

## Return Line Filters ■ Type RFS


**Product Description**

STAUFF RFS Carbon Steel Return Line Filters are designed as tank top or in-line filters. They are mounted directly on the tank top and if 100% of the system oil is filtered, they provide the optimum removal of contaminants from the system. This provides the pump with clean oil thus reducing contaminant generated wear. The filter bowl is designed with a connection, threaded or flanged, for extending the return oil beneath the surface thus preventing the entrainment of air. A high efficiency of contaminant removal is assured by using STAUFF RE Replacement Filter Elements. The high dirt-hold capacity of STAUFF Elements ensures a long service life and as a result reduced maintenance costs.

**Technical Data**
**Construction**

- Tank Top mounting or in-line mounting

**Materials**

- Filter Housing: Carbon Steel
- Sealings: NBR (Buna-N®)  
FPM (Viton®)  
EPDM (Ethylene Propylene Diene Monomer Rubber)  
Other sealing materials on request

**Port Connection**

- BSP
- SAE flange 3000 PSI

**Flow Rating**

- Up to 1135 l/min / 300 US GPM

**Operating Pressure**

- Max. 25 bar / 365 PSI

**Proof Pressure**

- Min. 37,5 bar / 545 PSI

**Temperature Range**

- -10 °C ... +100 °C / +14 °F ... +212 °F

**Filter Elements**

- Specifications see page C94

**Media Compatibility**

- Mineral oils, other fluids on request

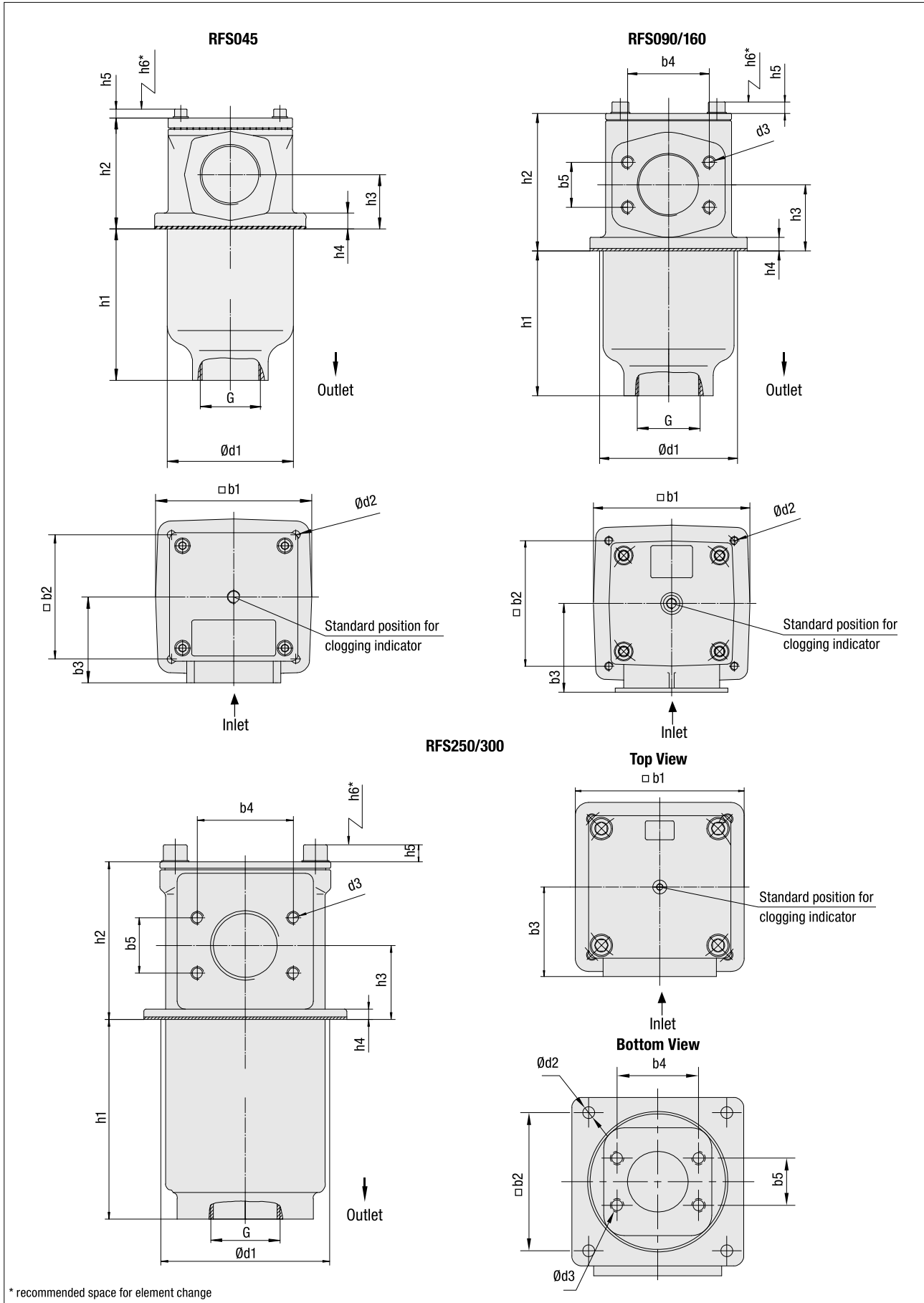
**Options and Accessories**
**Valves**

- Bypass valve (integrated in the filter element) Opening pressure 3 bar ± 0,3 bar / 43.5 PSI ± 4.35 PSI  
Other settings available on request

**Clogging Indicators**

- Visual clogging indicator 0...4 bar / 0...58 PSI coloured segments
- Electrical clogging switch, setting 2,5 bar / 36.25 PSI  
Other clogging indicators available on request

Return Line Filters ■ Type RFS



\* recommended space for element change

## Return Line Filters ■ Type RFS

Thread Connection		Filter Size RFS				
		045	090	160	250	300
Inlet	BSP	1-1/2	2	-	-	-
	SAE Flange	-	2	3	3-1/2	4
Outlet G	BSP	1-1/2	2	3	-	-
	SAE Flange	-	-	-	3-1/2	4

Dimensions (mm/in)	Filter Size RFS				
	045	090	160	250	300
b1	120	150	196	255	255
	4.72	5.91	7.72	10.04	10.04
b2	95,5	120	155,5	205	205
	3.76	4.72	6.12	8.07	8.07
b3	66	85	110	135	145
	2.60	3.35	4.33	5.32	5.71
b4	-	77,8	106,4	120,7	130,2
	-	3.06	4.19	4.75	5.13
b5	-	42,9	61,9	69,5	77,8
	-	1.69	2.44	2.74	3.06
d1	100	135	180	208	208
	3.94	5.32	7.09	8.19	8.19
d2	6,5	9	13,5	17,5	17,5
	.26	.35	.53	.69	.69
d3	-	M12 1/2-UNC	M16 5/8-UNC	M16 5/8 UNC	M16 5/8 UNC
	-	-	-	-	-
h1	120	138	243	251	332
	4.72	5.43	9.57	9.88	13.07
h2	88	131	167	198	241
	3.47	5.16	6.57	7.80	9.49
h3	43	63	84	93	121
	1.69	2.48	3.31	3.66	4.76
h4	13	13	13	13	13
	.51	.51	.51	.51	.51
h5	7	12	12	12	12
	.28	.47	.47	.47	.47
h6	130	180	320	350	460
	5.11	7.09	12.60	13.78	18.11

## Return Line Filter Housings / Complete Filters ■ Type RFS

**RFS** **250** **...** **...** **B** / **F** / **G42NC** / **D** / **F** / **X**

1 2 3 4 5 6 7 8 9 10

## 1 Type

Carbon Steel Return Line Filter **RFS**

## 2 Group

Flow	Size
170 l/min / 45 US GPM	<b>045</b>
340 l/min / 90 US GPM	<b>090</b>
600 l/min / 160 US GPM	<b>160</b>
945 l/min / 250 US GPM	<b>250</b>
1135 l/min / 300 US GPM	<b>300</b>

Note: Exact flow will depend on filter element selected.  
Consult technical data on pages C96 / C97.

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Stainless fibre	30 bar / 435 PSI		<b>A</b>
Filter paper	10 bar / 145 PSI	10, 20	<b>N</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	<b>S</b>

Note: \*Collapse/burst resistance as per ISO 2941.  
Other materials on request.

## 4 Micron Rating

3 $\mu$ m	<b>03</b>
5 $\mu$ m	<b>05</b>
10 $\mu$ m	<b>10</b>
20 $\mu$ m	<b>20</b>
25 $\mu$ m	<b>25</b>
50 $\mu$ m	<b>50</b>
100 $\mu$ m	<b>100</b>
200 $\mu$ m	<b>200</b>

Note: Other micron ratings on request.

## 5 Sealing Material

NBR (Buna®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

Note: Other sealing materials on request.

## 6 Connection Style

Connection Style	Group					Thread Style	Code
	045	090	160	250	300		
BSP	1-1/2	2	3	-	-	-	<b>G</b>
SAE Flange 3000 PSI	-	-	-	3-1/2	4	metric	<b>FM</b>
SAE Flange 3000 PSI	-	-	-	3-1/2	4	UNC	<b>FU</b>

## 7 Clogging Indicator

	Position*		Code
Without Clogging Indicator	-		<b>0</b>
Visual Clogging Indicator			<b>M</b>
Electrical Clogging Switch 42 V, NO	1	2	<b>G42NO</b>
Electrical Clogging Switch 42 V, NC			<b>G42NC</b>
Electrical Clogging Switch 110 V, two-way contact			<b>G110</b>
Electrical Clogging Switch 230 V, two-way contact			<b>G230</b>

Note: \*Position of clogging indicator see page C92.  
Without any code: assembly in the middle of the filter cover.

## 8 Option Clogging Indicator G42NO and G42NC

Plug connector and rubber cap	<b>none</b>
Deutsch plug	<b>D</b>
AMP plug	<b>A</b>
M12 x 1,5	<b>M12</b>

## 9 Outlet Style

Connection Style	Group					Thread Style	Code
	045	090	160	250	300		
BSP	1-1/2	2	3	-	-	-	<b>G</b>
SAE Flange 3000 PSI	-	-	-	3-1/2	4	metric	<b>FM</b>
SAE Flange 3000 PSI	-	-	-	3-1/2	4	UNC	<b>FU</b>

## 10 Design Code

Only for information **X**

## Filter Elements ■ Type RE

**RE** - **250** **G** **10** **B** / **X**

1 2 3 4 5 6

## 1 Type

Filter Element Series **RE**

## 2 Group

According to filter housing

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Stainless fibre	30 bar / 435 PSI		<b>A</b>
Filter paper	10 bar / 145 PSI	10, 20	<b>N</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	<b>S</b>

Note: \*Collapse/burst resistance as per ISO 2941.  
Other materials on request.

## 4 Micron Rating

3 $\mu$ m	<b>03</b>
5 $\mu$ m	<b>05</b>
10 $\mu$ m	<b>10</b>
20 $\mu$ m	<b>20</b>
25 $\mu$ m	<b>25</b>
50 $\mu$ m	<b>50</b>
100 $\mu$ m	<b>100</b>
200 $\mu$ m	<b>200</b>

Note: Other micron ratings on request.

## 5 Sealing Material

NBR (Buna®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>

Note: Other sealing materials on request.

## 6 Design Code

Only for information **X**

Return Line Filters ■ Type RFS

**Visual Clogging Indicator**

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

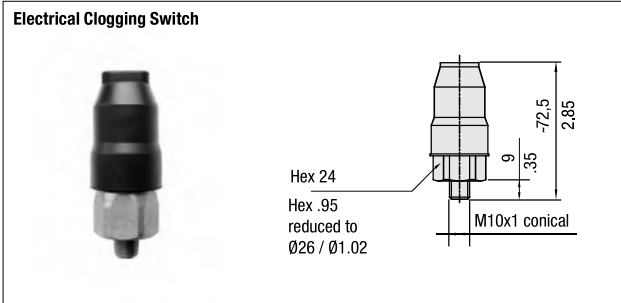
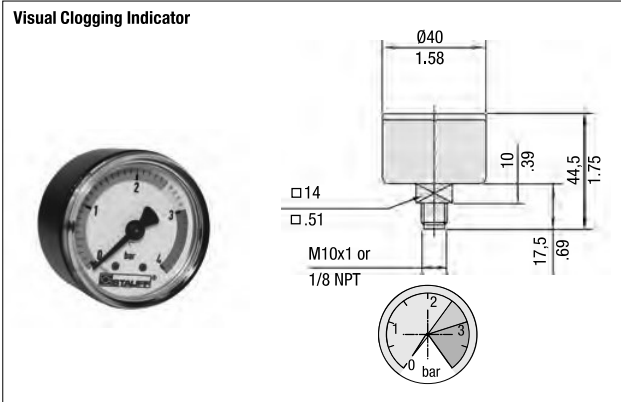
green	0 ... 2,5 bar / 0 ... 36.25 PSI	Element has service life left
yellow	2,5 ... 3,0 bar / 36.25 ... 43.5 PSI	Element is contaminated and should be changed
red	>3,0 bar / >43.5 PSI	Bypass valve open, unfiltered oil passing to tank

**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 bypass setting of 3 bar / 43.5 PSI is reached.

Standard type with plug connector and rubber cap. Available with DEUTSCH DT04-2P plug (industrial standard), AMP Junior Timer plug (industrial standard) and five-pin circular connector M12, A-coded, according to IEC 61076-2-101.

Maximum Voltage	Switch Type	Note: The customer / user carries the responsibility for the electrical connection.
42 V (normally open)	G42NO	
42 V (normally closed)	G42NC	
110 V (two-way contact)	G110	
230 V (two-way contact)	G230	



Dimensions in mm/in

**Replacement Filter Elements ■ Type RE**

**Product Description**

STAUFF RE Replacement Filter Elements are manufactured in the common filter materials such as Stainless Fibre, Stainless Mesh, Cellulose and Inorganic Glass Fibre. As standard all Replacement Elements RE have tin plated steel parts for use with aggressive media such as water glycol, upon request you also can get other materials. All Replacement Elements made by STAUFF comply with quality specifications in accordance with international standards.



**Order Code**

RE - 250 G 10 B / X

1
2
3
4
5
6

<b>1 Type</b>			
Filter Element Series			<b>RE</b>
<b>2 Group</b>			
According to filter housing			
Note: See order code page C94.			
<b>3 Filter Material</b>			
Material	Max. Δp*collapse	Micron ratings available	Code
Inorg. glass fibre	25 bar / 363 PSI	3, 5, 10, 20	<b>G</b>
Stainless fibre	30 bar / 435 PSI		<b>A</b>
Filter paper	10 bar / 145 PSI	10, 20	<b>N</b>
Stainless mesh	30 bar / 435 PSI	25, 50, 100, 200	<b>S</b>

Note: \*Collapse/burst resistance as per ISO 2941.  
Other materials on request.

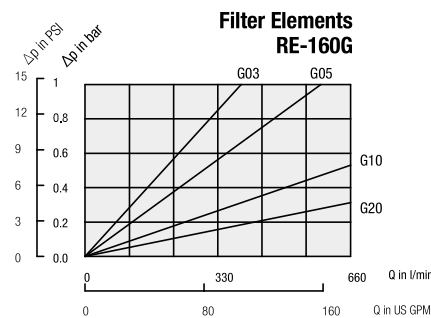
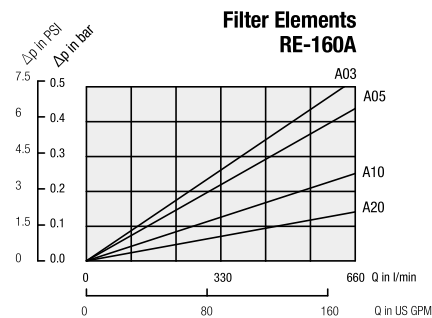
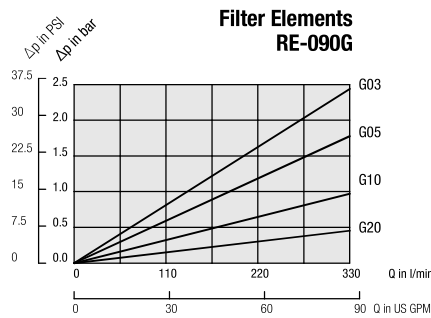
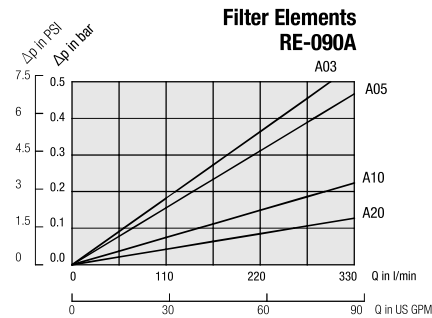
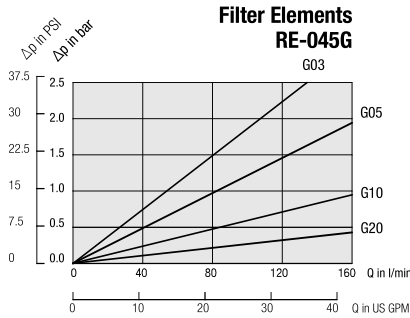
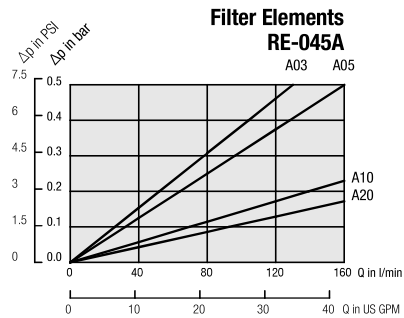
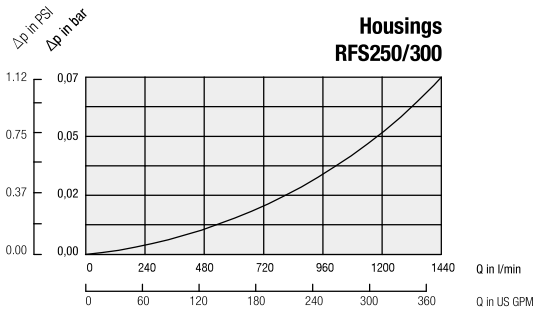
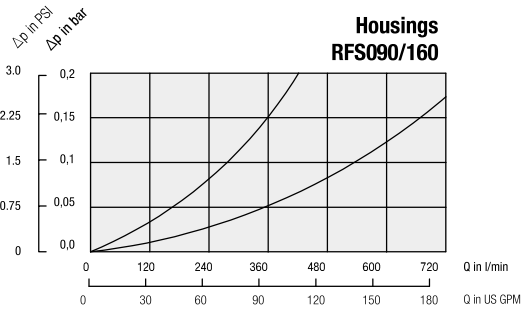
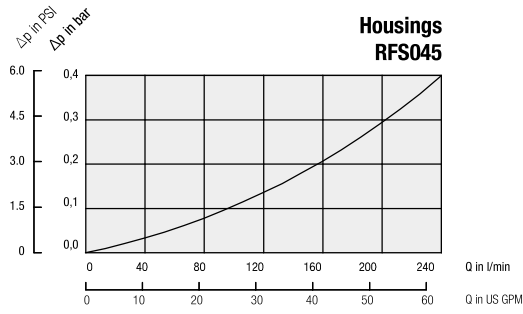
<b>4 Micron Rating</b>	
3 µm	<b>03</b>
5 µm	<b>05</b>
10 µm	<b>10</b>
20 µm	<b>20</b>
25 µm	<b>25</b>
50 µm	<b>50</b>
100 µm	<b>100</b>
200 µm	<b>200</b>

Note: Other micron ratings on request.

<b>5 Sealing Material</b>	
NBR (Buna®)	<b>B</b>
FPM (Viton®)	<b>V</b>
EPDM	<b>E</b>
Note: Other sealing materials on request.	
<b>6 Design Code</b>	
Only for information	<b>X</b>

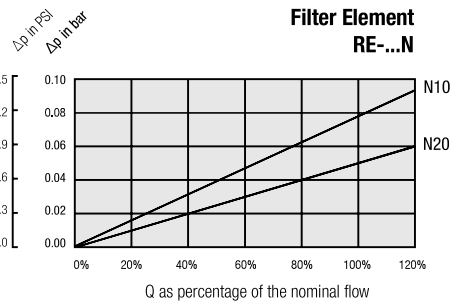
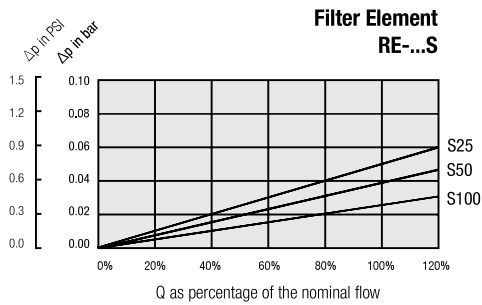
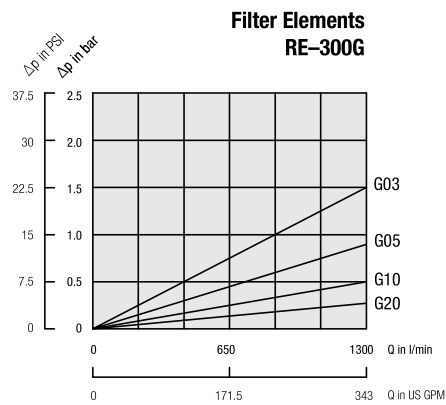
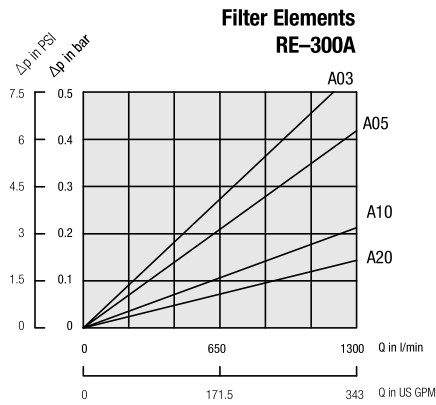
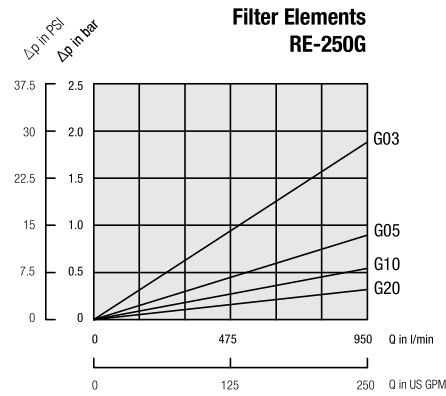
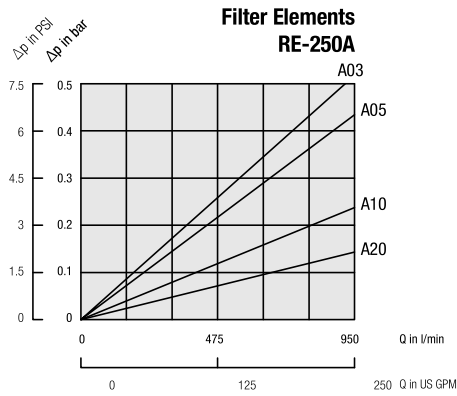
### Return Line Filters ■ Type RFS Flow Characteristics

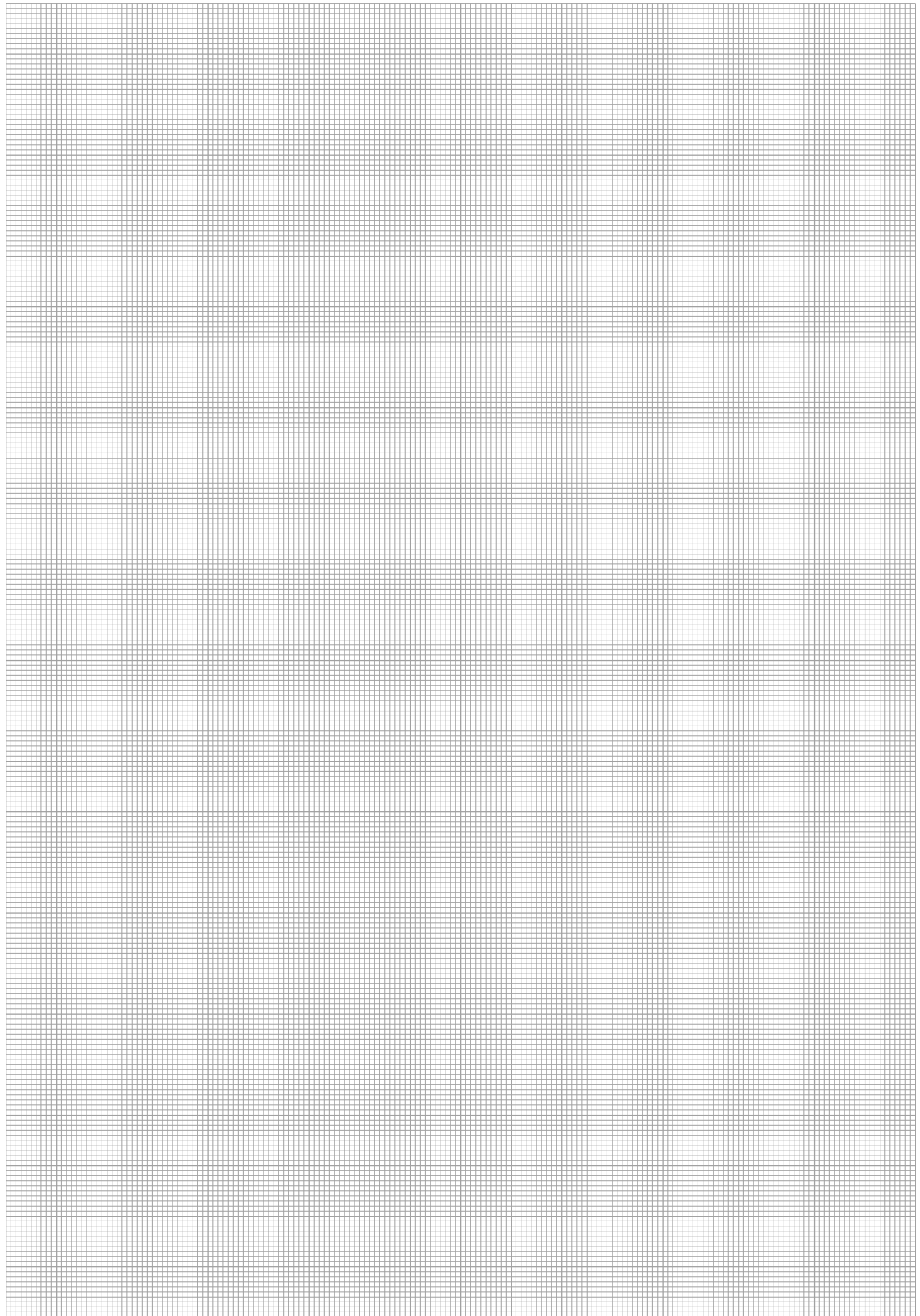
The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30cSt). The characteristics have been determined in accordance to ISO 3968. Multipass filter ratings have been obtained in accordance to ISO 16889. The housing pressure drop is directly proportional to the oil density. Consult STAUFF for details.



**Return Line Filters ■ Type RFS Flow Characteristics**

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30cSt). The characteristics have been determined in accordance to ISO 3968. Multipass filter ratings have been obtained in accordance to ISO 16889. The housing pressure drop is directly proportional to the oil density. Consult STAUFF for details.







## Return Line Filters ■ Type RTF10/25


**Product Description**

STAUFF RTF10/25 Return Line Filters are designed as tank top filters with a maximum operating pressure of 3,4 bar / 49 PSI.

**Technical Data**
**Construction**

- Tank Top flange mounting

**Materials**

- Filter head: Aluminum
- Filter bowl: Polyamide
- Sealings: NBR (Buna-N®)  
FPM (Viton®)  
Other sealing materials on request

**Port Connection**

- BSP
- NPT
- SAE O-ring thread

**Flow Rating**

- Up to 95 l/min / 25 US GPM

**Operating Pressure**

- Max. 3,4 bar / 49 PSI

**Burst Pressure**

- Min. 10 bar / 145 PSI

**Temperature Range**

- -25 °C ... +95 °C / -13 °F ... +203 °F

**Filter Elements**

- Specifications see page C102

**Media Compatibility**

- Mineral oils, other fluids on request

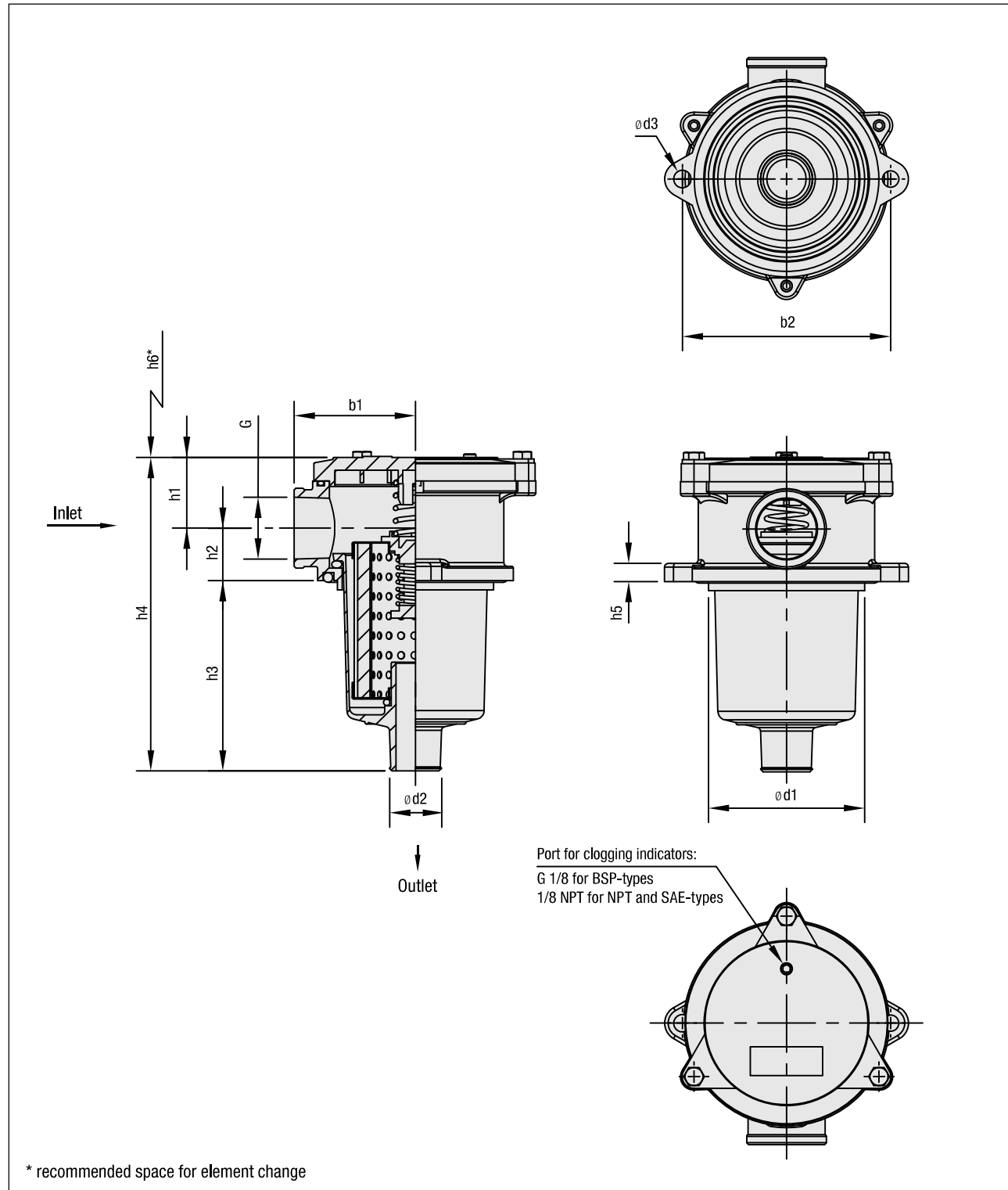
**Options and Accessories**
**Valve**

- Bypass valve: Opening pressure 1,7 bar / 25 PSI  
(integrated in the filter element) Other settings available on request

**Clogging Indicators**

- Visual clogging indicator, coloured segments
- Electrical clogging switch, adjustable  
Other clogging indicators available on request

## Return Line Filters ■ Type RTF10/25



**Return Line Filters ■ Type RTF10/25**

Thread Connection G	Filter Size RTF		
	10S1	25S1	25S2
BSP	1/2	1	1
NPT	1/2	1	1
SAE O-ring	-	1-5/16-12	1-5/16-12

Dimensions (mm/in)	Filter Size RTF		
	10S1	25S1	25S2
h1	26	34	34
	1.02	1.34	1.34
h2	21	29	29
	.83	1.14	1.14
h3	88	103	151
	3.46	4.05	5.95
h4	136	166	212
	5.35	6.53	8.35
h5	8	10	10
	.32	.39	.39
h6	110	130	175
	4.33	5.12	6.89
b1	50	67	67
	1.97	2.64	2.64
b2	90	115	115
	3.54	4.52	4.52
d1	66	86	86
	2.60	3.39	3.39
d2	24	28	28
	.94	1.10	1.10
d3	7	9	9
	.28	.35	.35
Weight (kg/lbs)	0,45	0,9	1
	1	2	2.2

## Return Line Filter Housings / Complete Filters ■ Type RTF10/25

RTF 25 ... B / N / S2 / V / X

1 2 3 4 5 6 7 8 9

## 1 Type

Return Line Filter **RTF**

## 2 Group

Flow	Size
38 l/min / 10 US GPM	<b>10</b>
95 l/min / 25 US GPM	<b>25</b>

Note: Exact flow will depend on filter element selected.  
Consult technical data on pages C119.

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	3 bar / 43,5 PSI	10, 25	<b>G</b>
Filter paper	3 bar / 43,5 PSI	10, 25	<b>D</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

10 $\mu\text{m}$	<b>10</b>
25 $\mu\text{m}$	<b>25</b>

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**FPM (Viton®) **V**

Note: Other sealing materials on request

## 6 Connection Style

Connection Style	Group		Code
	10	25	
BSP	1/2	1	<b>B</b>
NPT	1/2	1	<b>N</b>
SAE O-ring Thread	-	1-5/16-12	<b>S</b>

## 7 Length

Bowl Length 1 **S1**Bowl Length 2 **S2**

Note: RTF 10 size available in bowl length 1 only.

## 8 Clogging Indicator

Without clogging indicator **none**Visual clogging indicator **V**Electrical clogging indicator **E**

Note: See pages C100 and C121 for more details on indicator ports and types.

## 9 Design Code

Only for information **X**

## Filter Elements ■ Type RTE

RTE - 25 D 10 B / S2 / X

1 2 3 4 5 6 7

## 1 Type

Filter Element Series **RTE**

## 2 Group

According to filter housing

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Inorg. glass fibre	3 bar / 43,5 PSI	10, 25	<b>G</b>
Filter paper	3 bar / 43,5 PSI	10, 25	<b>D</b>

\* Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

10  $\mu\text{m}$  **10**25  $\mu\text{m}$  **25**

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**FPM (Viton®) **V**

Note: Other sealing materials on request

## 6 Length

Bowl Length 1 **S1**Bowl Length 2 **S2**

Note: RTF 10 size available in bowl length 1 only.

## 7 Design Code

Only for information **X**

## Return Line Filters ■ Type RTF20


**Product Description**

STAUFF RTF20 Return Line Filters are designed as tank top filters with a maximum operating pressure of 10 bar / 145 PSI and flow rates up to 115 l/min / 30 US GPM. The filter bowl is designed to return the oil beneath the surface thus preventing entrainment of air. RTF20 series compact design and integral breather make them ideal for mobile hydraulic applications.

**Technical Data**
**Construction**

- Tank Top flange mounting

**Materials**

- Filter head: Aluminum
- Filter bowl & cap: Polyamide
- Sealings: NBR (Buna-N®)  
FPM (Viton®)  
Other sealing materials on request

**Port Connection**

- BSP
- NPT
- SAE O-ring thread

**Flow Rating**

- Up to 115 l/min / 30 US GPM

**Operating Pressure**

- Max. 10 bar / 145 PSI

**Burst Pressure**

- Min. 30 bar / 435 PSI

**Temperature Range**

- -25 °C ... +95 °C / -13 °F ... +203 °F

**Integrated Breather**

- Filter paper 10 µm
- Filter paper 40 µm

**Filter Elements**

- Specifications see page C106

**Media Compatibility**

- Mineral oils, other fluids on request

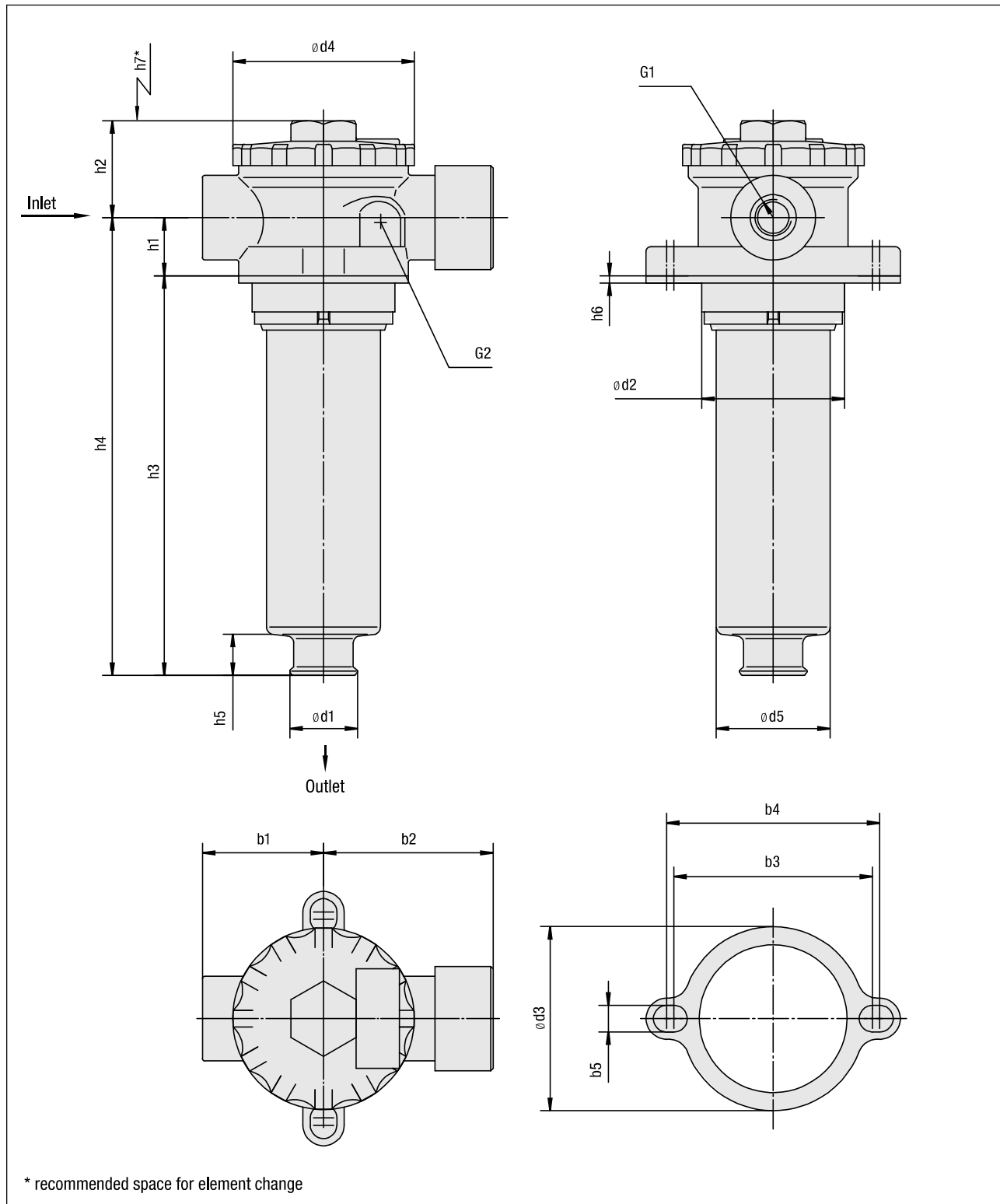
**Options and Accessories**
**Valve**

- Bypass valve: Opening pressure 1,7 bar / 25 PSI  
(integrated in the filter element) Other settings available on request

**Clogging Indicators**

- Visual clogging indicator, coloured segments
- Electrical clogging switch, adjustable  
Other clogging indicators available on request

## Return Line Filters ■ Type RTF20



## Return Line Filters ■ Type RTF20

Thread Connection G1	Filter Size RTF	
	020	
BSP	1/2	3/4
NPT	1/2	3/4
SAE Thread	3/4-16	1-1/16

Dimensions (mm/in)	Filter Size RTF	
	020	
b1	50	
	1.97	
b2	70	
	2.76	
b3	82	
	3.23	
b4	88	
	3.46	
b5	11	
	.43	
d1	28	
	1.10	
d2*	Min. 60 / Max. 63	
	Min. 2.36 / Max. 2.48	
d3	77	
	3.03	
d4	75	
	2.95	
d5	48	
	1.89	
h1	24	
	.94	
h2	37,5	
	1,48	
h3	178	
	7,01	
h4	202	
	7,95	
h5	16	
	.63	
h6	2	
	.07	
h7	210	
	8.27	
G2	G1/8 or	
	1/8 NPT	

\* recommended diameter for mounting hole

## Return Line Filter Housings / Complete Filters ■ Type RTF20

<b>RTF</b>	<b>20</b>	<b>D</b>	<b>10</b>	<b>B</b>	<b>/</b>	<b>N1</b>	<b>/</b>	<b>V</b>	<b>/</b>	<b>L10</b>	<b>/</b>	<b>D</b>	<b>/</b>	<b>X</b>
1	2	3	4	5		6		7		8		9		10

## 1 Type

Return Line Filter **RTF20**

## 2 Group

Flow **Size**  
115 l/min / 30 US GPM **20**Note: Exact flow will depend on filter element selected.  
Consult technical data on pages C119 / C120.

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	25 bar / 363 PSI	6, 10, 20	<b>G</b>
Filter paper	10 bar / 145 PSI	10	<b>D</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

6 $\mu$ m	<b>06</b>
10 $\mu$ m	<b>10</b>
20 $\mu$ m	<b>20</b>

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**FPM (Viton®) **V**

Note: Other sealing materials on request

## 6 Connection Style

Connection Style	Thread	Code
BSP	1/2	<b>B1</b>
BSP	3/4	<b>B2</b>
NPT	1/2	<b>N1</b>
NPT	3/4	<b>N2</b>
SAE O-ring Thread	3/4-16	<b>S1</b>
SAE O-ring Thread	1-1/16-12	<b>S2</b>

## 7 Clogging Indicator

No clogging indicator **0**Visual clogging indicator **V**Electrical clogging indicator **E**

Note: See pages C104 and C121 for more details on indicator ports and types.

## 8 Breather

10  $\mu$ m Filter Paper **L10**40  $\mu$ m Filter Paper **L40**

## 9 Dipstick

Without dipstick **none**With dipstick **D**

## 10 Design Code

Only for information **X**

## Filter Elements ■ Type RTE

<b>RTE</b>	<b>-</b>	<b>20</b>	<b>D</b>	<b>10</b>	<b>B</b>	<b>/</b>	<b>X</b>
1		2	3	4	5		6

## 1 Type

Filter Element Series **RTE**

## 2 Group

According to filter housing

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Inorg. glass fibre	25 bar / 363 PSI	6, 10, 20	<b>G</b>
Filter paper	10 bar / 145 PSI	10	<b>D</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

6 $\mu$ m	<b>06</b>
10 $\mu$ m	<b>10</b>
20 $\mu$ m	<b>20</b>

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**FPM (Viton®) **V**

Note: Other sealing materials on request

## 6 Design Code

Only for information **X**

## Air Filter Elements ■ Type RTEA

<b>RTEA</b>	<b>-</b>	<b>020</b>	<b>L</b>	<b>10</b>	<b>B</b>	<b>/</b>	<b>X</b>
1		2	3	4	5		6

## 1 Type

Air Filter Element Series **RTEA**

## 2 Group

Air filter for RTF20

## 3 Filter Material

Filter Paper **L**

Note: Other materials on request

## 4 Micron Rating

10  $\mu$ m **10**

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**

Note: Other sealing materials on request

## 6 Design Code

Only for information **X**



## Return Line Filters ■ Type RTF40


**Product Description**

STAUFF RTF40 Return Line Filters are designed as tank top filters with a maximum operating pressure of 6,9 bar / 100 PSI. The filter bowl is designed to return the oil beneath the surface thus preventing entrainment of air.

**Technical Data**
**Construction**

- Tank Top flange mounting

**Materials**

- Filter head: Aluminum
- Filter bowl: Bowl length 1: Polyamide  
Bowl length 2: Steel
- Sealings: NBR (Buna-N®)  
Other sealing materials on request

**Port Connection**

- BSP
- NPT
- SAE O-ring thread
- SAE flange

**Flow Rating**

- Up to 378 l/min / 100 US GPM

**Operating Pressure**

- Max. 6,9 bar / 100 PSI

**Temperature Range**

- -25 °C ... +95 °C / -13 °F ... +203 °F

**Filter Elements**

- RTE-47 with integrated bypass valve, single stack length
- RTE-48 bypass valve integrated in the filter head, equivalent to the HF-4 elements, single and double stack lengths
- RTE-49 bypass valve integrated in the filter head, single and double stack lengths
- Specifications see page C110

**Media Compatibility**

- Mineral oils, other fluids on request

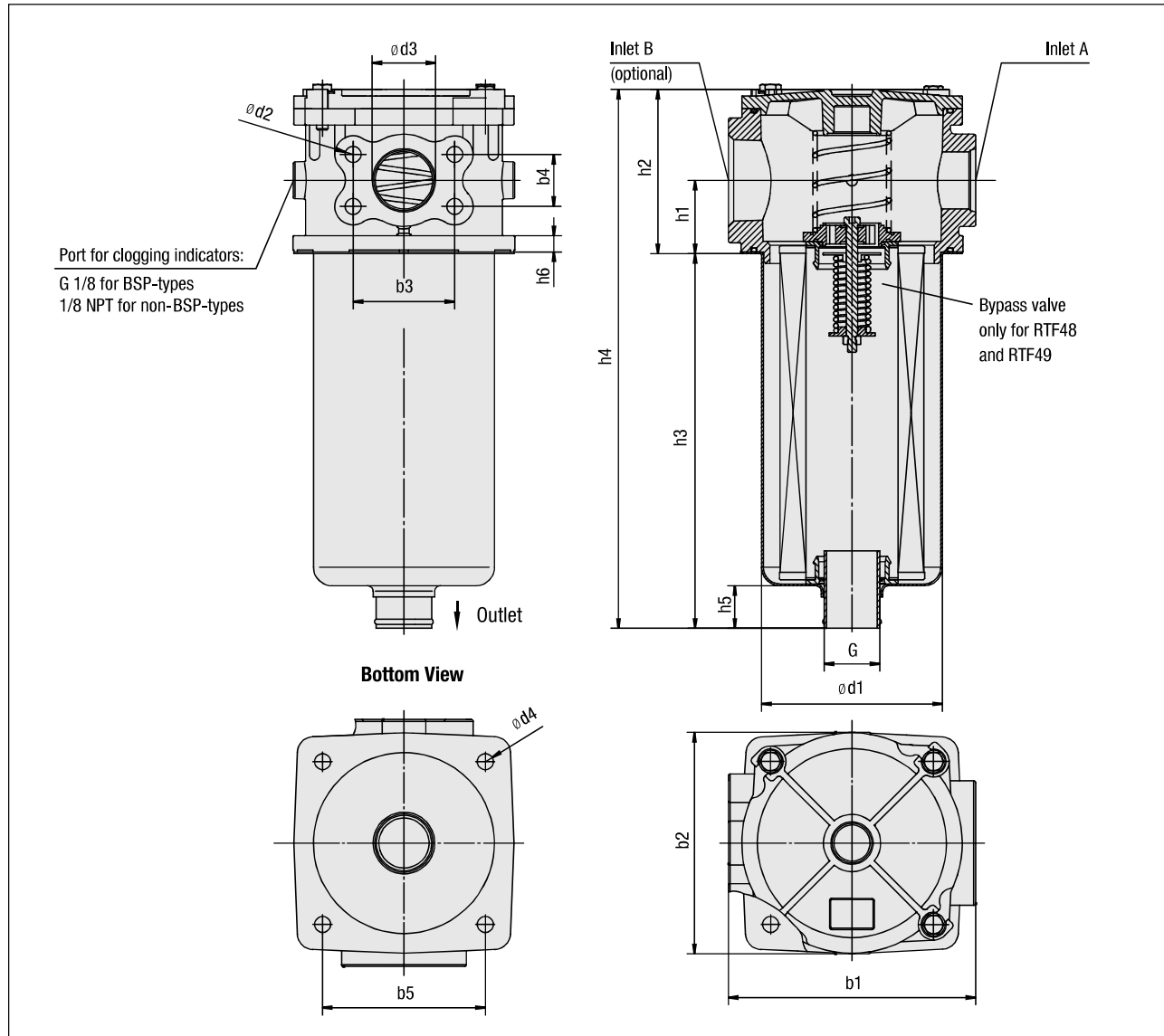
**Options and Accessories**
**Valve**

- Bypass valve: Opening pressures 1 bar / 14.5 PSI ±10 % or 1,7 bar / 25 PSI ±10 %  
RTF47: Bypass intergrated in the filter element  
RTF48/49: Bypass integrated in the filter head

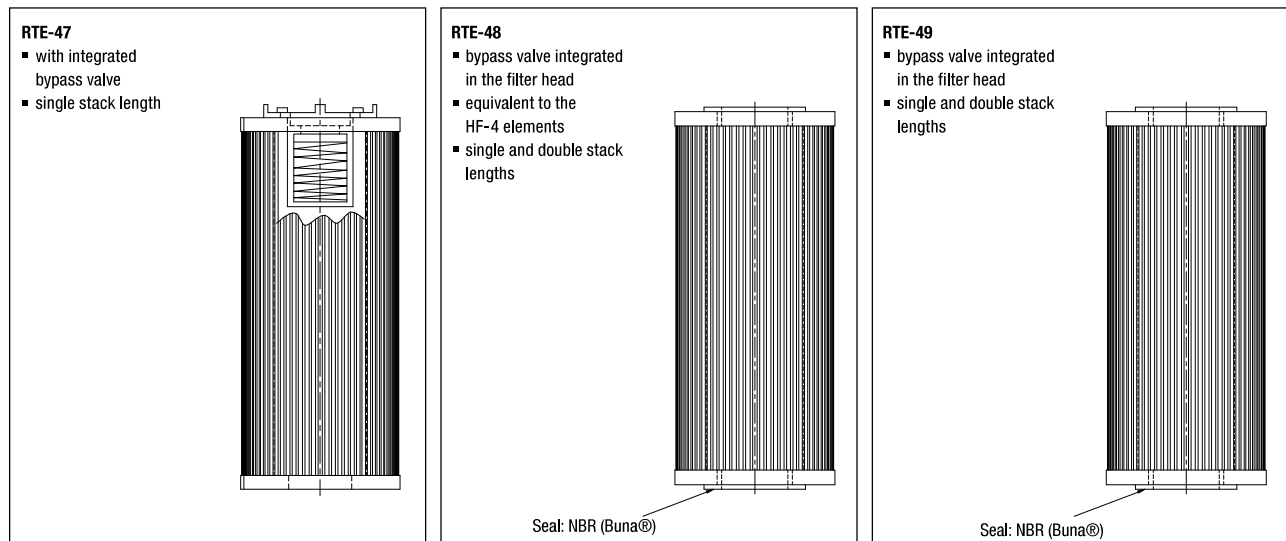
**Clogging Indicators**

- Visual clogging indicator, coloured segments
- Electrical clogging switch, adjustable  
Other clogging indicators available on request

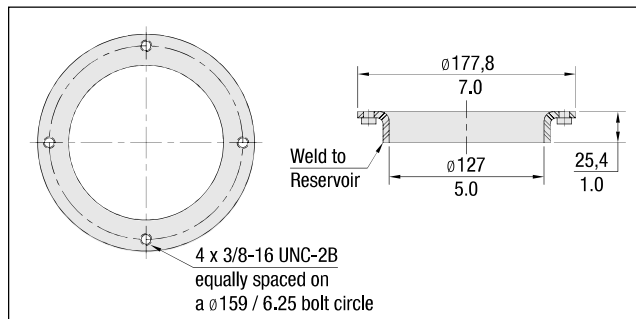
## Return Line Filters ■ Type RTF40



## Filter Elements ■ Types RTE-47 / RTE-48 / RTE-49



## Return Line Filters ■ Type RTF40


**RTF40 Series Weld Ring WR-40**

The WR-40 weld ring is welded directly to the hydraulic reservoir, eliminating the need for drilling and tapping mounting holes in the reservoir.

Material: Carbon Steel

Thread Connection Combinations	Filter Size RTF			
	4...S1		4...S2	
	Inlet A	Inlet B	Inlet A	Inlet B
BSP (B)	1-1/4 and 1-1/2 SAE Flange	None	1-1/4 and 1-1/2 SAE Flange	None
BSP (BB)	1-1/4 and 1-1/2 SAE Flange	1-1/4	1-1/4 and 1-1/2 SAE Flange	1-1/4
NPT (N)	1-1/4 and 1-1/2 SAE Flange	None	1-1/4 and 1-1/2 SAE Flange	None
NPT (NN)	1-1/4 and 1-1/2 SAE Flange	1-1/4	1-1/4 and 1-1/2 SAE Flange	1-1/4
NPT (M)	1-1/2	None	1-1/2	None
NPT (MN)	1-1/2	1-1/4	1-1/2	1-1/4
NPT (MM)	1-1/2	1-1/2	1-1/2	1-1/2
SAE (S)	1-5/8-12	None	1-5/8-12	None
SAE (SS)	1-5/8-12	1-5/8-12	1-5/8-12	1-5/8-12
SAE (ST)	1-5/8-12	1-7/8-12	1-5/8-12	1-7/8-12
SAE (SU)	1-5/8-12	2-1/2-12	1-5/8-12	2-1/2-12
SAE (TT)	1-7/8-12	1-7/8-12	1-7/8-12	1-7/8-12
Combination SAE & NPT (SO)	1-5/8-12	2	1-5/8-12	2

Dimensions (mm/in)	Filter Size RTF	
	4...S1	4...S2
h1	50 1.97	50 1.97
h2	112 4.41	112 4.41
h3	263 10.35	475 18.70
h4	385 15.16	587 23.11
h5	21 .83	38 1.50
h6	11 .43	11 .43
b1	170 6.70	170 6.70
b2	152 5.98	152 5.98
b3	69.9 2.75	69.9 2.75
b4	35.6 1.40	35.6 1.40
b5	112 4.41	112 4.41
d1	122 4.80	126 4.96
d2	M12 or 1/2-13 UN	M12 or 1/2-13 UN
d3	38,1 1.50	38,1 1.50
d4	11 .43	11 .43
G	G1-1/2 or 1-1/2 NPT	G1-1/2 or 1-1/2 NPT

## Return Line Filter Housings / Complete Filters ■ Type RTF40

RTF 48 ... B / N / 25 / S2 / V / X

1 2 3 4 5 6 7 8 9 10

## 1 Type

Return Line Filter **RTF**

## 2 Group

Flow	Size
190 l/min / 50 US GPM	<b>47</b>
190 l/min / 50 US GPM	<b>48</b>
190 l/min / 50 US GPM	<b>49</b>

Note: Exact flow will depend on filter element selected.  
Consult technical data on pages C119 / C120.  
For element length 2 (only RTF48 / RTF49) please double relating flow values.

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	10 bar / 145 PSI	3, 5, 10, 25	<b>G</b>
Filter paper	10 bar / 145 PSI	3, 10, 20, 25	<b>D</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

3 $\mu\text{m}$	<b>03</b>
5 $\mu\text{m}$	<b>05</b>
10 $\mu\text{m}$	<b>10</b>
20 $\mu\text{m}$	<b>20</b>
25 $\mu\text{m}$	<b>25</b>

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**

Note: Other sealing materials on request

## 6 Connection Style

Connection Style	Group		Code
	Port A	Port B	
BSP	1-1/4 and 1-1/2 SAE Flange	None	<b>B</b>
	1-1/4 and 1-1/2 SAE Flange	1-1/4	<b>BB</b>
NPT	1-1/4 and 1-1/2 SAE Flange	None	<b>N</b>
	1-1/4 and 1-1/2 SAE Flange	1-1/4	<b>NN</b>
NPT	1-1/2	None	<b>M</b>
	1-1/2	1-1/4	<b>MN</b>
NPT	1-1/2	1-1/2	<b>MM</b>
	SAE 1-5/8-12	None	<b>S</b>
SAE	1-5/8-12	1-5/8-12	<b>SS</b>
	1-5/8-12	1-7/8-12	<b>ST</b>
SAE	1-5/8-12	2-1/2-12	<b>SU</b>
	1-7/8-12	1-7/8-12	<b>TT</b>
Combination NPT & SAE	1-5/8-12	2	<b>SO</b>

## 7 Valve

No bypass	<b>00</b>
1 bar / 15 PSI	<b>15</b>
1,7 bar / 24,6 PSI	<b>25</b>

## 8 Length

Bowl Length 1 (1 element)	<b>S1</b>
Bowl Length 2 (2 elements)	<b>S2</b>

Note: RTF 47 size available in S1 bowl length only.

## 9 Clogging Indicator

No clogging indicator	<b>ohne</b>
Visual clogging indicator	<b>V</b>
Electrical clogging indicator	<b>E</b>

Note: See pages C108 and C121 for more details on indicator ports and options.

## 10 Design Code

Only for information **X**

## Filter Elements ■ Type RTE

RTE - 48 D 10 B / X

1 2 3 4 5 6

## 1 Type

Filter Element Series **RTE**

## 2 Group

According to filter housing

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Inorg. glass fibre	10 bar / 145 PSI	3, 5, 10, 25	<b>G</b>
Filter paper	10 bar / 145 PSI	3, 10, 20, 25	<b>D</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

3 $\mu\text{m}$	<b>03</b>
5 $\mu\text{m}$	<b>05</b>
10 $\mu\text{m}$	<b>10</b>
20 $\mu\text{m}$	<b>20</b>
25 $\mu\text{m}$	<b>25</b>

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**

Note: Other sealing materials on request

## 6 Design Code

Only for information **X**

## Return Line Filters ■ Type RTF50


**Product Description**

STAUFF RTF50 Return Line Filters are designed for tank top applications with a maximum pressure of 6,9 bar / 100 PSI. The filter bowl is designed to return the oil beneath the surface thus preventing entrainment of air. The RTF58 elements interchange with the popular "K" series and RTF59 elements interchange with the "RE-409" series elements.

**Technical Data**
**Construction**

- Tank Top flange mounting

**Materials**

- Filter head: Aluminum
- Filter bowl: Bowl length 1: Polyamide  
Bowl length 2: Steel
- Sealings: NBR (Buna-N®)  
Other sealing materials on request

**Port Connection**

- BSP
- NPT
- SAE O-ring thread

**Flow Rating**

- Up to 379 l/min / 100 US GPM

**Operating Pressure**

- Max. 6,9 bar / 100 PSI

**Temperature Range**

- -25 °C ...+95 °C / -13 °F ... +203 °F

**Filter Elements**

- Specifications see page C114

**Media Compatibility**

- Mineral oils, other fluids on request

**Options and Accessories**
**Valve**

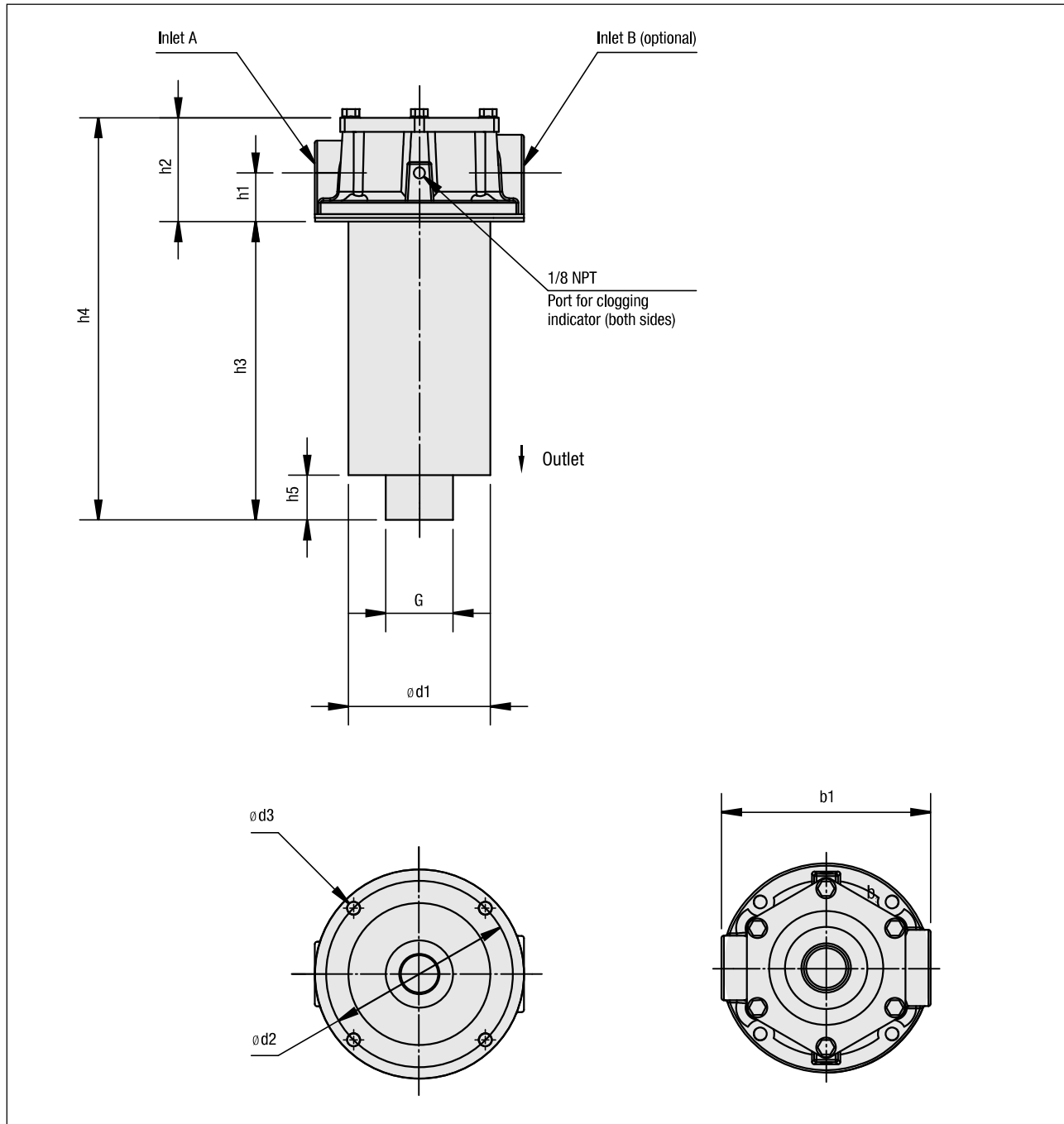
- Bypass valve: Opening pressures 1 bar / 14,5 PSI  $\pm$ 10 % or 1,7 bar / 25 PSI  $\pm$ 10 %  
Other settings available on request

**Clogging Indicators**

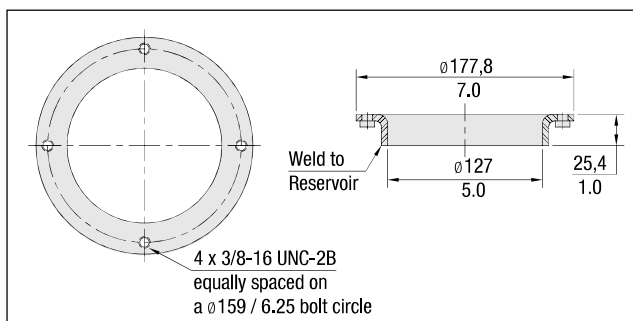
- Visual clogging indicator, coloured segments
- Electrical clogging switch, adjustable  
Other clogging indicators available on request



## Return Line Filters ■ Type RTF50



## Return Line Filters ■ Type RTF Accessories



## RTF50 Series Weld Ring WR-40

The WR-40 weld ring is welded directly to the hydraulic reservoir, eliminating the need for drilling and tapping mounting holes in the reservoir.

Material: Carbon Steel

Dimensions in mm / in

## Return Line Filters ■ Type RTF50

Thread Connection Combinations	Filter Size RTF			
	5...S1		5...S2	
	Inlet A	Inlet B	Inlet A	Inlet B
NPT (N)	1-1/4	None	1-1/4	None
NPT (NM)	1-1/4	1-1/2	1-1/4	1-1/2
NPT (M)	None	1-1/2	None	1-1/2
Combination SAE & NPT (SM)	1-5/8-12	1-1/2	1-5/8-12	1-1/2
SAE (S)	1-5/8-12	None	1-5/8-12	None
SAE (T)	None	1-7/8-12	None	1-7/8-12
SAE (ST)	1-5/8-12	1-7/8-12	1-5/8-12	1-7/8-12
Combination NPT & SAE (NT)	1-1/4	1-7/8-12	1-1/4	1-7/8-12

Dimensions (mm/in)	Filter Size RTF	
	5...S1	5...S2
h1	49,3	42,3
	1,94	1,67
h2	95,5	88,5
	3,78	3,48
h3	241,3	485,9
	9,50	19,13
h4	336,8	574,9
	13,26	22,61
h5	29,5	38,1
	1,16	1,50
b1	177,8	177,8
	7,00	7,00
d1	124,8	126
	4,91	4,96
d2	158,7	158,7
	6,25	6,25
d3	11,2	11,2
	,44	,44
G	1-1/2 NPT	1-1/2 NPT

## Return Line Filter Housings / Complete Filters ■ Type RTF50

<b>RTF</b>	<b>58</b>	<b>...</b>	<b>...</b>	<b>B</b>	<b>/</b>	<b>N</b>	<b>/</b>	<b>25</b>	<b>/</b>	<b>S2</b>	<b>/</b>	<b>V</b>	<b>/</b>	<b>X</b>
1	2	3	4	5	6	7	8	9	10					

## 1 Type

Return Line Filter **RTF**

## 2 Group

Flow	Size
Group size 58	<b>58</b>
Group size 59	<b>59</b>

Note: Exact flow will depend on filter element selected.  
Consult technical data on page C120.

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	10 bar / 145 PSI	3, 5, 10, 25	<b>G</b>
Filter paper	5 bar / 72,5 PSI	3, 10, 20, 25	<b>D</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

3 $\mu\text{m}$	<b>03</b>
5 $\mu\text{m}$	<b>05</b>
10 $\mu\text{m}$	<b>10</b>
20 $\mu\text{m}$	<b>20</b>
25 $\mu\text{m}$	<b>25</b>

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**  
Note: Other sealing materials on request

## 6 Connection Style

Connection Style	Group		Code
	Port A	Port B	
NPT	1-1/4	None	<b>N</b>
NPT	1-1/4	1-1/2	<b>NM</b>
NPT	None	1-1/2	<b>M</b>
Combination SAE & NPT	1-5/8-12	1-1/2	<b>SM</b>
SAE	1-5/8-12	None	<b>S</b>
SAE	None	1-7/8-12	<b>T</b>
SAE	1-5/8-12	1-7/8-12	<b>ST</b>
Combination NPT & SAE	1-1/4	1-7/8-12	<b>NT</b>

## 7 Valve

No bypass	<b>00</b>
1 bar / 15 PSI	<b>15</b>
1,7 bar / 24,6 PSI	<b>25</b>

## 8 Length

Bowl Length 1 (1 element)	<b>S1</b>
Bowl Length 2 (2 elements)	<b>S2</b>

## 9 Clogging Indicator

No clogging indicator	<b>N</b>
Visual clogging indicator	<b>V</b>
Electrical clogging indicator	<b>E</b>

Note: See pages C112 and C121 for more details on indicator ports and types.

## 10 Design Code

Only for information **X**

## Filter Elements ■ Type RTE

<b>RTE</b>	<b>-</b>	<b>58</b>	<b>D</b>	<b>10</b>	<b>B</b>	<b>/</b>	<b>X</b>
1	2	3	4	5	6		

## 1 Type

Filter Element Series **RTE**

## 2 Group

According to filter housing

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Inorg. glass fibre	10 bar / 145 PSI	3, 5, 10, 25	<b>G</b>
Filter paper	5 bar / 72,5 PSI	3, 10, 20, 25	<b>D</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

3 $\mu\text{m}$	<b>03</b>
5 $\mu\text{m}$	<b>05</b>
10 $\mu\text{m}$	<b>10</b>
20 $\mu\text{m}$	<b>20</b>
25 $\mu\text{m}$	<b>25</b>

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**  
Note: Other sealing materials on request

## 6 Design Code

Only for information **X**



## Return Line Filters ■ Type RTF-N


**Product Description**

STAUFF RTF-N Return Line Insert Filters allow for a choice of installation configurations which permits custom reservoir design with an in tank filtering system. The filters are installed semi-immersed or totally immersed into a reservoir. The filtration flow is from inside to the outside of the element which ensures that all the contaminant is collected inside the element itself avoiding contact with the reservoir fluid during element change. The combination of magnetic pre-filtration and high filtration efficiency results in a cost effective and versatile filtration system.

**Technical Data**
**Construction**

- Insert filter

**Materials**

- Flange plate: Aluminum
- Magnet rod: Steel
- Bypass: Steel
- Diffuser: Steel
- Sealings: NBR (Buna-N®)  
FPM (Viton®)  
Other sealing materials on request

**Flow Rating**

- Up to 500 l/min / 132 US GPM

**Operating Pressure**

- Max. 10 bar / 145 PSI

**Temperature Range**

- -29 °C ...+107 °C / -20 °F ... +225 °F

**Filter Elements**

- Specifications see page C118

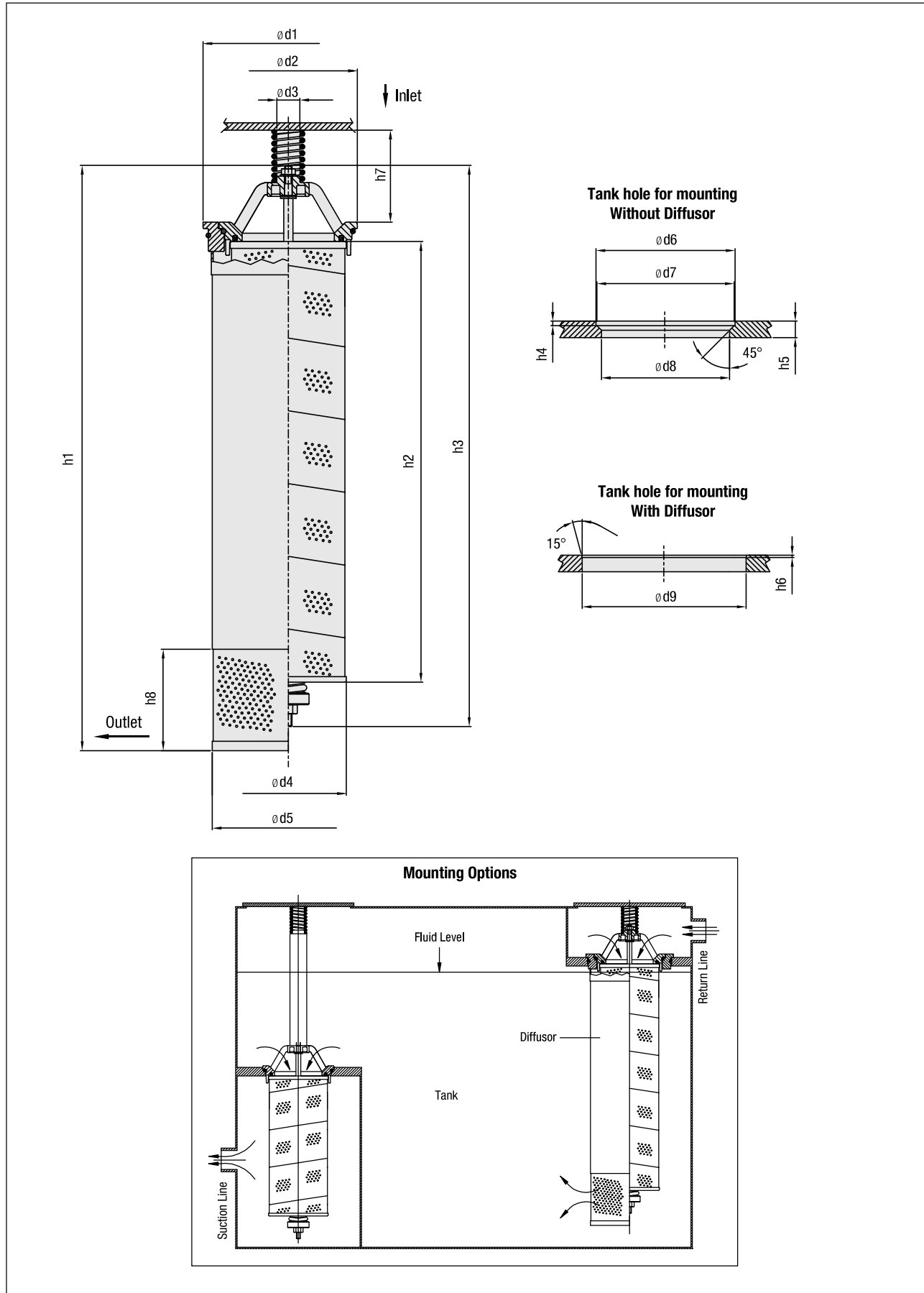
**Media Compatibility**

- Mineral oils, other fluids on request

**Options and Accessories**
**Valve**

- Bypass valve: Opening pressure 1,5 bar / 22 PSI  
(integrated in the filter element) Other settings available on request

Return Line Filters ■ Type RTF-N



## Return Line Filters ■ Type RTF-N

Dimensions (mm/in)	Filter Size RTF-N	
	390	500
h1	445	635
	17.52	25.00
h2	290	478
	11.42	18.82
h3	421	609
	16.57	23.98
h4	5	5
	.20	.20
h5	18	18
	.71	.71
h6	2,5	2,5
	.10	.10
h7	100	100
	3.94	3.94
h8	110	110
	4.33	4.33
d1	185	185
	7.28	7.28
d2	150	150
	5.91	5.91
d3	25	25
	.98	.98
d4	126	126
	4.95	4.95
d5	165	165
	6.50	6.50
d6	151	151
	5.94	5.94
d7	149	149
	5.87	5.87
d8	139	139
	5.47	5.47
d9	178	178
	7.01	7.01

## Return Line Filter Housings / Complete Filters ■ Type RTF-N

RTF-N 500 ... / B / 22 / D / X

1 2 3 4 5 6 7 8

## 1 Type

Return Line Insert Filter **RTF-N**

## 2 Group

Flow	Size
390 l/min / 103 US GPM	<b>390</b>
500 l/min / 132 US GPM	<b>500</b>

Note: Exact flow will depend on filter element selected.  
Consult technical data on page C120.

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Without filter element	-	-	...
Inorg. glass fibre	10 bar / 145 PSI	3, 5, 10, 20	<b>E</b>
Filter paper	10 bar / 145 PSI	10	<b>L</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

3 $\mu\text{m}$	<b>03</b>
5 $\mu\text{m}$	<b>05</b>
10 $\mu\text{m}$	<b>10</b>
20 $\mu\text{m}$	<b>20</b>

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**  
FPM (Viton®) **V**

Note: Other sealing materials on request

## 6 Bypass Setting

1,5 bar / 22 PSI **22**

## 7 Options

Without diffusor **none**  
With diffusor **D**

## 8 Design Code

Only for information **X**

## Filter Elements ■ Type RA

RA - 500 E 10 / B / X

1 2 3 4 5 6

## 1 Type

Element for Insert Filter **RA**

## 2 Group

According to filter housing

## 3 Filter Material

Material	Max. $\Delta p^*$ collapse	Micron ratings available	Code
Inorg. glass fibre	10 bar / 145 PSI	3, 5, 10, 20	<b>E</b>
Filter paper	10 bar / 145 PSI	10	<b>L</b>

\*Note: Collapse/burst resistance as per ISO 2941  
Other materials on request

## 4 Micron Rating

3  $\mu\text{m}$  **03**  
5  $\mu\text{m}$  **05**  
10  $\mu\text{m}$  **10**  
20  $\mu\text{m}$  **20**

Note: Other micron ratings on request

## 5 Sealing Material

NBR (Buna®) **B**  
FPM (Viton®) **V**

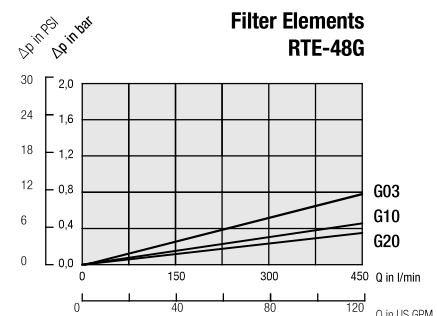
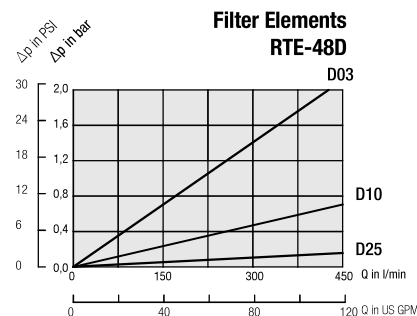
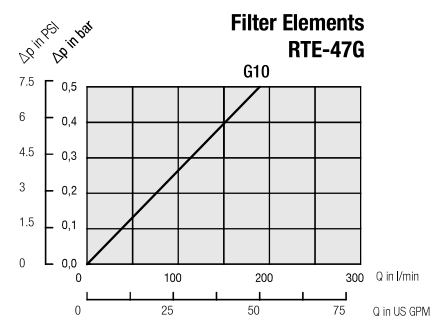
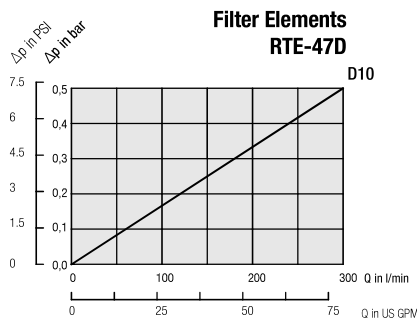
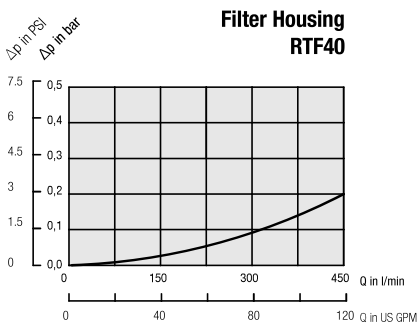
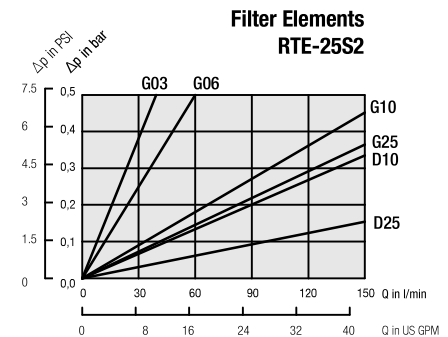
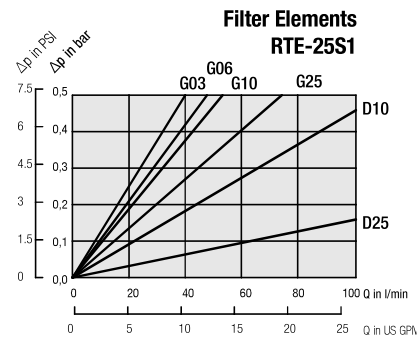
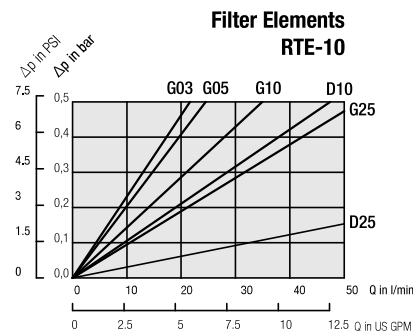
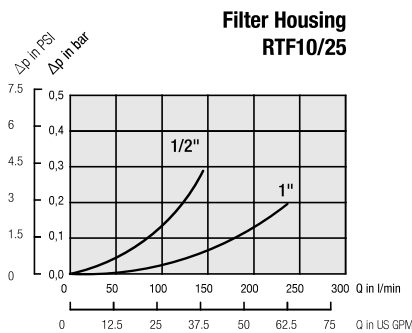
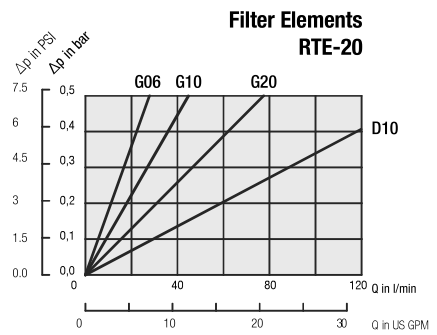
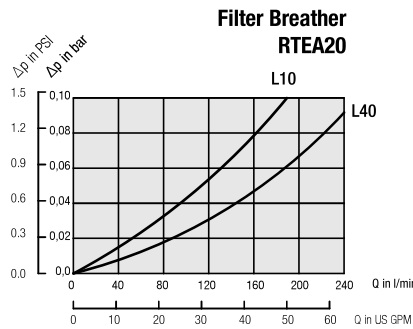
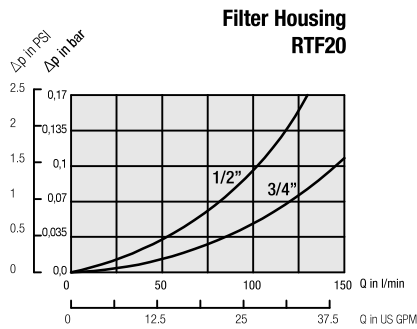
Note: Other sealing materials on request

## 6 Design Code

Only for information **X**

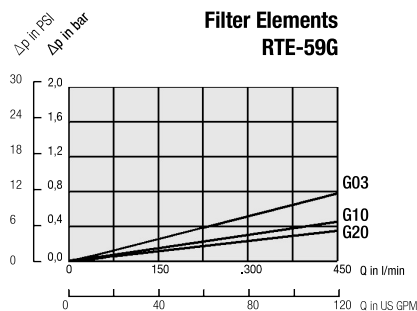
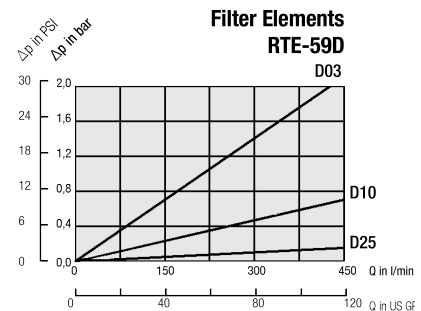
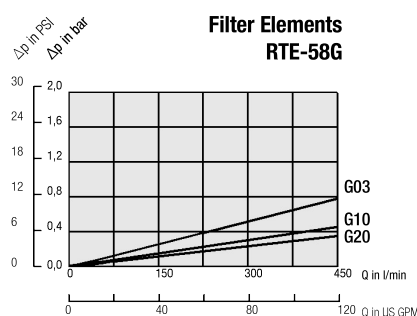
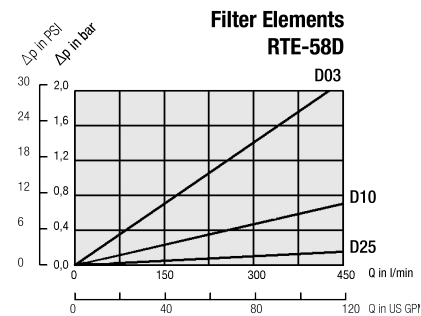
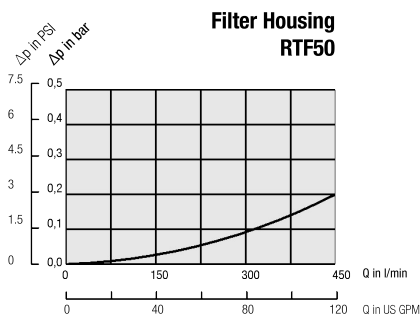
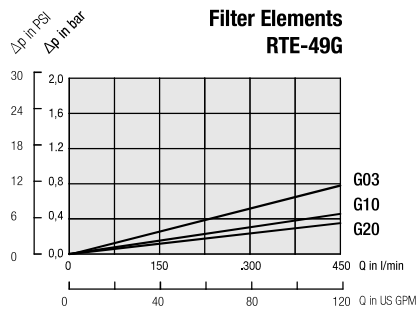
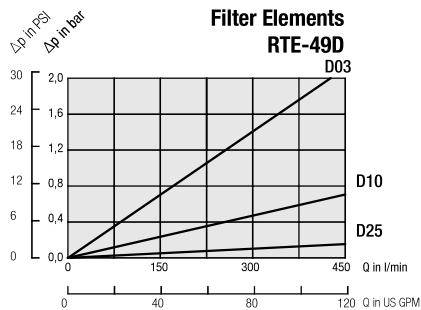
## Return Line Filters ■ Type RTF Flow Characteristics

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30cSt). The characteristics have been determined in accordance to ISO 3968. Multipass filter ratings have been obtained in accordance to ISO 16889. The housing pressure drop is directly proportional to the oil density. Consult STAUFF for details.

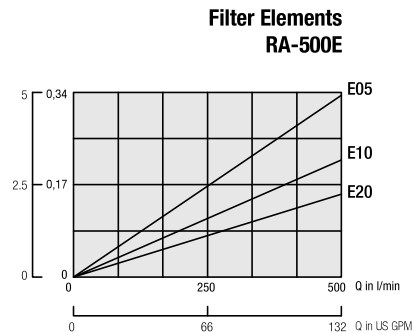
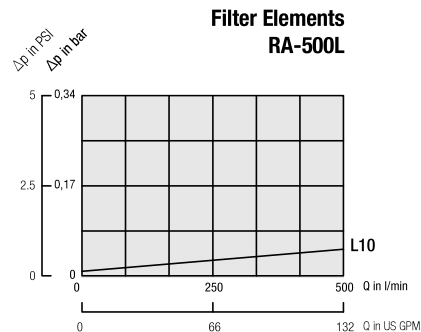
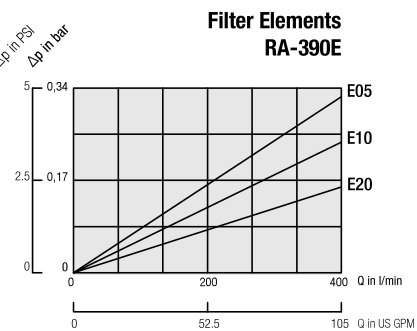
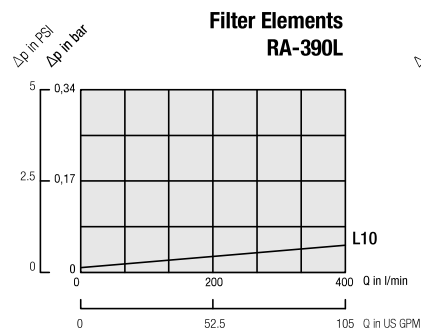
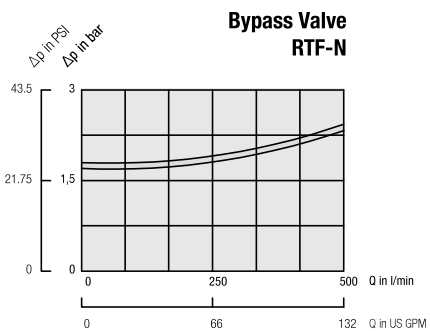


### Return Line Filters ■ Type RTF Flow Characteristics

The following characteristics are valid for mineral oils with a density of 0,85 kg/dm<sup>3</sup> and the kinematic viscosity of 30 mm<sup>2</sup>/s (30cSt). The characteristics have been determined in accordance to ISO 3968. Multipass filter ratings have been obtained in accordance to ISO 16889. The housing pressure drop is directly proportional to the oil density. Consult STAUFF for details.

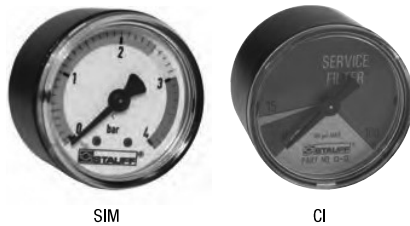


Note: Element pressure drop curves are for "S1" single elements. For "S2" double elements use 50% of the "S1" Value.



## RTF Filter Indicators

## Visual Indicators



Visual Pressure Clogging Indicators							
	Type	Thread Connection G	Unit of scale	Range of scale	Coloured Segments		
					Green	Yellow	Red
BSP	SIM-02	1/8	bar	0 ... 2,5	0 ... 1,2	1,2 ... 1,5	1,5 ... 2,5
	SIM-04	1/8	bar	0 ... 4	0 ... 2,5	2,5 ... 3	3 ... 4
	SIM-12	1/8	bar	0 ... 12	without coloured segments		
NPT	CI-12	1/8	PSI	0 ... 100	0 ... 13	13 ... 15	15 ... 100
	CI-20	1/8	PSI	0 ... 100	0 ... 21	21 ... 25	25 ... 100

## Electrical Indicators



Electrical Clogging Indicators					
	Type	Thread Connection G	Unit of scale	Adjustable range / Actuating pressure	Max. over pressure
BSP	SIE-NO	1/8	bar	1,3 (normally open)	80 bar / 1160 PSI
	SIE-NC	1/8	bar	1,3 (normally closed)	80 bar / 1160 PSI
	EPS-1B	1/8	bar	0,35 ... 2,5	25 bar / 362 PSI
NPT	EPS-1	1/8	PSI	5 ... 35	24 bar / 350 PSI

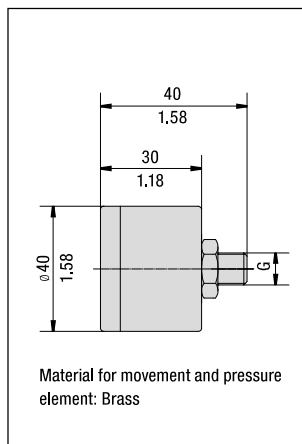
## Technical Data SIE / EPS

	Type EPS-1 / 1B
Electrical data	6 Amp 125/250 V AC
Protection	DIN 43650 IP65
Temperature Range	-5 °C ... +90 °C / +23 °F ... +194 °F (ambient and media)
Diaphragm Material	NBR
Housing Material	Brass
Adjustable Range	0,35 bar ... 2,0 bar / 5 ... 30 PSI
Dead Band	20% F.S.
Weight	0,1 kg / .22 lbs
Repeatability	± 2%
Hirschmann Connector With Strain Relief	

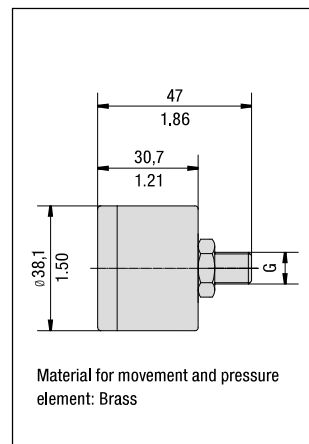
	Type SIE (electrical switch)
Electrical data	48V
Protection	DIN 43650 IP54
Temperature Range	-5 °C ... +60 °C / +23 °F ... +140 °F (ambient and media)
Diaphragm Material	NBR
Housing Material	Brass
Actuating Pressure	1,3 bar / 19 PSI
Max. current (res.)	0,5 A
Max. current (ind.)	0,2 A
Available as "normally open" (closes contact at actuating pressure) and as "normally closed" (opens contact at actuating pressure)	

## Dimensions

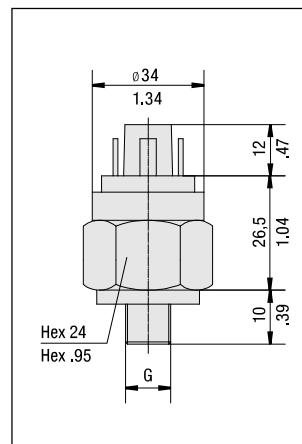
## Type SIM



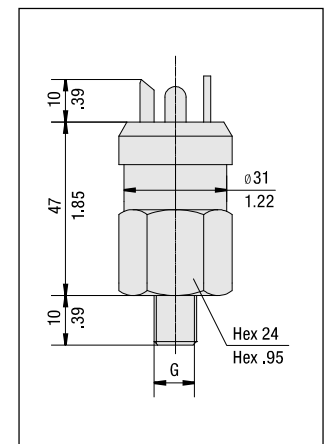
## Type CI



## Type SIE



## Type EPS



Note: The customer / user carries the responsibility for the electrical connection.