

VAF

INSTRUMENTS



Liquid filters

Deaerators

302

Product Bulletin

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Introduction

VAF Instruments liquid filters/deaerators are used in combination with VAF flowmeters. The use of liquid filters protects downstream equipment against abrasive particles and clogging. The sturdy, compact construction and the particularly large filtering area ensure that these liquid filters are on the 'safe side' even in tough and unfavorable conditions. The design permits trouble free operation at all time and easy cleaning. The use of a deaerator tank is to prevent, especially at start up, large quantities of air or gas entering the process liquid.

Experience in flow measurement

In 1938 VAF Instruments started as a manufacturer of petrol delivery pumps. The flowmeters made by VAF Instruments for this pump had to have the highest accuracy and had to meet the demands of the board of weights and measures. Innovation and research over the past 75 years helped VAF Instruments to make new types of flowmeters bearing in mind customer requirements and the need for accurate flow measurement also in combination with liquid filters or deaerators.

Available liquid filter / deaerators

Liquid filter/deaerators are available in connection sizes from 15 mm up to 300 mm representing maximum flow ranges from 50 l/min up to 16000 l/min. Steel and stainless steel models are available.

Liquids

VAF Instruments liquid filters/deaerators are suitable for a wide range of liquids. Especially developed for filtering and deaerating of all kind of hydrocarbon liquids.

Special versions

This brochure comprises only VAF Instruments' standard delivery program. Special flowmeter variants can be offered as tailor-made solutions.



Features & benefits

Features	Benefits
Large filtering area	Extended intervals between cleaning operations Low pressure drop
ISO 9001 registered company	Assured product quality
Materials selected for high reliability of construction	Long lifetime
Designed to international CE standards	Guaranteed sturdy, compact construction
Acceptance certificates from all major classification authorities available on request	Suitable for a wide range of applications
Economically priced filter elements	Worthwhile to keep some in stock

Technical specification

Basic model number	FZ015 ¹	FZ025 ¹	FZ040 ¹	FZ050 ¹	FZ080 ¹	FZ100 ¹
Connection size	DN 15 mm (½") ²	DN 25 mm (1")	DN 40 mm (1.5")	DN 50 mm (2")	DN 80 mm (3")	DN 100 mm (4")
Connections	½" BSPF, 12/" NPT					
Pipe couplings [mm]	12, 18					
Flanges						
DIN PN [bar]	10, 16, 25, 40	16, 25, 40				
ANSI [RF]	150, 300					
JIS [K]	5, 10, 16, 20					
Materials						
Body	steel, AISI 316					
Filter element	AISI 316					
O-rings	steel filters: Viton, Viton /PFA optional; AISI 316 filters: Viton A, kalrez optional					
Mesh width	0,05 mm (50 µm; 280 mesh) 0,10 mm (100 µm; 150 mesh) 0,20 mm (200 µm; 80 mesh) the mesh size is determined by VAF Instruments based on the process data provided by the customer;					
Inlet / outlet orientation	horizontal, inlet and outlet on same level					
Max. flowrate [l/min] ³	50	160	250	500	1900	2700
Weight [kg]	3 ⁴	8	16	17	35	85
Max. operating temperature [°C]	120 (180 on request)					
Max. working pressure [bar]	40					

Notes: ¹ Z= variable, if Z = 1 body material is steel, if Z = 3 body material is AISI 316; ² Also available with DIN DN 25 flanges; ³ For liquids with high viscosities the maximum flowrate may be limited; Refer to the product bulletin of the flowmeter with which the liquid filter will be used or consult VAF Instruments. ⁴ 5 kg for filter with flanges; For filters DN 150 - 300 consult factory;

Technical specification

Pressure drop

The pressure drop across the filter must not exceed 0,8 bar (80 kPa). Higher pressure drops increase the risk of filter element failure. The pressure drop data given below are based on filter elements with the smallest mesh size available. Data for versions not shown are available on request.

Air vent/deaerator

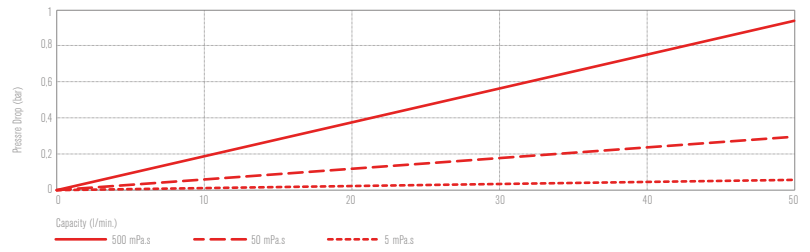
Liquid filters can optionally be provided with a top mounted air vent. The purpose of this feature is to automatically expell small to medium quantities of air or gas from the process liquid. Especially important at the initial start-up.

The air vent is not suitable for continuous venting of large quantities of air or gas. In this case a separate deaerator tank should be installed upstream of the flowmeter.

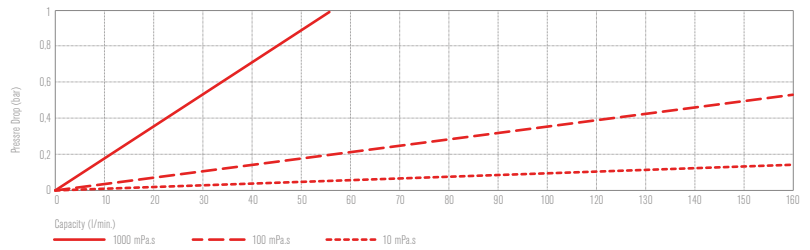
Deaerator tank

Housing	Steel
Connection size	DN 50 (2"), 80 (3"), 100 (4"), 150 (6"), 200 (8")
Flange connections	DIN PN 10, ANSI 150 RF, ANSI 300 RF
Max. working pressure [bar]	10
Vent outlet	¾" NPT

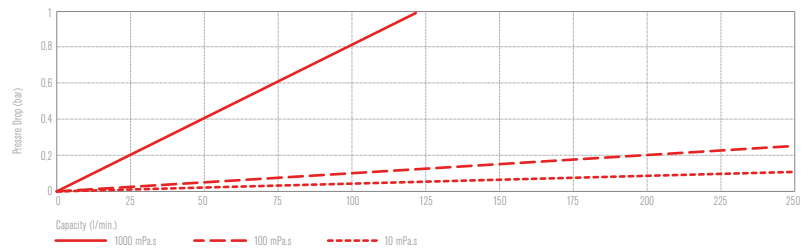
Filter DN15 (½")



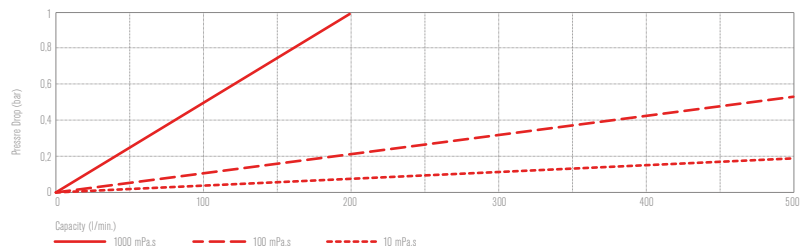
Filter DN25 (1")



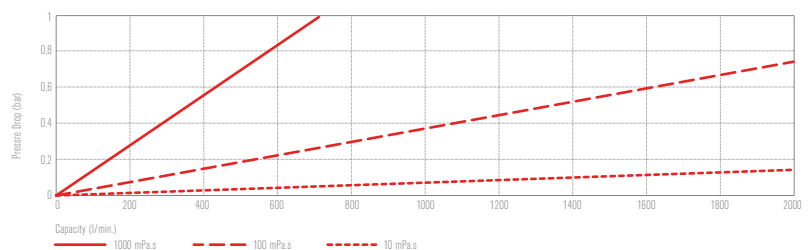
Filter DN40 (1½")



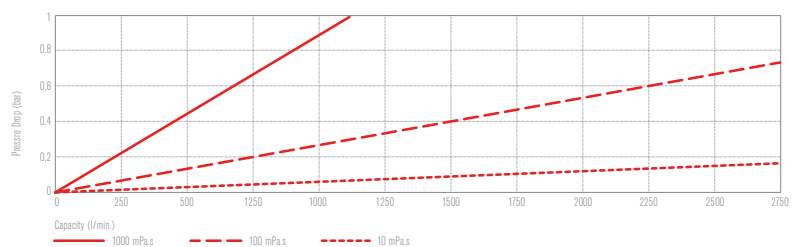
Filter DN50 (2")



Filter DN80 (3")



Filter DN100 (4")

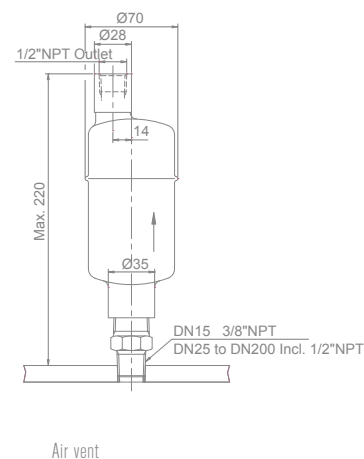


Air vent

Material		Valve set diameter		Max. working pressure	
		mm	inches	MPa	bar
Body	Stainless steel 304L	3,2	1/8	1,25	12,5
Valve and seat	Chrome-plated steel 440F	2,6	#38	2,10	21
Float and lever	Stainless steel 304L	2,0	5/64	2,80	28
Vent outlet	1/2" NPT female				
Nominal pressure rating [bar]	28 (2800 kPa)				

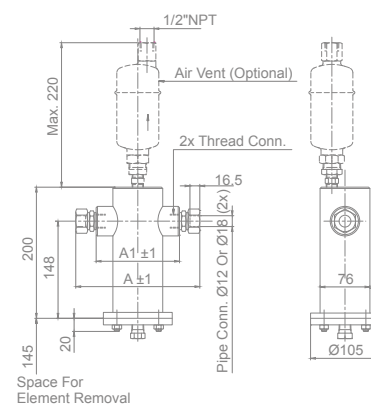
Venting capacity [Nm³/h]

System pressure		Valve seat diameter [mm]		
bar	kPa	3,2 (1/8")	2,6 (#38)	2,0 (5/64")
0,5	50	3,2	2	1,8
0,75	75	6,2	4	2,3
1	100	7,1	4,6	2,7
1,5	150	8,9	5,9	3,4
2	200	10,6	7	4,1
2,5	250	12,3	8,2	4,8
3	300	14,1	9,4	5,5
4	400	17,4	11,8	6,9
5	500	21,3	14,4	8,2
6	600	24,9	16,5	9,6
7	700	28,2	19,2	11
8	800	31,8	21,6	12
10	1000	39	26,4	15
12,5	1250	48,9	32,7	18,6
15	1500	-	38,4	22,2
20	2000	-	50,7	29,4
25	2500	-	-	36,6
28	2800	-	-	40,9
28	2800	-	-	40,9



Dimensions

Basic model no.	Body material	Type of connections	A	A1
F1015	steel	1/2" BSP female thread	-	150
F1015		12 mm pipe couplings	218	50
F1015		18 mm pipe couplings	212	150
F3015	AISI 316	1/2" BSP female thread	-	125
F3015		12 mm pipe couplings	193	125
F3015		18 mm pipe couplings	187	125
F3015		1/2" NPT female thread	-	125



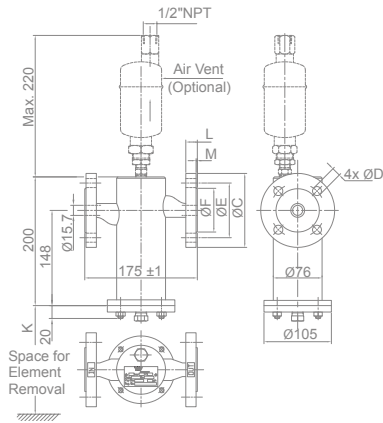
Liquid filters DN 15 (1/2") with threaded or pipe connections

Except where noted all dimensions are in millimetres.

Dimensions

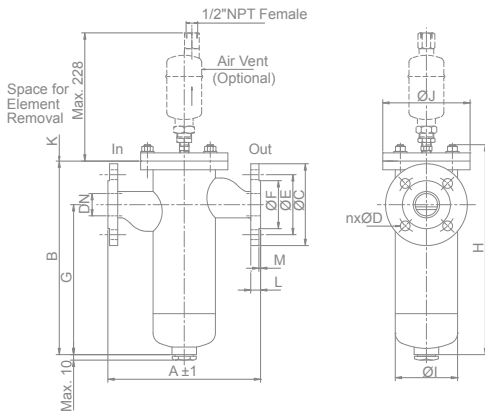
Flange dimensions refer to liquid filters with DIN PN 10 / 16 / 25 / 40 flanges.

Flange-to-flange dimensions of liquid filters with ANSI or JIS flanges are available on application. Except where noted all dimensions are in millimetres.



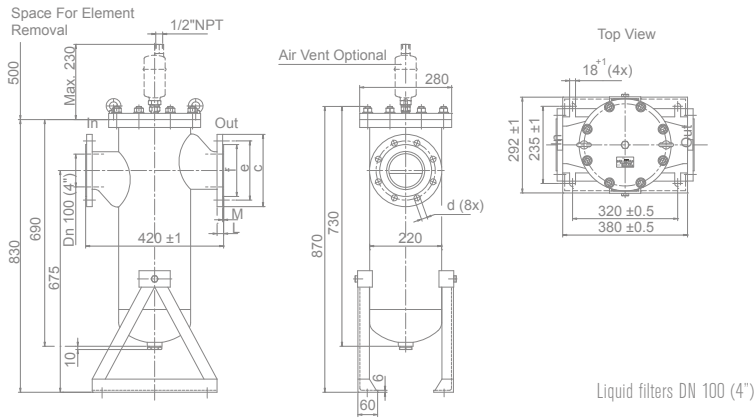
Liquid filters DN 15 (1/2") with flanged connections

Basic model no.	Body material	Flange size	C	ø D	E	F	K	L	M
F1015	steel	DN 15	95	14	65	45	145	16	2
		DN 25	115	14	85	68	145	18	2
F3015	AISI 316	DN 15	95	14	65	45	145	16	2
		DN 25	115	14	85	68	145	18	2

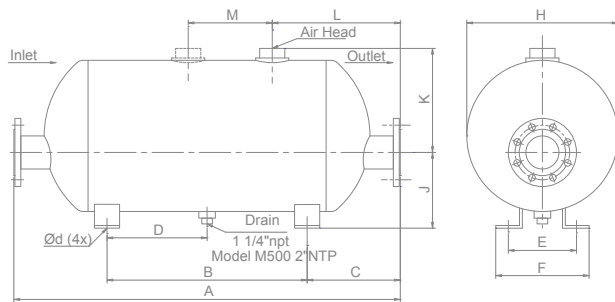


Liquid filters DN 25 (1") - DN 80 (3")

Basic model no.	Body material	Flange size	A	B	C	n x ø D	E	F	G	H	I	J	K	L	M
F1025	steel	DN 25	200	225	115	4 x 14	85	68	165	255	89	130	200	18	2
F1040		DN 40	250	355	150	4 x 18	110	88	275	385	115	160	290	18	3
F1050		DN 50	260	415	165	4 x 18	125	102	325	445	115	160	365	20	3
F1080		DN 80	330	445	200	8 x 18	160	138	335	485	168	225	300	24	3
F3025	AISI 316	DN 25	200	225	115	4 x 14	85	68	165	255	89	130	200	18	2
F3040		DN 40	280	355	150	4 x 18	110	88	275	385	115	160	290	18	3
F3050		DN 50	270	415	165	4 x 18	125	102	325	445	115	160	365	20	3
F3080		DN 80	330	445	200	8 x 18	160	138	335	485	168	225	300	24	3



Basic model no.	Body material	Flange size	C	n x ø D	E	F	L	M
F1100	steel	DN 100 PN 10/16	220	8 x 18	180	158	20	3
		DN 100 PN 25/40	235	8 x 22	190	162	24	3
F3100	AISI 316	DN 100 PN 10/16	220	8 x 18	180	158	20	3
		DN 100 PN 25/40	235	8 x 22	190	162	24	3



Deaerator tank

Basic model no.	Body material	Flange size	A	B	C	D	E	F	H	J	K	L	M	ød
M100-2	steel	DN 50	864	368	249	183	152	218	356	240	200	363	-	21
M100-3		DN 80	864	368	249	183	152	218	356	240	200	363	-	21
M200-3		DN 80	1168	605	282	302	206	282	457	290	253	396	-	21
M200-4		DN 100	1168	605	282	302	206	282	457	290	253	396	-	21
M300		DN 150	1422	737	343	368	241	305	508	315	280	417	-	21
M324		DN 150	1676	914	381	357	318	381	610	315	380	450	-	21
M400		DN 200	2134	1372	381	686	318	381	610	315	380	434	254	21
M500		DN 200	2286	1524	381	762	533	610	914	365	632	533	305	22

Quotation & ordering information

For selection of the suitable liquid filter or deaerator tank, the following data should be determined:

1. Process liquid (trade name or chemical composition):				
2. Describe nature and concentration of solids to be filtered out:				
3. Flowrate [l/min]: normal:		maximum:		
4. Operating pressure range [bar]:				
5. Allowable pressure drop [max. 0.8 bar]:				
6. Operating temperature range [°C]:				
7. Viscosity at operating conditions:				
8. Basic model number:		mesh width:		
9. Body material:	<input type="radio"/> steel	<input type="radio"/> AISI 316		
10. O-ring material:	<input type="radio"/> Viton A	<input type="radio"/> Viton A/PFA	<input type="radio"/>	
11. Connections:	<input type="radio"/> 1/2" BSPF	<input type="radio"/> pipe couplings [mm]	<input type="radio"/> NPT 1/2"	
	<input type="radio"/> DIN PN [bar]	<input type="radio"/> ANSI RF [lbs]	<input type="radio"/> JIS [K]	
12. Orientation of inlet and outlet connections:				
<input type="radio"/> inlet and outlet same level (standard)				
<input type="radio"/> high inlet, low outlet (optional on DN 150 to DN 300 models)				
13. Air vent:	<input type="radio"/> not required	<input type="radio"/> required		
14. Special certification: <input type="radio"/> inspection by classification authority:				
<input type="radio"/> EN 10204 3.1				

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Name: _____

Place and date: _____

For further information see relevant Product Bulletins or www.vaf.nl

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