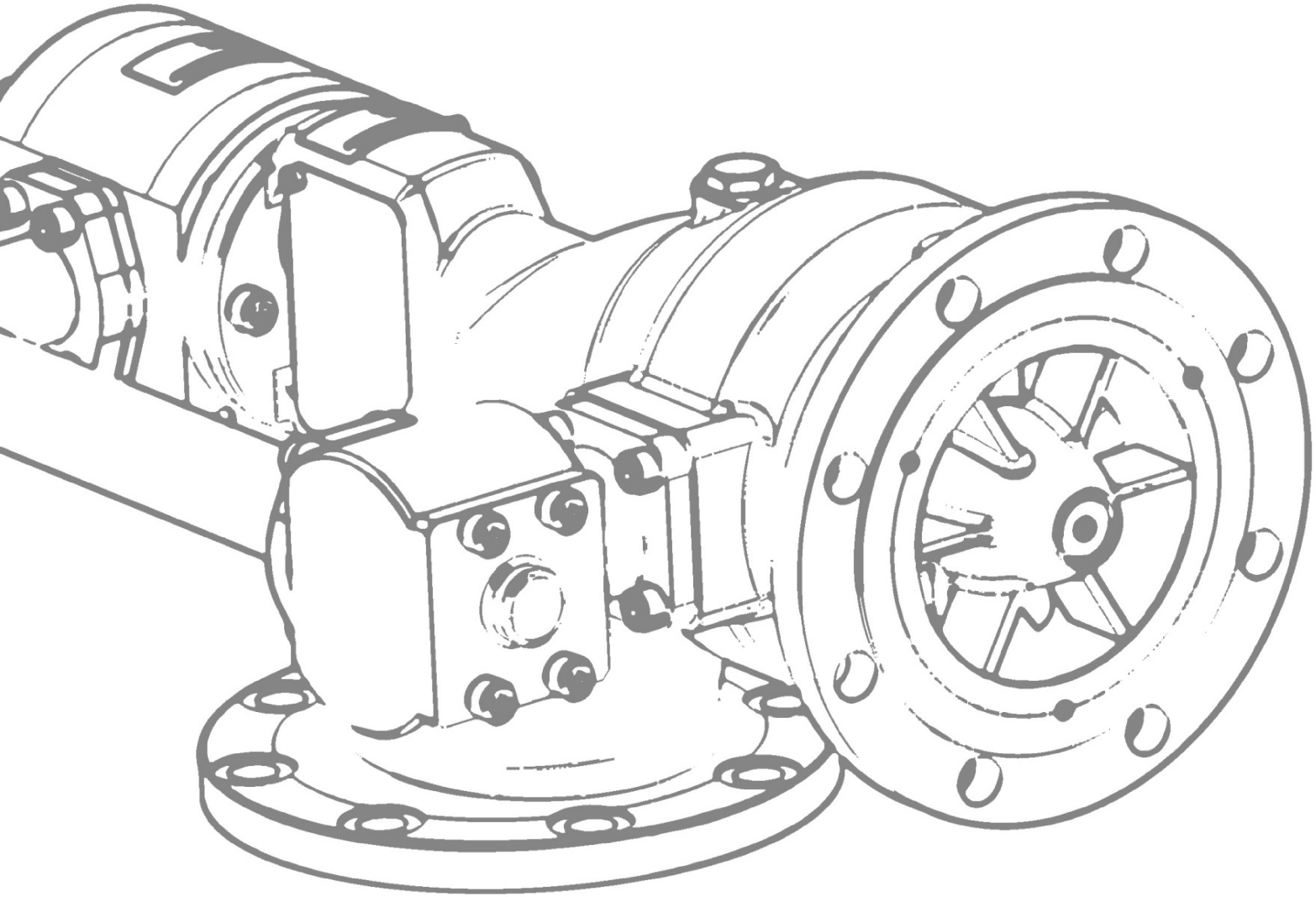
Datasheet for

MATRE TURBINE IN-LINE FOAM PROPORTIONER



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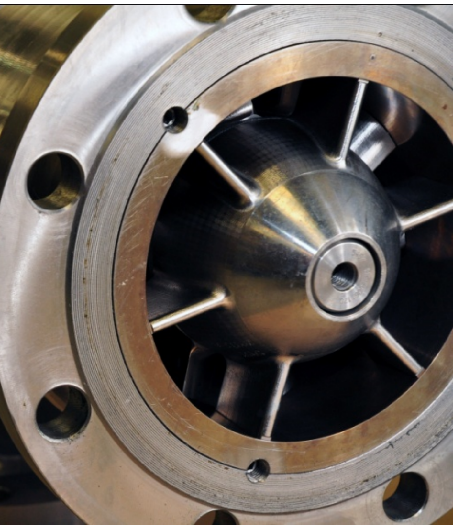

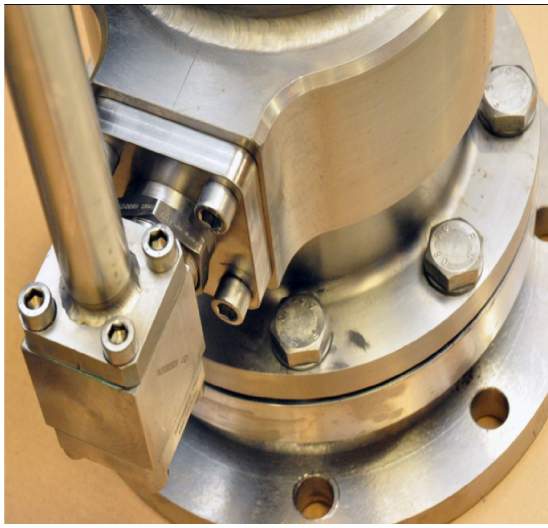

Datasheet for MATRE© Turbine in-Line Foam Proportioners

1 Contents

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

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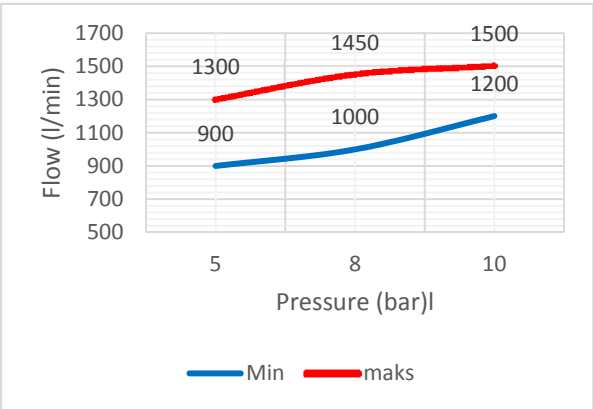
3 General product features

Characteristics	Standard	Options
Material	Bronze BS 1400 AB2 turbine Bronze BS 1400 LB2 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 abs minimum	
Insertion rate	1% or 3% (Tolerance according to NFPA 11)	
Check valve in foam port	Bronze BS 1400 AB2	Available in all materials and with all interfaces mentioned above.
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. MPSH: 25KPa	

4 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.

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4.1 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"	**8119AB** 8440 SD	**5161AB**								
4"	**8423AB**	**6986AB**	**9888AB** 9889 TI 9890 SD	**9891AB** 9892 TI 9893 SD						
6"	X	X	X	**9914AB**	**7309AB** 7884 TI	**5154AB** 5491 TI	**5115AB** 7203 SD 5485 TI			
8"	X	X	X	X	X	8218 TI	6357 TI 7188 SD	**5251AB** 7208 SD 7016 TI		
10"	X	X	X	X	X	X	5490 TI	**5110AB** 7209 SD 7885 TI	6956 TI	
12"	X	X	X	X	X	X	X	X	7897 TI	6995 TI

X = available

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

4.2 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	**8590 AB**						
4"	X	X	**9894 AB** 9895 TI 9896 SD	**9897 AB**				
6"	X	**8584 AB**	**9915 AB**	X	**9300 AB**	**5239 AB** 5475 TI	**6092 AB**	
8"	X	X	X	X		**7053 AB**	**6066 AB**	**4975 AB**
10"	X	X	X	X		X	X	X
12"	X	X	X	X		X	X	X

X = available

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5 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**.

	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	1/2" BSPP M	1/2" BSPP F		fig. 1	462	135	215	44,5	48,5	33	158,5	18
		ANSI 4" B16.5 150 RF	1/2" BSPP M	1/2" BSPP F		fig. 1	553,5	226,5	306,5	44,5	48,5	33	158,5	18
		ANSI 6" B16.5 150 RF	1/2" BSPP M	1/2" BSPP F		fig. 1	538	211	291	44,5	48,5	33	158,5	18
		ANSI 8" B16.5 150 RF	1/2" BSPP M	1/2" BSPP F		fig. 1				44,5	48,5	33	158,5	18
		ANSI 10" B16.5 150 RF	1/2" BSPP M	1/2" BSPP F		fig. 1				44,5	48,5	33	158,5	18
		ANSI 12" B16.5 150 RF	1/2" BSPP M	1/2" BSPP F		fig. 1				44,5	48,5	33	158,5	18
	1500-2300	ANSI 3" B16.5 150 RF	1/2" BSPP M	1/2" BSPP F	32	fig. 1	462	135	215	44,5	48,5	33	158,5	18
		ANSI 4" B16.5 150 RF	1/2" BSPP M	1/2" BSPP F	60	fig. 1	553,5	226,5	306,5	44,5	48,5	33	158,5	18
		ANSI 6" B16.5 150 RF	1/2" BSPP M	1/2" BSPP F	67	fig. 1	538	211	291	44,5	48,5	33	158,5	18
1% insertion		ANSI 8" B16.5 150 RF	1/2" BSPP M	1/2" BSPP F		fig. 1				44,5	48,5	33	158,5	18
		ANSI 10" B16.5 150 RF	1/2" BSPP M	1/2" BSPP F		fig. 1				44,5	48,5	33	158,5	18
		ANSI 12" B16.5 150 RF	1/2" BSPP M	1/2" BSPP F		fig. 1				44,5	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
		ANSI 6" B16.5 150 RF	1" BSPP M	1" BSP F	88	fig. 2	662	230	400	50,5	58	45	45	24

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	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)
	4500-7500	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
	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
		ANSI 4" B16.5 150 RF	1" BSPP M	1" BSP F	50	fig. 2	533	150	250	50	58	45	45	24

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	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)
	2800-3400	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
	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
		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 Dimensional figures

For the required dimension go the section 5.

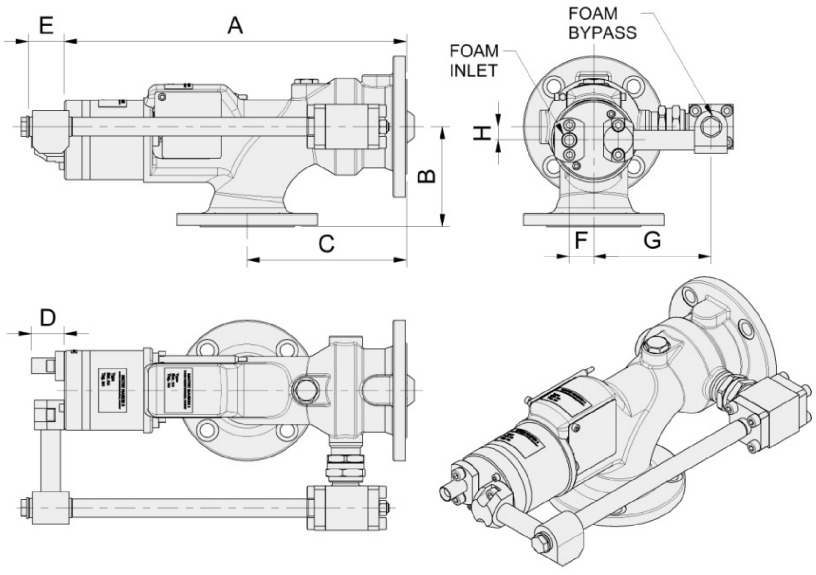

Figure 1.

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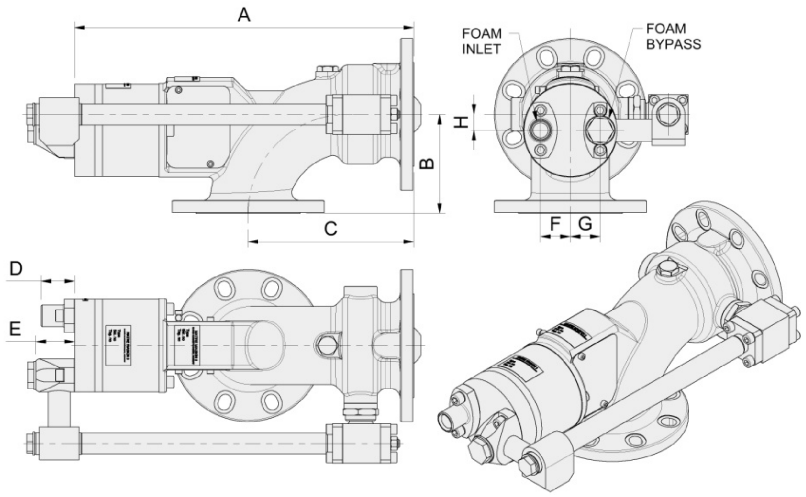


Figure 2.

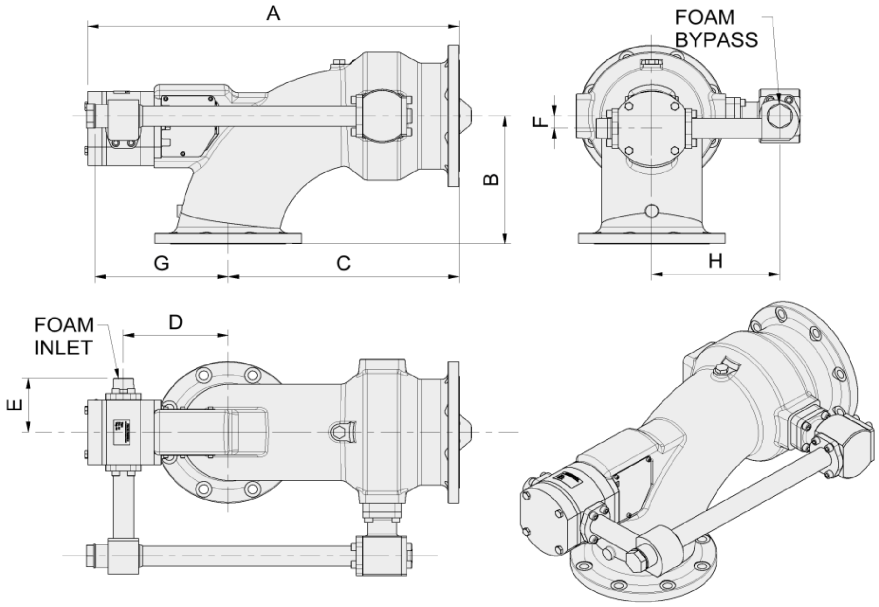
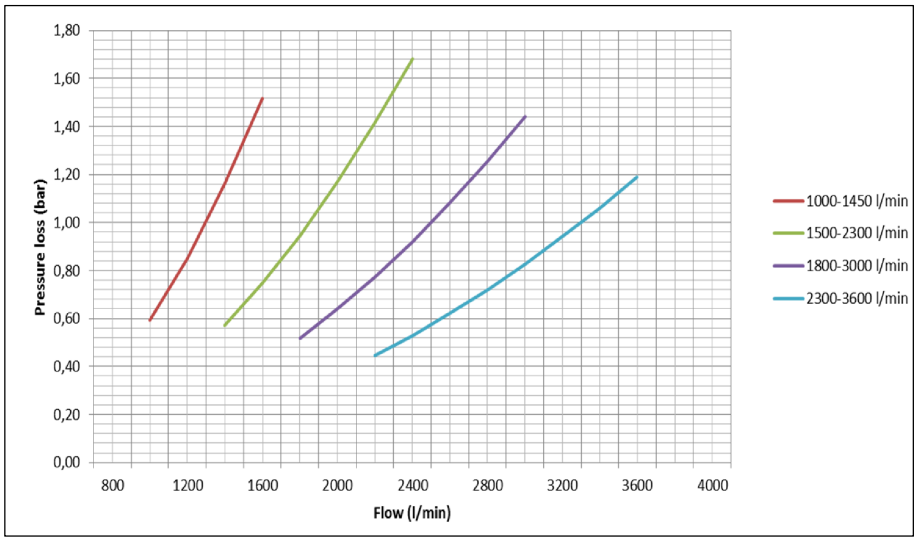


Figure 3.

7 Pressure loss data

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



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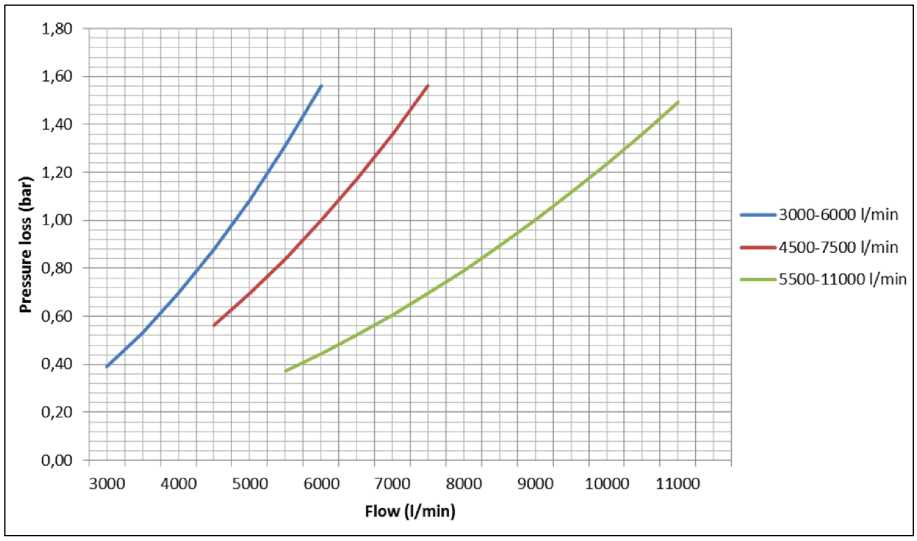
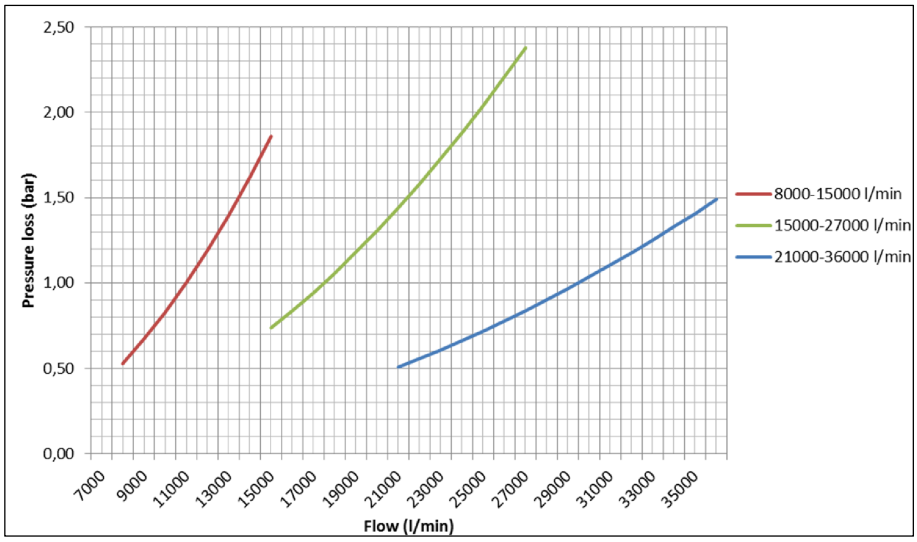
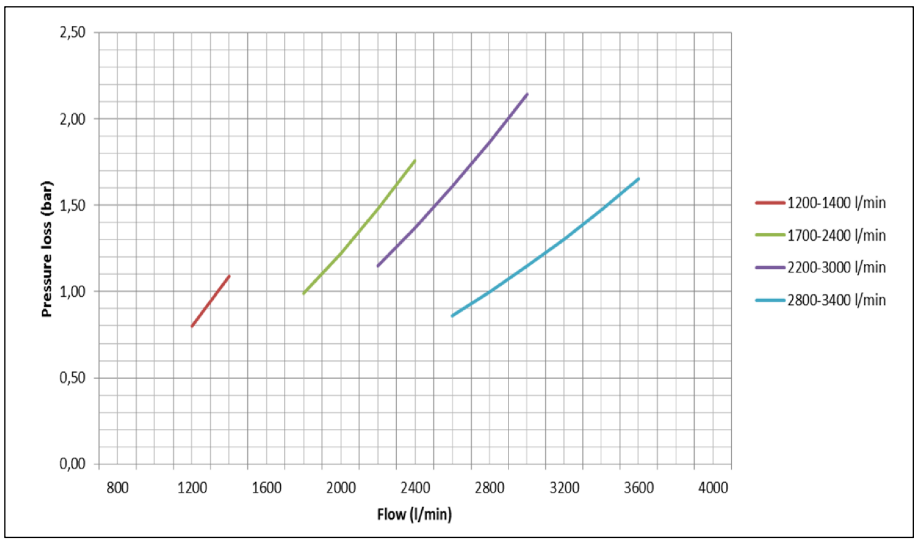




7.2 In-line Turbine pressure loss at 3% insertion rate



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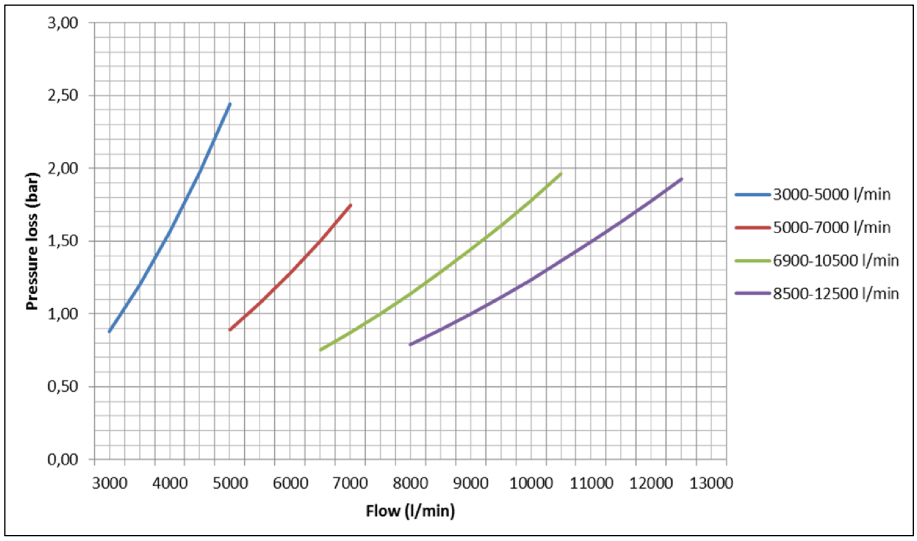

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