

Introduction

Parker FT Series Tee Filters are designed for protection of instrumentation systems from undesirable materials. Component changes or repair and maintenance can admit dirt, chips, or other contaminants to the small bore tubing.

Features

- ▶ Filter element replacement achievable without removing filter from installation
- ▶ Compact, high strength forged body design with effective filtration areas of:
 - FT4 – 1.57 sq in (1013 sq mm)
 - FT8 – 2.53 sq in (1632 sq mm)
- ▶ Stainless steel and brass construction
- ▶ Standard sintered metal micron ratings: 1, 5, 10, 50, and 100
- ▶ Optional 250 and 450 micron wire cloth filter elements
- ▶ Optional bypass enables a continuous self cleaning flow around the element
- ▶ Port connections include male and female NPT, CPI™, A-LOK®, and VacuSeal

Specifications

• Pressure Ratings:

With Elastomeric and Metallic Seals:

Stainless Steel6000 psig (414 bar) CWP

Brass.....2000 psig (138 bar) CWP

With PTFE Seals:

Stainless Steel4000 psig (276 bar) CWP

Brass.....2000 psig (138 bar) CWP

Pressure Rating and Tubing Selection:

For working pressures of A-LOK® and CPI™ tube connections, please see the Instrument Tubing Selection Guide (Bulletin 4200-TS), found in the Technical Section of the Parker Instrumentation Process Control Binder, or the Parker Instrument Tube Fitting Installation Manual (Bulletin 4200-B4).

For working pressures of valves with external or internal pipe threads, please see Catalog 4260, Instrumentation Pipe Fittings.

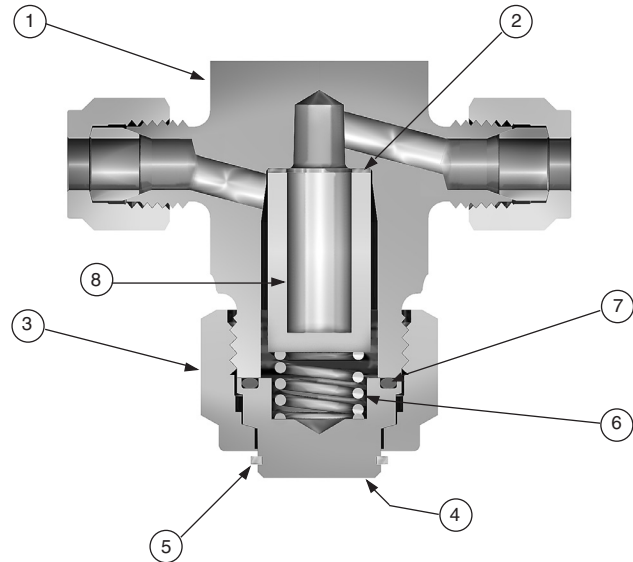
Definitions

Filter Element – The component within the filter which captures media contamination.

Filtration Area – The surface area of the filter element available to capture contamination.

Micron – A unit of measure used to indicate the mean pore diameter of the filter element or the mean particle diameter of media contamination.

One micron = 0.00004 inch or 0.0010 mm



Model Shown: 4Z-FT4-10-BN-SS

Materials of Construction

Item #	Part	Stainless Steel Filter	Brass Filter
1	Body	ASTM A182, Type F316	ASTM B283, Alloy C37700
2	Washer	316 Stainless Steel	
3	Nut	ASTM A479, Type 316	ASTM B16, Alloy C36000
4	Cap	ASTM A479, Type 316	ASTM B16, Alloy C36000
5	Retainer Ring	PH 15-7 Mo Stainless Steel	
6	Spring	316 Stainless Steel	
7	Seal	Fluorocarbon Rubber	
8	Element	316 Stainless Steel	

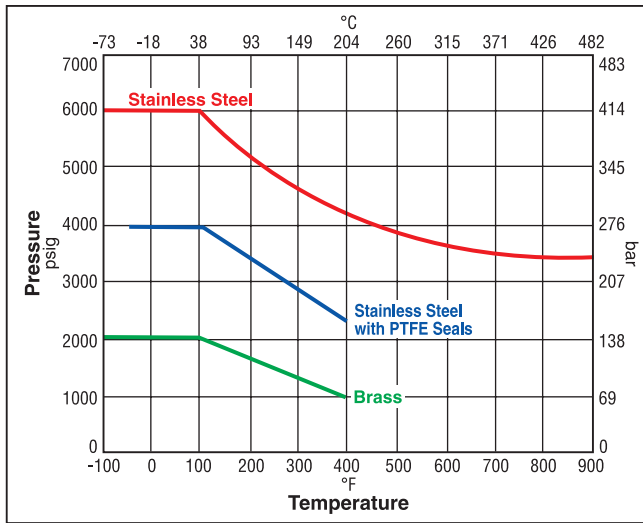
* Optional seal materials are available. See How to Order section.
Lubrication: Perfluorinated Polyether.

Installation

Best installation practice is to orient the cap downward. This helps to prevent contaminants from entering the system during element change.

Pressure vs. Temperature

Nitrile Seat



Note: This Pressure versus Temperature chart reflects the maximum temperature range of indicated body materials.

The temperature rating of the seal becomes the limiting factor on temperature range.

Temperature Ratings:

- Nitrile Rubber..... -40°F to 275°F (-40°C to 135°C)
- Highly Fluorinated Fluorocarbon Rubber
..... -20°F to 500°F (-29°C to 260°C)
- Ethylene Propylene Rubber
..... -70°F to 300°F (-57°C to 149°C)
- Fluorocarbon Rubber..... -40°F to 400°F (-40°C to 204°C)
- Neoprene Rubber..... -65°F to 300°F (-54°C to 149°C)
- Silver Plated Nickel Alloy Gasket (C-ring)
..... -100°F to 900°F (-73°C to 482°C)
- PTFE -70°F to 400°F (-56°C to 204°C)

Note: To determine MPa, multiply bar by 0.1

Flow Calculations with 100 psig (7 bar) Inlet Pressure

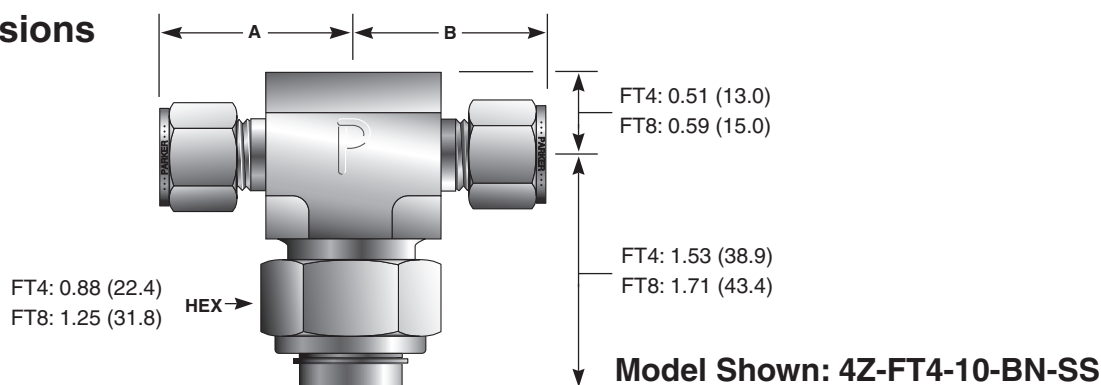
Pressure Drop		FT4				FT8			
ΔP psig	ΔP bar	Water gpm at 60°F (16°C)	Water m³/hr at 60°F (16°C)	Air SCFM at 60°F (16°C)	Air m³/hr at 60°F (16°C)	Water gpm at 60°F (16°C)	Water m³/hr at 60°F (16°C)	Air SCFM at 60°F (16°C)	Air m³/hr at 60°F (16°C)
		1 Micron				1 Micron			
5	0.35	0.16	0.04	1.69	2.68	0.28	0.06	2.89	4.58
10	0.69	0.23	0.05	2.35	3.72	0.39	0.09	4.02	6.36
50	3.45	0.51	0.12	4.63	7.18	0.87	0.20	7.91	12.26
		5 Micron				5 Micron			
5	0.35	0.35	0.08	3.68	5.84	0.77	0.17	8.05	12.76
10	0.69	0.50	0.11	5.13	8.12	1.08	0.25	11.21	17.74
50	3.45	1.11	0.25	10.10	15.65	2.43	0.55	22.07	34.19
		10 Micron				10 Micron			
5	0.35	0.44	0.10	4.57	7.26	0.94	0.21	9.90	15.70
10	0.69	0.62	0.14	6.37	10.09	1.33	0.30	13.79	21.83
50	3.45	1.38	0.31	12.55	19.44	2.98	0.68	27.15	42.07
		50 Micron				50 Micron			
5	0.35	0.52	0.12	5.42	8.59	0.99	0.23	10.42	16.52
10	0.69	0.73	0.17	7.55	11.95	1.40	0.32	14.51	22.97
50	3.45	1.63	0.37	14.86	23.03	3.14	0.71	28.57	44.26
		100 Micron				100 Micron			
5	0.35	0.65	0.15	6.78	10.75	1.64	0.37	17.22	27.31
10	0.69	0.91	0.21	9.45	14.95	2.32	0.53	23.99	37.97
50	3.45	2.04	0.46	18.60	28.81	5.19	1.18	47.23	73.17
		250 Micron				250 Micron			
5	0.35	1.14	0.26	11.94	18.92	1.74	0.40	18.22	28.88
10	0.69	1.62	0.37	16.56	26.17	2.47	0.56	25.28	39.95
50	3.45	3.61	0.82	31.30	48.07	5.52	1.25	47.78	73.37
		450 Micron				450 Micron			
5	0.35	1.23	0.28	12.84	20.35	1.88	0.43	19.64	31.13
10	0.69	1.74	0.39	17.82	28.17	2.66	0.60	27.27	43.10
50	3.45	3.88	0.88	33.92	52.16	5.94	1.35	51.89	79.81

Flow / Filter Data

Filter Series	Effective Filtration Area		C_V^*						
	sq in	sq mm	1 Micron	5 Micron	10 Micron	50 Micron	100 Micron	250 Micron	450 Micron
			Micron Range .5 to 3	Micron Range 5 to 10	Micron Range 10 to 20	Micron Range 40 to 50	Micron Range 100 to 150	Micron Range 225 to 275	Micron Range 400 to 500
FT4	1.57	1012	0.072	0.157	0.195	0.231	0.289	0.511	0.549
FT8	2.53	1632	0.123	0.343	0.422	0.444	0.734	0.780	0.840

* Tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = x_T$.
 $x_T = 1.0$ for micron sizes 1 through 100; 0.78 for the 250 micron size, and 0.81 for the 450 micron size.

Dimensions



Dimensions in inches (millimeters) are for reference only, subject to change.

Basic Part Number	End Connections	Dimensions Inches (mm)	Options			
	Port 1 and Port 2	A† and B	Micron Rating	Seal Material	Body Material	
2A-FT4-10-SS	1/8" A-LOK®	1.14 (29.0)	1 micron 5 micron 50 micron 100 micron 250 micron 450 micron	BN Nitrile Rubber	B Brass	
2Z-FT4-10-SS	1/8" CPI™					
2F-FT4-10-SS	1/8" Female NPT	1.00 (25.4)		EPR Ethylene Propylene Rubber		
2M-FT4-10-SS	1/8" Male NPT	1.00 (25.4)				
4A-FT4-10-SS	1/4" A-LOK®	1.23 (31.2)		NE Neoprene Rubber		
4Z-FT4-10-SS	1/4" CPI™					
4F-FT4-10-SS	1/4" Female NPT	1.06 (26.9)				KZ Highly Fluorinated Fluorocarbon Rubber
4M-FT4-10-SS	1/4" Male NPT	1.09 (27.7)				
4V-FT4-10-SS	1/4" VacuSeal	1.20 (30.5)		HT Silver Plated Nickel Alloy C-Ring		
M6A-FT4-10-SS	6mm A-LOK®	1.23				
M6Z-FT4-10-SS	6mm CPI™	(31.2)	T PTFE			
6A-FT8-10-SS	3/8" A-LOK®	1.42				
6Z-FT8-10-SS	3/8" CPI™	(36.1)				
6M-FT8-10-SS	3/8" Male NPT	1.19 (30.2)				
8A-FT8-10-SS	1/2" A-LOK®	1.53 (38.9)				
8Z-FT8-10-SS	1/2" CPI™					
8F-FT8-10-SS	1/2" Female NPT	1.48 (37.6)				
8M-FT8-10-SS	1/2" Male NPT	1.38 (35.1)				
8V-FT8-10-SS	1/2" VacuSeal	1.33 (33.8)				
M8A-FT8-10-SS	8mm A-LOK®	1.44 (36.6)				
M8Z-FT8-10-SS	8mm CPI™					
M10A-FT8-10-SS	10mm A-LOK®	1.44 (36.6)				
M10Z-FT8-10-SS	10mm CPI™					
M12A-FT8-10-SS	12mm A-LOK®	1.54 (39.1)				
M12Z-FT8-10-SS	12mm CPI™					

†For CPI™ and A-Lok®: Dimensions are measured with nuts in the finger tight position.

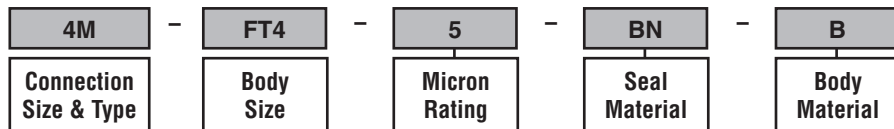
Maximum Pressure Differential Across Clean Filters at 70°F (21°C)

	1 micron	5 micron	10 micron	50 micron	100 micron	250 micron	450 micron
psig	2250	1950	1750	1150	1000	1000	1000
bar	155	134	120	79	69	69	69

How to Order

The part number sequence identifies product characteristics as shown in the example below.

Example: 4M-FT4-5-BN-B Describes a FT Series Filter with 1/4" male NPT inlet and outlet on a 1/4" in line body, 5 micron element, Nitrile seals and Brass body construction.



Options

Oxygen Cleaning – Add the suffix **-C3** to the end of the part number to receive valves cleaned in accordance with ASTM G93 level C, class 500. This ASTM details cleaning methods and cleanliness levels for materials and equipment used in oxygen-enriched environments. **Example: 4M-FT4-5-BN-B-C3**

Bypass – Add the suffix **-PB** to the end of the part number to receive a 1/8" -27 FNPT tapped Cap for sampling. **Example: 2M-FT4-5-V-SS-PB**

Integral Compression Ported Bypass Option – Add the suffix **-PBA** (A-LOK®) or **-PBZ** (CPI™) to the end of the part number to receive a 4Z/4A (FT4) or 6A/6Z (FT8) compression ported Cap. **Example: 2M-FT4-5-V-SS-PBZ**

Kit Information

To order repair kits for the FT Series Filters, simply fill in the designators from the chart below.

Size	Micron Rating	Seal Material
FT4	1 micron	V Fluorocarbon Rubber
FT8	5 micron	BN Nitrile Rubber
	10 micron	EPR Ethylene Propylene Rubber
	50 micron	NE Neoprene Rubber
	100 micron	KZ Highly Fluorinated Fluorocarbon
	250 micron	HT Silver PLated Nickel Alloy C-Ring
	450 micron	

Examples: KIT-FT4-10-V, KIT-FT8-100-BN

Filter Kits Contain: Seals, Filter Element, Spring and Maintenance Instructions.

Caution: When interchanging sintered metal elements with wire cloth filter elements, the flow direction is reversed.

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