



# FRF

## RETURN FILTERS



### DESCRIPTION

In-out tank top return line filter

### MATERIALS

Head and cover: Aluminum alloy  
Diffusor: Zinc plated steel  
Element support: Polyamide (aluminum alloy for FRF3+ and FRF4+)  
Magnetic core: Synthesized magnetic material (phosphated steel for FRF1X)  
Seals: NBR Nitrile (FKM Fluoroelastomer on request)  
Indicator housing: Brass

### PRESSURE

Max. working: 1 MPa (10 bar)  
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 2200 l/min

### WORKING TEMPERATURE

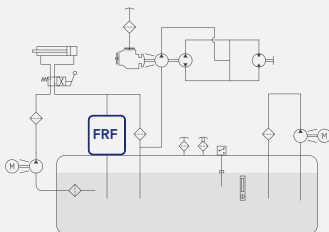
From -25° to +110° C

### 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

# FRF1

## RETURN FILTERS

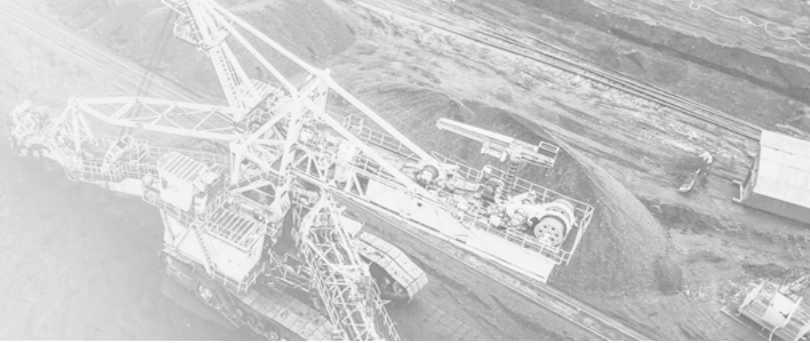


### ORDERING AND OPTION CHART

F	R	F	COMPLETE FILTER FAMILY						FILTER ELEMENT FAMILY	E	R	F
			<b>SIZE &amp; LENGTH</b>	11	12	13	14	1X	<b>SIZE &amp; LENGTH</b>			
			<b>PORT TYPE</b>									
			B = BSP thread	B	B	B	B	B				
			A = BSP thread, double port (only A08)	A	A	A	A	A				
			N = NPT thread	N	N	N	N	N				
			S = SAE thread	S	S	S	S	S				
			<b>PORT SIZE</b>									
			06 = 3/4"	06	06	06	06	06				
			08 = 1"	08	08	08	08	08				
			10 = 1" 1/4	10	10	10	10	10				
		<b>F</b>	<b>BYPASS VALVE</b>									
			F = 150 kPa (1,5 bar)	F	F	F	F	F				
			<b>SEALS</b>						<b>SEALS</b>			
			N = NBR Nitrile	N	N	N	N	N				
			F = FKM Fluoroelastomer	F	F	F	F	F				
			G = Treatment for water-glycol	G	G	G	G	G				
			<b>FormulaUFI MEDIA</b>						<b>FormulaUFI MEDIA</b>			
			FA = FormulaUFI.MICRON 5 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FA	FA	FA	FA	FA				
			FB = FormulaUFI.MICRON 7 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FB	FB	FB	FB	FB				
			FC = FormulaUFI.MICRON 12 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FC	FC	FC	FC	FC				
			FD = FormulaUFI.MICRON 21 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FD	FD	FD	FD	FD				
			CC = FormulaUFI.CELL 10 $\mu\text{m}$ $\beta > 2$	CC	CC	CC	CC	CC				
			ME = FormulaUFI.WEB 60 $\mu\text{m}$	ME	ME	ME	ME	ME				
			<b>CLOGGING INDICATOR</b>									
			05 = nr. 2 x 1/8" ports, plugged	05	05	05	05	05				
			30 = manometer, scale 0 - 600 kPa (0 - 6 bar)	30	30	30	30	30				
			P4 = SPDT, pressure switch	P4	P4	P4	P4	P4				
			<b>ACCESSORIES</b>									
			W = without accessory	W	W	W	W	W				
			F = with diffusor	F	F	F	F	F				
			<b>ACCESSORIES</b>									
			W = without accessory	W	W	W	W	W				
			M = magnetic core	M	M	M	M	M				

# FRF2

## RETURN FILTERS



### ORDERING AND OPTION CHART

F	R	F	COMPLETE FILTER FAMILY				FILTER ELEMENT FAMILY	E	R	F
			<b>SIZE &amp; LENGTH</b>	22	23	24	<b>SIZE &amp; LENGTH</b>			
			<b>PORT TYPE</b>							
			B = BSP thread	B	B	B				
			A = BSP thread, double port (only AD1)	A	A	A				
			N = NPT thread	N	N	N				
			S = SAE thread	S	S	S				
			F = SAE flange 3000 psi	F	F	F				
			P = SAE flange 3000 psi, double port	P	P	P				
			<b>PORT SIZE</b>							
			12 = 1" 1/2 (P12= 1"1/2 SAE+1" 1/2 BSP)	12	12	12				
			D1 = 1" 1/2 +1" 1/4 (only AD1)	D1	D1	D1				
		<b>F</b>	<b>BYPASS VALVE</b>							
			F = 150 kPa (1,5 bar)	F	F	F				
			<b>SEALS</b>				<b>SEALS</b>			
			N = NBR Nitrile	N	N	N				
			F = FKM Fluoroelastomer	F	F	F				
			G = Treatment for water-glycol	G	G	G				
			<b>FormulaUFI MEDIA</b>				<b>FormulaUFI MEDIA</b>			
			FA = FormulaUFI.MICRON 5 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FA	FA	FA				
			FB = FormulaUFI.MICRON 7 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FB	FB	FB				
			FC = FormulaUFI.MICRON 12 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FC	FC	FC				
			FD = FormulaUFI.MICRON 21 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FD	FD	FD				
			CC = FormulaUFI.CELL 10 $\mu\text{m}$ $\beta > 2$	CC	CC	CC				
			ME = FormulaUFI.WEB 60 $\mu\text{m}$	ME	ME	ME				
			<b>CLOGGING INDICATOR (**)</b>							
			05 = nr. 2 x 1/8" ports, plugged	05	05	05				
			30 = manometer, scale 0 - 600 kPa (0 - 6 bar)	30	30	30				
			P4 = SPDT, pressure switch	P4	P4	P4				
			03 = port for differential indicator, plugged	03	03	03				
			5B = visual differential 130 kPa (1,3 bar)	5B	5B	5B				
			6B = electrical differential 130 kPa (1,3 bar)	6B	6B	6B				
			7B = indicator 6B with LED	7B	7B	7B				
			T0 = elect. diff. 130 kPa (1,3 bar) with thermostat 30°C	T0	T0	T0				
			<b>ACCESSORIES</b>							
			W = without accessory	W	W	W				
			F = with diffusor	F	F	F				
			<b>ACCESSORIES</b>							
			W = without accessory	W	W	W				
			M = magnetic core	M	M	M				

\*\* When the filter is ordered with FKM seals, the first digit of the indicator code is a letter (please see Clogging Indicator Chapter for further details)

# FRF3

## RETURN FILTERS

### ORDERING AND OPTION CHART

F	R	F	COMPLETE FILTER FAMILY					FILTER ELEMENT FAMILY	E	R	F
			<b>SIZE &amp; LENGTH</b>	31	32	33	34	<b>SIZE &amp; LENGTH</b>			
			<b>PORT TYPE</b>								
			F = SAE flange 3000 psi	F	F	F	F				
			P = SAE flange 3000 psi, double port	P	P	P	P				
			<b>PORT SIZE</b>								
			16 = 2"	16	16	16	16				
			20 = 2" 1/2	20	20	20	20				
			DA = 2" 1/2+2"	DA	DA	DA	DA				
			D7 = 2"+1" 1/2	D7	D7	D7	D7				
F			<b>BYPASS VALVE</b>								
			F = 150 kPa (1,5 bar)	F	F	F	F				
			<b>SEALS</b>					<b>SEALS</b>			
			N = NBR Nitrile	N	N	N	N				
			F = FKM Fluoroelastomer	F	F	F	F				
			G = Treatment for water-glycol	G	G	G	G				
			<b>FormulaUFI MEDIA</b>					<b>FormulaUFI MEDIA</b>			
			FA = FormulaUFI.MICRON 5 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FA	FA	FA	FA				
			FB = FormulaUFI.MICRON 7 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FB	FB	FB	FB				
			FC = FormulaUFI.MICRON 12 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FC	FC	FC	FC				
			FD = FormulaUFI.MICRON 21 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FD	FD	FD	FD				
			CC = FormulaUFI.CELL 10 $\mu\text{m}$ $\beta > 2$	CC	CC	CC	CC				
			ME = FormulaUFI.WEB 60 $\mu\text{m}$	ME	ME	ME	ME				
			<b>CLOGGING INDICATOR (**)</b>								
			05 = nr. 2 x 1/8" ports, plugged	05	05	05	05				
			30 = manometer, scale 0 - 600 kPa (0 - 6 bar)	30	30	30	30				
			P4 = SPDT, pressure switch	P4	P4	P4	P4				
			03 = port for differential indicator, plugged	03	03	03	03				
			5B = visual differential 130 kPa (1,3 bar)	5B	5B	5B	5B				
			6B = electrical differential 130 kPa (1,3 bar)	6B	6B	6B	6B				
			7B = indicator 6B with LED	7B	7B	7B	7B				
			T0 = elect. diff. 130 kPa (1,3 bar) with thermostat 30°C	T0	T0	T0	T0				
			<b>ACCESSORIES</b>								
			W = without accessory	W	W	W	W				
			F = with diffusor	F	F	F	F				
			<b>ACCESSORIES</b>								
			W = without accessory	W	W	W	W				
			M = magnetic core	M	M	M	M				

\*\* When the filter is ordered with FKM seals, the first digit of the indicator code is a letter (please see Clogging Indicator Chapter for further details)



# FRF4

## RETURN FILTERS



### ORDERING AND OPTION CHART

F	R	F	COMPLETE FILTER FAMILY					FILTER ELEMENT FAMILY	E	R	F
			<b>SIZE &amp; LENGTH</b>	41	42	43	44	<b>SIZE &amp; LENGTH</b>			
			<b>PORT TYPE</b>								
			F = SAE flange 3000 psi	F	F	F	F				
			P = SAE flange 3000 psi, double port	P	P	P	P				
			<b>PORT SIZE</b>								
			24 = 3"	24	24	24	24				
			32 = 4"	32	32	32	32				
			D9= 3"+4"	D9	D9	D9	D9				
F			<b>BYPASS VALVE</b>								
			F = 150 kPa (1,5 bar)	F	F	F	F				
			<b>SEALS</b>					<b>SEALS</b>			
			N = NBR Nitrile	N	N	N	N				
			F = FKM Fluoroelastomer	F	F	F	F				
			G = Treatment for water-glycol	G	G	G	G				
			<b>FormulaUFI MEDIA</b>					<b>FormulaUFI MEDIA</b>			
			FA = FormulaUFI.MICRON 5 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FA	FA	FA	FA				
			FB = FormulaUFI.MICRON 7 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FB	FB	FB	FB				
			FC = FormulaUFI.MICRON 12 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FC	FC	FC	FC				
			FD = FormulaUFI.MICRON 21 $\mu\text{m}_{(c)}$ $\beta > 1.000$	FD	FD	FD	FD				
			CC = FormulaUFI.CELL 10 $\mu\text{m}$ $\beta > 2$	CC	CC	CC	CC				
			ME = FormulaUFI.WEB 60 $\mu\text{m}$	ME	ME	ME	ME				
			<b>CLOGGING INDICATOR (**)</b>								
			05 = nr. 2 x 1/8" ports, plugged	05	05	05	05				
			30 = manometer, scale 0 - 600 kPa (0 - 6 bar)	30	30	30	30				
			P4 = SPDT, pressure switch	P4	P4	P4	P4				
			03 = port for differential indicator, plugged	03	03	03	03				
			5B = visual differential 130 kPa (1,3 bar)	5B	5B	5B	5B				
			6B = electrical differential 130 kPa (1,3 bar)	6B	6B	6B	6B				
			7B = indicator 6B with LED	7B	7B	7B	7B				
			T0 = elect. diff. 130 kPa (1,3 bar) with thermostat 30°C	T0	T0	T0	T0				
			<b>ACCESSORIES</b>								
			W = without accessory	W	W	W	W				
			F = with diffusor	F	F	F	F				
			<b>ACCESSORIES</b>								
			W = without accessory	W	W	W	W				
			M = magnetic core	M	M	M	M				



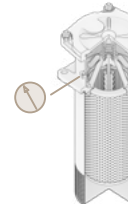


\*\* When the filter is ordered with FKM seals, the first digit of the indicator code is a letter (please see Clogging Indicator Chapter for further details)

# FRF

## RETURN FILTERS



### SPARE PARTS

FILTER HOUSING	FILTER ELEMENT	CLOGGING INDICATOR	ACCESSORIES	
				
B R F [ ] [ ] [ ] [ ] [ ] [ ] [ ] F [ ] [ ] [ ] [ ] [ ] [ ]	E R F [ ] [ ] [ ] [ ] [ ] [ ] [ ]	[ ] [ ]	[ ]	[ ]

### SPARE SEAL KIT

	NBR	FKM
<b>FRF11-12-13-14-1X</b>	521.0055.2	521.0056.2
<b>FRF22-23-24</b>	521.0020.2	521.0057.2
<b>FRF31-32-33-34</b>	521.0021.2	521.0058.2
<b>FRF41-42-43-44</b>	521.0095.2	521.0096.2

### SPARE SPRING

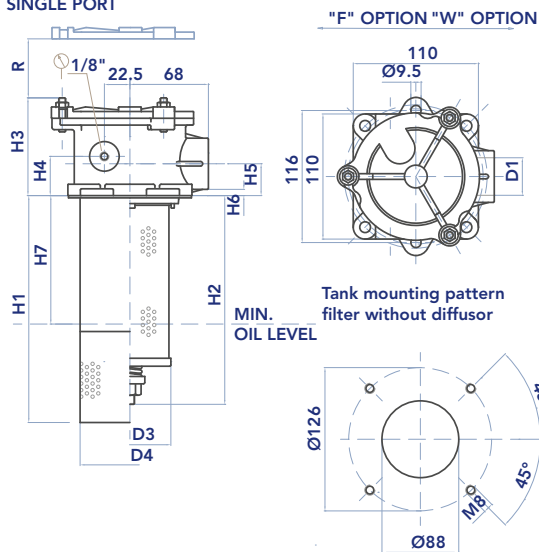
<b>FRF11-12-13-14-1X</b>	008.0282.1
<b>FRF22-23-24</b>	008.0269.1
<b>FRF31-32-33-34</b>	008.0275.1
<b>FRF41-42-43-44</b>	008.0283.1

# FRF1

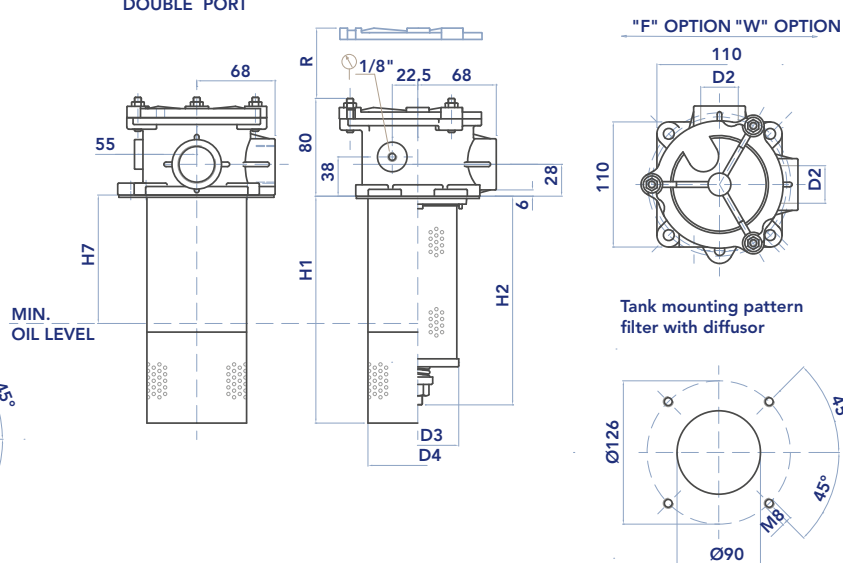
## RETURN FILTERS

### INSTALLATION DRAWING

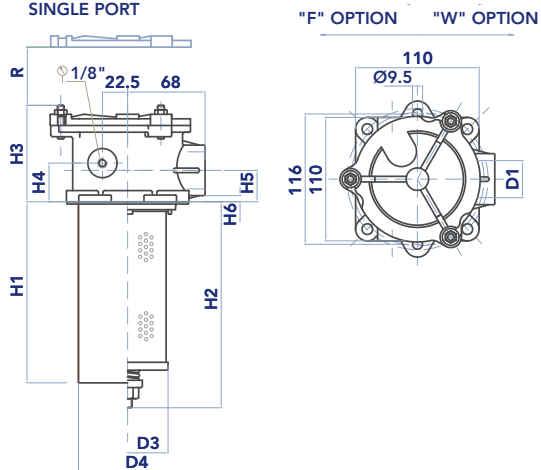
FRF 11-12-13-14  
SINGLE PORT



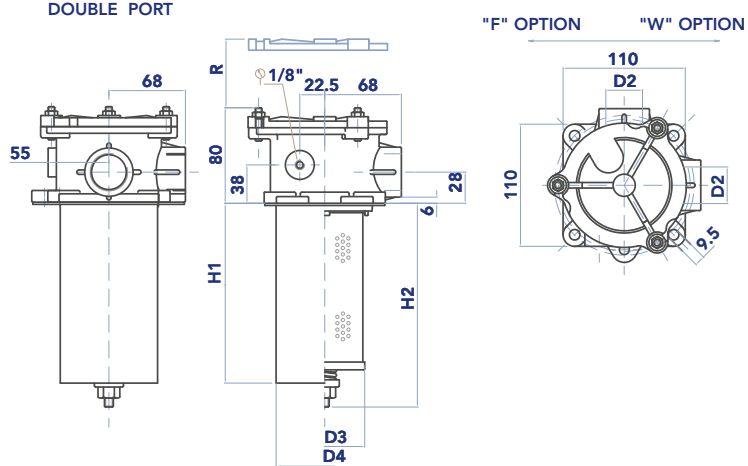
FRF 11-12-13-14  
DOUBLE PORT



FRF 1X  
SINGLE PORT



FRF 1X  
DOUBLE PORT



### FILTER HOUSING

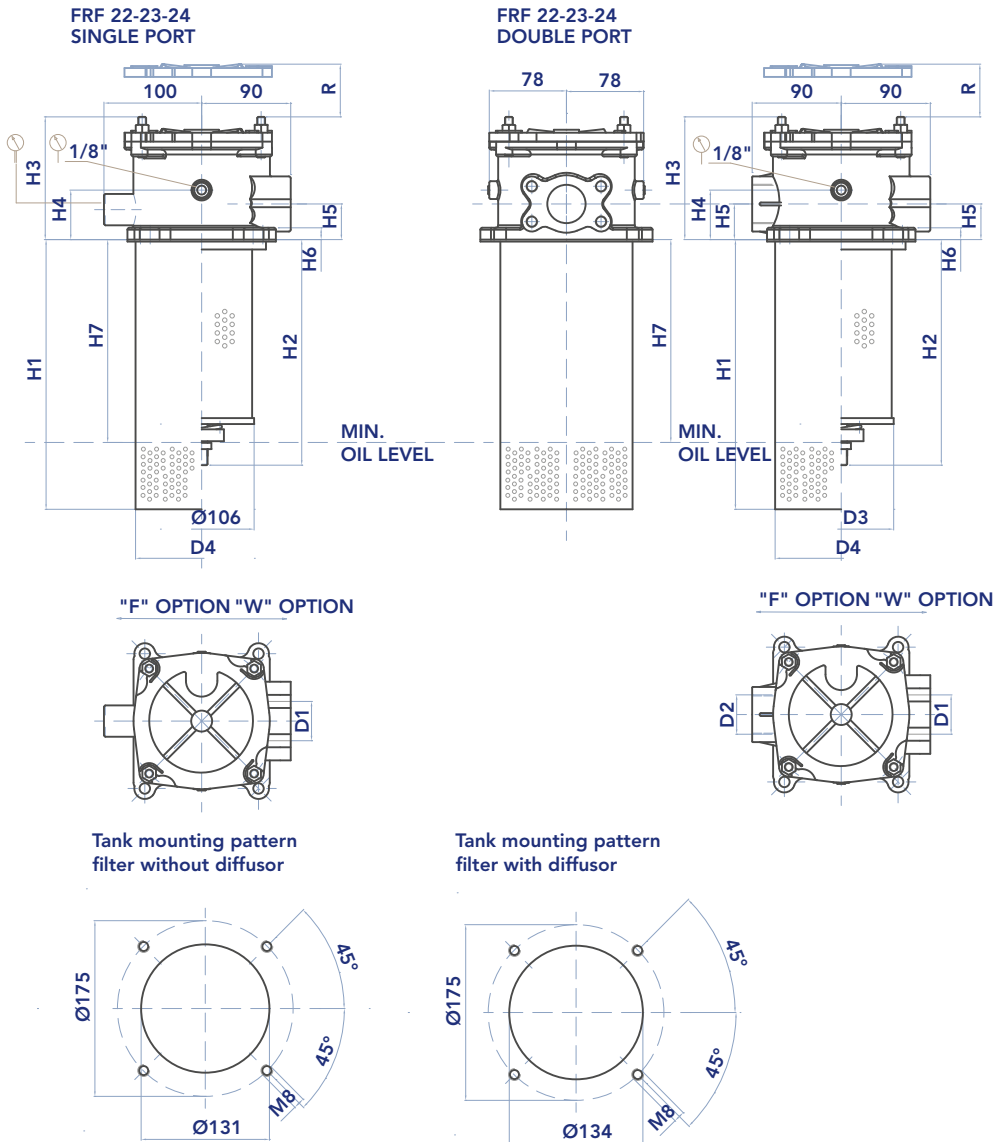
	D1	D2	D3	D4	D5	H1	H2	H3	H4	H5	H6	H7	R	Kg
FRF11	3/4" - 1" - 1" 1/4	1"	72	89	9	198	140	90	38	28÷32	6	118	230	1,20
FRF12	3/4" - 1" - 1" 1/4	1"	72	89	9	198	185	90	38	28÷32	6	118	275	1,40
FRF13	3/4" - 1" - 1" 1/4	1"	72	89	9	250	235	90	38	28÷32	6	170	325	1,50
FRF14	3/4" - 1" - 1" 1/4	1"	72	89	9	350	335	90	38	28÷32	6	270	445	1,70
FRF1X	3/4" - 1" - 1" 1/4	1"	72	89	9	500	535	90	38	28÷32	6	270	625	2,00

# FRF2

## RETURN FILTERS



### INSTALLATION DRAWING



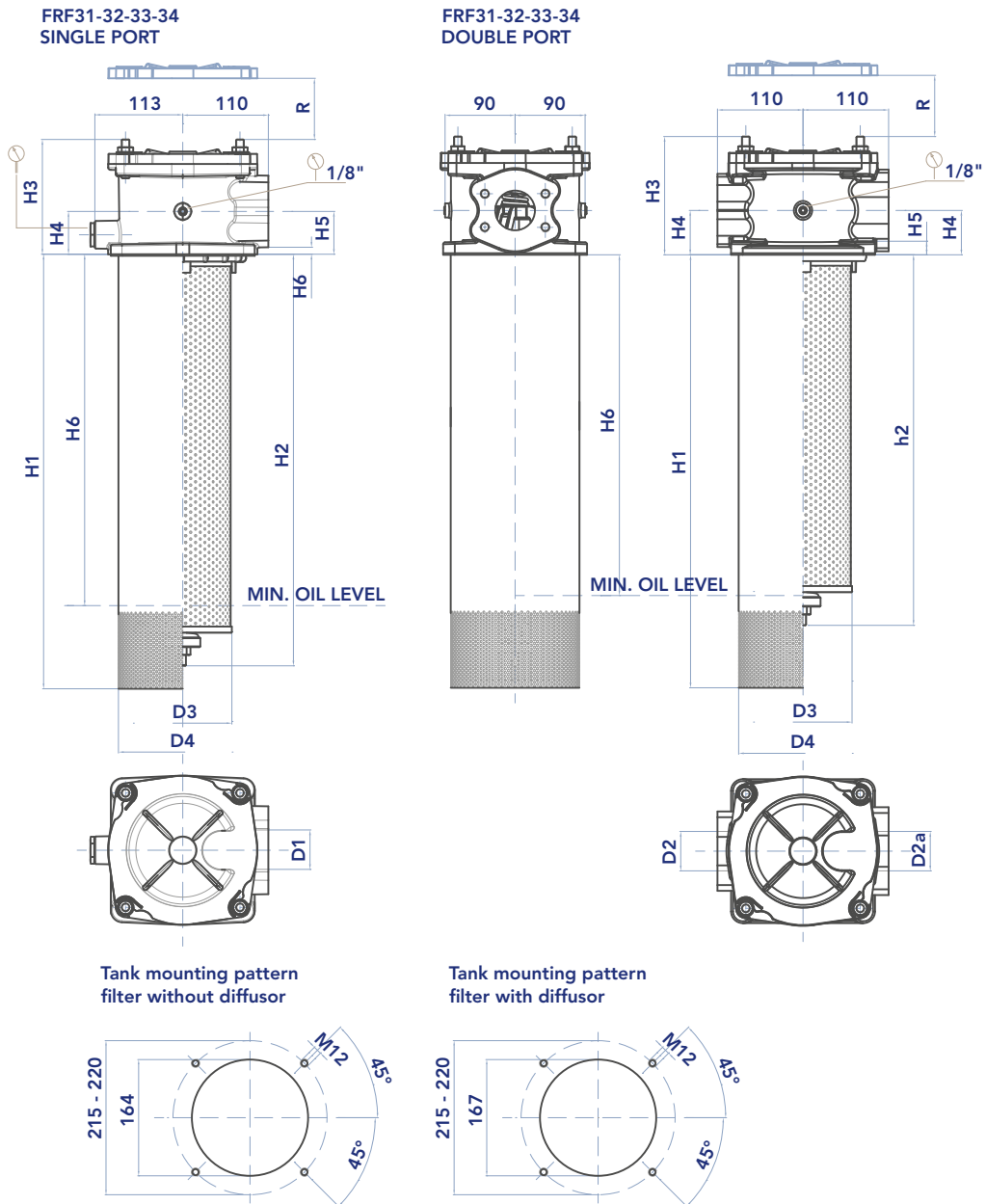
### FILTER HOUSING

	D1	D2	D3	D4	H1	H2	H3	H4	H5	H6	H7	R	Kg
<b>FRF22</b>	1" 1/2	1"1/4 ÷ 1"1/2	106	133	250	225	129	50	36	12	150	310	4,20
<b>FRF23</b>	1" 1/2	1"1/4 ÷ 1"1/2	106	133	320	295	129	50	36	12	220	380	4,70
<b>FRF24</b>	1" 1/2	1"1/4 ÷ 1"1/2	106	133	525	500	129	50	36	12	425	580	5,00

# FRF3

## RETURN FILTERS

### INSTALLATION DRAWING



### FILTER HOUSING

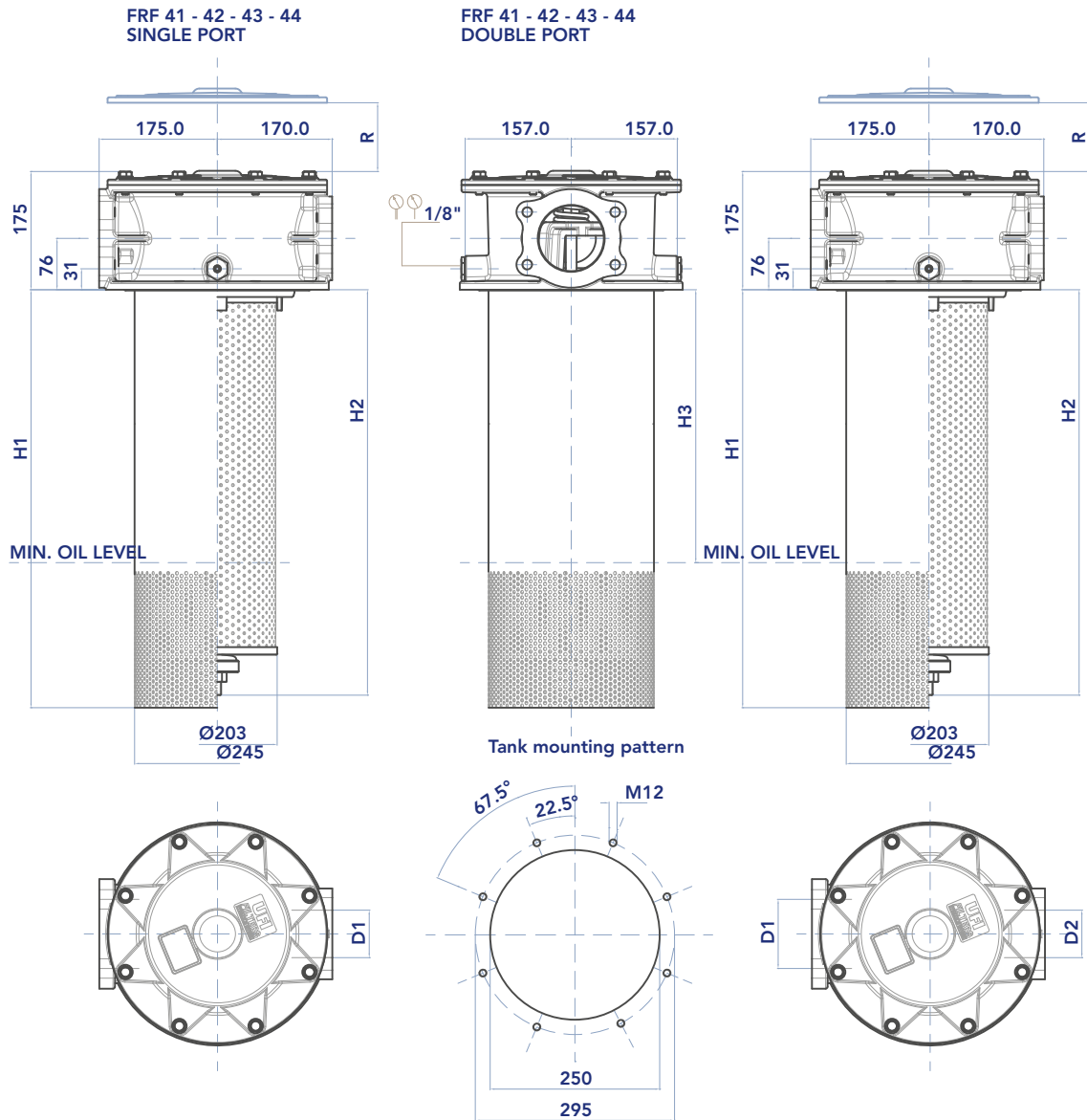
	D1	D2	D2a	D3	D4	H1	H2	H3	H4	H5	H6	R	Kg
<b>FRF31</b>	2" - 2"1/2	2" - 2"1/2	1"1/2 - 2"	126	165,5	290	260	155	55	14	190	350	8,00
<b>FRF32</b>	2" - 2"1/2	2" - 2"1/2	1"1/2 - 2"	126	165,5	370	340	155	55	14	270	430	8,40
<b>FRF33</b>	2" - 2"1/2	2" - 2"1/2	1"1/2 - 2"	126	165,5	470	440	155	55	14	370	580	8,60
<b>FRF34</b>	2" - 2"1/2	2" - 2"1/2	1"1/2 - 2"	126	165,5	560	530	155	55	14	460	620	9,10

# FRF4

## RETURN FILTERS



### INSTALLATION DRAWING

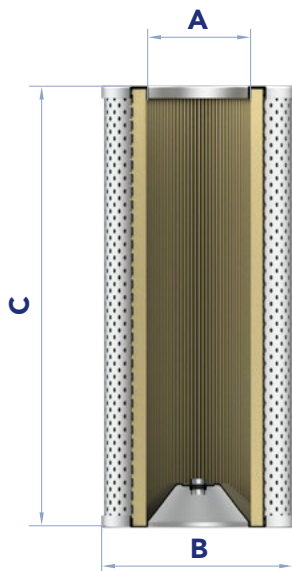


### FILTER HOUSING

	D1	D2	H1	H2	H3	R
FRF41	3"	4"	405	396	205	600
FRF42	3"	4"	620	611	420	810
FRF43	3"	4"	900	891	700	1.090
FRF44	3"	4"	1165	1156	965	1.360



## FILTER ELEMENT



### FRF1

	A	B	C	Kg	AREA (cm <sup>2</sup> )		
					Media F+	Media C+	Media M+
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
ERF1X	45	72	500	1,00	3.950	6.000	2.200

### FRF2

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

### FRF3

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	290	1,90	10.400	12.400	4.250
ERF34	92	126	480	2,20	12.800	15.400	5.250

### FRF4

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	1.090	13,00	60.000	74.000	21.800

# FRF

## RETURN FILTERS

### MAINTENANCE

- 1) Stop the system and verify there is no pressure in the filter.
- 2) Loosen the nuts (1) on the cover (2). N.B. it is not necessary to disassemble the nuts, use the slots on the cover. FRF4: Unscrew the screws (1).
- 3) Turn the cover (2) clockwise and remove it. FRF4: remove the cover (2).
- 4) Extract the filter element using the handle (3).
- 5) At the bottom of the element, unscrew the nut (4) from the tie-rod (5) locking the nut (6) with a wrench to prevent rotation of the tie-rod. Remove the spring holder washer (7) and the spring (8).
- 6) Remove the dirty filter element (3) using the handle.
- 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.
- 7) Check the filter element part number on the filter label or in the ordering and option chart. Use only original spare parts.
- 8) Check the correct positioning and the condition of the O-ring (10) between the handle and the element. Clean and lubricate with oil. If damaged, check the seal kit part number in the catalogue or contact the customer care service.
- 9) Insert the clean element (9) on the tie-rod (5) handling with care.
- 10) Assembly the spring (8), the spring holder (7) and screw the nut (4) on the tie-rod (5) until it stops.
- 11) Check the correct position and the condition of handle O-ring gasket (11). Clean and lubricate with oil. If damaged, check the seal kit part number in the catalogue or contact the customer care service.
- 12) Replace the filter element assembly (with the handle) into the housing with the upper spring (12).
- 13) Check the correct positioning and the condition of the O-ring gasket (13) of the cover (2) and lubricate with oil. If damaged, check the seal kit part number in the catalogue or contact the customer care service.
- 14) Position the cover (2) and tighten the nuts (1) until it stops.  
FRF4: Position the cover (2) and tighten the screws (1) until it stops.

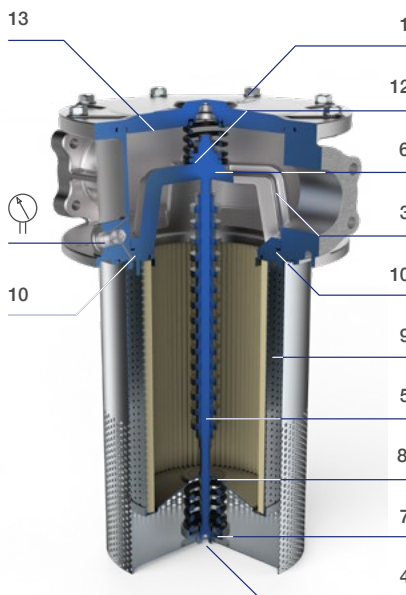
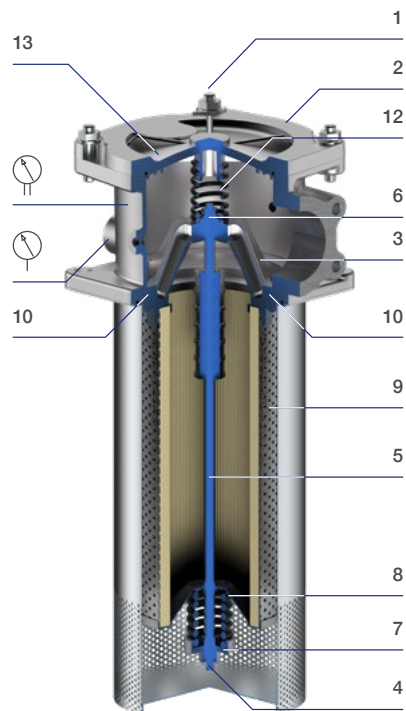
#### Accessories:

Clogging indicator.

If damaged, unscrew and replace it (check the part number in the ordering and option chart).

Indicators with thread M20x1,5: Lubricate the O-ring gaskets and tighten until it stops, with a tightening torque of 40 Nm +5/0.

Indicators with conical thread 1/8": Apply a thread-sealing and screw until tight. N.B. Over-tightening can damage the thread.



# FRF

## RETURN FILTERS

### PRESSURE DROP CURVES ( $\Delta P$ ) 1+

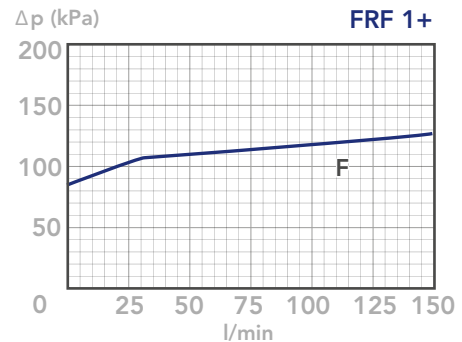
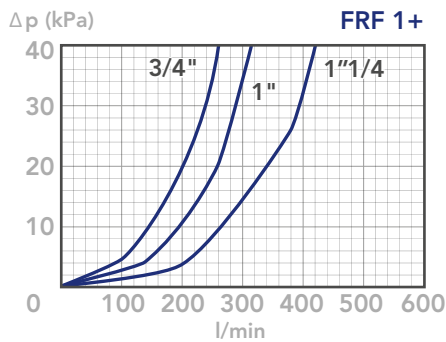
The “Assembly Pressure Drop ( $\Delta p$ )” is obtained by adding the pressure drop values of the Filter Housing and of the Clean Filter Element corresponding to the considered Flow Rate and it must

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

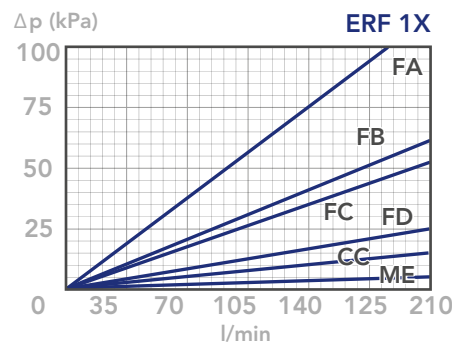
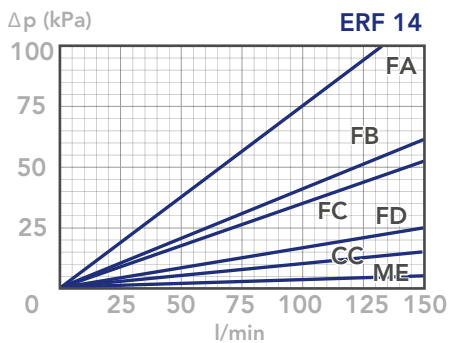
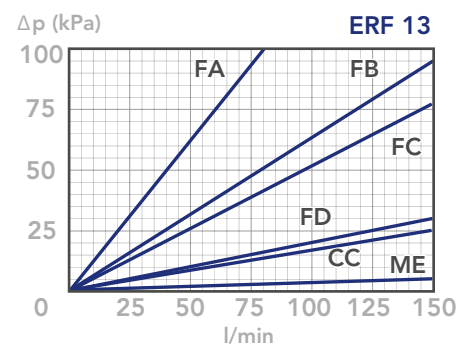
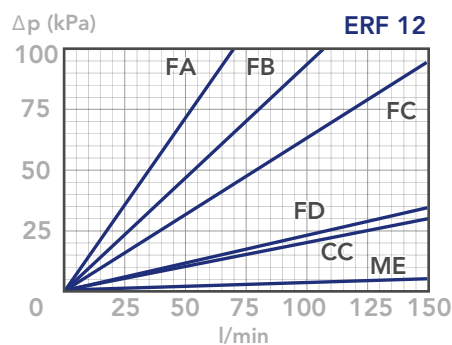
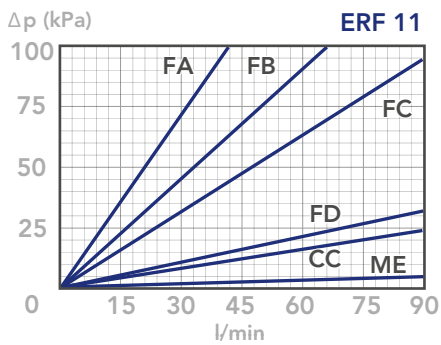
FILTER HOUSING PRESSURE DROP  
(mainly depending on the port size)

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.



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



### N.B.

All the curves have been obtained with mineral oil having a kinematic viscosity 30 cSt and specific gravity 0,86 kg/dm<sup>3</sup>; 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.

# FRF

## RETURN FILTERS

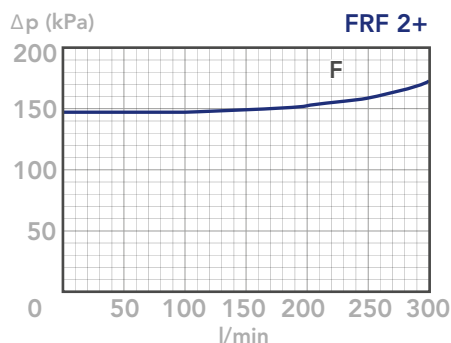
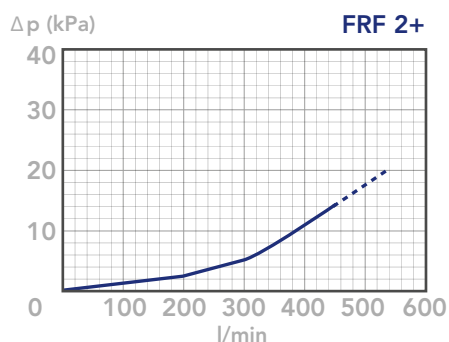
### PRESSURE DROP CURVES ( $\Delta P$ ) 2+

The “Assembly Pressure Drop ( $\Delta p$ )” 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

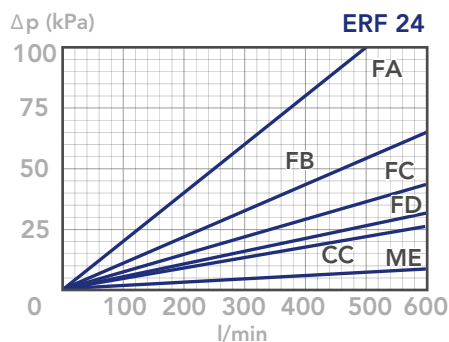
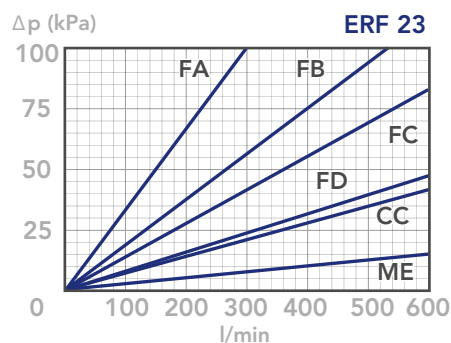
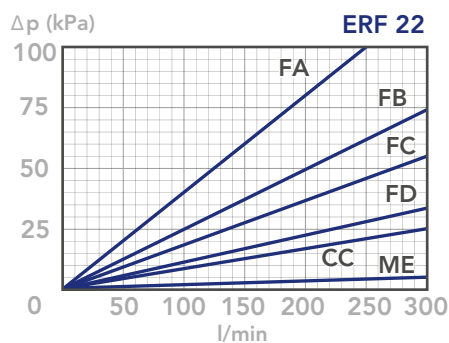
be lower than 50 kPa (0,5 bar) and should never exceed 1/3 of the bypass valve setting.

**FILTER HOUSING PRESSURE DROP**  
(mainly depending on the port size)

**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.



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



### N.B.

All the curves have been obtained with mineral oil having a kinematic viscosity 30 cSt and specific gravity 0,86 Kg/dm<sup>3</sup>; 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.

# FRF

## RETURN FILTERS

### PRESSURE DROP CURVES ( $\Delta P$ ) 3+

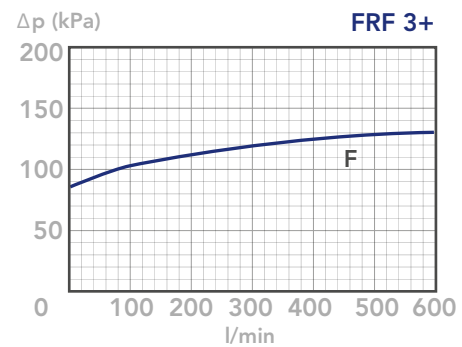
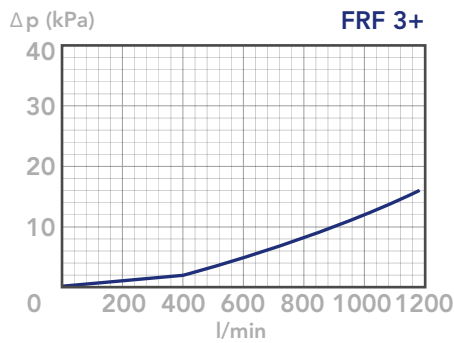
The “Assembly Pressure Drop ( $\Delta p$ )” is obtained by adding the pressure drop values of the Filter Housing and of the Clean Filter Element corresponding to the considered Flow Rate and it must

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

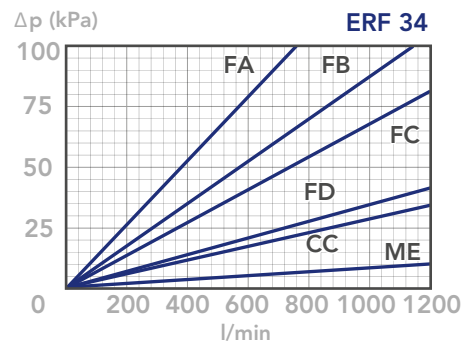
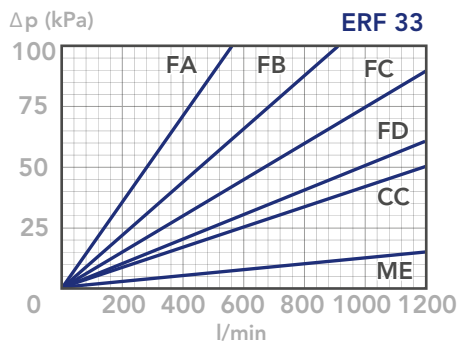
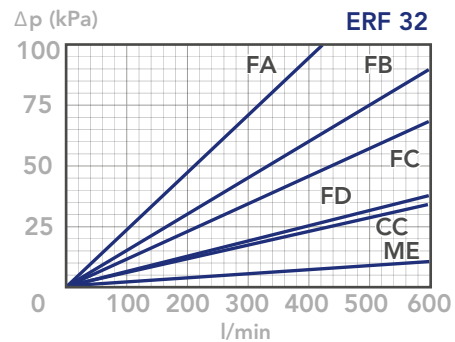
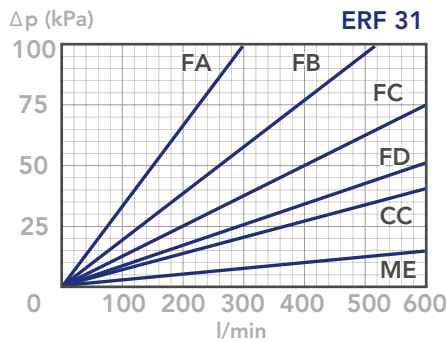
**FILTER HOUSING PRESSURE DROP**  
(mainly depending on the port size)

**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.



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



### N.B.

All the curves have been obtained with mineral oil having a kinematic viscosity 30 cSt and specific gravity 0,86 Kg/dm<sup>3</sup>; 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.



# FRF

## RETURN FILTERS



### PRESSURE DROP CURVES ( $\Delta P$ ) 4+

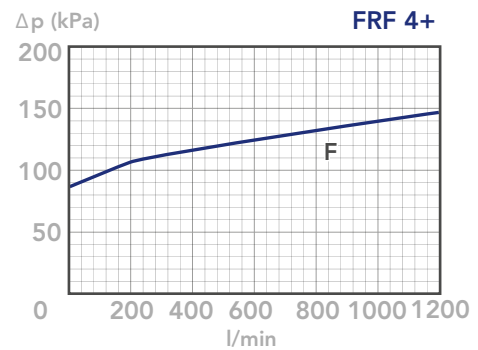
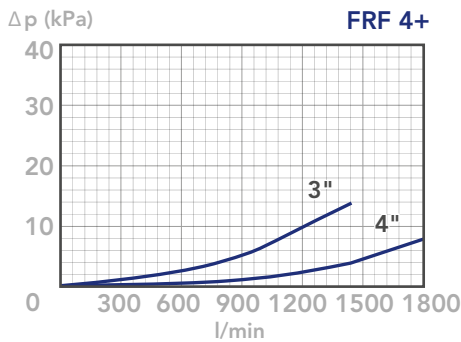
The “Assembly Pressure Drop ( $\Delta p$ )” is obtained by adding the pressure drop values of the Filter Housing and of the Clean Filter Element corresponding to the considered Flow Rate and it must

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

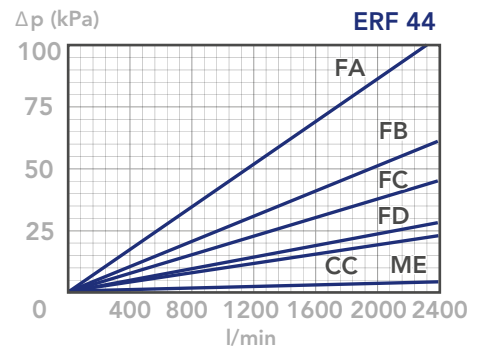
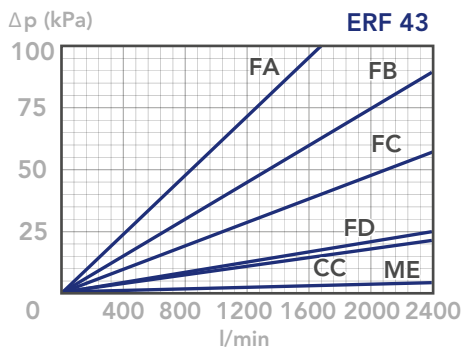
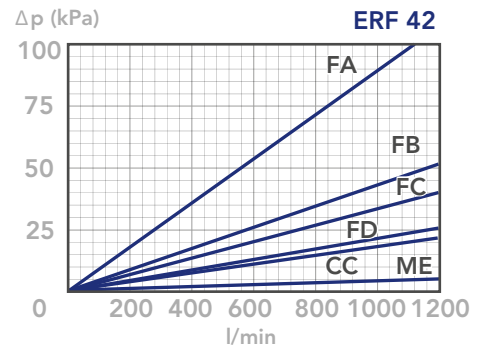
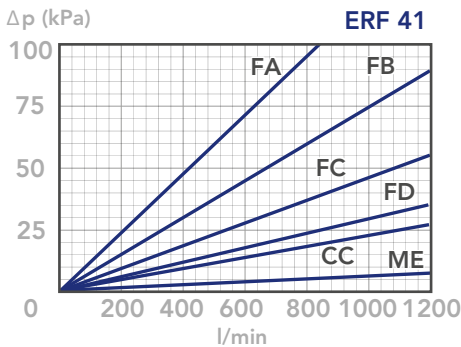
**FILTER HOUSING PRESSURE DROP**  
(mainly depending on the port size)

**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.



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



### N.B.

All the curves have been obtained with mineral oil having a kinematic viscosity 30 cSt and specific gravity 0,86 Kg/dm<sup>3</sup>; 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.