



INSTRUMENTATION

MICRON IN-LINE & TEE FILTERS

VFI & VFT Series

www.unilok.com



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

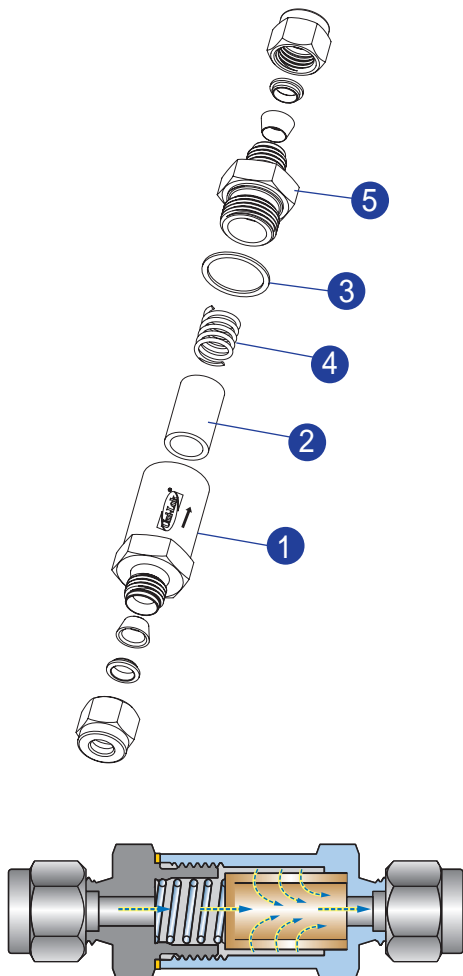
Wide choices of port sizes and end connections

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 | - |

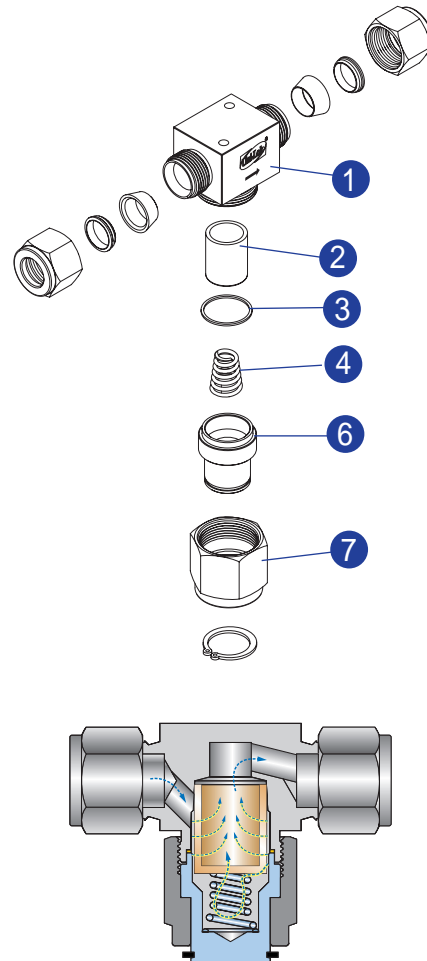
VFT series T Filters

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

Uni-Lok 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.

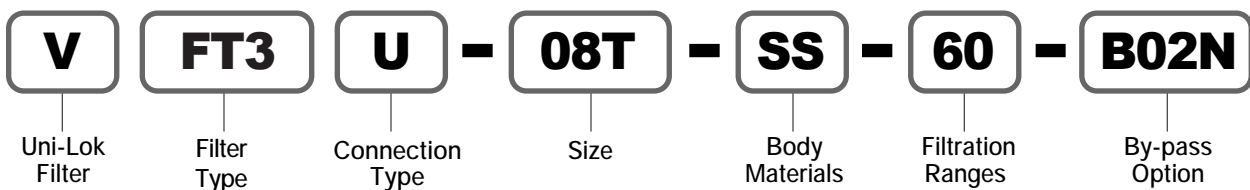
Testing

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

Uni-Lok VF series filters are ordered by part number as shown as below.

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



| Filter Type | |
|-------------|----------------|
| FI | In-line Filter |
| FT | T Filter |

| Connection Type | |
|-----------------|--------------------------|
| U | Uni-Lok Tube Fitting |
| F | Female NPT or ISO7/1(PT) |
| M | Male NPT or ISO7/1(PT) |

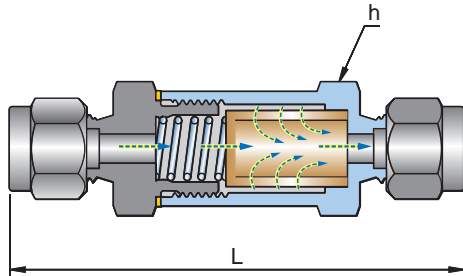
| Body Materials | |
|----------------|-------|
| SS | 316SS |
| BS | Brass |

| Connection Type | | | | | | |
|--|------------|-------|-------|-------|-------|------|
| 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 | Norminal 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 |
| VF11 | U-02T- | 1/8" Uni-Lok | 2.4 | 59.7 | 14.3 |
| | U-M03T- | 3mm Uni-Lok | | 60.5 | |
| | F-02N- | 1/8" Female NPT | | 54.9 | |
| VF12 | U-04T- | 1/4" Uni-Lok | 4.7 | 74.9 | 19.0 |
| | U-M06T- | 6mm Uni-Lok | | 75.2 | |
| | F-04N- | 1/4" Female NPT | | 72.9 | |
| | M-04N- | 1/4" Male NPT | | 68.3 | |
| VF13 | U-06T- | 3/8" Uni-Lok | 7.1 | 81.8 | 25.4 |
| | F-06N- | 3/8" Female NPT | | 77.2 | |
| | M-06N- | 3/8" Male NPT | | 71.6 | |
| VF14 | U-08T- | 1/2" Uni-Lok | 10.3 | 86.9 | |
| | U-M10T- | 10mm Uni-Lok | | 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 |
| VF11 | 0.55 | 0.00035 |
| VF12 | 1.30 | 0.00083 |
| VF13, VF14 | 2.00 | 0.00128 |

Filter Elements & Ordering Designator

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

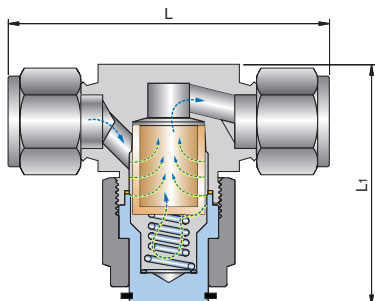
| Ordering Designator | Normal Pore Size (µm) | Pore Size Range (µm) |
|---------------------|-----------------------|----------------------|
| 05 | 0.5 | 0.5 ~ 2 |
| 2 | 2 | 1 ~ 4 |
| 7 | 7 | 5 ~ 10 |
| 15 | 15 | 11 ~ 25 |
| 60 | 60 | 50 ~ 75 |
| 90 | 90 | 75 ~ 100 |

Technical Data

| Series | Max Working Pressure at 100° F(37° C) | | | | Working Temperature Rating | |
|------------|---------------------------------------|-----|-------|-----|----------------------------|----------------------------|
| | 316SS | | Brass | | 316SS | Brass |
| | psig | bar | psig | bar | | |
| VF11 | 3000 | 206 | 3000 | 206 | -20 ~ 900°F -28 ~ 482°C | -20 ~ 300°F -28 ~ 148°C |
| VF12 | 3000 | 206 | 3000 | 206 | | |
| VF13, VF14 | 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 |
| VFT1 | U-02T- | 1/8" Uni-Lok | 4.4 | 57.7 | 47.5 |
| | U-04T- | 1/4" Uni-Lok | | 62.7 | |
| | U-M06T- | 6mm Uni-Lok | | 62.5 | |
| | F-02N- | 1/8" Female NPT | | 50.8 | |
| | F-04N- | 1/4" Female NPT | | 54.1 | |
| | M-04N- | 1/4" Male NPT | | 54.1 | |
| VFT2 | U-06T- | 3/8" Uni-Lok | 5.4 | 72.1 | 56.0 |
| | U-M08T- | 8mm Uni-Lok | | 72.1 | |
| VFT3 | U-08T- | 1/2" Uni-Lok | 6.4 | 77.2 | 56.0 |
| | U-M10T- | 10mm Uni-Lok | | 72.6 | |
| | U-M12T- | 12mm Uni-Lok | | 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".

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 | -20 ~ 300° F |
| VFT3 | | | | | -28 ~ 482° C | -28 ~ 148° C |

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 |

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 (β _n) | 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 | 1/4 | 3/8,1/2 | 1/8 | 1/4 | 3/8,1/2 | 1/8 | 1/4 | 3/8,1/2 | 1/8 | 1/4 | 3/8,1/2 | 1/8 | 1/4 | 3/8,1/2 | 1/8 | 1/4 | 3/8,1/2 |
| | 3mm | 6mm | 10,12mm | 3mm | 6mm | 10,12mm | 3mm | 6mm | 10,12mm | 3mm | 6mm | 10,12mm | 3mm | 6mm | 10,12mm | 3mm | 6mm | 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 (β _n) | 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 | 1/4 | 3/8,1/2 | 1/8 | 1/4 | 3/8,1/2 | 1/8 | 1/4 | 3/8,1/2 | 1/8 | 1/4 | 3/8,1/2 | 1/8 | 1/4 | 3/8,1/2 | 1/8 | 1/4 | 3/8,1/2 |
| | 3mm | 6mm | 10,12mm | 3mm | 6mm | 10,12mm | 3mm | 6mm | 10,12mm | 3mm | 6mm | 10,12mm | 3mm | 6mm | 10,12mm | 3mm | 6mm | 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 |

Uni-Lok Line up

Instrumentation

Fittings



- Tube Fittings
- PTFE Fittings
- Hose & Push-On Connectors
- Precision Pipe Fittings
- Fusible Connectors
- Dielectric Fittings

Valves



- VB1 series
 - VB2 series
 - VB3 series
 - VB6B series
 - VB6F series
 - VB6T series
 - VP series
 - VN5 series
 - VN6 series
 - VU6 series
 - VMT series
 - VM series
 - VG series
 - VL series
 - VD series
 - VC series
 - VR series
 - VE series
 - VF series
 - VPR series
 - VBR series
- Precision & Clean Ball Valves
Swing-Out Ball Valves
Instrumentation Ball Valves
High Pressure Bar Stock Ball Valves
High Pressure Forged Ball Valves
Trunnion Ball Valves
Plug Valves
- Integral Bonnet Forged Needle Valves
High Pressure Bar Stock Needle Valves
Union Bonnet Valves
Metering Valves
- Instrumentation Manifolds Valves
Gauge & Gauge Root Valves
Bleed Valves
- Double Block and Bleed Valves
- General & High Pressure Relief Valves
Low & High Pressure Relief Valves
Industrial Excess Flow Valves
- T & In-Line Filters
Pressure Reducing Valves
Back Pressure Regulators

Others

- Seamless & Welded Tubing
- Condensate Pots

UHP(Ultra High Purity)

Fittings



- Weld & Metal Face Seal Fittings
- Pipe & Tube Fittings
- Flanges
- Cylinder Connectors

Valves



- VCD series
- VCB series
- VCC series
- Diaphragm Valves
- Bellows Valves
- Welded Check Valves

*CONNECTS THE WORLD SINCE 1984
WITH THE SAME ATTITUDE
OF THE TIME OF BEGINNING*



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