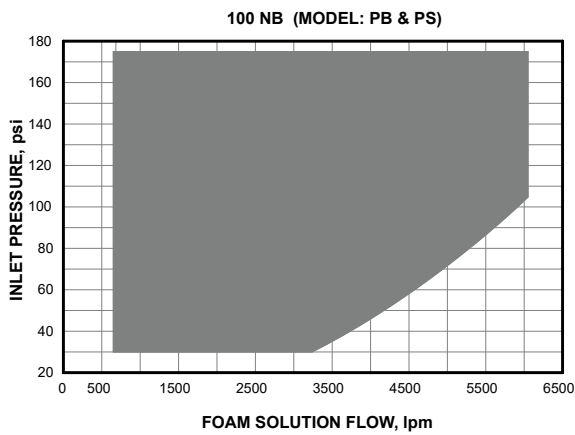
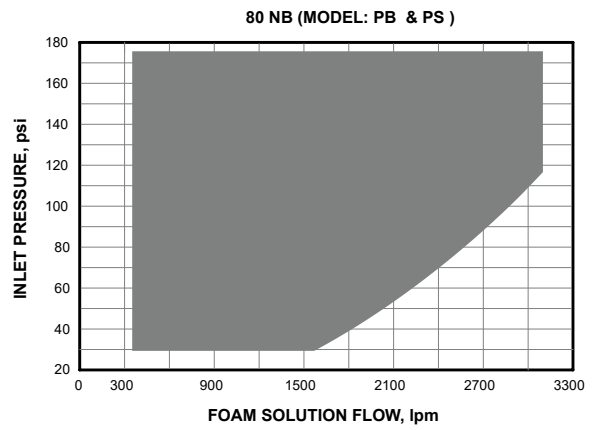
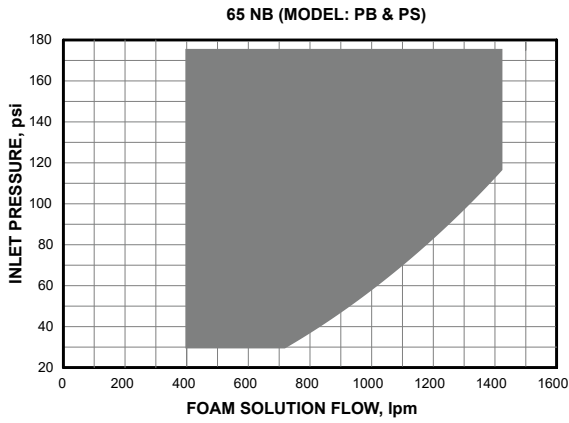
Note: Refer Catalogue No. HD263 for Ratio Controller details

## FLOW VS PRESSURE LOSS

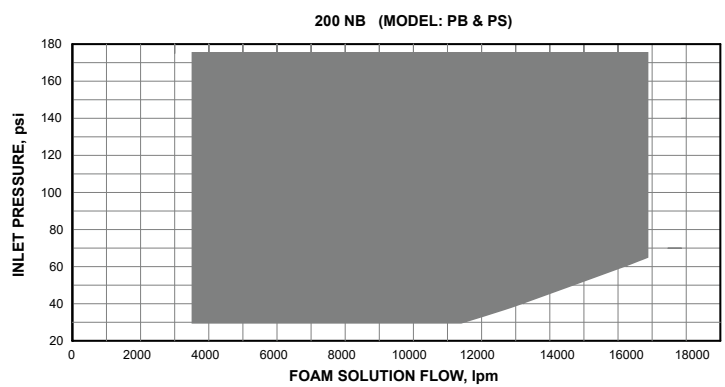
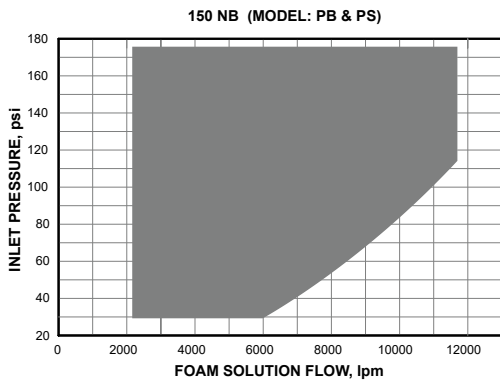
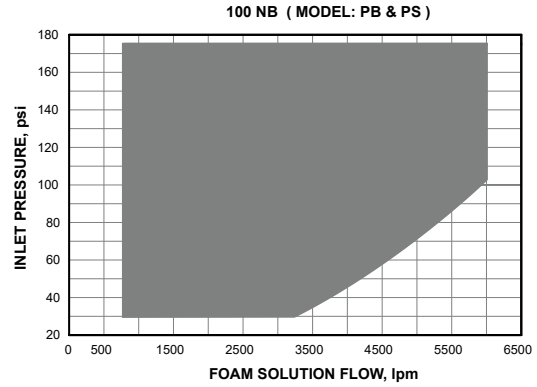
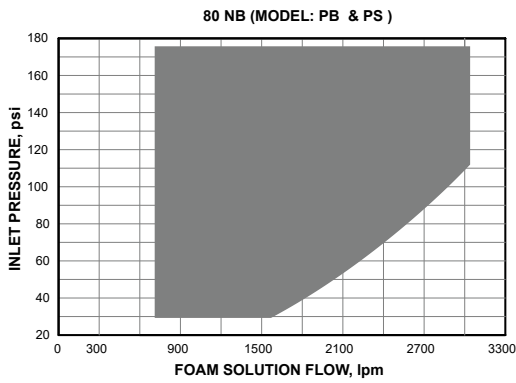
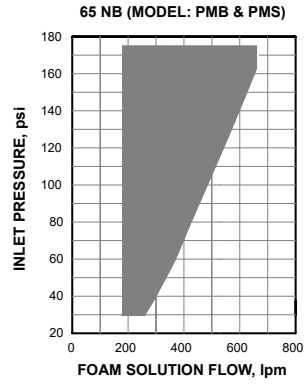
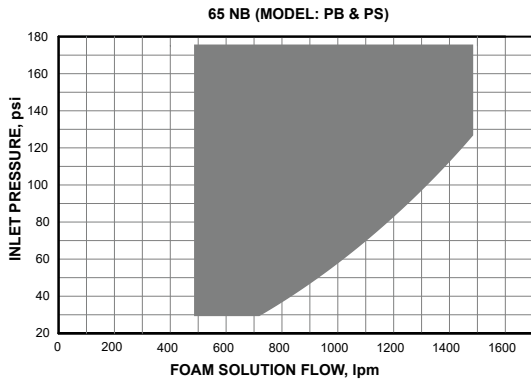


Note: Friction loss above 1 psi is plotted in the graph (flow range is as per given Table-V)

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

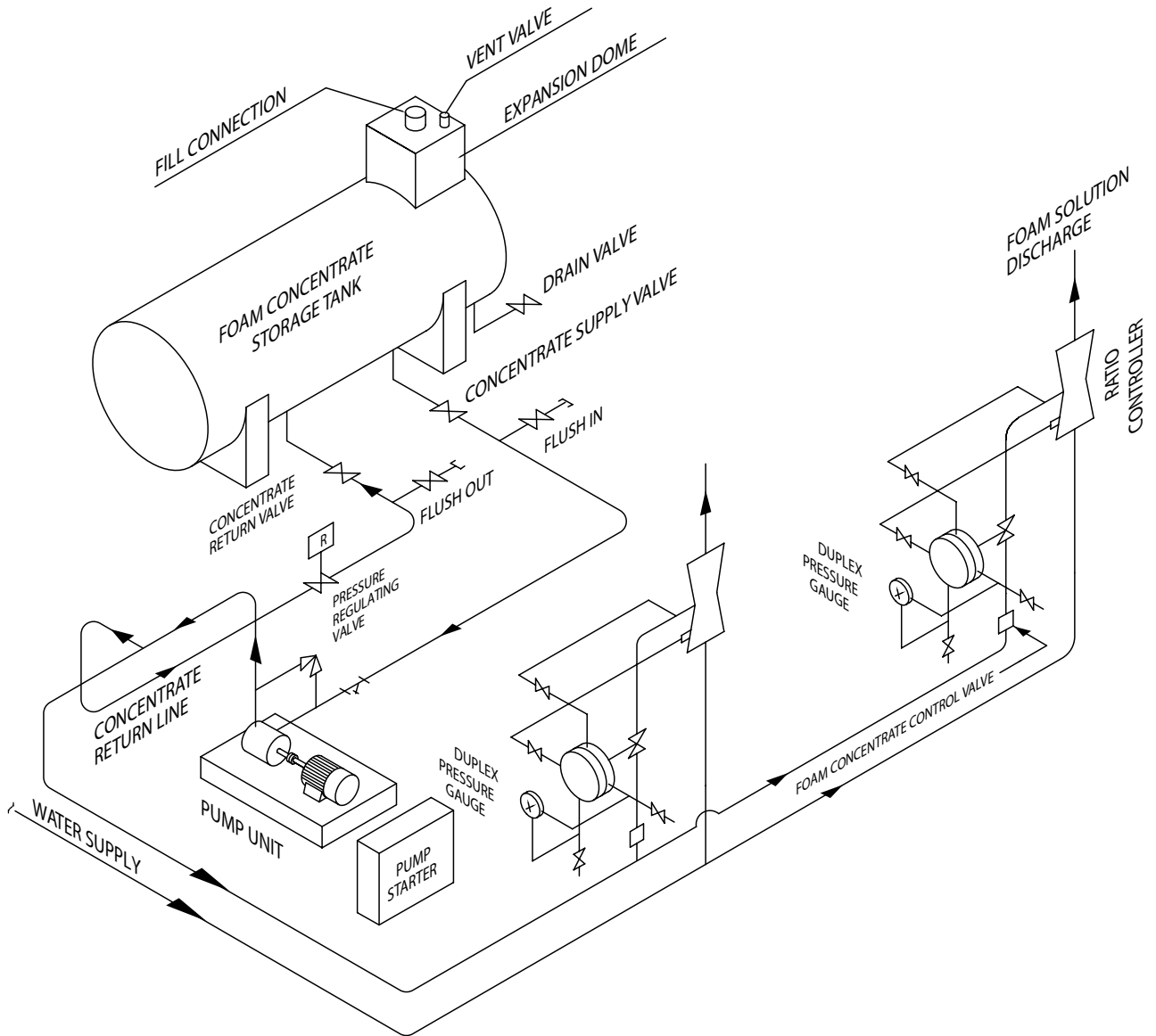


**INLET PRESSURE VS FOAM SOLUTION FLOW  
(FOAM CONCENTRATE: HD AR-AFFF 3X3-C6, 3%)**

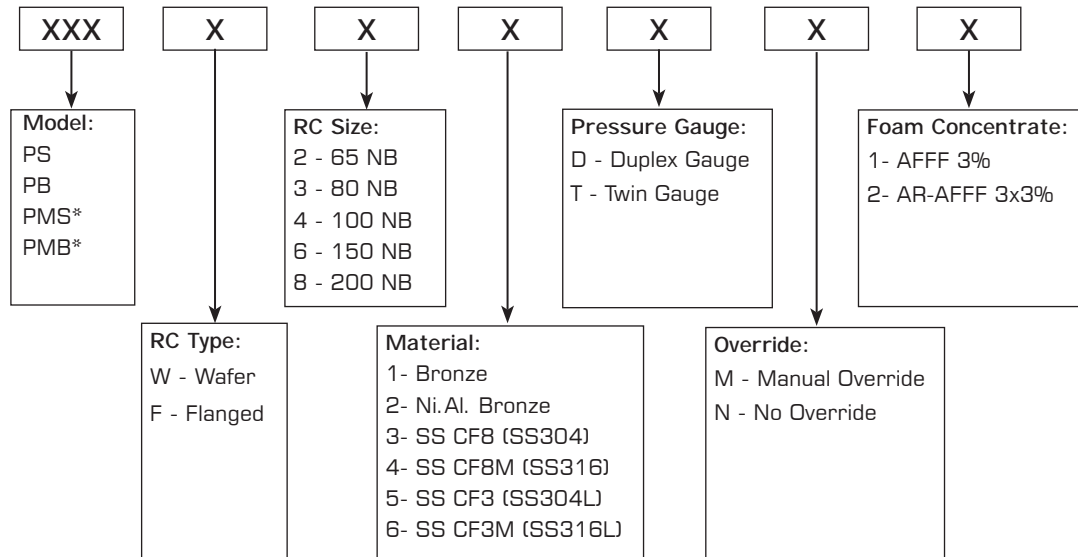




**TYPICAL INLINE BALANCE PRESSURE FOAM PROPORTIONING SYSTEM**



## INLINE BALANCE PRESSURE FOAM PROPORTIONER ORDERING INFORMATION



\*Only for 65 NB size

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