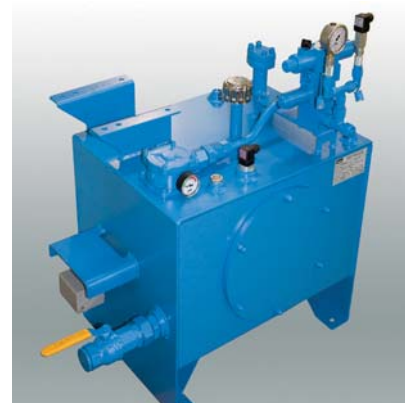


TTF Series

Tanktop Mounted Return Line Filters

Max 500 l/min - 10 bar



Featuring pre-filtration by means of a magnetic column

Extended element life time

The TTF Series features pre-filtration by means of a magnet column and a quick response bypass with low hysteresis. Maximum pressure 10 bar. Maximum flow 500 l/min. A second return port is an available option as is a filling port in the filter cover.

AN INNOVATIVE GREEN
FILTER FEATURING
LEIF®



Contact Information:

Parker Hannifin
Hydraulic Filter Division Europe

**European Product
Information Centre**
Freephone: 00800 27 27 5374
(from AT, BE, CH, CZ, DE, EE, ES,
FI, FR, IE, IT, PT, SE, SK, UK)
filtrationinfo@parker.com

www.parkerhfde.com

Product Features:

- TTF features pre-filtration by means of a magnet column.
- Quick response bypass with low hysteresis.
- Maximum pressure 10 bar. Maximum flow 500 l/min.
- Options include a filling port in the filter cover and second return port.
- Patented LEIF® elements safeguard filtration quality.
- Flow from inside to out.

TTF Series

Tanktop Mounted Return Line Filters

Features & Benefits

Features	Advantages	Benefits
10 bar rated filter	Can be utilised for severe return line applications	Reduced downtime due to premature filter failures
Cast aluminium head	Compact profile, lightweight and durable	Less weight, smaller envelop and cleaner appearance
LEIF® elements	Patented element safeguards the use of genuine parts	Guaranteed quality of filtration Contributes to ISO 14001 certification
Magnetic pre-filtration	Removes ferrous particles, even during bypass conditions	Improved fluid cleanliness levels Extended element life time
In-to-Out filtration	All captured contamination retains inside the element	No recontamination of system during change of elements
High level of customisation	Dedicated system-matched solutions can be easily made available	Improved integration of filter in system combined with lower initial system costs
Quick response bypass with low hysteresis	Reduction of bypass period due to low hysteresis	Improved protection of system
	Only a small part of the total flow is bypassing the element	
Standard or customised funnel	Ensures that oil enters the tank under the oil level	Significant reduction of oil foaming

Typical Applications

- Waste management trucks
- Mobile cranes
- Power packs
- Wheeled loaders
- Drilling equipment

The Parker Filtration TTF Series Return Line Filters

TTF tank top mounted return line filters feature pre-filtration by means of a magnet column and a quick response bypass with low hysteresis. Thanks to the “In-to-Out” filter principle, contaminated oil cannot leak back into the system. TTF filters are available in versions capable of handling flow rates up to 500 l/min. They can operate up to a maximum working pressure of 10 bar. Optional filling port in filter cover, second return port and customised diffusers can be specified.



Specification

Operation pressure:
Max. 10 bar.

Assembly:
Tank top mounted.

Connections:
Threaded BSP ports.
Flanged ports on request.

Filter housing:
Aluminium head and cover.

Seal material:
Nitrile, fluoroelastomer, neoprene.

Operation temperature range:
Seal material Nitrile: -40 to +100°C.
Seal material Fluoroelastomer: -20 to +120°C.

Bypass setting
Opening pressure 0.8 / 1.5 or 2 bar.
Other settings on request.

Degree of filtration:
Determined by multipass test according to ISO 16889.

Flow fatigue characteristics:
Filter media is supported so that the optimum fatigue life is achieved.

Filtration media:
Microglass III and Ecoglass III for LEIF® elements.
Also available 10µm cellulose and 40µm stainless steel mesh.

Element collapse rating:
10 bar (ISO 2941)

Pressure indicator options:
Setting 0.7 or 1.2 bar.
Other settings on request.
Visual pressure gauge.
Electrical pressure switch.

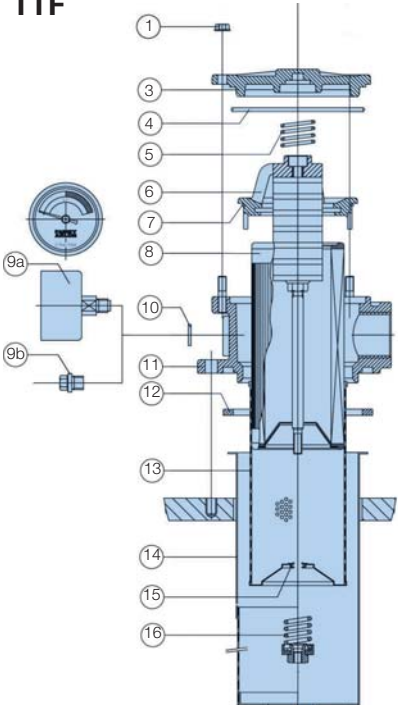
Options:
Diffuser type P (straight pipe, no perforated plate area)
Diffuser type T (with closed diffuser end cap and with perforated plate area, recommended when oil entry in reservoir is close to the reservoir bottom or to ensure oil entry under the reservoir oil level)

Magnetic pack:
Standard. TTF400 and 500 are standard supplied without magnets

Filling port in cover: (optional)
Plugged.

Filter element:
LEIF® element with reusable metal element sleeve.
Optional conventional style element with steel end caps.
The LEIF® element is patented and safeguards the use of genuine parts.
Note: LEIF® element can be used with mineral and HEES type oils.
For other fluids consult Parker Filtration.
LEIF® contributes to ISO 14001 quality standards.

TTF

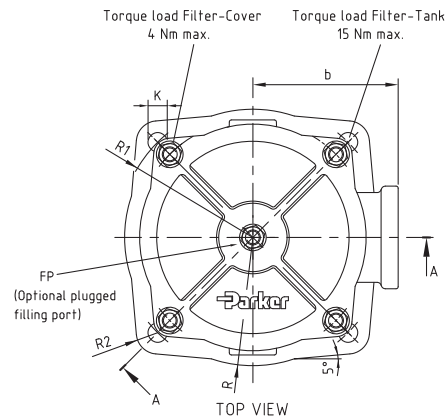
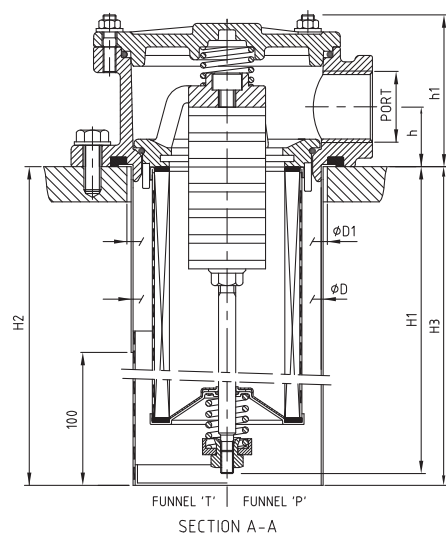


TTF sealkit: No. 4+7+12		
Ref.	No.	Description
1	4	Flange nut
3	1	Cover
4	1	Cover-seal
5	1	Top-spring
6	1	Insert
7	1	Insert-seal
8	1	Element
9a	0-1	Indicator
9b	0-3	Plug M10x1
10	0-3	Unit-ring
11	1	Housing
12	1	Gasket
13	1	Sleeve
14	1	Funnel/diffuser
15	1	O-ring
16	1	Bypass set

TTF Series

Tanktop Mounted Return Line Filters

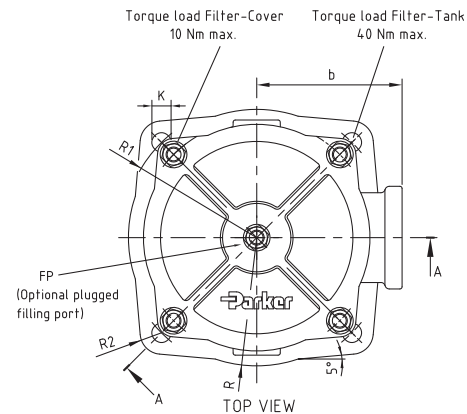
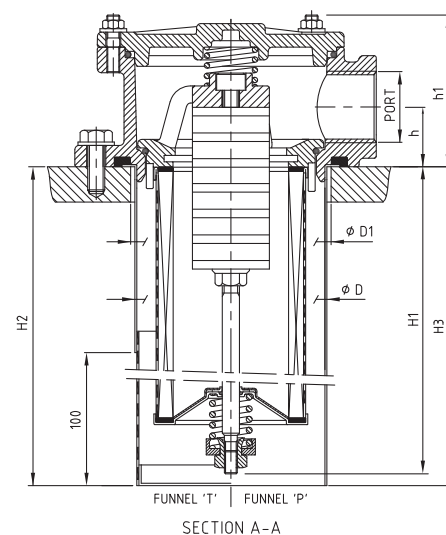
TTF Lengths 2-5 Single port



TTF length	Type	Port option	h	h1	ØD	ØD1	H1	H2	H3	b	R	R1	R2	K	FP
2	TTF 1-60	G ³ / ₄ , G1	28	73	Ø90	Ø93	131	190	190	68	60	63	10	4xØ9	G ¹ / ₂
3	TTF 1-90						175	190	190						
4	TTF 1-120						225	330	330						
5	TTF 1-150						325	330	330						

Dimensions in mm

TTF Lengths 6-10 Single port

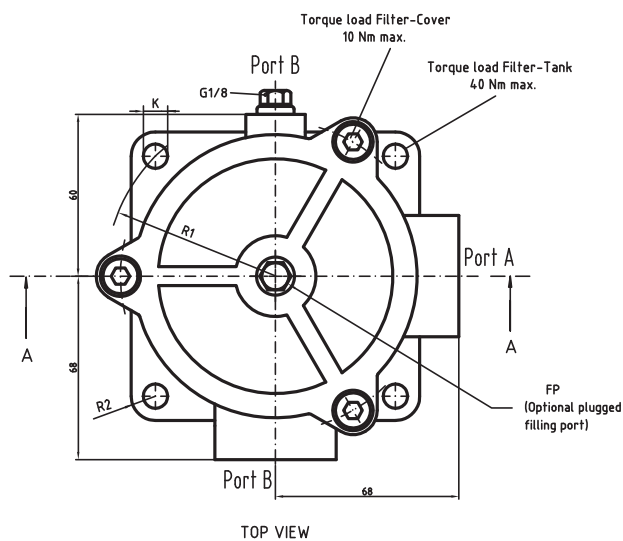
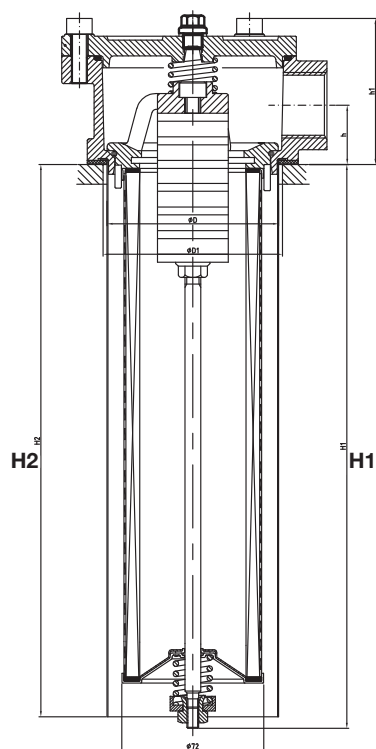


TTF length	Type	Port option	h	h1	ØD	ØD1	H1	H2	H3	b	R	R1	R2	K	FP
6	TTF 2-170	G1 ¹ / ₄ , G1 ¹ / ₂	36	92	Ø132	Ø136	223	318	318	90	83	87.5	12	4xØ11	G1
7	TTF 2-230						303	318	318						
8	TTF 2-300						508	538	538						
9	TTF 2-400						523	538	538						
10	TTF 2-500						563	578	578						

Dimensions in mm



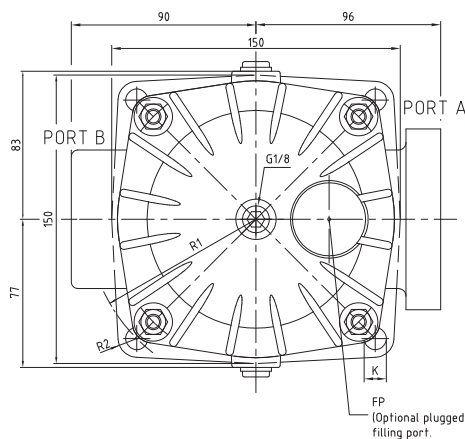
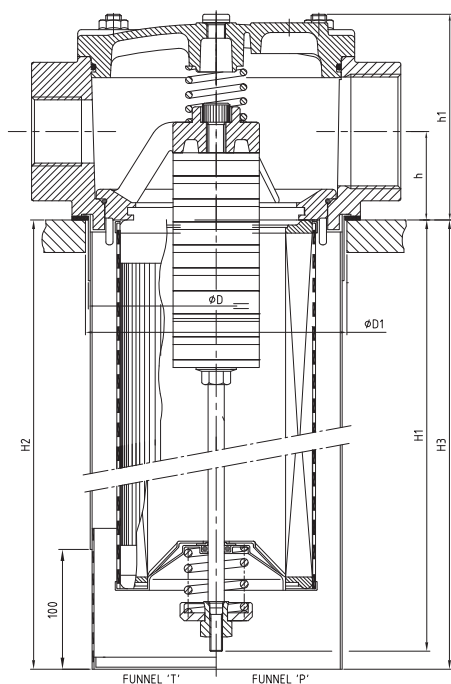
TTF Lengths 2-5 Dual port



TTF length	Type	Port option A - B	h	h1	ØD	ØD1	H1	H2	b	R	R1	R2	K	FP
2	TTF 1-60	G1 - G1	30	74	Ø88	Ø91	131	190	90	83	87.5	12	4xØ11	G1
3	TTF 1-90						175	170						
4	TTF 1-120						225	220						
4A	TTF 1-140						285	280						
5	TTF 1-150						325	320						
4B	TTF 1-175						376	370						

Dimensions in mm

TTF Lengths 6-10 Dual port



TTF length	Type	Dual Port option A-B	h	h1	ØD	ØD1	H1	H2	H3	R	R1	R2	K	FP
6	TTF 2-170	G1½ - G1½ G2 - G1½ SAE 1½ - G1½	46	107	Ø132	Ø136	223	318	318	83	87.5	12	4xØ11	G1
7	TTF 2-230						303	318	318					
8	TTF 2-300						508	538	538					
9**	TTF 2-400						523	538	538					
10**	TTF 2-500						563	578	578					

Dimensions in mm

TTF Series

Tanktop Mounted Return Line Filters

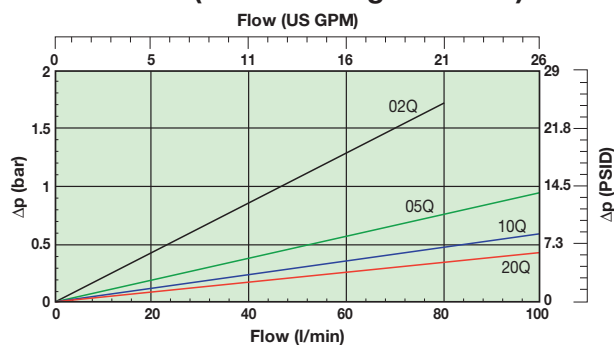
Pressure Drop Curves

The recommended level of the initial pressure drop for low pressure filters is max 0.5 bar.

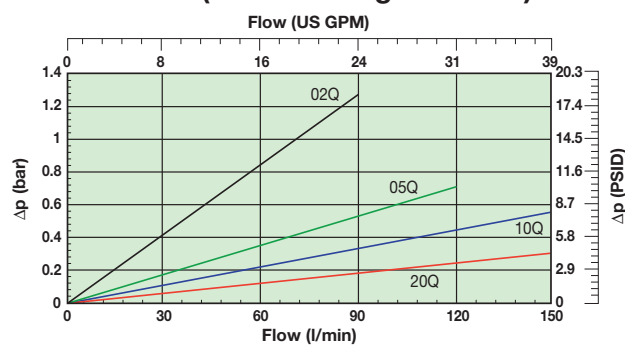
If the medium used has a viscosity different from 32cSt, pressure drop over the filter can be estimated as follows:

$$\Delta p = (\Delta p_{32} \times \text{viscosity of medium used}) / 32\text{cSt.}$$

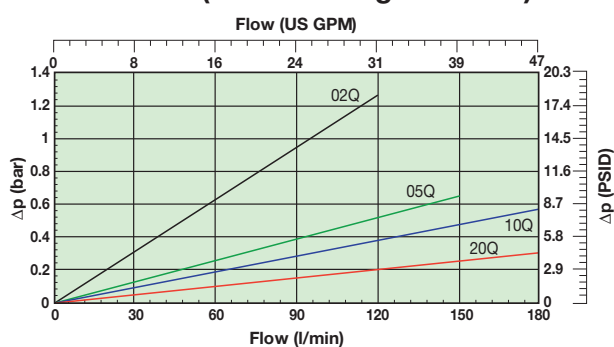
TTF60 (Element length code 2)



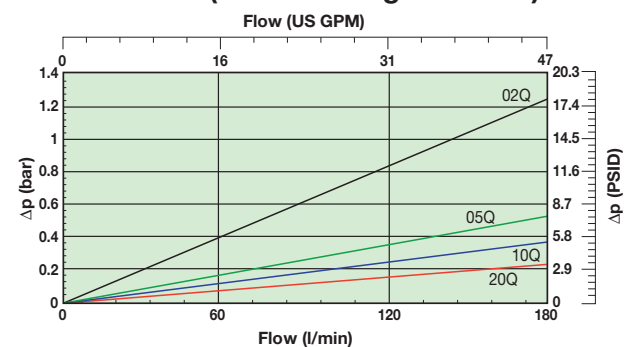
TTF90 (Element length code 3)



TTF120 (Element length code 4)



TTF150 (Element length code 5)



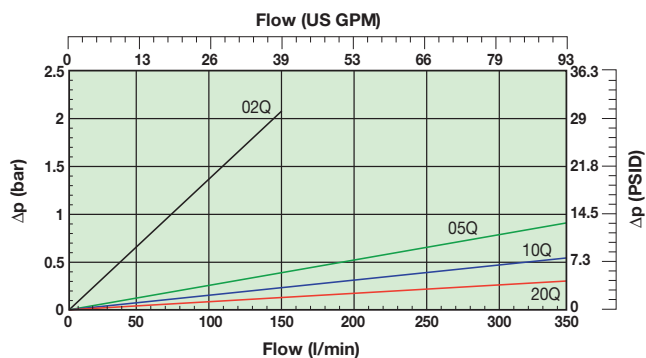
Pressure Drop Curves (cont.)

The recommended level of the initial pressure drop for low pressure filters is max 0.5 bar.

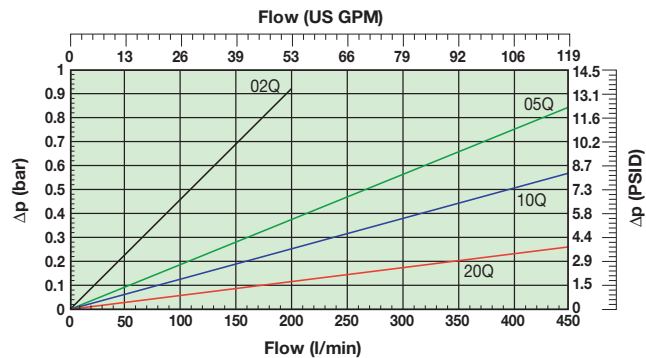
If the medium used has a viscosity different from 32cSt, pressure drop over the filter can be estimated as follows:

$$\Delta p = (\Delta p_{32} \times \text{viscosity of medium used}) / 32\text{cSt.}$$

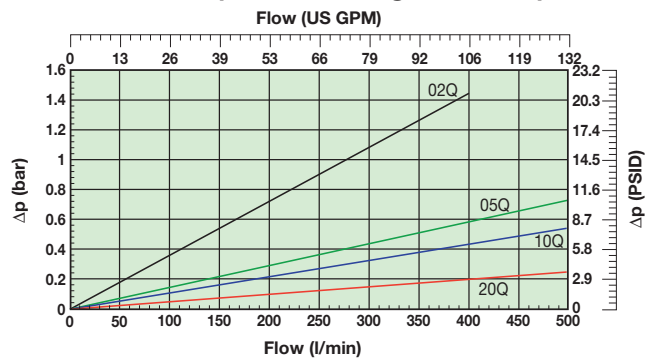
TTF170 (Element length code 6)



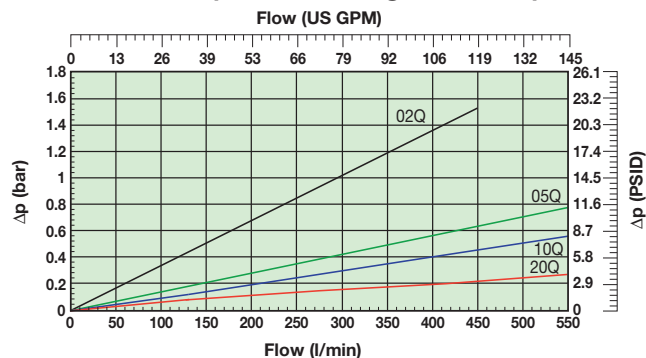
TTF230 (Element length code 7)



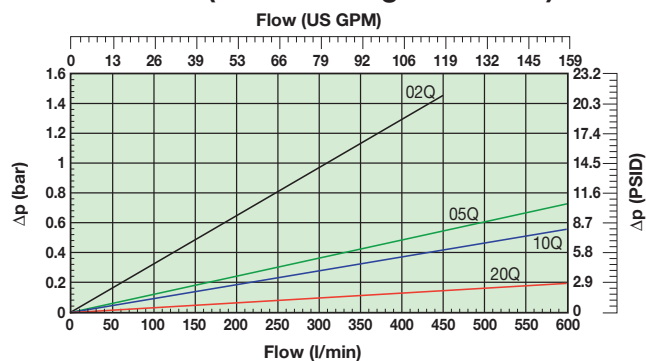
TTF300 (Element length code 8)



TTF400 (Element length code 9)



TTF500 (Element length code 10)

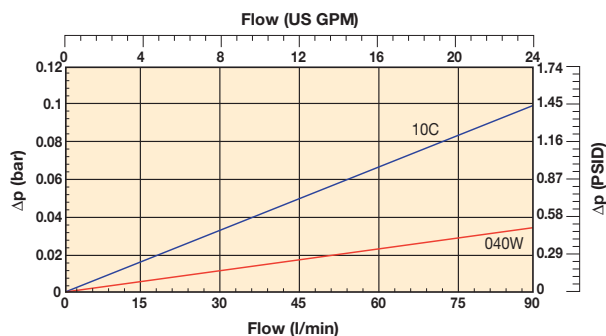


TTF Series

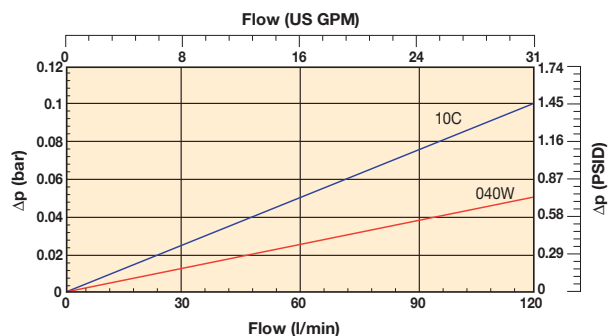
Tanktop Mounted Return Line Filters

Pressure Drop Curves (cont.)

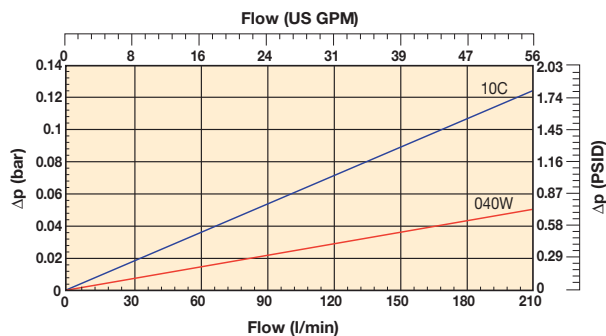
TTF60 (Element length code 2)
Cellulose & stainless steel media



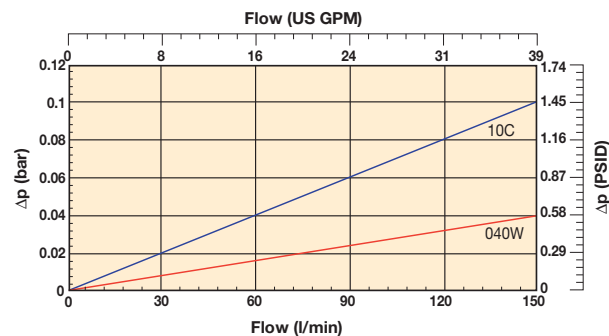
TTF90 (Element length code 3)
Cellulose & stainless steel media



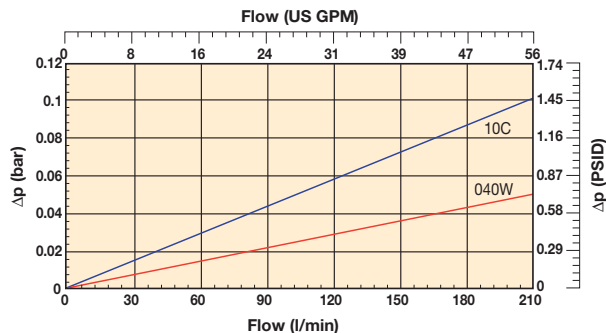
TTF120 (Element length code 4)
Cellulose & stainless steel media



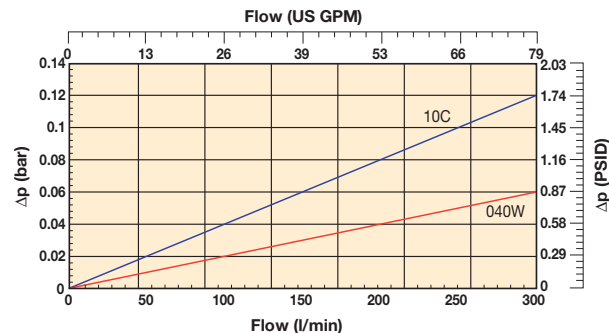
TTF150 (Element length code 5)
Cellulose & stainless steel media



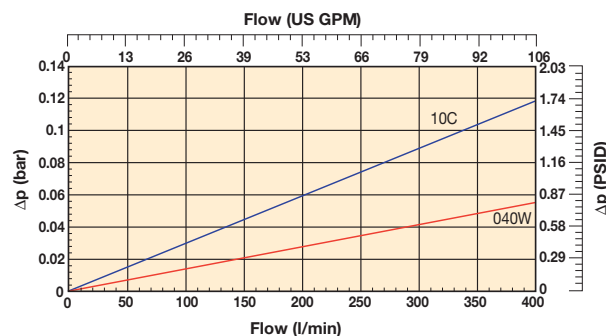
TTF170 (Element length code 6)
Cellulose & stainless steel media



TTF230 (Element length code 7)
Cellulose & stainless steel media



TTF300 (Element length code 8)
Cellulose & stainless steel media

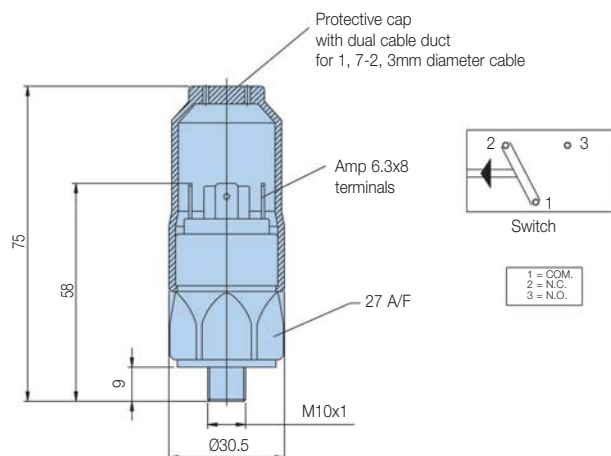


TTF Series

Tanktop Mounted Return Line Filters

Indicator Options

Indicator PS pressure switch

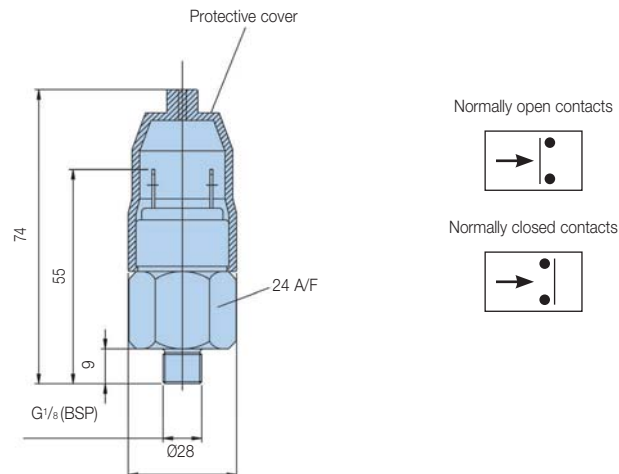


Specifications	
Elec.rating	42V / 4A
Thread connection	M10x1
Elec.connection	AMP 6.3x0.8 terminals + protective cap
Protection	IP65 (with cap) terminals IP00
Code	FMUS1EBMM10L (Switch)

Indicator Connection / Filter Head Matrix

Port(s) Filter head	Indicator Thread
TTF ISO 228-G ³ / ₄ " (BSP) (TTF length 2,3,4 and 5)	M10
ISO 228-G1" (BSP)	M10
ISO 228-G1 ¹ / ₂ " (BSP) (TTF length 6 and larger)	M10
2xISO 228-G1 ¹ / ₂ " (BSP) (TTF length 6 and larger)	G1/8"
ISO 228-G1 ¹ / ₂ "(BSP) (TTF length 6 and larger)	M10
2xISO 228-G1 ¹ / ₂ "(BSP) (TTF length 6 and larger)	G1/8"
1 ¹ / ₂ " SAE-3000 PSI (TTF length 6 and larger)	G1/8"
1 ¹ / ₂ " SAE-3000 PSI (2nd port) + G1 ¹ / ₂ " (TTF length 6 and larger)	G1/8"
G2" (TTF length 6 and larger)	G1/8"
G2" + G1 ¹ / ₂ " (TTF length 6 and larger)	G1/8"

Indicator PS NO/NC pressure switch



Specifications	
Elec.rating	42V / 2A
Thread connection	G1/8
Elec.connection	AMP terminal 6.3x0.8
Protection	IP65 (terminal IP00)
Switch type	NO or NC
Code	FMUS2EBMG02L (NO switch) FMUS3EBMG02L (NC switch)

Visual indicator	
M10: code	FMUG1EBPM10L
G1/8: code	FMUG2EBPG02L

Ordering Information

Standard products table

Part number	Supersedes	Flow (l/min)	Model number	Element length	Media rating (µ)	Seals	Indicator	Bypass settings	Ports	Included options	Replacement elements	Supersedes
TTF310QLBP2EG121	TTF90-G ³ / ₄ TXWL3-10 B15 MM	90	TTF90	Length 3	10	Nitrile	Plugged	1.5 Bar (22 Psi)	G ³ / ₄	None	937878Q	TXWL3-10
TTF320QLBP2EG121	TTF90-G ³ / ₄ TXWL3-20 B15 MM	90	TTF90	Length 3	20	Nitrile	Plugged	1.5 Bar (22 Psi)	G ³ / ₄	None	937877Q	TXWL3-20
TTF510QLBP2EG161	TTF125-G1 TXWL3E-10 B15 MM	125	TTF125	Length 5	10	Nitrile	Plugged	1.5 Bar (22 Psi)	G1	None	937852Q	TXWL3E-10
TTF520QLBP2EG161	TTF125-G1 TXWL3E-20 B15 MM	125	TTF125	Length 5	20	Nitrile	Plugged	1.5 Bar (22 Psi)	G1	None	937875Q	TXWL3E-20
TTF610QLBP2EG203	TTF170-G1 ¹ / ₂ TXWL4-10 T B15 MM	170	TTF170	Length 6	10	Nitrile	Plugged	1.5 Bar (22 Psi)	G1 ¹ / ₂	Diffuser type T	937853Q	TXWL4-10
TTF620QLBP2EG203	TTF170-G1 ¹ / ₂ TXWL4-20 T B15 MM	170	TTF170	Length 6	20	Nitrile	Plugged	1.5 Bar (22 Psi)	G1 ¹ / ₂	Diffuser type T	937874Q	TXWL4-20
TTF810QLBP2EG243	TTF300-G1 ¹ / ₂ TXWL5A-10 T B15 MM	300	TTF300	Length 8	10	Nitrile	Plugged	1.5 Bar (22 Psi)	G1 ¹ / ₂	Diffuser type T	937855Q	TXWL5A-10
TTF820QLBP2EG243	TTF300-G1 ¹ / ₂ TXWL5A-20 T B15 MM	300	TTF300	Length 8	20	Nitrile	Plugged	1.5 Bar (22 Psi)	G1 ¹ / ₂	Diffuser type T	937872Q	TXWL5A-20
TTF1010QLBP2HG24A	TTF500-G1 ¹ / ₂ TXWL5C-10 T B20 MM NMG	500	TTF500	Length 10	10	Nitrile	Plugged	2.0 Bar (29 Psi)	G1 ¹ / ₂	Diffuser type T	937857Q	TXWL5C-10
TTF1010QLBP2HG24A	TTF500-G1 ¹ / ₂ TXWL5C-20 T B20 MM NMG	500	TTF500	Length 10	20	Nitrile	Plugged	2.0 Bar (29 Psi)	G1 ¹ / ₂	Diffuser type T	937870Q	TXWL5C-20

Note: Filter assemblies ordered from the product configurator on the next page are on extended lead times. Where possible, please make your selection from the table above.

TTF Series

Tanktop Mounted Return Line Filters

Ordering Information (cont.)

Product configurator

Configurator example of a TTF Series filter

Box 1	Box 2	Box 3	Box 4	Box 5	Box 6	Box 7	Box 8
TTF	9	05QL	V	S3	H	L24	1

Box 1	Box 2	Box 3
Code	Filter type	Degree of filtration
TTF	Housing	Element media
	Code	Glass fibre
	TTF 1-60	Microglass III (for disposable elements)
	TTF 1-90	Ecoglass III (for Leif® elements)
	TTF 1-120	Cellulose
	TTF 1-120	Nom. rating
	TTF 1-120	Disposable element
	TTF 1-120	LEIF® element
	TTF 1-150	
	TTF 2-170	
	TTF 2-230	
	TTF 2-300	
	TTF 2-400	
	TTF 2-500	

Box 4	Box 5	Box 6
Seal type	Indicator	Bypass valve
Seal material		Bypass valve
Code	Code	Code
Nitrile	Pressure gauge, setting 1.2 bar, M10x1*	0.8 bar
Fluorelastomer	Pressure gauge, setting 1.2 bar, G1/8 for dual head ports	1.5 bar
Neoprene	Pressure switch 42V, 1.2 bar setting, NO/NC, M10x1*	2.0 bar for TTF series
	Pressure switch 42V, 1.2 bar setting, NO with G1/8 BSP*	Blocked bypass
	Pressure switch 42V, 1.2 bar setting, NC with G1/8 BSP*	Other bypass settings
	Pressure switch 250V, NO/NC with G1/8*	
	Pressure switch 220V, NO/NC with M10*	
	No indicator, indicator ports not machined	
	No indicator, indicator ports L + R plugged	
	Other settings for indicators / gauges on request	

Note: * HEAD HAS PLUGGED INDICATOR CONNECTIONS L+R

Note: Also see the table indicator Connection/Filter Head Matrix on page 29

Box 7	Box 8
Filter connection	Options
Ports	Options
ISO 228-G1/4" (BSP) (TTF length 2,3,4 and 5)	No diffuser required
ISO 228-G1" (BSP) (TTF length 2,3,4 and 5)	Diffuser type T with perforated plate area
ISO 228-G1 1/2" (BSP) (TTF length 6 and larger)	Diffuser type P without perforated plate area
2xISO 228-G1 1/4" (BSP) (TTF length 6 and larger)	Diffuser with integrated hose connection for TTF lengths 2, 3 and 4
ISO 228-G1 1/2" (BSP) (TTF length 6 and larger)	No magnets
2xISO 228-G1 1/2" (BSP) (TTF length 6 and larger)	Plugged filling port
1 1/2" SAE-3000 PSI (TTF length 6 and larger)	Diffuser type T and no magnets
1 1/2" SAE-3000 PSI (2nd port) + G1 1/2" (TTF length 6 and larger)	Diffuser type P and no magnets
G2" (TTF length 6 and larger)	Diffuser type T, no magnets, plugged filling port
G2" + G1 1/2" (TTF length 6 and larger)	Diffuser type P, no magnets, plugged filling port
	Air tight diffuser type T
	Air tight diffuser type P
	Other combinations

Degree of filtration						Media code
Average filtration beta ratio β (ISO 16889) / particle size μm [c]						
$\beta_x(c)=2$	$\beta_x(c)=10$	$\beta_x(c)=75$	$\beta_x(c)=100$	$\beta_x(c)=200$	$\beta_x(c)=1000$	
% efficiency, based on the above beta ratio (β_x)						
50.0%	90.0%	98.7%	99.0%	99.5%	99.9%	
N/A	N/A	N/A	N/A	N/A	4.5	
N/A	N/A	4.5	5	6	7	02Q/02QL
N/A	N/A	4.5	5	6	7	05Q/05QL
N/A	6	8.5	9	10	12	10Q/10QL
6	11	17	18	20	22	20Q/20QL

Highlights Key (Denotes part number availability)

123	Item is standard
123	Item is standard green option
123	Item is semi standard
123	Item is non standard

Note: Standard items are in stock, semi standard items are available within four weeks



Ordering Information (cont.)

Supersedes Spare Element table (TXWL & PXWL replaced by 900000 number)

TTF60	TXWL2-2	TXWL2-5	TXWL2-10	TXWL2-20
Part number spare element	937823Q	937880Q	937881Q	937882Q
TTF90	TXWL3-2	TXWL3-5	TXWL3-10	TXWL3-20
Part number spare element	937824Q	937879Q	937878Q	937877Q
TTF120	TXWL3D-2	TXWL3D-5	TXWL3D-10	TXWL3D-20
Part number spare element	937825Q	937825Q	937851Q	937876Q
TTF125	TXWL3E-2	TXWL3E-5	TXWL3E-10	TXWL3E-20
Part number spare element	937826Q	937849Q	937852Q	937875Q
TTF170	TXWL4-2	TXWL4-5	TXWL4-10	TXWL4-20
Part number spare element	937827Q	937848Q	937853Q	937874Q
TTF230	TXWL5-2	TXWL5-5	TXWL5-10	TXWL5-20
Part number spare element	937828Q	937847Q	937854Q	937873Q
TTF300	TXWL5A-2	TXWL5A-5	TXWL5A-10	TXWL5A-20
Part number spare element	937829Q	937846Q	937855Q	937872Q
TTF400	TXWL5B-2	TXWL5B-5	TXWL5B-10	TXWL5B-20
Part number spare element	937830Q	937845Q	937856Q	937871Q
TTF500	TXWL5C-2	TXWL5C-5	TXWL5C-10	TXWL5C-20
Part number spare element	937831Q	937844Q	937857Q	937870Q

Supersedes Spare Element table (TXW & TXX replaced by 900000 number)

TTF60	TXW2-10-B	TXW2-2-B	TXW2-5-B	TXW2-10-B	TXW2-20-B	ST2-40-B
Part number spare element	937721	937751Q	937754Q	937787Q	937790Q	937820
TTF90	TXW3-10-B	TXW3-2-B	TXW3-5-B	TXW3-10-B	TXW3-20-B	ST3-40-B
Part number spare element	937722	937750Q	937755Q	937786Q	937791Q	937819
TTF120	TXW3D-10-B	TXW3D-2-B	TXW3D-5-B	TXW3D-10-B	TXW3D-20-B	ST3D-40-B
Part number spare element	937723	937749Q	937756Q	937785Q	937792Q	937818
TTF125	TXW3E-10-B	TXW3E-2-B	TXW3E-5-B	TXW3E-10-B	TXW3E-20-B	ST3E-40-B
Part number spare element	937724	937748Q	937757Q	937784Q	937793Q	937817
TTF170	TXW4-10-B	TXW4-2-B	TXW4-5-B	TXW4-10-B	TXW4-20-B	ST4-40-B
Part number spare element	937725	937747Q	937758Q	937783Q	937794Q	937816
TTF230	TXW5-10-B	TXW5-2-B	TXW5-5-B	TXW5-10-B	TXW5-20-B	ST5-40-B
Part number spare element	937726	937746Q	937759Q	937782Q	937795Q	937815
TTF300	TXW5A-10-B	TXW5A-2-B	TXW5A-5-B	TXW5A-10-B	TXW5A-20-B	ST5A-40-B
Part number spare element	937727	937745Q	937760Q	937781Q	937796Q	937814

TTF Series Seal Kit

TTF Filter connections	Nitrile Seal Kit
Ports	Part Number
ISO 228-G $\frac{1}{4}$ " (BSP) (TTF length 2,3,4 and 5)	2049010012
ISO 228-G $\frac{1}{2}$ " (BSP) (TTF length 2,3,4 and 5)	2049010012
ISO 228-G $\frac{1}{4}$ " (BSP) (TTF length 6 and larger)	2049010012
2xISO 228-G $\frac{1}{4}$ " (BSP) (TTF length 6 and larger)	918045035
ISO 228-G $\frac{1}{2}$ " (BSP) (TTF length 6 and larger)	2049010013
2xISO 228-G $\frac{1}{2}$ " (BSP) (TTF length 6 and larger)	918045035
1 $\frac{1}{2}$ " SAE-3000 PSI (TTF length 6 and larger)	918045035
1 $\frac{1}{2}$ " SAE-3000 PSI (2nd port) + G $\frac{1}{2}$ " (TTF length 6 and larger)	918045035
G2" (TTF length 6 and larger)	918045035
G2" + G $\frac{1}{2}$ " (TTF length 6 and larger)	918045035