

**Flangible filters**

These filters are for installation on the return line. Semi-submerged in the tank. All filters are complete with by-pass valve.

<b>Operating Temperature</b>	
with NBR seals	-30 ÷ 90° C
<b>Fluid compatibility conforming to ISO 2943 (Norm ISO 6743/4)</b>	
oil mineral with NBR seals	HH - HL - HM - HR - HV - HG
water emulsions with NBR seals	HFAE - HFAS
<b>Pressure</b>	
working pressure	8 bar
testing pressure	12 bar
burst pressure	16 bar
element collapse pressure rating (conforming to ISO 2941)	10 bar
<b>By-pass valve</b>	
by-pass setting	1,7 bar

**DEFINITION**

Ratio “β<sub>x</sub>” according to ISO 4572:

$$\beta_x \geq \frac{\text{Upstream particles with dimensions "x" } \mu\text{m}}{\text{Downstream particles with dimensions "x" } \mu\text{m}}$$

where “x” stands for particle size in μm

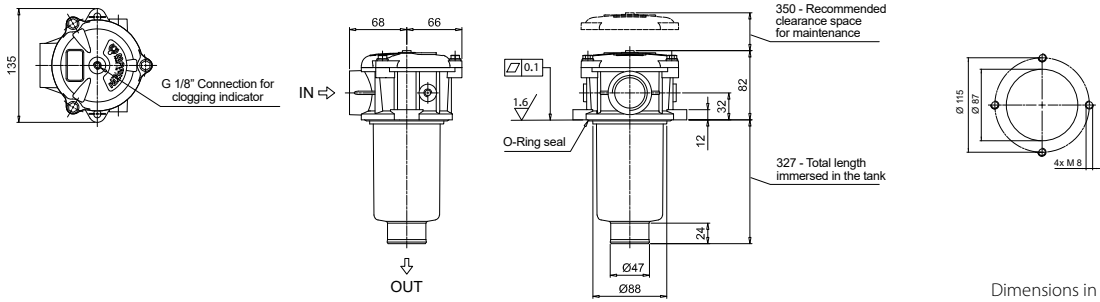
$$\% \text{ / Filtration Efficiency} = \frac{\text{Ratio } \beta - 1}{\text{Ratio } \beta} \times 100$$

Values	Efficiency
“β”	%
≥ 2	50
≥ 20	95
≥ 50	98
≥ 75	98,7
≥ 100	99
≥ 200	99,5

**CONVERSION TABLE**

Characteristics	International System (SI)	US Customary System (USCS)	Conversion from SI to USCS	Conversion from USCS to SI
Pressure	Mega Pascal (MPa) 1 MPa = 10 bar	Pound/Square Inch (psi)	1 MPa = 145 psi	1 psi = 0,0069 MPa
Flow in hydraulic	Litre per minute (l/min)	Gallon per minute (gpm)	1 l/min = 0,265 gpm	1 gpm = 3,78 l/min
Force	Newton (N)	Pound force (lbf)	1 N = 0,225 lbf	1 lbf = 4,444 N
Torque	Newton meter (Nm)	Pound force per foot (lbf ft)	1 Nm = 0,767 lbf ft	1 lbf ft = 1,357 Nm
Temperature	Celsius degree (°C)	Fahrenheit degree (°F)	°C = (°F-32)/1,8	°F= (°C*1,8) + 32
Lenght	Millimeter (mm) , Meter (m)	Inch (in), Foot (ft)	1 mm = 0,03937 in, 1 m = 3,28084 ft	1 in = 25,4 mm, 1 ft = 0,3048 m
Weight	Kilogram (kg)	Pound (lb)	1 kg = 2,2016 lb	1 lb = 0,1536 kg

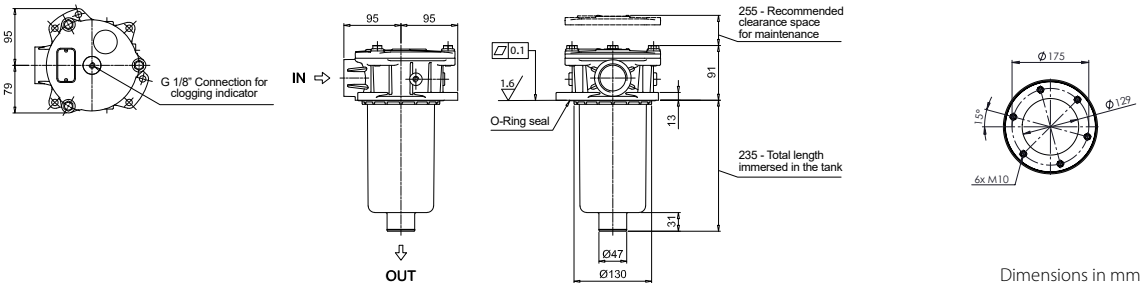
**Flange F4**



Dimensions in mm

Distance between the holes	Filter	$\beta$	Displacement l/min	Code	IN NPT	Cartridge
115	Micro-fibre glass 10 $\mu$ m	$\beta_{10} > 200$	150	<b>11800154110</b>	1 1/4"	11800254110
	Micro-fibre glass 25 $\mu$ m	$\beta_{25} > 200$	200	<b>11800154120</b>		11800254120
	Steel 60 $\mu$ m		250	<b>11800154160</b>		11800254160

**Flange F2**



Dimensions in mm

Distance between the holes	Filter	$\beta$	Displacement l/min	Code	IN NPT	Cartridge
175	Micro-fibre glass 10 $\mu$ m	$\beta_{10} > 200$	200	<b>11800152110</b>	1 1/4"	11800252110
	Micro-fibre glass 25 $\mu$ m	$\beta_{25} > 200$	250	<b>11800152120</b>		11800252120
	Steel 60 $\mu$ m		300	<b>11800152160</b>		11800252160

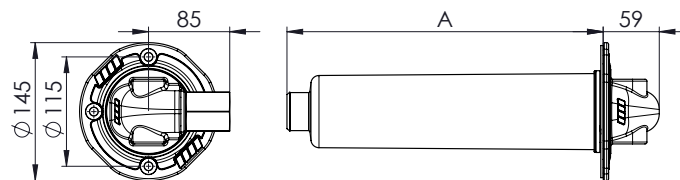
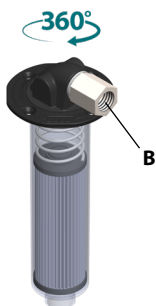
**Multifunctional adjustable return system cap**



The peculiarity of this product is that the port to which the return line of the systems is connected, can be oriented in any position of 360 ° allowed.

**CAP WITH FILTER CARTRIDGE**

**Flange F4**

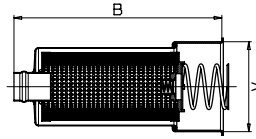


Dimensions in mm

Cap without ports	Code	A	B NPT	Spare parts				
Technical features				Plastic recipient	Cartridge	Cap	Cap ring	Gasket
60 $\mu$ m (steel) 200 lt	<b>11800126518</b>	330	1"	50900001859	11800211176	54600250010	49211020010	50600003022
25 $\mu$ m (cellulose) 160 lt	<b>11800126527</b>				11800212175			
25 $\mu$ m (fiber) 160 lt	<b>11800126536</b>				11800212193			
60 $\mu$ m (steel) 90 lt	<b>11800126714</b>				11800201356			
25 $\mu$ m (cellulose) 60 lt	<b>11800126723</b>	165	1"	50900001902	11800202355	54600250010	49211020010	50600003022
25 $\mu$ m (fiber) 60 lt	<b>11800126732</b>				11800204353			

**Submerged filter**

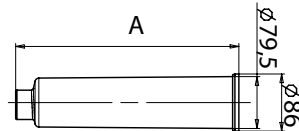
These filters have to be fitted in combination with flange in combination with mounting plates for diverters.



Dimensions in mm

Order code	Flange type	Displacement		Filter		Operating temperature °C	A mm	B mm	Max. operating pressure bar	Testing pressure bar	By-pass valve opening Δp bar	Filter element collapse pressure bar	Spare cartridge
		l/min	μm	β									
<b>Flange F2</b>													
11800111757	175	180	60			-25÷110	127	304	3	6	1,5±9%	10	11800201203 steel
11800112756		130	30	2									11800202202 reinforced cellulose

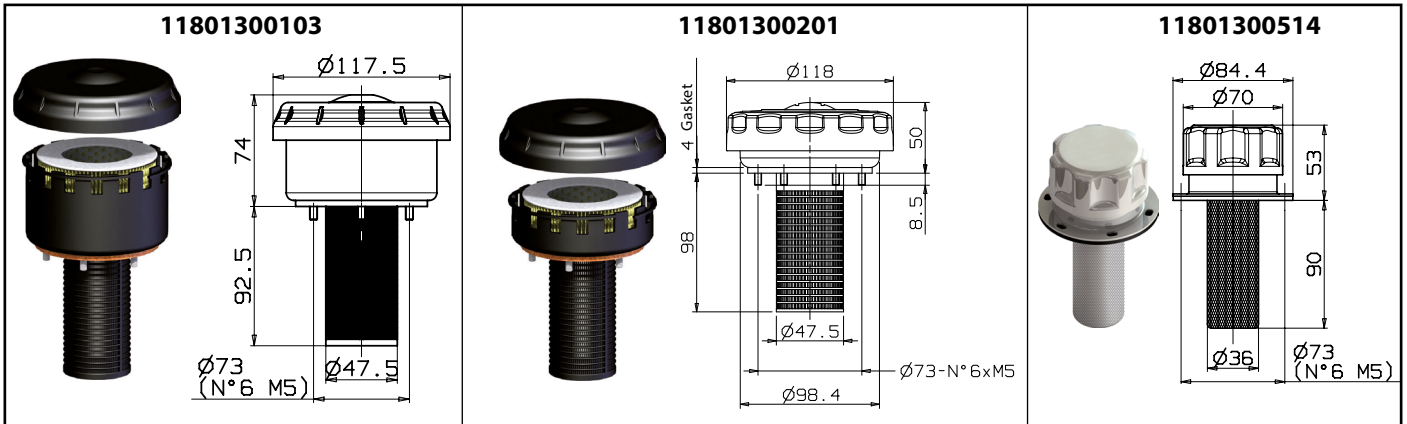
These filters have to be fitted in combination with flange **F4** in combination with mounting plates for diverters.



Dimensions in mm

Order code	Flange type	A	Displacement		Filter		Operating temperature °C	Max. operating pressure bar	Testing pressure bar	By-pass valve opening Δp bar	Filter element collapse pressure bar	Spare cartridge
			l/min	μm	β	25						
<b>Flange F4</b>												
11800111177	115	330	200	60		-25÷110	8	12	1,7±10%	10	11800211176 steel	
11800112176			160	25	2						11800212175 reinforced cellulose	
11800112194			160	25	200						11800212193 microfiber	
11800111195		162	90	60							11800201356 steel	
11800112210			60	25	2						11800202355 reinforced cellulose	
11800112229			60	25	200						11800204353 microfiber	

Filler cap

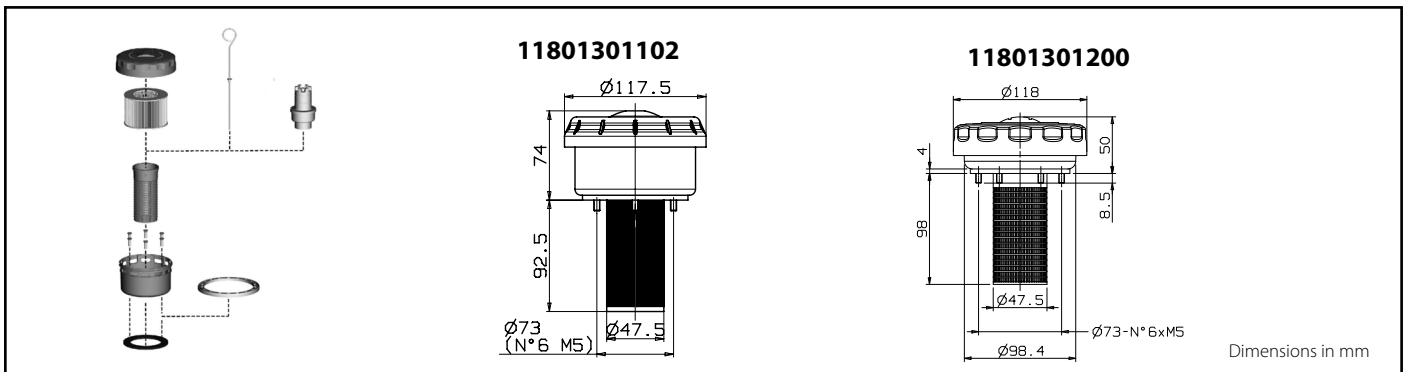


Filler cap complete with paper filter to ensure a proper filtration on the air coming into the tank.

Dimensions in mm

Order code	Air displacement	Filter	Filter Elements	
11801300103	1800 l/min	3 µm	11890200107	Paper
11801300201	1400 l/min	10 µm	11890200125	
11801300514	480 l/min	40 µm	Metallic net	

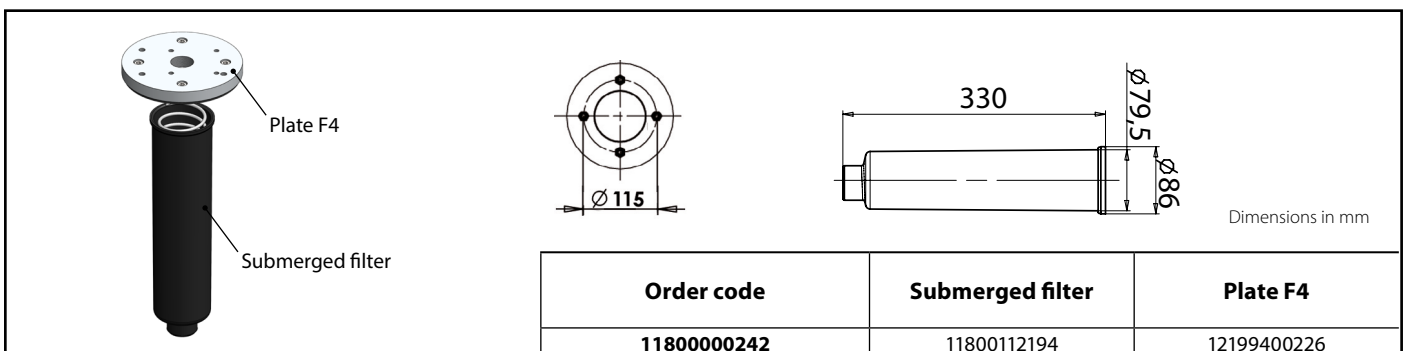
Filler cap with antispash



Dimensions in mm

Order code	Air displacement	Filter	Filter Elements	
11801301102	1800 l/min	3 µm	11890200107	Paper
11801301200	1400 l/min	10 µm	11890200125	

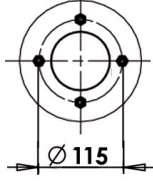

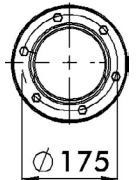
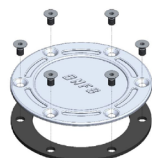
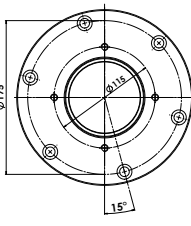

"Easy kit" - Submerged filter+plate F4



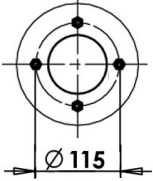
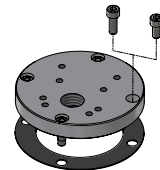
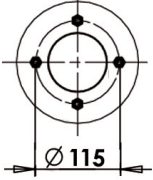
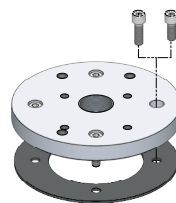
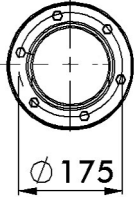
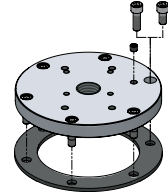
Dimensions in mm

Order code	Submerged filter	Plate F4
11800000242	11800112194	12199400226

Flanges

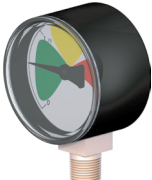
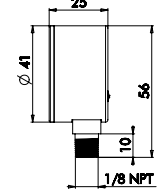
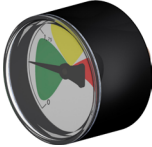
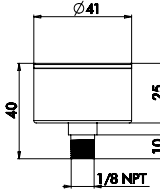
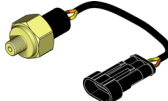
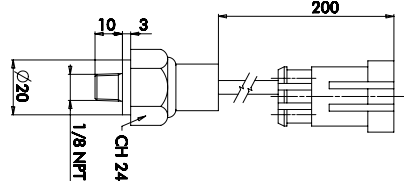
	Order code	Description	Bill of material
Blank flanges	 Code 13599020110 (OMFB) 13599020129 (Neutro)	Blank flange	 4 screws SPEI M8x16 1 aluminium plate 1 Gasket
	 Code 13599020165	Blank flange	 6 screws SPEI M10x18 1 aluminium plate 1 Gasket
Kit adaptor filter cap	 Code 13590400234	Kit adaptor F4 on oil tanks F2.	 1 plate 6 screws TCE M10x30 4 screws SPEI M8x20

Dimensions in mm


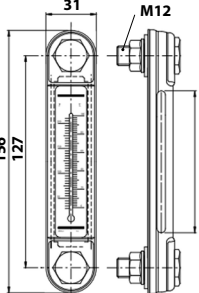
	Order code	Description	Bill of material
Mounting flanges for tipping valves	 Code 12199400182	Mounting flange for tipping valves option: <b>FM / FP 80 Modular 150</b>	 4 screw TCE M 8x14 4 screw TCE M 8x20 1 aluminium plate 1 Gasket <b>WARNING: SHORT SCREWS MUST BE USED ONLY FOR OIL TANKS FAMILY CODE 135700...</b>
	 Code 12199400226	Mounting flange for tipping valves option: <b>Modular 150 - Modular 250 on side and rear mounting tanks</b>	 4 screw TCE M 8x25 4 screw TCE M 8x20 1 aluminium plate 1 Gasket <b>WARNING: SHORT SCREWS SHALL BE USED ON TANKS WITH WELDED FLANGES. LONG SCREWS SHALL BE USED ON TANKS WITH DEEP-DRAWN FLANGES AND THREADED INSERTS.</b>
	 Code 12199400217	Mounting flange for tipping valves option: <b>Modular 150 Modular 250</b>	 6 screw TCE M10x20 6 screw TCE M10x30 1 aluminium plate 1 Gasket 1 Plug G 1/8 <b>WARNING: SHORT SCREWS MUST BE USED ONLY FOR OIL TANKS FAMILY CODE 135700...</b>

Dimensions in mm


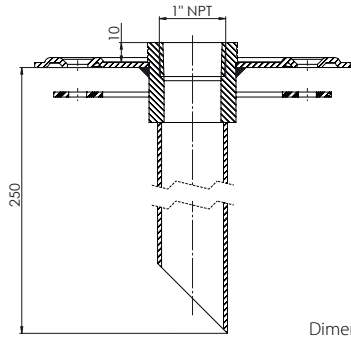
Clogging indicators

Order code		Description	Products	
Visual indicators	Radial attachment 1180000073	Pressure gauge, scale from 0 to 6 bar radial attachment.		
	Rear attachment 1180000082	Pressure gauge, scale from 0 to 6 bar rear attachment.		
Electric indicators	31200500110	Adjustable electric indicator from 0.5 bar to 3 bar. IP 65 Packard connection.		 Dimensions in mm

Visual level indicator

Order code	Description	Product
50900400052	<b>VERTICAL LEVEL GAUGES WITH METAL CASING</b> - Max working temperature - 30° + 100° C. - Rear gasket: NBR 70 Shore. - Maximum tightening torque suggested 5 Nm.	  Dimensions in mm

Non-filtered return for F4 flange

Order code	Description	Product
13590400421	<b>NON-FILTERED RETURN</b> - 1" NPT return connection and pipe	  Dimensions in mm