

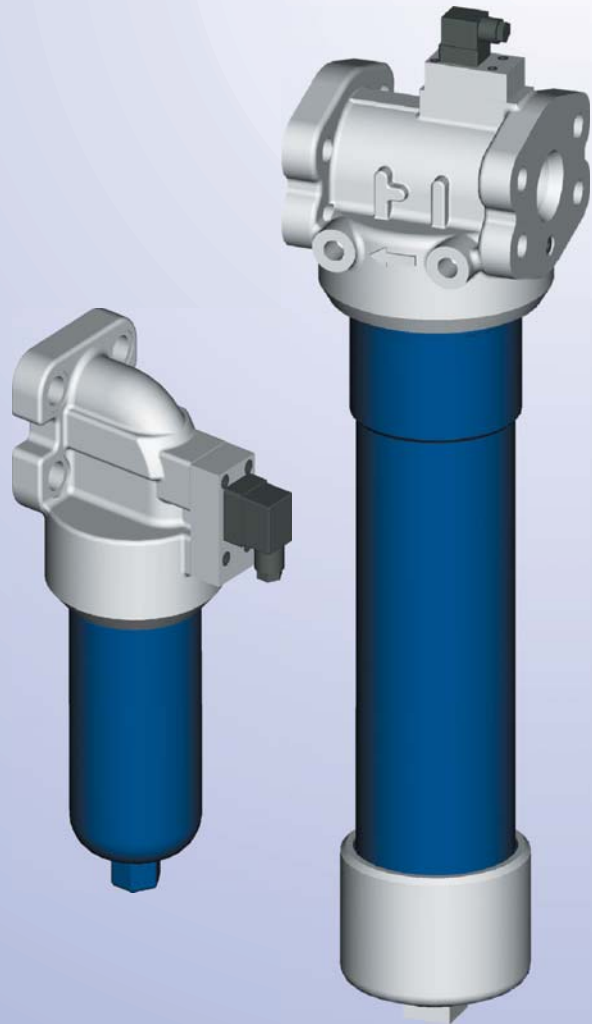


Filters . Accumulators

High Pressure Inline Filters

250 / 450 LE and FE 0005 - 0145

250 / 450 LEN and FEN 0040 - 1000



Filters for inline installation

Flange mounted filters

Compact modular design

Optimised flow characteristics

Low pressure drop

High efficient filter media

*Operating pressure : 250/450 bar
Connection up to SAE 2 ½"*



High Pressure Inline Filters

250/450 LE 0005-0145
250/450 LEN 0040-1000
250/450 FE 0005-0145
250/450 FEN 0040-1000

Operating pressure 250/450 bar
Operating temperature - 10° C to + 100° C
Connection up to SAE 2 ½"

Application

Filtration of liquids and lubricants at high pressure.

Filtration of liquids and gases.

Filter series LE 0005-0145 (LEN 0040-1000) are intended for installation in pipelines.

Filter series FE 0005-0145 (FEN 0040-1000) are used for manifold installation and are to protect system components from contamination.

Design

Filter head with inlet, outlet and filter element locator. Filter bowl is unscrewed downwards. Material: as per spare parts list in this brochure.

Filter Element

Pleated design with optimised pleat density and various filter media. The filter element is the most important component of the filter in view of prolonged life and wear protection of the system.

Oil cleanliness, the initial pressure drop and the dirt holding capacity are the most important criteria for selection.

For further detailed information please refer our "Filter Elements" brochure.

Accessories

Maintenance Indicators

For monitoring the filter element's contamination status, visual and visual / electrical indicators, with one or two switching points are available.

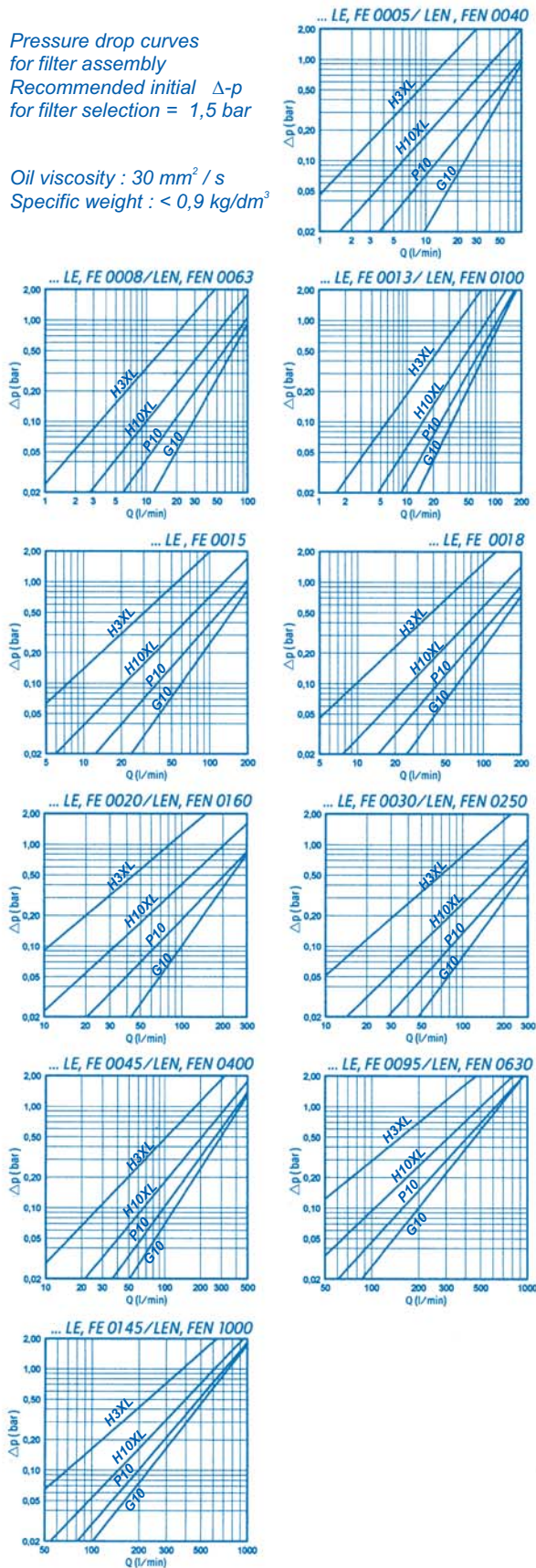
Bypass valve

To protect the filter element during start up and over pressurisation due to clogging.

Performance Characteristics

Pressure drop curves for filter assembly
Recommended initial Δp for filter selection = 1,5 bar

Oil viscosity : 30 mm² / s
Specific weight : < 0,9 kg/dm³



Ordering Information

Special designs available on request.

Filter type	Magnet	Maintenance Indicator	Connection	Material
LE = Inline Filter with EPE Standard filter element LEN = Inline Filter with filter element according to DIN 24550 FE = Flange Mounted Filter with EPE Standard Element FEN = Flange Mounted Filter with filter element According to DIN 24550	0 = without	0 = without LE 0005-0145 and FE-0005-0145 LEN/FEN 0040-1000 A5.0 = visual maintenance indicator B5.0 = combined visual/electrical indicator D5.0 = combined visual/electrical indicator with signal lights & 2 switch points Standard switch pressure: 5.0 Bar	LE/LEN Inlet/outlet R0 = pipe thread S0 = SAE flange FE/FEN Inlet/outlet 00 = standard	0 = standard

Filter Assembly → **450** **LE** **0013** **H10XL** - **A** **00** - **0** **0** **D5.0** - **R0** **P** **0** **0**

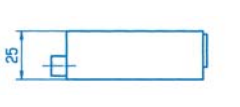
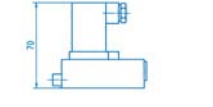
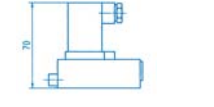
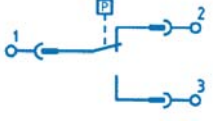
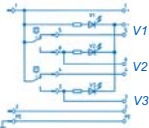
Seal Kit → **D 450** **LE** **0013** - **D** - **R0** **P** **0**

Pressure	Nominal Size	Filter Media & Filtration Grade	Diff. Pressure	Element Model	Bypass Valve	Gasket	Addl. Info
250 bar 450 bar	LE/FE... 0005 0008 0013 0015 0018 0020 0030 0045 0095 0145	Nominal filtration grade in µm G= stainless steel wire mesh, cleanable G10 G25 G40 G60 G80 G100 Vs=nonwoven media, not cleanable VS 25 VS 40 VS 60 P= paper, not cleanable P5 P10 P25	Max. allowed differential pressure of the filter element A = 30 Bar B = 330 Bar	0.. = Standard adhesive T=100°C E.. = Special adhesive T=160°C	LE/LEN 0 = without 9 = 7.0 Bar FE/FEN 0 = without	P = Buna-N V = Viton E = Ethylene-Propylene N = Neoprene	0 = without 5 = Silicon free Z = Inspection certificate
Filter Element Type: 2.	LEN/FEN... 0040 0063 0100 0160 0250 0400 0630 1000 * For FE only	Absolute filter grade (ISO16889) in µm H..XL= micro glass-fibre, not cleanable H1XL H3XL H6XL H10XL H20XL AS= micro glass-fibre, water absorbing, not cleanable AS1 AS3 AS6 AS10 AS20		..0 = Standard material ..Z = Zinc free	For Filter Element always 0		- = without 5 = Silicon free Z = Inspection certificate

Filter Element → **2.** **0013** **H10XL** - **A** **00** - **0** - **P**

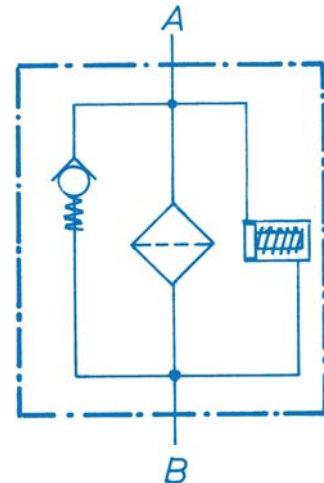
Maintenance Indicator

Maintenance indicators are used for monitoring the filter element's contamination status. They are available as visual or visual/electrical indicators. For technical data refer our brochure "Maintenance Indicators"

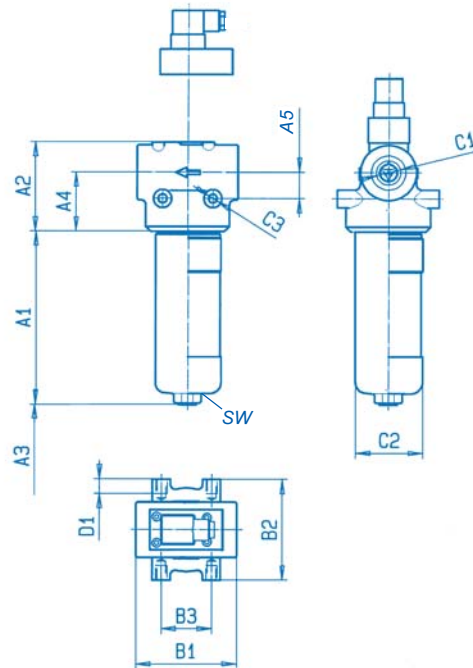
250/450 LE 0005-0145, 250/450 FE 0005-0145 and 250/450 LEN/FEN 0040/1000		
		
A...visual	B...visual/electrical	D....visual/electrical with three light indicators 24V and two switching points
Ordering information A5,0=F5,0 A0 00 00P*	Ordering information B5,0=F5,0 GW02 00P*	Ordering information D5,0=R5,0 GW09 ZOP*
	Switching symbol 	Switching symbol 
		V1 green LED in use V2 red LED, 100% clogging V3 yellow LED, 75% clogging

*P=Buna N; V= Viton, E= Ethylene-Propylene, N= Neoprene also possible

Filter Switching Symbol



Dimensions



Filter housing for filter elements according to EPE standard

Type	Capacity in l	Weight in kg ¹⁾	A1	A2	A3 ²⁾	A4	A5	B1	B2	B3	C1 Connection RO/SO	C2		C3	D1	SW
												250	450			
250/450 LE 0005	0.2	4.0	101	89	110	59	26	100	100	50	G ¾	Ø 64	Ø 67	M10	13	24
250/450 LE 0008	0.3	4.5	161													
250/450 LE 0013	0.5	5.4	251													
250/450 LE 0015	0.9	10.3	188	125	120	82	36	140	140	80	G 1	Ø 92		M12	20	32
250/450 LE 0018	1.1	12.6	239													
250/450 LE 0020	1.3	16.8	167													
250/450 LE 0030	1.9	19.5	257	142	120	87	37	160	156	80	G 1-¼	Ø 114		M16	20	32
250/450 LE 0045	3.0	23.8	407													
450 LE 0095	4.5	49.5	415	187	120	110	42	200	200	100	SAE 2" 6000 psi	-	Ø 140	M20	27	41
450 LE 0145	6.2	64.6	638										Ø 156			

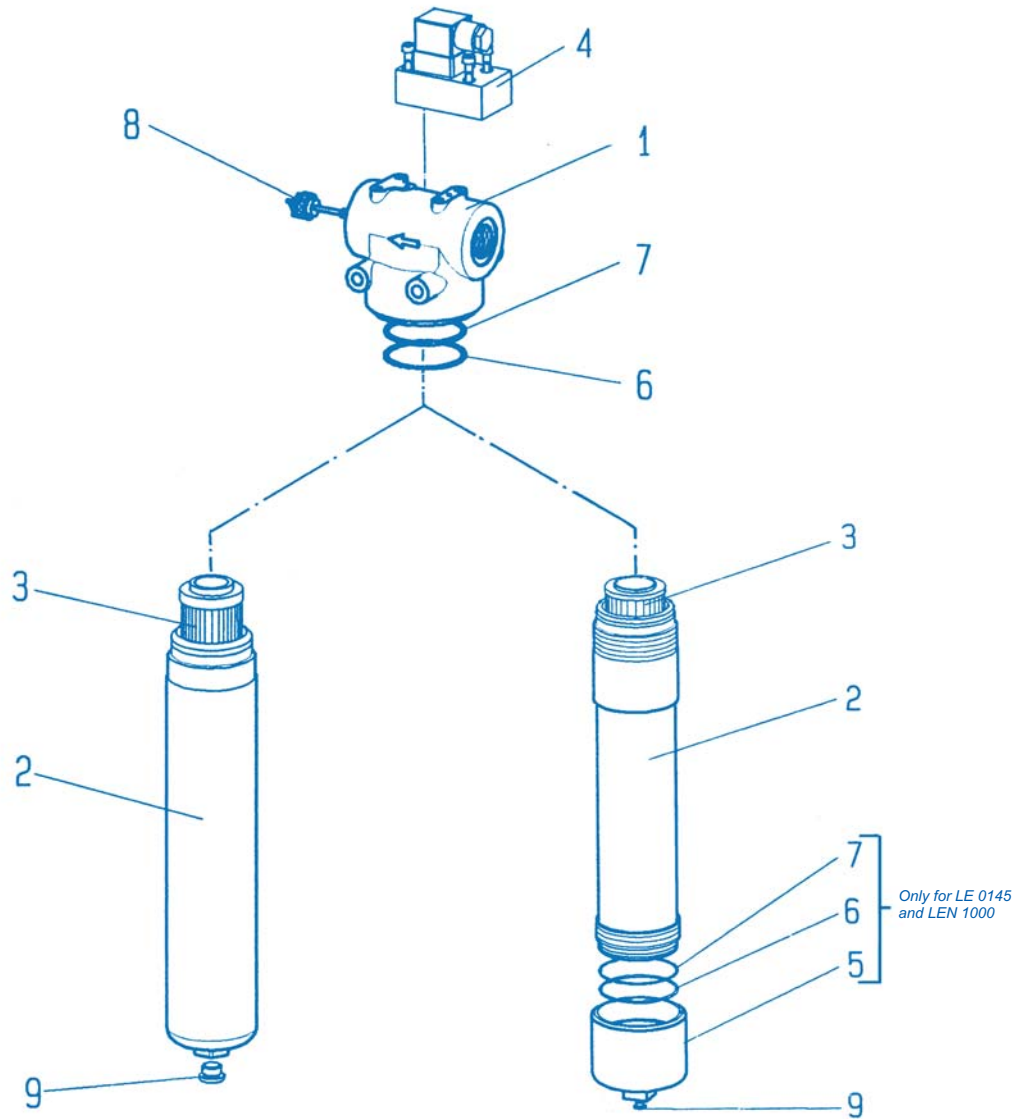
Filter housing for filter elements according to DIN 24550

Type	Capacity in l	Weight in kg ¹⁾	A1	A2	A3 ²⁾	A4	A5	B1	B2	B3	C1 Connection RO/SO	C2	C3	D1	SW	
250/450 LEN 0040	0.2	4.0	101	89	110	59	26	100	100	50	G ¾	Ø 67		M10	13	24
250/450 LEN 0063	0.3	4.5	161													
250/450 LEN 0100	0.5	5.4	251													
250/450 LEN 0160	1.3	16.8	167	142	120	87	37	160	156	80	G1-¼	Ø 114		M16	20	32
250/450 LEN 0250	1.9	19.5	257													
250/450 LEN 0400	3.0	23.8	407													
450 LEN 0630	4.5	49.5	415	187	120	110	42	200	200	100	SAE 2" 6000 psi	Ø 140		M20	27	41
450 LEN 1000	6.2	64.6	638									Ø 156				

1) = weight including standard filter element and maintenance indicator
2) = servicing height for filter element replacement

All dimensions are in mm

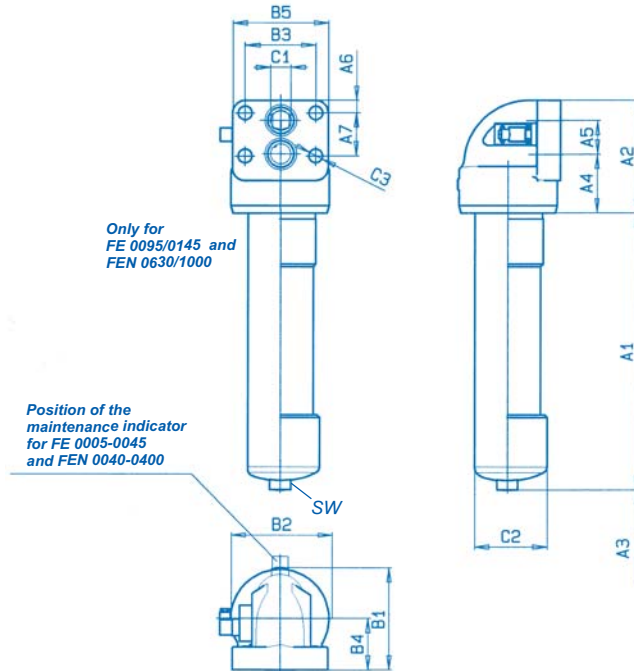
Spare Parts



		Size LE Size LEN		0005 0040	0008 0063	0013 0100	0015	0018	0020 0160	0030 0250	0045 0400	0095 0630	0145 1000	
<i>Part</i>	<i>Qty.</i>	<i>Designation</i>	<i>Material</i>											
1	1	Filter head	GGG50	Please indicate ordering information "Filter Assembly"										
2	1	Filter bowl	Carbon steel/24CrMo5	Please indicate ordering information "Filter Assembly"										
3	1	Filter element	Various	Please indicate ordering information "Filter Element"										
3.1	1	O-ring	Buna N/Viton	Please indicate ordering information "Seal Kit"										
4	1	Maintenance indicator	Various	Refer section "Maintenance Indicator"										
5	1	Bowl	42CrMo4	----- Pt No.4374										
6	2	Supporting ring	Teflon	Please indicate ordering information "Seal Kit"										
7	2	O-ring	Buna N/Viton	Please indicate ordering information "Seal Kit"										
8	1	Bypass valve*	Various	Part No.3054		Part No.3058		Part No.5167						
9	1	Plug	Steel	Part No.778										

*Please indicate opening pressure

Dimensions



Filter housing for filter elements according to EPE standard

Type	Capacity in l	Weight in kg ¹⁾	A1	A2	A3 ²⁾	A4	A5	A6	A7	B1	B2	B3	B4	B5	C1	C2		C3	SW
																250	450		
250/450 FE 0005	0.2	4.6	98																
250/450 FE 0008	0.3	5.9	161	112	110	56	28	12	45	95	88	57	48	80	Ø14	Ø64	Ø67	Ø14	24
250/450 FE 0013	0.5	6.1	251																
250/450 FE 0015	0.9	11.0	188																
250/450 FE 0018	1.1	12.7	239	150	130	80	35	20	55	130	125	72	65	110	Ø18	Ø92	Ø18		
250/450 FE 0020	1.3	16.8	167																32
250/450 FE 0030	1.9	19.2	257	160		79.5	52	22.5	60	156	150	95	80	140	Ø32	Ø114	Ø23		
250/450 FE 0045	3.0	24.1	407		150														
450 FE 0095	4.5	47.5	421	225		117	67	25	86	199	195	140	99	190	Ø50	-	Ø140	Ø27	41
450 FE 0145	6.2	67.5	641														Ø156		

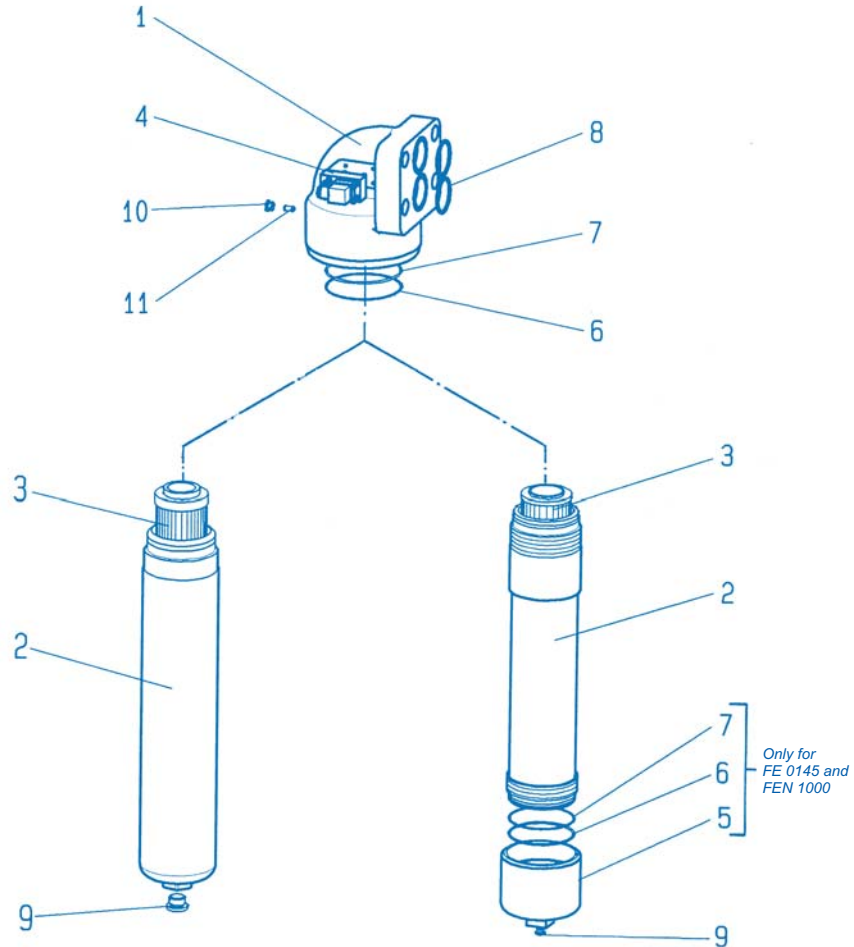
Filter housing for filter elements according to DIN 24550

Type	Capacity in l	Weight in kg ¹⁾	A1	A2	A3 ²⁾	A4	A5	A6	A7	B1	B2	B3	B4	B5	C1	C2	C3	SW	
																			250/450 FEN 0040
250/450 FEN 0063	0.3	5.9	161	112	110	56	28	12	45	95	88	57	48	80	Ø14	Ø67	Ø14	24	
250/450 FEN 0100	0.5	6.1	251																
250/450 FEN 0160	1.3	16.8	167																
250/450 FEN 0250	1.9	19.2	257	160		79.5	52	22.5	60	156	150	95	80	140	Ø32	Ø114	Ø23	32	
250/450 FEN 0400	3.0	24.1	407		150														
450 FEN 0630	4.5	47.5	421	225		117	67	25	86	199	195	140	99	190	Ø50	Ø140	Ø27	41	
450 FEN 1000	6.2	67.5	641													Ø156			

1) = weight including standard filter element and maintenance indicator
2) = servicing height for filter element replacement

All dimensions are in mm

Spare Parts



		Size FE Size FEN		0005 0040	0008 0063	0013 0100	0015	0018	0020 0160	0030 0250	0045 0400	0095 0630	0145 1000
Part	Qty.	Designation	Material										
1	1	Filter head	GGG50	Please indicate ordering information "Filter Assembly"									
2	1	Filter bowl	Carbon Steel/24CrMo5	Please indicate ordering information "Filter Assembly"									
3	1	Filter element	Various	Please indicate ordering information "Filter Element"									
3.1	1	O-ring	Buna N/Viton	Please indicate ordering information "Seal Kit"									
4	1	Maintenance indicator	Various	Refer section "Maintenance indicator"									
5	1	Bowl	42CrMo4	----- Pt No.4374									
6	2	Supporting ring	Teflon	Please indicate ordering information "Seal Kit"									
7	2	O-ring	Buna N/Viton	Please indicate ordering information "Seal Kit"									
8	2	O-ring	Buna N/Viton	Please indicate ordering information "Seal Kit"									
9	1	Plug	Steel	Part No.778									
10	1	Plug	Steel	----- Pt No.771									
11	1	Set screw	5.8	----- Pt No.4371									



Filters . Accumulators

Installation, Starting and Maintenance

Installation

Verify operating pressure with name plate information.

Mount the filter assembly using mounting device on the head (Part 1) considering flow direction (direction arrows) and servicing height required for cleaning / replacing elements (part 3).

Remove dust protection plugs from filter inlet and outlet, screw filter in pipeline without tension stress.

Connection of electrical maintenance indicator

Connect indicator using the three wired cable.

Please verify electrical ratings on the indicators name plate.

Connection Settings :

1. Normally closed 1 (black & white) + 3 (blue)
2. Normally open 1 (black & white) + 2 (brown)
3. Changer 1 (black & white) + 2 (brown) + 3 (blue)

Starting Operation

Switch on system pump.

Maintenance

The filter element is clogged and needs to be replaced or cleaned if the visual indicator's (part 4) red pin reaches its final position and / or the electrical switch is activated.

Filter element service

Switch off pump and depressurise system.

Unscrew filter bowl (part 2) or bottom (pos 5) of filter bowl (part 2, only for LE / FE 0145 and LEN / FEN 1000) and remove filter element (part 3), turning slightly off from its locator in the filter head (Part 1).

Check filter bowl inside and clean if necessary.

Replace filter element H..-XL and P....

The filter element with G..media is cleanable. The efficiency of the cleaning process depends on the characteristics of contamination and the final pressure drop prior to servicing / cleaning the element. If the differential pressure after the filter element's cleaning process exceeds more than 50% of the pre service value the G,. element also needs to be replaced.

Install cleaned or replaced filter element by slightly turning it back on its locator. Check o- ring (part 7) on filter bowl, replace in case of damage or wear. Screw filter bowl (part 2) and tighten it at hexagon bolt using a suitable tool.

Operate filter as described above.

Technical Specifications are subject to change

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