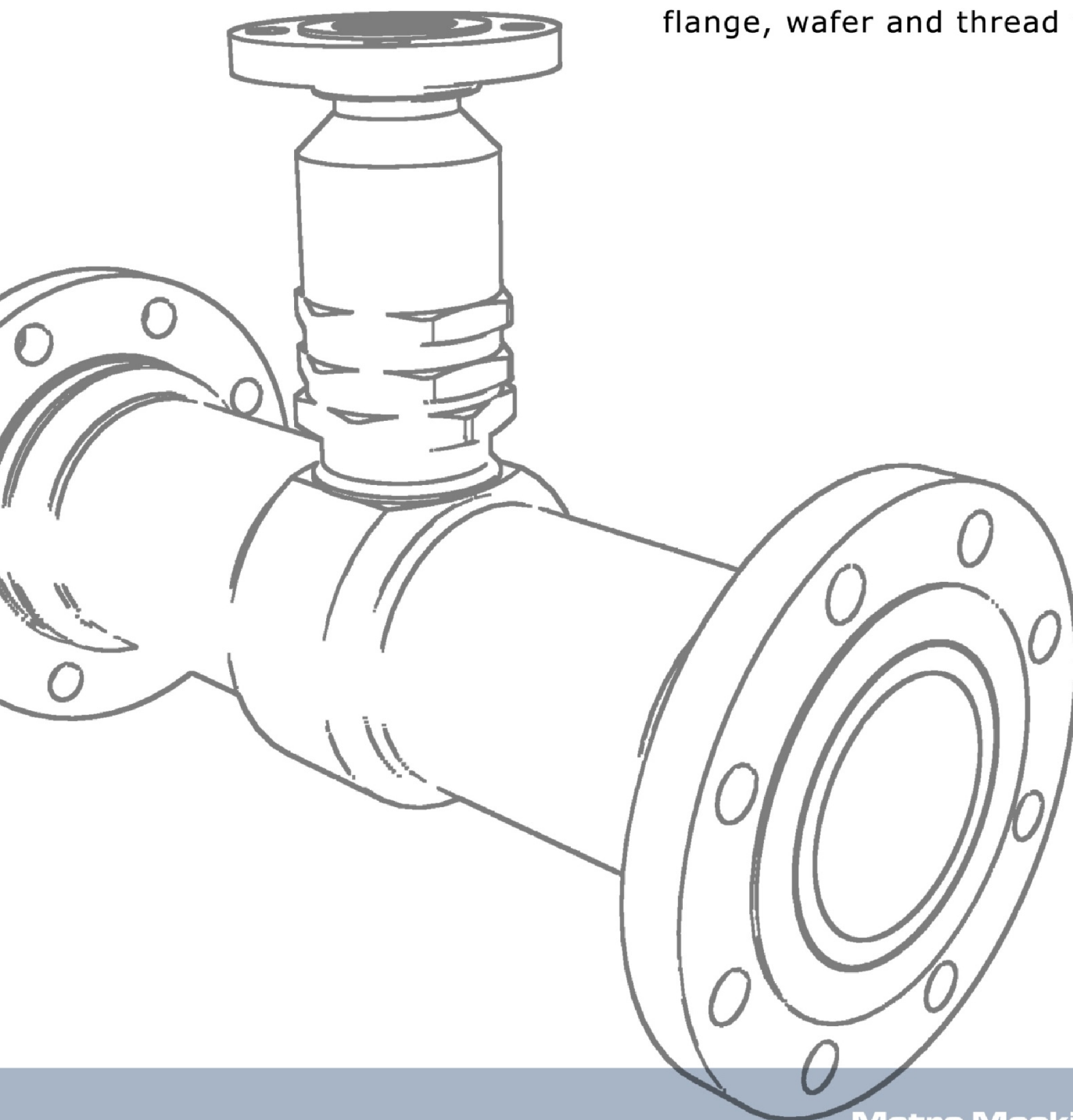


Datasheet for

MATRE INDUCTOR FOAM PROPORTIONERS

flange, wafer and thread types



Matre Maskin AS

5420 Rubbestadneset, Norway

Tel. +47 53 42 77 44

E-mail: company@matre.no

Web: www.matre.no



Datasheet for MATRE© Foam Inductors

1 Contents

2	General product description	3
3	General installation guide	3
4	Product dimensions and performance	3
4.1	Standard bronze housing design - threaded	4
4.2	Standard bronze housing design - flanged	6
4.3	Standard PN16 welded housing design - flanged	8
4.4	Standard welded housing design - flanged	10
4.5	Standard wafer design	12



2 General product description

Each inductor is customised to the client's requirements regarding flow and pressure. The principle of an inductor gives a specific characteristic for performance. No moving parts can change the performance. The inductor is therefore the most reliable insertion device possible.

Changing of inlet flow or pressure parameter will not be possible without recalculation, change of venturi nozzle dimensions accordingly and recalibration of insertion rate.

As this device sucks foam liquid from the tank by vacuum created of venturi nozzles and powered by the water flow, a minimum 30% drop of pressure over the inductor is necessary. This pressure drop must be taken into consideration during calculation of system parameters and layout both on upstream and downstream side of the inductor.

3 General installation guide

Water line must be in nominal dimension and straight length for minimum 4 x DN at inlet and at outlet 1 x DN to insure low turbulence through the inductor. Turbulence will make the inductor fail to insert foam. Flow resistance on outlet piping and nozzles must be as low as possible.

Foam suction line must be dimensioned for less than 2 m/sec foam velocity. No pipes fittings or parts with rough inside surface should be installed. Only full bore valves must be used. No strainer or other restrictions must be installed. The Normal Pressure Suction Height should be less than 0,25 bar.

Inductors can be installed both in horizontal and vertical position.

4 Product dimensions and performance

Note

In this datasheet the calculations are based on 7 bar water pressure for the dimensional criteria's. Substantial pressure difference may lead to changed dimensions.

Note that if the inlet pressure varies from 7 bar the k-factor may be limited to less than the table shows. Please contact Matre for a final confirmation.

Various choices and combinations for flow, pressures, materials, connection standards and insertion rate will influence on dimensions. Final confirmation of dimensions will therefore be given in order confirmation. Please contact Matre for further information.



4.1 Standard bronze housing design - threaded

Description

A complete bronze design with AISI 316 check valve. Design pressure 16 bar. To be calibrated to any custom required flow, pressure and insertion rate within design range.

Characteristics

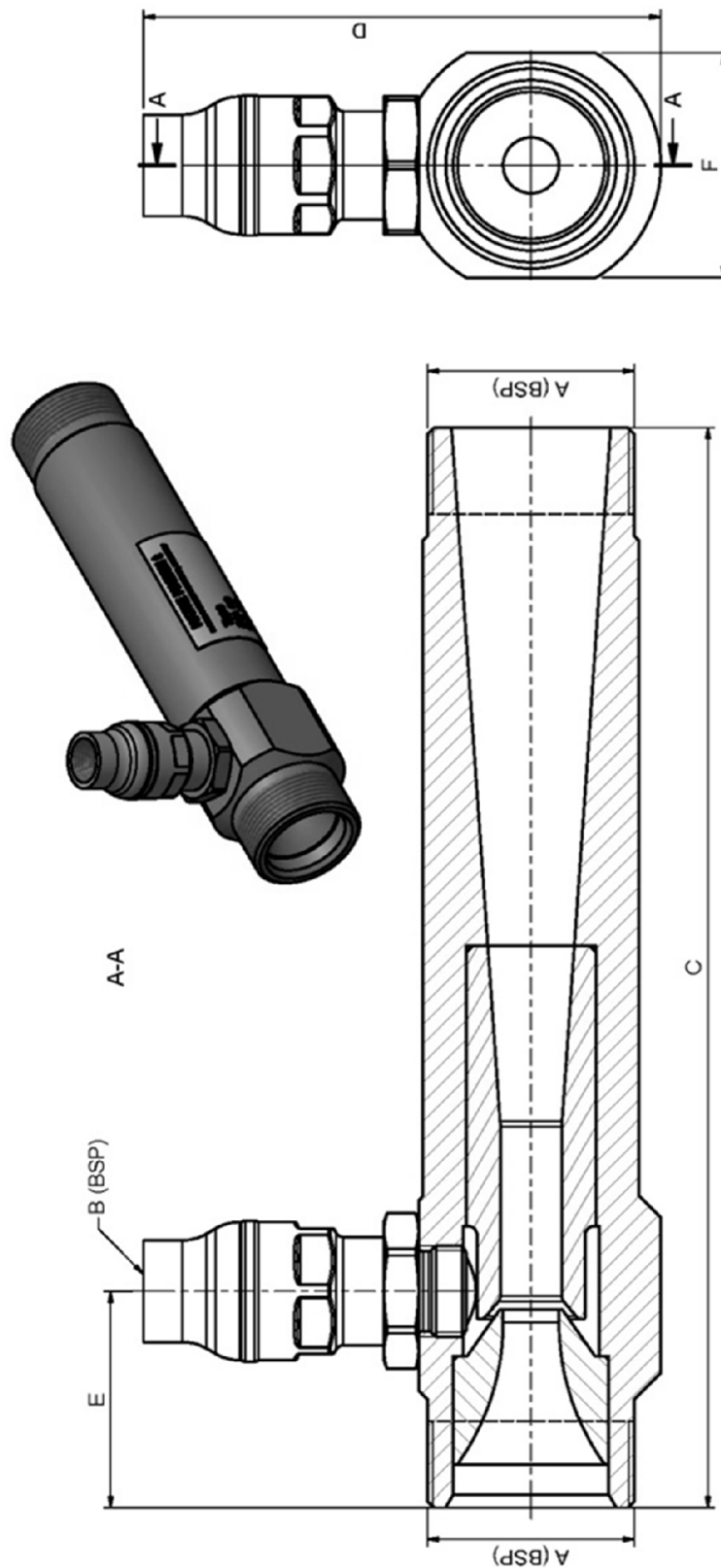
Standard

Options

Material	Housing: bronze BS 1400 LG2 Check valve: stainless steel AISI 316	BS 1400 AB2 Check valve: bronze BS 1400 AB2
Interface for water supply	BSP M	Other flange standard
Interface for foam supply	BSP F	NPT M
Design pressure	16 bar	20 bar (using bronze check valve)
Test pressure	24 bar	30 bar (using bronze check valve)
Capacity	K= 50-600	
Flow @ 7 bar	132-1587 l/min	
Insertion rate	1% or 3% (Tolerance according to NFPA 11)	6% (Tolerance according to NFPA 11)
Flow tolerance	nominal factor $\pm 5\%$	
Minimum pressure loss	30% of inlet pressure	

Model	A (Water)	B (Foam)	C (mm)	D (mm)	E (mm)	F (mm)	K- factor range	Insert. rate (%)	Weight (kg)
M-FOI15	1 1/2"	1/2"	250	113,5	50	52	50-135	1% - 3%	4
M-FOI20	2"	3/4"	300	151	63	68	135-350	1% - 3%	6,5
M-FOI30	3"	1"	390	198	85	100	150-600	1% - 3%	18

*Note that if the inlet pressure varies from 7 bar the k-factor may be limited to less than the table shows.
Please contact Matre for a final confirmation.*





4.2 Standard bronze housing design - flanged

Description

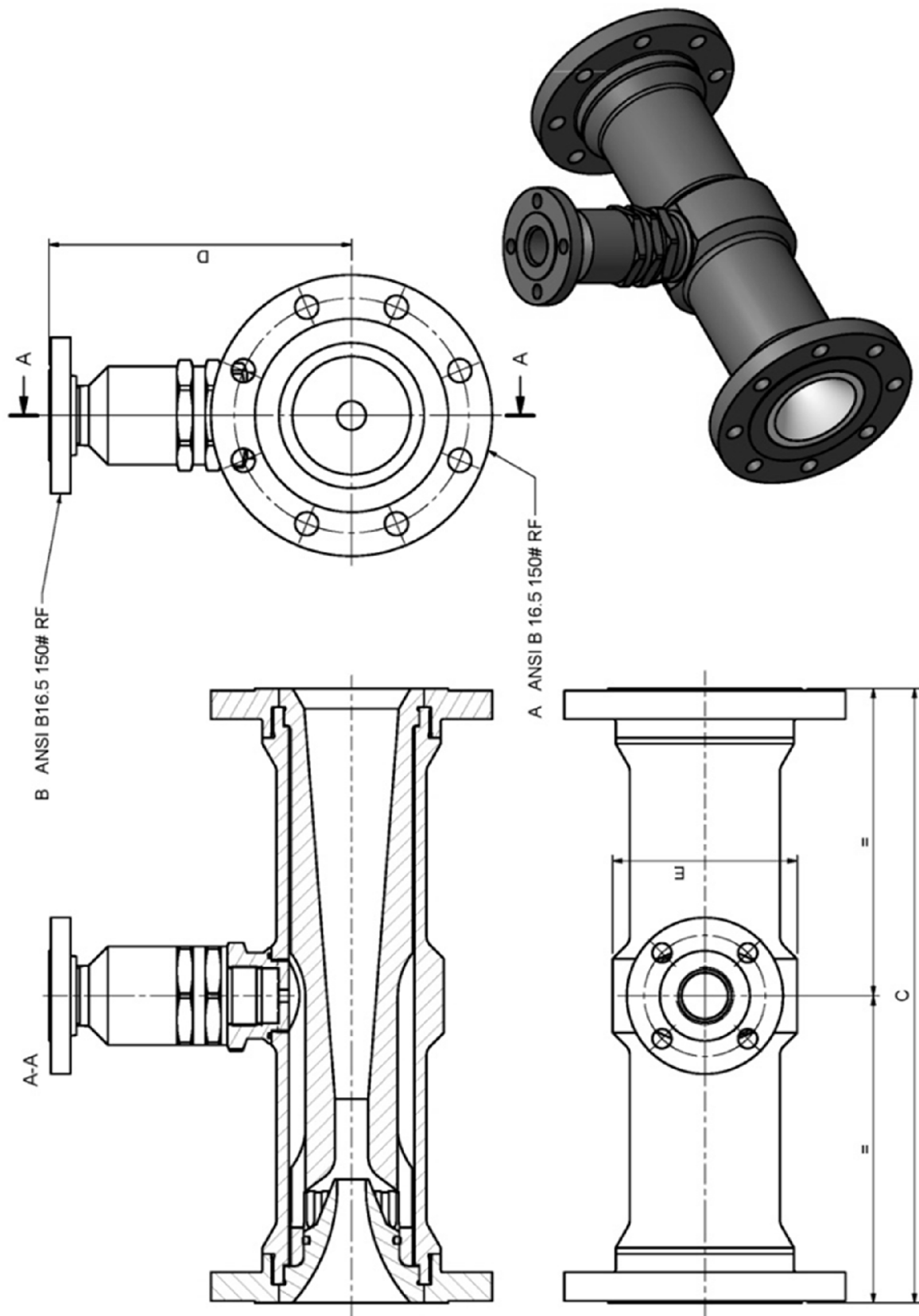
A complete bronze design with POM nozzles. To be calibrated to any custom required flow, pressure and insertion rate within design range.

Characteristics	Standard	Options
Material	Bronze BS 1400 LG2	Bronze BS 1400 AB2
Interface for water supply	ANSI B16.5 150# RF	Other flange standard
Interface for foam supply	NPT (up to foam inlet 2")	ANSI B16.5 150# RF
Design pressure	20 bar	
Test pressure	30 bar	
Capacity	K= 280 – 10500	
Flow @ 7 bar	1323-27780 l/min	
Insertion rate	1% or 3% (Tolerance according to NFPA 11)	6% (Tolerance according to NFPA 11)
Flow tolerance	nominal factor $\pm 5\%$	
Minimum pressure loss	30% of inlet pressure 35% for sizes 10" and 12"	

	Model	A (Water)	B (Foam)	C (mm)	D* (mm)	K-factor range	Weight (kg)
Insertion rate 1%	M-FOI40	4"	1 1/2"	500	246	300-1150	35
	M-FOI60	6"	2"	600	308	700-3050	63
	M-FOI80	8"	2"	800	343	1510-5480	135
	M-FOI100	10"	2"	800	365	3000-6000	215
	M-FOI120	12"	2"	1000	393	4000-8000	330
	M-FOI120	12"	3"	1000	445	4000-10500	330
Insertion rate 3%	M-FOI40	4"	1 1/2"	500	246	300-1150	35
	M-FOI60	6"	2"	600	308	700-3050	63
	M-FOI80	8"	3"	800	394	1510-5480	135
	M-FOI100	10"	3"	800	414	3000-6000	215
	M-FOI100	10"	4"	800	480	3000-6000	215
	M-FOI120	12"	3"	1000	445	4000-6000	330
	M-FOI120	12"	4"	1000	508	4000-10500	330

Tolerance on this dimension is ± 3 mm

Note that if the inlet pressure varies from 7 bar the k-factor may be limited to less than the table shows. Please contact Matre for a final confirmation.





4.3 Standard PN16 welded housing design - flanged

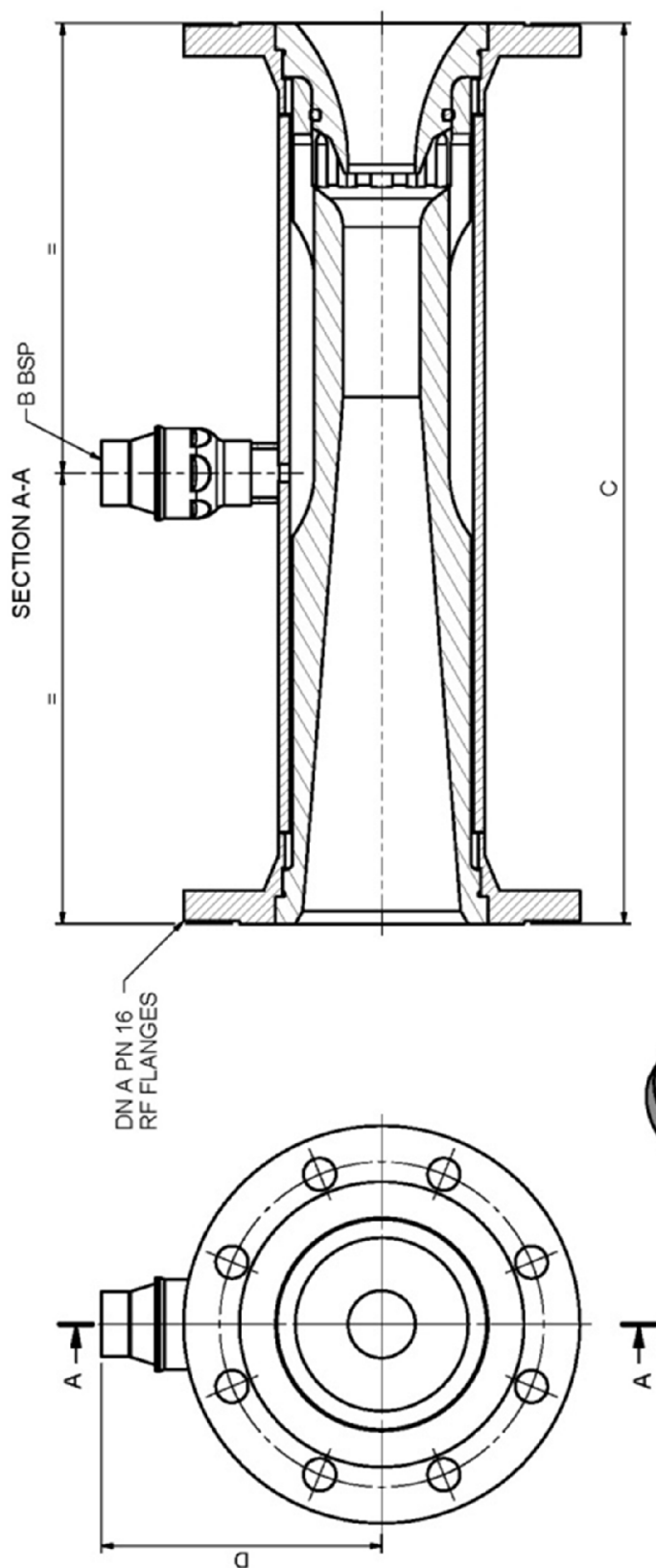
Description

A complete AISI 316 design with POM nozzles. To be calibrated to any custom required flow, pressure and insertion rate within design range.

Characteristics	Standard	Options
Material	Stainless steel AISI 316L, POM Nozzles	
Interface for water supply	DIN PN16	
Interface for foam supply	BSP F	
Design pressure	16 bar	
Test pressure	24 bar	
Capacity	K= 280 – 3050	
Flow @ 7 bar	740-7070 l/min	
Insertion rate	1% or 3% (Tolerance according to NFPA 11)	
Flow tolerance	nominal factor $\pm 5\%$	
Minimum pressure loss	30% of inlet pressure	

	Model	A (Water)	B (Foam)	C (mm)	D (mm)	K-factor range	Weight (kg)
Insertion rate 1%	M-FOIDN100	4"	1"	500	156	300-1150	19
	M-FOIDN150	6"	2"	600	231	700-3050	32
Insertion rate 3%	M-FOIDN100	4"	1"	500	156	300-600	19
	M-FOIDN100	4"	1 1/2"	500	196	300-1150	19
	M-FOIDN150	6"	2"	600	231	700-3050	32

*Note that if the inlet pressure varies from 7 bar the k-factor may be limited to less than the table shows.
Please contact Matre for a final confirmation.*





4.4 Standard welded housing design - flanged

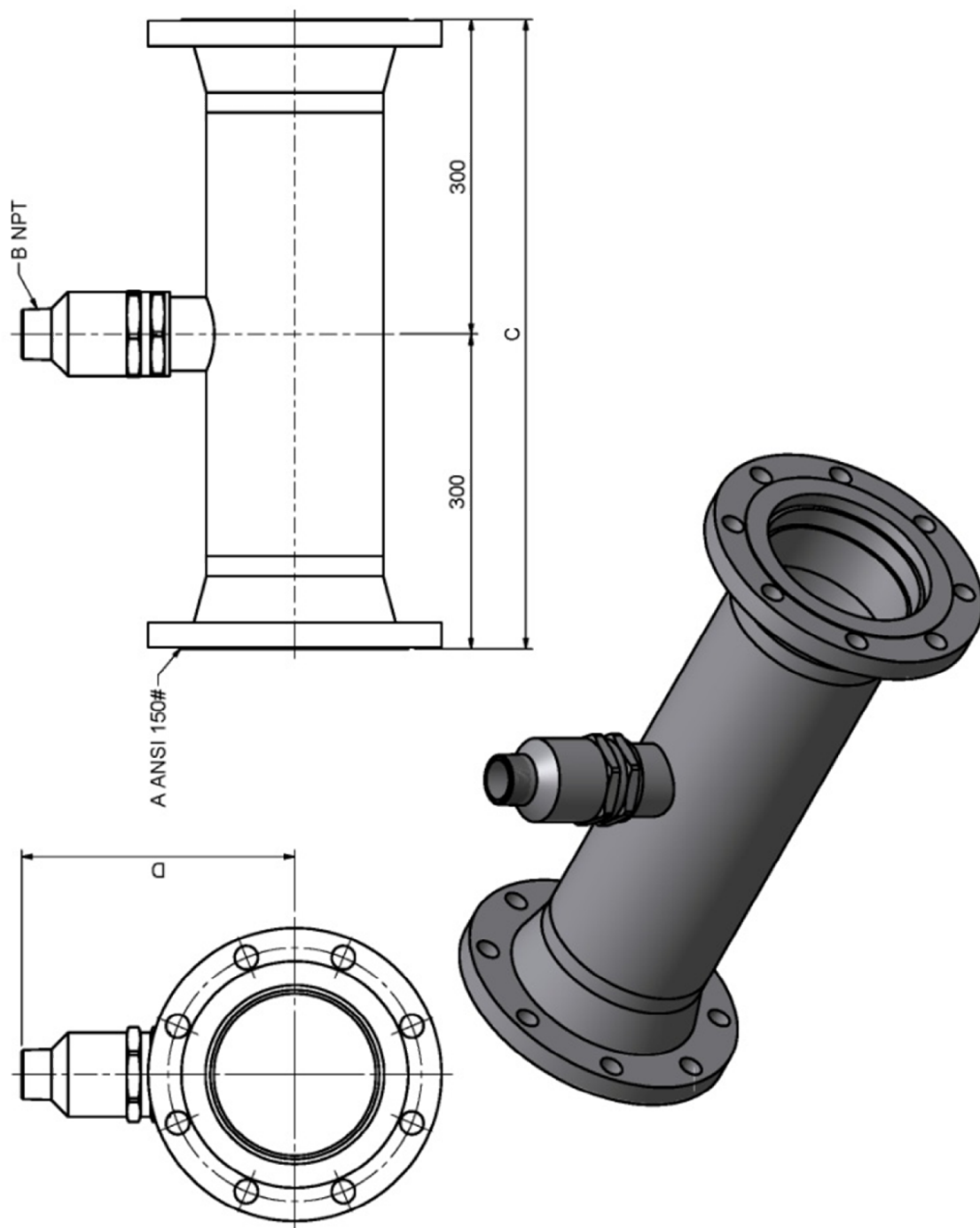
Description

A welded housing design with all pressurized parts of specified main material with POM nozzles. To be calibrated to any custom required flow, pressure and insertion rate within design range.

Characteristics	Standard	Options
Material	Stainless steel AISI 316	Titanium Gr.2, Super Duplex
Interface for water supply	ANSI B16.5 150# RF	ANSI, DIN, etc.
Interface for foam supply	NPT M (1"-2"), ANSI (3"-4")	ANSI, DIN, etc.
Design pressure	20 bar	
Test pressure	30 bar	
Capacity	K= 280 -10500	
Flow @ 7 bar	740-27780 l/min	
Insertion rate	1% or 3% (Tolerance according to NFPA 11)	6% (Tolerance according to NFPA 11)
Flow tolerance	nominal factor $\pm 5\%$	
Minimum pressure loss	30% of inlet pressure 35% for sizes 10" and 12"	

	Model	A (Water)	B (Foam)	C (mm)	D (mm)	K-factor range	Weight (kg)
Insertion rate 1%	M-FOI40	4"	1 ½"	500	246	300-1150	35
	M-FOI60	6"	2"	600	308	700-3050	63
	M-FOI80	8"	2"	800	343	1510-5480	135
	M-FOI100	10"	2"	800	365	3000-6000	215
	M-FOI120	12"	2"	1000	393	4000-8000	330
	M-FOI120	12"	3"	1000	445	4000-10500	330
Insertion rate 3%	M-FOI40	4"	1 ½"	500	246	300-1150	35
	M-FOI60	6"	2"	600	308	700-3050	63
	M-FOI80	8"	3"	800	394	1510-5480	135
	M-FOI100	10"	3"	800	414	3000-6000	215
	M-FOI100	10"	4"	800	480	3000-6000	215
	M-FOI120	12"	4"	1000	445	4000-6000	330

Note that if the inlet pressure varies from 7 bar the k-factor may be limited to less than the table shows. Please contact Matre for a final confirmation.





4.5 Standard wafer design

Description

A complete wafer housing design with POM nozzles. To be calibrated to any custom required flow, pressure and insertion rate within design range. For installation between ANSI 150 lb or DIN PN16 flanges.

Characteristics	Standard	Options
Material	Bronze BS 1400 LG2	Titanium Gr2, Super Duplex, Bronze, Bronze BS 1400 AB2, Stainless steel AISI 316
Interface for water supply	ANSI 150# / DIN PN16	
Interface for foam supply	1 x NPT M , 2 x NPT M	ANSI, DIN, etc.
Design pressure	20 bar	
Test pressure	30 bar	
Capacity	K= 80 -10500	
Flow @ 7 bar	212-27780	
Insertion rate	1% or 3% (Tolerance according to NFPA 11)	
Flow tolerance	nominal factor $\pm 5\%$	
Minimum pressure loss	30% of inlet pressure 35% for sizes 10" and 12"	

	Model	A (Water)	B (Foam)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	K-factor range	Weight Ti (kg)
Insertion rate 1%	M-FOI15	1 1/2"	1/2"	55	95	27,5	215	38	80-170	1,5
	M-FOI20	2"	3/4"	TBA	TBA	TBA	TBA	TBA	135-350	TBA
	M-FOI30	3"	1"	98	148,5	49	350	74	150-700	5
	M-FOI40	4"	1 1/2"	137	251	68,5	428	94	300-1150	11
	M-FOI60	6"	2"	155	136	77,5	620	145	700-3050	20
	M-FOI80	8"	2"	186	340	93	800	195	1510-5480	38
	M-FOI100	10"	2"	200	369	100	800	240	3000-6000	62
	M-FOI120	12"	2"	1000	TBA	TBA	TBA	TBA	4000 - 8000	TBA
Insertion rate 3%	M-FOI120	12"	2X2"	1000	TBA	TBA	TBA	TBA	4000-10500	TBA
	M-FOI15	1 1/2"	1/2"	55	95	27,5	215	38	80-170	1,5
	M-FOI20	2"	3/4"	TBA	TBA	TBA	TBA	TBA	135-350	TBA
	M-FOI30	3"	1"	98	148,5	49	350	74	150-700	5
	M-FOI40	4"	1 1/2"	137	251	68,5	428	94	300-1150	11
	M-FOI60	6"	2"	155	136	77,5	620	145	700-3050	20
	M-FOI80	8"	2X2"	186	340	93	800	195	1510-5480	40
	M-FOI100	10"	2X2"	200	369	100	800	240	3000-5480	62
	M-FOI120	12"	2x2"	1000	TBA	TBA	TBA	TBA	4000-10500	TBA

Note that if the inlet pressure varies from 7 bar the k-factor may be limited to less than the table shows. Please contact Matre for a final confirmation.

