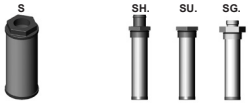
Suction Filter SF/SFM/SFF and Suction Filter Elements S/S..

up to 500 l/min

Filters:

Elements:



1. TECHNICAL SPECIFICATIONS

1.1 FILTER HOUSING

Construction

The filter housings are designed in accordance with international regulations. The SF filters consist of a filter housing and a bolt-on cover plate. The SFM and SFF filters consist of a filter head with filter bowl and bolt-on cover plate (on the SFF there is a foot valve in the base of the filter bowl).

Standard equipment:

- bypass valve
- connection for a clogging indicator

1.2 FILTER ELEMENTS

HYDAC filter elements are validated and their quality is constantly monitored according to the following standards:

- ISO 2941
- ISO 2942
- ISO 2943
- ISO 3724
- ISO 3968
- ISO 11170
- ISO 16889

The suction filter elements S are designed to be screwed into the suction lines of pumps.
It is essential that suction filter elements are always installed well below the minimum oil level.
The suction filter elements S.. are designed to be mounted simply onto the outside of the tank. They are used in devices with hoses that are exposed to little mechanical load. Elements can be changed very simply.

Standard equipment:

- without bypass valve

Filter elements are available with the following pressure stability values:

Paper (P):	5 bar
Wire mesh (W):	5 bar

1.3 FILTER SPECIFICATIONS

Nominal pressure	Suction operation	
Temperature range	-10 °C to +100 °C	
Material of SF filter	Cover plate: Housing:	aluminium aluminium
Material of SFM filter	Cover plate: Filter head: Filter bowl:	aluminium aluminium polyamide
Material of SFF filter	Cover plate: Filter head: Filter bowl:	GGG40 aluminium steel
Material of S elements	Filter mesh: End caps: Central tube:	wire mesh polyamide steel, zinc-plated
Material of S.. elements	Filter mesh: End caps: Central tube:	wire mesh on request on request
Type of clogging indicator	VR Connection thread G ½ V1/4 Conn. thread NPT (only SFF)	
Pressure setting of the clogging indicator	0.2 to 1 bar (others on request)	
Bypass cracking pressure	0.25 bar (SFF filter) 0.3 bar (SF and SFM filter) (others on request)	
Cracking pressure of bypass valve for suction filter elements S (optional)	0.2 bar	

1.4 SEALS

NBR (=Perbunan)

1.5 INSTALLATION

Tank-top or inline filter.

1.6 SPECIAL MODELS AND ACCESSORIES

On request

1.7 SPARE PARTS

See Original Spare Parts List

1.8 CERTIFICATES AND APPROVALS

On request

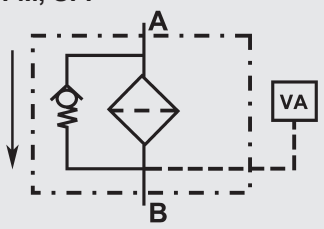
1.9 COMPATIBILITY WITH HYDRAULIC FLUIDS ISO 2943

- Hydraulic oils H to HLPD DIN 51524
- Lubrication oils DIN 51517, API, ACEA, DIN 51515, ISO 6743
- Compressor oils DIN 51506
- Biodegradable operating fluids VDMA 24568 HETG, HEES, HEPG
- Fire-resistant fluids HFA, HFB, HFC and HFD
- Operating fluids with high water content (>50% water content) on request

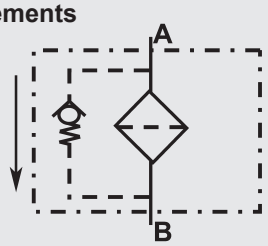
1.10 IMPORTANT INFORMATION

- Filter housings must be earthed.
- When using electrical clogging indicators, the electrical power supply to the system must be switched off before removing the clogging indicator connector.

Symbol for hydraulic systems SF, SFM, SFF



S elements



VA = clogging indicator

2. MODEL CODE (also order example)

SF W 330 W L 10 UE 1 . X /-V

2.1 COMPLETE FILTER

Filter type
SF, SFM, SFF

Filter material
P paper (not for SFF)
W stainless steel wire mesh

Size of filter or element
SF: 60, 110, 160, 240, 330
SFM: 330
SFF: 400, 500

Operating pressure
W suction operation

Type and size of connection

Type	Connection	Filter size SF 60	SF 110	SF 160	SF 240	SF 330	SFM 330	SFF 400	SFF 500
C	G ¾	●	●						
E	G 1¼			●	●				
F	G 1½						●		
G	G 2					●			
K	SAE DN 40 (1½")						●		
L	SAE DN 50 (2")					●			
M	SAE DN 65 (2½")							●	
P	SAE DN 100 (4")								●

Filtration rating
P: 10, 20 (not for SFF)
W: 75, 125

Clogging indicator version
A screw plug in indicator port
UE negative pressure gauge
UF negative pressure switch
for other clogging indicators see brochure no. 7.050../..

Type code
1

Modification number
X the latest version is always supplied

Supplementary details
KB without bypass valve
V FPM seals
W suitable for HFA and HFC emulsions

2.2 REPLACEMENT ELEMENT FOR SF / SFM / SFF FILTERS

0330 RS 075 W /-V

Size
0060, 0110, 0160, 0240, 0330, 0400, 0500

Type
RS

Filtration rating in µm
P: 010, 020 (not for SFF)
W: 075, 125

Filter material
P, W

Supplementary details
SFF must be added to model code for SFF filter
V, W (for descriptions, see Point 2.1)

2.3 REPLACEMENT CLOGGING INDICATOR

VR 1 UE . X /-V

Type
VR connection thread G ½ (only for SF and SFM filters)
V1/4 connection thread NPT (only for SFF filters)

Pressure setting
1 1 bar (for type UE)
0.2 0.2 bar (for type UF)

Type of clogging indicator (see Point 2.1)

Modification number
X the latest version is always supplied

Supplementary details
V (for descriptions, see Point 2.1)

2.4 SUCTION FILTER ELEMENT S

0050 S 125 W /-B0.2

Size
0015, 0025, 0050, 0100, 0180

Type
S

Filtration rating in µm
075, 125

Filter material
W

Supplementary details
B0.2 special cracking pressure of bypass 0.2 bar;
no details = standard

2.5 SUCTION FILTER ELEMENT S..

0070 SGD 125 W

Size
0040, 0060, 0070, 0110

Type
SHB* suction filter element hose connection (38.1 and 32)

SUI* suction filter element UN thread (1 1/16-12 UN and 1 5/16-12UN)

SG.* suction filter element thread (G ¾ , G 1, G 1½)

Filtration rating in µm
125

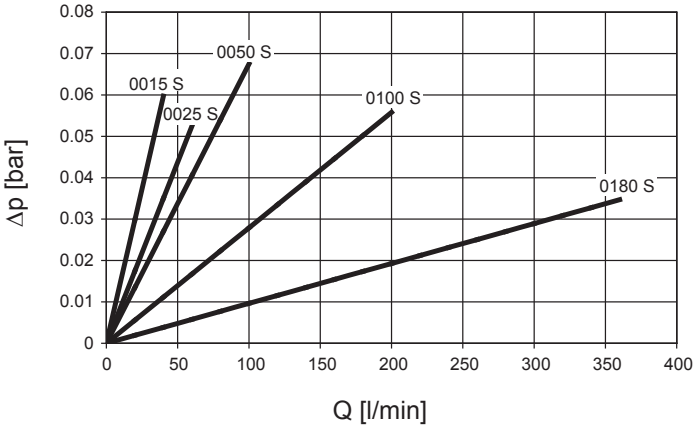
Filter material
W

*for further details on the designation, please see Point 5

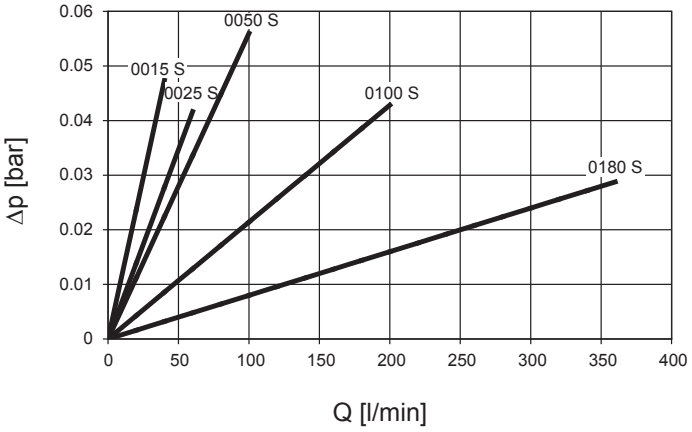
3. FILTER CALCULATION / SIZING S AND S..

3.1 ΔP-Q-GRAPHS FOR SUCTION FILTER ELEMENTS S (AT 30 MM²/S)

75 µm

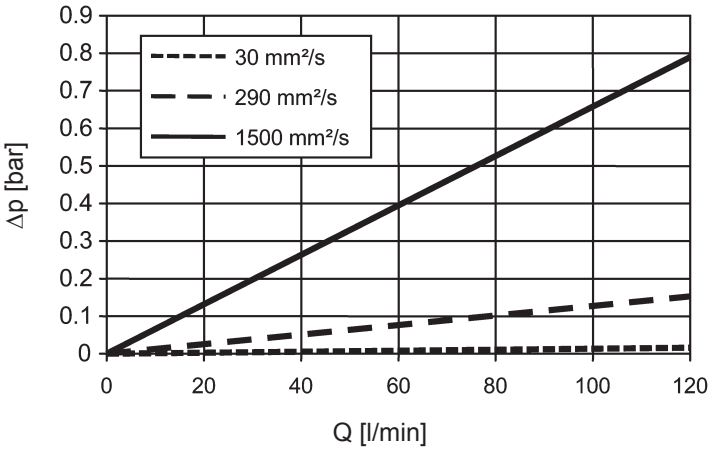


125 µm



3.2 ΔP-Q-GRAPHS FOR SUCTION FILTER ELEMENTS S.. FOR MOUNTING ON OUTSIDE OF TANK

Size 0060 and 0070



Size 0040 and 0110 on request.

4. FILTER CALCULATION / SIZING SF, SFM, SFF

The total pressure drop of a filter at a certain flow rate Q is the sum of the housing Δp and the element Δp and is calculated as follows:

$\Delta p_{total} = \Delta p_{housing} + \Delta p_{element}$

$\Delta p_{housing}$ = (see Point 4.1)

$$\Delta p_{element} = Q \cdot \frac{SK^*}{1000} \cdot \frac{viscosity}{30}$$

(*see Point 4.2)

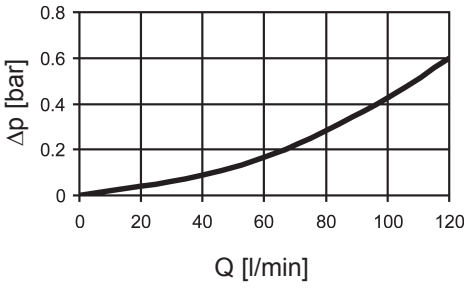
For ease of calculation, our Filter Sizing Program is available on request free of charge.

NEW: Sizing online at www.hydac.com

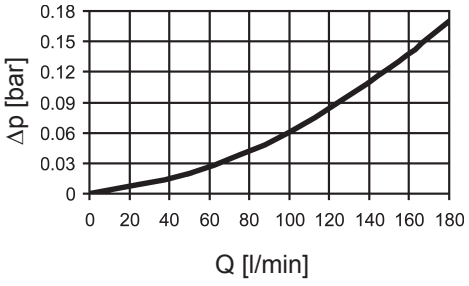
4.1 Δp-Q HOUSING CURVES BASED ON ISO 3968

The housing curves apply to mineral oil with a density of 0.86 kg/dm³ and a kinematic viscosity of 30 mm²/s. In this case, the differential pressure changes proportionally to the density.

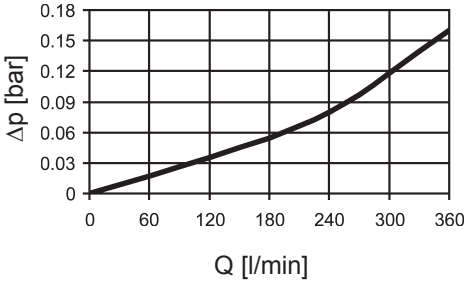
SF 60, 100



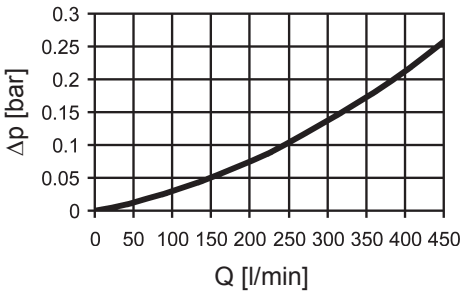
SF 160, 240



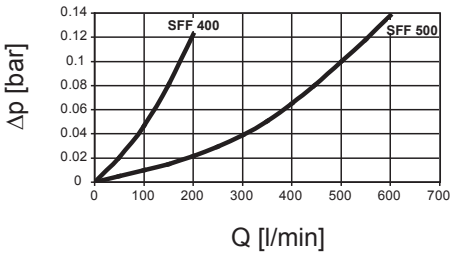
SF 330



SFM 330



SFF 400, 500

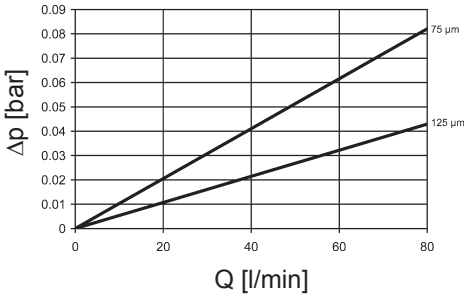


4.2 GRADIENT COEFFICIENTS (SK) FOR FILTER ELEMENTS (FOR SF/SFM/SFF FILTERS)

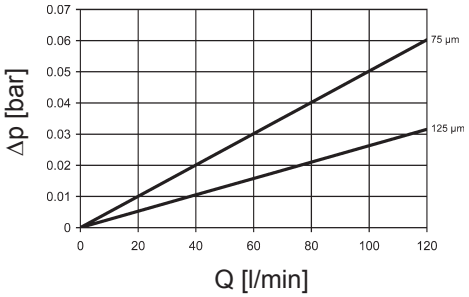
The gradient coefficients in mbar/(l/min) apply to mineral oils with a kinematic viscosity of 30 mm²/s. The pressure drop changes proportionally to the change in viscosity.

RS	W	
	75 µm	125 µm
60	1.03	0.54
110	0.52	0.26
160	0.36	0.19
240	0.25	0.13
330	0.19	0.10
400	0.20	0.16
500	0.20	0.16

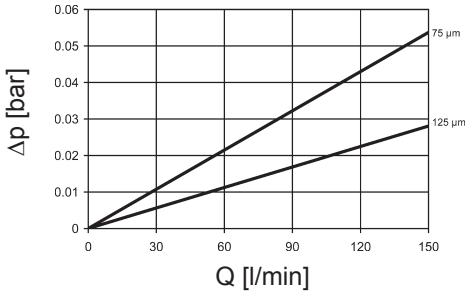
60 W



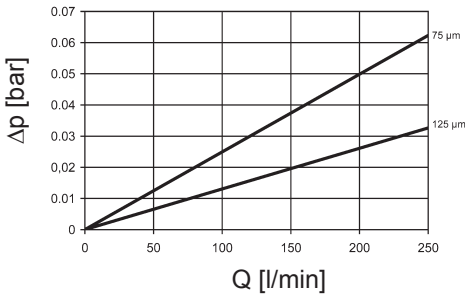
110 W



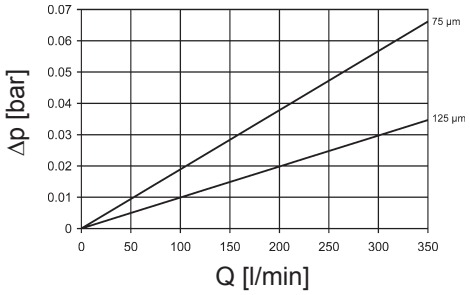
160 W



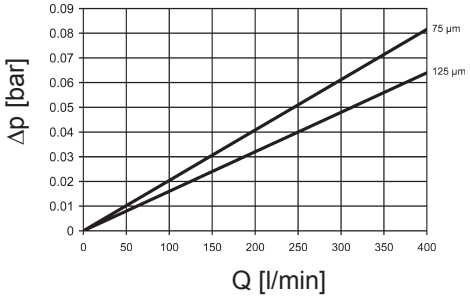
240 W



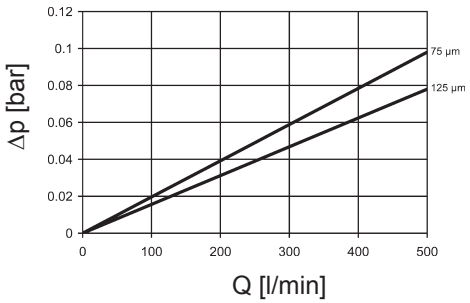
330 W



400 W



500 W

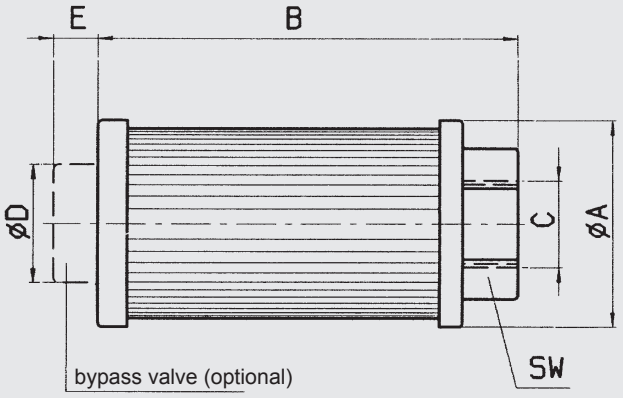


5. DIMENSIONS

Tank requirements

1. In the filter contact area, the tank flange should have a maximum flatness of 0.3 mm and RA 3.2 µm maximum roughness.
2. In addition, the contact area should be free of damage and scratches.
3. The fixing holes of the tank flange must be blind, or stud bolts with threadlocker must be used to fix the filter.
   As an alternative, the tank flange can be continuously welded from the inside.
4. Both the tank sheet metal and/or the filter mounting flange must be sufficiently robust so that neither deform when the seal is compressed during tightening.

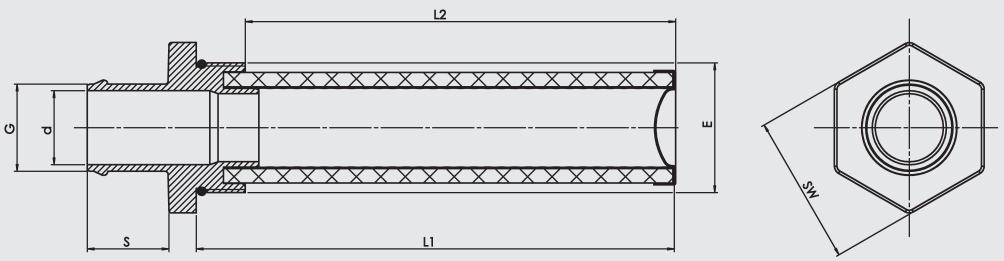
Suction filter element S



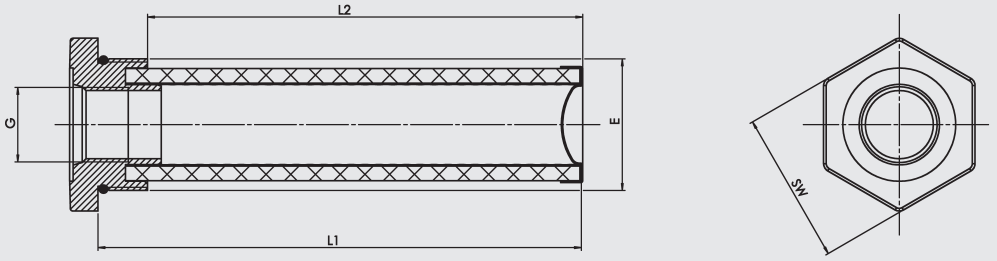
Types	A	B	C	D (ISO 228)	E	SW	Flow rate l/min
0015 S	44	104	G ½	24	10.5	30	15
0025 S	63	127	G ¾	36	13.5	46	25
0050 S	63	159	G 1	36	13.5	46	50
0100 S	86	210	G 1½	46	18.5	69	100
0180 S	86.5	311	G 2	46	18.5	69	180

Suction filter element S.. for mounting on the outside of tank

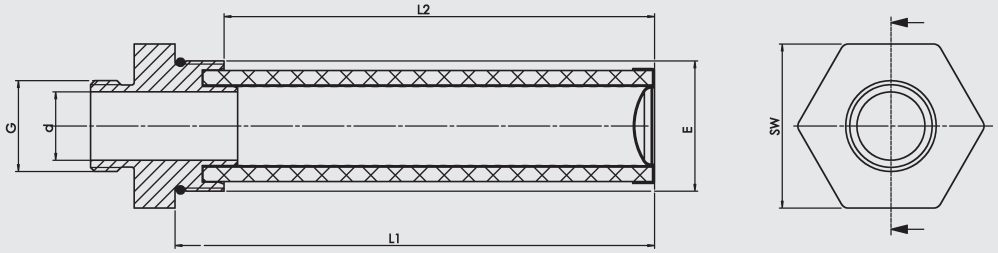
Type SHB



Type SUI

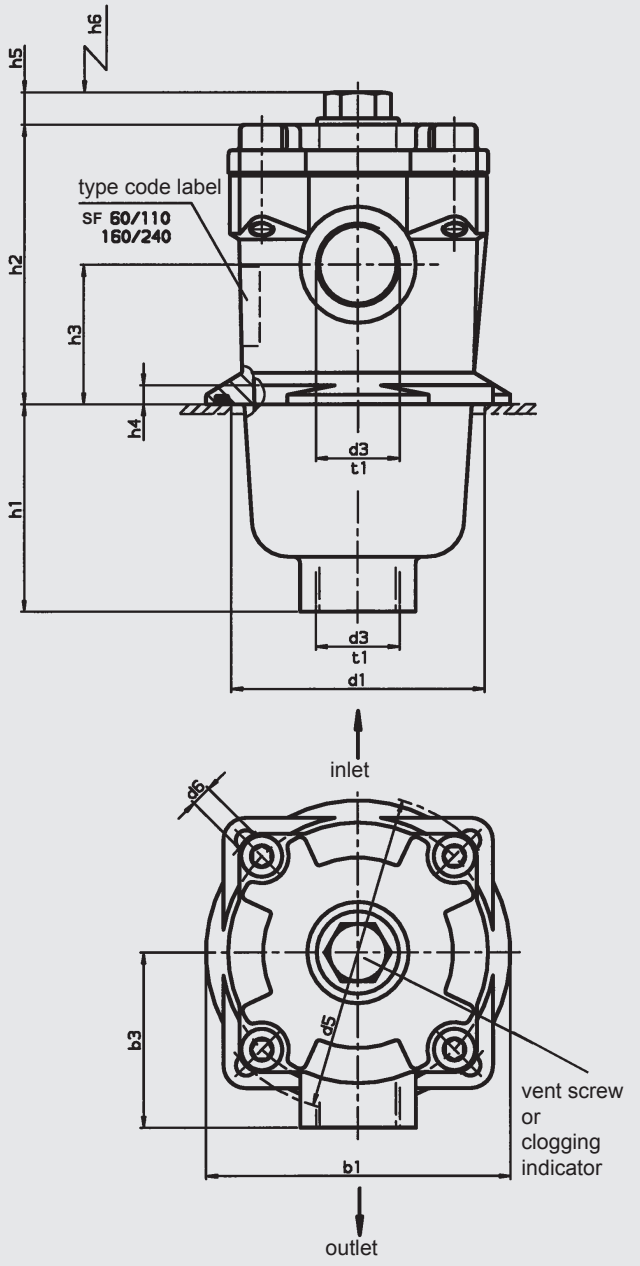


Type SGx

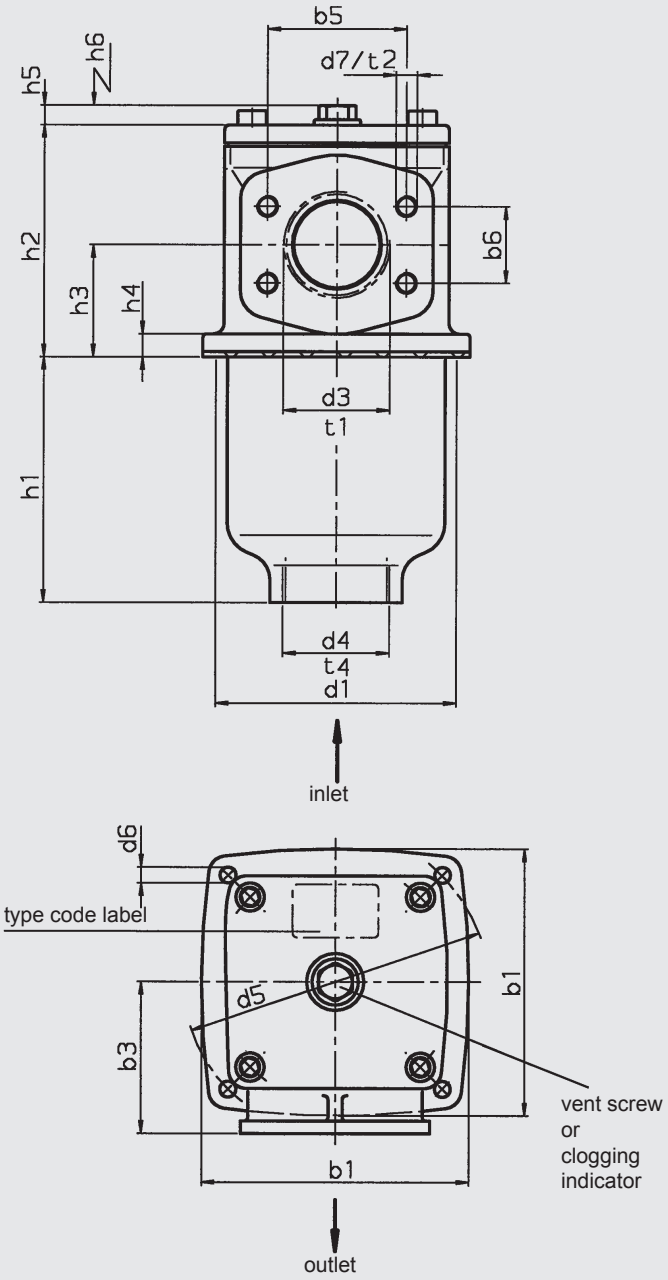


Designation	G	E	d	L1	L2	SW
0110 SHB 125 W	38.1	2½-12 UN 2 B	32	176	158	70
0070 SHB 125 W	32.0	1 7/8-12 UNF	25	176	158	55
0060 SHB 125 W	32.0	1 7/8-12 UNF	25	143	125	55
0070 SUI 125 W	1 1/16-12 UN	1 7/8-12 UNF	-	176	158	55
0060 SUI 125 W	1 1/16-12 UN	1 7/8-12 UNF	-	143	125	55
0110 SGF 125 W	G 1½	2½-12 UN 2 B	34	176	158	70
0070 SGD 125 W	G 1	1 7/8-12 UNF	25	176	158	55
0040 SGC 125 W	G ¾	1 7/8-12 UNF	20	143	125	55

SF 60 to 240

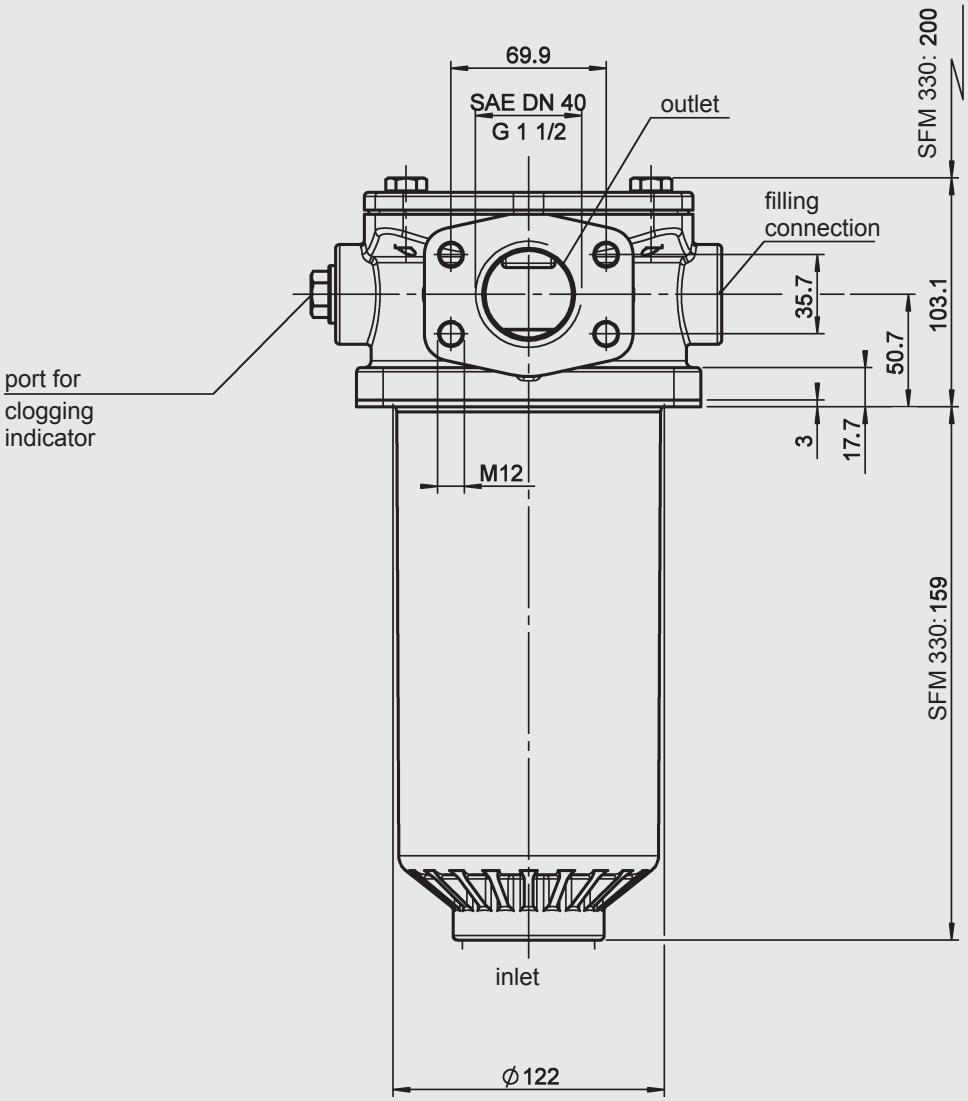


SF 330

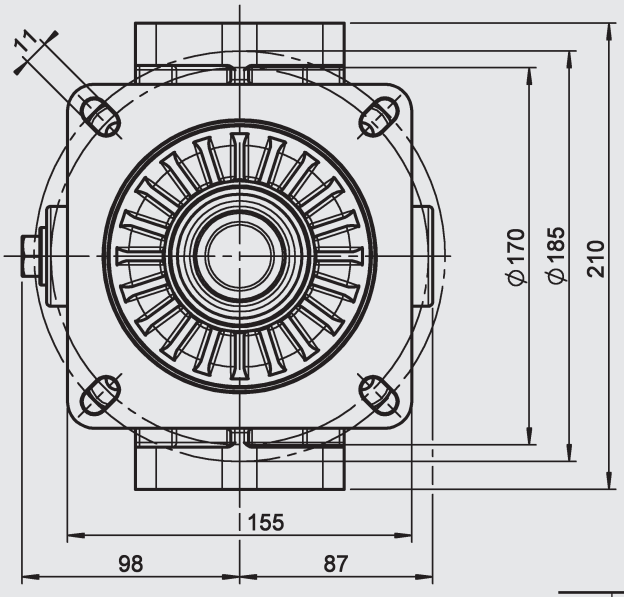


SF	b1	b3	b5	b6	d1	d3[1)]	d4	d5	d6[2)]	d7	h1	h2	h3	h4	h5	h6	t1	t2	t4	Weight incl. element [kg]	Volume of pressure chamber [l]
60	96	55	-	-	80	G ¾	-	100	M5	-	66	88	44	6	12	80	17	-	-	0.9	0.4
110	96	55	-	-	80	G ¾	-	100	M5	-	133	88	44	6	12	145	17	-	-	1.1	0.6
160	126	72	-	-	106	G 1¼	-	135	M6	-	89	108	54	6	12	120	20	-	-	1.8	1.0
240	126	72	-	-	106	G 1¼	-	135	M6	-	150	108	54	6	12	180	20	-	-	2.2	1.4
330	150	85	- 77.8	- 42.9	135	G2 SAE DN 50	G2	170	M8	- M12	138	130	63	13	12	180	27	- 23	27	4.1	2.0

[1)] Threaded port to ISO 228 / [2)] Mounting hole for screw

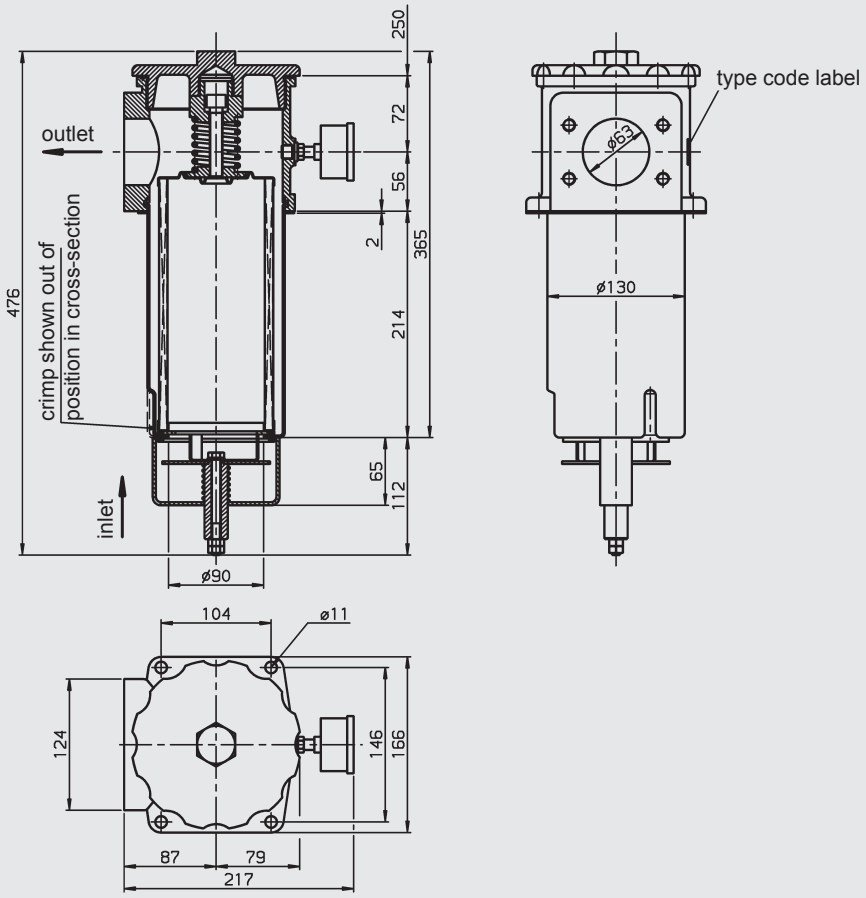


View from below

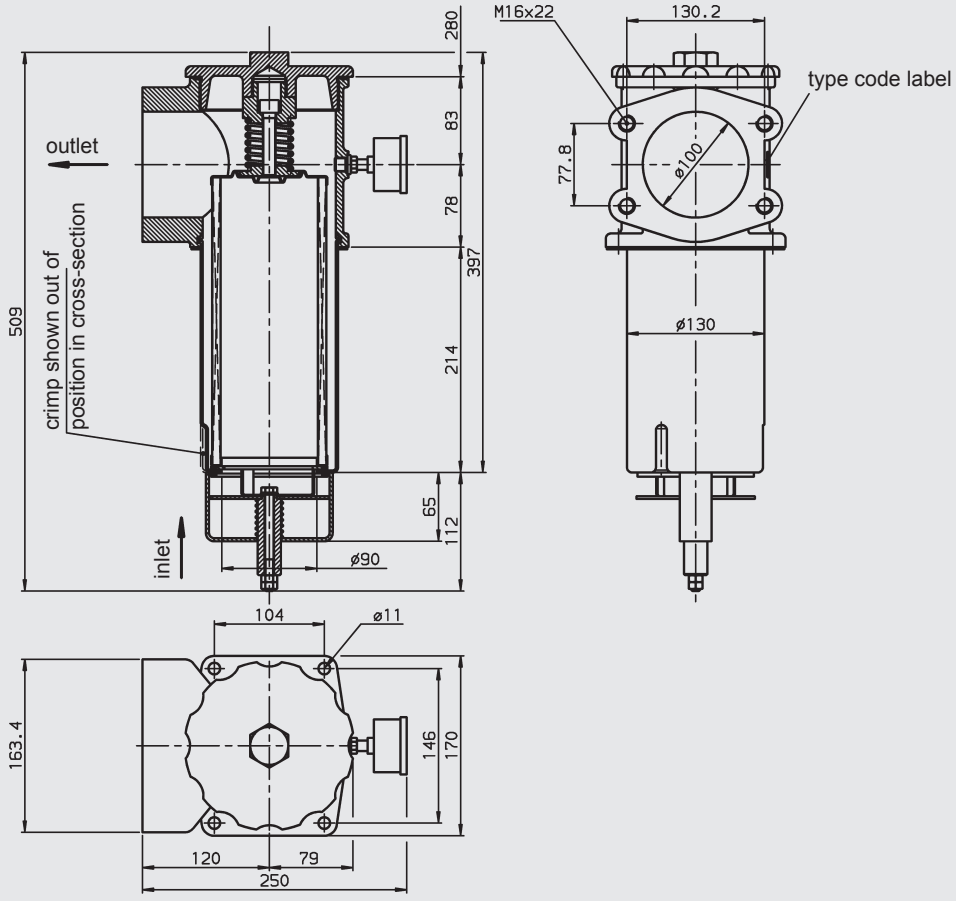


SFM	Weight incl. element [kg]	Volume of pressure chamber [l]
330	3.9	2.0

SFF 400



SFF 500



SFF	Volume of pressure chamber [l]
400	4.23
500	4.63

NOTE

The information in this brochure relates to the operating conditions and applications described.
For applications or operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.

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