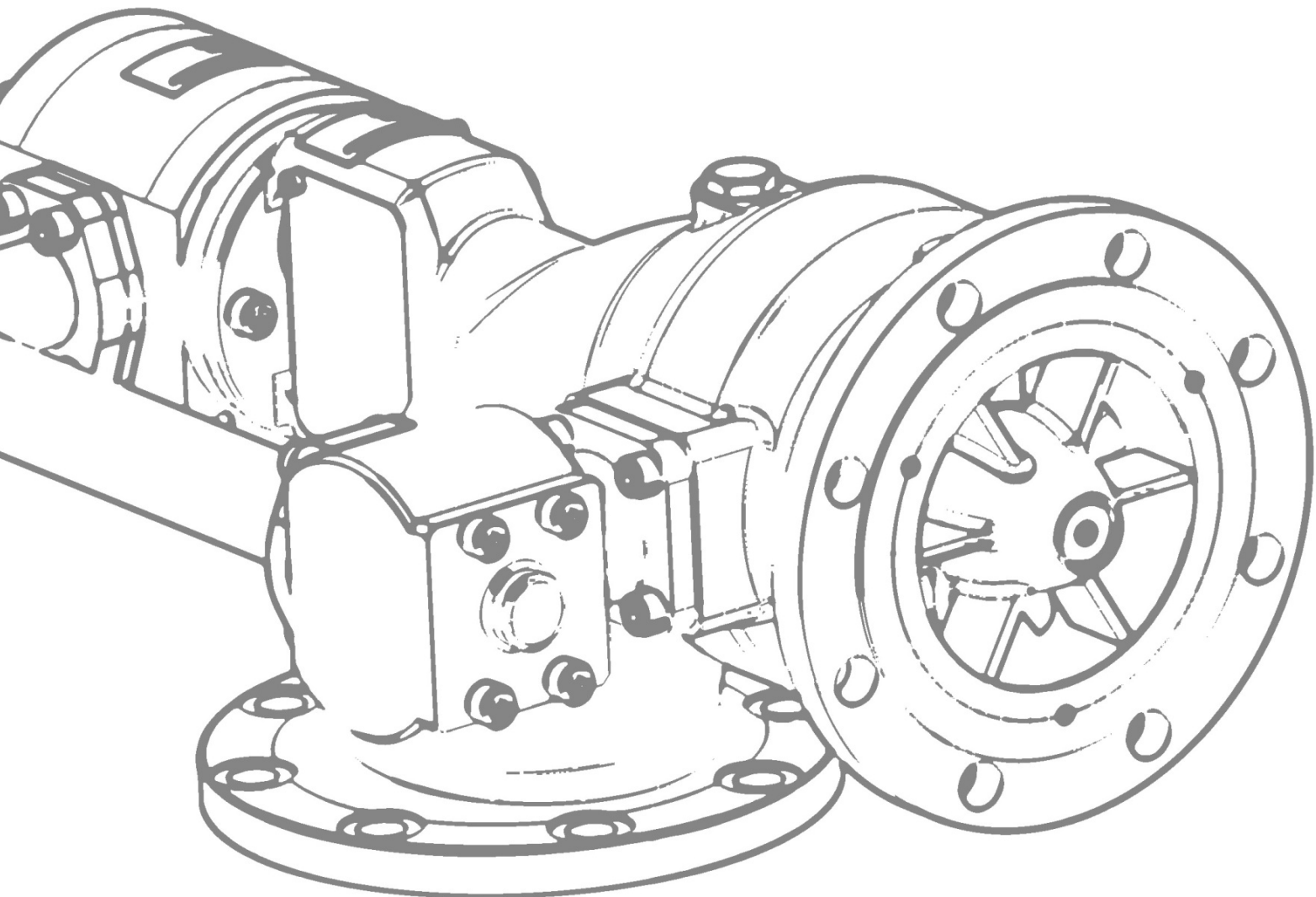




Datasheet for

MATRE TURBINE IN-LINE FOAM PROPORTIONER



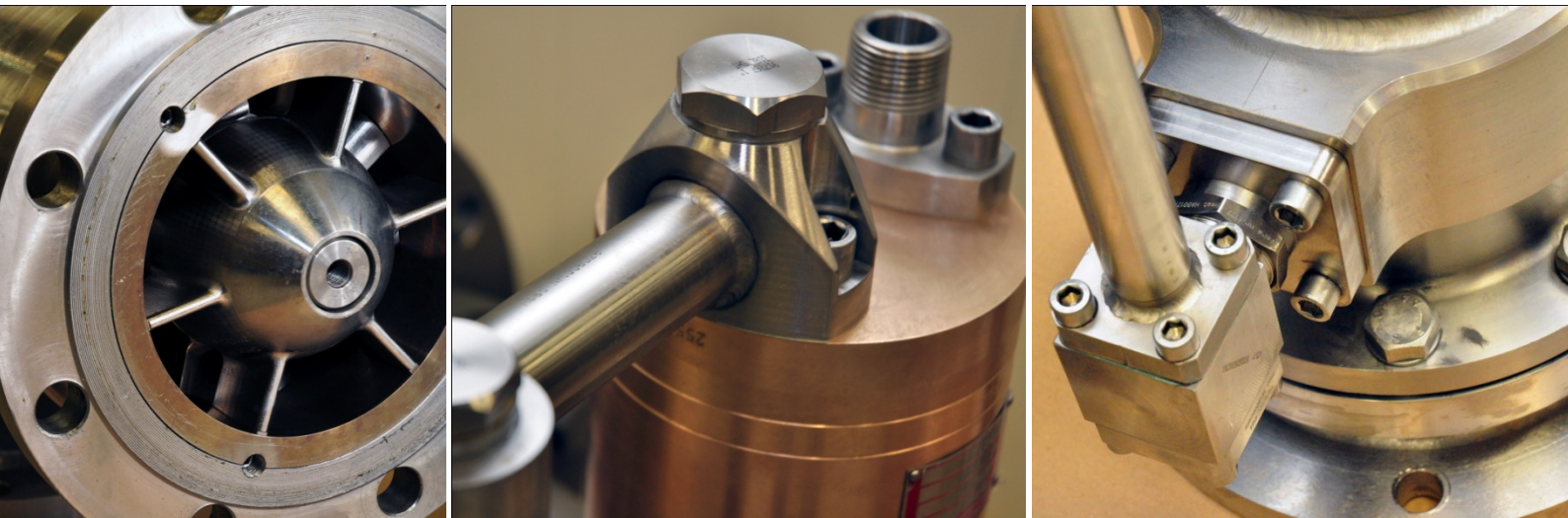
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Datasheet for MATRE© Turbine in-Line Foam Proportioners

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2 Product info

Matre Turbine In-line Foam Proportioners are known for their reliability.

The foam proportioner starts to function as soon as water starts to flow through it. For testing purposes or to run the system with water only it is possible to open the bypass line and send the foam back to the tank. This represents a substantial economic and environmental saving and at the same time increasing safety. It also helps to simplify the firefighting system as auxiliary valves can be omitted.

The robustness in the design of the Turbine In-Line Foam Proportioners ensures low maintenance that is not sensitive to particles in the water.

3 General product features

Characteristics	Standard	Options
Material	Bronze EN 1982 CC333G turbine Bronze EN 1982 CC495K pump Stainless Steel AISI 316L manifold	Titanium Gr.2 turbine and housing Stainless Steel Super Duplex housing with Titanium Gr.2 turbine
Interface for water supply	ANSI 16.5 150 lb RF	ANSI 16.5 150 lb FF
Design pressure	20 bar	
Test pressure	30 bar	
Water pressure range	5-10 bar (5-14 bar)	
Foam concentrate inlet pressure at pump	0,75 bar absolute minimum	
Insertion rate	1% or 3% (Tolerance according to NFPA 11)	
Foam viscosity	<100 cSt	For high viscosity foam, additional testing will be required
Check valve in foam port	EN 1982 CC333G	Available in the same materials as the turbine casing.
Installation recommendations	The turbine can be installed in any position. In- and outlet piping to same diameter as the turbine. Straight pipe should be 3 x DN at inlet. Outlet piping to same specification as inlet, but no requirements for straight pipe length. Max. NPSHr: 0,25 bar	



4 Special design options

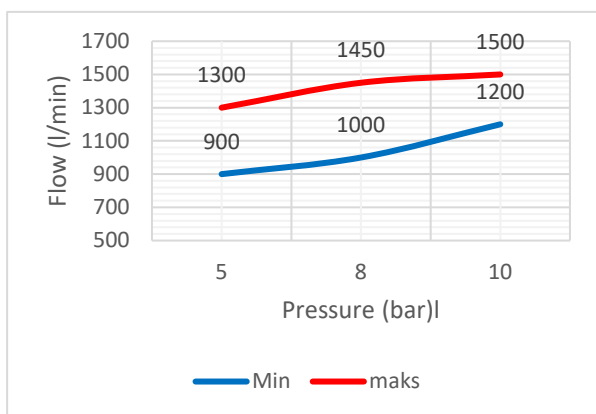
Design features that may be customised is amongst other:

- Special interface standard of interfaces
- Special flow
- Special operation pressure.
- High viscosity foam concentrate
- High elevated foam tank

If special design is required please contact Matre

5 Flow range and interface guide

All the flow ranges are available with different interfaces. In the following tables you can find the available interface dimensions for the different flow ranges.



The turbines performance is given at 8 bar inlet pressure.

At 10 bar inlet pressure the lowest possible flow is 10%-20% higher. Depending on turbine size. It will be most at the smallest turbines.

At 5 bar inlet pressure the highest flow will be reduced by 5-10%.

For more info please contact Matre.

5.1 Selection of Matre turbine proportioners with 1% insertion

Size	1000-1450 l/min	1500-2300 l/min	1800-3000 l/min	2300-3600 l/min	3000-6000 l/min	4500-7500 l/min	5500-11000 l/min	8000-15000 l/min	15000-27000 l/min	21000-36000 l/min
3"	13492AB 13497SD	13494AB								
4"	13495AB 13498SD	13496AB	9888AB 9889TI 9890SD	9891AB 9892TI 9893SD						
6"	X	X	X	9914AB	7309AB ¹ 7884TI ¹	5154AB 5491TI ¹	5115AB 9865SD 5485 TI ¹			
8"	X	X	X	X	X	8218 TI ¹	6357 TI ¹ 7188 SD ¹	5251AB 7208 SD ² 7016TI ²		
10"	X	X	X	X	X	X	5490 TI ¹	5110AB 7209 SD ² 7885TI ²	6956TI ²	
12"	X	X	X	X	X	X	X	X	7897TI ²	6995TI ²

X = available on request

1 NPT M foam inlet. Standard with BSPP M

2 SAE foam inlet and bypass. Contact Matre for details.



5.1.1 Detailed operational range as a function of inlet pressure for 1% proportioners

1% insertion rate	(1800-3000)		(2300-3600)		(3000-6000)		(4500-7500)		(5500-11000)		(8000-15000)		(15000-27000)		(21000-36000)	
	Min flow (l/min)	Maks flow (l/min)	Min flow (l/min)	Maks flow (l/min)	Min flow (l/min)	Maks flow (l/min)	Min flow (l/min)	Maks flow (l/min)	Min flow (l/min)	Maks flow (l/min)	Min flow (l/min)	Maks flow (l/min)	Min flow (l/min)	Maks flow (l/min)	Min flow (l/min)	Maks flow (l/min)
5 bar	1800	3000	2100	3600	3000	6000	4200	7500	5200	11000	7500	15000	14500	27000	20000	36000
8 bar	1800	3000	2300	3600	3000	6000	4500	7500	5500	11000	7500	15000	14500	27000	21000	36000
10 bar	1800	3000	2300	3600	3000	6000	4500	7500	5500	11000	8000	15000	15000	27000	25000	36000
14 bar	2400	3000	2900	3600	4500	6000	5600	7500	6800	11000	8000	15000	18000	27000	29000	36000

5.2 Selection of Matre turbine proportioners with 3% insertion

Size	1200-1400 l/min	1700-2400 l/min	2200-3000 l/min	2800-3400 l/min	3000-5000 l/min	5000-7000 l/min	6900-10500 l/min	8500-12500 l/min
3"	8607 AB 8608 TI 10472 SD	8590 AB 10474 SD						
4"	X	X						
6"	X	8584 AB²	9915 AB	11863AB	9300 AB¹	5239 AB 5475 TI ³	6092 AB 10971 TI	
8"	X	X	X	X	11855 AB¹	7053 AB	6066 AB	
10"	X	X	X	X	X	X	X	X
12"	X	X	X	X	X	X	X	X

X = available on request

- 1 Foam suction line 1 1/2" NPT male. Available in 1 1/2" BSP. Standard is 1 1/2" SAE 3000 PSI
- 2 ANSI 150LB FF. Standard is ANSI 150LB RF
- 3 Foam suction line 1 1/2" BSP male. Available in 1 1/2" NPT. Standard is 1 1/2" SAE 3000 PSI

6 Dimensions and interfaces

Standard product dimensions and interfaces can be found in this section. All information in the following table apply to standard turbine proportioners. For information about different interfaces and materials contact us. **For the related figures go to section 6.1.**

	Flow (L/min)	Water interface	Foam suction	Foam bypass	Dry weight (kg)	Figure no.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)
1% insertion	1000-1450	ANSI 3" B16.5 150 RF	3/4" BSPP M	1/2" BSPP F		fig. 1	462	135	215	53,5	48,5	33	158,5	18
		ANSI 4" B16.5 150 RF	3/4" BSPP M	1/2" BSPP F		fig. 1	553,5	226,5	306,5	53,5	48,5	33	158,5	18
		ANSI 6" B16.5 150 RF	3/4" BSPP M	1/2" BSPP F		fig. 1	538	211	291	53,5	48,5	33	158,5	18
		ANSI 8" B16.5 150 RF	3/4" BSPP M	1/2" BSPP F		fig. 1				53,5	48,5	33	158,5	18
		ANSI 10" B16.5 150 RF	3/4" BSPP M	1/2" BSPP F		fig. 1				53,5	48,5	33	158,5	18
		ANSI 12" B16.5 150 RF	3/4" BSPP M	1/2" BSPP F		fig. 1				53,5	48,5	33	158,5	18
		ANSI 3" B16.5 150 RF	3/4" BSPP M	1/2" BSPP F	32	fig. 1	462	135	215	53,5	48,5	33	158,5	18
		ANSI 4" B16.5 150 RF	3/4" BSPP M	1/2" BSPP F	60	fig. 1	553,5	226,5	306,5	53,5	48,5	33	158,5	18



	Flow (L/min)	Water interface	Foam suction	Foam bypass	Dry weight (kg)	Figure no.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)
1% insertion	1500-2300	ANSI 6" B16.5 150 RF	3/4" BSPP M	1/2" BSPP F	67	fig. 1	538	211	291	53,5	48,5	33	158,5	18
		ANSI 8" B16.5 150 RF	3/4" BSPP M	1/2" BSPP F		fig. 1				53,5	48,5	33	158,5	18
		ANSI 10" B16.5 150 RF	3/4" BSPP M	1/2" BSPP F		fig. 1				53,5	48,5	33	158,5	18
		ANSI 12" B16.5 150 RF	3/4" BSPP M	1/2" BSPP F		fig. 1				53,5	48,5	33	158,5	18
	1800-3000	ANSI 4" B16.5 150 RF	1" BSPP M	1" BSP F	48	fig. 2	522	150	250	50,5	58	45	45	24
		ANSI 6" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2				50,5	58	45	45	24
		ANSI 8" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2				50,5	58	45	45	24
		ANSI 10" B16.5 150 RF	1" BSPP M	1" BSP F	133	fig. 2	622	260	360	50,5	58	45	45	24
		ANSI 12" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2				50,5	58	45	45	24
	2300-3600	ANSI 4" B16.5 150 RF	1" BSPP M	1" BSP F	48	fig. 2	522	150	250	50,5	58	45	45	24
		ANSI 6" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2				50,5	58	45	45	24
		ANSI 8" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2				50,5	58	45	45	24
		ANSI 10" B16.5 150 RF	1" BSPP M	1" BSP F	133	fig. 2	622	260	360	50,5	58	45	45	24
		ANSI 12" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2				50,5	58	45	45	24
	3000-6000	ANSI 6" B16.5 150 RF	1" BSPP M	1" BSP F	88	fig. 2	662	230	400	50,5	58	45	45	24
		ANSI 8" B16.5 150 RF	1" BSPP M	1" BSP F	150	fig. 2	762	330	500	50,5	58	45	45	24
		ANSI 10" B16.5 150 RF	1" BSPP M	1" BSP F	173	fig. 2	762	330	500	50,5	58	45	45	24
		ANSI 12" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2				50,5	58	45	45	24
	4500-7500	ANSI 6" B16.5 150 RF	1" BSPP M	1" BSP F	88	fig. 2	662	230	400	50,5	58	45	45	24
		ANSI 8" B16.5 150 RF	1" BSPP M	1" BSP F	150	fig. 2	762	330	500	50,5	58	45	45	24
		ANSI 10" B16.5 150 RF	1" BSPP M	1" BSP F	173	fig. 2	762	330	500	50,5	58	45	45	24
		ANSI 12" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2				50,5	58	45	45	24
	5500-11000	ANSI 6" B16.5 150 RF	1" BSPP M	1" BSP F	85	fig. 2	673	230	400	50,5	58	45	45	24
		ANSI 8" B16.5 150 RF	1" BSPP M	1" BSP F	147	fig. 2	773	330	500	50,5	58	45	45	24
		ANSI 10" B16.5 150 RF	1" BSPP M	1" BSP F	170	fig. 2	773	330	500	50,5	58	45	45	24
		ANSI 12" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2				50,5	58	45	45	24
	8000-15000	ANSI 8" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" BSP F	210	fig. 3	868	310	540	245	78	30	311,5	299
		ANSI 10" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" BSP F		fig. 3				245	78	30	311,5	299
ANSI 12" B16.5 150 RF		1 1/2" SAE 3000PSI	1 1/2" BSP F		fig. 3				245	78	30	311,5	299	
15000-27000	ANSI 10" B16.5 150 RF	2" SAE 3000PSI	2" BSP F	302	fig. 3	1080	394	683	265	80	37,5	339,5	299	
	ANSI 12" B16.5 150 RF	2" SAE 3000PSI	2" BSP F		fig. 3				80	37,5	339,5	299		



	Flow (L/min)	Water interface	Foam suction	Foam bypass	Dry weight (kg)	Figure no.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)
	21000-36000	ANSI 10" B16.5 150 RF	2" SAE 3000PSI	2" BSP F		fig. 3	1080	394	683					
		ANSI 12" B16.5 150 RF	2" SAE 3000PSI	2" BSP F		fig. 3								
3% insertion	1200-1400	ANSI 3" B16.5 150 RF	1" BSPP M	1" BSP F	44	fig. 2	492	135	215	50,5	58	45	45	24
		ANSI 4" B16.5 150 RF	1" BSPP M	1" BSP F	72	fig. 2	583,5	226,5	306,5	50,5	58	45	45	24
		ANSI 6" B16.5 150 RF	1" BSPP M	1" BSP F	79	fig. 2	568	211	291	50,5	58	45	45	24
		ANSI 8" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2					58	45	45	24
		ANSI 10" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2					58	45	45	24
		ANSI 12" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2					58	45	45	24
	1700-2400	ANSI 3" B16.5 150 RF	1" BSPP M	1" BSPP F	44	fig. 2	495	135	215	50,5	58	45	45	24
		ANSI 4" B16.5 150 RF	1" BSPP M	1" BSPP F	72	fig. 2	586,5	226,5	306,5	50,5	58	45	45	24
		ANSI 6" B16.5 150 RF	1" BSPP M	1" BSPP F	79	fig. 2	571	211	291	50,5	58	45	45	24
		ANSI 8" B16.5 150 RF	1" BSPP M	1" BSPP F		fig. 2				50,5	58	45	45	24
		ANSI 10" B16.5 150 RF	1" BSPP M	1" BSPP F		fig. 2				50,5	58	45	45	24
		ANSI 12" B16.5 150 RF	1" BSPP M	1" BSPP F		fig. 2				50,5	58	45	45	24
	2200-3000	ANSI 4" B16.5 150 RF	1" BSPP M	1" BSP F	50	fig. 2	533	150	250	50	58	45	45	24
		ANSI 6" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2				50	58	45	45	24
		ANSI 8" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2				50	58	45	45	24
		ANSI 10" B16.5 150 RF	1" BSPP M	1" BSP F	135	fig. 2	632	260	360	50	58	45	45	24
		ANSI 12" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2				50	58	45	45	24
	2800-3400	ANSI 4" B16.5 150 RF	1" BSPP M	1" BSP F	50	fig. 2	533	150	250	50	58	45	45	24
		ANSI 6" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2				50	58	45	45	24
		ANSI 8" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2				50	58	45	45	24
		ANSI 10" B16.5 150 RF	1" BSPP M	1" BSP F	135	fig. 2	632	260	360	50	58	45	45	24
		ANSI 12" B16.5 150 RF	1" BSPP M	1" BSP F		fig. 2				50	58	45	45	24
	3000-5000	ANSI 6" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" BSP F	110	fig. 3	694	230	400	211	78	30	278	236
		ANSI 8" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" BSP F		fig. 3	794	330	500	211	78	30	278	236
ANSI 10" B16.5 150 RF		1 1/2" SAE 3000PSI	1 1/2" BSP F		fig. 3	794	330	500	211	78	30	278	236	
ANSI 12" B16.5 150 RF		1 1/2" SAE 3000PSI	1 1/2" BSP F		fig. 3				211	78	30	278	236	
5000-7000	ANSI 6" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" BSP F	110	fig. 3	694	230	400	211	78	30	278	236	
	ANSI 8" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" BSP F		fig. 3	794	330	500	211	78	30	278	236	
	ANSI 10" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" BSP F		fig. 3	794	330	500	211	78	30	278	236	



	Flow (L/min)	Water interface	Foam suction	Foam bypass	Dry weight (kg)	Figure no.	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)
		ANSI 12" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" BSP F		fig. 3				211	78	30	278	236
6900-10500		ANSI 6" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" BSP F	98	fig.3	708	230	400	208	70	30	278	236
		ANSI 8" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" BSP F		fig.3	808	330	500	208	70	30	278	236
		ANSI 10" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" BSP F		fig.3	808	330	500	208	70	30	278	236
		ANSI 12" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" BSP F		fig.3				208	70	30	278	236
8500-12500		ANSI 8" B16.5 150 RF	2" SAE 3000PSI	2" BSP F	220	fig. 3	933	310	540	261	80	37,5	336	299
		ANSI 10" B16.5 150 RF	2" SAE 3000PSI	2" BSP F		fig. 3				261	80	37,5	336	299
		ANSI 12" B16.5 150 RF	2" SAE 3000PSI	2" BSP F		fig. 3				261	80	37,5	336	299

6.1 Dimensional figures

For the required dimension go the section 5.

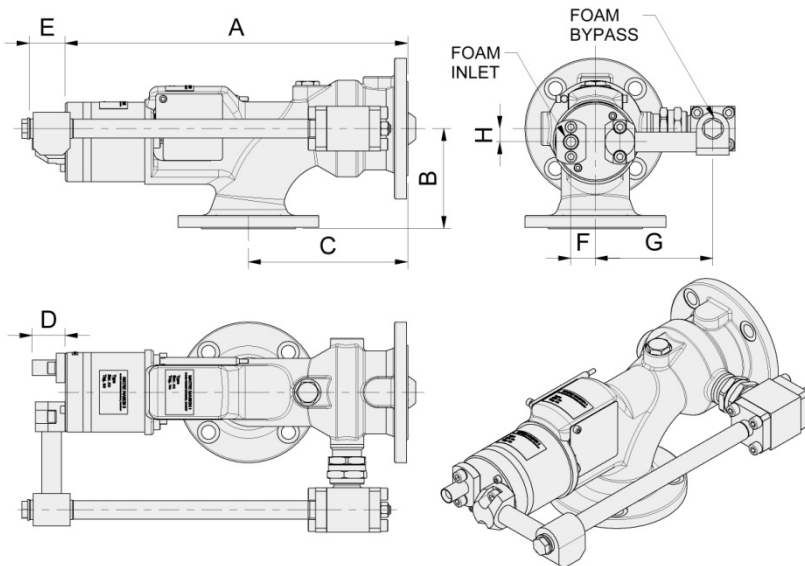


Figure 1.

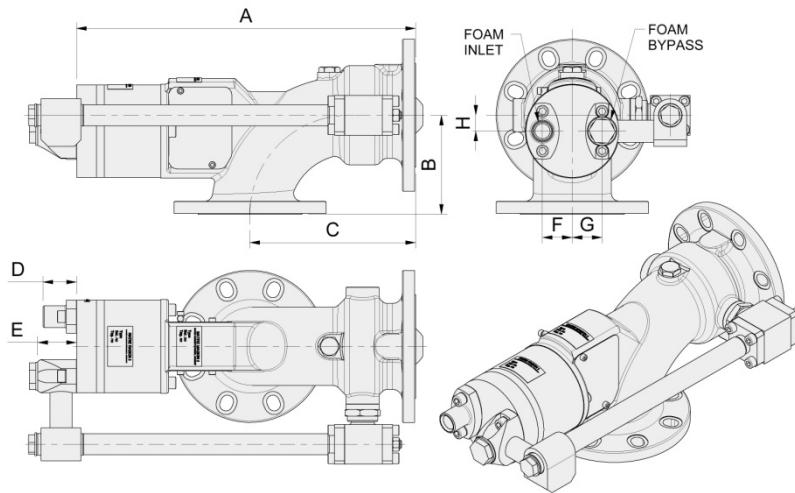


Figure 2.

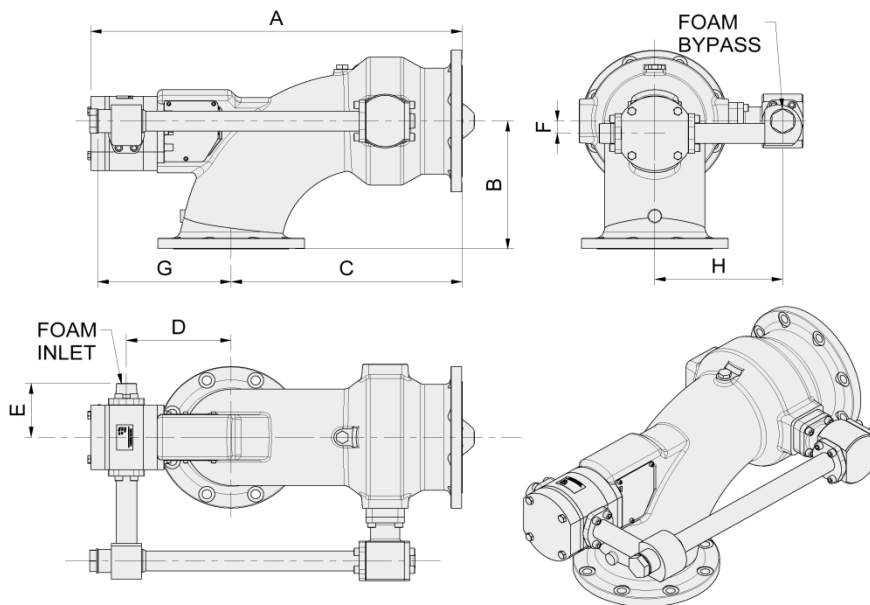


Figure 3.

7 Automatic 3-way valve

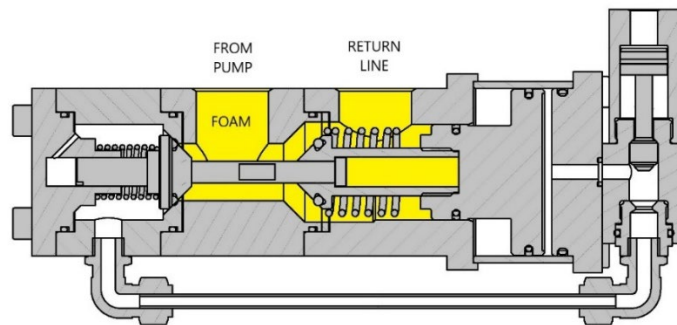
The valve will prevent foam from seeping in to the drained water line if the tank is installed elevated from the turbine. The turbine will start running with the bypass line open, helping the pump to prime. No signal is needed for normal operation as the water pressure from the turbine will switch the valve.

For remote operation a pressure signal (gas or liquid) is needed for running without foam. The return line is kept open.

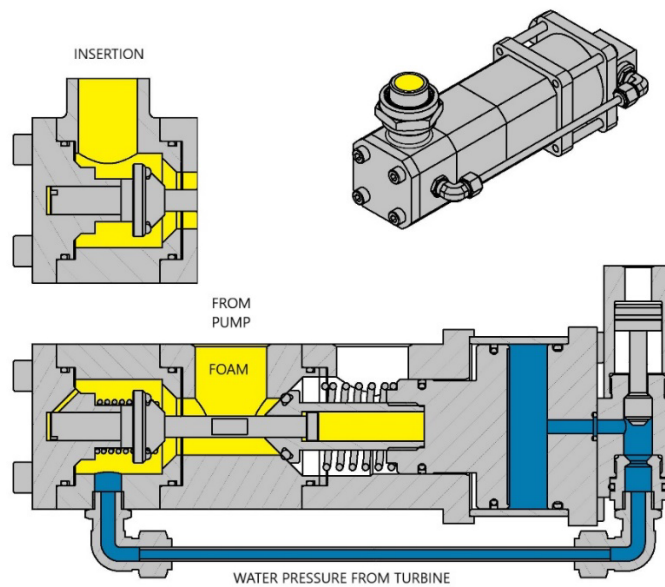
For local operation the manual override valve can be used.

7.1 Function

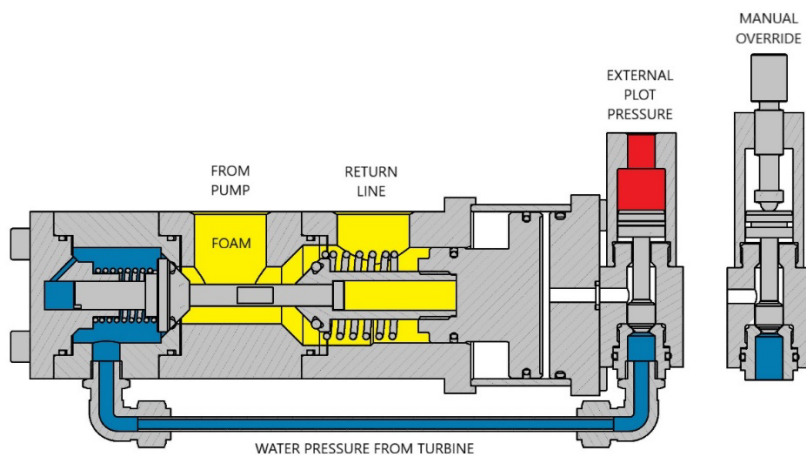
7.1.1 Stand by mode



7.1.2 Operation mode



7.1.3 Override mode



7.2 Dimensions

7.2.1 1" valve

Additional weight to turbines is 7,5 kg

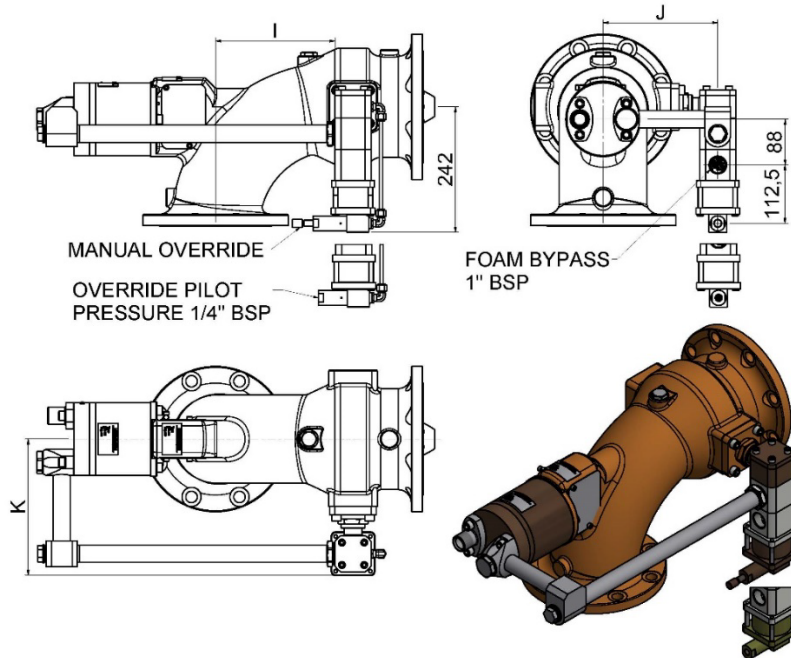


Figure 4

7.2.2 1 1/2" valve

Additional weight to turbines is 15,5 kg

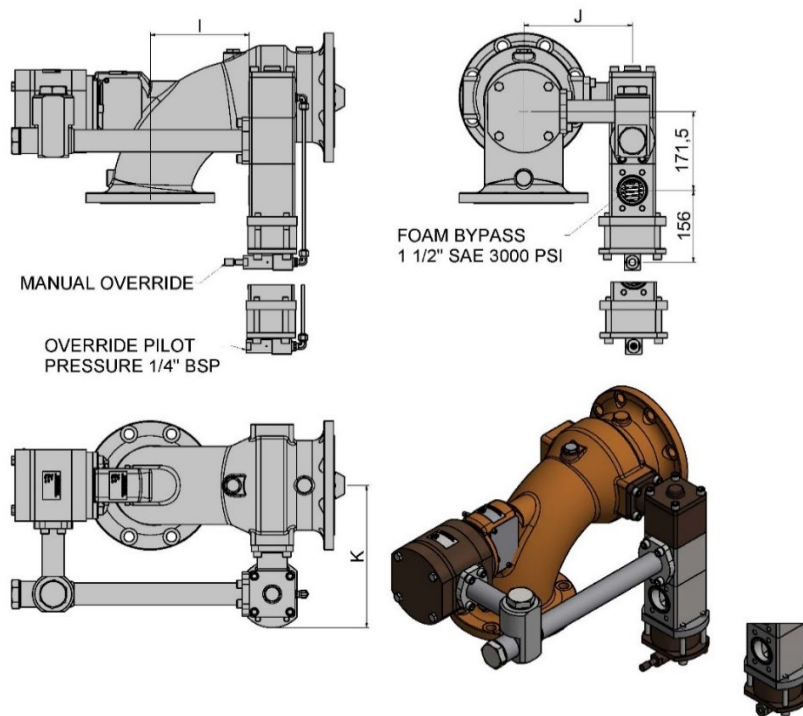


Figure 5



	Flow (L/min)	Water interface	Foam suction	Foam bypass	Figure no.	I (mm)	J (mm)	K (mm)		
1% insertion	1000-1450	ANSI 3" B16.5 150 RF	1/2" BSPP M	1" BSPP F	fig. 4	98	145	187		
		ANSI 4" B16.5 150 RF	1/2" BSPP M	1" BSPP F	fig. 4	98	145	187		
		ANSI 6" B16.5 150 RF	1/2" BSPP M	1" BSPP F	fig. 4	98	145	187		
		ANSI 8" B16.5 150 RF	1/2" BSPP M	1" BSPP F	fig. 4	98	145	187		
		ANSI 10" B16.5 150 RF	1/2" BSPP M	1" BSPP F	fig. 4	98	145	187		
		ANSI 12" B16.5 150 RF	1/2" BSPP M	1" BSPP F	fig. 4	98	145	187		
	1500-2300	1500-2300	ANSI 3" B16.5 150 RF	1/2" BSPP M	1" BSPP F	fig. 4	98	145	187	
			ANSI 4" B16.5 150 RF	1/2" BSPP M	1" BSPP F	fig. 4	98	145	187	
			ANSI 6" B16.5 150 RF	1/2" BSPP M	1" BSPP F	fig. 4	98	145	187	
			ANSI 8" B16.5 150 RF	1/2" BSPP M	1" BSPP F	fig. 4	98	145	187	
			ANSI 10" B16.5 150 RF	1/2" BSPP M	1" BSPP F	fig. 4	98	145	187	
			ANSI 12" B16.5 150 RF	1/2" BSPP M	1" BSPP F	fig. 4	98	145	187	
1% insertion	1800-3000	1800-3000	ANSI 4" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204	
			ANSI 6" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204	
			ANSI 8" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204	
			ANSI 10" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204	
			ANSI 12" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204	
	2300-3600	2300-3600	2300-3600	ANSI 4" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204
				ANSI 6" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204
				ANSI 8" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204
				ANSI 10" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204
				ANSI 12" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204
	3000-6000	3000-6000	3000-6000	ANSI 6" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	230	221	263
				ANSI 8" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	230	221	263
				ANSI 10" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	230	221	263
				ANSI 12" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	230	221	263
	4500-7500	4500-7500	4500-7500	ANSI 6" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	230	221	263
				ANSI 8" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	230	221	263
				ANSI 10" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	230	221	263
				ANSI 12" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	230	221	263
	5500-11000	5500-11000	5500-11000	ANSI 6" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	230	221	263
				ANSI 8" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	230	221	263

Rev 15



	Flow (L/min)	Water interface	Foam suction	Foam bypass	Figure no.	I (mm)	J (mm)	K (mm)	
3% insertion		ANSI 10" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	230	221	263	
		ANSI 12" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	230	221	263	
	8000-15000	ANSI 8" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" SAE	fig. 5	310	278	351	
		ANSI 10" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" SAE	fig. 5	310	278	351	
		ANSI 12" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" SAE	fig. 5	310	278	351	
	15000-27000	ANSI 10" B16.5 150 RF	2" SAE 3000PSI	1 1/2" SAE	fig. 5	405	299	372	
		ANSI 12" B16.5 150 RF	2" SAE 3000PSI	1 1/2" SAE	fig. 5	405	299	372	
	21000-36000	ANSI 10" B16.5 150 RF	2" SAE 3000PSI	1 1/2" SAE	fig. 5	405	299	372	
		ANSI 12" B16.5 150 RF	2" SAE 3000PSI	1 1/2" SAE	fig. 5	405	299	372	
		1200-1400	ANSI 3" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	98	172	214
			ANSI 4" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	98	172	214
			ANSI 6" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	98	172	214
			ANSI 8" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	98	172	214
			ANSI 10" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	98	172	214
			ANSI 12" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	98	172	214
		1700-2400	ANSI 3" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	98	172	214
			ANSI 4" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	98	172	214
			ANSI 6" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	98	172	214
ANSI 8" B16.5 150 RF			1" BSPP M	1" BSPP F	fig. 4	98	172	214	
ANSI 10" B16.5 150 RF			1" BSPP M	1" BSPP F	fig. 4	98	172	214	
ANSI 12" B16.5 150 RF			1" BSPP M	1" BSPP F	fig. 4	98	172	214	
2200-3000		ANSI 4" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204	
		ANSI 6" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204	
		ANSI 8" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204	
		ANSI 10" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204	
		ANSI 12" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204	
		ANSI 6" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" SAE	fig. 5	215	236	309	
2800-3400	ANSI 4" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204		
	ANSI 6" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204		
	ANSI 8" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204		
	ANSI 10" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204		
	ANSI 12" B16.5 150 RF	1" BSPP M	1" BSPP F	fig. 4	135	162	204		

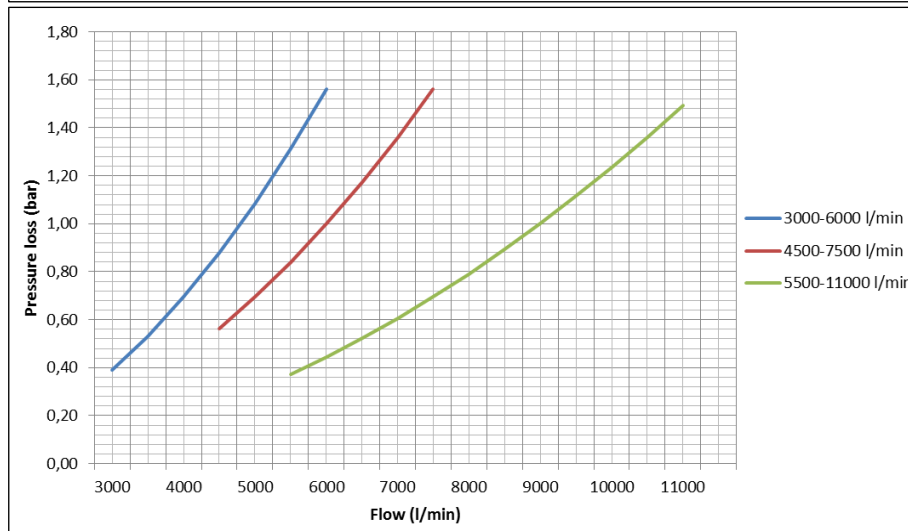
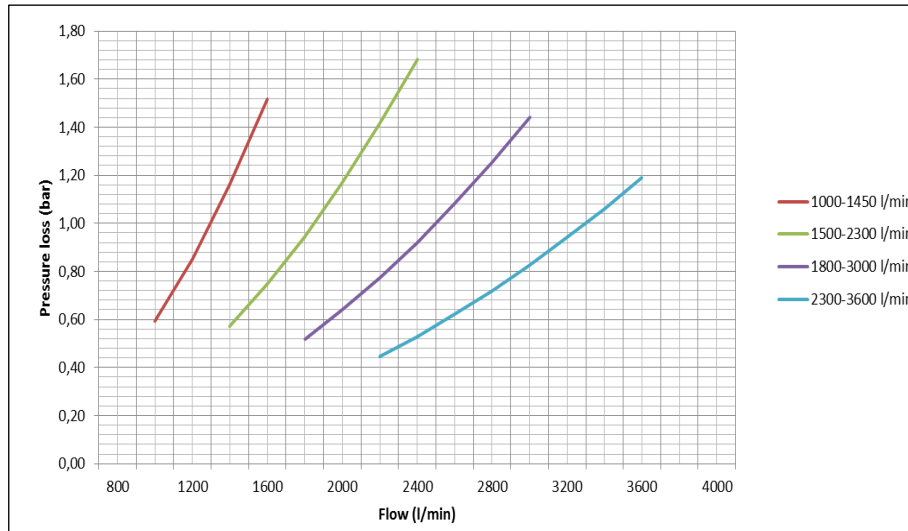


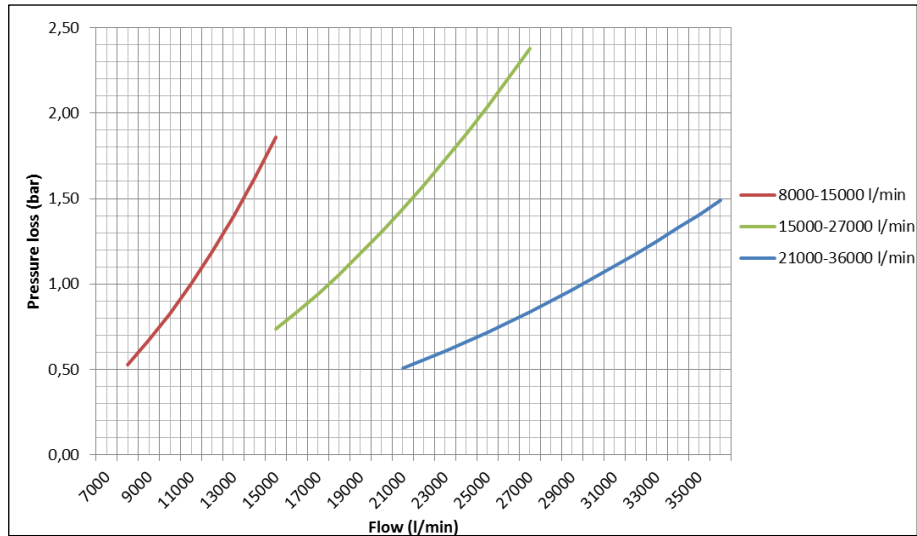
	Flow (L/min)	Water interface	Foam suction	Foam bypass	Figure no.	I (mm)	J (mm)	K (mm)
	3000-5000	ANSI 8" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" SAE	fig. 5	215	236	309
		ANSI 10" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" SAE	fig. 5	215	236	309
		ANSI 12" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" SAE	fig. 5	215	236	309
	5000-7000	ANSI 6" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" SAE	fig. 5	215	236	309
		ANSI 8" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" SAE	fig. 5	215	236	309
		ANSI 10" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" SAE	fig. 5	215	236	309
		ANSI 12" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" SAE	fig. 5	215	236	309
	6900-10500	ANSI 6" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" SAE	fig. 5	215	236	309
		ANSI 8" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" SAE	fig. 5	215	236	309
		ANSI 10" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" SAE	fig. 5	215	236	309
		ANSI 12" B16.5 150 RF	1 1/2" SAE 3000PSI	1 1/2" SAE	fig. 5	215	236	309
	8500-12500	ANSI 8" B16.5 150 RF	2" SAE 3000PSI	1 1/2" SAE	fig. 5	310	278	351
		ANSI 10" B16.5 150 RF	2" SAE 3000PSI	1 1/2" SAE	fig. 5	310	278	351
		ANSI 12" B16.5 150 RF	2" SAE 3000PSI	1 1/2" SAE	fig. 5	310	278	351



8 Pressure loss data

8.1 In-line Turbine pressure loss at 1% insertion rate





8.2 In-line Turbine pressure loss at 3% insertion rate

