



HYDRAULIC FILTER

Interchangeable Elements

F.B.N. srl is pleased to offer you its range of filter elements, interchangeable with all main manufacturers of equipments (OEM) and hydraulic filters. Our interchangeable elements are produced with components of the highest quality level and are constantly monitored to ensure maximum performance, equivalent to the original. It is an ever-expanding range, We kindly invite you to see our online cross-reference to check the equivalences: **www.fbn.it/reference**. In case the equivalences are not found, we can evaluate the building also for modest quantities. Contact us!







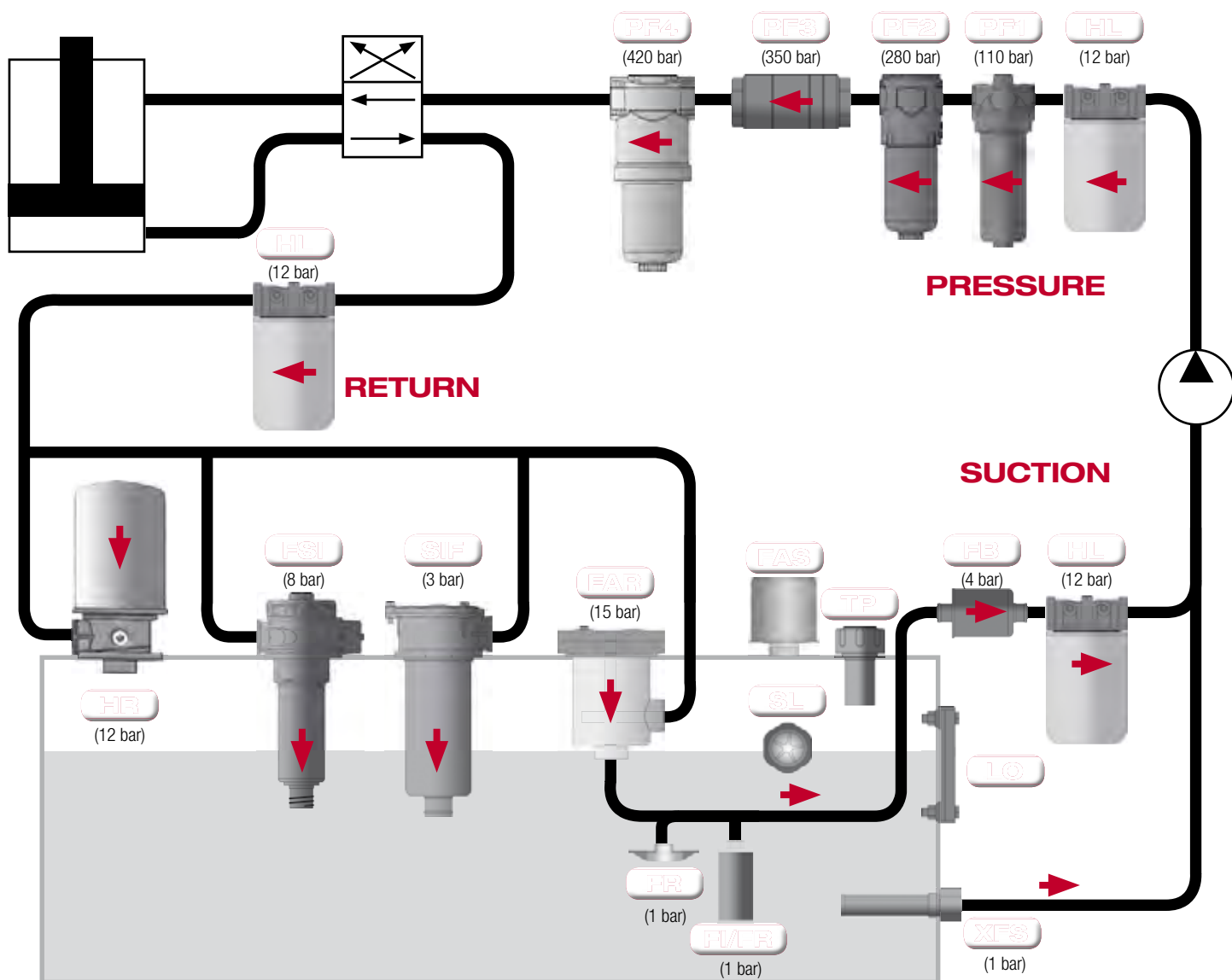
Hydraulic filters catalog

THE IMPORTANCE OF A FILTER IN AN HYDRAULIC SYSTEM:

In modern hydraulic systems, manufacturers tend to use components for production and control of hydraulic power, increasingly complex, expensive and with very high performances. **THE MAIN CAUSE OF BREAKDOWNS IN THESE SYSTEMS IS A DIRECT CONSEQUENCE OF HYDRAULIC FLUID'S CONTAMINATION AND THE DERIVING COSTS ARE REALLY HIGH** (components' replacements, production stops, increased maintenance costs, etc.etc.). It is impossible to eliminate completely contamination from fluids but it can be kept under control by proper choice of a filter and the constant replacement of its filter element. That's why, choosing a suitable filter for your hydraulic system and application, means **A REDUCTION OF THE OPERATING COSTS AND KEEPING HIGH ITS POTENTIAL**. You must analyze several factors, to select a proper filter:

1) Location on the circuit (suction, delivery, return); **2)** The Max. working pressure considering also the filter element Δp ; **3)** Max. flow rate needed, filter dimensions and connections; **4)** Filtration degree and filtering material necessary to protect components. You must take into account several parameters in order to determine it, such as: a) The required level of contamination class according to standards ISO4406 or NAS1638 and therefore the most suitable filtering efficiency, b) The sensitivity of components to be protected, c) The expected life (cycles) and the dirt holding capacity, d) The working environment, e) The general costs, also for evtl. production stops; **5)** The working temperatures; **6)** The eventual usage of clogging indicators or by-pass. F.B.N. Srl is able to offer you a range to suit all your needs. Our technical department is at your complete disposal for any request for additional information and technical explanations.

EXAMPLES OF APPLICATION



= Hydraulic pump



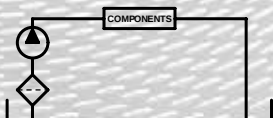
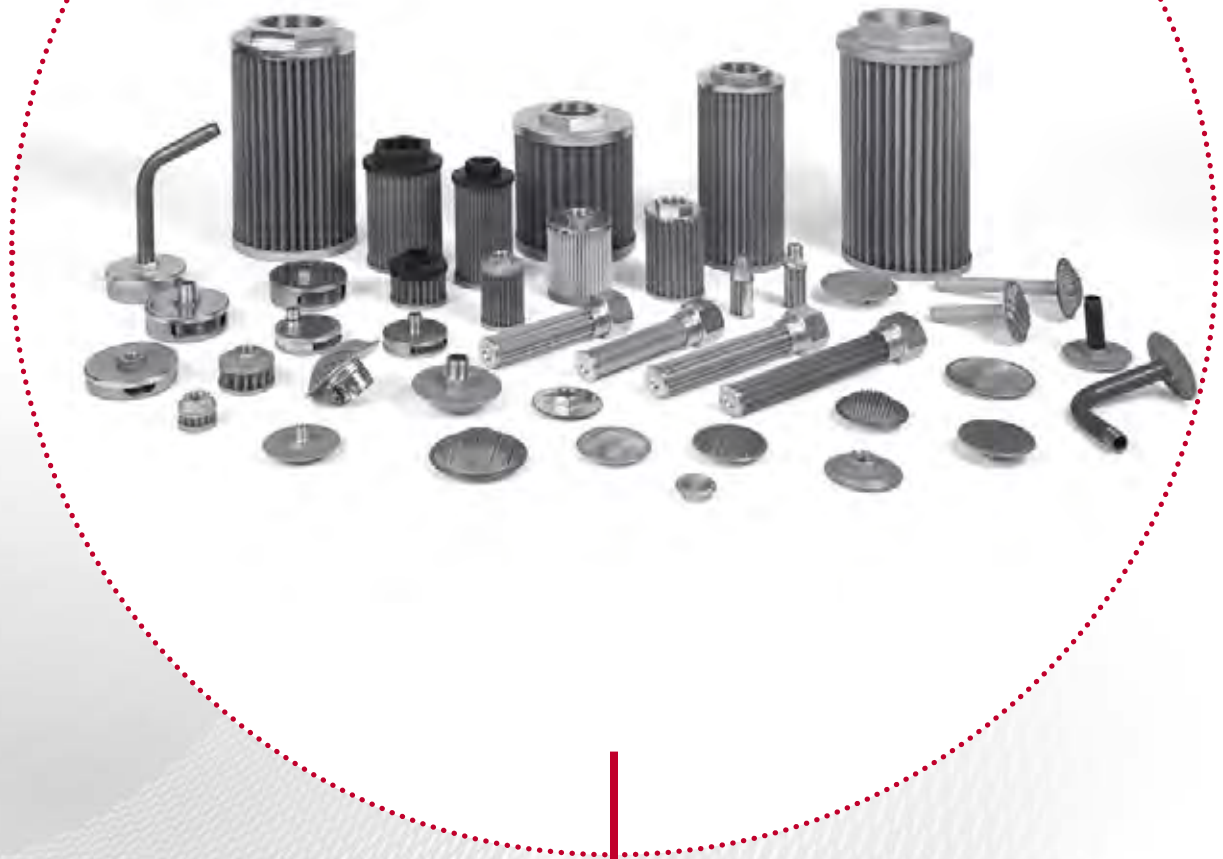
= Valve



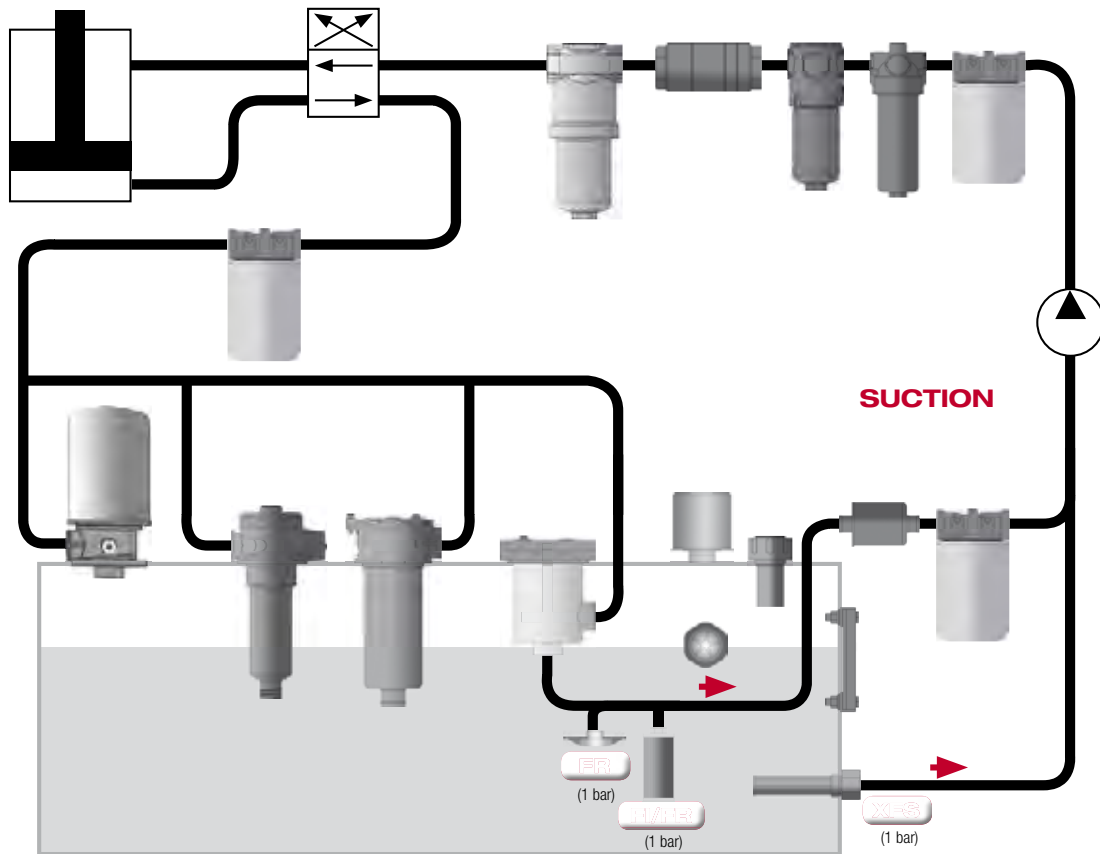
= Hydraulic cylinder

Immersed suction filters (strainers)

SERIE FI-FR-XES



Suction filters



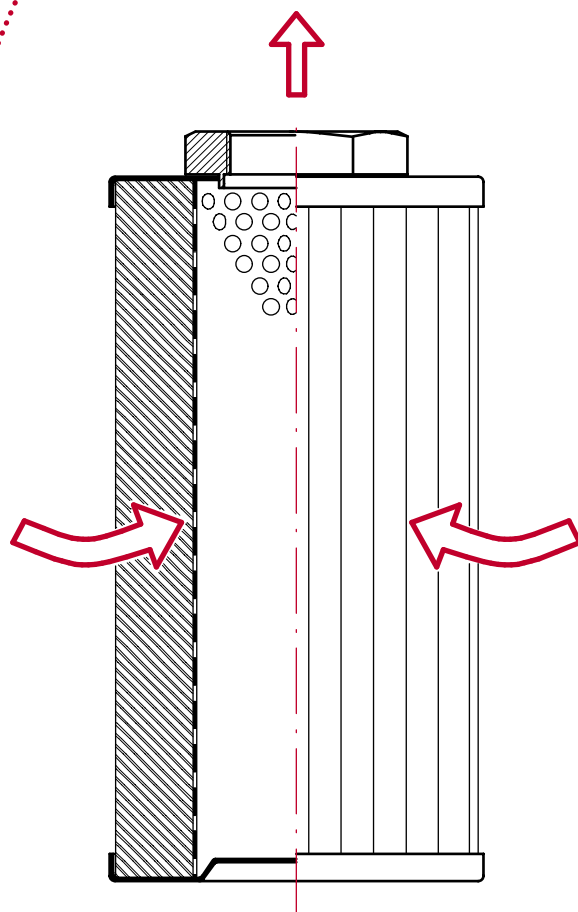
FI-FR-XFS filter series are used for suction, immersed into hydraulic oil tank, to protect the pump and system components from coarse contamination. There are several filter families and models available, in order to satisfy all needs: many filtration degrees and connections, small flow rates for mini power-packs, bigger flow rates, narrow spaces, special connections or with suction pipes. We can also produce special filters upon customer request.

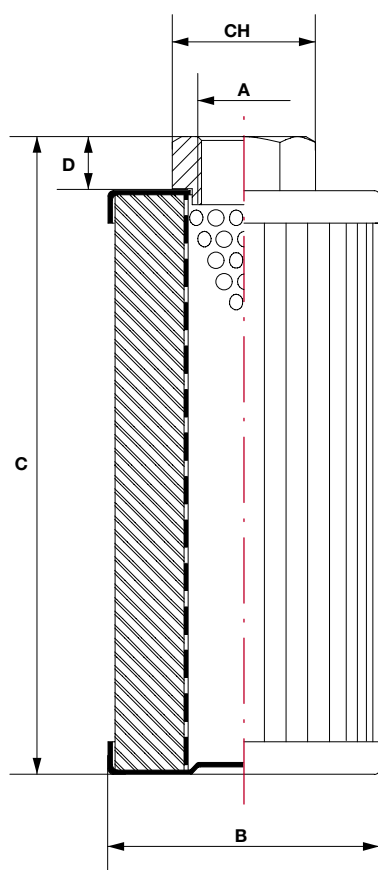
FI SERIES

Threaded tank-immersed suction oil filters

TECHNICAL FEATURES:

- Connections + caps: galvanized steel.
- Inner pipe: galvanized perforated plate.
- Standard available threads: from 3/8" to 3" ("bspp"). "Npt" or other threads available upon request.
- Standard available filter elements: 30 Micron nom. paper / 60-90-250 Micron nom. wire mesh. Other filtrations upon request.
- By-pass: available upon request (0,3 bar opening).
- Working temperature: from -30°C to +110°C.
- Collapse pressure: 1 bar.
- Tested according standards: ISO 2941 / ISO 3724 / ISO 3968.





DIMENSIONS (mm)					
Mod.	A*	B	C	D	CH
FI1.10	3/8"	50	89	8	22
FI2.10	1/2"				69
FI2.15					
FI3.15	3/4"	142	8	36	
FI3.20			9		
FI4.20	1"	100	94	9	46
FI4.25			143	9	
FI4.30				10	
FI5.30	1" 1/4		180	10	60
FI5.35		230	10		
FI5.40		140	93	10	
FI5.45	1" 1/2	100	230	10	60
FI6.40		105	10		
FI6.50			165	10	
FI6.55			140	213	10
FI7.55	260	10			
FI7.60	320	10			
FI7.65	268	16		95	
FI7.70		326	16		
FI8.65		2" 1/2	150		290
FI8.70	326			16	
FI9.70	3"	150	290	26	100

FLOW RATES (l/min)				
Mod.	M30	M60	M90	MD5
FI1.10	6	12	16	16
FI2.10	16	21	24	24
FI2.15	16	21	24	24
FI3.15	18	24	28	28
FI3.20	20	28	32	32
FI4.20	28	35	40	40
FI4.25	28	35	40	40
FI4.30	30	46	50	50
FI5.30	40	55	70	70
FI5.35	50	75	90	90
FI5.40	60	90	110	110
FI5.45	45	65	80	80
FI6.40	70	100	120	120
FI6.50	60	100	110	110
FI6.55	60	100	120	120
FI7.55	100	130	160	160
FI7.60	120	180	200	200
FI7.65	140	220	250	250
FI7.70	150	230	260	260
FI8.65	160	250	270	270
FI8.70	170	260	290	290
FI9.70	200	280	350	350

* Standard threads "bspp". "Npt" or special threads upon request.

* Flow rates measured with oil of 30 cst kinematic viscosity, 0,86 kg/dm³ density and $\Delta p=0,03$ bar.

• Fluid compatibility: mineral oil (HH-HL-HM-HR-HV-HG) and synthetic fluids (HS-HFDR-HFDU-HFDS).

• Graphic curves Δp VS flow rate available upon request

HOW TO ORDER A COMPLETE FILTER:

FI	1	.	10	M30	
FI			see table		
1	3/8" bspp			M30	30μ Paper
2	1/2" bspp			M60	60μ metal mesh
3	3/4" bspp			M90	90μ metal mesh
4	1" bspp			MD5	250μ metal mesh
5	1" 1/4 bspp				
6	1" 1/2 bspp				
7	2" bspp				
8	2" 1/2 bspp				
9	3" bspp				
					Without By-pass
					With By-pass opening 0,3 bar

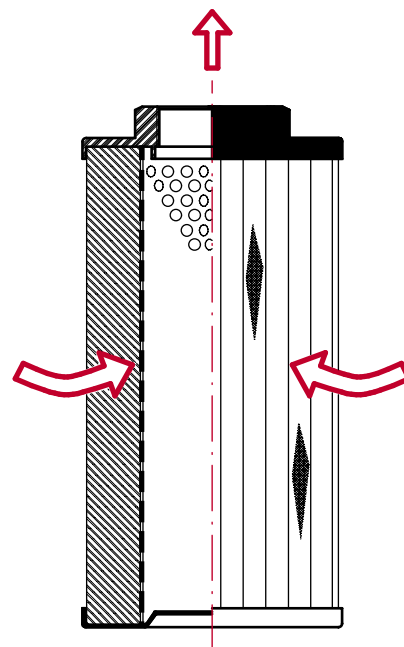
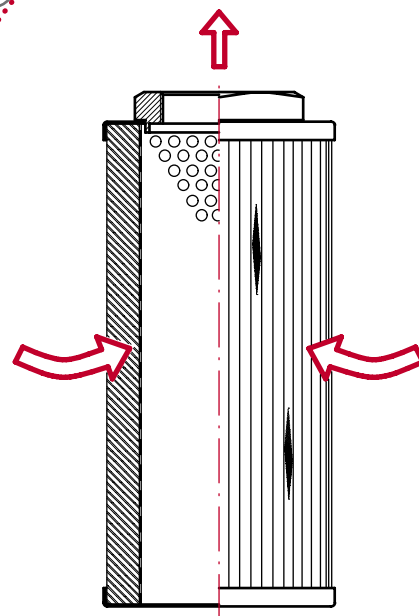
* Version upon request

FR/FRP SERIES

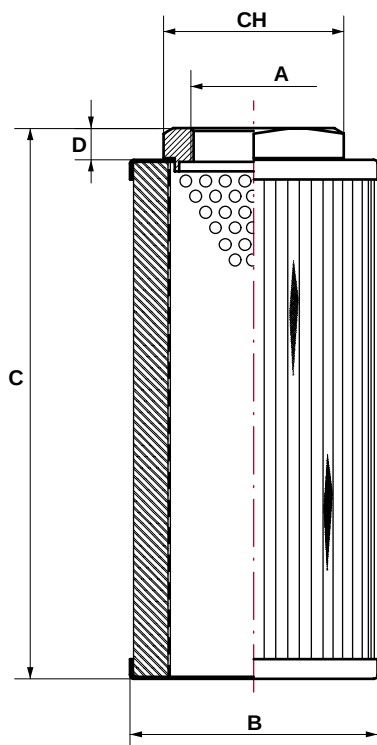
EN Threaded tank-immersed suction oil filters (metal or plastic version)

TECHNICAL FEATURES:

- Threaded cap: FR Series galvanized steel /FRP Series glass-filled nylon.
- End cap: galvanized steel.
- Inner pipe: galvanized perforated plate.
- Standard available threads: from 3/8" to 3" ("bspp"). "Npt" or other threads available upon request.
- Standard available filter elements: FR Series 160 Micron nom. wire mesh. FRP Series 125 Micron nom. metal mesh. Other filtrations upon request.
- By-pass: available upon request (0,3 bar opening).
- Working temperature: from -30°C to +110°C.
- Collapse pressure: 1 bar.
- Tested according standards: ISO 2941 / ISO 3724 / ISO 3968.



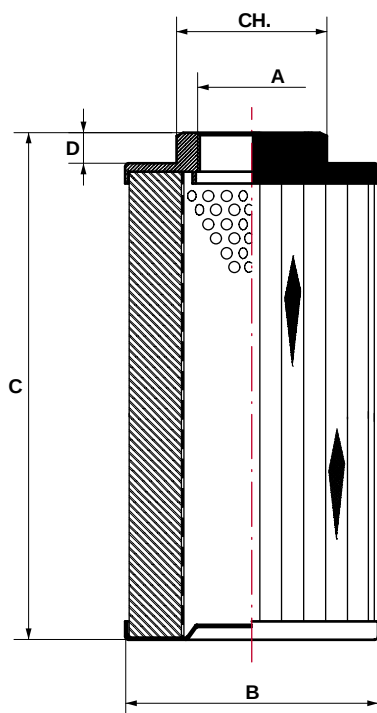
FR



METALLIC CONNECTION VERSION

Mod.	A*	B	C	D	CH	μ	Flow l/min.**
FR1.04482	3/8"	45	40	8	22	160 μ	10
FR1.06600	3/8"	45	55	8	22	160 μ	12
FR1.04483	3/8"	45	75	8	22	160 μ	15
FR3.04484	1/2"	45	105	8	30	160 μ	18
FR2.04485	3/4"	63	110	8	36	160 μ	30
FR8.04486	1"	63	140	9	46	160 μ	60
FR8.06625	1"	89	144	9	46	160 μ	80
FR8.04487	1" 1/4	89	125	10	60	160 μ	100
FR8.04488	1" 1/2	89	145	10	60	160 μ	150
FR8.04489	1" 1/2	89	200	10	60	160 μ	180
FR8.04490	2"	89	260	10	75	160 μ	330
FR8.04491	2"	140	150	10	75	160 μ	330
FR8.04492	2" 1/2	140	215	16	95	160 μ	520
FR8.04493	3"	150	270	26	100	160 μ	600

FRP



PLASTIC CONNECTION VERSION

Mod.	A*	B	C	D	CH	μ	Flow l/min.*
FRP1.07400	3/8"	42	36,5	12,5	30	125 μ	10
FRP1.07401	3/8"	42	52	12,5	30	125 μ	12
FRP1.07402	3/8"	42	71	12,5	30	125 μ	15
FRP2.07403	1/2"	42	100,5	13,5	30	125 μ	18
FRP3.07404	3/4"	60	110	14	36	125 μ	30
FRP4.07405	1"	60	140	15	46	125 μ	60
FRP4.07406	1"	85	140	18	60	125 μ	80
FRP5.07407	1" 1/4	85	140	18	60	125 μ	100
FRP6.07408	1" 1/2	85	140	18	60	125 μ	150
FRP6.07409	1" 1/2	85	195	18	60	125 μ	180
FRP7.07410	2"	85	255	18	70	125 μ	330
FRP7.07411	2"	144	142	18	70	125 μ	330
FRP8.07412	2" 1/2	144	203	22	90	125 μ	520
FRP9.07413	3"	144	260	17	100	125 μ	600

- Add "B" to code's end for By-pass version.

* Standard threads "bspp". "Npt" or special threads upon request.

** Flow rates measured with oil of 30 cst kinematic viscosity, 0,86 kg/dm3 density and Δp=0,03 bar.

- Fluid compatibility: mineral oil (HH-HL-HM-HR-HV-HG) and synthetic fluids (HS-HFDR-HFUD-HFDS).

- Graphic curves Δp VS flow rate available upon request

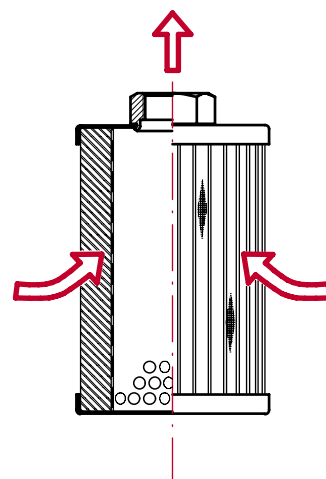
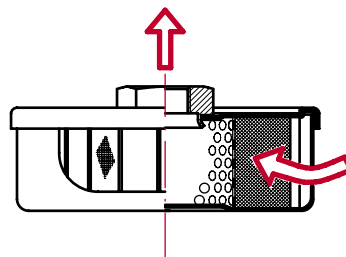
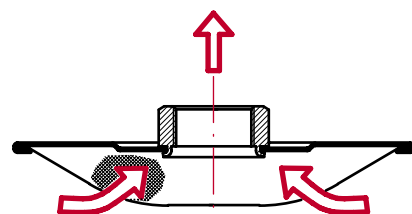
FR SERIES

FOR MINI POWERPACKS AND SMALL FLOW RATES

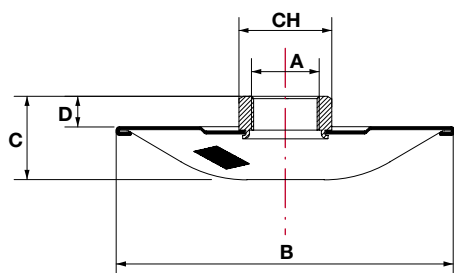
Threaded tank-immersed suction oil filters, specific for mini power-packs and small flow rates (ideal for narrow spaces).

TECHNICAL FEATURES:

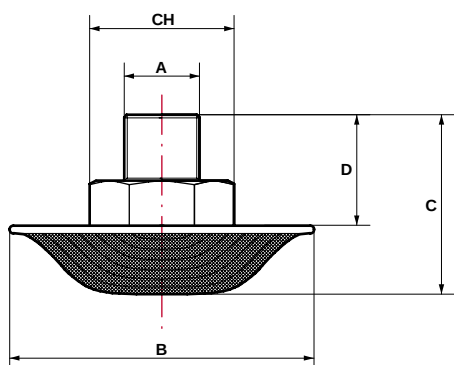
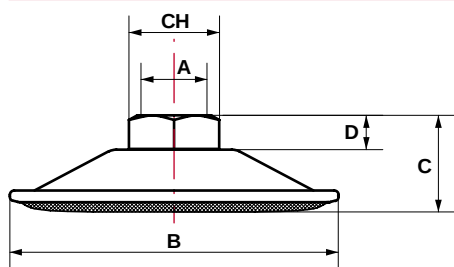
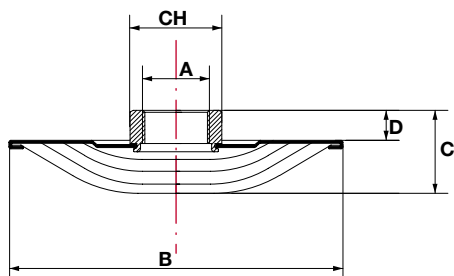
- Connections + caps: galvanized steel.
- Inner pipe (where present): galvanized perforated plate.
- Standard available threads: from 1/4" to 1" ("bspp"). "Npt" or other threads available upon request.
- Standard available filter elements: 60-90-120-250-500 Micron nom. wire mesh. Other filtrations upon request.
- Suction pipes available upon request.
- Working temperature: from -30°C to +110°C.
- Collapse pressure: 1 bar.
- Tested according standards: ISO 2941 / ISO 3724 / ISO 3968.



**TYPE 1
(PLAIN)**



**TYPE 2
(PLEATED)**



SUCTION FILTERS FOR MINI POWERPACKS

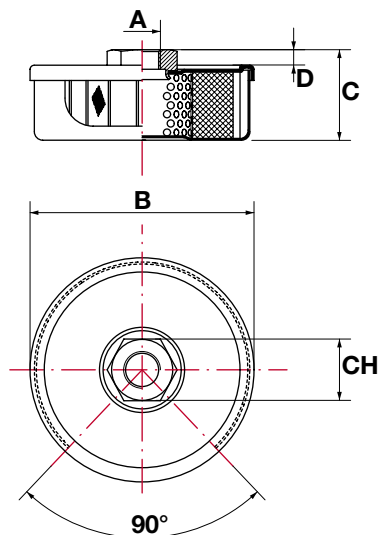
Mod.	DIMENSIONS mm					Filtering surface cm ² (Type)	Filter element	Flow l/min.**
	A	B	C	D	CH			
FR5.06694	1/4" bspp	32	13	6	22	9 (1)	90μ Repts FeZn	4
FR1.06692	3/8" bspp	32	15	8	22	9 (1)	90μ Repts FeZn	5
FR1.07537	3/8" bspp	32	15	8	55	9 (1)	250μ Repts FeZn	5
FR5.04265	1/4" bspp	63	17	7	22	45 (2)	60μ Repts FeZn	7
FR5.01752	1/4" bspp	63	15	6,5	22	30 (1)	90μ Repts FeZn	7
FR5.03503	1/4" bspp	63	17	7	22	45 (2)	90μ Repts FeZn	9
FR5.03546	1/4" bspp	63	14	5	22	30 (1)	250μ Repts FeZn	9
FR5.04465	1/4" npt	63	14	5	22	30 (1)	250μ Repts FeZn	9
FR1.02319	3/8" bspp	63	16	7	22	30 (1)	90μ Repts FeZn	10
FR1.04467	3/8" bspp	63	18	8	22	45 (2)	90μ Repts FeZn	12
FR1.02396	3/8" bspp	63	17	7	22	45 (2)	90μ Repts FeZn	12
FR1.04386	3/8" bspp	63	16	7	22	30 (1)	200μ Repts FeZn	11
FR1.03570	3/8" bspp	63	16	7	22	30 (1)	250μ Lam Inox	12
FR1.01775	3/8" bspp	63	20	8	22	120 (2)	250μ Repts FeZn	13
FR1.04462	3/8" npt	63	17	7	22	45 (2)	90μ Repts FeZn	12
FR3.04387	1/2" bspp	63	16	7	30	30 (1)	250μ Lam Inox	18
FR4.03500	M 12x1	63	16	7	22	30 (1)	90μ Repts FeZn	7
FR5.03506	1/4" bspp	80	17	5	22	53 (1)	90μ Repts FeZn	7
FR5.02395	1/4" bspp	80	23	5	22	200 (2)	90μ Repts FeZn	12
FR1.04216	3/8" bspp	80	17	7	22	200 (2)	60μ Repts Inox	6
FR1.03531	3/8" bspp	80	21	7	22	90 (2)	90μ Repts FeZn	12
FR1.04398	3/8" bspp	80	17	7	22	53 (1)	90μ Repts FeZn	12
FR1.02392	3/8" bspp	80	25	7	22	200 (2)	90μ Repts FeZn	25
FR1.03581	3/8" bspp	80	17	7	22	53 (1)	200μ Repts FeZn	15
FR1.02394	3/8" bspp	80	17	7	22	53 (1)	250μ Repts FeZn	15
FR1.03571	3/8" bspp	80	21	7	22	100 (2)	250μ Lam Inox	14
FR3.07502	1/2" bspp	80	26	8	30	90 (2)	90μ Repts FeZn	22
FR4.03502	M 12x1	80	17	7	22	53 (1)	90μ Repts FeZn	10
FR4.02393	M 12x1	80	25	7	22	200 (2)	90μ Repts FeZn	12
FR4.02386	M 12x1	80	17	7	22	53 (1)	200μ Repts FeZn	13

SUCTION FILTERS FOR MINI POWERPACKS BELL SHAPED

Mod.	DIMENSIONS mm					Filtering surface cm ²	Filter element	Flow l/min.**
	A	B	C	D	CH			
FR1.04391	3/8" bspp	80	23,5	8	22	65	90μ Repts FeZn	12

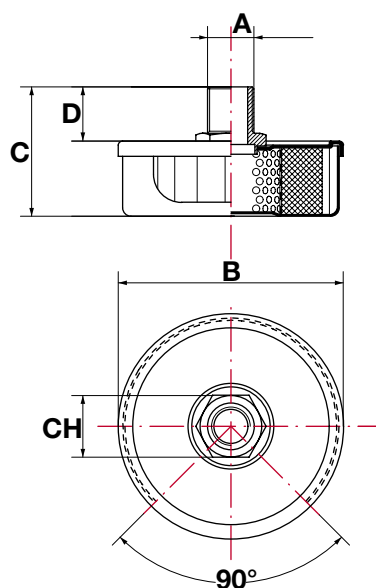
SUCTION FILTERS FOR MINI POWERPACKS

Mod.	DIMENSIONS mm					Filtering surface cm ²	Filter element	Flow l/min.**
	A	B	C	D	CH			
FR5.04434	1/4" bspp	63	27,5	17,5	19	45	90μ Repts FeZn	12
FR1.02374	3/8" bspp	80	33	20,5	22	53	250μ Repts FeZn	15
FR1.03572	3/8" bspp	80	35	20,5	22	200	250μ Lam Inox	20
FR3.04355	1/2" bspp	80	43	26,5	25	200	90μ Repts FeZn	22
FR2.04356	3/4" bspp	80	43	26	36	200	90μ Repts FeZn	28
FR8.04357	1" bspp	80	52	35,5	46	200	90μ Repts FeZn	32
FR6.04332	Ø i 30	80	42	25	-	200	90μ Repts FeZn	38



FEMALE THREADED SCREENED SUCTION FILTER

Mod.	DIMENSIONS mm					Filtering surface cm ²	Filter element	Flow l/min.**
	A	B	C	D	CH			
FR5.01766	1/4" bspp	80	26	6	22	70	200μ Repts FeZn	12
FR5.02345	1/4" bspp	80	32	6	22	100	90μ Repts FeZn	13
FR1.01329	3/8" bspp	80	32	8	22	100	90μ Repts FeZn	14
FR1.01328	3/8" bspp	80	32	8	22	200	90μ Repts FeZn	16
FR1.07518	3/8" bspp	80	34,5	8	22	100	250μ Repts FeZn	16

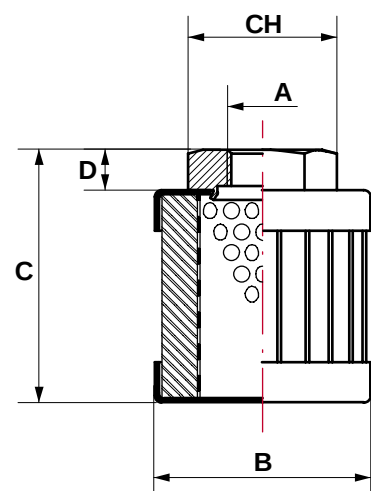


SCREENED SUCTION FILTER MALE THREADED

Mod.	DIMENSIONS mm					Filtering surface cm ²	Filter element	Flow l/min.**
	A	B	C	D	CH			
FR1.01330	3/8" bspt	80	47	21	22	100	90μ Repts FeZn	14
**FR1.03588	3/8" bspt	80	47	21	22	100	90μ Repts FeZn	14
*FR1.03522	3/8" bspt	80	47	21	22	200	90μ Repts FeZn	16
*FR5.04231	1/4" bspp	32	39	18	19	34	90μ Repts FeZn	5
FR7.02348	3/8" bspt	80	47	21	22	100	60μ Repts Inox	10
*FR7.02380	3/8" bspt	80	47	21	22	100	60μ Repts Inox	10

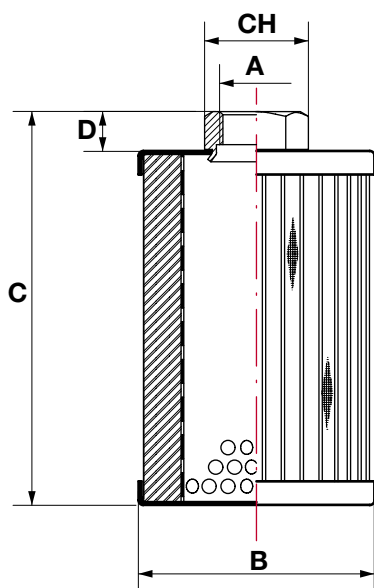
* not screened

** cam connection



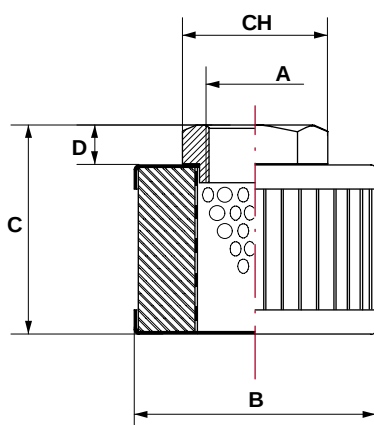
SUCTION FILTER 1/4" BSPP

Mod.	DIMENSIONS mm					Filtering surface cm ²	Filter element	Flow l/min.**
	A	B	C	D	CH			
FR5.01759	1/4"	32	27	6	22	34	90μ Repts FeZn	5
FR5.02361	1/4"	32	37	6	22	52	90μ Repts FeZn	6
FR5.04289	1/4"	32	50	6	22	44	90μ Repts FeZn	6
FR5.01373	1/4"	32	56	6	22	78	90μ Repts FeZn	7
FR5.04430	1/4"	45	56	6	22	127	90μ Repts FeZn	11
FR5.02334	1/4"	50	32	6	22	100	90μ Repts FeZn	10
FR5.04238	1/4"	50	87	6	22	216	90μ Repts FeZn	13
FR5.04243	1/4"	50	87	6	22	216	60μ Repts Inox	7



SUCTION FILTER 3/8" BSPP

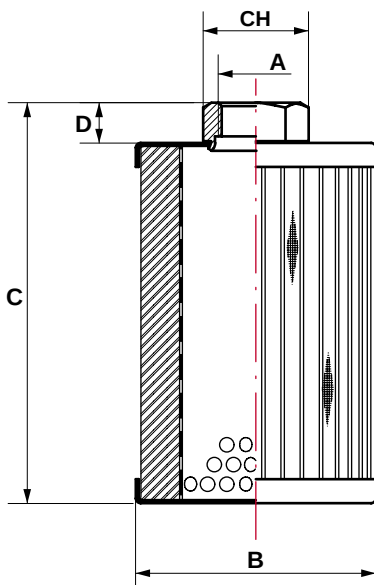
Mod.	DIMENSIONS mm					Filtering surface cm ²	Filter element	Flow l/min.**
	A	B	C	D	CH			
FR1.02355	3/8"	32	29	8	22	34	90μ Repts FeZn	10
FR1.03583	3/8"	32	29	8	22	34	200μ Repts FeZn	8
FR1.02360	3/8"	32	39	8	22	50	90μ Repts FeZn	12
FR1.04283	3/8"	32	59	8	22	88	60μ Repts Inox	8
FR1.01303	3/8"	32	59	8	22	78	90μ Repts FeZn	14
FR7.04455	3/8"	32	59	8	22	78	250μ Repts Inox	15
FR1.02353	3/8"	32	75	8	22	120	90μ Repts FeZn	14
FR1.03590	3/8"	45	78	8	22	190	90μ Repts FeZn	18
FR1.03566	3/8"	45	78	8	22	190	120μ St. Steel Mesh	20
FR1.02306	3/8"	45	103	8	22	260	120μ St. Steel Mesh	22
FR1.01318	3/8"	50	35	8	22	96	90μ Repts FeZn	14
FR1.01308	3/8"	50	75	8	22	200	90μ Repts FeZn	16
FR1.04384	3/8"	50	84	8	22	200	60μ Repts Inox	13
FR1.03564	3/8"	50	105	8	22	430	60μ Repts Inox	15
FR1.01340	3/8"	80	34	8	22	100	90μ Repts FeZn	14
FR1.01343	3/8"	80	34	8	22	200	90μ Repts FeZn	16



SUCTION FILTER 1/2" BSPP

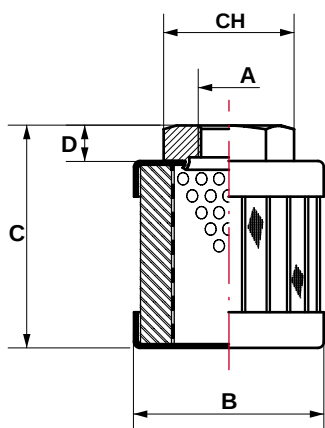
Mod.	DIMENSIONS mm					Filtering surface cm ²	Filter element	Flow l/min.**
	A	B	C	D	CH			
FR3.04416	1/2"	42	105	8	30	390	90μ Repts FeZn	22
FR3.01347	1/2"	50	75	8	30	200	90μ Repts FeZn	23
FR3.04361	1/2"	50	80	8	30	237	250μ Repts FeZn	25
FR3.04307	1/2"	50	89	8	30	237	250μ Lam Inox	26
*FR3.02367	1/2"	50	130	8	30	320	90μ Repts FeZn	28
FR3.03518	1/2"	63	103	8	30	350	120μ St. Steel Mesh	26
FR3.02333	1/2"	100	58	8	30	300	250μ Repts FeZn	25

* in scarico / drain filter



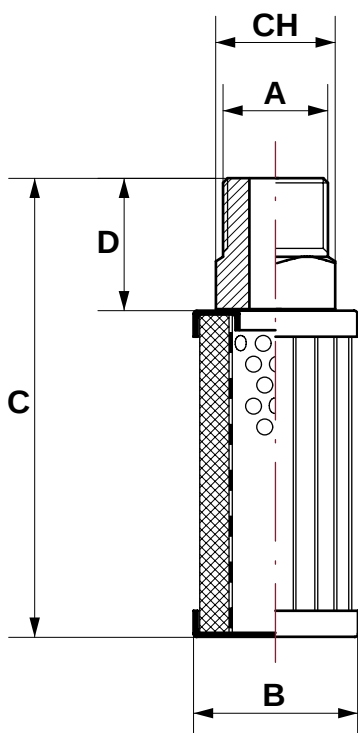
SUCTION FILTER 3/4" BSPP

Mod.	DIMENSIONS mm					Filtering surface cm ²	Filter element	Flow l/min.**
	A	B	C	D	CH			
FR2.02305	3/4"	63	103	8	36	350	150μ Lam Inox	35
FR2.04230	3/4"	63	103	8	36	350	500μ Lam Inox	50
FR2.02354	3/4"	63	128	8	36	410	150μ Lam Inox	40
FR2.04203	3/4"	63	160	8	36	675	60μ Repts Inox	30



SUCTION FILTER M 12X1

Mod.	DIMENSIONS mm					Filtering surface cm ²	Filter element	Flow l/min.**
	A	B	C	D	CH			
FR4.01342	12x1	32	29	8	22	34	90μ Repts FeZn	5
FR4.01336	12x1	32	58	8	22	78	90μ Repts FeZn	7
FR4.01335	12x1	80	34	8	22	100	90μ Repts FeZn	10
FR4.01333	12x1	80	34	8	22	200	90μ Repts FeZn	12



HYDRAULIC OIL SUCTION FILTER MALE CONN. 3/8" BSPT

Mod.	DIMENSIONS mm					Filtering surface cm ²	Filter element	Flow l/min.**
	A	B	C	D	CH			
*FR1.01779	3/8"	26	64	20	17	56	90μ Repts FeZn	20
FR1.02352	3/8"	26	70	20	17	65	90μ Repts FeZn	21
FR1.01304	3/8"	32	142,5	20	22	200	90μ Repts FeZn	30

* schermato 180° / screened 180°

** Flow rates measured with oil of 30 cst kinematic viscosity, 0,86 kg/dm³ density and Δp=0,03 bar.

• Fluid compatibility: mineral oil (HH-HL-HM-HR-HV-HG) and synthetic fluids (HS-HFDR-HFDU-HFDS).

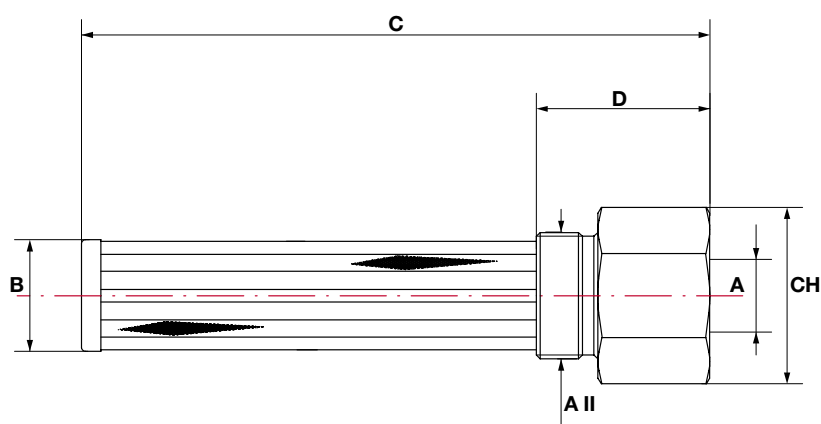
• Graphic curves Δp VS flow rate available upon request

XFS SERIES

EN Double thread suction oil filters, to screw directly to oil tank (ideal for narrow spaces f.e. vertical tanks for log-splitters).

TECHNICAL FEATURES:

- End cap + threaded nut: galvanized steel.
- Standard available threads (male/female): from 1/2" to 1" ("bspp"). "Npt" or other threads available upon request.
- Standard available filter elements: 90-250-400 Micron nom. wire mesh. Other filtrations upon request.
- Working temperature: from -30°C to +110°C.
- Collapse pressure: 1 bar.
- Tested according standards: ISO 2941 / ISO 3724 / ISO 3968.



DOUBLE THREAD HYDRAULIC OIL SUCTION FILTER 3/8" BSPP

Mod.	DIMENSIONS mm						Filtering degree	Flow l/min.**
	A	A II	B	D	C	CH		
XFS.03918	1/2"	3/4"	21	37	148	30	230/250μ	11
XFS.03901	1/2"	1"	29	45	145	40	250/270μ	14
XFS.02490	1/2"	1"	29	45	165	40	250/270μ	14
XFS.05719	1/2"	1"	29	45	197	40	90/110μ	12
XFS.02492	1/2"	1"	29	45	205	40	250/270μ	14
XFS.05742	1/2"	1"	29	45	205	40	400μ	14
XFS.05736	1/2"	1"	29	45	235	40	400μ	14
XFS.03912	3/4"	1"	29	45	161	40	90/110μ	19
XFS.02496*	3/4"	1"	29	45	165	40	250/270μ	25
XFS.07306	3/4"	1"	29	45	165	40	600μ	29
XFS.07357	3/4" bspt	1"	29	45	165	40	300μ	25
XFS.05769	3/4" bspt	1"	29	45	165	40	600μ	29
XFS.07361	3/4" bspt	1"	29	45	205	40	300μ	26
XFS.07358	1"	1"	29	45	205	40	300μ	35
XFS.07360	1" bspt	1"	29	45	205	40	300μ	35

** Flow rates measured with oil of 30 cst kinematic viscosity, 0,86 kg/dm³ density and Δp=0,03 bar.

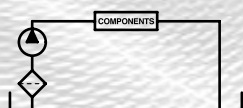
* Available also with By-pass Δp=0,03 bar.

• Fluid compatibility: mineral oil (HH-HL-HM-HR-HV-HG) and synthetic fluids (HS-HFDR-HFUD-HFDS).

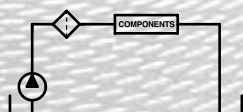
• Graphic curves Δp VS flow rate available upon request

In-line filters

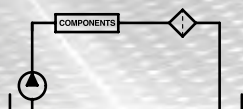
SERIE FB - HL



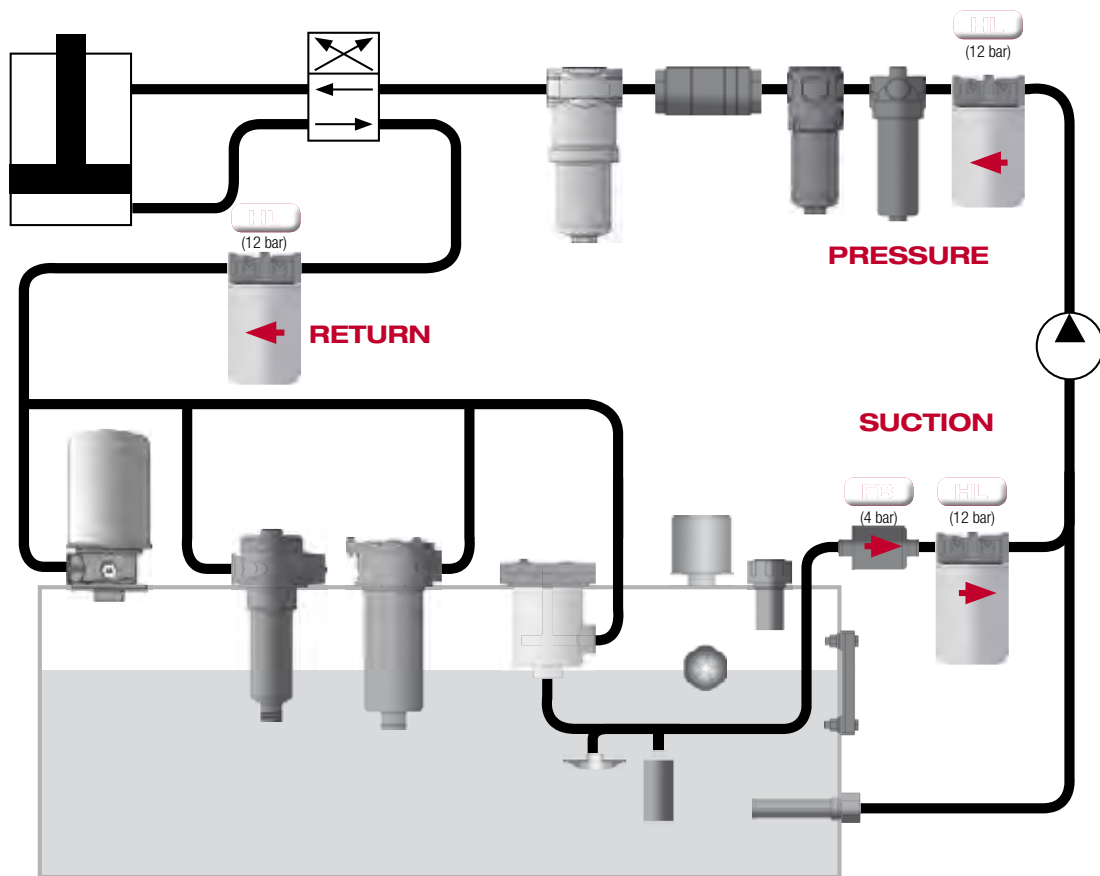
Suction filters



Delivery filters



Return-line filters



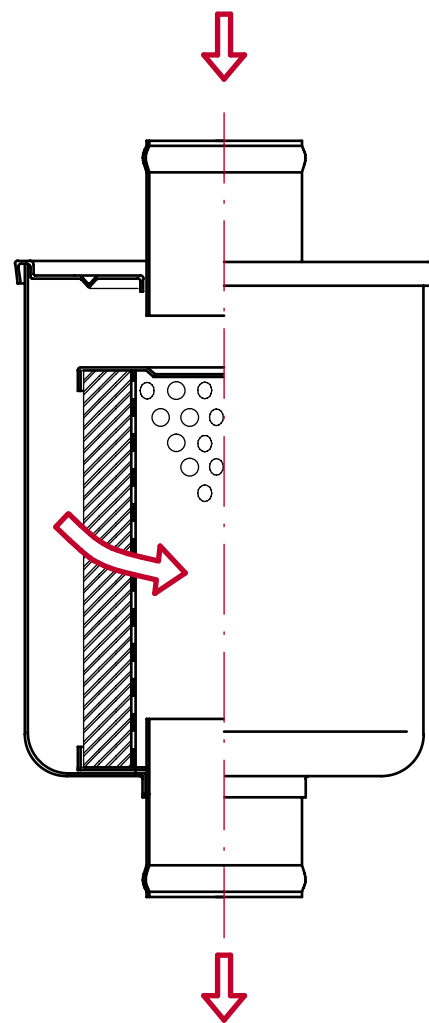
FB-HL series filters are used in-line mounting on low pressure hydraulic circuit, to protect the pump and system components from contamination. FB series filters are used in suction line, while the spin-on filters (disposable) HL series are used on both suction and return line. It is a very versatile series of filters, designed for various applications: tools, agricultural and earthmoving machines, industrial vehicles and mobile applications in general. There are several models to meet all needs, from small to large flows, with different filter elements in order to ensure maximum protection to the circuit. We can also produce special filters upon customer request.

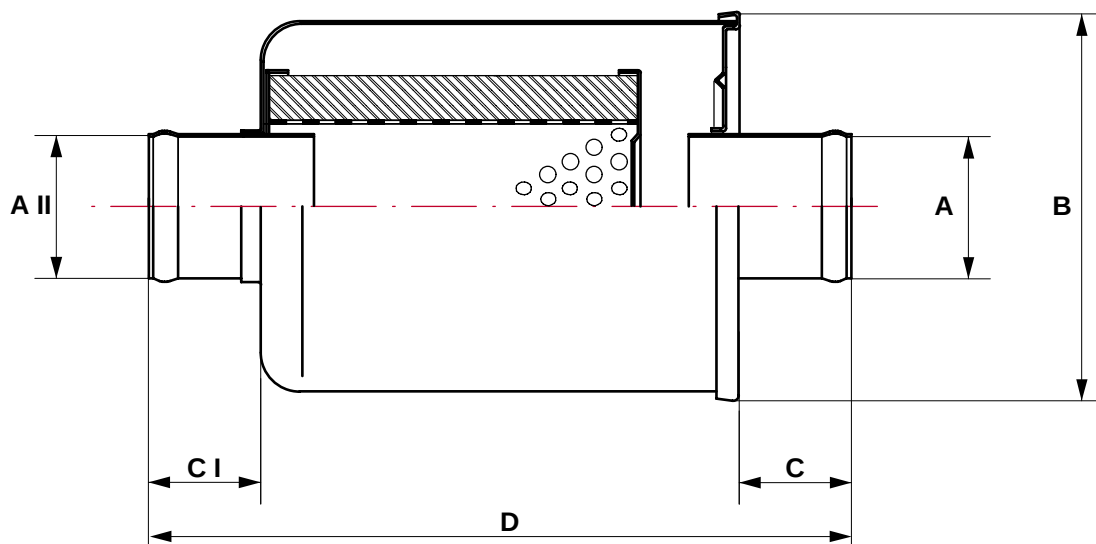
FB SERIES

EN In-line suction filters for low pressure hydraulic circuits.

TECHNICAL FEATURES:

- End caps + connections + external body: galvanized steel.
- Inner cartridge: galvanized steel structure. Paper or stainless Steel filtering element.
- Standard available connections: pipes e.d. from 25 to 50mm. Other diameters or threads available upon request.
- Standard available filter elements: 30 Micron nom. paper / 160 Micron nom. wire mesh. Other filtrations upon request.
- Operating temperature: -20°C +100°C.
- Operating pressure: 4 bar.
- Testing pressure: 6 bar.
- Element collapse pressure: 5 bar.
- Tested according standards: ISO 2941 / ISO 3724 / ISO 3968.





IN-LINE SUCTION FILTERS

Mod.	DIMENSIONS mm						Filter element	Flow l/min.**
	A	A II	B	C	C I	D		
FB3.05172	19	19	80	25	25	148	20μ Fiberglass	25
FB3.05174	19	19	80	25	25	148	22μ Paper	28
FB3.05171	19	19	80	25	25	148	60μ Repts Inox	30
FB3.05173	19	19	80	25	25	148	160μ Stainless steel mesh	35
FB3.01597	25	25	80	27	27	151	25μ Paper	30
FB3.05134	25	25	80	27	27	151	160μ Stainless steel mesh	55
FB3.01592	30	30	80	23	23	144	160μ Stainless steel mesh	45
FB3.05102	35	35	80	23	23	144	60μ Repts Inox	52
FB3.01594	35	35	80	23	23	144	160μ Stainless steel mesh	55
FB3.05189	38	38	80	22	23	172	60μ Repts Inox	65
FB3.01593	38	38	80	23	23	144	160μ Stainless steel mesh	65
FB3.05170	38	38	80	23	23	206	160μ Stainless steel mesh	65
FB3.05141	40	40	80	23	23	206	160μ Stainless steel mesh	68
FB3.05097	50	50	80	29	24	178	60μ Repts Inox	70
FB3.01599	50	50	80	29	24	178	160μ Stainless steel mesh	100
FB3.01596	45	45	100	42	31	212	160μ Stainless steel mesh	90

* Standard pipes. Other diameters or special threads upon request.

** Flow rates measured with oil of 30 cst kinematic viscosity, 0,86 kg/dm³ density and Δp=0,3 bar.

- Fluid compatibility: mineral oil (HH-HL-HM-HR-HV-HG) and synthetic fluids (HS-HFDR-HFDU-HFDS).

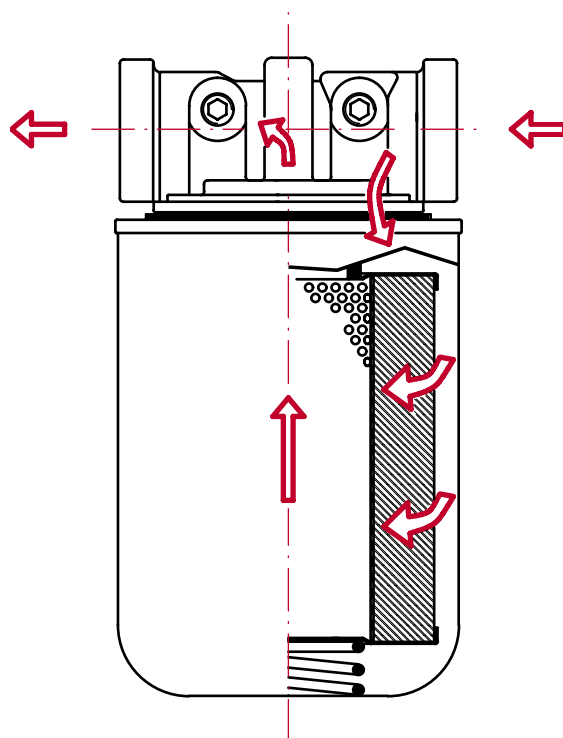
- Graphic curves Δp VS flow rate available upon request

HL SERIES

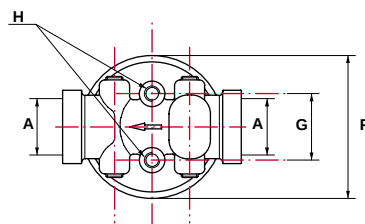
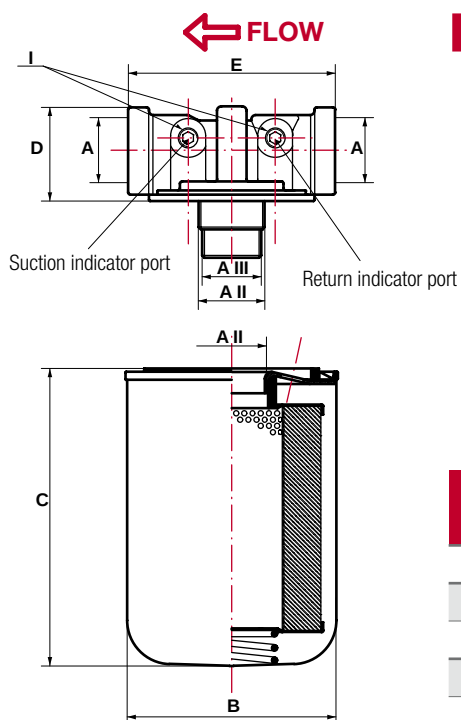
Spin-on filters for in-line low pressure hydraulic circuit mounting (suction, delivery or return).

TECHNICAL FEATURES:

- Supporting head: aluminium die-casting.
- By-pass valve (head): Opening 0,25 bar in suction / 1,7 bar on return.
- Spin-on element: galvanized steel structure. Filter element in microfiber, paper or wire mesh.
- Standard available threads: 3/4" bspp (mod. 1-2) or 1"1/4 bspp (mod. 3-4). Other threads upon request.
- Standard available filter elements: 3-5-10-25 Micron abs. microfiber / 10-25 Micron nom. paper / 60-90 Micron nom. wire mesh / 30 Micron nom. water absorbing. Other filter elements upon request.
- Seals: Buna-N standard. Viton upon request.
- Operating temperature: -30°C +110°C.
- Operating pressure: 12 bar. Burst pressure: 25 bar. Element collapse pressure: 5 bar.
- Tested according standards: ISO 2941 / ISO 3724 / ISO 3968.



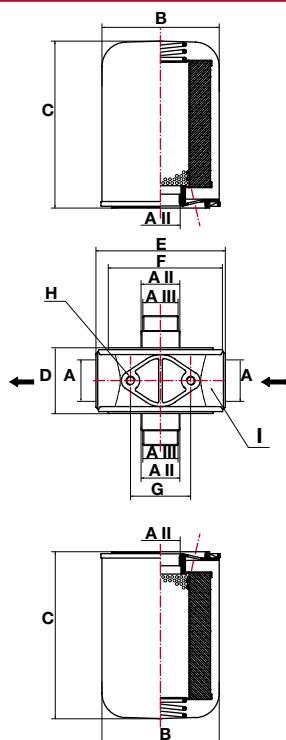
HL10-20



SINGLE CARTRIDGE

Mod.	A	A II	A III	B	C	D	E	F	G	H	I
HL101	3/4" bspp	3/4" bspp	-	95	147	43	95	75,5	38	M8	1/8" bspp
HL102	3/4" bspp	3/4" bspp	-	95	192	43	95	75,5	38	M8	1/8" bspp
HL203	1"1/4 bspp	1"1/4 bspp	1"1/2-16 UNF	128	182	65	133	134	55	M8	1/8" bspp
HL204	1"1/4 bspp	1"1/4 bspp	1"1/2-16 UNF	128	228	65	133	134	55	M8	1/8" bspp

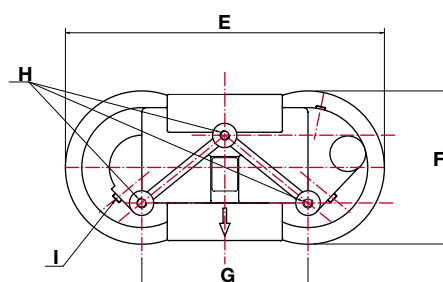
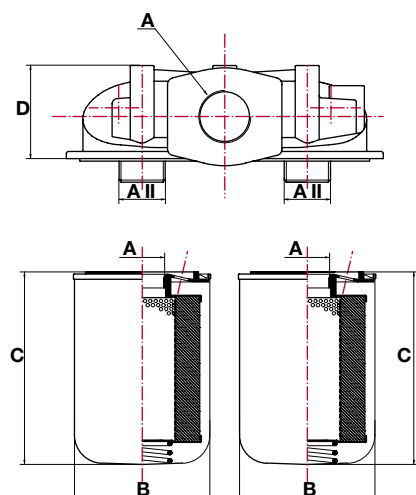
HL30



OPPOSED DOUBLE CARTRIDGE

Mod.	A	A II	A III	B	C	D	E	F	G	H	I
HL303	1"1/2 bspp	1"1/4 bspp	1"1/2-16 UNF	128	182	71	140	113	65	M10	1/8" bspp
HL304	1"1/2 bspp	1"1/4 bspp	1"1/2-16 UNF	128	228	71	140	113	65	M10	1/8" bspp

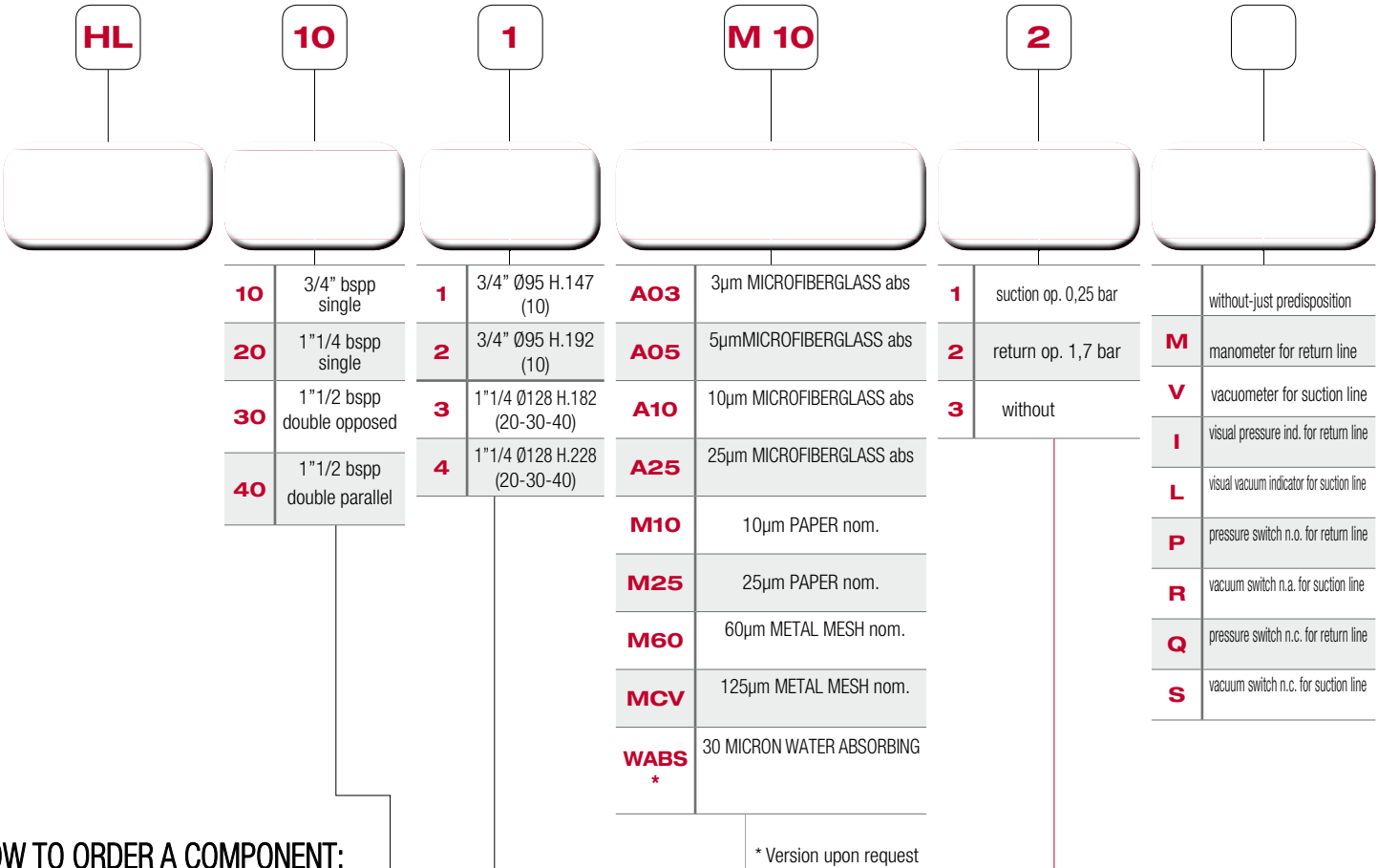
HL40



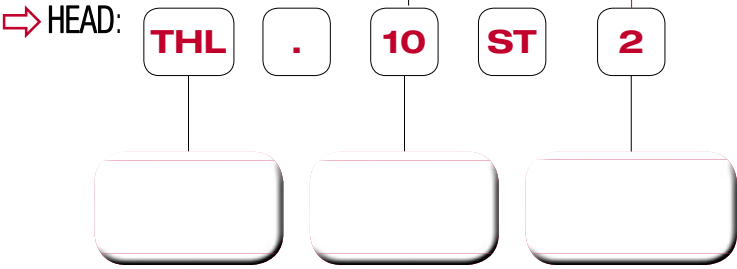
PARALLEL DOUBLE CARTRIDGE

Mod.	A	A II	B	C	D	E	F	G	H	I
HL403	1"1/2 bspp	1"1/4 bspp	128	182	82	287	138	150	M10	1/8" bspp
HL404	1"1/2 bspp	1"1/4 bspp	128	228	82	287	138	150	M10	1/8" bspp

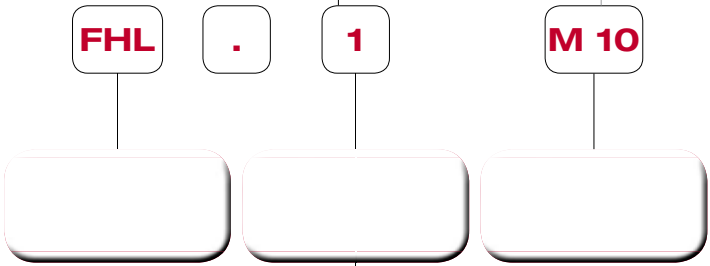
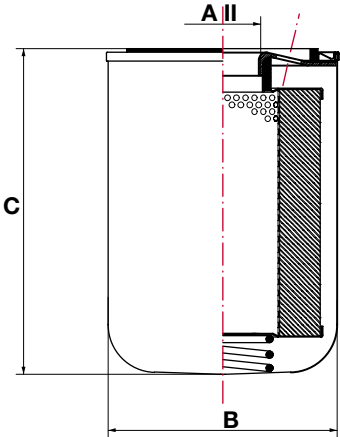
HOW TO ORDER A COMPLETE FILTER:



HOW TO ORDER A COMPONENT:



⇒ CARTRIDGE:



Mod.	Dimensions mm		
	A II	B	C
FHL.1	3/4" bspp	95	147
FHL.2	3/4" bspp	95	192
FHL.3	1"1/4 bspp	128	182
FHL.4	1"1/4 bspp	128	228

HL suction flow rates**

Flow rate in l/min. measured with
Dp=0.05 - 0.10 bar

FILTERING ELEMENTS	FIBERGLASS				PAPER		WIRE MESH	
Mod.	A03 3 MICRON ABS	A05 5 MICRON ABS	A10 10 MICRON ABS	A25 25 MICRON ABS	M10 10 MICRON NOM	M25 25 MICRON NOM	M60 60 MICRON NOM	MCV 125 MICRON NOM
HL101	7	9	13	15	16	20	30	30
HL102	8	11	15	20	22	30	35	35
HL203	18	32	40	50	53	60	95	95
HL204	27	40	54	65	70	78	100	100
HL303	48	70	95	110	115	130	150	150
HL304	55	79	102	128	130	145	150	150
HL403	48	70	95	110	115	130	150	150
HL404	55	79	102	128	130	145	150	150

** Flow rates measured with oil of 30 cSt kinematic viscosity and 0.86 kg/dm³

HL Flow rates on return line**

Flow rate in l/min. measured with
Dp=0.4 - 0.5 bar

FILTERING ELEMENTS	FIBERGLASS				PAPER		WIRE MESH	
Mod.	A03 3 MICRON ABS	A05 5 MICRON ABS	A10 10 MICRON ABS	A25 25 MICRON ABS	M10 10 MICRON NOM	M25 25 MICRON NOM	M60 60 MICRON NOM	MCV 125 MICRON NOM
HL101	30	35	48	65	68	73	80	80
HL102	34	41	55	69	74	80	90	90
HL203	87	102	118	125	130	170	190	190
HL204	92	110	125	135	150	188	205	205
HL303	190	242	270	280	290	325	360	360
HL304	205	255	283	292	305	340	375	375
HL403	190	242	270	280	290	325	360	360
HL404	205	255	283	292	305	340	375	375

** Flow rates measured with oil of 30 cSt kinematic viscosity and 0.86 kg/dm³

- Fluid compatibility: mineral oil (HH-HL-HM-HR-HV-HG) and synthetic fluids (HS-HFDR-HFDU-HFDS).

- Graphic curves Δp VS flow rate available upon request

CLOGGING INDICATORS (SUCTION)

V

DIMENSIONS mm *SCALA 0 / -76 cm.Hg*

QUADRO 12
R 1/8"
30
ø 40

L

DIMENSIONS mm

ø 24,5
30
24
R 1/8"
Ch. 30

Re S

DIMENSIONI mm - DIMENSIONS mm

Feston 6,3X4,8
N.A.
N.C.
Ch24
54mm
18mm
12mm
1/8" BSPT
22,5mm
CAP.IP54
CAP.IP65

SERIES	SETTING	TIPO - TYPE
V	0÷ -1 bar	Vacuum gauge
L	-0,15 bar	Visual vacuum indicator
R	-0,2 bar	Vacuum switch N.O. (Max 240V/0,4A) / (48V/0,5A)
S	-0,2 bar	Vacuum switch N.C. (Max 240V/0,4A) / (48V/0,5A)

CLOGGING INDICATORS (RETURN)

M

DIMENSIONS mm *SCALA 0-12 Bar/psi*

QUADRO 12
R 1/8"
30
ø 40

I

DIMENSIONS mm

44,5
30
R 1/8"
Ch. 30

Pe Q

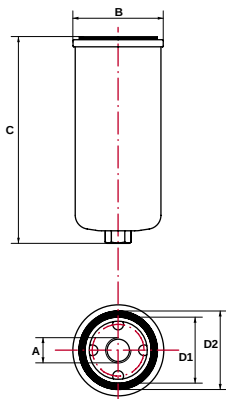
DIMENSIONI mm - DIMENSIONS mm

Feston 6,3X4,8
N.A.
N.C.
Ch24
54mm
18mm
12mm
1/8" BSPT
22,5mm
CAP.IP54
CAP.IP65

SERIES	SETTING	TYPE
M	0÷ 12 bar	Pressure gauge
I	1,5 bar	Visual pressure indicator
P	1,5 bar	Pressure switch N.O. (Max 240V/0,4A) / (48V/0,5A)
Q	1,5 bar	Pressure switch N.C. (Max 240V/0,4A) / (48V/0,5A)

Spin-on filters for small flow rates

Spin-on filters for small flow rates, ideal for direct mounting on components (hydraulic blocks or power packs)

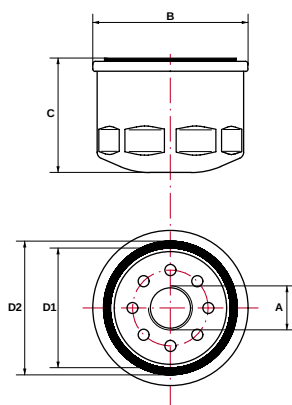


F02.01385

- Filter element: paper 10-15 Micron nom.
- By-pass valve: op. 1 bar
- Working pressure: 10 bar

Mod.	DIMENSIONS mm					FLOW l/m**
	A	B	C	D1	D2	
F02.01385	M14x1,5	50	118	37	44	16

** Flow rates measured with oil of 30 cst kinematic viscosity, 0,86 kg/dm³ density and $\Delta p=0,03$ bar.

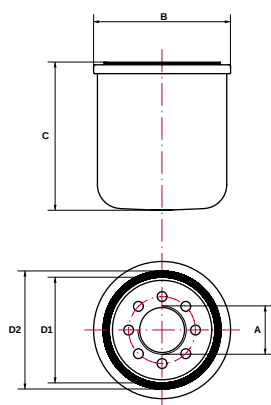


F05.01437

- Filter element: paper 10-15 Micron nom.
- By-pass valve: op. 0,8 bar
- Working pressure: 10 bar

Mod.	DIMENSIONS mm					FLOW l/m**
	A	B	C	D1	D2	
F05.01437	M20x1,5	79	59	62	72	20

** Flow rates measured with oil of 30 cst kinematic viscosity, 0,86 kg/dm³ density and $\Delta p=0,03$ bar.



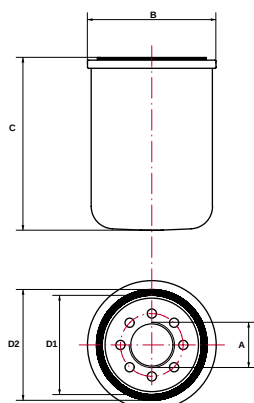
F09.05143

- Filter element: paper 10-15 Micron nom.
- By-pass valve: op. 1,6 bar
- Working pressure: 10 bar

• Ideal for mounting with aluminium head THL.10

Mod.	DIMENSIONS mm					FLOW l/m**
	A	B	C	D1	D2	
F09.05143	3/4" bspp	79	81	62	72	28

** Flow rates measured with oil of 30 cst kinematic viscosity, 0,86 kg/dm³ density and $\Delta p=0,03$ bar.



HAO.07027

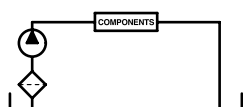
- Filter element: paper 10-15 Micron nom.
- By-pass valve: no
- Working pressure: 25 bar

Mod.	DIMENSIONS mm					FLOW l/m**
	A	B	C	D1	D2	
HAO.07027	3/4"-16 UNF	79	100	62	72	32

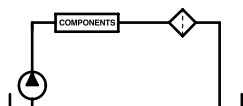
** Flow rates measured with oil of 30 cst kinematic viscosity, 0,86 kg/dm³ density and $\Delta p=0,03$ bar.

Tank-top filters

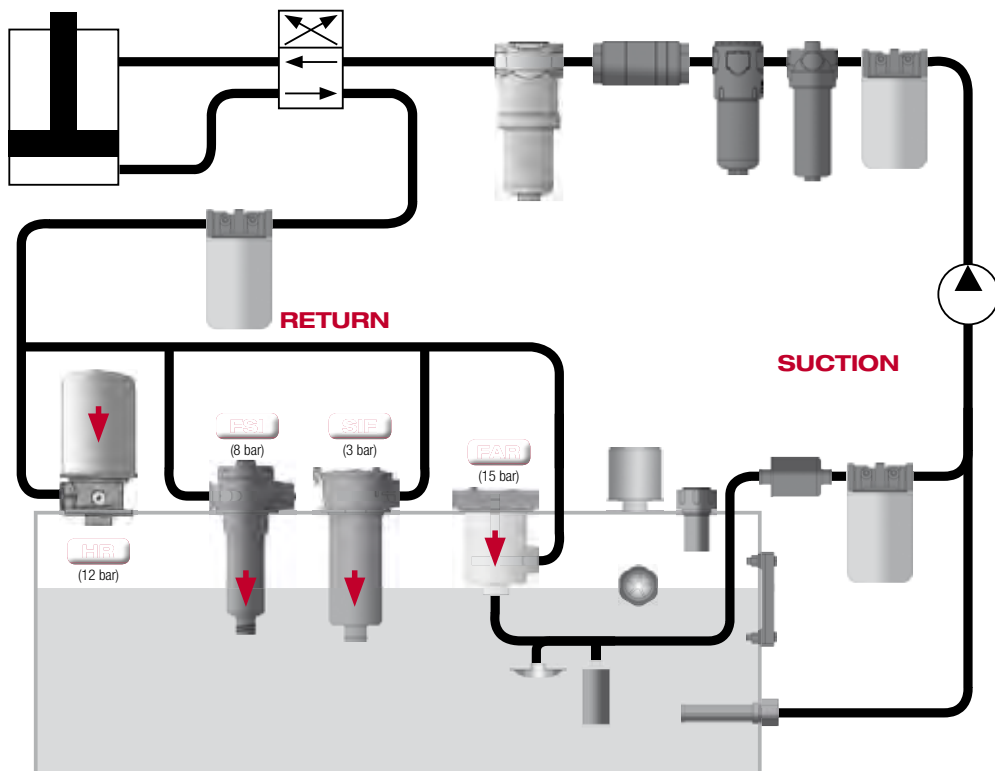
SERIE SIF - FSI - HR - FAR



Suction filters



Return-line filters



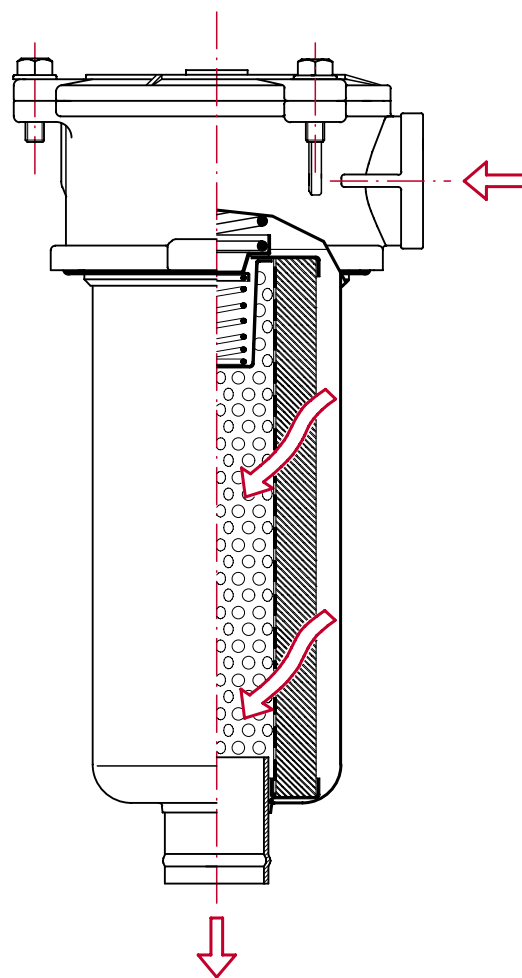
SIF-FSI-HR-FAR series filters are mainly used on return line (discharge). They are directly assembled on hydraulic tank cover (tank-top), to clean fluid by contamination deriving from previous work of system components. SIF-FSI series filters are mounted semi-immersed in tank on return line, spin-on filters (disposable) series HR are mounted on tank cover, while filters FAR series are mounted semi-immersed in tank, mainly for stationary applications, on both suction and return line. It is a very versatile series of filters, designed for various applications: tools, agricultural and earthmoving machines, industrial vehicles, mobile and stationary applications in general. There are several models to meet all needs, from small to large flows, with different filter elements in order to ensure maximum protection to the circuit. We can also produce special filters upon customer request.

SERIE SIF

EN Return-line filters (discharge) for mounting semi-immersed in tank (tank-top filters).

TECHNICAL FEATURES:

- Head + cover: aluminium die-casting.
- Filter bowl: nylon (plastic) for series 10A+B/15B+C/20C. Galvanized steel for series 15L/20L+D/25D+E/30E+F+G/35H.
- By-pass valve: Standard opening 1,7 bar.
- Standard available threads: 1/2"-3/4"-1"-1 1/4"-1 1/2"-2" bspp. Other threads upon request.
- Standard available filter elements: 10-25 Micron abs. Microfiber / 10-25 Micron nom. paper (norm. or rinf.) / 60-90 Micron nom. wire mesh. Other filter elements upon request.
- Seals: Buna-N standard. Viton upon request.
- Operating temperature: -25°C +110°C.
- Operating pressure: 3 bar. Burst pressure: 10 bar.
- Tested according standards: ISO 2941 / ISO 3724 / ISO 3968.



COME ORDINARE UN FILTRO COMPLETO:

HOW TO ORDER A COMPLETE FILTER:

S I F

.

20

C

30

10	1/2" bspp
15	3/4" bspp
20	1" bspp
25	1" 1/4 bspp
30	1" 1/2 bspp
35	2" bspp

See table page 35

10A	10µm MICROFIBERGLASS abs
25A	25µm MICROFIBERGLASS abs
10C	10µm just PAPER nom
30C	25µm just PAPER nom
10	10µm REINFORCED PAPER nom
30	25µm REINFORCED PAPER nom
60	60µm METAL MESH nom
90	90µm METAL MESH nom

	without-just predisposition
N	manometer with radial conn.
I	visual pressure indicator
P	pressure switch n.o. for return line
Q	pressure switch n.c. for return line

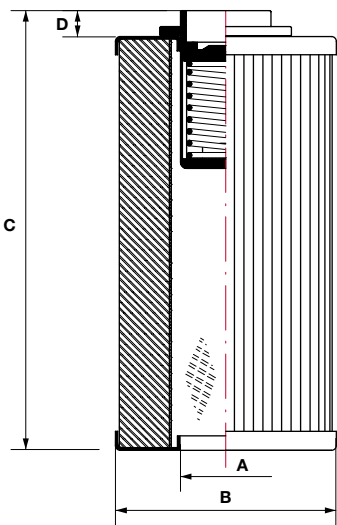
HOW TO ORDER THE REPLACEMENT ELEMENT:

FXR

.

A6

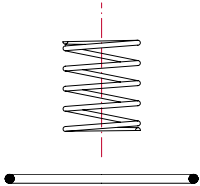
M30



Dimensioni mm - Dimensions mm				
Mod.	A	B	C	D
FXR.A3	26	50	70	5,5
FXR.A5	29	70	81	8
FXR.A6	29	70	130	8
FXR.S6	42	70	210	8
FXR.A7	41	95	170	8
FXR.A8	41	95	202	8
FXR.S1	41	95	250	8
FXR.S3	41	95	280	8
FXR.A9	65	130	136	8
FXR.A0	52	130	136	8
FXR.B1	52	130	202	8
FXR.B2	65	130	202	8
FXR.B3	65	130	202	8
FXR.B4	65	130	250	8
FXR.S2	65	130	267	8
FXR.B5	65	130	403	8

SIF.10A	FXR.A3M
SIF.10B	FXR.A5M
SIF.15B	
SIF.15C	FXR.A6M
SIF.15L	FXR.S6M
SIF.20C	FXR.A6M
SIF.20L	FXR.S6M
SIF.20D	FXR.A8M
SIF.25D	FXR.A8M
SIF.25E	FXR.A0M
SIF.30E	
SIF.30F	FXR.B1M
SIF.30G	FXR.B2M
SIF.35H	FXR.B3M

	Just element
K	Cartridge + kit spring and o-ring



SIF Flow rates on return line**

Flow rate in l/min. measured with
Dp=0.4 - 0.5 bar

FILTERING ELEMENTS	FIBERGLASS		PAPER				WIRE MESH	
Mod.	10A 10 MICRON ABS	25A 25 MICRON ABS	10C 10 MICRON NOM	30C 30 MICRON NOM	10 10 MICRON NOM	30 30 MICRON NOM	60 60 MICRON NOM	90 90 MICRON NOM
SIF.10A	25	32	40	45	40	45	55	60
SIF.10B	45	65	65	70	65	70	80	85
SIF.15B	50	60	73	78	73	78	90	95
SIF.15C	65	75	90	95	90	95	105	110
SIF.15L	90	100	115	120	115	120	125	135
SIF.20C	70	80	95	100	95	100	110	115
SIF.20L	95	105	120	125	120	125	130	140
SIF.20D	170	180	195	200	195	200	220	230
SIF.25D	205	215	230	240	230	240	260	270
SIF.25E	230	240	255	265	255	265	285	295
SIF.30E	245	255	270	280	270	280	310	320
SIF.30F	295	305	320	330	320	330	360	370
SIF.30G	315	325	340	350	340	350	380	390
SIF.35H	430	450	480	500	480	500	550	570

** Flow rates measured with oil of 30 cst kinematic viscosity and 0,86 kg/dm³ density.

• Fluid compatibility: mineral oil (HH-HL-HM-HR-HV-HG) and synthetic fluids (HS-HFDR-HFDU-HFDS).©

• Graphic curves Δp VS flow rate available upon request

CLOGGING INDICATORS

N

DIMENSIONS mm SCALE 0-12 Bar/psi

I

DIMENSIONS mm

Pe Q

DIMENSIONI mm - DIMENSIONS mm

Fasten 6.3X4.8

Ch24

1/8" BSPT

22,5mm

CAP.IP54

CAP.IP65

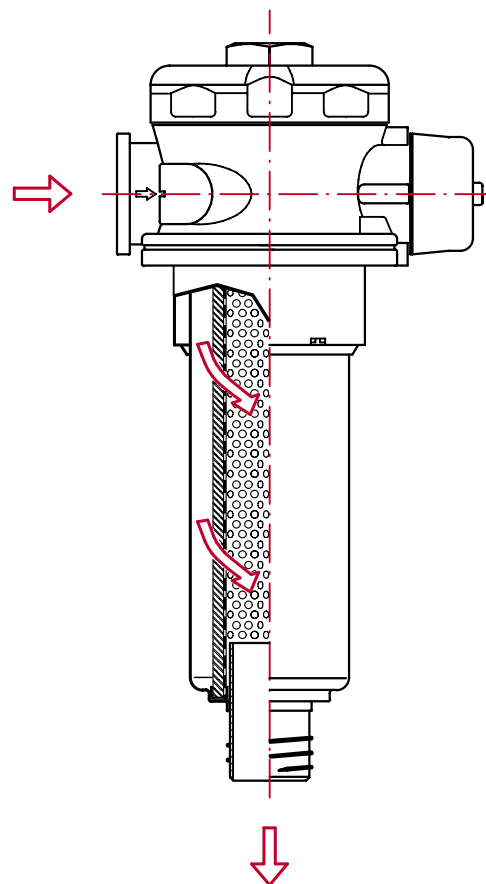
SERIES	SETTING	TYPE
N	0 ÷ 12 bar	Pressure gauge (Radial connection)
I	1,5 bar	Visual pressure indicator
P	1,5 bar	Pressure switch N.O. (Max 240V/0,4A) / (48V/0,5A)
Q	1,5 bar	Pressure switch N.C. (Max 240V/0,4A) / (48V/0,5A)

FSI SERIES

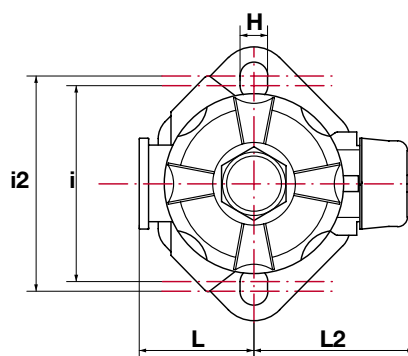
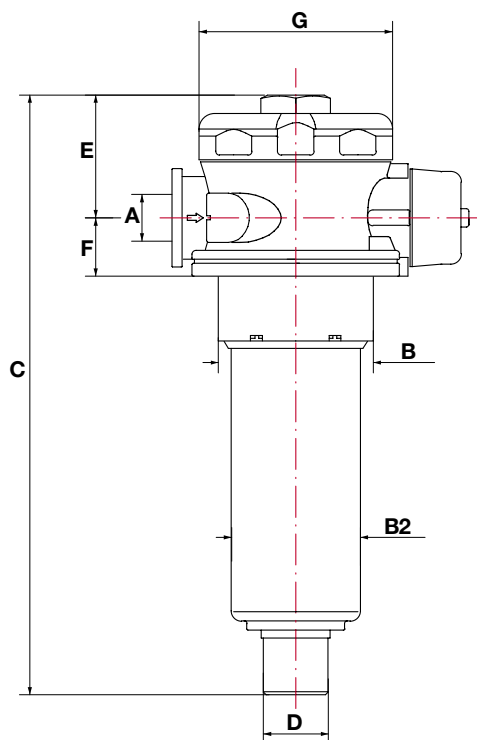
EN Return line tank-top filters (discharge) with breathing element and service cover.

TECHNICAL FEATURES:

- Head: anodized aluminium die-casting.
- Filter bowl + cover: nylon (plastic).
- By-pass valve: Standard opening 1,7 bar.
- Standard available threads: 1/2"-3/4"-1"1/4 bspp. Other threads upon request.
- Standard available filter elements: 10-25 Micron abs. microfiber / 10-25 Micron nom. reinforced paper / 60-90 Micron nom. wire mesh. Other filter elements upon request.
- Seals: Buna-N standard. Viton upon request.
- Operating temperature: -25°C +110°C.
- Operating pressure: 8 bar. Burst pressure: 16 bar.
- Element collapse pressure: 10 bar.
- Tested according standards: ISO 2941 / ISO 3724 / ISO 3968.

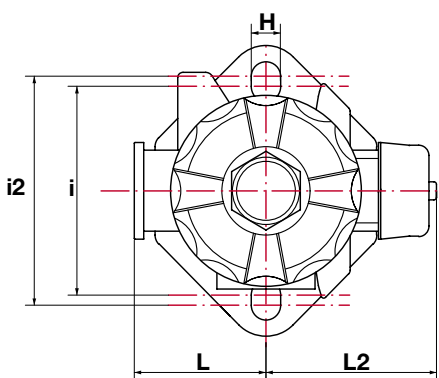
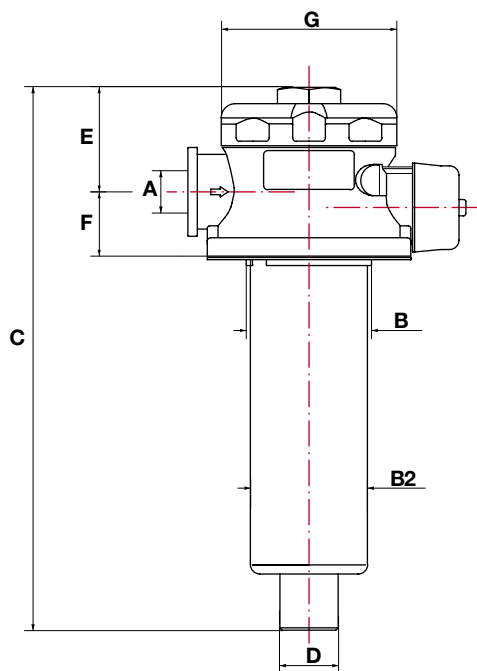


FSI1



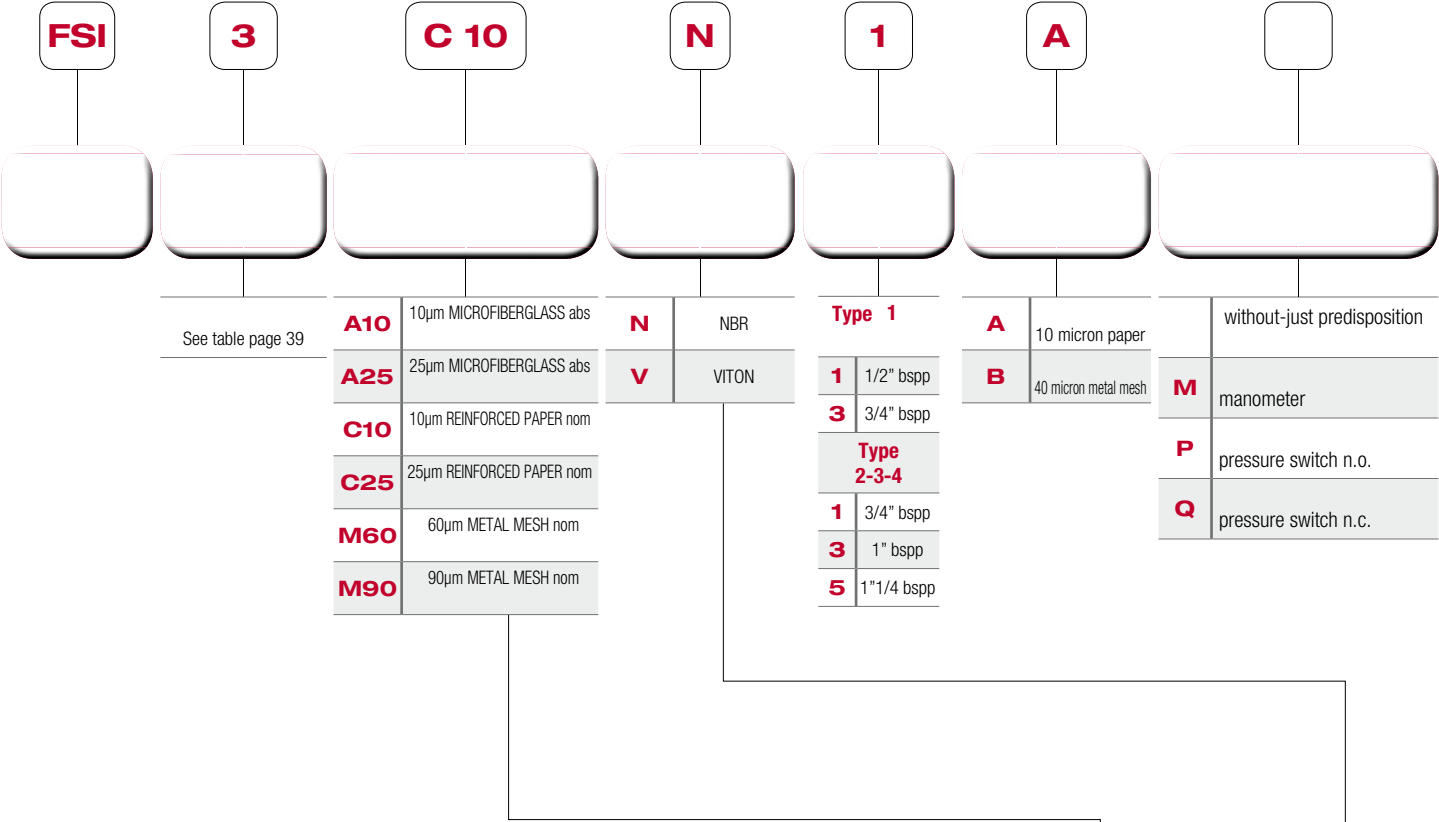
DIMENSIONS mm													
Mod.	A	B	B II	C	D	E	F	G	H	I	I II	L	L II
FSI1	1/2" bspp 3/4" bspp	60	50	232	25	48	22	75	10,5	82	90	48	69

FSI2-3-4

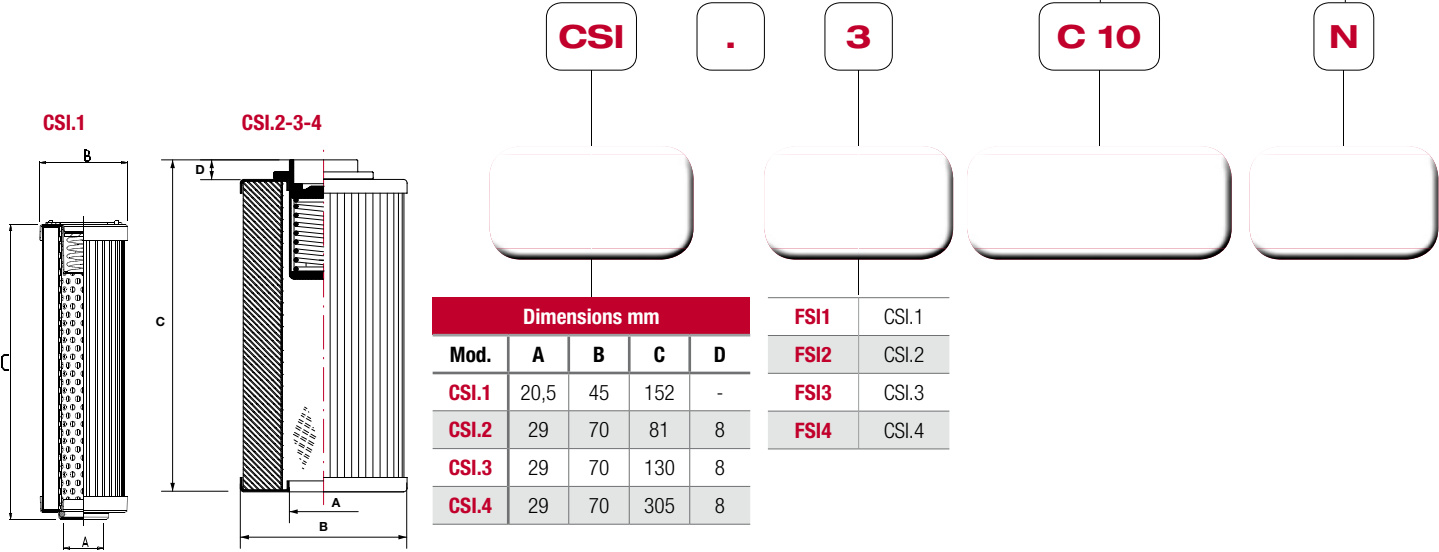


DIMENSIONS mm													
Mod.	A	B	B II	C	D	E	F	G	H	I	I II	L	L II
FSI2	3/4" bspp	86	80	210	27,5	67	40	110	8,5	110	115	68,5	93,5
FSI3	1" bspp	86	80	255	27,5	67	40	110	8,5	110	115	68,5	93,5
FSI4	1"1/4 bspp	86	80	420	27,5	67	40	110	8,5	110	115	68,5	93,5

HOW TO ORDER A COMPLETE FILTER:



HOW TO ORDER THE REPLACEMENT ELEMENT:



FSI Flow rates on return line**

Flow rate in l/min. measured with
Dp=0.4 - 0.5 bar

FILTERING ELEMENT		FIBERGLASS			PAPER		WIRE MESH		
Mod.	THREAD BSPP	A05 5 MICRON ABS	A10 10 MICRON ABS	A25 25 MICRON ABS	C10 10 MICRON NOM	C25 25 MICRON NOM	M25 25 MICRON NOM	M60 60 MICRON NOM	M90 90 MICRON NOM
FSI1	1/2"	30	30	35	30	35	35	35	35
	3/4"	35	40	50	45	55	55	60	60
FSI2	3/4"	35	45	55	55	75	65	85	90
	1"	35	45	55	55	85	65	85	95
	1"1/4	35	45	55	55	85	65	90	100
FSI3	3/4"	55	65	75	75	95	75	90	95
	1"	55	65	75	75	100	85	100	105
	1"1/4	55	65	80	75	105	85	105	110
FSI4	3/4"	95	100	115	115	130	115	125	130
	1"	105	120	135	135	155	135	155	160
	1"1/4	110	125	145	145	175	145	170	180

** Flow rates measured with oil of 30 cst kinematic viscosity and 0,86 kg/dm3 density.

• Fluid compatibility: mineral oil (HH-HL-HM-HR-HV-HG) and synthetic fluids (HS-HFDR-HFDU-HFDS).

• Graphic curves Δp VS flow rate available upon request

CLOGGING INDICATORS

M

DIMENSIONS mm SCALA 0-12 Bar/psi

I

DIMENSIONS mm

Pe Q

DIMENSIONS mm

Feston 6.3X4.8

Ch24

1/8" BSPT

22,5mm

CAP.IP54

CAP.IP65

N.A.

N.C.

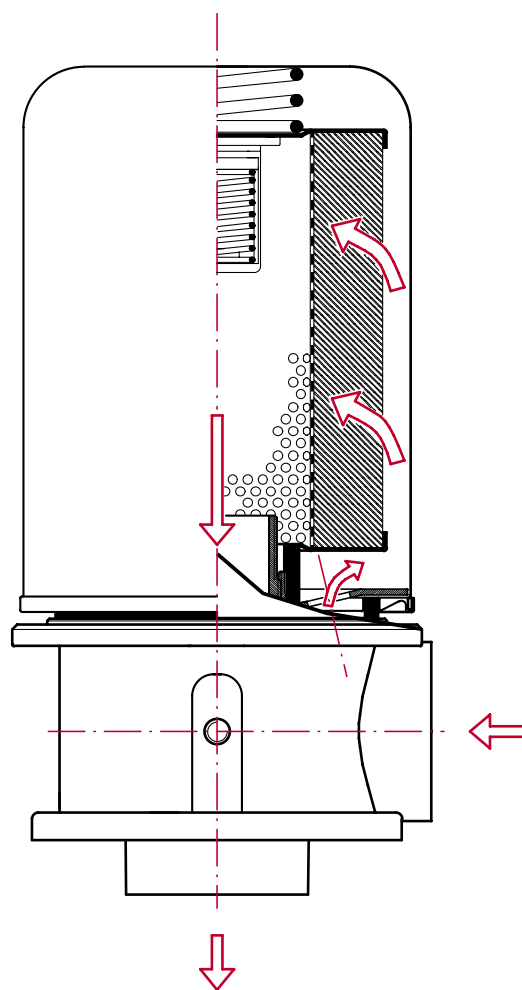
SERIES	SETTING	TYPE
M	0÷ 12 bar	Pressure gauge
I	1,5 bar	Visual pressure indicator
P	1,5 bar	Pressure switch N.O. (Max 240V/0,4A) / (48V/0,5A)
Q	1,5 bar	Pressure switch N.C. (Max 240V/0,4A) / (48V/0,5A)

HR SERIES

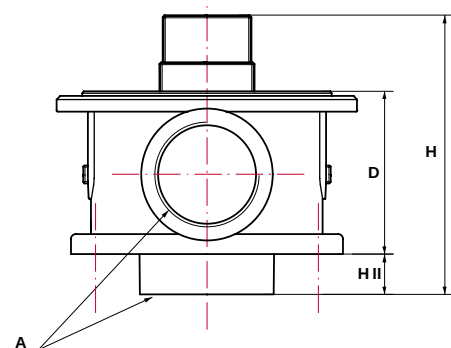
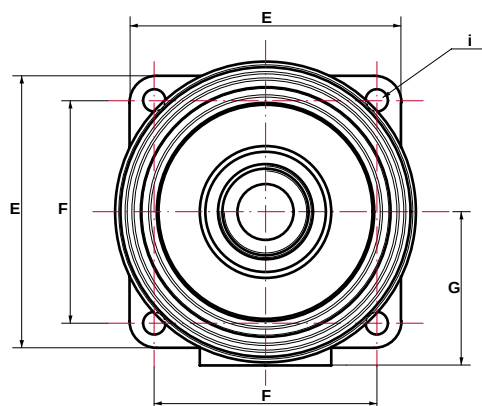
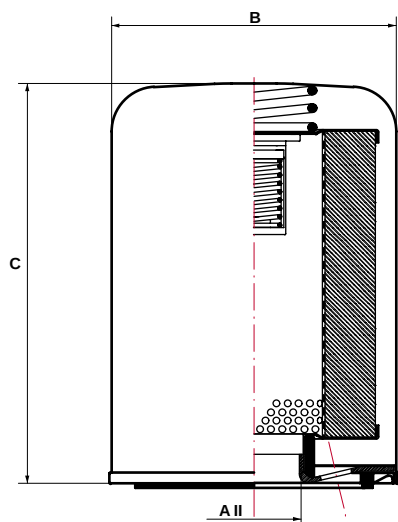
EN Tank-top return line Spin-on filters

TECHNICAL FEATURES:

- Supporting head: aluminium die-casting.
- Opening 1,7 bar.
- Spin-on element: galvanized steel structure. Filter element in paper.
- Standard available threads: 3/4" bspp (mod. 1-2) or 1"1/2 bspp (mod. 3-4).
- Standard available filter elements: 10-25 Micron nom. paper. Other filter elements upon request.
- Seals: Buna-N standard. Viton upon request.
- Operating temperature: -30°C +110°C.
- Operating pressure: 12 bar.
- Burst pressure: 25 bar.
- Element collapse pressure: 5 bar.
- Tested according standards: ISO 2941 / ISO 3724 / ISO 3968.

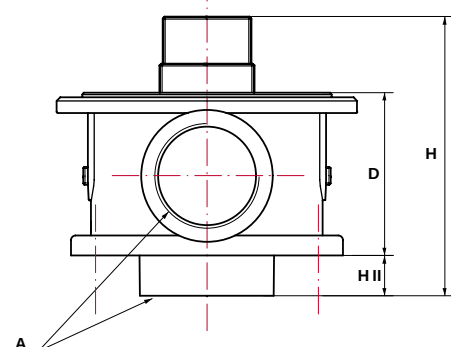
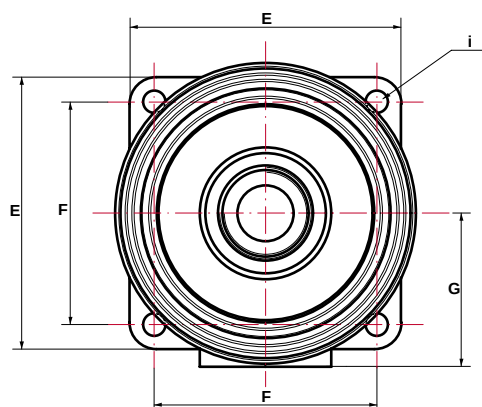
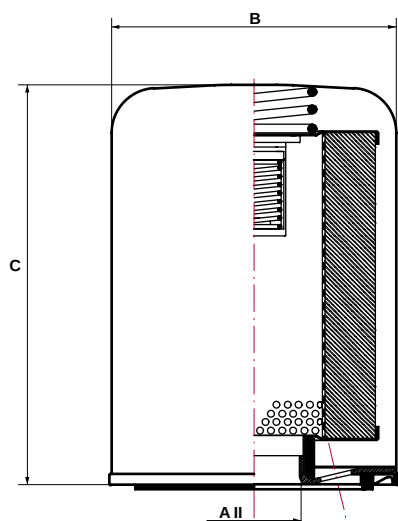


HR101-102



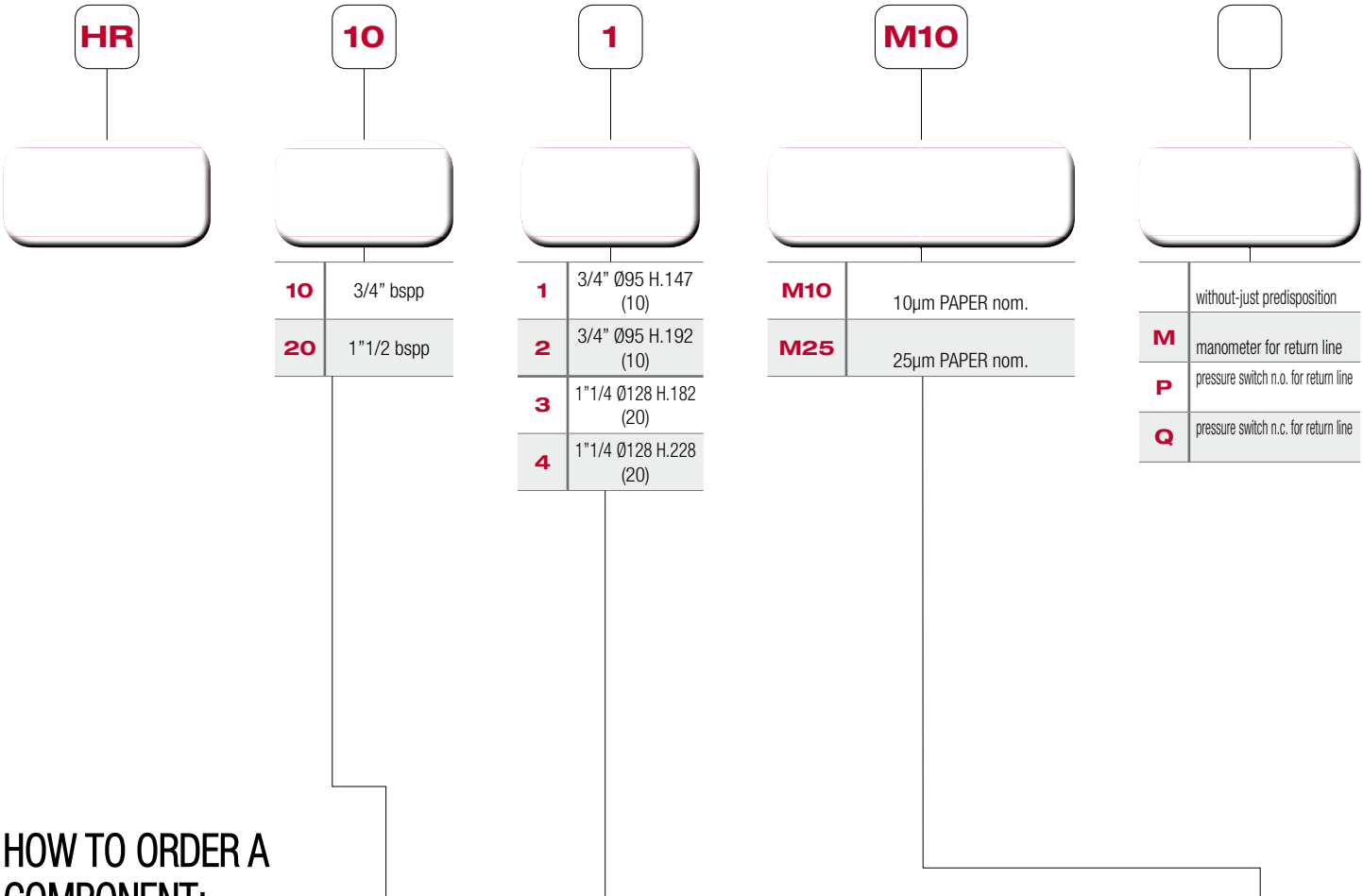
DIMENSIONS mm											
Mod.	A	A II	B	C	D	E	F	G	H	H II	i
HR101	3/4" bspp	3/4" bspp	95	145	50	90	70	50	80	16	Ø 7
HR102	3/4" bspp	3/4" bspp	95	190	50	90	70	50	80	16	Ø 7

HR203-204

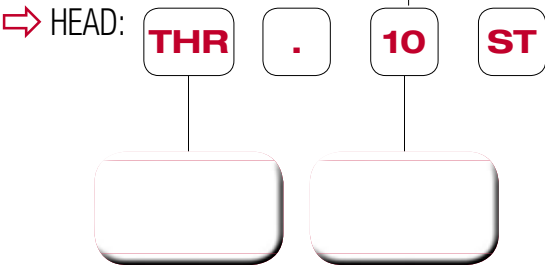


DIMENSIONS mm											
Mod.	A	A II	B	C	D	E	F	G	H	H II	i
HR203	1"1/2 bspp	1"1/4 bspp	128	180	73	123	100	70	125	18	Ø 9
HR204	1"1/2 bspp	1"1/4 bspp	128	226	73	123	100	70	125	18	Ø 9

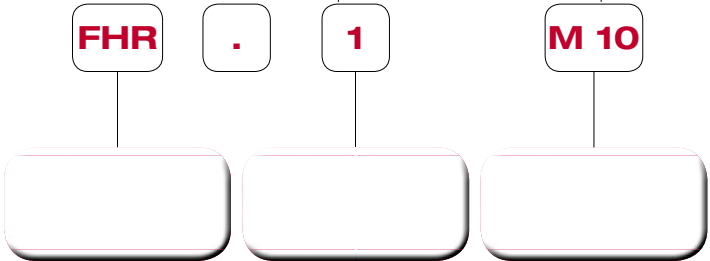
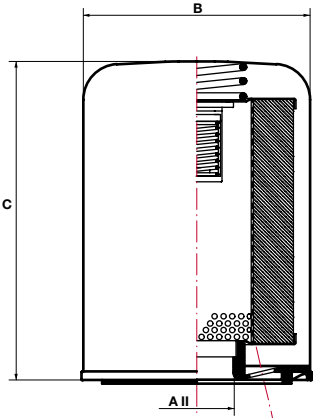
HOW TO ORDER A COMPLETE FILTER:



HOW TO ORDER A COMPONENT:



⇒ CARTRIDGE:



Dimensions mm			
Mod.	A II	B	C
FHR.1	3/4" bspp	95	147
FHR.2	3/4" bspp	95	192
FHR.3	1"1/4 bspp	128	182
FHR.4	1"1/4 bspp	128	228

HR Flow rates on return line**

Flow rate in l/min. measured with
Dp=0.4 - 0.5 bar

FILTERING ELEMENT	PAPER	
	M10 10 MICRON NOM	M25 25 MICRON NOM
Mod.		
HR101	68	73
HR102	74	80
HR203	130	170
HR204	150	188

** Flow rates measured with oil of 30 cSt kinematic viscosity and 0.86 kg/dm³

- Fluid compatibility: mineral oil (HH-HL-HM-HR-HV-HG) and synthetic fluids (HS-HFDR-HFUD-HFDS).

- Graphic curves Δp VS flow rate available upon request

CLOGGING INDICATORS

M

DIMENSIONS mm SCALE 0-12 Bar/psi

I

DIMENSIONS mm

Pe Q

DIMENSIONS mm

DIMENSIONS mm

CAP.IP54

CAP.IP65

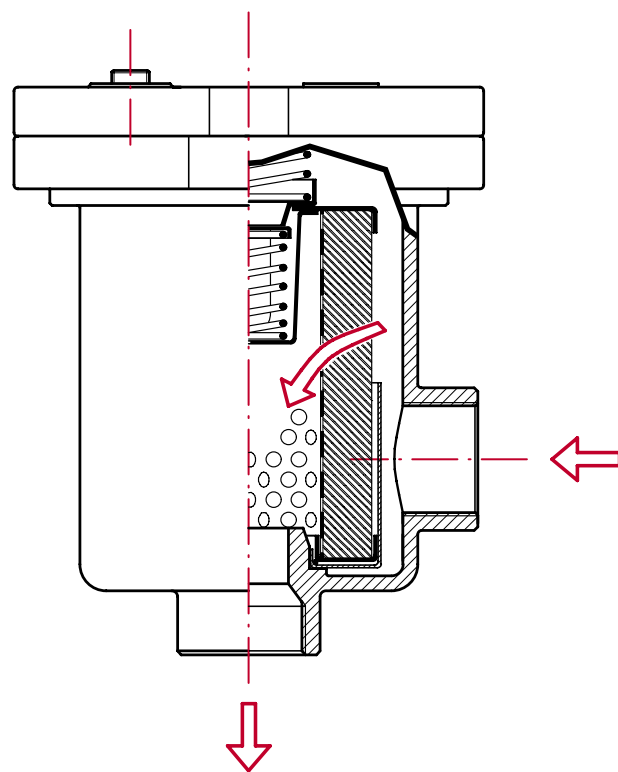
SERIES	SETTING	TIPO - TYPE
M	0÷ 12 bar	Pressure gauge
I	1,5 bar	Visual pressure indicator
P	1,5 bar	Pressure switch N.O. (Max 240V/0,4A) / (48V/0,5A)
Q	1,5 bar	Pressure switch N.C. (Max 240V/0,4A) / (48V/0,5A)

SERIE FAR

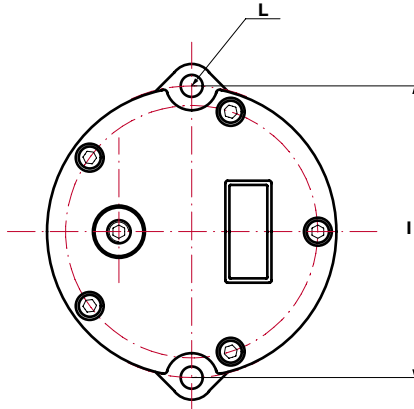
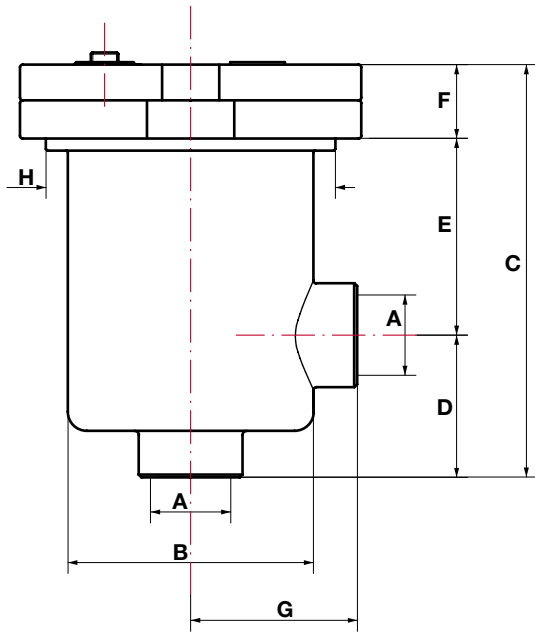
EN Suction & return line tank-top filters.

TECHNICAL FEATURES:

- Cover: aluminium die-casting.
- Filter body: aluminium die-casting.
- By-pass valve: Standard opening 0,25 bar (suction) / 1,7 bar (return).
- Standard available threads: 1/2"-3/4"-1"-1 1/4" bspp.
- Standard available filter elements: 10-25 Micron nom. paper / 60-125 Micron nom. wire mesh. Other filter elements upon request.
- Seals: Buna-N standard. Viton upon request.
- Operating temperature: -25°C +110°C.
- Operating pressure: 15 bar.
- Burst pressure: 45 bar.
- Element collapse pressure: 10 bar.
- Tested according standards: ISO 2941 / ISO 3724 / ISO 3968.



FAR.05-10-15

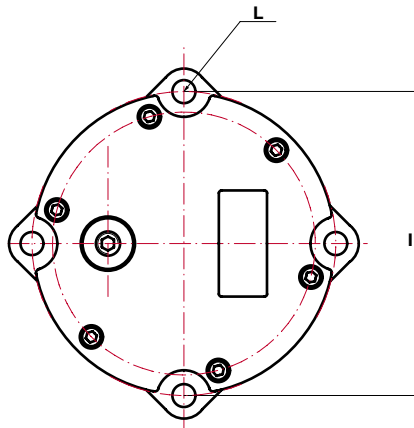
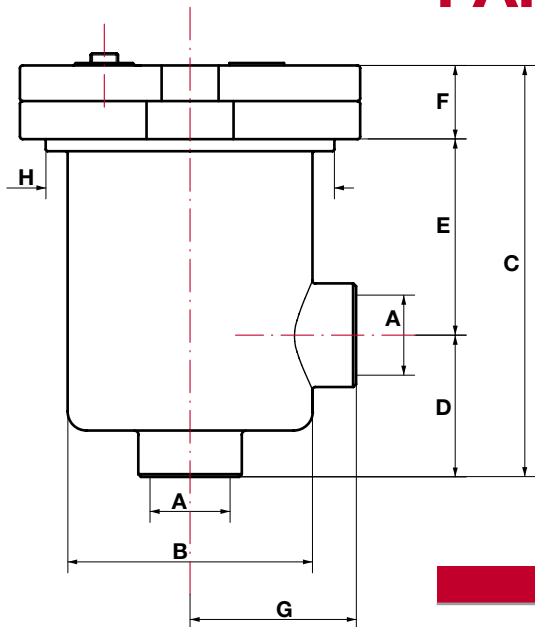


2 FIXING HOLES

DIMENSIONS mm

Mod.	A	B	C	D	E	F	G	H	I	L
FAR.05	1/2" bspp	71	125	40	66	19	48	80	100	Ø 7,5
FAR.10	3/4" bspp	88	151	52	72	27	59	106	125	Ø 9,5
FAR.15	1" bspp	88	195	52	116	27	59	106	125	Ø 9,5

FAR.20

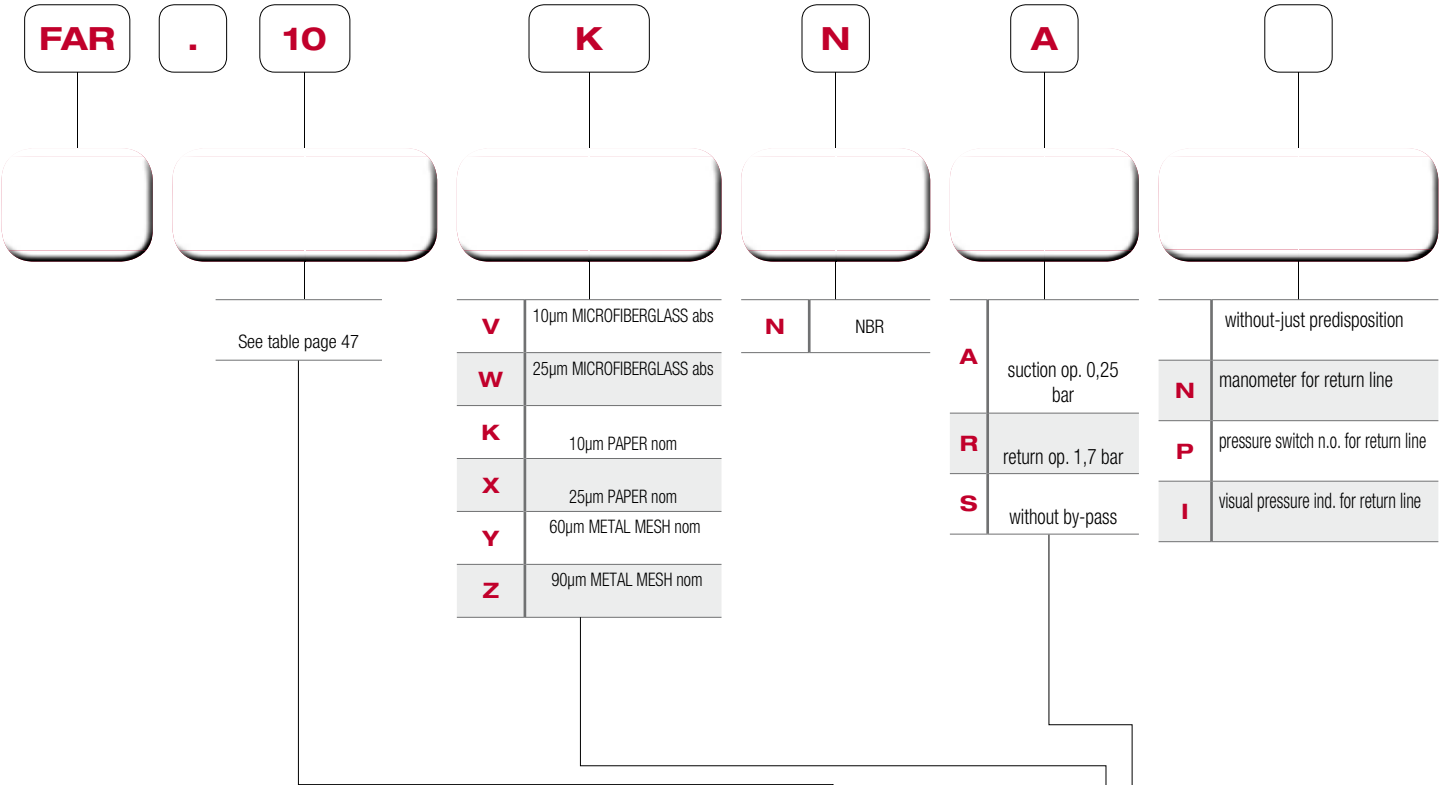


4 FIXING HOLES

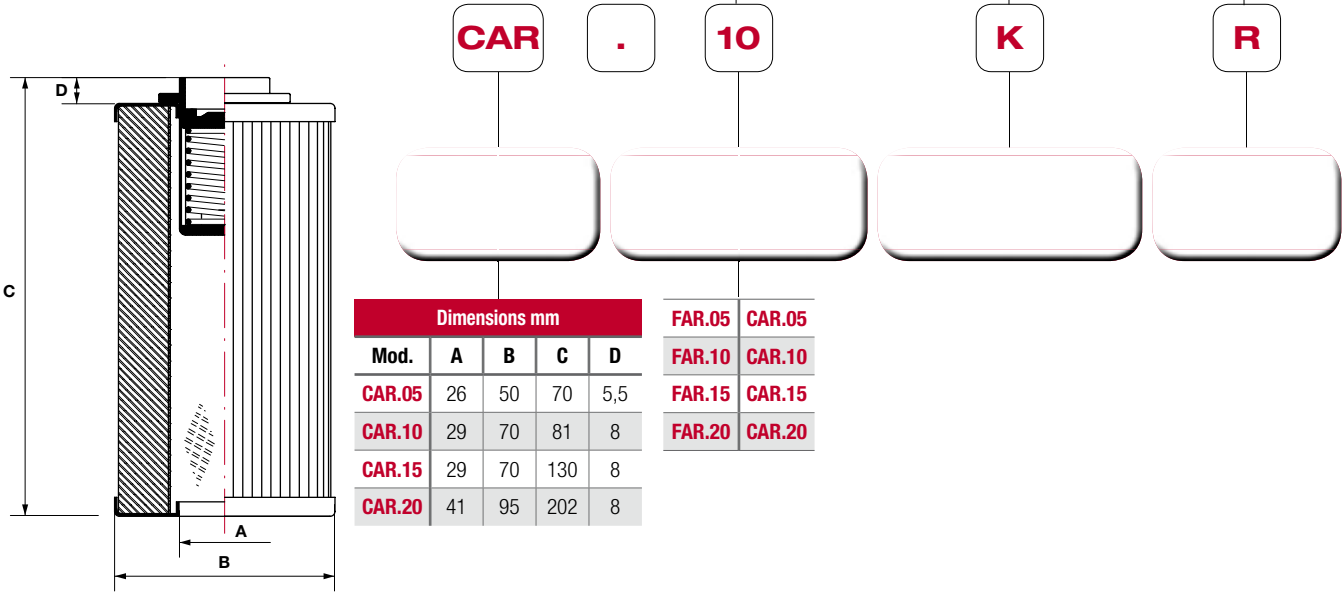
DIMENSIONS mm

Mod.	A	B	C	D	E	F	G	H	I	L
FAR.20	1" 1/4 bspp	138	275	62	180	33	83,5	147	175	Ø 9,5

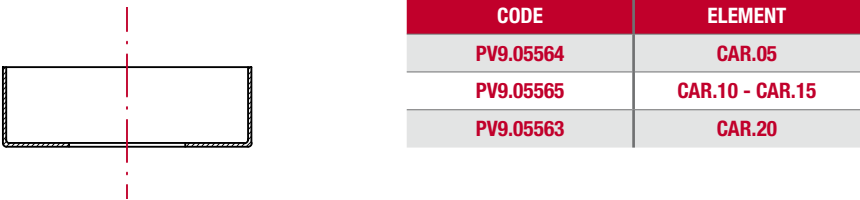
HOW TO ORDER A COMPLETE FILTER:



HOW TO ORDER THE REPLACEMENT ELEMENT:



ELEMENT PLASTIC PROTECTION (from inflow):



FAR suction flow rates**

Flow rate in l/min. measured with
Dp=0.05 - 0.10 bar

ELEMENTO FILTRANTE	FIBERGLASS		PAPER		WIRE MESH	
Mod.	V - 10 MICRON ABS	W - 25 MICRON ABS	K - 10 MICRON NOM	X - 25 MICRON NOM	Y - 60 MICRON NOM	Z - 90 MICRON NOM
FAR.05	7	8	9	10	13	15
FAR.10	13	15	18	20	28	30
FAR.15	27	30	33	35	48	50
FAR.20	50	54	58	60	87	90

FAR Flow rates on return line**

Flow rate in l/min. measured with
Dp=0.4

FILTERING ELEMENT	FIBERGLASS		PAPER		WIRE MESH	
Mod.	V - 10 MICRON ABS	W - 25 MICRON ABS	K - 10 MICRON NOM	X - 25 MICRON NOM	Y - 60 MICRON NOM	Z - 90 MICRON NOM
FAR.05	13	15	18	20	28	30
FAR.10	32	35	45	50	63	68
FAR.15	57	60	70	75	95	100
FAR.20	115	120	130	140	180	190

** Flow rates measured with oil with 30 cSt kinematic viscosity and 0.86 kg/dm³

- Fluid compatibility: mineral oil (HH-HL-HM-HR-HV-HG) and synthetic fluids (HS-HFDR-HFDU-HFDS).

CLOGGING INDICATORS

N

DIMENSIONS mm SCALE 0-12 Bar/psi

I

DIMENSIONS mm

P

DIMENSIONS mm

CAP. IP54

CAP. IP65

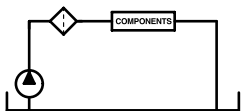
N.A.

N.C.

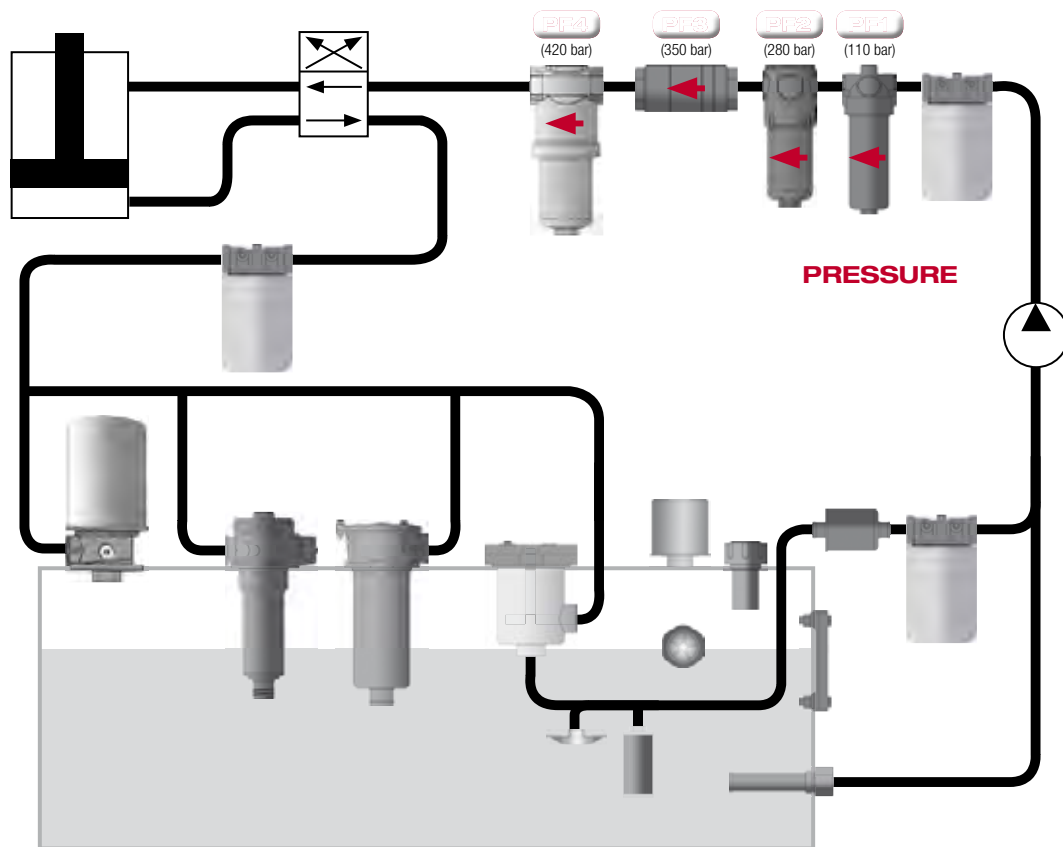
SERIES	SETTING	TYPE
N	0÷ 12 bar	Pressure gauge
I	1,5 bar	Visual pressure indicator
P	1,5 bar	Pressure switch N.O. (Max 240V/0,4A) / (48V/0,5A)

Medium & high pressure in-line filters

SERIE PF 1-2-3-4



Delivery filters



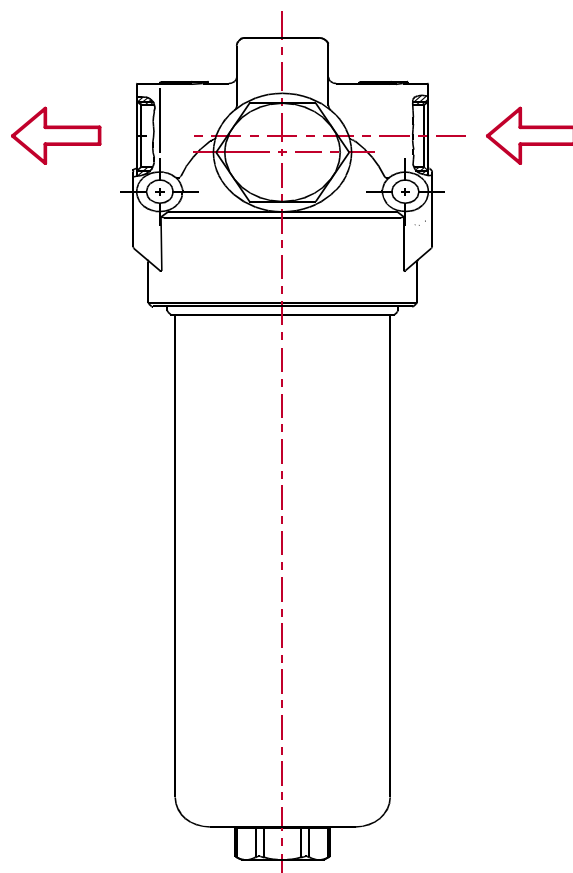
PF1-PF2-PF3-PF4 series filters are used in-line (pressure) mounting on medium and high pressure hydraulic circuit (from 110 up to 420 bar), to protect system's components from contamination. This kind of filters is essential on sophisticated hydraulic systems capable of high performances, for which it is necessary to guarantee maximum protection for sensitive components, downstream the filter. It is a very versatile series of filters, designed for various applications: tools, agricultural and earthmoving machines, industrial vehicles, mobile and stationary applications in general. There are several models to meet all needs, from small to large flows, with different filter elements in order to ensure maximum protection to the circuit.

SERIE PF1 (max. 110 bar)

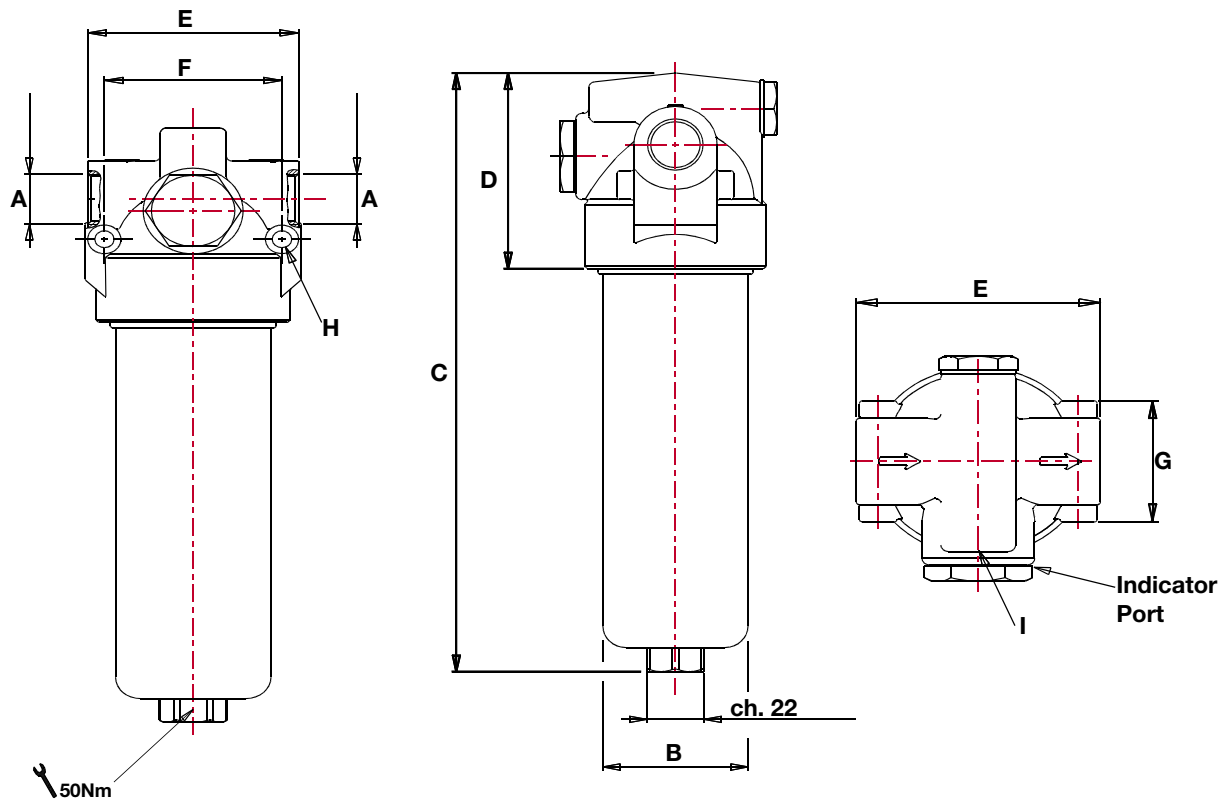
GB Medium pressure in-line filters (max. 110 bar)

TECHNICAL FEATURES:

- Head: anodized aluminium die-casting.
- Filter body: anodized aluminium die-casting.
- By-pass valve: Differential opening 6 bar.
- Standard available threads: 1/2" bspp. Other threads upon request.
- Standard available filter elements: 5-10-25 Micron abs. microfiber / 10-25 Micron nom. paper. Other filter elements upon request.
- Seals: Buna-N standard. Viton upon request.
- Operating temperature: -30°C +90°C (+110°C Viton).
- Maximum flow rate: 90 l/min.
- Operating pressure: 110 bar. Burst pressure: 300 bar.
- Element collapse pressure: 21 bar.
- Fatigue resistance: > 800'000 cycles (0÷110 bar).
- Tested according standards: ISO 2941 / ISO 3724 / ISO 3968.



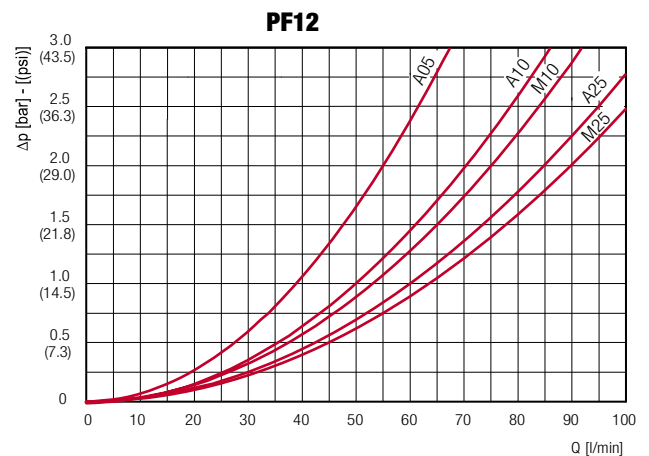
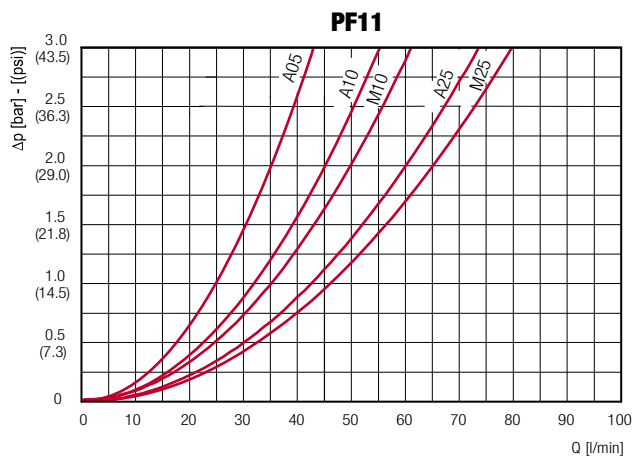
PF11-12



MEDIUM PRESSURE COMPLETE FILTER 110 bar

DIMENSIONS mm										WEIGHT
Mod.	A	B	C	D	E	F	G	H	I	Kg.
PF11	1/2" bspp	56	158	80	76	64	45	Ø 7	M20x1,5	1,00
PF12	1/2" bspp	56	248	80	76	64	45	Ø 7	M20x1,5	1,30

COMPLETE FILTER'S PRESSURE DROP



COME ORDINARE UN FILTRO COMPLETO:

HOW TO ORDER A COMPLETE FILTER:

PF1

110 bar

1

Vedi tabella pag. 53
See table page 53

A10

ΔP 21 bar

A05	MICROFIBRA 5µm abs 5µm MICROFIBERGLASS abs
A10	MICROFIBRA 10µm abs 10µm MICROFIBERGLASS abs
A25	MICROFIBRA 25µm abs 25µm MICROFIBERGLASS abs
M10	CARTA RINF. 10µm nom. 10µm REINF. PAPER nom.
M25	CARTA RINF. 25µm nom. 25µm REINF. PAPER nom.

D

D

1/2" bspp

B

B

con by-pass
taratura 6 bar
with by-pass
setting 6 bar

S

senza by-pass
without by-pass

senza
without

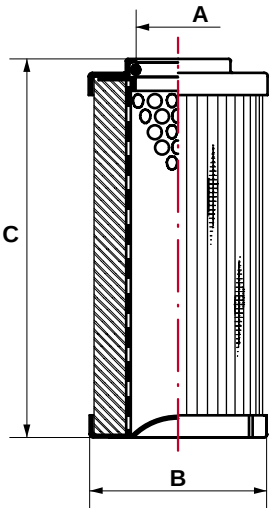
J

Differenziale visivo
Visual differential

K

Elettrico diff. visivo
Visual electr. differential

HOW TO ORDER THE REPLACEMENT ELEMENT:



PE1

.

1

A10

Dimensions mm

Mod.	A	B	C
PE1.1	22,8	42	89
PE1.2	22,8	42	178

PF11

PF12

PE1.1

PE1.2

standard NBR

V

Viton (upon request)

PF1 flow rates**

Flow rate in l/min. measured with
Dp=2 bar

FILTERING ELEMENT		FIBERGLASS			PAPER	
Mod.	FILETTO THREAD BSPP	A05 5 MICRON ABS	A10 10 MICRON ABS	A25 25 MICRON ABS	M10 10 MICRON NOM	M25 25 MICRON NOM
PF11	1/2"	35	45	60	50	65
PF12	1/2"	55	70	85	75	90

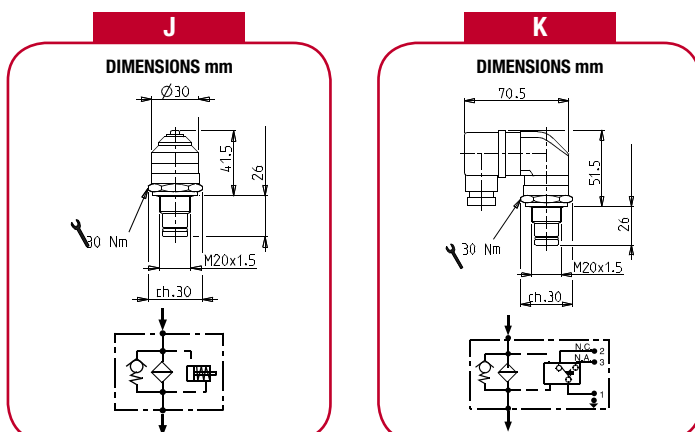
** Flow rates measured with oil with 30 cSt kinematic viscosity and 0.86 kg/dm³

- Fluid compatibility: mineral oil (HH-HL-HM-HR-HV-HG) and synthetic fluids (HS-HFDR-HFDU-HFDS).

PE1 element dirt holding capacity (ISO MTD) $\Delta p=5$ bar

FILTERING ELEMENT			FIBERGLASS			PAPER	
Mod.	C mm	FILTERING SURFACE cm ²	A05 5 MICRON ABS gr	A10 10 MICRON ABS gr	A25 25 MICRON ABS gr	M10 10 MICRON NOM gr	M25 25 MICRON NOM gr
HP11	89	300	2,2	2,50	3,70	2,00	3,2
HP12	178	700	4,90	5,20	7,80	4,20	6,70

CLOGGING INDICATORS



SERIES	SETTING	TYPE
J	8 bar (no by-pass) 5 bar (by-pass)	Visual differential
K	8 bar (no by-pass) 5 bar (by-pass)	Visual electrical differential IP65 - 250Vac

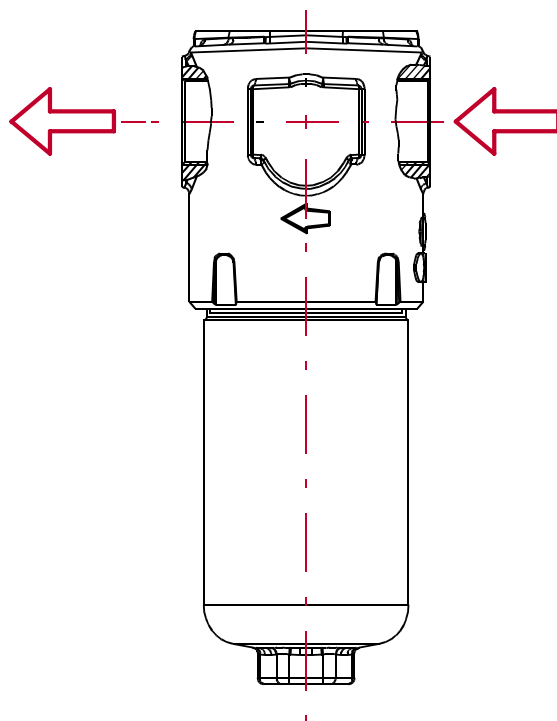
PF2 SERIES

(max. 300 bar)

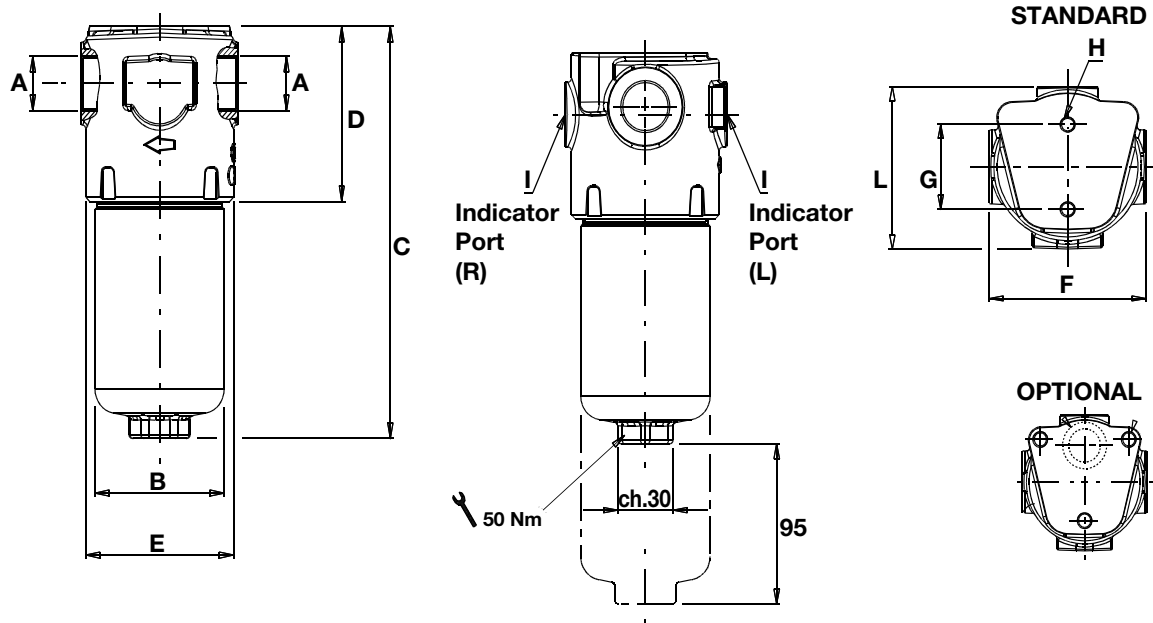
Medium pressure in-line filters (max. 300 bar)

TECHNICAL FEATURES:

- Head: s.g. cast iron.
- Filter body: forged steel.
- By-pass valve: Differential opening 6 bar.
- Standard available threads: 1/2"-3/4"-1" bspp. Other threads upon request.
- Standard available filter elements: 3-5-10-25 Micron abs. microfiber. Other filter elements upon request.
- Seals: Buna-N standard. Viton upon request.
- Operating temperature: -30°C a +90°C (+110°C Viton).
- Maximum flow rate: 170 l/min.
- Operating pressure: 300 bar. Burst pressure: 560 bar.
- Element collapse pressure: 21 bar or 210 bar.
- Fatigue resistance: 1'000'000 cycles (0÷280 bar).
- Tested according standards: ISO 2941 / ISO 3724 / ISO 3968.



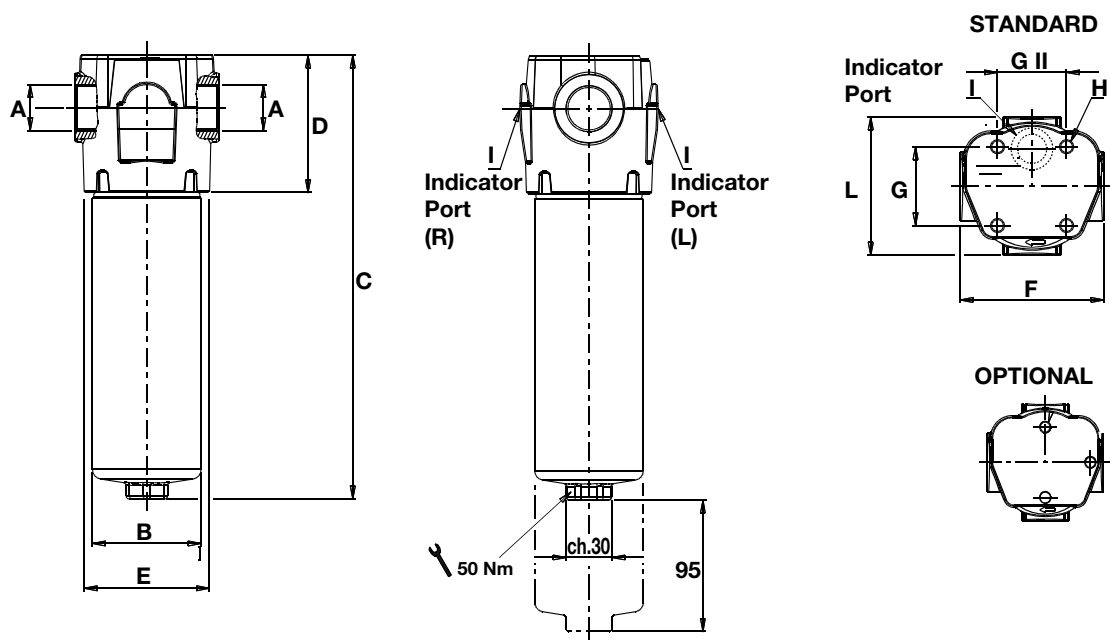
PF21-22-23



HIGH PRESSURE COMPLETE FILTER 300 bar

Mod.	DIMENSIONS mm										WEIGHT
	A	B	C	D	E	F	G	H	I	L	kg.
PF21	1/2" bspp 3/4" bspp	70	173	85	80	85	46	M8	1/2" bspp	88	3,8
PF22		70	200	85	80	85	46	M8	1/2" bspp	88	4,2
PF23		70	295	85	80	85	46	M8	1/2" bspp	88	5,7

PF24-25



HIGH PRESSURE COMPLETE FILTER 300 bar

Mod.	DIMENSIONS mm											WEIGHT
	A	B	C	D	E	F	G	G II	H	I	L	kg.
PF24	3/4" bspp	79	214	100	91	105	57	50	M10	1/2"bspp	100	6,0
PF25	1" bspp	79	322	100	91	105	57	50	M10	1/2"bspp	100	7,8

HOW TO ORDER A COMPLETE FILTER:

PF2

280 bar

1

See table page 57

A10

ΔP 21 bar	
A03	3µm MICROFIBERGLASS abs
A05	5µm MICROFIBERGLASS abs
A10	10µm MICROFIBERGLASS abs
A25	25µm MICROFIBERGLASS abs
ΔP 210 bar	
H03	3µm MICROFIBERGLASS abs
H05	5µm MICROFIBERGLASS abs
H10	10µm MICROFIBERGLASS abs
H25	25µm MICROFIBERGLASS abs

E

D	1/2" bspp (PF21-22-23)
E	3/4" bspp (PF21-22-23-24-25)
F	1" bspp (PF24-25)

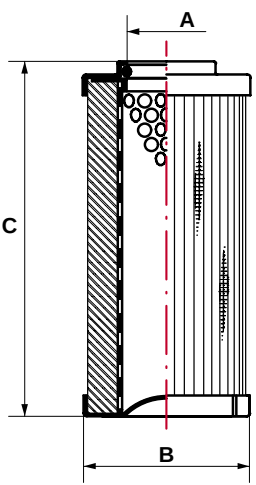
B

B	with by-pass setting 6 bar
S	without by-pass

	without
T	Visual differential
U	Visual eletr. differential

* Precise position (standard right)

HOW TO ORDER THE REPLACEMENT ELEMENT:



PE2

.

1

A10

DIMENSIONS mm			
Mod.	A	B	C
PE2.1	25,5	47	86
PE2.2	25,5	47	115
PE2.3	25,5	47	208
PE2.4	27,5	54	122
PE2.5	27,5	54	229

PF21	PE2.1
PF22	PE2.2
PF23	PE2.3
PF24	PE2.4
PF25	PE2.5

	standard NBR
V	Viton (upon request)

PF2 flow rates**

Flow rate in l/min. measured with
Dp=0,75 bar

FILTERING ELEMENT		FIBERGLASS			
Mod.	FILETTO - THREAD BSPP	A03 3 MICRON ABS	A05 5 MICRON ABS	A10 10 MICRON ABS	A25 25 MICRON ABS
PF21	1/2"	25	30	35	45
	3/4"	25	30	35	45
PF22	1/2"	35	40	50	60
	3/4"	35	40	50	60
PF23	1/2"	60	65	75	85
	3/4"	65	70	80	95
PF24	3/4"	60	65	80	100
	1"	60	70	85	105
PF25	3/4"	105	120	135	155
	1"	110	125	145	170

** Flow rates measured with oil with 30 cSt kinematic viscosity and 0.86 kg/dm³

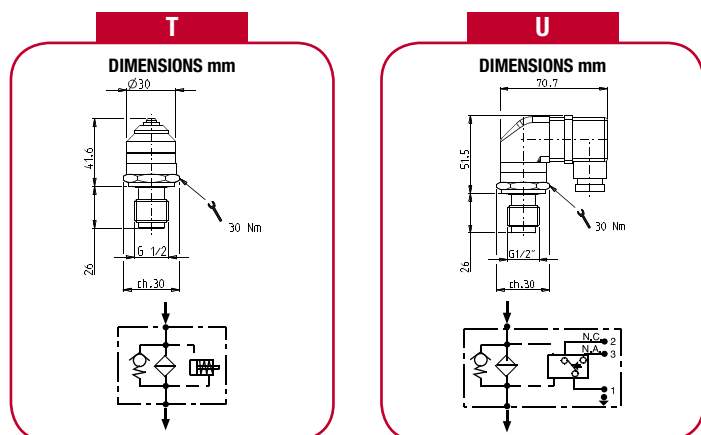
- Fluid compatibility: mineral oil (HH-HL-HM-HR-HV-HG) and synthetic fluids (HS-HFDR-HFUD-HFDS).

PE2 element dirt holding capacity (ISO MTD)

Δp=5 bar

FILTERING ELEMENT			FIBERGLASS			
Mod.	C mm	FILTERING SURFACE cm ²	A03 3 MICRON ABS gr	A05 5 MICRON ABS gr	A10 10 MICRON ABS gr	A25 25 MICRON ABS gr
PE2.1	85	380	2,10	2,70	3,00	4,40
PE2.2	115	500	3,00	3,90	4,40	6,40
PE2.3	208	950	5,30	6,70	7,50	11,00
PE2.4	122	900	5,10	6,50	7,30	10,50
PE2.5	229	1800	10,10	13,00	14,50	21,00

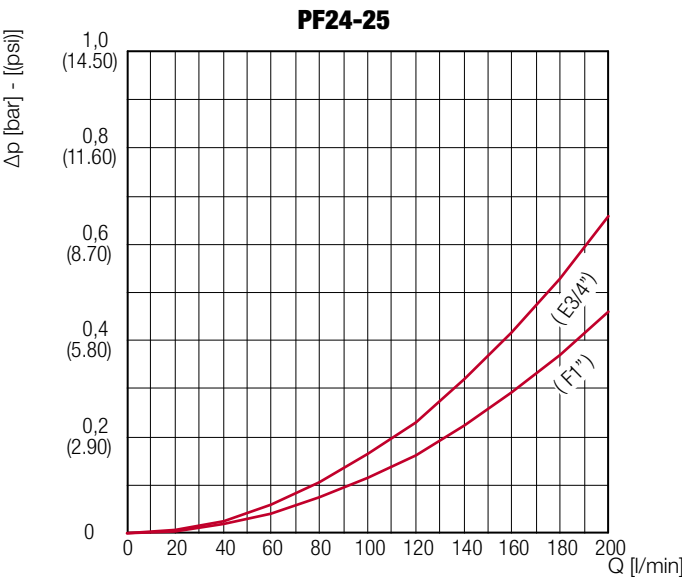
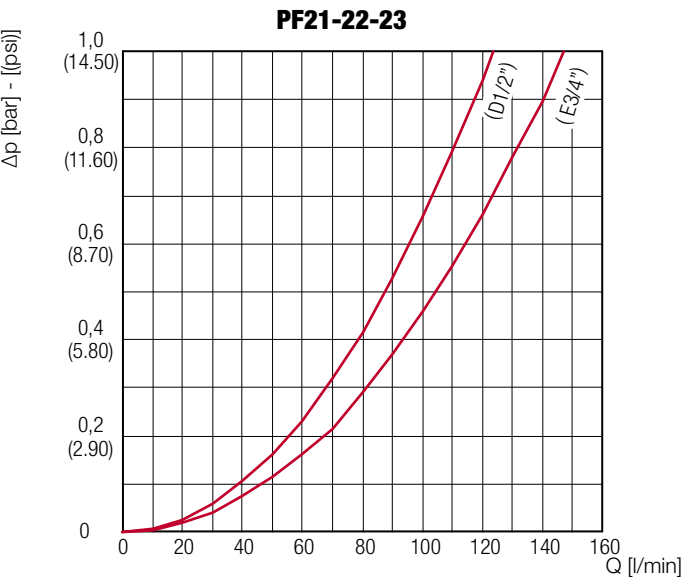
CLOGGING INDICATORS



SERIES	SETTING	TYPE
T	8 bar (no by-pass) 5 bar (by-pass)	Visual differential
U	8 bar (no by-pass) 5 bar (by-pass)	Visual electrical differential IP65 - 250Vac

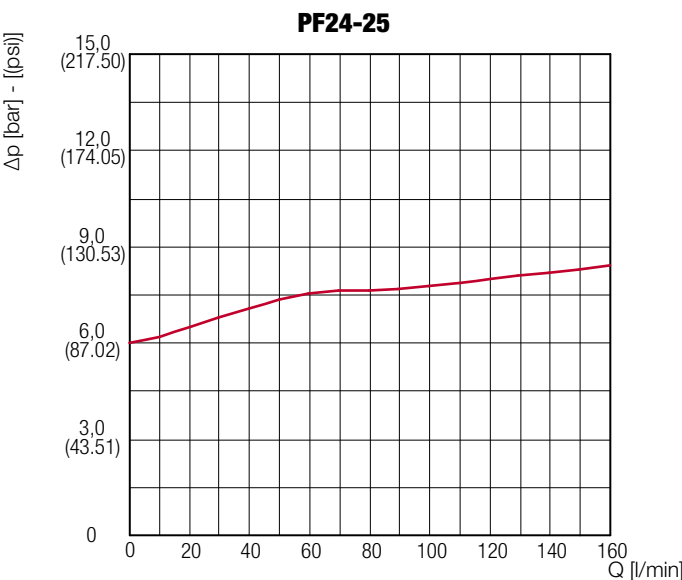
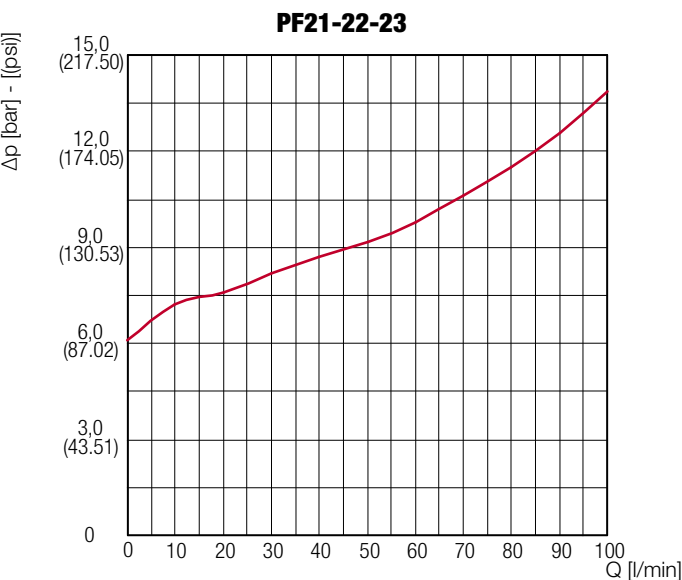
PRESSURE DROP CURVES THROUGH THE HOUSING

The curves are obtained in the following conditions:
Mineral oil type SAE 10
Kinematic viscosity 120 SSU (30 cSt)
Density 7.29 lb/gal (0,856 kg/dm³).



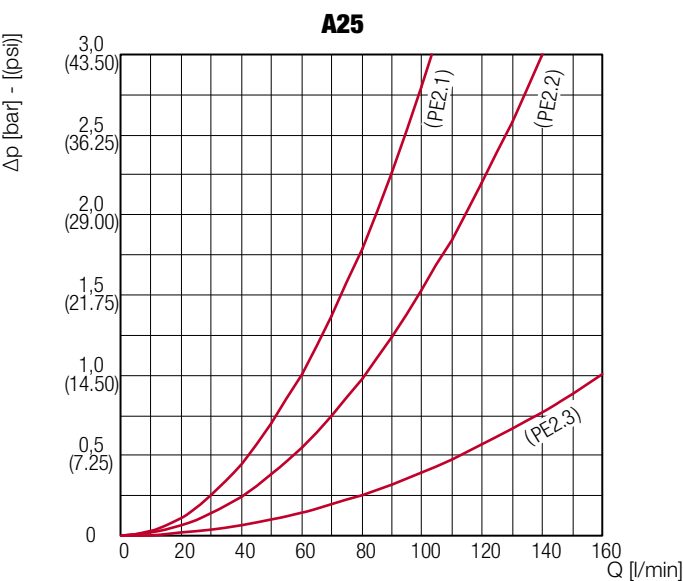
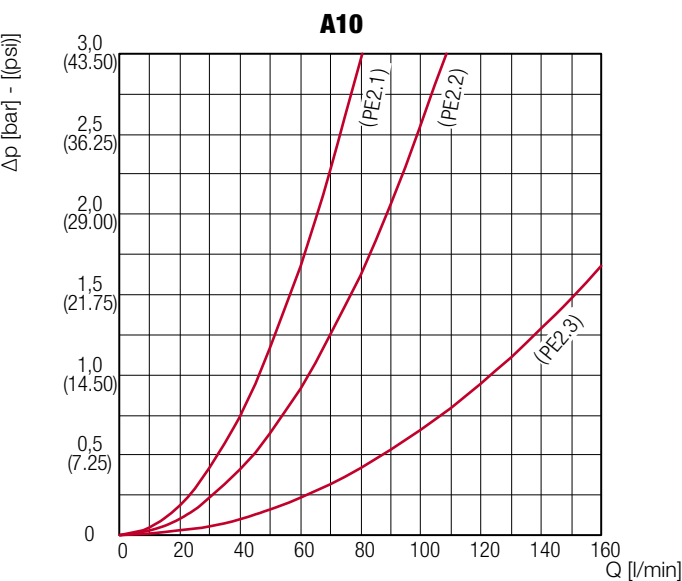
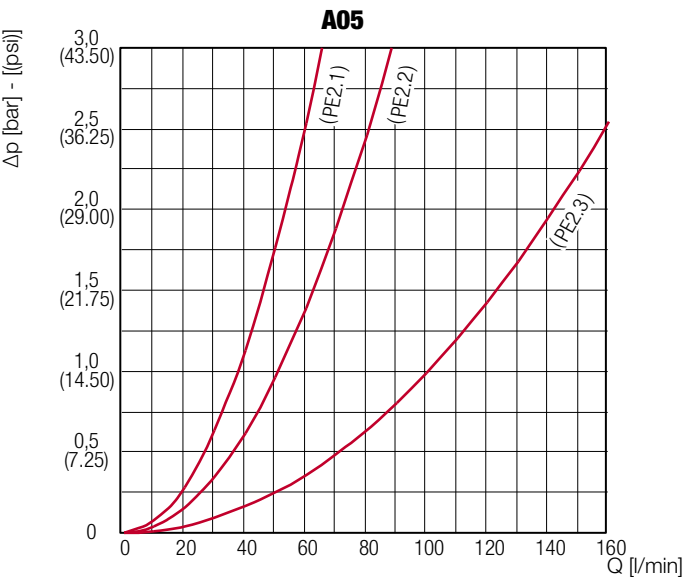
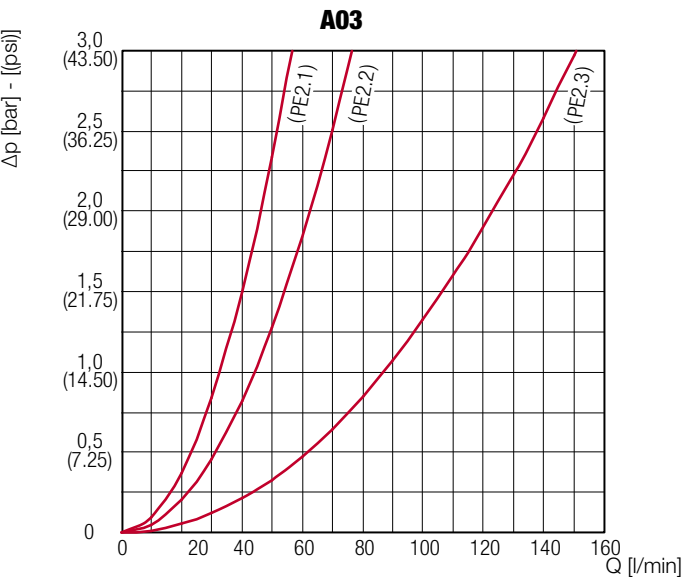
PRESSURE DROP CURVES THROUGH THE BY-PASS VALVES

The curves are obtained in the following conditions:
Mineral oil type SAE 10
Kinematic viscosity 120 SSU (30 cSt)
Density 7.29 lb/gal (0,856 kg/dm³).



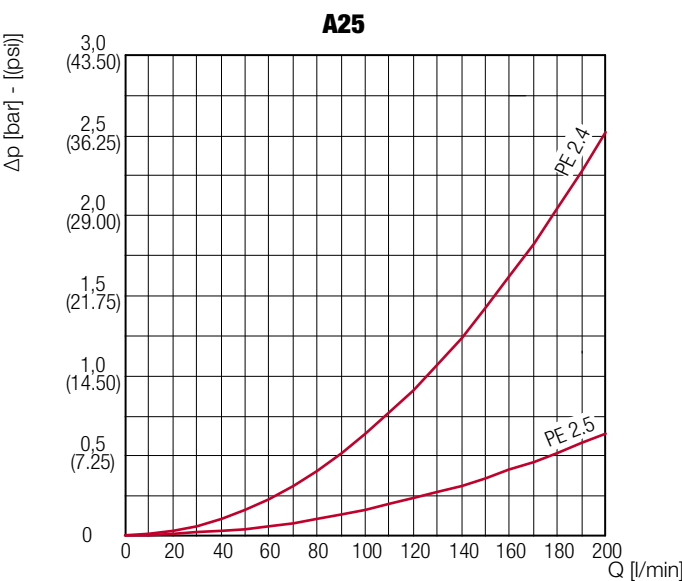
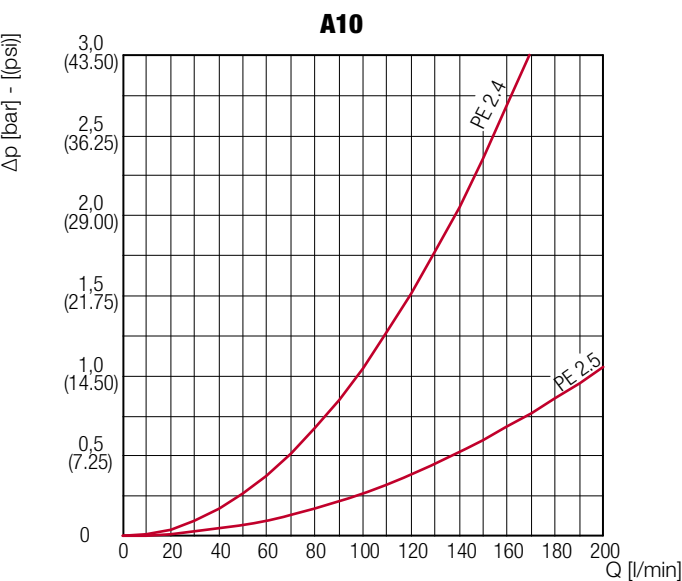
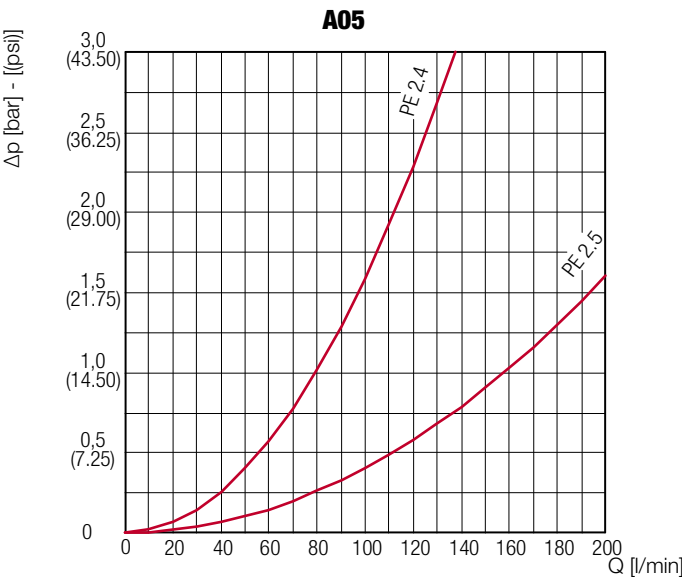
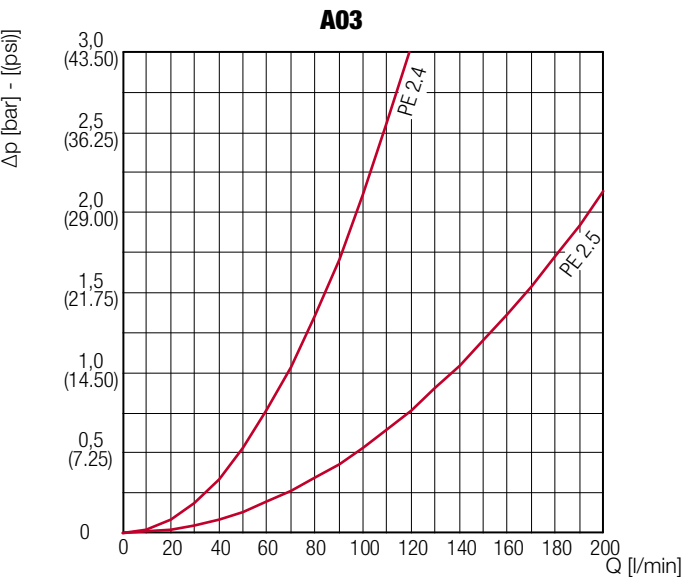
PRESSURE DROP CURVES THROUGH THE ELEMENT PE 2.1-2.2-2.3

The curves are obtained in the following conditions:
Mineral oil type SAE 10
Kinematic viscosity 120 SSU (30 cSt)
Density 7.29 lb/gal (0,856 kg/dm³).



PRESSURE DROP CURVES THROUGH THE ELEMENT PE 2.1-2.2-2.3

The curves are obtained in the following conditions:
Mineral oil type SAE 10
Kinematic viscosity 120 SSU (30 cSt)
Density 7.29 lb/gal (0,856 kg/dm³).



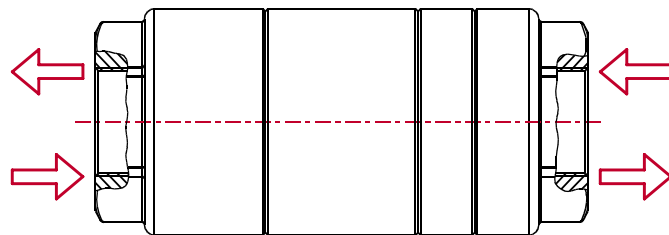
PF3 SERIES

(max. 350 bar)

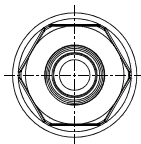
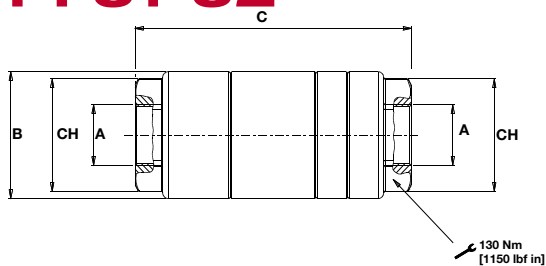
GB High pressure in-line filters (max. 350 bar) "last chance" type - Bidirectional flow

TECHNICAL FEATURES:

- Filter body: aluminium high-resistance.
- Inner element: sintered bronze.
- Standard available threads: 1/4"-3/8"-1/2"-3/4" bspp. Other threads upon request.
- Standard available filter elements: 10-25-40-60 Micron nom.
- Seals: Buna-N standard. Viton upon request.
- Operating temperature: -30°C a +90°C (+110°C Viton).
- Maximum flow rate: 115 l/min.
- Operating pressure: 350 bar. Burst pressure: 520 bar.
- Element collapse pressure: 80 bar.
- Fatigue resistance: 1'000'000 cycles (0÷350 bar).
- Tested according standards: ISO 2941 / ISO 3724 / ISO 3968.



PF31-32



HIGH PRESSURE COMPLETE FILTER 350 bar

Mod.	DIMENSIONS mm				WEIGHT
	A	B	C	CH	kg.
PF31	1/4" bspp 3/8" bspp 1/2" bspp	44	100	35	0,3
PF32	1/2" bspp 3/4" bspp	54	140	41	0,6

HOW TO ORDER A COMPLETE FILTER:

PF3

350 bar

1

See table above

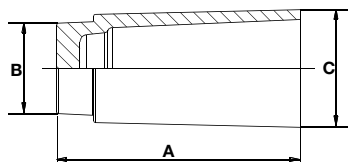
M10

M10	Sintered bronze 10 Micron nom.
M25	Sintered bronze 25 Micron nom.
M40	Sintered bronze 40 Micron nom.
M60	Sintered bronze 60 Micron nom.

D

B	1/4" bspp (PF31)
C	3/8" bspp (PF31)
D	1/2" bspp (PF31-32)
E	3/4" bspp (PF32)

HOW TO ORDER THE REPLACEMENT ELEMENT:



PE3

DIMENSIONS mm			
Mod.	A	B	C
PE3.1	39	21	25,5
PE3.2	68	25,5	32

.

PF31	PE3.1
PF32	PE3.2

1

M10

PF3 flow rates**

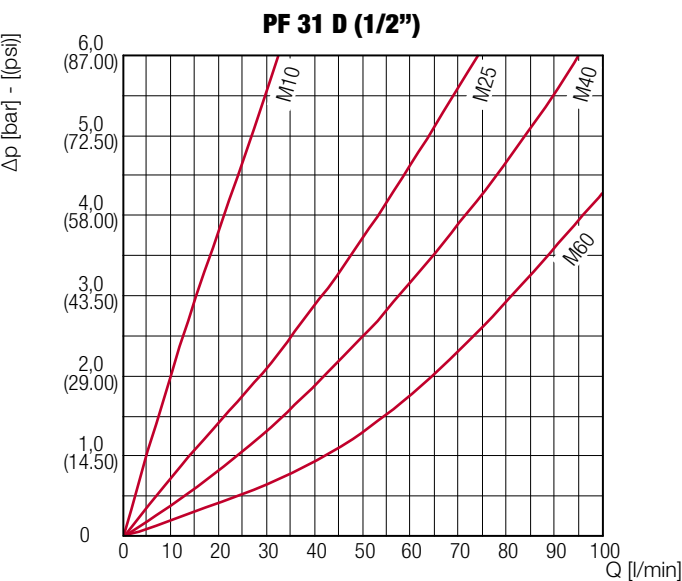
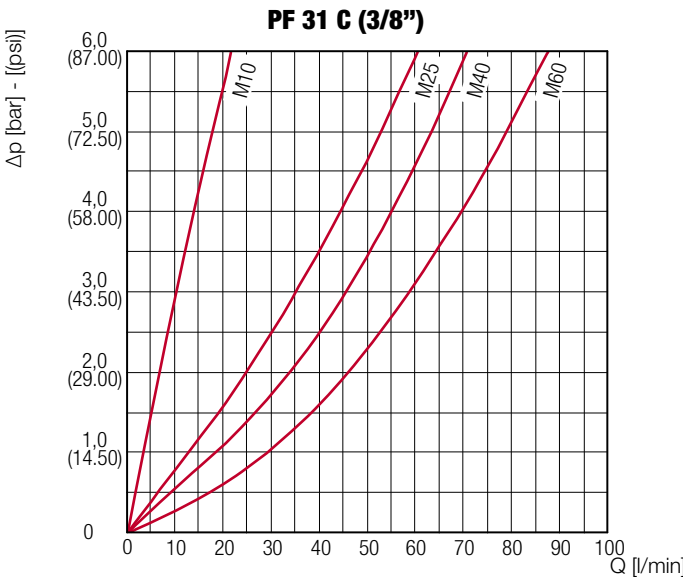
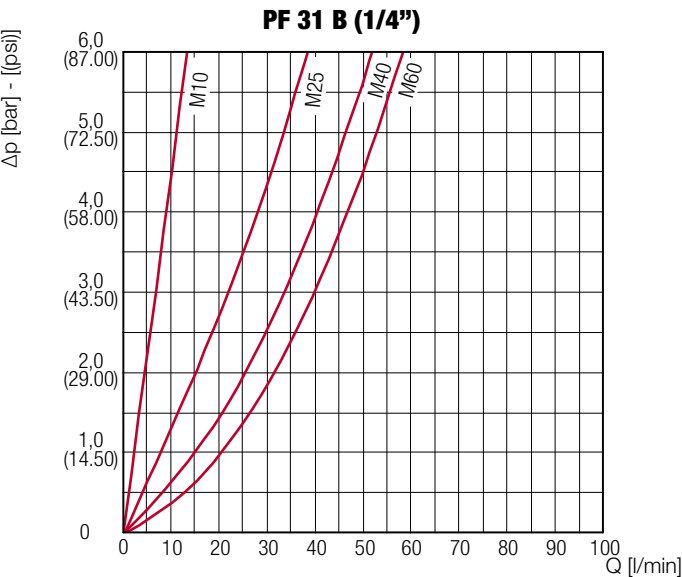
Flow rate in l/min. measured with
Dp=2 bar

FILTERING ELEMENT		SINTERED BRONZE			
Mod.	FILETTO - THREAD BSPP	M10 10 MICRON NOM	M25 25 MICRON NOM	M40 40 MICRON NOM	M60 60 MICRON NOM
PF31	1/4"	5	15	25	30
	3/8"	7	25	35	45
	1/2"	10	30	40	65
PF32	1/2"	15	35	55	80
	3/4"	20	40	70	115

** Flow rates measured with oil with 30 cSt kinematic viscosity and 0.86 kg/dm³

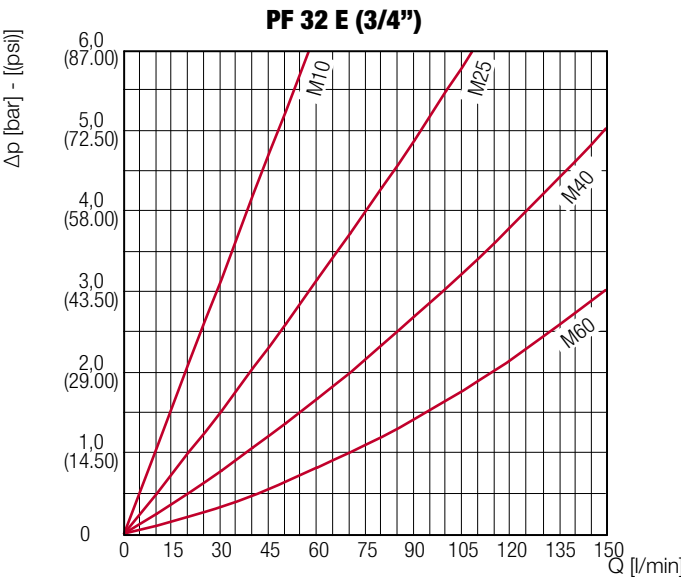
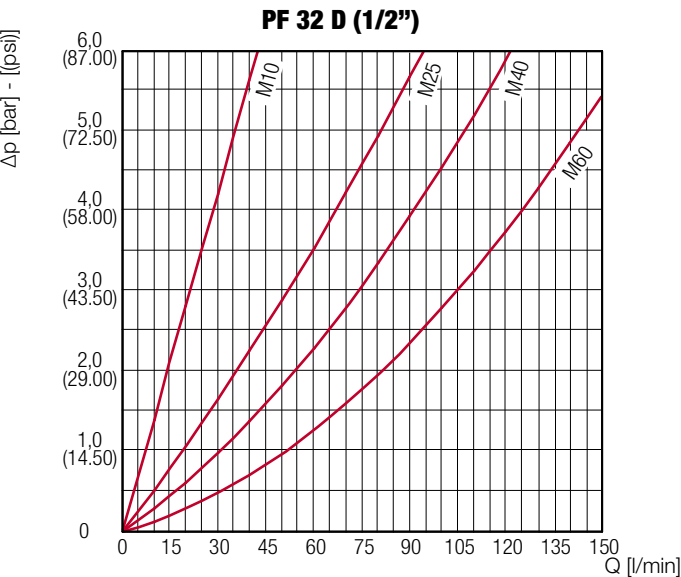
PRESSURE DROP CURVES THROUGH THE HOUSING PF 31

The curves are obtained in the following conditions:
Mineral oil type SAE 10
Kinematic viscosity 120 SSU (30 cSt)
Density 7.29 lb/gal (0,856 kg/dm³).



PRESSURE DROP CURVES THROUGH THE HOUSING PF 32

The curves are obtained in the following conditions:
Mineral oil type SAE 10
Kinematic viscosity 120 SSU (30 cSt)
Density 7.29 lb/gal (0,856 kg/dm³).



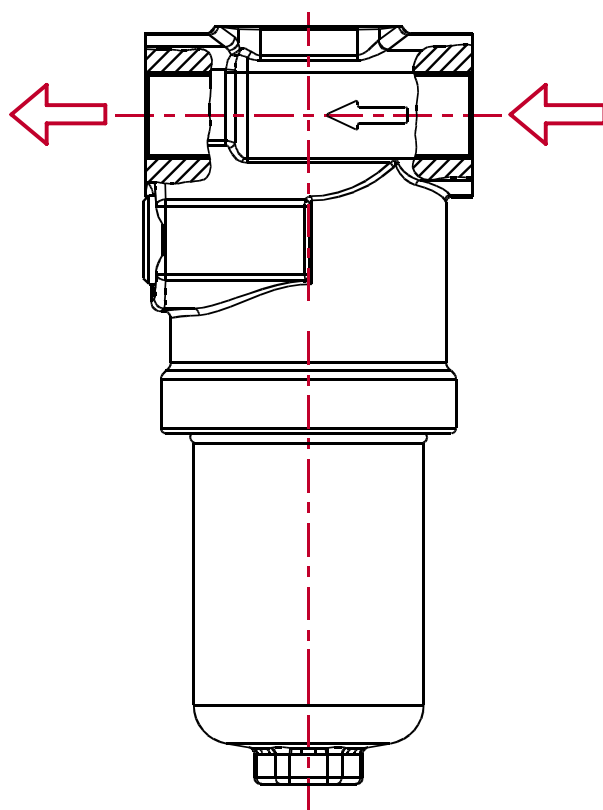
PF4 SERIES

(max. 420 bar)

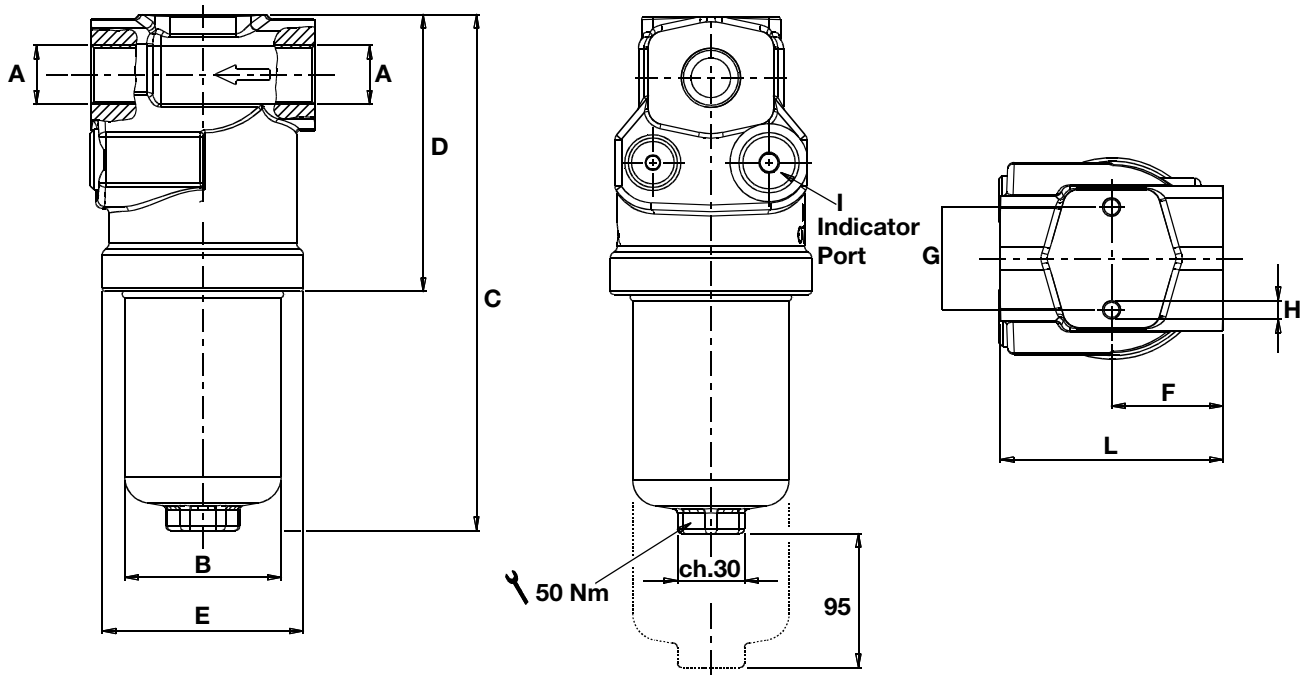
GE High pressure in-line filters (max. 420 bar)

TECHNICAL FEATURES:

- Head: s.g. cast iron. Filter body: forged steel.
- By-pass valve: Differential opening 6 bar.
- Standard available threads: 1/2"-3/4"-1"-1 1/4"-1 1/2" bspp. Other threads upon request.
- Standard available filter elements: 3-5-10-25 Micron abs. microfiber. Other filter elements upon request.
- Seals: Buna-N standard. Viton upon request.
- Operating temperature: -30°C a +90°C (+110°C Viton).
- Maximum flow rate: 450 l/min.
- Operating pressure: 420 bar. Burst pressure: 1260 bar.
- Element collapse pressure: 21 bar or 210 bar.
- Fatigue resistance: 1'000'000 cycles (0÷420 bar).
- Tested according standards: ISO 2941 / ISO 3724 / ISO 3968.



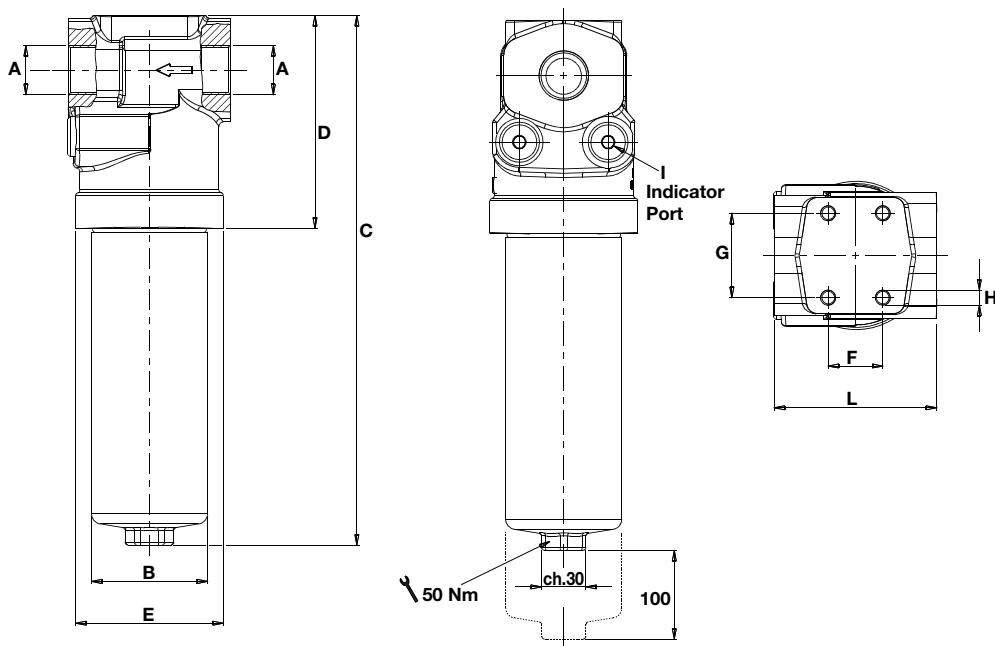
PF41-42-43



HIGH PRESSURE COMPLETE FILTER 420 bar

Mod.	DIMENSIONS mm										WEIGHT
	A	B	C	D	E	F	G	H	I	L	kg.
PF41	1/2" bspp 3/4" bspp	70	210	125	90	50	46	M8	1/2" bspp	100	5,3
PF42		70	235	125	90	50	46	M8	1/2" bspp	100	5,7
PF43		70	330	125	90	50	46	M8	1/2" bspp	100	7,2

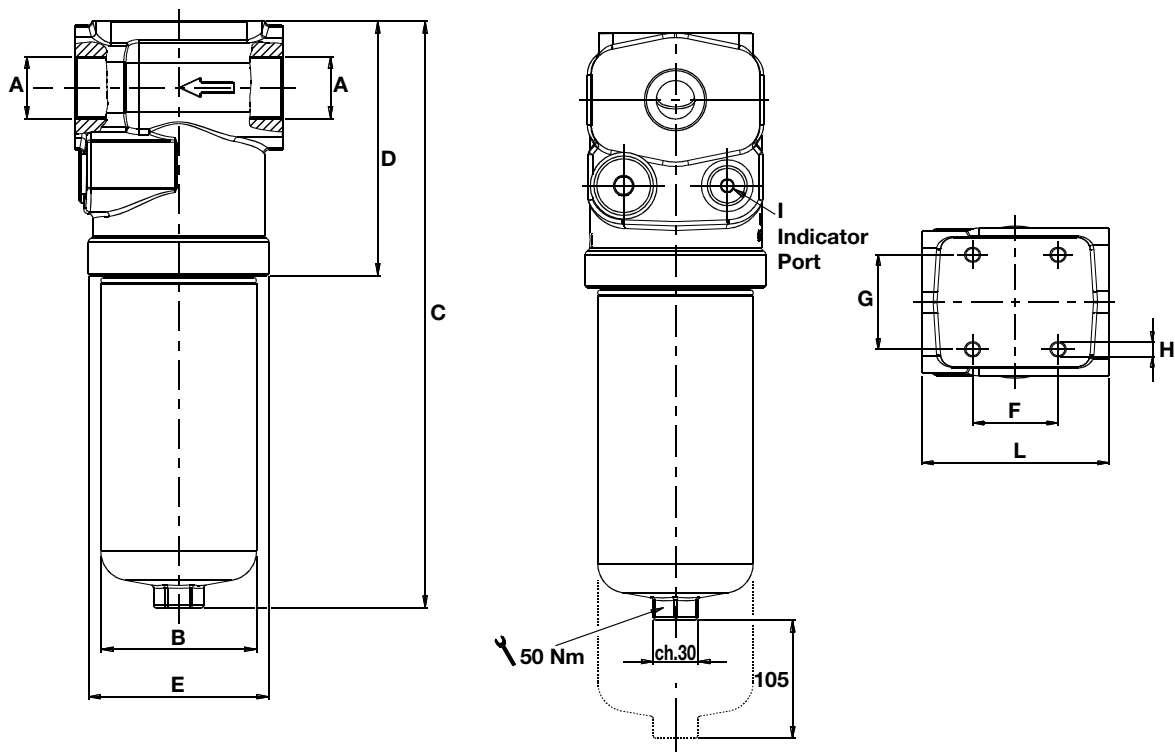
PF44-45



HIGH PRESSURE COMPLETE FILTERS 420 bar

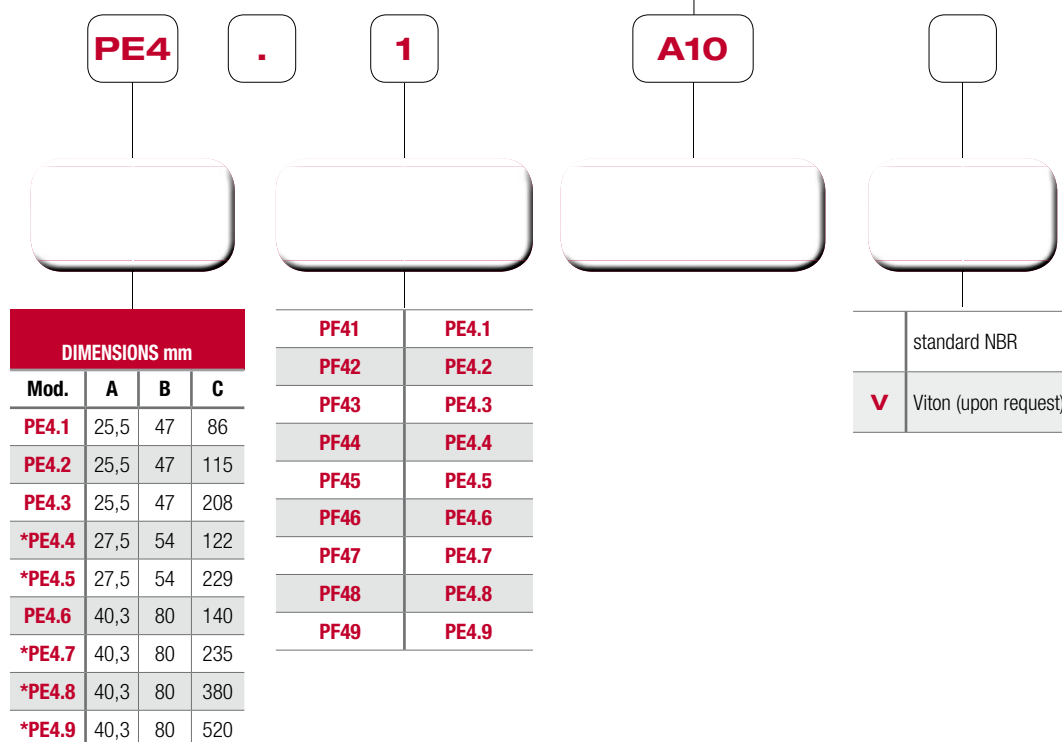
Mod.	DIMENSIONS mm										WEIGHT
	A	B	C	D	E	F	G	H	I	L	kg.
PF44	3/4" bspp	79	250	145	100	37	57	M10	1/2"bspp	110	8,2
PF45	1" bspp	79	360	145	100	37	57	M10	1/2"bspp	110	10,0

PF46-47-48-49



HIGH PRESSURE COMPLETE FILTER 420 bar											
Mod.	DIMENSIONS mm										WEIGHT
	A	B	C	D	E	F	G	H	I	L	kg.
PF46	1" bspp 1"1/4 bspp 1"1/2 bspp	105	305	172	122	64	76	M12	1/2" bspp	140	15,2
PF47		105	400	172	122	64	76	M12	1/2" bspp	140	18,0
PF48		105	545	172	122	64	76	M12	1/2" bspp	140	22,0
PF49		105	690	172	122	64	76	M12	1/2" bspp	140	28,5

HOW TO ORDER A COMPLETE FILTER:



*USA element type available upon request (see page 67)

PF4 flow rates**

Flow rate in l/min. measured with
Dp=0,75 bar

FILTERING ELEMENT		FIBERGLASS			
Mod.	FILETTO - THREAD BSPP	A03 3 MICRON ABS	A05 5 MICRON ABS	A10 10 MICRON ABS	A25 25 MICRON ABS
PF41	1/2"	25	30	35	45
	3/4"	25	30	35	45
PF42	1/2"	35	40	50	60
	3/4"	35	40	50	60
PF43	1/2"	60	65	75	85
	3/4"	65	70	80	95
PF44	3/4"	60	65	80	100
	1"	60	70	85	105
PF45	3/4"	105	120	135	155
	1"	110	125	145	170
PF46	1"	140	160	185	215
	1"1/4	145	165	200	240
	1"1/2	150	170	205	245
PF47	1"	210	230	255	280
	1"1/4	235	255	290	330
	1"1/2	240	265	305	350
PF48	1"	270	280	295	310
	1"1/4	315	335	360	385
	1"1/2	330	355	385	420
PF49	1"	295	300	310	320
	1"1/4	360	375	390	410
	1"1/2	385	400	425	450

** Flow rates measured with oil of 30 cSt kinematic viscosity and 0.86 kg/dm³

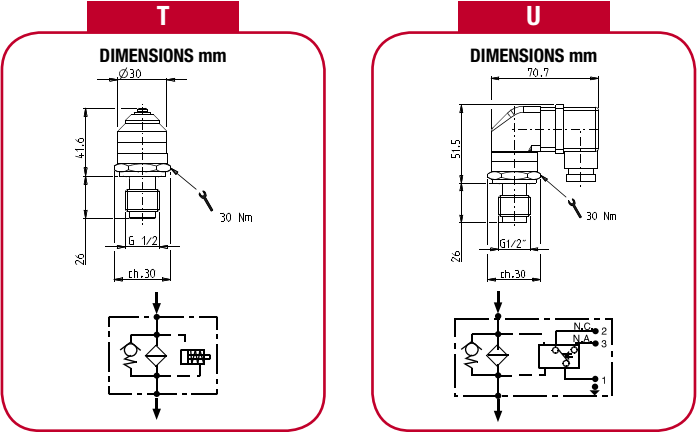
- Fluid compatibility: mineral oil (HH-HL-HM-HR-HV-HG) and synthetic fluids (HS-HFDR-HFDU-HFDS).

**PE4 element dirt
holding capacity
(ISO MTD)**

Δp=5 bar

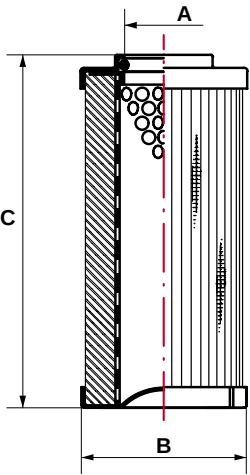
FILTERING ELEMENT			FIBERGLASS			
Mod.	C mm	FILTERING SURFACE cm ²	A03 3 MICRON ABS gr	A05 5 MICRON ABS gr	A10 10 MICRON ABS gr	A25 25 MICRON ABS gr
PE4.1	86	380	2,10	2,70	3,00	4,40
PE4.2	115	500	3,00	3,90	4,40	6,40
PE4.3	208	950	5,30	6,70	7,50	11,00
PE4.4	122	900	5,10	6,50	7,30	10,50
PE4.5	229	1800	10,10	13,00	14,50	21,00
PE4.6	140	2000	11,00	14,50	16,00	23,00
PE4.7	235	3400	19,00	24,00	27,00	39,00
PE4.8	380	5500	30,00	34,00	43,00	63,00
PE4.9	520	7700	42,00	54,00	60,00	87,00

CLOGGING INDICATORS



SERIES	SETTING	TYPE
T	8 bar (no by-pass) 5 bar (by-pass)	Visual differential
U	8 bar (no by-pass) 5 bar (by-pass)	Visual electrical differential IP65 - 250Vac

“USA ELEMENT TYPE” AVAILABLE UPON REQUEST:



DIMENSIONS mm			
Mod.	A	B	C
PE4.4_U	24,5	53	115
PE4.5_U	24,5	53	210
PE4.7_U	43,2	80	210
PE4.8_U	43,2	80	328
PE4.9_U	43,2	80	428

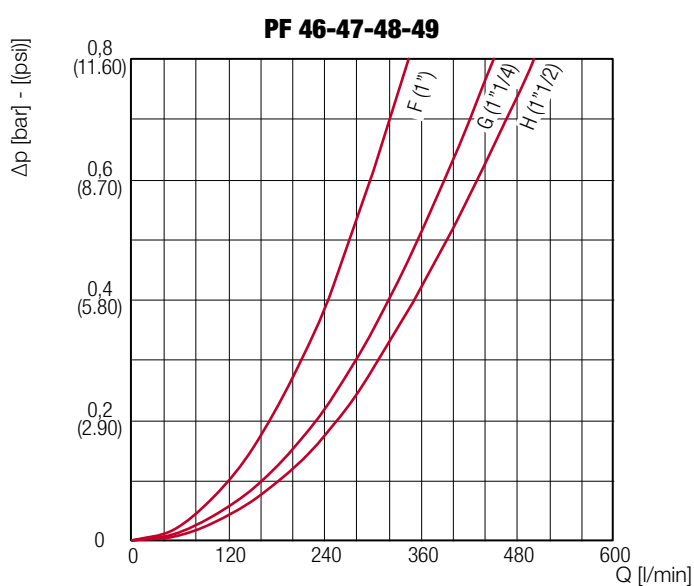
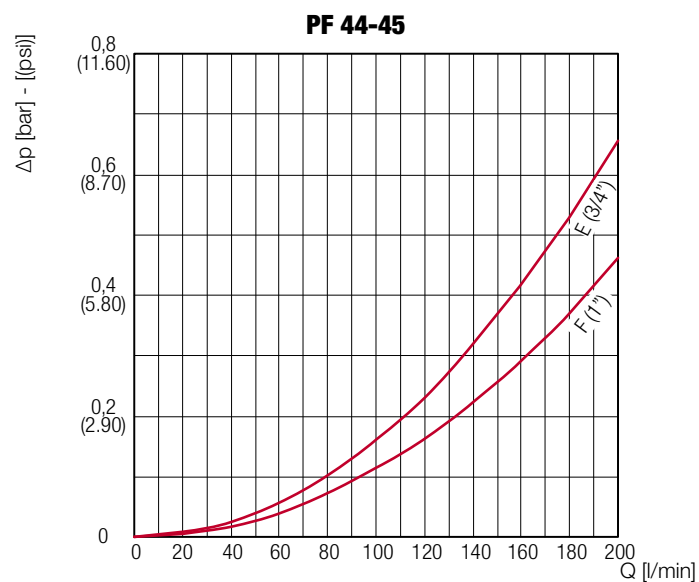
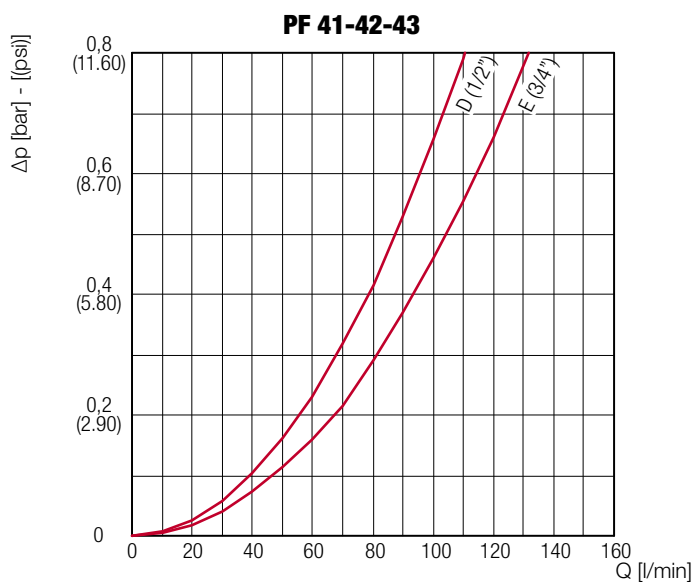
PRESSURE DROP CURVES THROUGH THE HOUSING PF4

The curves are obtained in the following conditions:

Mineral oil type SAE 10

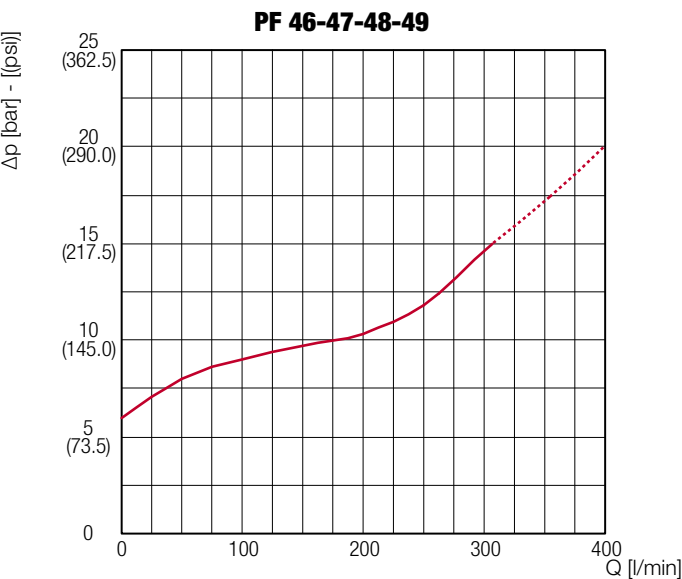
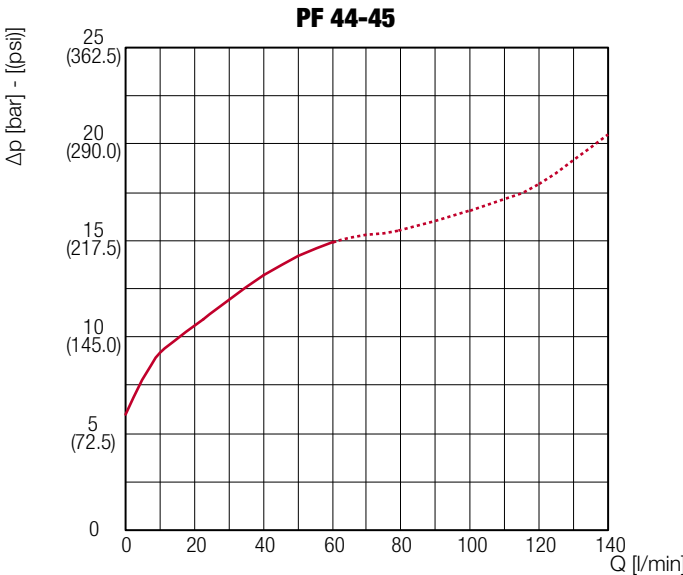
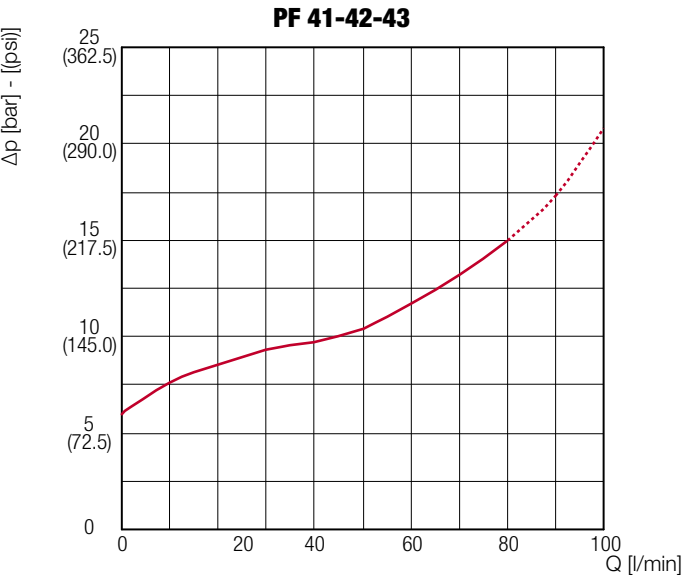
Kinematic viscosity 120 SSU (30 cSt)

Density 7.29 lb/gal (0,856 kg/dm³).



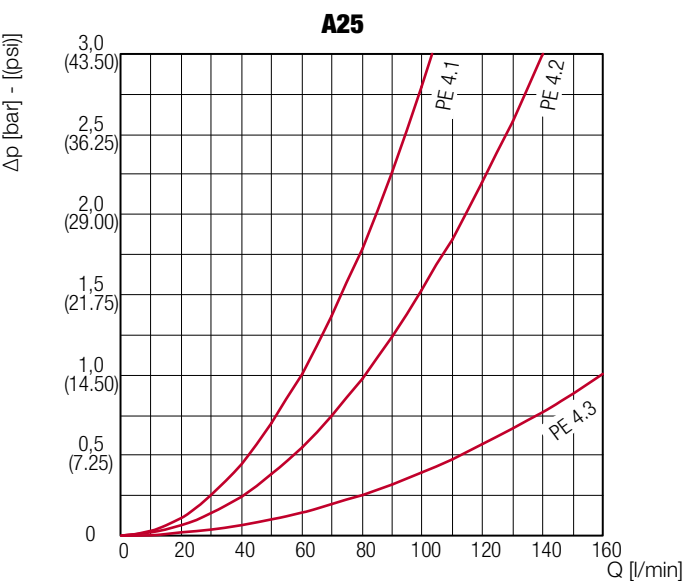
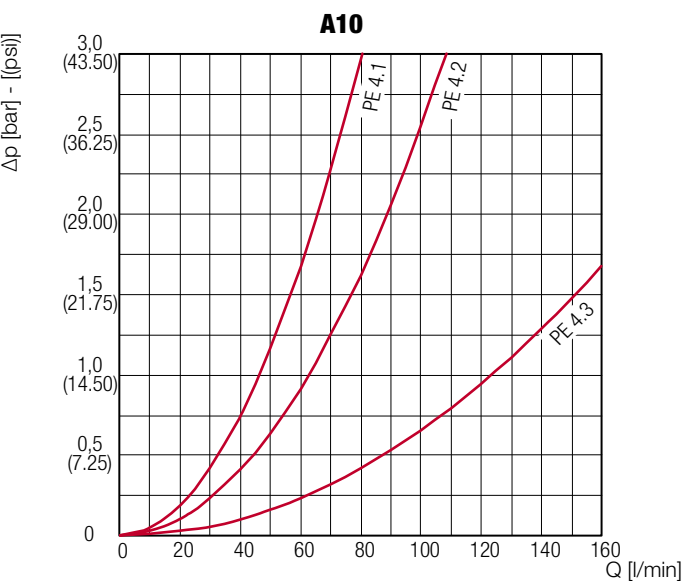
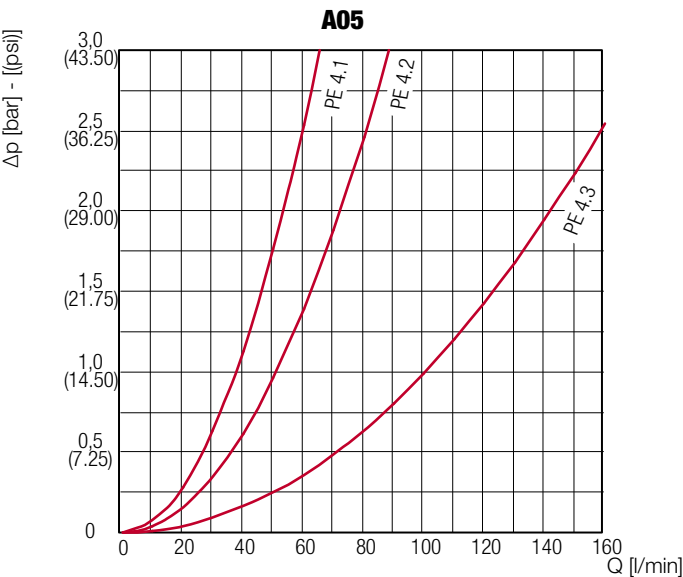
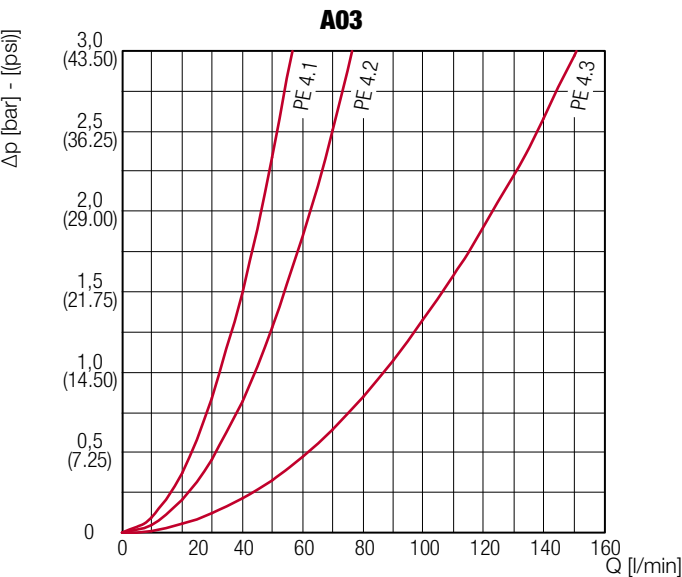
PRESSURE DROP CURVES THROUGH THE BY-PASS VALVES PF4

The curves are obtained in the following conditions:
Mineral oil type SAE 10
Kinematic viscosity 120 SSU (30 cSt)
Density 7.29 lb/gal (0,856 kg/dm³).



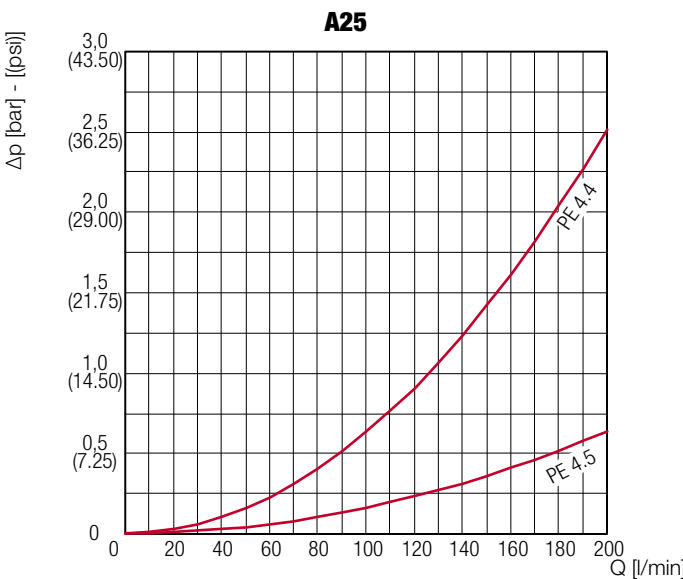
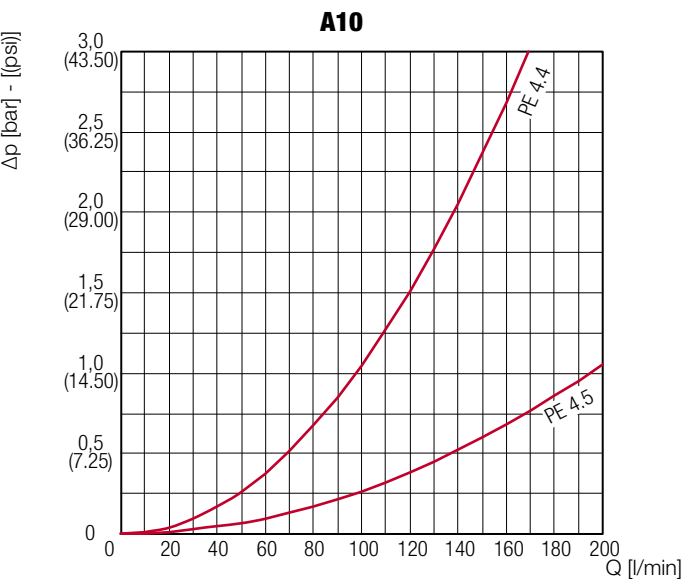
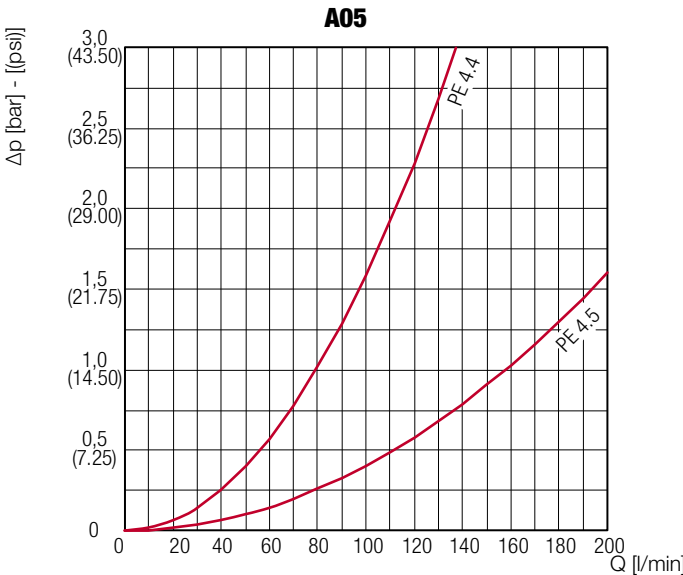
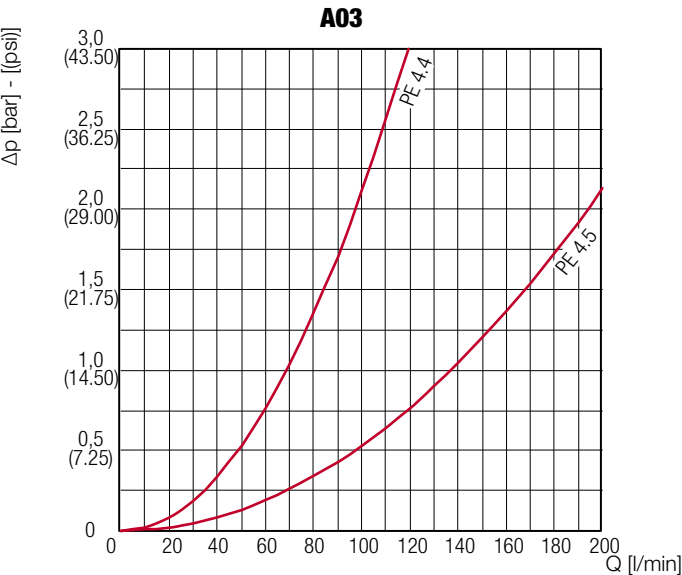
PRESSURE DROP CURVES THROUGH THE ELEMENT PE 4.1-4.2-4.3

The curves are obtained in the following conditions:
Mineral oil type SAE 10
Kinematic viscosity 120 SSU (30 cSt)
Density 7.29 lb/gal (0,856 kg/dm³).



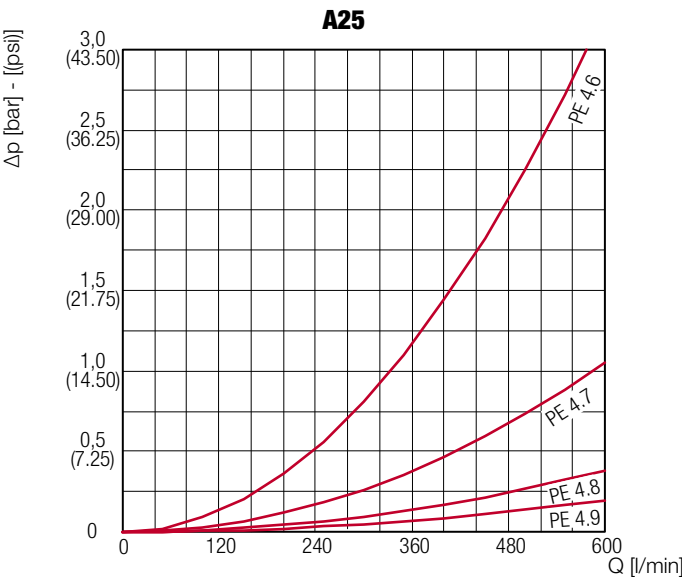
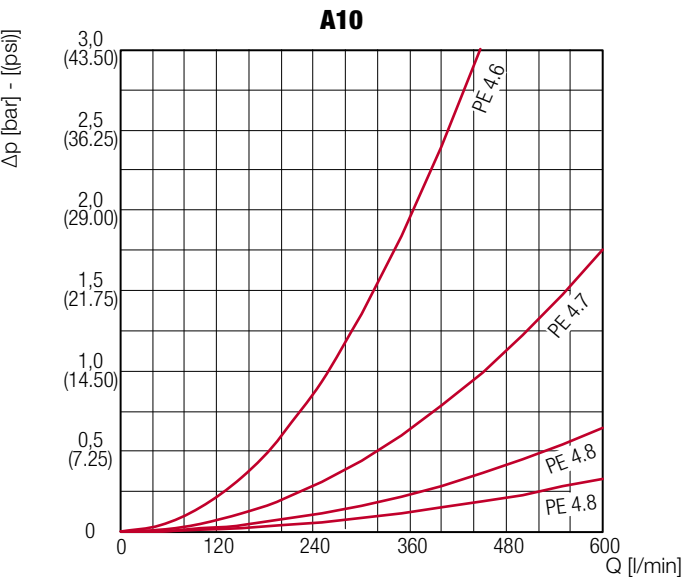
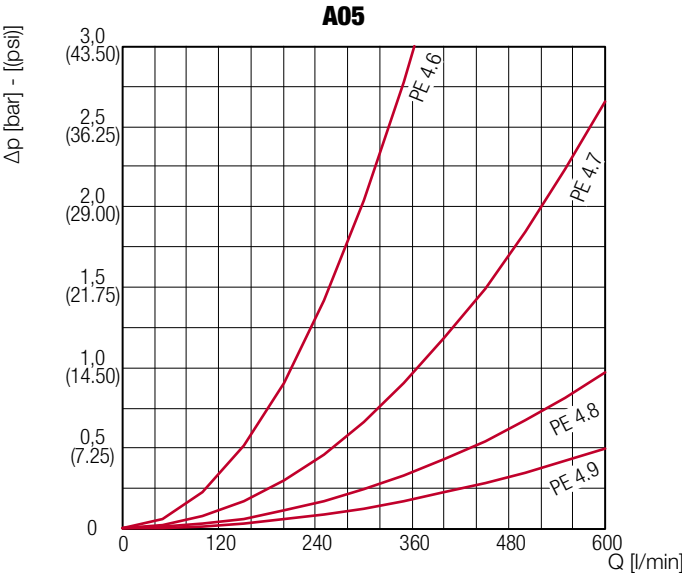
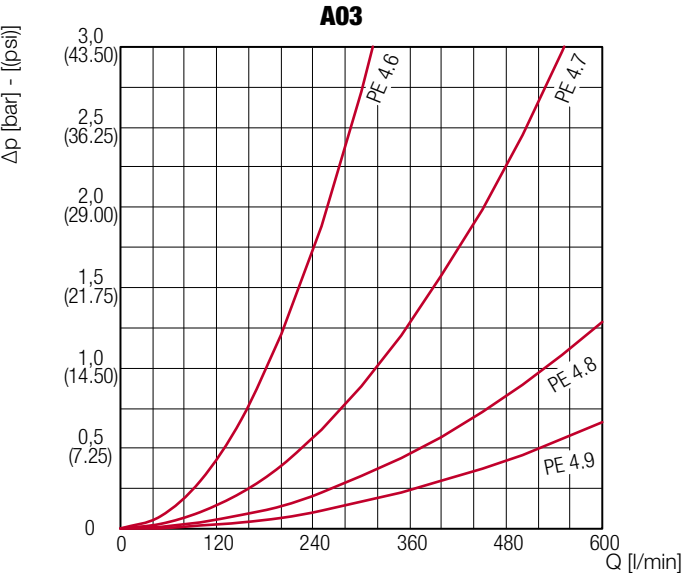
PRESSURE DROP CURVES THROUGH THE ELEMENT PE 4.4-4.5

The curves are obtained in the following conditions:
Mineral oil type SAE 10
Kinematic viscosity 120 SSU (30 cSt)
Density 7.29 lb/gal (0,856 kg/dm³).



PRESSURE DROP CURVES THROUGH THE ELEMENT PE 4.6-4.7-4.8-4.9

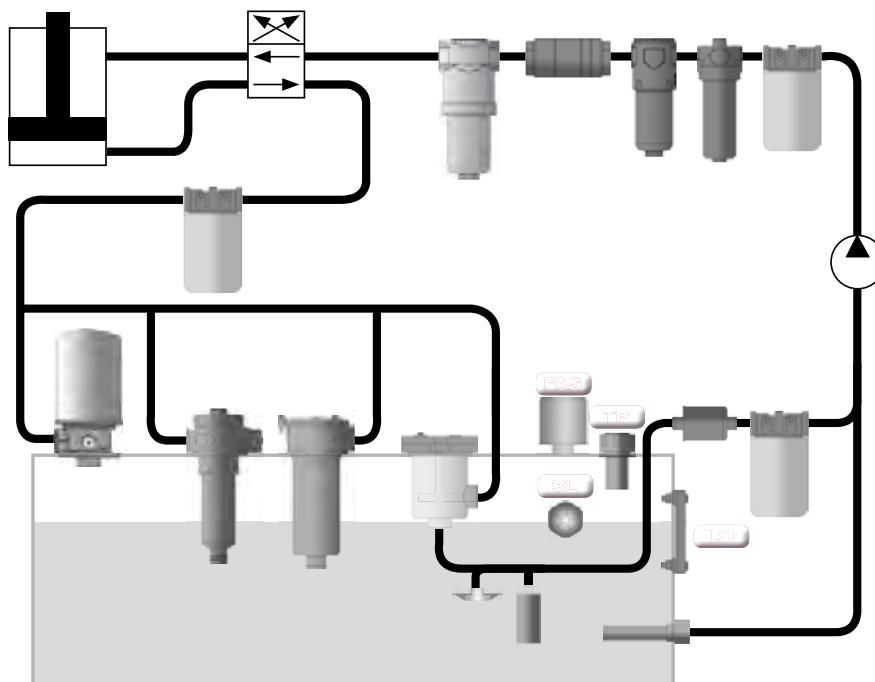
The curves are obtained in the following conditions:
Mineral oil type SAE 10
Kinematic viscosity 120 SSU (30 cSt)
Density 7.29 lb/gal (0,856 kg/dm³).



Hydraulic tank accessories

SERIE LO-SL-TP-FAS-PV





The accessories series LO-SL-TP-FAS-PV are designed to complete our wide range of filters, in order to give customers the possibility to source, from a single supplier, high quality components needed for the full assembly of the hydraulic tank. They are essential components to inspect the fluid and all main system functions:

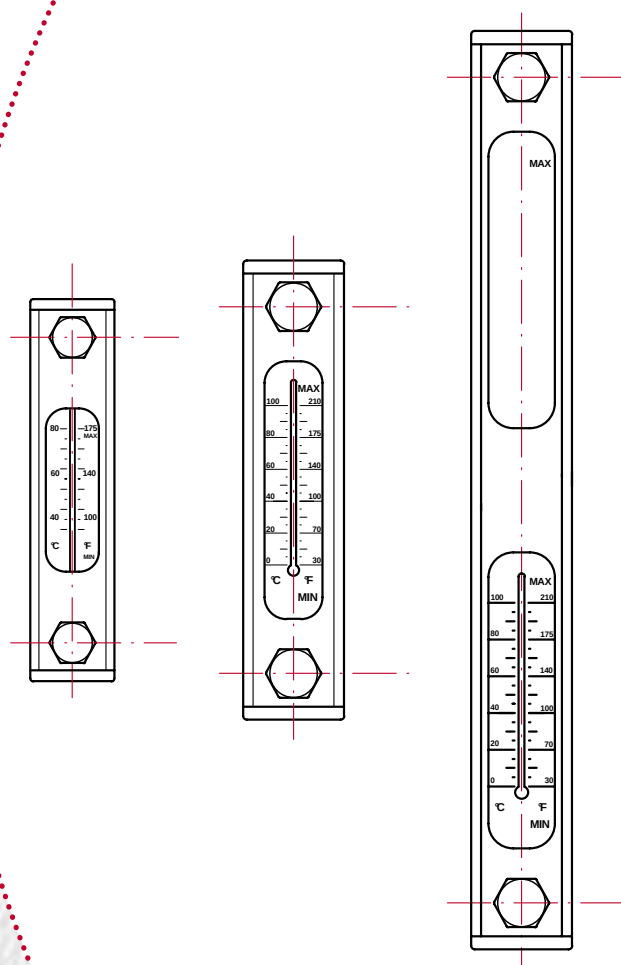
- The visual oil level indicators series LO allow to check the level and temperature of tank's fluid.
- The oil level windows series SL-SLM are designed to inspect the oil level also in narrow spaces and with maximum cost savings.
- The filler breathers series TP-TPL are used for tank filling and filtration of air exchanged with outside atmosphere.
- The breathers series FAS are mounted to filter the intake air and avoid contaminant access.
- The compensation tanks/barrels PV series allow a total safe storage of small amounts of oil.

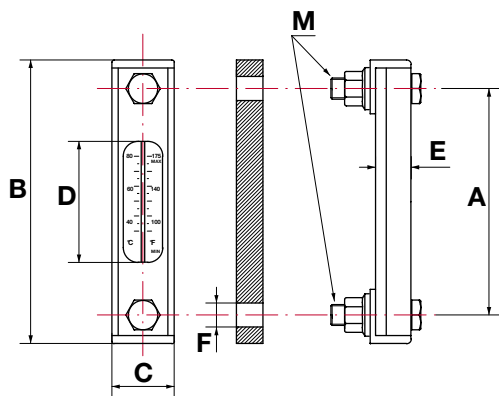
LO SERIES

EN Visual oil level indicators (with or without thermometer)

TECHNICAL FEATURES:

- Body: "Trogamid" glass.
- Closing heads: nylon (plastic).
- External protection: extruded aluminium.
- Screws: galvanized steel.
- Seals: Buna-N standard. Viton upon request.
- Standard drilling distance: 76-127-254 mm. Other dimensions upon request.
- Thermometer (if required): bulb, incorporated into oil level with double scale °C (scale 0°C/+100°C) and °F (scale 30°F/210°F)
- Operating temperature: from -20°C to +80°C.
- Max. working pressure: 1 bar.
- Tightening Torque: 10 Nm.

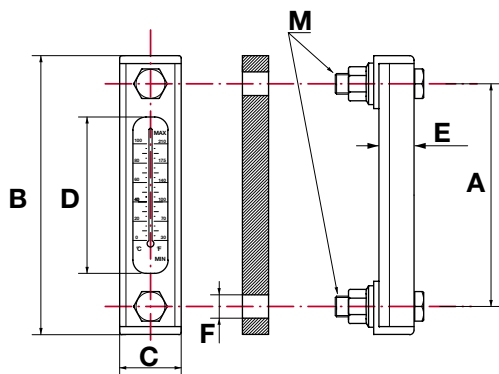




LO5.076

DRILLING DISTANCE 76 mm

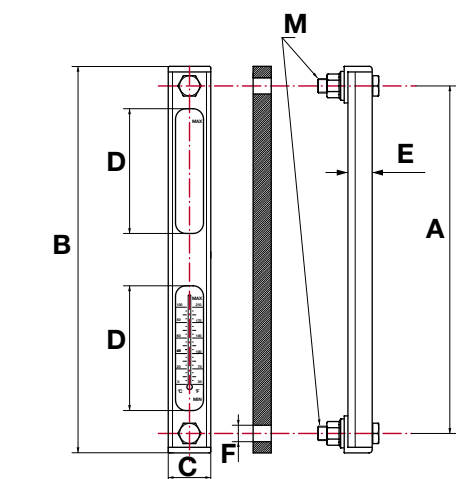
Mod.	DIMENSIONS mm							
	A	B	C	D	E	M	F Ø MIN.	F Ø MAX.
L05.076ST	76	106	36	41	21	Standard M10	10,5 - 11	
L05.076TE						(1) M12		
L05.076ST1								
L05.076TE1							12,5 - 13	



LO5.127

DRILLING DISTANCE 127 mm

Mod.	DIMENSIONS mm							
	A	B	C	D	E	M	F Ø MIN.	F Ø MAX.
L05.127ST	127	159	36	86	21	Standard M12	12,5 - 13	
L05.127TE						(1) M10		
L05.127ST1								
L05.127TE1							10,5 - 11	



LO5.254

DRILLING DISTANCE 254 mm

Mod.	DIMENSIONS mm							
	A	B	C	D	E	M	F Ø MIN.	F Ø MAX.
L05.254ST	254	285	36	2x86	21	Standard M12	12,5 - 13	
L05.254TE						(1) M10		
L05.254ST1								
L05.254TE1							10,5 - 11	

HOW TO ORDER AN OIL LEVEL INDICATOR:

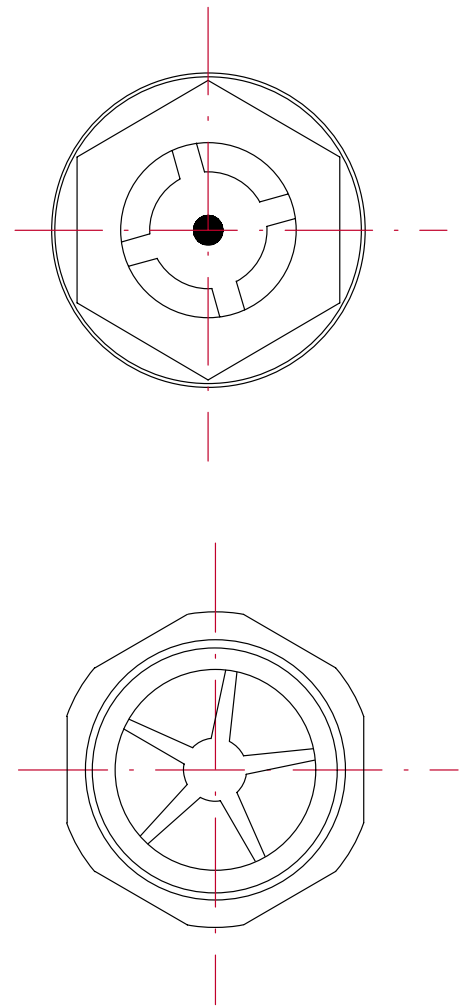
LO5	.	076	TE	
076	Drilling dist. 76 mm	ST	No Thermometer	Standard bolt (M)
127	Drilling dist. 127 mm	TE	With Thermometer	1 Alternative bolt (M)
254	Drilling dist. 254 mm			

SL SERIES

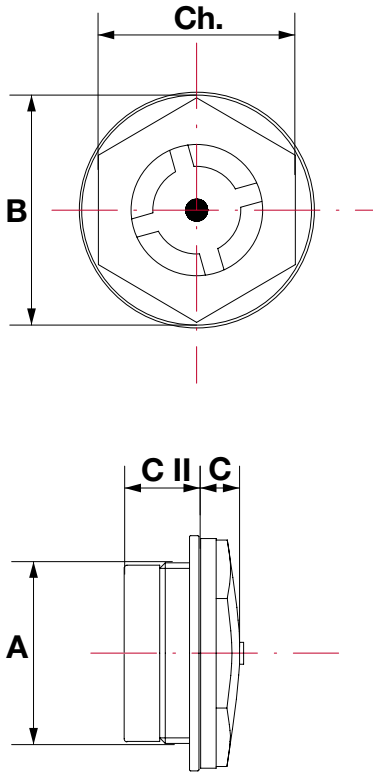
EN Visual oil level windows in plastic or metal

TECHNICAL FEATURES:

- Body: plastic version in polyamide resin. Metal version in aluminium alloy.
- Viewer (metal version): polyamide resin "Trogamid". HP version in natural glass.
- Gaskets: standard in fiber. HP version in viton.
- Max. Working pressure (metal version): 5 bar. HP version 20 bar.
- Working temperature: from -30°C to + 90°C. HP version +130°C .
- Avoid contact with alcohol, liquids containing alcohol, water over 80°C and coolant at high temperatures ("Trogamid" resin version).
- Metal version for high temperatures and pressure up to 20 bar is available (SLM. HP).



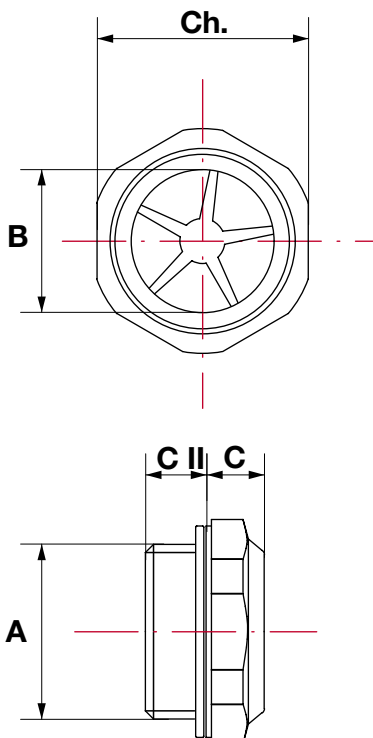
SL



PLASTIC VERSION

Mod.	DIMENSIONS mm					SERRAGGIO Nm TIGHTENING Nm
	A	B	C	C II	Ch	
SL.14	1/4" bspp	20,5	8	8,50	17	8
SL.38	3/8" bspp	22	6,5	12	18	12
SL.12	1/2" bspp	28	8	12	24	16
SL.34	3/4" bspp	36	8,5	13,5	30	21
SL.1	1" bspp	42	9	14	36	24
SL.114	1" 1/4 bspp	51	10	17	42	
SL.112	1" 1/2 bspp	58	10	21	50	
SL.2	2" bspp	74	12	20	64	
SL.1415	M14x1,5	20	7,5	8	17	8
SL.1615	M16x1,5	22	6,5	12,5	18	12
SL.1815	M18x1,5	25,5	6	12,5	21	12
SL.2015	M20x1,5	28	7,5	12	24	16
SL.2215	M22x1,5	28	7,5	12,5	24	16
SL.4015	M40x1,5	51	10	17	42	

SLM



METAL VERSION

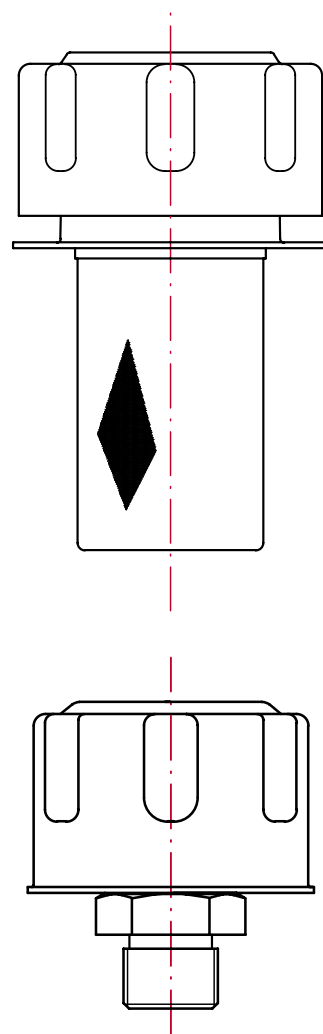
Mod.	DIMENSIONS mm					SERRAGGIO Nm TIGHTENING Nm
	A	B	C	C II	Ch	
SLM.14	1/4" bspp	11	9,50	7,50	18	
SLM.38	3/8" bspp	13	9	9	22	
SLM.12	1/2" bspp	16	10	9	27	
SLM.34	3/4" bspp	20	11	11	32	
SLM.1	1" bspp	26	12	10	40	
SLM.114	1" 1/4 bspp	34	14	12	50	
SLM.1815	M18x1,5	13	10	9	22	
SLM.2215	M22x1,5	16	10	9	27	
SLM.12HP	1/2" bspp	12	10	9	27	
SLM.34HP	3/4" bspp	16	11	11	32	
SLM.1HP	1" bspp	23	12	12	40	

TP SERIES

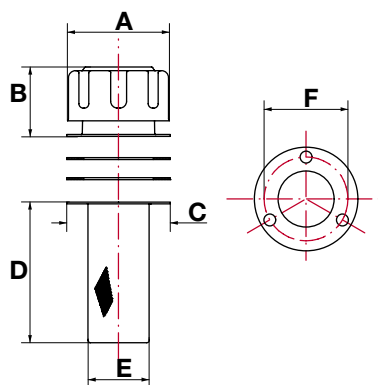
EN Filler caps with inner air breather and filter.

TECHNICAL FEATURES:

- Cover: chrome plated steel.
- Flange (when provided): galvanized steel.
- Pre-filtering oil basket (when provided): galvanized microexpanded mesh.
- Inner air filter: 40 micron nom. foam or 10 micron nom. paper. Other filter elements available upon request.
- Pressurization valve (when provided): in plastic, inside the cover.
- Additional screws (when provided): TC M005x012 UNI6107 in galvanized steel.
- Seals (when provided): paper / cork for basket version. Buna-N for pressurized version.

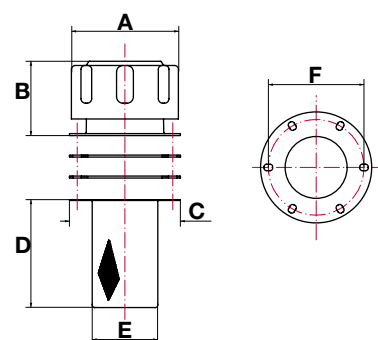


SCREW FIXING



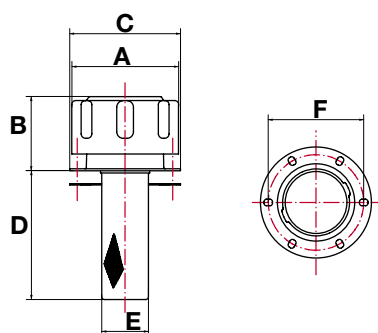
SCREW FIXING FLANGE (NR.3)

Mod.	AIR FILTER		DIMENSIONS mm						MOUNTING HOLES
	Micron nom.	Air Flow m³/h	A	B	C	D	E	F	
TP1.02600	40 (foam)	15	48	37	52	65	28	41	3
TP1.03869	10 (paper)	15	48	37	52	65	28	41	3



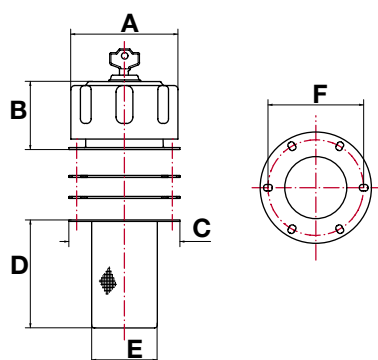
SCREW FIXING FLANGE (NR.6)

Mod.	AIR FILTER		DIMENSIONS mm						MOUNTING HOLES
	Micron nom.	Air Flow m³/h	A	B	C	D	E	F	
TP1.02601	40 (foam)	42	75	48	83	82	50	73	6
TP1.03870	10 (paper)	42	75	48	83	82	50	73	6
TP1.02602	40 (foam)	42	75	48	83	150	50	73	6
TP1.02603	40 (foam)	42	75	48	83	201	50	73	6



SCREW FIXING FLANGE (NR.6) + PRESSURISATION VALVE 0,35 bar

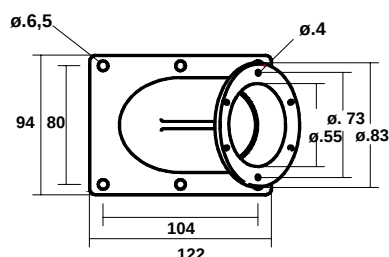
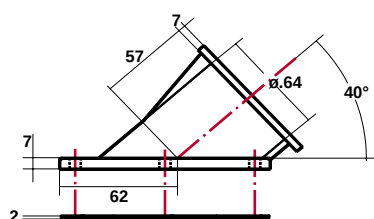
Mod.	AIR FILTER		DIMENSIONS mm						MOUNTING HOLES
	Micron nom.	Air Flow m³/h	A	B	C	D	E	F	
TP3.02606	40 (foam)	42	70	50	83	100	36	73	6
TP3.02607	40 (foam)	42	75	48	83	150	48	73	6



KEY LOCKING AND SCREW FIXING FLANGE

Mod.	AIR FILTER		DIMENSIONS mm						MOUNTING HOLES
	Micron nom.	Air Flow m³/h	A	B	C	D	E	F	
TP2.02604	40 (foam)	42	75	46	83	93	50	73	6
TP2.02605	40 (foam)	42	75	46	83	150	50	73	6

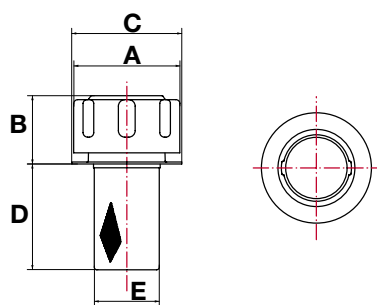
PV9.01746



ANGLED ADAPTOR FOR FILTER CAPS

- Suitable for all 6 holes fixing models.
- Supplied with fixing screws and gasket.

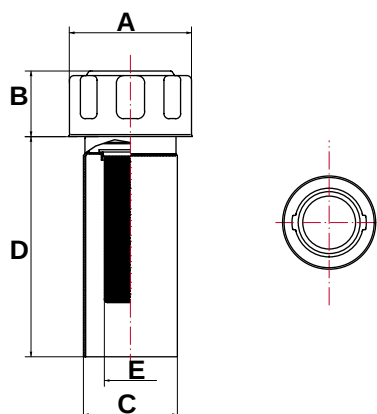
WELDING FIXING



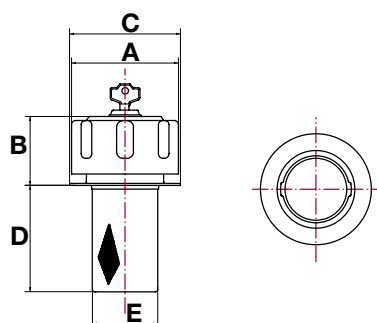
WELDING FIXING FLANGE							
Mod.	AIR FILTER		DIMENSIONS mm				
	Micron nom.	Air Flow m³/h	A	B	C	D	E
TP5.02610	40 (foam)	42	75	48	84	105	38
TP7.02612*	40 (foam)	42	70	50	84	100	36

* Versione TP7 con valvola di pressurizzazione apertura 0,35 bar.

* TP7 version with pressurized valve opening 0,35 bar.

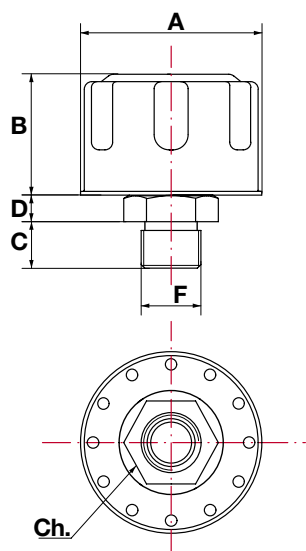


WELDING FIXING FLANGE WITH PIPE							
Mod.	AIR FILTER		DIMENSIONS mm				
	Micron nom.	Air Flow m³/h	A	B	C	D	E
TP5.05502	40 (foam)	42	70	35	64	149	36



KEY LOCKING AND WELDING FIXING FLANGE							
Mod.	AIR FILTER		DIMENSIONS mm				
	Micron nom.	Portata aria m³/h Air Flow m³/h	A	B	C	D	E
TP6.02611	40 (foam)	42	75	48	84	105	38

THREAD CONNECTION



SCREWING CAP								
Mod.	AIR FILTER		DIMENSIONS mm					
	Micron nom.	Air Flow m³/h	BSPP	A	B	C	D	CH
TP8.02613	40 (foam)	15	1/4"	48	30	13	9	22
TP8.05506	40 (foam)	15	1/2"	48	30	13	9	22
TP8.02614	40 (foam)	42	3/4"	76	40	20	8	32
TP8.03842	10 (paper)	42	3/4"	76	40	20	8	32
TP9.02615*	40 (foam)	42	3/4"	70	35	18	15	30
TP9.06736*	10 (paper)	42	3/4"	76	40	20	8	32

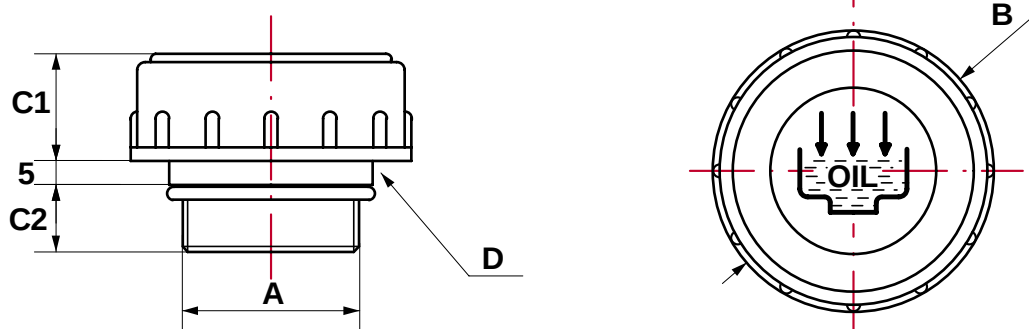
* TP9 version with pressurized valve opening 0,35 bar.

TPL SERIES

Plastic filler caps with inner air breather and filter (replaceable).

TECHNICAL FEATURES:

- Cover and body: in plastic (polyamide 66) / body black color – cover red color .
- Inner air filter: 40 micron nom. sponge (replaceable). Other filter elements available upon request.
- For applications subject to strong oil spray, we recommend to use a sintered bronze air filter element 30 micron nom. (add "B" to code's end).
- Seal: NBR.
- Working temperature: from - 30°C / to + 100°C.



PLASTIC SCREWING CAP

Mod.*	AIR FILTER		DIMENSIONS mm				
	Micron nom.	Air Flow m³/h**	A	B	C1	C2	D
TPL.38	40 (foam replac.)	12	3/8" bspp	36	17	11	23
TPL.12	40 (foam replac.)	13,8	1/2" bspp	41	18	12	28
TPL.34	40 (foam replac.)	21	3/4" bspp	47	17	12	33
TPL.1	40 (foam replac.)	24	1" bspp	52	20	12	38
TPL.114	40 (foam replac.)	36	1"1/4 bspp	63	23	13	49
TPL.112	40 (foam replac.)	36	1"1/2 bspp	63	23	13,5	55
TPL.1615	40 (foam replac.)	13,8	M 16x1,5	36	17	11	23
TPL.1815	40 (foam replac.)	13,8	M 18x1,5	41	17,5	12	28
TPL.2015	40 (foam replac.)	13,8	M 20x1,5	41	17,5	12	28
TPL.2215	40 (foam replac.)	13,8	M 22x1,5	41	17,5	12	28
TPL.70/114	40 (foam replac.)	36	1"1/4 bspp	70	36	14,5	53
TPL.70/112	40 (foam replac.)	36	1"1/2 bspp	70	36	14,5	43

* Add "B" to code's end for air filter in sintered bronze.

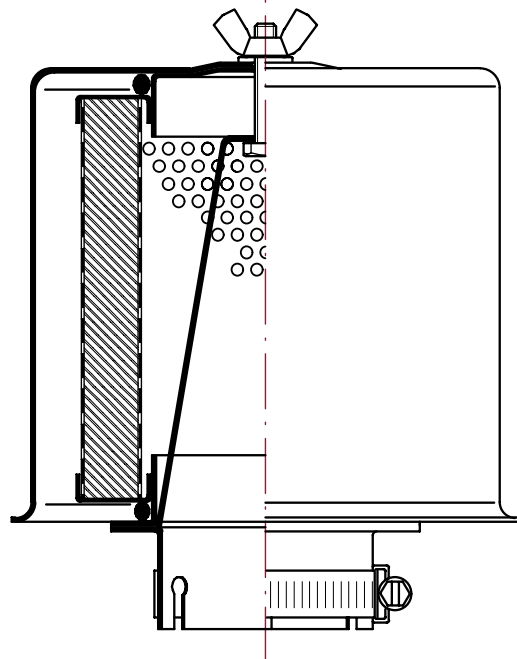
** Flow rates measured with intake pressure 50 mbar

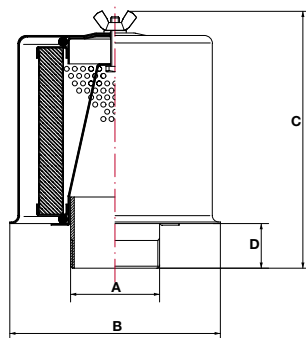
FAS SERIES

EN Suction dry air filters and tank breathers.

TECHNICAL FEATURES:

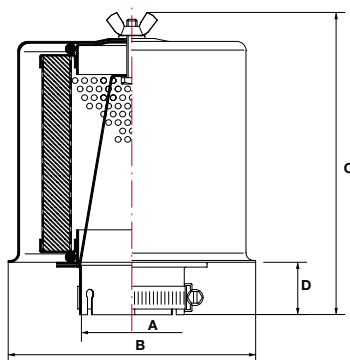
- Filter cover: black painted steel.
- Inner filter structure: black painted steel.
- Sealing cartridge gaskets: NBR.
- Closing screws and clamp (type 2): galvanized steel.
- Inner air cartridge: standard paper 5/7 micron nom. / "X" velvet mesh 40 micron nom. / "P" polyester 20 micron nom. / "I" stainless steel 60 micron nom. Other filter element upon request.





TYPE 1: THREADED CONNECTION

Model* with paper cartridge	Cap. m ³ /h**		Dimensions mm				Spare cartridge			
	Paper	Vel. mesh	A	B	C	D	Paper	Velvet mesh	Polyester	Steel
FAS.04499	10	18	1/4" BSPP	53	42	18	MF9.04701	AS2.03666	MF9.04701P	AS3.05370
FAS.04500	10	18	M12X1.5	53	42	18	MF9.04701	AS2.03666	MF9.04701P	AS3.05370
FAS.04501	10	18	3/8" BSPP	53	42	30	MF9.04701	AS2.03666	MF9.04701P	AS3.05370
FAS.04502	25	40	1/2" BSPP	79	60	30	MF9.04702	AS2.03662	MF9.04702P	AS3.05371
FAS.04503	45	68	3/4" BSPP	104	90	30	MF9.04703	AS2.03681	MF9.04703P	AS3.03644
FAS.04520	45	68	M26X1.5	104	90	30	MF9.04703	AS2.03681	MF9.04703P	AS3.03644
FAS.04504	80	140	1" BSPP	130	100	40	MF9.02658	AS2.03682	MF9.02658P	AS3.03645
FAS.04519	125	170	1 1/4" BSPP	130	100	40	MF9.02658	AS2.03682	MF9.02658P	AS3.03645
FAS.04505	150	200	1 1/2" BSPP	130	130	45	MF9.04705	AS2.03683	MF9.04705P	AS3.03712
FAS.04506	200	320	2" BSPP	130	130	60	MF9.04705	AS2.03683	MF9.04705P	AS3.03712
FAS.04507	300	420	2" BSPP	172	160	50	MF9.02657	AS2.03685	MF9.02657P	AS3.03689
FAS.04508	500	650	2 1/2" BSPP	204	160	60	MF9.04706	AS2.03686	MF9.04706P	AS3.05372
FAS.04509	900	1.200	3" BSPP	290	190	60	MF9.04707	AS2.03687	MF9.04707P	MF9.04707I
FAS.04510	1.500	2.300	4" BSPP	336	240	60	MF9.04708	AS2.03688	MF9.04708P	AS3.05373



TYPE 2: CLAMP CONNECTION

Model* with paper cartridge	Cap. m ³ /h**		Dimensions mm				Spare cartridge			
	Paper	Vel. mesh	A	B	C	D	Paper	Velvet mesh	Polyester	Steel
FAS.04511	45	68	20	104	90	20	MF9.04703	AS2.03681	MF9.04703P	AS3.03644
FAS.04512	120	140	40	130	100	20	MF9.02658	AS2.03682	MF9.02658P	AS3.03645
FAS.04513	200	200	52	130	134	23	MF9.04705	AS2.03683	MF9.04705P	AS3.03712
FAS.04514	280	420	60	176	150	20	MF9.02657	AS2.03685	MF9.02657P	AS3.03689
FAS.04515	500	420	80	204	155	25	MF9.04706	AS2.03686	MF9.04706P	AS3.05372
FAS.04516	520	650	90	204	155	25	MF9.04706	AS2.03686	MF9.04706P	AS3.05372
FAS.04517	900	1.200	100	290	185	25	MF9.04707	AS2.03687	MF9.04707P	MF9.04707I
FAS.04518	1.500	2.300	140	336	240	25	MF9.04708	AS2.03688	MF9.04708P	AS3.05373

* VELVET MESH CARTRIDGE: ADD "X" TO CODE'S END - POLYESTER CARTRIDGE: ADD "P" TO CODE'S END - ST. STEEL CARTRIDGE: ADD "I" TO CODE'S END

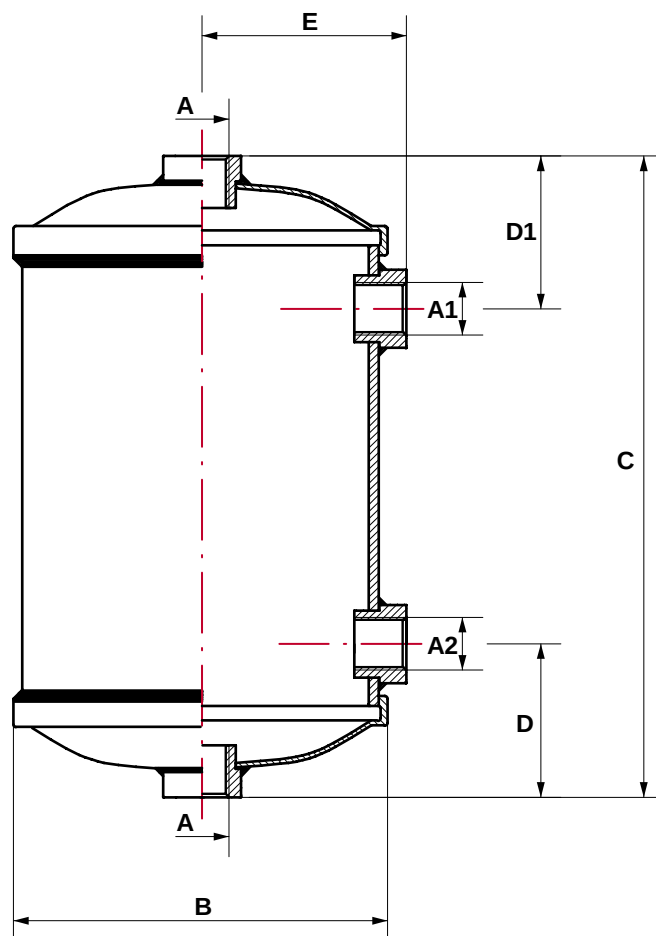
** CAPACITY MEASURED WITH 200 mm H₂O PRESSURE LOSS

PV SERIES

Compensation tanks and barrels

TECHNICAL FEATURES:

- Construction material: black dust painted steel.
- Leakage control test: 100% on all production.
- Special productions made by drawing or customer technical specifications are available upon request.



	DIMENSIONS mm								
Mod.	A	A1	A2	B	C	D	D1	E	LITERS
PV9.05511	3/8" bspp	-	-	Ø 62	90	-	-	-	0,15
PV9.03894	3/8" bspp	1/4" bspp	-	Ø 79	118	-	40	48	0,3
PV9.03887	3/8" bspp	-	-	Ø 79	118	-	-	-	0,3
PV9.03888*	1/2" bspp	-	-	Ø 105	150	-	-	-	0,9
PV9.03885	3/8" bspp	3/8" bspp	3/8" bspp	Ø 105	206	53	53	60	1,2
PV9.01731M	3/8" bspp	3/8" bspp	3/8" bspp	Ø 105	243	66	66	60	1,5
PV9.05509**	3/4" bspp	3/8" bspp	1"1/4 bspp	Ø 105	243	66	153	60	1,5
PV9.05569	3/8" bspp	3/8" bspp	3/8" bspp	Ø 105	380	55	55	60	2

* with fixing bracket

** Lateral ring nuts not on same axis

