

Return Line Filters RF & RFB



Local solutions for individual customers worldwide



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Stauff Filtration Technology

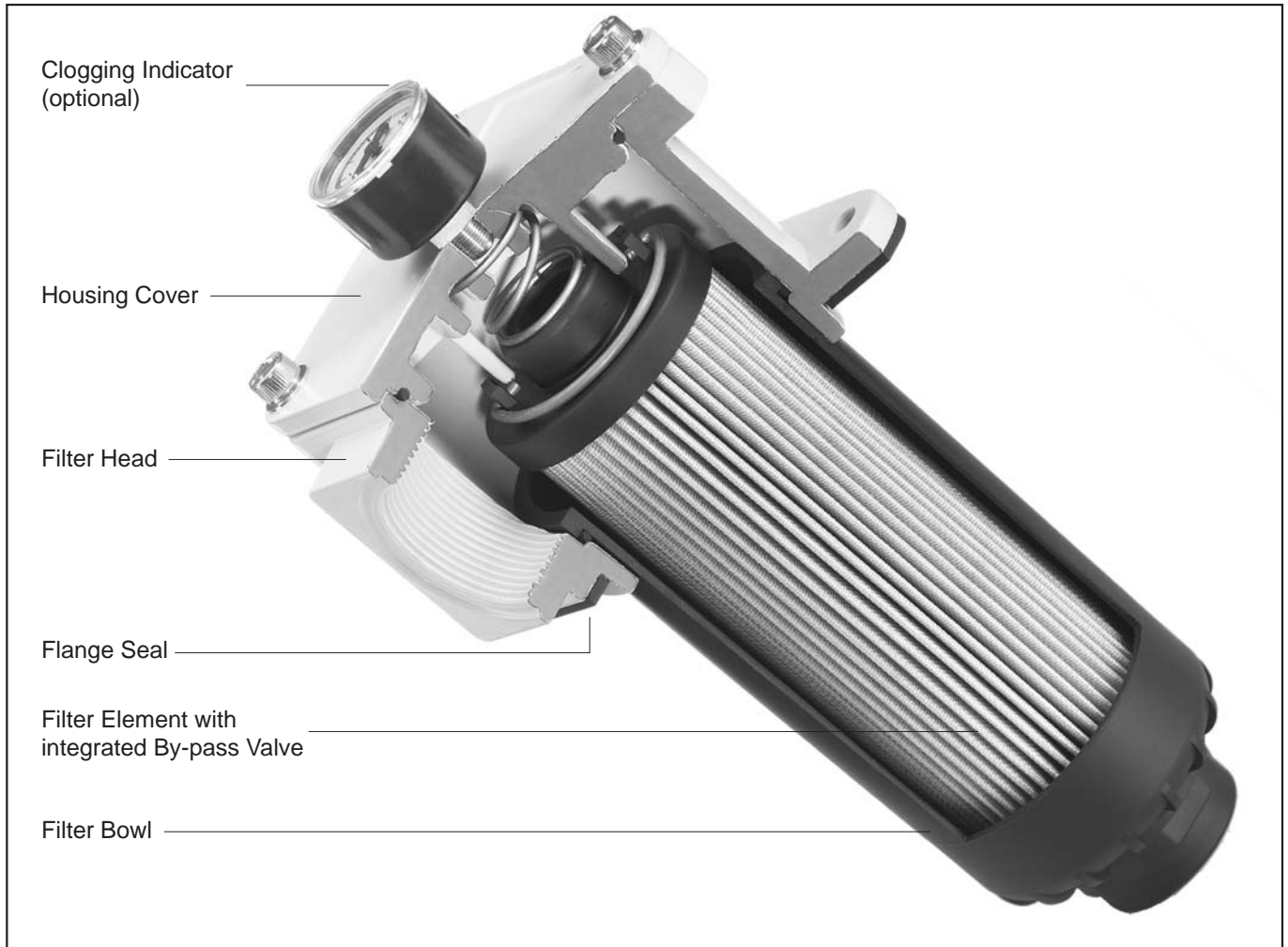
Stauff Filtration Technology offers a complete range of filtration products and services that will provide the system designer or user with the highest level of contamination control demanded by today's most sophisticated applications. Products include pressure filters, return line filter elements, spin on filters suction strainers, and filler breathers for various hydraulic, lubrication and fuel oils.

Stauff has the technical expertise to provide superior filter element designs for the Stauff original filter housings and also for the interchange element market. Stauff manufactures more than 10,000 different elements. Many of these are designed to fit into filter housings produced by other companies while maintaining or surpassing the original performance.

The "Stauff Contamination Control Program" includes the diagnostic services including fluid sampling and laser particle counting products needed to monitor the system contamination level. Stauff, through its global network of wholly owned companies and technically qualified distributors, is ideally placed to assist its customers in the total contamination process providing a well balanced filtration solution.

Technical Data

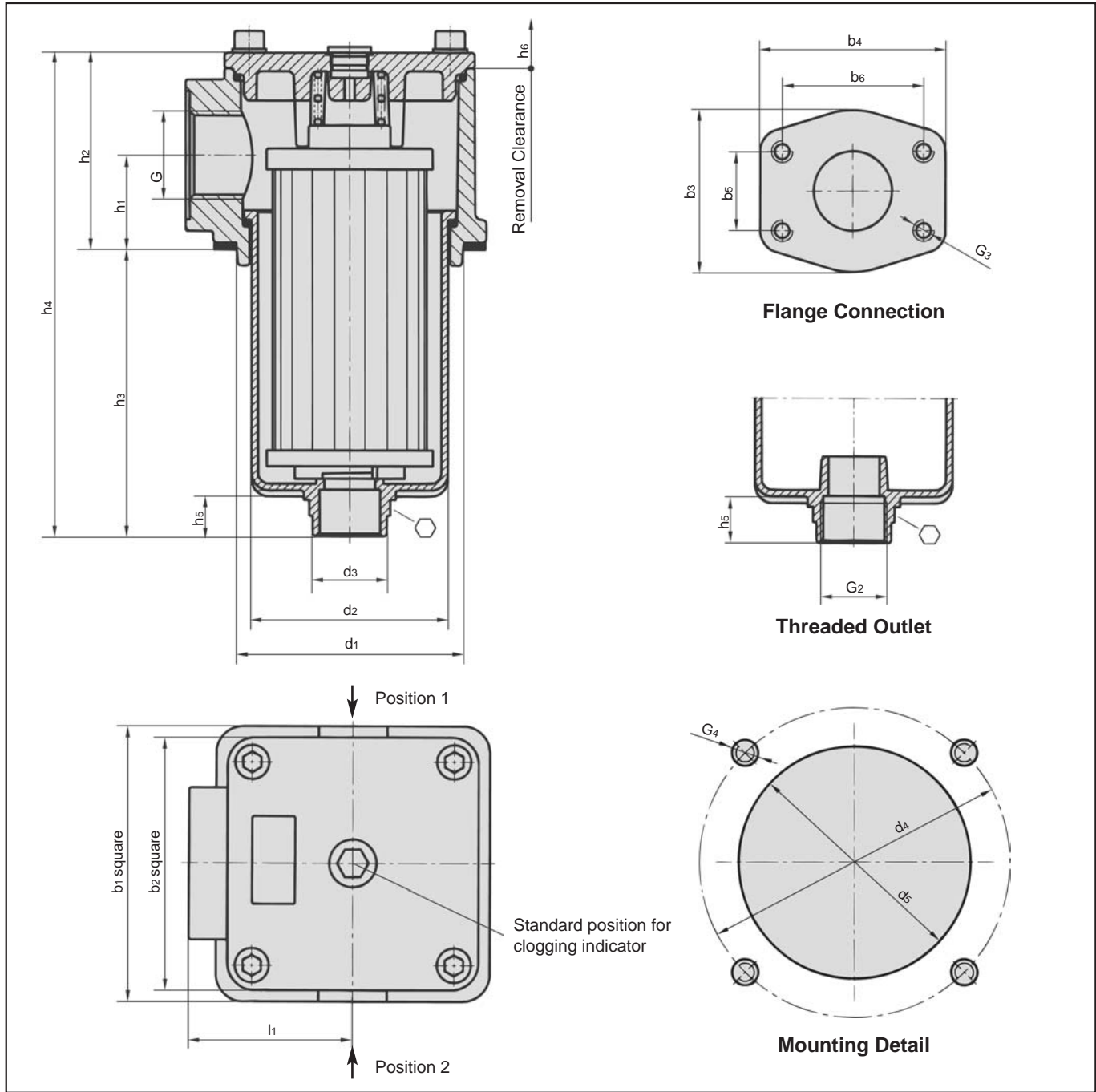
STAUFF RF 014-130 return line filters are designed as tank top filters. They are mounted directly on the tank top and if 100% of the system oil is filtered, they provide the optimum removal of contaminant from the system. This provides the pump with clean oil thus reducing contaminant generated wear. The filter bowl or funnel is designed to return the oil beneath the surface thus preventing the entrainment of air by the returning oil.



Technical Specification

Construction	Tank Top flange mounting	By-pass valve (integrated in the filter element)	Opening pressure 3 bar \pm 0,3 bar (43,5 PSI \pm 4,35 PSI) other pressures on request
Filter head	Aluminium	Clogging indicator	Gauge type indicator 0...4 bar (0...58 PSI) coloured segments; Electrical switch, setting 2,5 bar (36,25 PSI)
Filter bowl	Glass fiber reinforced polyamide	Filter elements	Specification see page 14
Seals	NBR (Buna-N®), FPM (Viton®) or EPDM (Ethylene-Propylene)	Media	Mineral oils, other fluids on request
Threaded connection	BSP, NPT- and SAE-"O"-Ring thread as well as SAE-flange 3000 PSI		
Operating pressure	max 16 bar (232 PSI)		
Proof pressure	24 bar (350 PSI)		
Temperature Range	-10° to +100°C (14° to 212°F)		

Dimensions RF 014-130



Dimensions Return Line Filters

All dimensions in mm (inch)

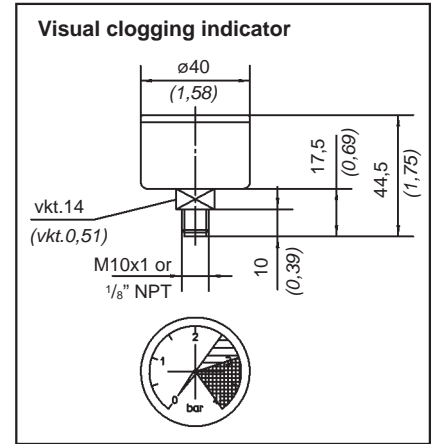
Filter Size	Thread Connection G				Dimensions																				
	BSP	NPT	SAE- "O" Ring Thread	SAE Flange 3000 PSI	b_1	b_2	b_3	b_4	b_5	b_6	d_1	d_2	d_3	d_4	d_5	h_1	h_2	h_3	h_4	h_5	h_6	l_1	G_2	G_3	G_4
RF 014	G 3/4	3/4"	1 1/16"-12 UN	-	89	80					73	57,5	36	100	78	33	66	91,5 (3,6)	157,5 (6,2)	23,5 (0,93)	140 (5,51)	48	G1		M6 or 1/8" UNC
RF 030	G 1	1"	1 5/16"-12 UN	-	89 (3,5)	80 (3,15)					73 (2,87)	57,5 (2,26)	36 (1,42)	100 (3,94)	78 (3,07)	33 (1,3)	66 (2,6)	159,5 (6,3)	225,5 (8,88)	210 (8,27)	210 (8,27)	48 (1,89)	G1		M6 or 1/8" UNC
RF 045	G 1 1/4	1 1/4"	1 5/8"-12 UN	-	120	110					100	84	48	135	105	41	86	119 (4,69)	206 (8,11)	24 (0,95)	180 (7,09)	66	G1 1/4		M8 or 3/16" UNC
RF 070	G 1 1/2	1 1/2"	1 7/8"-12 UN	-	120 (4,72)	110 (4,33)					100 (3,94)	84 (3,31)	48 (1,89)	135 (5,14)	105 (4,13)	41 (1,61)	86 (3,39)	180 (7,09)	267 (10,51)	240 (9,45)	240 (9,45)	66 (2,6)	G1 1/4		M8 or 3/16" UNC
RF 090	G 2	2"	1 7/8"-12 UN	2"	150	135	88	102	42,9	77,8	126	112,5	54,5	170	131	47	98	172,5 (6,79)	273,5 (10,77)	27 (1,06)	235 (9,25)	85	G1 1/2	1/2 UNC x15 (x0,59)	M10 or 3/8" UNC
RF 130	G 2	2"	1 7/8"-12 UN	2"	150 (5,91)	135 (5,14)	88 (3,47)	102 (4,02)	42,9 (1,69)	77,8 (3,06)	126 (4,96)	112,5 (4,43)	54,5 (2,15)	170 (6,69)	131 (5,16)	47 (1,85)	98 (3,86)	252,5 (9,94)	353,5 (13,92)	315 (12,4)	315 (12,4)	85 (3,35)	G1 1/2	1/2 UNC x15 (x0,59)	M10 or 3/8" UNC

Options RF 014-130

1. Visual clogging indicator

The gauge visually displays the degree of contamination of the element. The coloured segments allow quick visual checking.

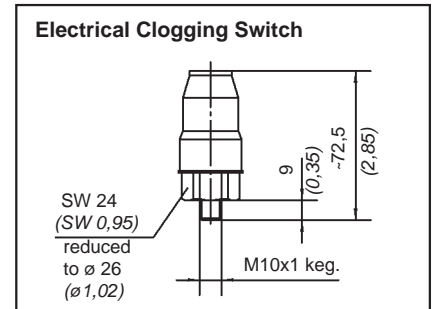
green	0...2,5 bar (0...36,25 PSI)	Element has service life left
yellow	2,5...3,0 bar (36,25 ...43,5 PSI)	Element is contaminated and should be changed
red	>3,0 bar (>43,5 PSI)	By-pass valve open, unfiltered oil passing to tank



2. Electrical clogging switch

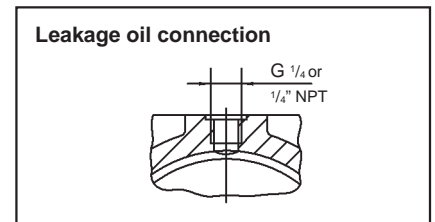
The switch is used where an electrical signal is needed to indicate when the element needs changing. The switch can turn on a light, or shut the machine down, or any further function controlled by an electric signal. The switching pressure is 2,5 bar (36,25 PSI) and this allows the element to be changed before the by-pass setting of 3 bar (43,5 PSI) is reached.

Maximum Voltage	Switch Type
42 V	G 42
110 V	G 110
220 V	G 220



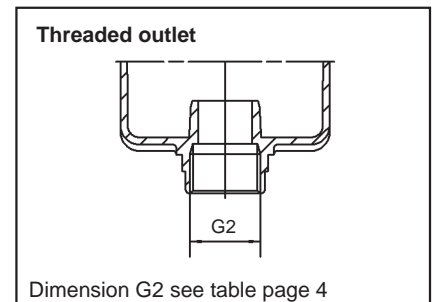
3. Leakage oil connection

Seal or case drain lines can be connected to the filter through either of the clogging indicator ports providing that the leakage oil can accept a pressure of 3 bar (43,5 PSI). It ensures that no un-filtered oil can return to the reservoir. It may save the cost of a manifold.



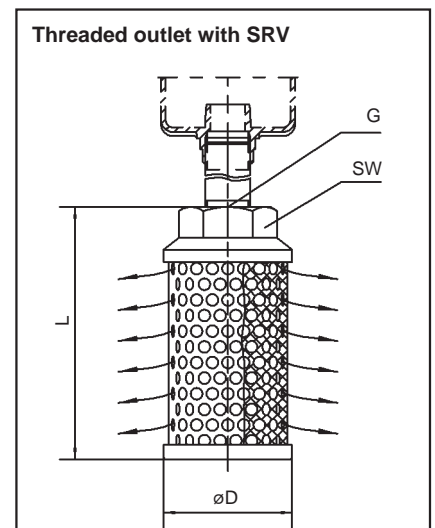
4. Filter bowl with threaded connection

Under some circumstances such as a tall reservoir or one with oil levels which vary greatly during operation, it is necessary to extend the filter bowl so that the returning oil returns beneath the surface and does not entrain air in the process. The optional bowl with a female thread allows an extension to be fitted quite simply.



5. Filter bowl with threaded connection and diffusor

Diffusers mounted to the filter bowl minimize foaming and reduce noise of backstreaming fluids. For further details on STAUFF diffusers please refer to our catalogue "Hydraulic Accessories".



All dimensions in mm (inch)

Size SRV	for Return Line Filter Size	Dimensions			
		ø D	L	Thread G	SW
SRV-114-B16	RF 014/030	60 (2,36)	139 (5,47)	G 1	46 (1,81)
SRV-200-B20	RF 045/070	82 (3,23)	139 (5,47)	G 1/4	60 (2,36)
SRV-227-B24	RF 090/130	82 (3,23)	200 (7,87)	G 1/2	60 (2,36)

Ordering Code Filter Housings

RF 070 ... B / B / M / G / L1 / X

Filter type	RF
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Group		
Size	Flow	
	l/min	GPM
014	60	14
030	110	30
045	160	45
070	240	70
090	330	90
130	500	130
* Note Exact flow will depend on filter element selected. Consult technical data on page 7 & 8		

For complete filters:
identification filter material + micron rating code (see ordering code filter elements below)

Seal material	
B	NBR (Buna-N®)
V	FPM (Viton®)
E	EPDM
other seal material on request	

Design Code
only for information

Additional Features		Pos.*	
L	Leakage oil connection	1	2
*) position of leakage oil connection see page 4 without any code: assembly in the middle of the filter cover			

Outlet Style	
O	Standard outlet (without thread)
G	Filter bowl with threaded outlet

Clogging indicator (see page 5)		Pos.*	
M	Pressure gauge	1	2
G42	Electrical switch 42 V		
G110	Electrical switch 110 V		
G220	Electrical switch 220 V		
*) position of clogging indicator see page 4 without any code: assembly in the middle of the filter cover			

Connection style		Group					
Code	Connection style	014	030	045	070	090	130
B	BSP	G ³ / ₄	G1	G1 ¹ / ₄	G1 ¹ / ₂	G2	G2
B 1	BSP	G ¹ / ₂	G ¹ / ₂	G1 ¹ / ₂	G1 ¹ / ₄	G1 ¹ / ₄	G1 ¹ / ₄
B 2	BSP	G1	G ³ / ₄	–	–	G1 ¹ / ₂	G1 ¹ / ₂
N	NPT	³ / ₄ "	1"	1 ¹ / ₄ "	1 ¹ / ₂ "	2"	2"
N 1	NPT	1"	³ / ₄ "	1 ¹ / ₂ "	1 ¹ / ₄ "	1 ¹ / ₂ "	1 ¹ / ₂ "
U	SAE- ^o -Ring thread	1 ¹ / ₁₆	1 ⁵ / ₁₆	1 ⁵ / ₈	1 ⁷ / ₈	1 ⁷ / ₈	1 ⁷ / ₈
U 1	SAE- ^o -Ring thread	1 ⁵ / ₁₆	1 ¹ / ₁₆	1 ⁷ / ₈	1 ⁵ / ₈	1 ⁵ / ₈	1 ⁵ / ₈
F	SAE-flange (3000 PSI)	–	–	–	–	2"	2"
Flanges are not supplied.							

Ordering Code Filter Elements

RE-014 G 10 V / X

Series	RE
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Group	according to filter housing
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Filter material			Micron ratings available
Code	Material	max p* collapse	
A	Stainless fiber	30 bar (435 PSI)	03, 05, 10, 20
N	Filter paper	16 bar (232 PSI)	
G	Inorganic glass fiber	30 bar (435 PSI)	
S, B	Stainless mesh	30 bar (435 PSI)	25, 50, 100, 200
*collapse / burst resistance as per ISO 2941			

Design code
only for information

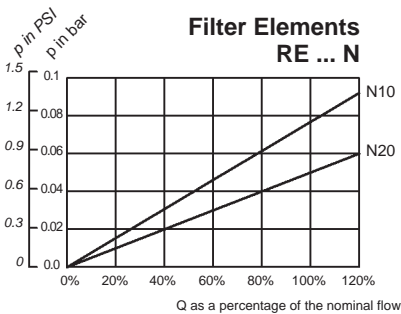
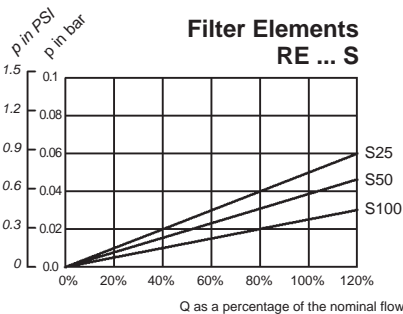
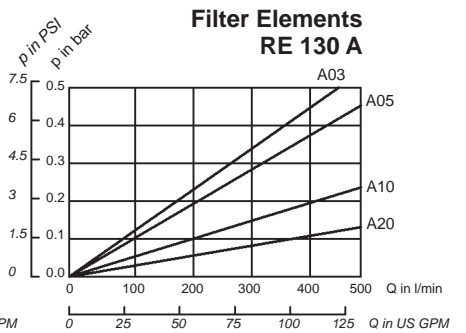
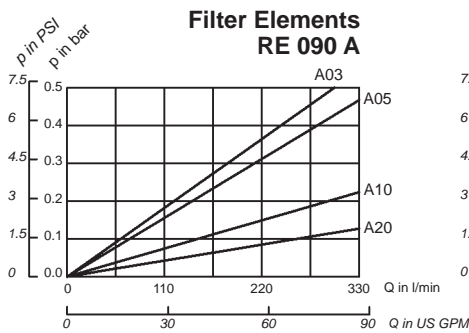
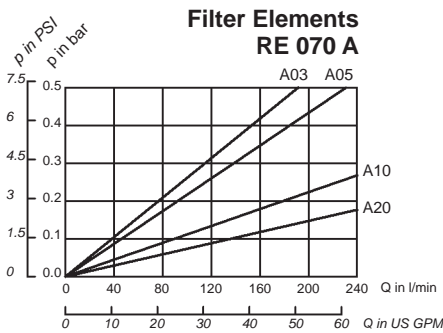
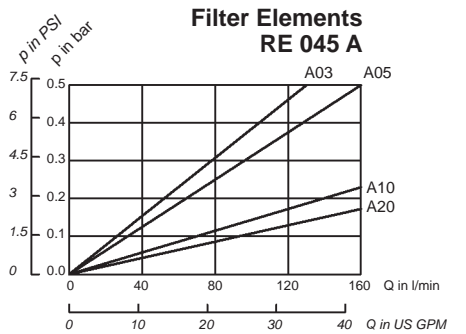
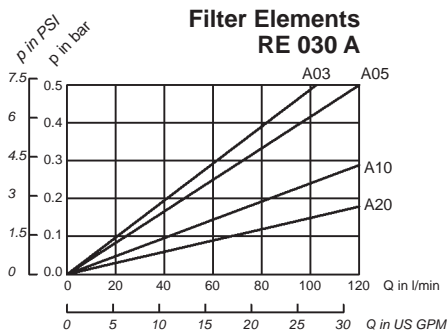
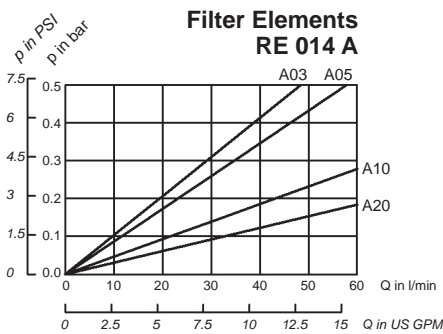
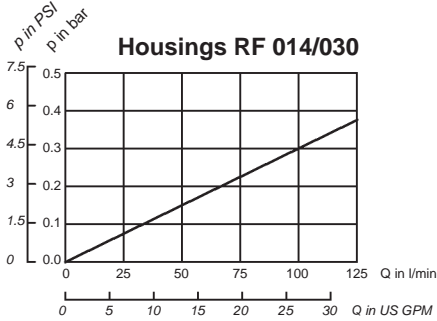
Seal material	
B	NBR (Buna-N®)
V	FPM (Viton®)
E	EPDM
other seal materials on request	

Micron rating	
03	3 µm
05	5 µm
10	10 µm
20	20 µm
25	25 µm
50	50 µm
100	100 µm
200	200 µm
other micron ratings on request	

Bold type identifies preferred material, other filter materials or micron ratings on request

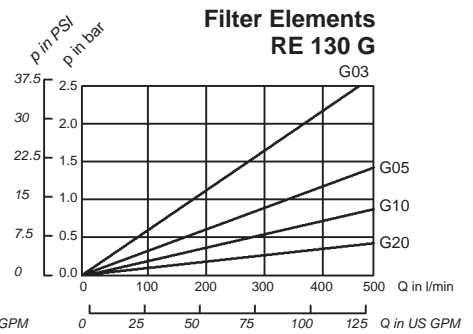
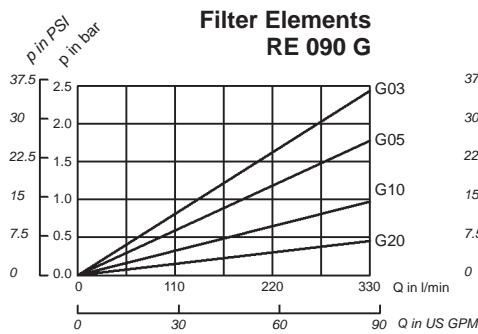
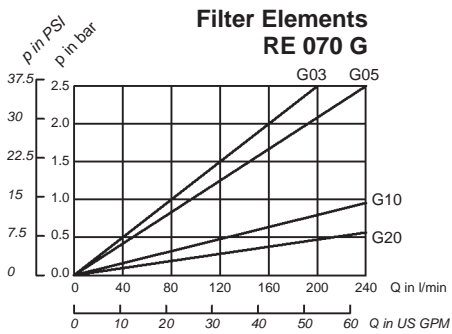
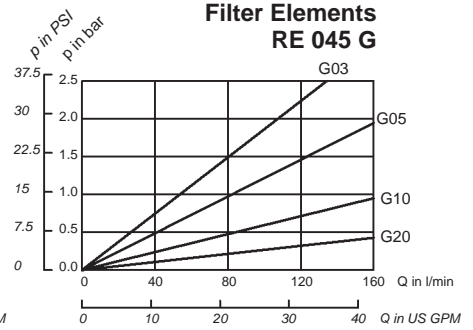
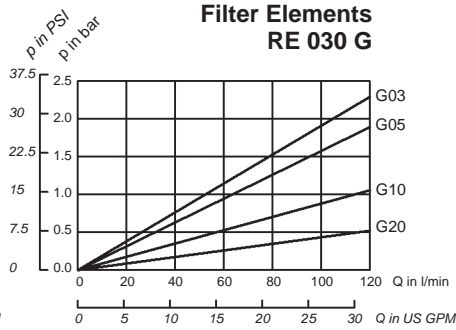
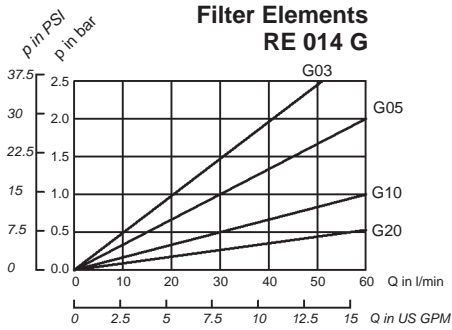
Flow Characteristics of Return Line Filters RF 014-130

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm³ and the kinematic viscosity of 30 mm²/s. The characteristics have been determined in accordance to ISO 3968.



Flow Characteristics of Return Line Filters RF 014-130

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm³ and the kinematic viscosity of 30 mm²/s. The characteristics have been determined in accordance to ISO 3968.



Technical Data

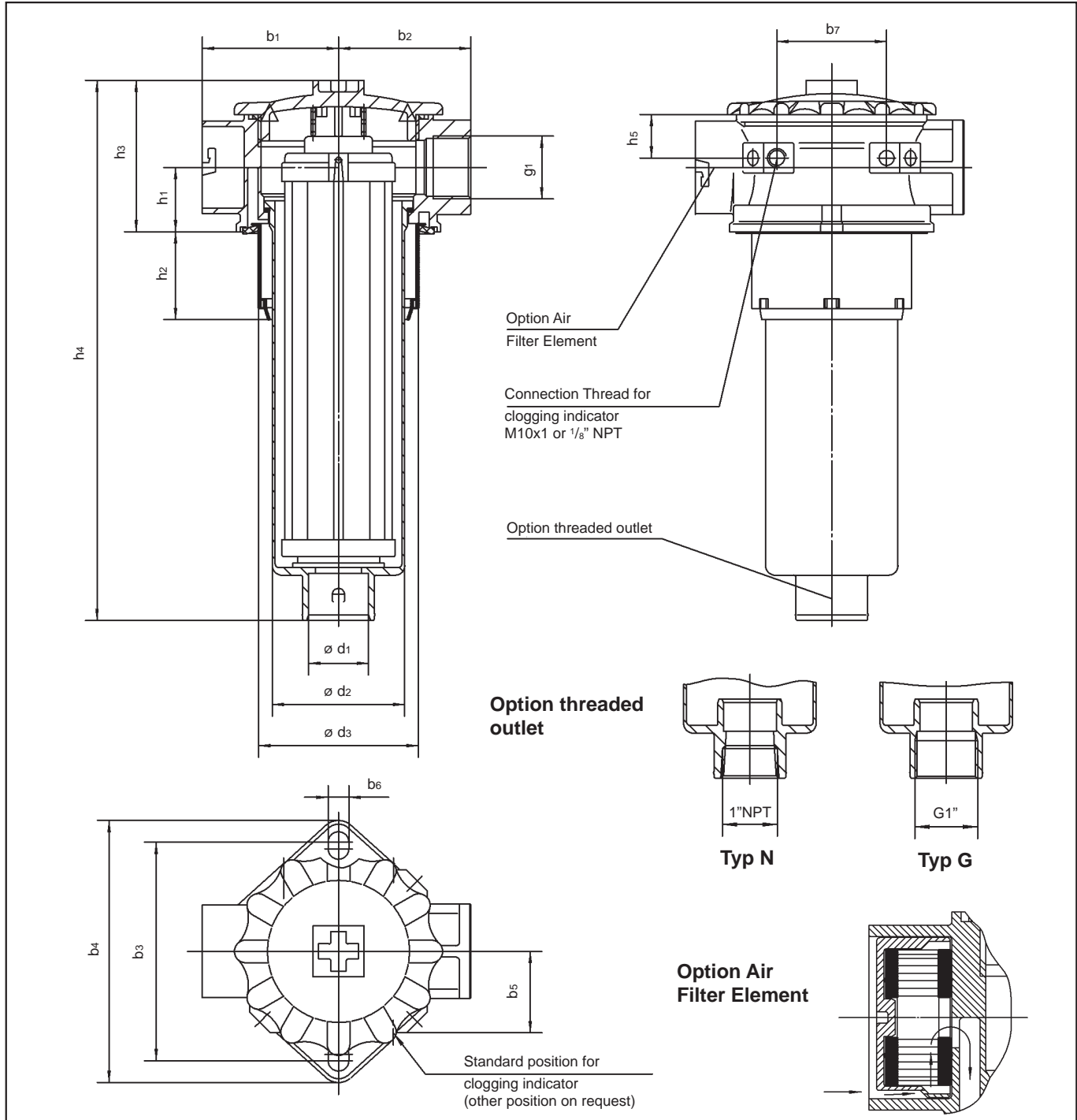
STAUFF RFB return line filters are designed as tank top filters. They are mounted directly on the tank top and if 100% of the system oil is filtered they provide the optimum removal of contaminant from the system. This provides the pump with clean oil thus reducing contaminant generated wear. Because of its low weight and compact design the STAUFF filters RFB are optimally suitable in mobile hydraulic applications.



Technical Specification

Construction	Tank Top flange mounting	By-pass valve (integrated in the filter element)	Opening pressure 3 bar \pm 0,3 bar (43,5 PSI \pm 4,35 PSI) other pressures on request
Filter head	Aluminium	Clogging indicator	Gauge type indicator 0...4 bar (0...58 PSI) coloured segments; Electrical switch, setting 2,5 bar (36,25 PSI)
Filter bowl	Glass fiber reinforced polyamide	Filter elements	Specification see page 14
Seals	NBR (Buna-N®), FPM (Viton®) or EPDM (Ethylene-Propylene)	Media	Mineral oils, other fluids on request
Threaded connection	BSP, NPT- and SAE-"O"-Ring thread		
Operating pressure	max 10 bar (145 PSI)		
Proof pressure	24 bar (350 PSI)		
Temperature range	-10° up to +100°C (14° up to 212°F)		

Dimensions RFB 022-052



Dimensions Return Line Filter RFB 022/046/052

All dimensions in mm (inch)

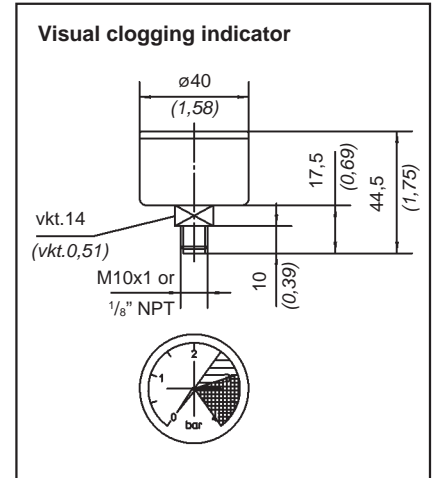
Filter Size	Thread connection G		SAE-“O”-Ring thread	h ₁	h ₂	h ₃	h ₄	h ₅	d ₁	d ₂	d ₃	b ₁	b ₂	b ₃	b ₄	b ₅	b ₆	b ₇
	BSP	NPT																
RFB 022	G 3/4	3/4"	1-5/16-12 UN	34 (1,34)	46,5 (1,83)	80 (3,15)	205,5 (8,09)	23 (0,91)	32 (1,26)	70 (2,76)	84,5 (3,33)	72 (2,84)	70 (2,76)	115,5 (4,55)	138,5 (5,45)	43 (1,69)	11 (0,43)	58 (2,28)
	G 1	1"																
RFB 046	G 3/4	3/4"					285,5 (11,24)											
	G 1	1"																
RFB 052	G 3/4	3/4"					351,5 (13,84)											
	G 1	1"																

Options

1. Visual clogging indicator

The gauge visually displays the degree of contamination of the element. The coloured segments allow quick visual checking.

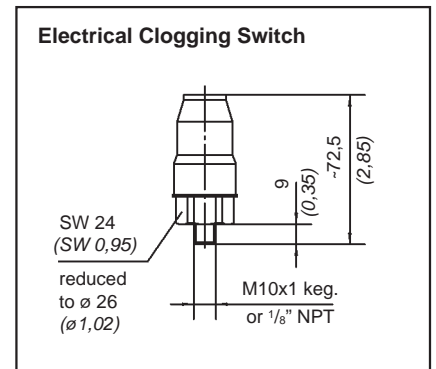
green	0...2,5 bar (0...36,25 PSI)	Element has service life left
yellow	2,5...3,0 bar (36,25 ...43,5 PSI)	Element is contaminated and should be changed
red	>3,0 bar (43,5 PSI)	By-pass valve open, unfiltered oil passing to tank



2. Electrical clogging switch

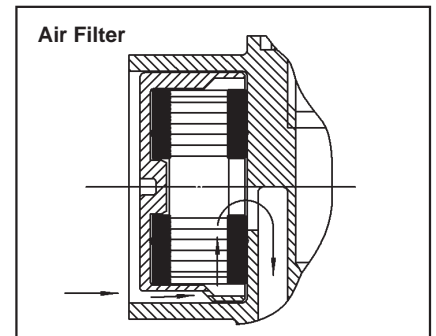
The switch is used where an electrical signal is needed to indicate when the element needs changing. The switch can turn on a light, or shut the machine down, or any further function controlled by an electric signal. The switching pressure is 2,5 bar (36,25 PSI) and this allows the element to be changed before the by-pass setting of 3 bar (43,5 PSI) is reached.

Maximum Voltage	Switch Type
42 V	G 42
110 V	G 110
220 V	G 220



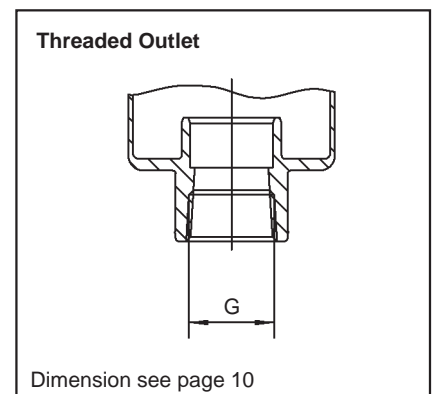
3. Air Filter Element

Allows an effective filtration of the incoming air which avoids the infiltration of dirt particles into the hydraulic system. The standard air filter element is micron filter paper, other materials and micron ratings on request.

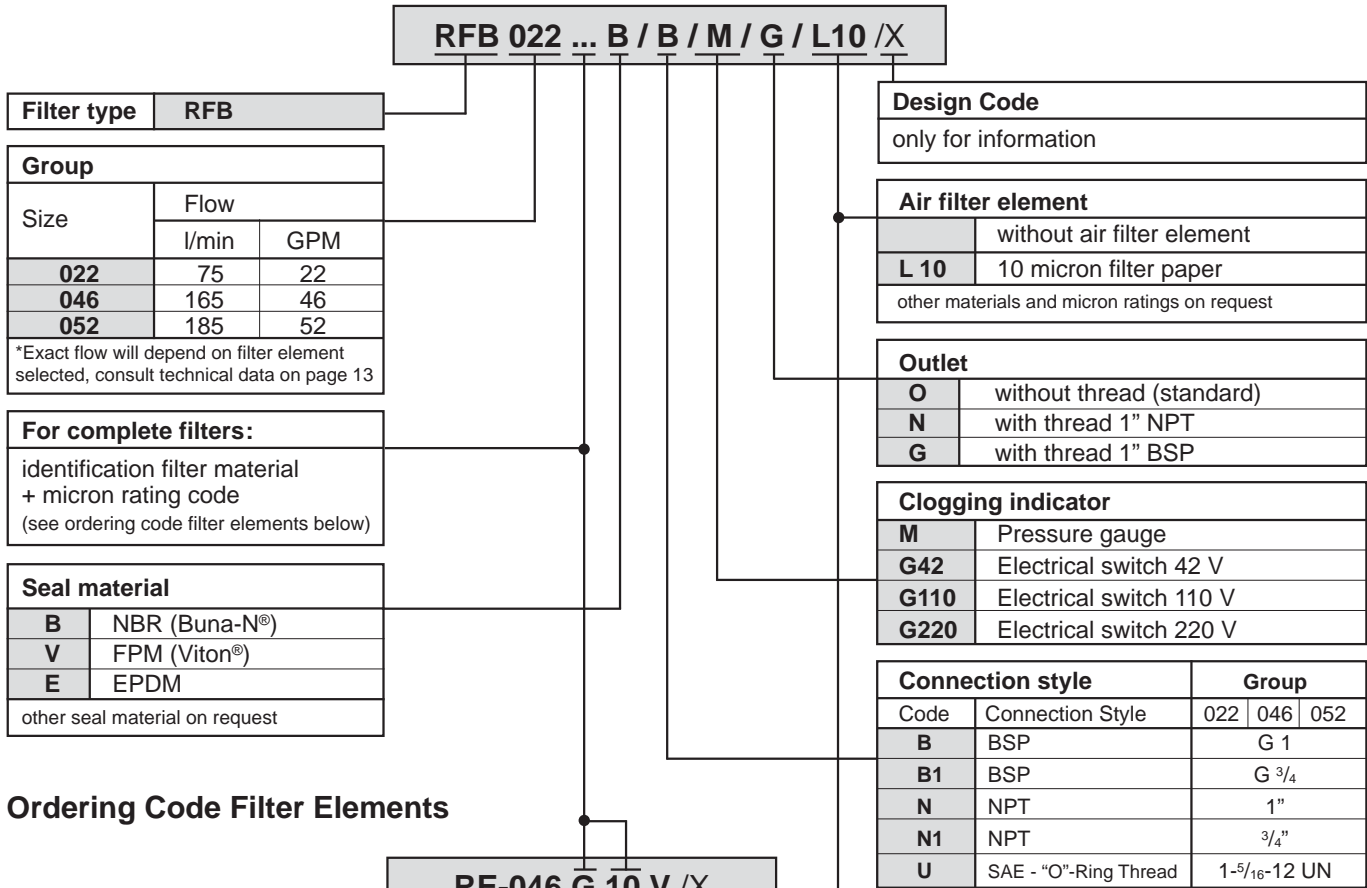


4. Filter bowl with threaded connection

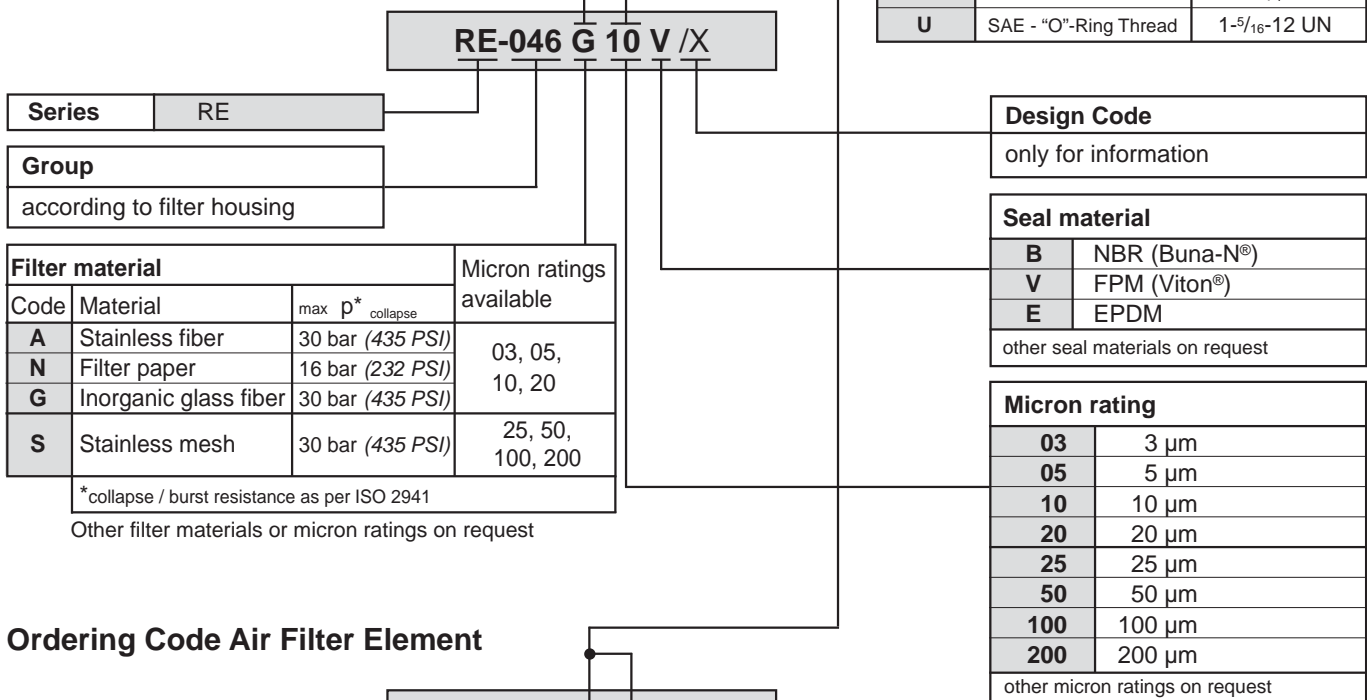
Under some circumstances such as a tall reservoir or one with oil levels which vary greatly during operation, it is necessary to extend the filter bowl so that the returning oil returns beneath the surface and does not entrain air in the process. The optional bowl with a female thread allows an extension to be fitted quite simply.



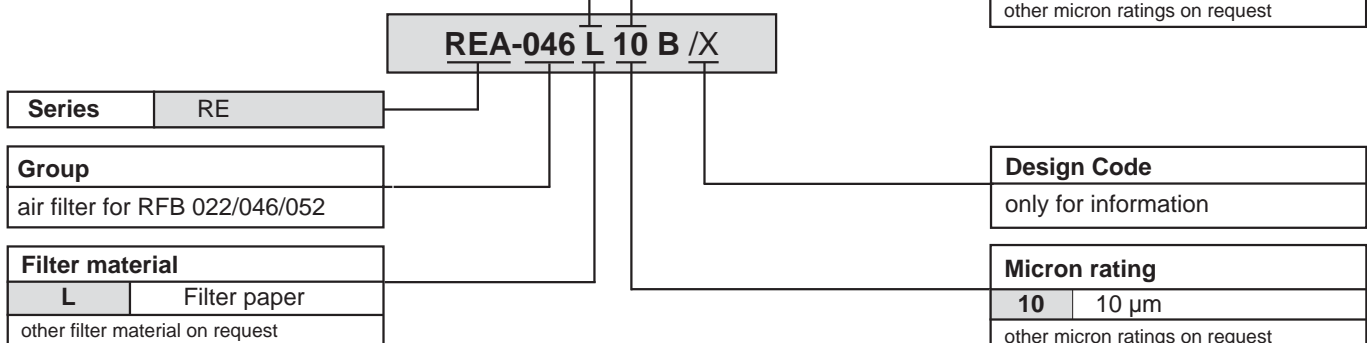
Ordering Code Filter Housings



Ordering Code Filter Elements

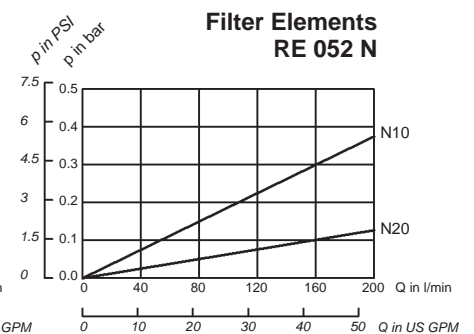
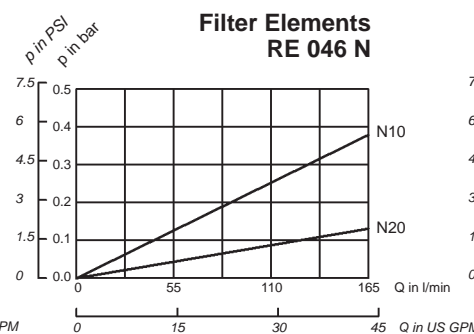
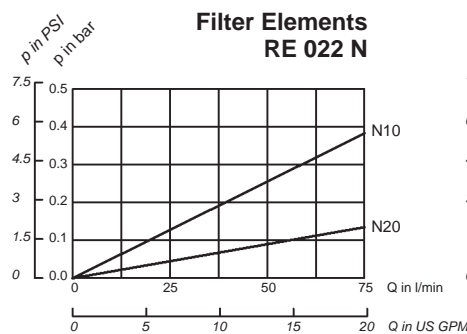
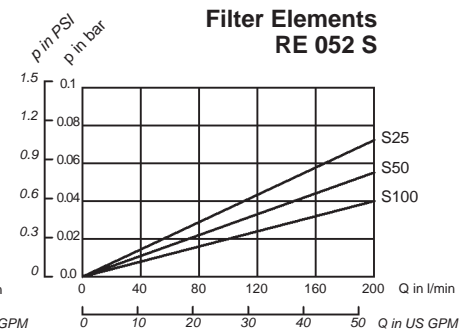
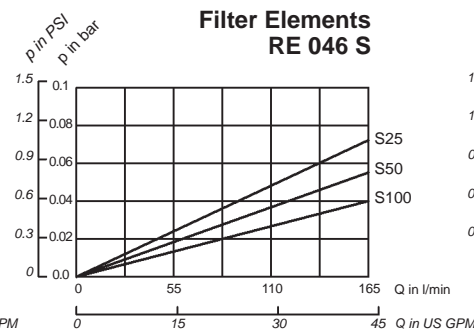
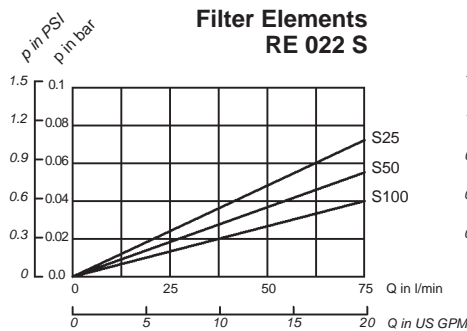
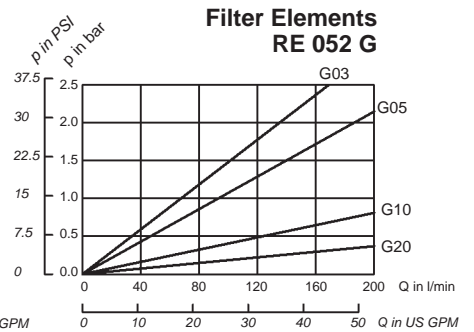
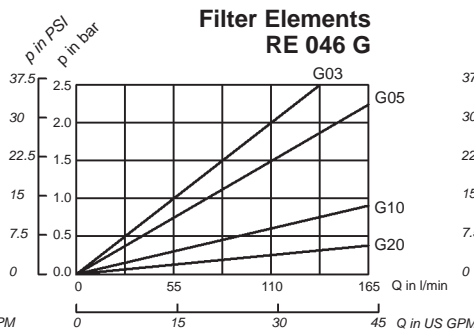
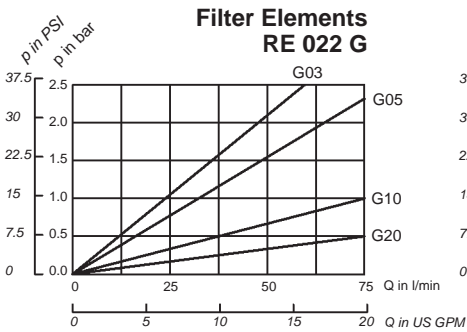
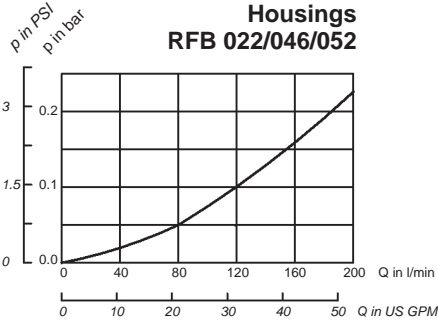


Ordering Code Air Filter Element



Flow Characteristics of Return Line Filters RFB 022-052

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm³ and the kinematic viscosity of 30 mm²/s. The characteristics have been determined in accordance to ISO 3968.



Replacement Filter Elements for RF and RFB series

STAUFF replacement filter elements for RF and RFB series filters are manufactured in the common filter materials such as stainless fiber, stainless mesh, paper and inorganic glass fiber. As standard all replacement elements series RF and RFB have tin plated steel parts for use with aggressive media such as water glycol, other materials available upon request. All STAUFF replacement elements comply with quality specifications in accordance with international standards.



RE-014 G 10 V /X

Series RE

Group
according to filter housing

Filter material			Micron ratings available
Code	Material	max p* collapse	
A	Stainless fiber	30 bar (435 PSI)	03, 05, 10, 20
N	Filter paper	16 bar (232 PSI)	
G	Inorganic glass fiber	30 bar (435 PSI)	
S, B	Stainless mesh (type B not for RE-022/046/065)	30 bar (435 PSI)	25, 50, 100, 200

*collapse / burst resistance as per ISO 2941

Bold type identifies preferred material, other filter materials or micron ratings on request

Design Code
only for information

Seal material

B	NBR (Buna-N®)
V	FPM (Viton®)
E	EPDM

other seal materials on request

Micron rating

03	3 µm
05	5 µm
10	10 µm
20	20 µm
25	25 µm
50	50 µm
100	100 µm
200	200 µm

other micron ratings on request

