

INSTRUMENT

In-Line & Tee Filter VF



In-Line & Tee Filter VF

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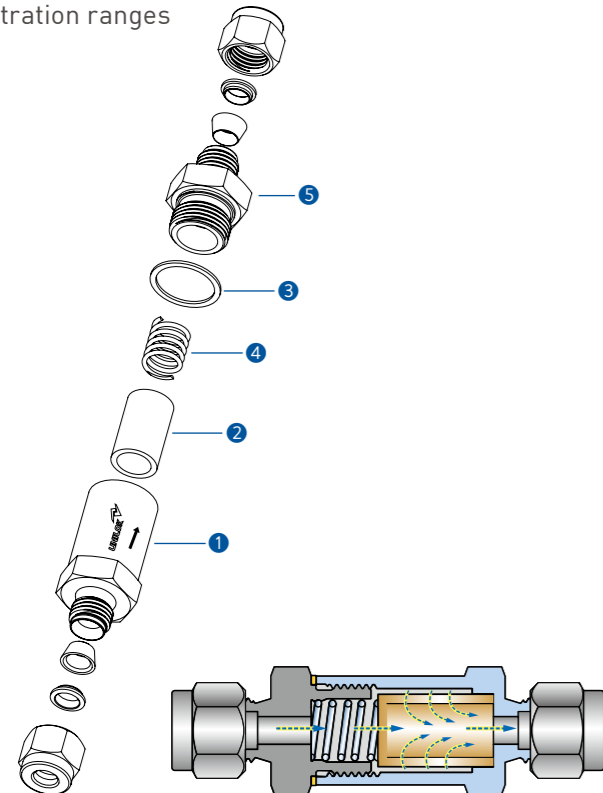
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Features

- Traps undesirable materials for protection of system components from fluid particles as well as contaminants
- Replaceable sintered 316SS filter element with micron filtering ranges - 0.5, 2, 7, 15, 60 & 90 microns
- Compact body design
- Wide choices of port sizes and end connections

VFI series In-line Filters

- Maximum working pressure up to 3000psig (206bar) at 100°F(37°C)
- For limited space and when filter element don t have to be replaced often Compact design with broaden filtration ranges

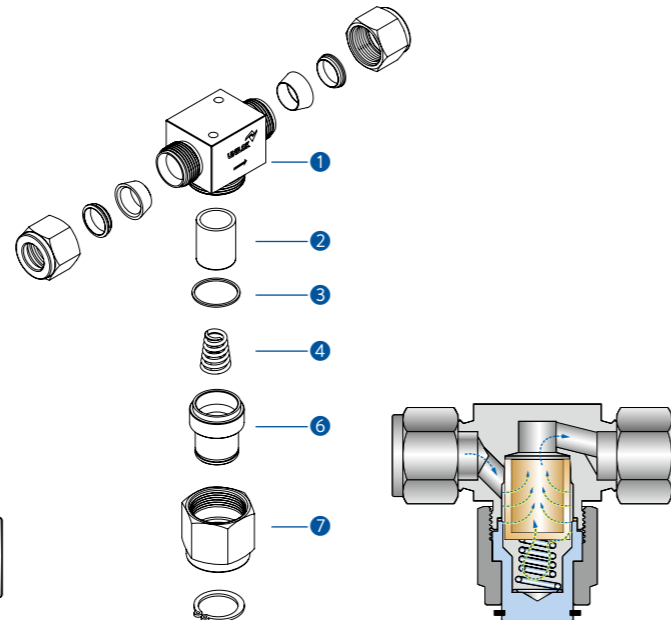


Materials of Construction

No.	Description	Materials	
		FT- T	FI - Inline
1	Body	316SS	
2	Sintered Filter	316SS	
3	Gasket	316SS plated with silver	
4	Spring	302SS	
5	Outlet Body	-	316SS
6	Bonnet	316SS	-
7	Nut	316SS	-

VFT series T Filters

- Maximum working pressure up to 6000psig (413bar) at 100°F(37°C)
- Easy replacement of filter element on-line
- Union bonnet design for safe high pressure application
- Bypass option for sampling or purging of process fluid



Definitions

Filter Element

Made of sintered stainless steel , porous with lots of tiny holes
Traps media contamination which is bigger than the porous in the filter element

Filtration Area

Actual surface area of the filter element to trap media contamination

Micron

Pore diameter of filter element or particle diameter of media contamination 1 micron = 0.001mm or 0.00004 inch

Cleaning

UNILOK filters are free from machine oils, loose particles and grease throughout the close cleaning process.

The special cleaning for high purity application is available upon request.

Important Notification

Proper installation, materials compatibility, operation and maintenance of these filters are the responsibility of the user. The total system design must be taken into consideration to ensure optimal performance and safety.

When undesirable contaminants are trapped by filter element, the system pressure build up occurs. It comes earlier when the flow volume is high and the media is not clean. In this case, the filter elements need to be replaced and clean metal components when replacement for minimal pressure drop as well as system purity.

Testing

Every VF series filter is 100% factory tested with air and nitrogen at 1000psig (69bar) to a requirement of no detectable leakage.

How To order

UNILOK VF series filters are ordered by part number as shown below.

Example: The following part number, *VFT3U-08T-SS-60-B02N* is designated for FT series filter with both 1/2 UNILOK tube fittings, 316SS, 60 micron filter element, 1/8 Female NPT by-pass option.



Thread Type Designation	
FI	In-line Filter
FT	T Filter

Connection Type	
U	UNILOK Tube Fitting
F	Female NPT or ISO7/1(PT)
M	Male NPT or ISO7/1(PT)

Body Materials	
SS	316SS
BS	Brass

Connection Size					
Fractional(Inch) Tube O.D. Designation					
Tube O.D.	inch	1/8	1/4	3/8	1/2
	mm	3.17	6.35	9.52	12.70
Designator		02T	04T	06T	08T

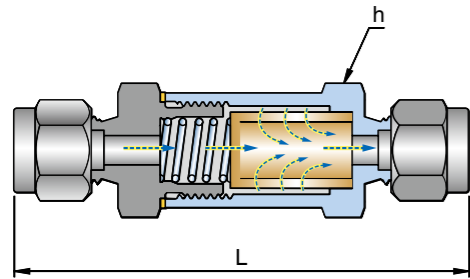
Metric Tube O.D. Designation						
Tube O.D.	mm	3	6	8	10	12
Designator		M03T	M06T	M08T	M10T	M12T

Pipe Size Designation (NPT or ISO7/1-PT)					
Pipe Size		1/8	1/4	3/8	1/2
Designator		02N/R	04N/R	06N/R	08N/R

Filtration Ranges	
Designator	Normal Micron
05	0.5
2	2
7	7
15	15
60	60
90	90

By-pass Option	
None	None
B02N	By-pass with Female 1/8"NPT
B04N	By-pass with Female 1/4"NPT

VFI series (In-line Filters)



Maximum working pressure up to 3000psig (206bar) at 100°F(37°C)
 For limited space and when filter element don't have to be replaced often
 Compact design with broaden filtration ranges

Ordering Information & Dimensions

Part Number	End Connection		Orifice (mm)	Dimensions (mm)	
	Inlet	Outlet		L	h
VFI1	U-02T-	1/8" UNILOK	2.4	59.7	14.3
	U-M03T-	3mm UNILOK		60.5	
	F-02N-	1/8" Female NPT		54.9	
VFI2	U-04T-	1/4" UNILOK	4.7	74.9	19.0
	U-M06T-	6mm UNILOK		75.2	
	F-04N-	1/4" Female NPT		72.9	
	M-04N-	1/4" Male NPT		68.3	
VFI3	U-06T-	3/8" UNILOK	7.1	81.8	25.4
	F-06N-	3/8" Female NPT		77.2	
	M-06N-	3/8" Male NPT		71.6	
VFI4	U-08T-	1/2" UNILOK	10.3	88.6	
	U-M10T-	10mm UNILOK		82.2	

ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VFI series filters. Add "R" as a suffix instead of "N"

Effective Filtration Area

Series	Effective Filtration Area	
	sq. inch	sq. meter
VFI1	0.55	0.00035
VFI2	1.30	0.00083
VFI3, VFI4	2.00	0.00128

Filter Elements & Ordering Designator

The elements can trap 95% of undesirable particles larger than the nominal pore size.

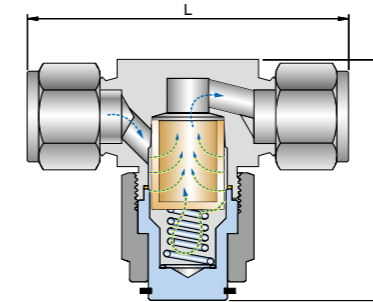
Ordering Designator	Normal Pore Size (µm)	Pore Size Range (µm)
05	0.5	0.5 ~ 2
2	2	1 ~ 4
7	7	5 ~ 10
15	15	11 ~ 25
60	60	50 ~ 75
90	90	75 ~ 100

Technical Data

Series	Max Working Pressure at 100°F(37°C)				Working Temperature Rating	
	316SS		Brass		316SS	Brass
	psig	bar	psig	bar		
VFI1	3000	206	3000	206	-20 ~ 900°F -28 ~ 482°C	-20 ~ 300°F -28 ~ 148°C
VFI2	3000	206	3000	206		
VFI3, VFI4	2500	172	2000	137		

Dimensions are for reference only and are subject to change without prior notice.

VFT series (T Filters)



Maximum working pressure up to 6000psig (413bar) at 100°F(37°C)
 Easy replacement of filter element on-line
 Union bonnet design for safe high pressure application
 Bypass option for sampling or purging of process fluid

Ordering Information & Dimensions

Part Number	End Connection		Orifice (mm)	Dimensions (mm)	
	Inlet	Outlet		L	L ₁
VFI1	U-02T-	1/8" UNILOK	4.4	57.7	47.5
	U-04T-	1/4" UNILOK		62.7	
	U-M06T-	6mm UNILOK		62.5	
	F-02N-	1/8" Female NPT		50.8	
	F-04N-	1/4" Female NPT		54.1	
	M-02N-	1/4" Male NPT		54.1	
VFI2	U-06T-	3/8" UNILOK	5.4	72.1	56.0
	M-08N-	8mm UNILOK		72.1	
VFI3	U-08T-	1/2" UNILOK	6.4	77.2	56.0
	U-M10T-	10mm UNILOK		72.6	
	U-M12T-	12mm UNILOK		77.2	
	M-06N-	3/8" Male NPT		60.5	
	M-08N-	1/2" Male NPT		69.9	

ISO7/1 Tapered Threads (PT) are available for all fractional sizes of VFT series filters. Add "R" as a suffix instead of "N".

Filter Elements & Ordering Designator

The elements can trap 95% of undesirable particles larger than the nominal pore size.

Ordering Designator	Normal Pore Size (µm)	Pore Size Range (µm)
05	0.5	0.5 ~ 2
2	2	1 ~ 4
7	7	5 ~ 10
15	15	11 ~ 25
60	60	50 ~ 75
90	90	75 ~ 100

Technical Data

Series	Max Working Pressure at 100°F(37°C)				Working Temperature Rating	
	316SS		Brass		316SS	Brass
	psig	bar	psig	bar		
VFT1, VFT2	6000	413	2000	137	-20 ~ 900°F -28 ~ 482°C	-20 ~ 300°F -28 ~ 148°C
VFI3						

Dimensions are for reference only and are subject to change without prior notice.

Flow Data at 70°F(21°C) VFI series In-line Filters

Nominal Element Pore Size (µm)	Inlet Pressure psig/bar									Pressure Drop psig/bar								
	5psig/0.34bar			10psig/0.68bar			15psig/1.00bar			10psig/0.68bar			50psig/3.40bar			100psig/6.80bar		
	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm
	Air Flow, L/min									Water Flow, L/min								
0.5	1.1	3.4	10	1.7	7.3	24	3.4	13	45	0.03	0.15	0.34	0.15	0.64	1.5	0.45	1.0	2.8
2	5.6	17	39	11	39	79	17	65	110	0.30	0.90	0.98	0.91	3.2	4.1	1.5	4.9	6.0
7	14	39	51	25	82	119	34	130	190	0.37	1.5	2.4	1.1	4.9	8.3	1.8	7.5	13
15	22	34	51	36	82	130	42	130	220	0.45	1.8	3.1	1.3	4.9	9.8	2.1	7.9	15
60	48	87	140	62	160	280	68	240	420	0.56	3.4	7.5	1.8	12	25	2.6	17	37
90	51	110	170	62	210	310	73	280	450	0.75	4.5	8.7	1.8	15	28	2.2	23	41

VFT series T Filters

Nominal Element Pore Size (µm)	Inlet Pressure psig/bar									Pressure Drop psig/bar								
	5psig/0.34bar			10psig/0.68bar			15psig/1.00bar			10psig/0.68bar			50psig/3.40bar			100psig/6.80bar		
	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm	1/8 3mm	1/4 6mm	3/8,1/2 10,12mm
	Air Flow, L/min									Water Flow, L/min								
0.5	1.1	3.4	10	1.7	7.3	24	3.4	13	45	0.15	0.15	0.34	0.64	0.64	1.5	1.0	1.0	2.8
2	5.6	17	39	11	39	79	17	65	110	0.30	0.90	0.98	0.90	3.2	4.1	1.5	4.9	6.0
7	14	39	51	25	82	119	34	130	190	0.37	1.5	2.4	1.1	4.9	8.3	1.8	7.5	13
15	22	34	51	36	82	130	42	130	220	0.45	1.8	3.1	1.3	4.9	9.8	2.1	7.9	15
60	48	87	140	62	160	280	68	240	420	0.56	3.0	5.6	1.8	10	18	2.6	14	25
90	51	110	170	62	210	310	73	280	450	0.75	4.1	6.4	1.8	12	20	2.2	18	28