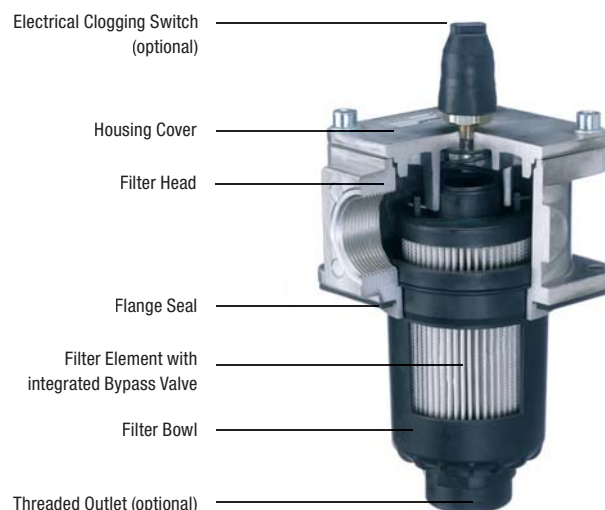


## Return Line Filters ■ Type RF



### Product Description

STAUFF RF Return Line Filters are designed as tank top filters. They are mounted directly on the tank top and when 100% of the system's 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 is designed to return the oil beneath the surface thus preventing the entrainment of air by the returning oil. 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 flange mounting

#### Materials

- Filter head: Aluminium
- Filter bowl: Glass Fibre reinforced Polyamide
- Sealings: NBR (Buna-N®)  
FPM (Viton®)  
EPDM (Ethylene-Propylene-Diene-Monomer-Rubber)  
Other sealing materials on request

#### Port Connection

- BSP
- NPT
- SAE O-ring thread
- SAE flange 3000 PSI

#### Operating Pressure

- Max. 16 bar / 232 PSI

#### Temperature Range

- -10°C ... +100°C / +14°F ... +212°F

#### Filter Elements

- Specifications see page C68

#### Media Compatibility

- Mineral oils, other fluids on request

### Options and Accessories

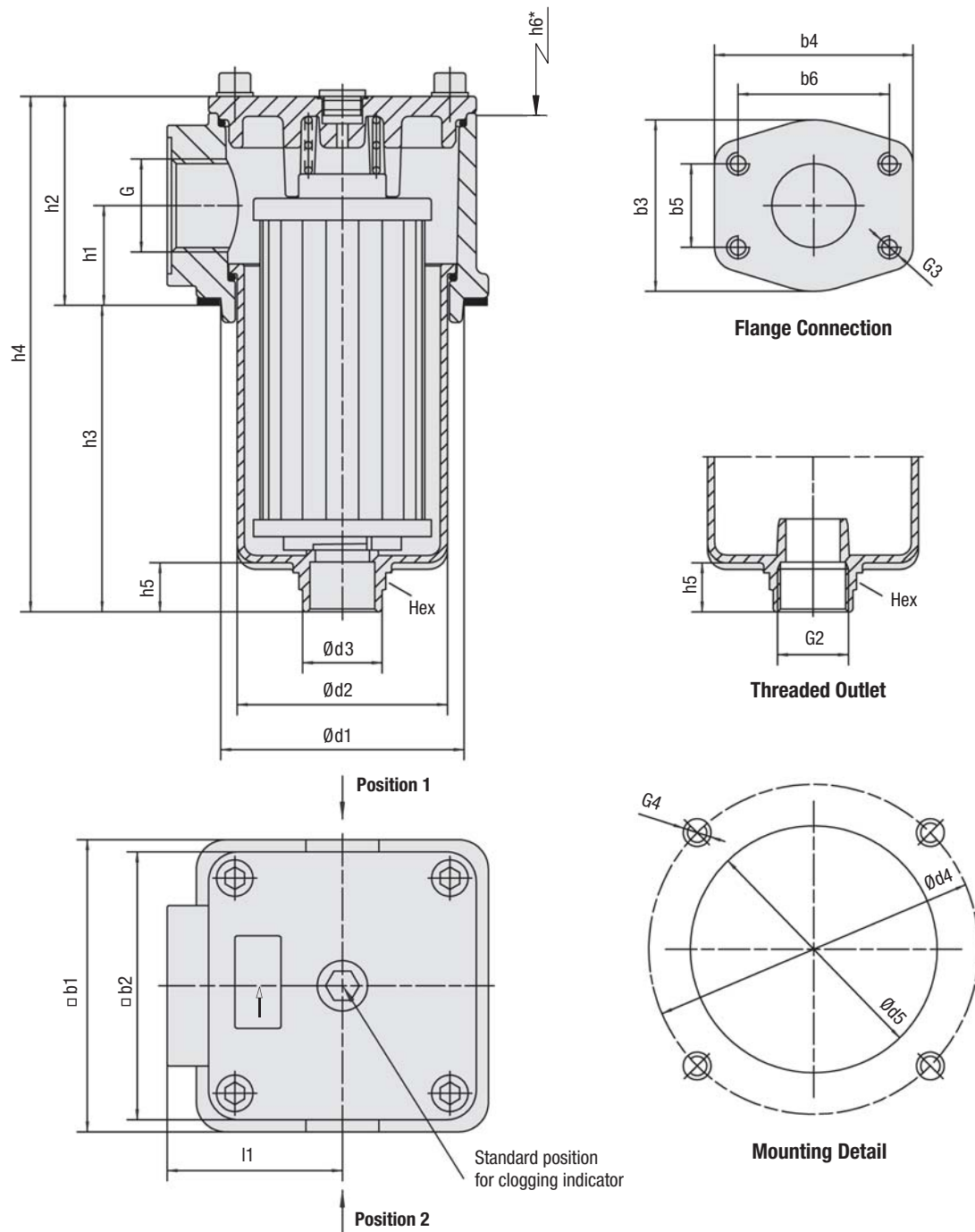
#### Valve

- Bypass valve (integrated in the filter element) Opening pressure 3 bar  $\pm$  0,3 bar / 43.5 PSI  $\pm$  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 RF



\* recommended space for element change

## Return Line Filters ■ Type RF

Thread Connection G	Filter Size RF					
	014	030	045	070	090	130
BSP	3/4	1	1-1/4	1-1/2	2	2
NPT	3/4	1	1-1/4	1-1/2	2	2
SAE O-ring Thread	1-1/16-12	1-5/16-12	1-5/8-12	1-7/8-12	1-7/8-12	1-7/8-12
SAE Flange 3000 PSI	-	-	-	-	2	2

Dimensions (mm/in)	Filter Size RF					
	014	030	045	070	090	130
b1	89	89	120	120	150	150
	3.50	3.50	4.72	4.72	5.91	5.91
b2	80	80	110	110	135	135
	3.15	3.15	4.33	4.33	5.31	5.31
b3	-	-	-	-	88	88
	-	-	-	-	3.47	3.47
b4	-	-	-	-	102	102
	-	-	-	-	4.02	4.02
b5	-	-	-	-	42,9	42,9
	-	-	-	-	1.69	1.69
b6	-	-	-	-	77,8	77,8
	-	-	-	-	3.06	3.06
d1	73	73	100	100	126	126
	2.87	2.87	3.94	3.94	4.96	4.96
d2	57,5	57,5	84	84	112,5	112,5
	2.26	2.26	3.31	3.31	4.43	4.43
d3	36	36	48	48	54,5	54,5
	1.42	1.42	1.89	1.89	2.15	2.15
d4	100	100	135	135	170	170
	3.94	3.94	5.31	5.31	6.69	6.69
d5	78	78	105	105	131	131
	3.07	3.07	4.13	4.13	5.16	5.16
h1	33	33	41	41	47	47
	1.30	1.30	1.61	1.61	1.85	1.85
h2	66	66	86	86	98	98
	2.60	2.60	3.39	3.39	3.86	3.86
h3	91,5	159,5	119	180	172,5	252,5
	3.60	6.28	4.69	7.09	6.79	9.94
h4	157,5	225,5	206	267	273,5	353,5
	6.20	8.88	8.11	10.51	10.77	13.91
h5	23,5	23,5	24	24	27	27
	.93	.93	.95	.95	1.06	1.06
h6	140	210	180	240	235	315
	5.51	8.27	7.09	9.45	9.25	12.40
l1	48	48	66	66	85	85
	1.89	1.89	2.60	2.60	3.35	3.35
G2	G1 or 1 NPT	G1 or 1 NPT	G1-1/4 or 1-1/4 NPT	G1-1/4 or 1-1/4 NPT	G1-1/2 or 1-1/2 NPT	G1-1/2 or 1-1/2 NPT
G3	-	-	-	-	1/2 UNC x 15	1/2 UNC x 15
	-	-	-	-	1/2 UNC x .59	1/2 UNC x .59
G4	M6 or 1/4-20 UNC	M6 or 1/4-20 UNC	M8 or 5/16-18 UNC	M8 or 5/16-18 UNC	M10 or 3/8-16 UNC	M10 or 3/8-16 UNC
Hex	36	36	50	50	55	55
	1.42	1.42	1.97	1.97	2.16	2.16

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

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

**1** **2** **3** **4** **5** **6** **7** **8** **9** **10**

**1 Type**Return Line Filter **RF****2 Group**

Flow	Size
60 l/min / 14 US GPM	<b>014</b>
110 l/min / 30 US GPM	<b>030</b>
160 l/min / 45 US GPM	<b>045</b>
240 l/min / 70 US GPM	<b>070</b>
330 l/min / 90 US GPM	<b>090</b>
500 l/min / 130 US GPM	<b>130</b>

Note: Exact flow will depend on filter element selected.  
Consult technical data on pages C70 / C71.

**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 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.

**5 Sealing Materials**

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						Code
	014	030	045	070	090	130	
BSP	3/4	1	1-1/4	1-1/2	2	2	<b>B</b>
BSP	1/2	1/2	1-1/2	1-1/4	1-1/4	1-1/4	B1
BSP	1	3/4	-	-	1-1/2	1-1/2	B2
NPT	3/4	1	1-1/4	1-1/2	2	2	<b>N</b>
NPT	1	3/4	1-1/2	1-1/4	1-1/2	1-1/2	N1
SAE O-ring Thread	1-1/16	1-5/16	1-5/8	1-7/8	1-7/8	1-7/8	<b>U</b>
SAE O-ring Thread	1-5/16	1-1/16	1-7/8	1-5/8	1-5/8	1-5/8	U1
SAE Flange 3000 PSI	-	-	-	-	2	2	<b>F</b>

Note: Bold types identify preferred connection styles.

**7 Clogging Indicator**

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

Note: \*Position of clogging indicator see page C66.

Without any code: assembly in the middle of the filter cover.

**8 Outlet Style**

Standard outlet (without thread)	<b>0</b>
Filter bowl with threaded outlet	<b>G</b>

**9 Additional Features**

	Position*		
Without leakage oil connection	-		<b>none</b>
Leakage oil connection	1	2	<b>L</b>

Note: \*Position of the leakage oil connection see page C66.

Without any code: assembly in the middle of the filter cover.

**10 Design Code**

Only for information	<b>X</b>
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## Filter Elements ■ Type RE

**RE** - **014** **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 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.

**5 Sealing Materials**

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	<b>X</b>
----------------------	----------

## Return Line Filters ■ Type RF

### 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.

Maximum Voltage	Switch Type
42 V (normally open)	G42NO
42 V (normally closed)	G42NC
110 V (two-way contact)	G110
230 V (two-way contact)	G230

### 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. The one piece design also allows for inline applications.

### Leakage Oil Connection

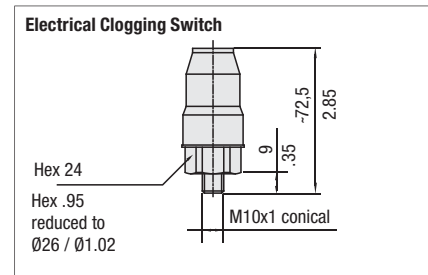
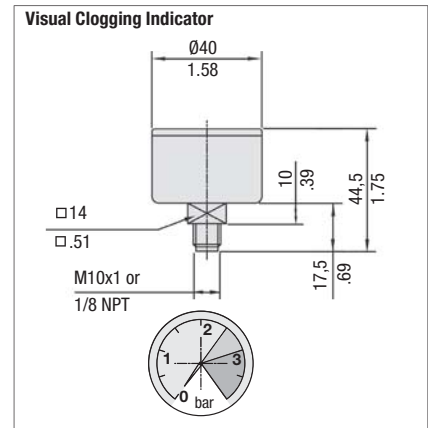
Seal or case drain lines can be connected to the filter through either of the clogging indicator ports providing that the leakage oil can accept a pressure of 3 bar / 43.5 PSI. It ensures that no unfiltered oil can return to the reservoir.

### Filter Bowl with Threaded Connection and Diffuser

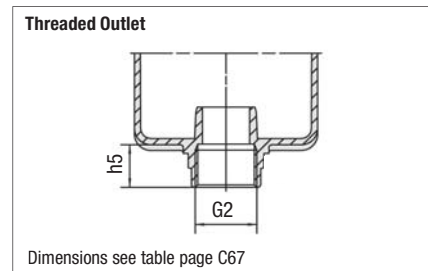
Diffusers mounted to the filter bowl minimise foaming and reduce noise of high return line flows. For further details on STAUFF Diffusers please refer to the "Hydraulic Accessories" section on page E36.

Attention: Connection pipe not included in scope of delivery!

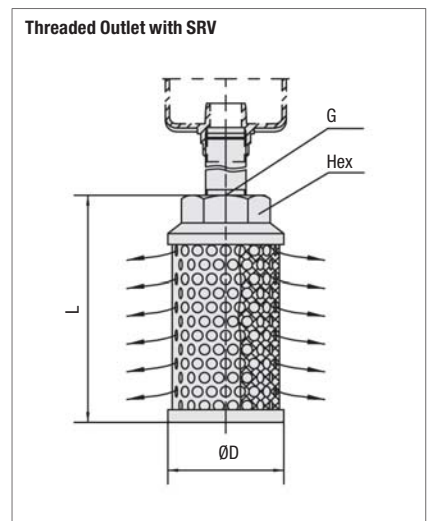
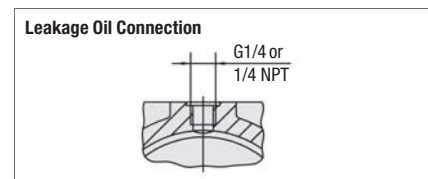
Size SRV	for Return Line Filter Size	Dimensions (mm/in)			
		øD	L	Thread G	Hex
SRV-114-B16	RF 014/030	60	139	G1	46
SRV-114-N16		2.36	5.47	1 NPT	1.81
SRV-200-B20	RF 045/070	82	139	G1-1/4	60
SRV-200-N20		3.23	5.47	1-1/4 NPT	2.36
SRV-227-B24	RF 090/130	82	200	G1-1/2	60
SRV-227-N24		3.23	7.87	1-1/2 NPT	2.36



Dimensions in mm/in

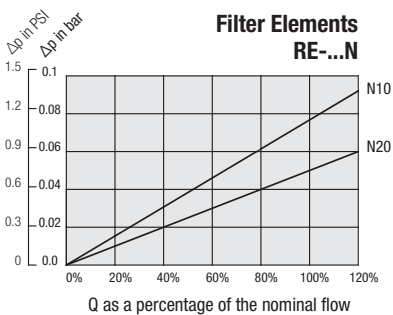
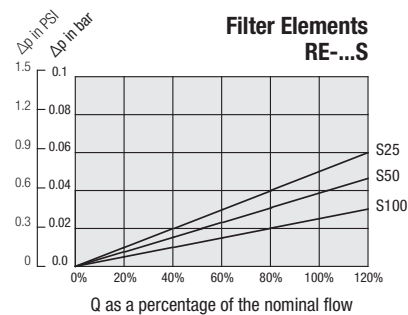
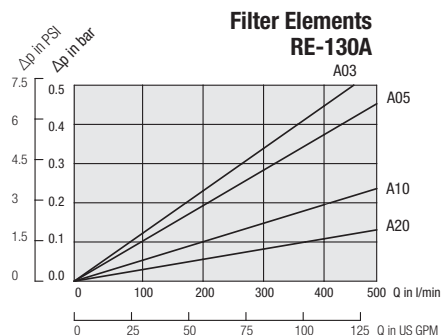
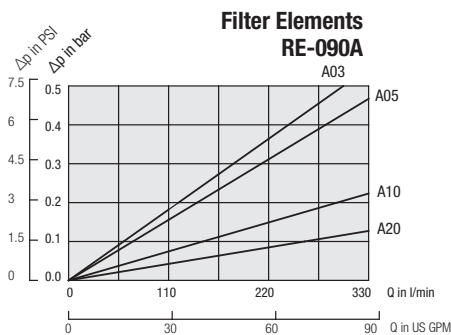
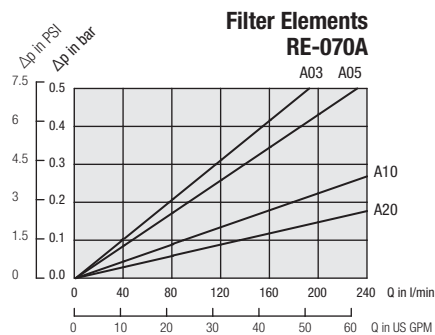
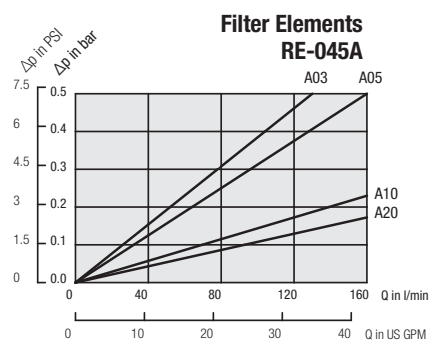
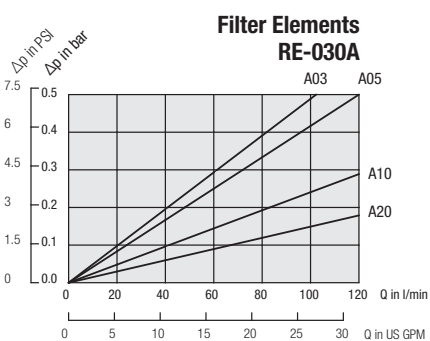
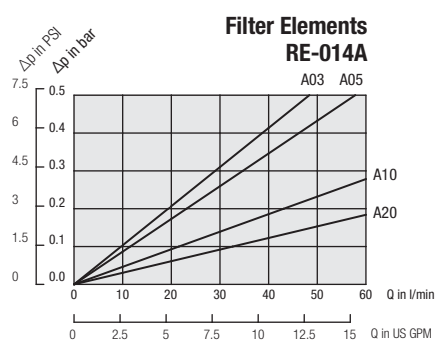
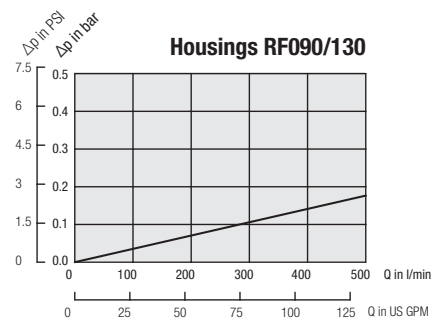
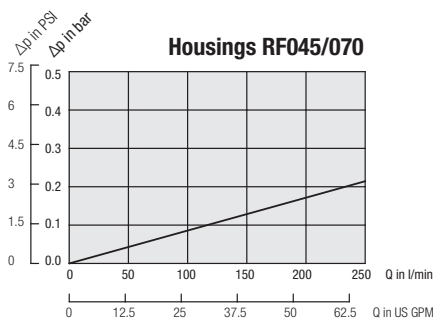
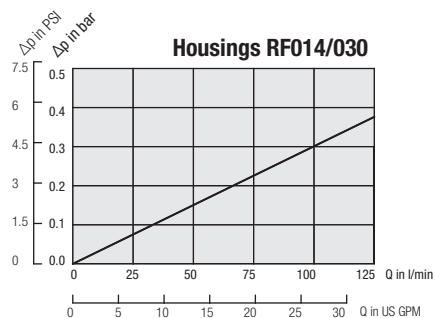


Dimensions see table page C67



## Return Line Filters ■ Type RF 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 RF 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.

