



FRG

RETURN FILTERS

DESCRIPTION

Tank insert return line filter, inside to outside filtration

MATERIALS

Diffusor: Zinc plated steel
Element support: Polyamide
(aluminum alloy for FRG3+ & 4+)
Magnetic core: Synthesized magnetic material
Seals: NBR Nitrile
FKM Fluoroelastomer on request

PRESSURE

Collapse, differential for the filter element (ISO 2941):
1 MPa (10 bar)

BYPASS VALVE

Setting: 150 kPa (1,5 bar) \pm 10%

FLOW RATE

Qmax 2400 l/min

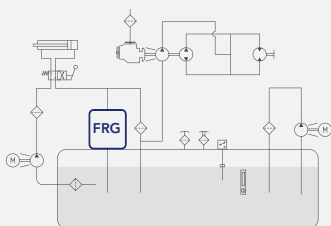
WORKING TEMPERATURE

From -25° to +110° C

COMPATIBILITY (ISO 2943)

Full with fluids: HH-HL-HM-HV-HTG
(according to ISO 6743/4)
For fluids different than the above mentioned,
please contact our Customer Service.

HYDRAULIC DIAGRAM



Is this datasheet the latest release? Please check on our website

FRG

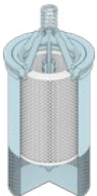



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ORDERING AND OPTION CHART

FRG	COMPLETE FILTER FAMILY															FILTER ELEMENT FAMILY	E	R	F	
	SIZE & LENGTH	11	12	13	14	22	23	24	31	32	33	34	41	42	43	44	SIZE & LENGTH			
	T PORT TYPE																			
	T = in the tank	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	T	
00	PORT SIZE																			
	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	
	F BYPASS VALVE																			
	F = 150 kPa (1,5 bar)	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	
	SEALS															SEALS				
	N = NBR Nitrile	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
	F = FKM Fluoroelastomer	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	
	FormulaUFI MEDIA															FormulaUFI MEDIA				
	FA = FormulaUFI.MICRON 5 $\mu\text{m}_{(e)}$ $\beta > 1.000$	FA	FA	FA	FA	FA	FA	FA	FA	FA	FA	FA	FA	FA	FA	FA	FA	FA	FA	
	FB = FormulaUFI.MICRON 7 $\mu\text{m}_{(e)}$ $\beta > 1.000$	FB	FB	FB	FB	FB	FB	FB	FB	FB	FB	FB	FB	FB	FB	FB	FB	FB	FB	
	FC = FormulaUFI.MICRON 12 $\mu\text{m}_{(e)}$ $\beta > 1.000$	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	FC	
	FD = FormulaUFI.MICRON 21 $\mu\text{m}_{(e)}$ $\beta > 1.000$	FD	FD	FD	FD	FD	FD	FD	FD	FD	FD	FD	FD	FD	FD	FD	FD	FD	FD	
	CC = FormulaUFI.CELL 10 μm $\beta > 2$	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	CC	
	ME = FormulaUFI.WEB 60 μm	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	ME	
XX	CLOGGING INDICATOR																			
	XX = not applicable	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	XX	
	ACCESSORIES																			
	W = without diffusor	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
	F = with diffusor	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	
X	ACCESSORIES																			
	W = without magnetic core	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	W	
	M = with magnetic core	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	

SPARE PARTS

FILTER HOUSING	FILTER ELEMENT	ACCESSORIES	
			
BRG T00F XX	ERF		



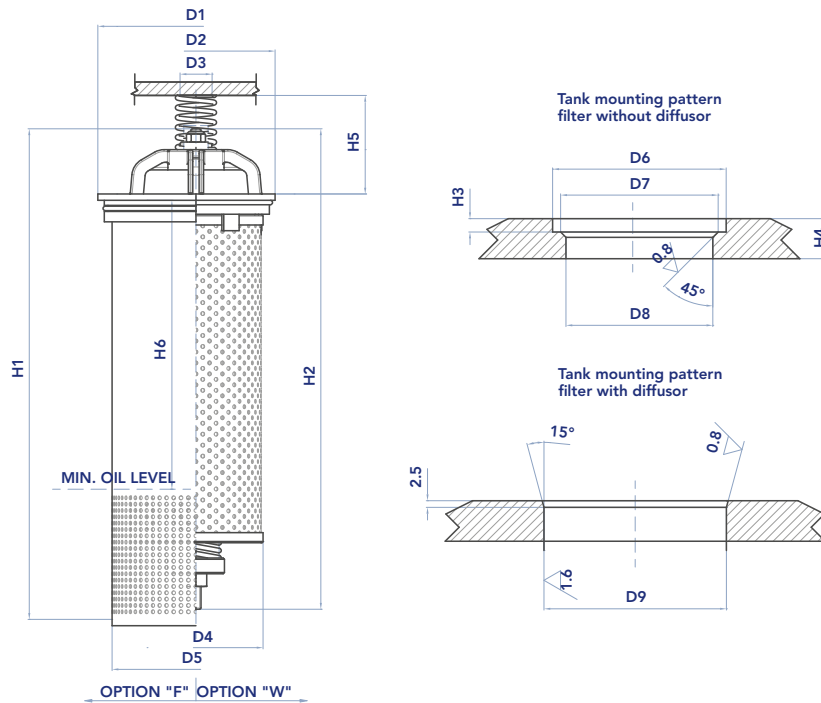
SPARE SEAL KIT

	NBR	FKM
FRG11-12-13-14	521.0063.2	521.0067.2
FRG22-23-24	521.0064.2	521.0068.2
FRG31-32-33-34	521.0065.2	521.0069.2
FRG41-42-43-44	521.0066.2	521.0070.2

SPARE SPRING

FRG11-12-13-14	008.0282.1
FRG22-23-24	008.0269.1
FRG31-32-33-34	008.0275.1
FRG41-42-43-44	008.0283.1

INSTALLATION DRAWING



FILTER HOUSING

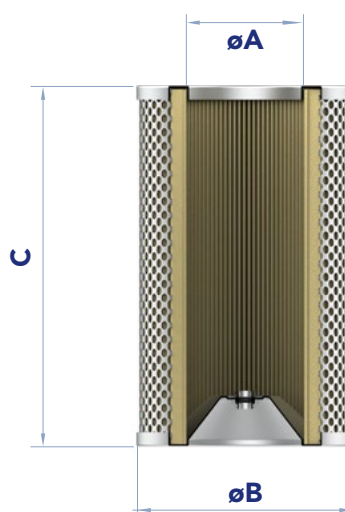
	D1	D2	D3	D4	D5	D6	D7	D8	D9	H1	H2	H3	H4	H5	H6	KG opz F	KG opz W
FRG11	120	87	20	72	89	88	82,5	76	110	245	180	4	12	45	118	1,25	0,70
FRG12	120	87	20	72	89	88	82,5	76	110	245	224	4	12	45	118	1,45	0,90
FRG13	120	87	20	72	89	88	82,5	76	110	295	274	4	12	45	170	1,65	1,00
FRG14	120	87	20	72	89	88	82,5	76	110	395	374	4	12	45	270	2,10	1,30
FRG22	155	125,5	25	106	132	126	123,5	117	145	312	305	5	15	78	150	2,75	1,65
FRG23	155	125,5	25	106	132	126	123,5	117	145	382	375	5	15	78	220	3,20	1,90
FRG24	155	125,5	25	106	132	126	123,5	117	145	587	580	5	15	78	425	4,40	2,50
FRG31	185	150	25	126	165	151	149	139	178	365	351	5	18	100	190	3,85	2,25
FRG32	185	150	25	126	165	151	149	139	178	455	431	5	18	100	270	4,70	2,80
FRG33	185	150	25	126	165	151	149	139	178	555	531	5	18	100	370	5,60	3,20
FRG34	185	150	25	126	165	151	149	139	178	645	619	5	18	100	460	6,20	3,50
FRG41	260	230	40	203	235	231	227	217	250,5	530,5	515	6	20	140	205	10,20	7,20
FRG42	260	230	40	203	235	231	227	217	250,5	745,5	730	6	20	140	420	14,00	9,50
FRG43	260	230	40	203	235	231	227	217	250,5	1025,5	1010	6	20	140	700	20,00	14,00
FRG44	260	230	40	203	235	231	227	217	250,5	1290,5	1275	6	20	140	965	26,00	19,00

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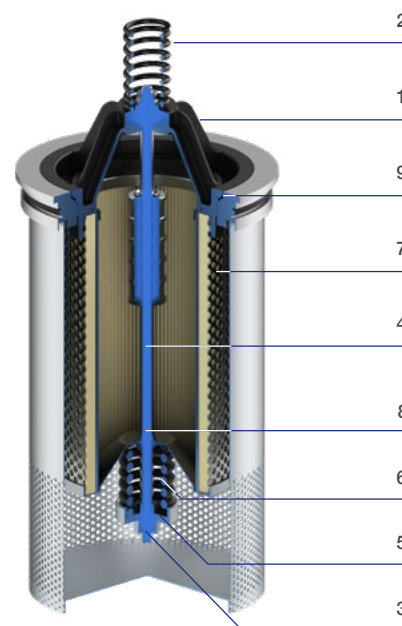
FILTER ELEMENT

	A	B	C	Kg	AREA (cm ²)		
					Media F+	MediaH+	Media C+
ERF11	45	72	106	0,25	770	1.250	460
ERF12	45	72	150	0,35	1.170	1.800	650
ERF13	45	72	200	0,45	1.570	2.450	880
ERF14	45	72	300	0,60	2.370	3.600	1.320
ERF22	72	106	190	0,75	3.900	4.600	1.500
ERF23	72	106	260	1,00	5.400	6.400	2.050
ERF24	72	106	465	1,50	9.700	11.800	3.670
ERF31	92	126	210	1,15	5.500	6.650	2.250
ERF32	92	126	290	1,50	7.700	9.200	3.150
ERF33	92	126	390	1,90	10.400	12.400	4.250
ERF34	92	126	480	2,20	12.800	15.400	5.250
ERF41	157	203	330	3,90	17.900	22.100	6.400
ERF42	157	203	545	5,20	30.000	37.000	10.800
ERF43	157	203	825	9,00	45.200	55.500	16.200
ERF44	157	203	1090	13,00	60.000	74.000	21.800



MAINTENANCE

- 1) Stop the system and verify there is no pressure in the filter.
- 2) Remove the complete filter by upper handle (1) and if necessary remove the spring (2). Remove the cover (2).
- 3) Unscrew the nut (3) from tie-rod (4) and remove the spring holder (5) and the spring (6).
- 4) Remove the dirty filter element (7).
N.B. The exhausted filter elements and the oil dirty filter parts are classified "Dangerous waste material" and must be disposed of according to the local laws, by authorized Companies.
- 5) Check the filter element part number on the filter label or in the ordering and option chart. Use only original spare parts.
- 6) Lubricate the element O-ring gasket (8) with oil.
- 7) Insert the clean element on the tie-rod (4) with care.
- 8) Assembly the spring (6), spring holder (5) and tighten the nut (3) on the tie-rod (4) until it stops, with a tightening torque of 15 Nm $\pm 3/0$.
- 9) Check the handle O-ring (9) condition and lubricate with oil. If damaged, check the catalogue or contact the customer care service.
- 10) Insert the complete filter into its seat.



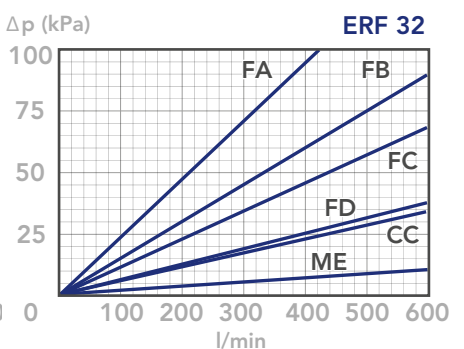
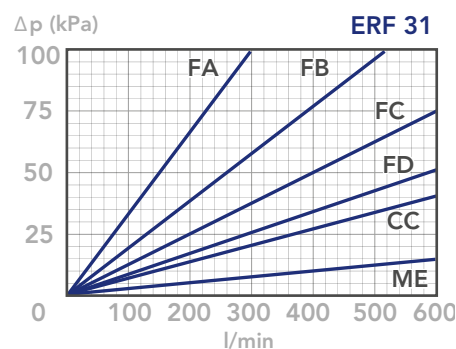
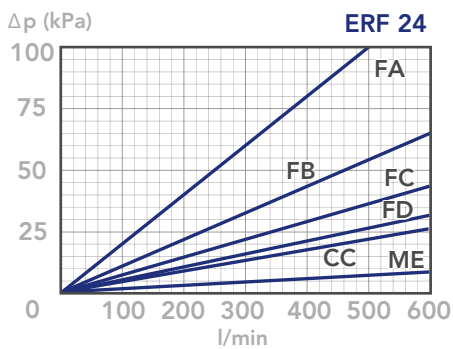
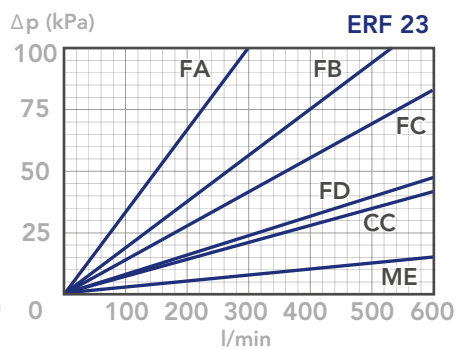
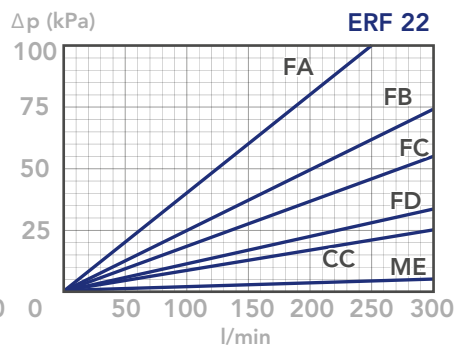
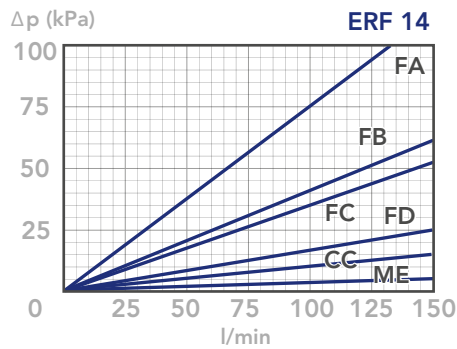
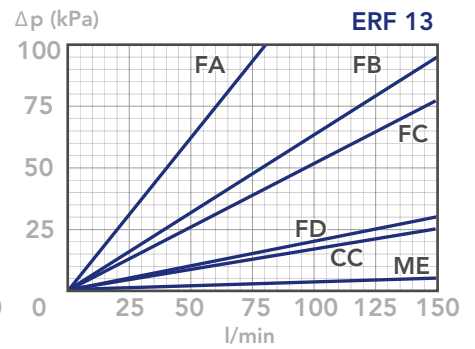
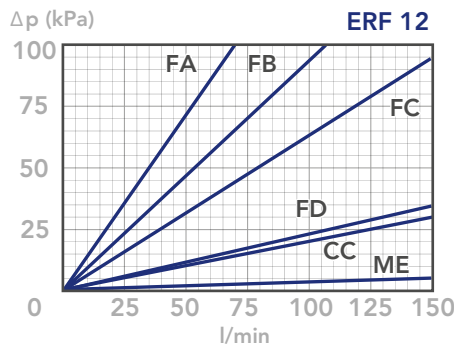
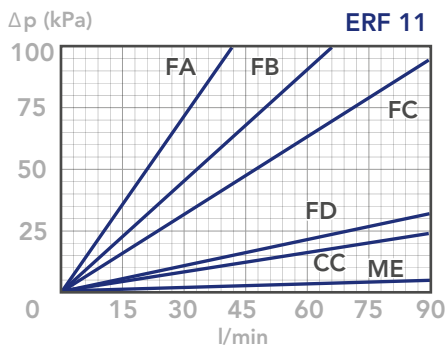


PRESSURE DROP CURVES (Δp)

The “Assembly Pressure Drop (Δp)” is obtained by adding the pressure drop values of the Filter Housing and of the Clean Filter Element corresponding to the considered Flow

Rate and it must be lower than 50 kPa (0,5 bar) and should never exceed 1/3 of the bypass valve setting.

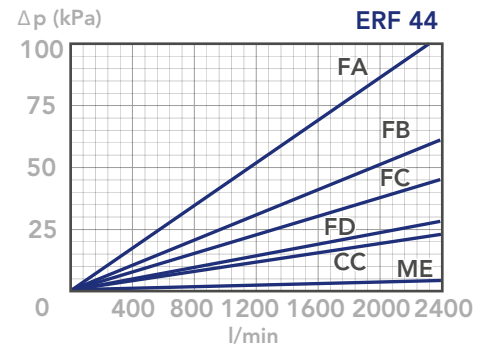
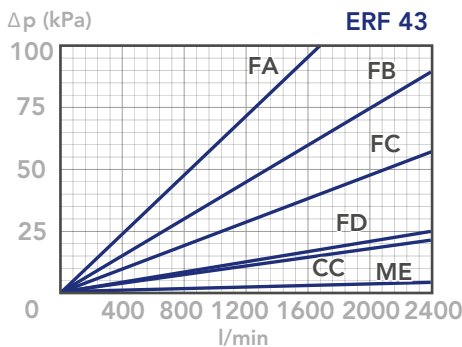
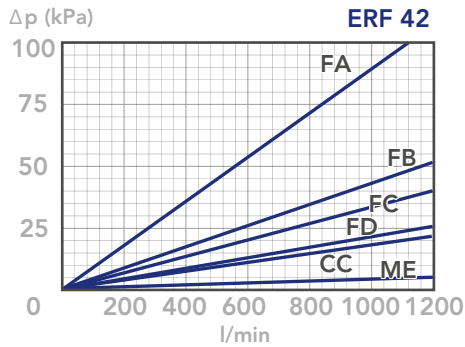
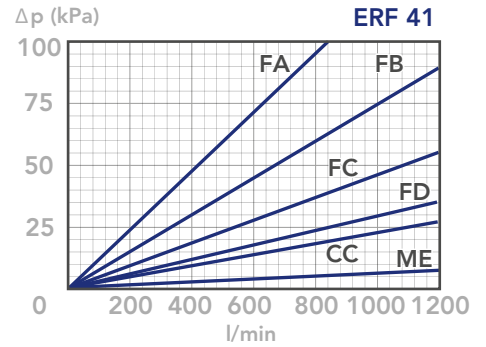
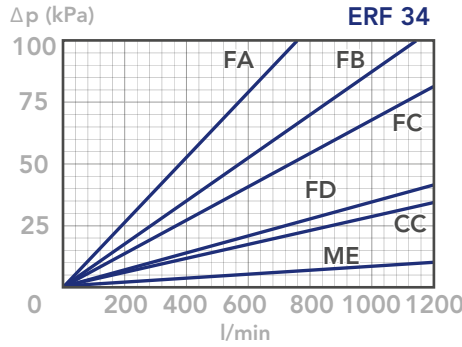
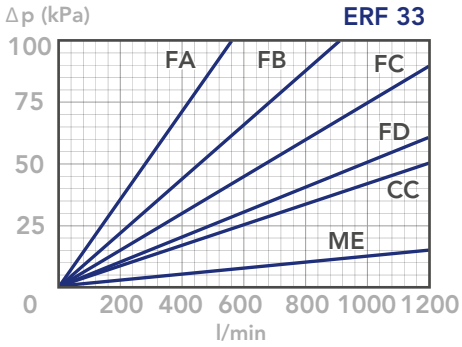
CLEAN FILTER ELEMENT PRESSURE DROP WITH F+, CC AND ME MEDIA
(depending both on the internal diameter of the element and on the filter media)



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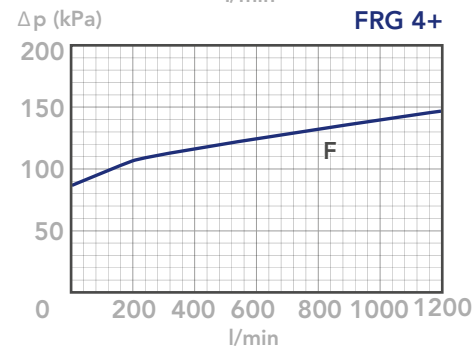
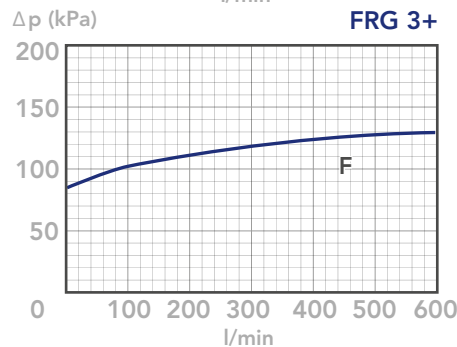
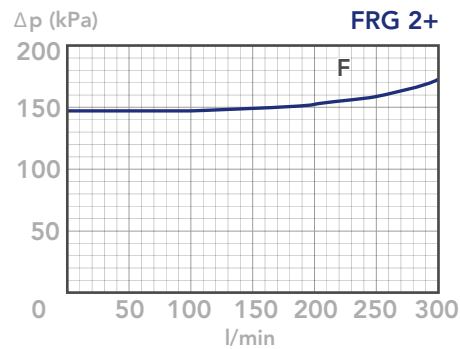
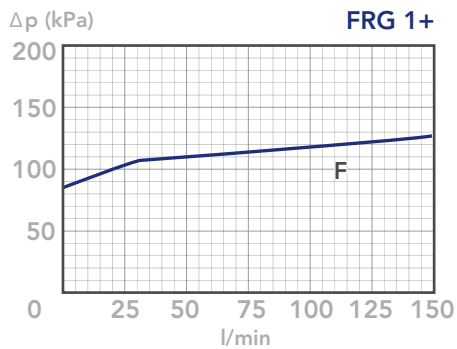
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CLEAN FILTER ELEMENT PRESSURE DROP WITH F+, CC AND ME MEDIA
(depending both on the internal diameter of the element and on the filter media)



BYPASS VALVE PRESSURE DROP

When selecting the filter size, these curves must be taken into account if it is foreseen that any flow peak is to be absorbed by the bypass valve, it also must be of proper configuration to avoid pressure peaks. The valve pressure drop is directly proportional to fluid specific gravity.



N.B.

All the curves have been obtained with mineral oil having a kinematic viscosity 30 cSt and specific gravity 0,86 Kg/dm³; for fluids with different features, please consider the factors described in the first part of this catalogue. All the curves

are obtained from test done at the UFI FILTERS HYDRAULICS Laboratory, according to the specification ISO 3968. In case of discrepancy, please check the contamination level, viscosity and features of the fluid in use.