

# FRH

## RETURN FILTERS



### MATERIALS

Head and cover: Aluminium alloy  
Bowl: Polyamide  
Bypass valve: Polyamide  
Seals: NBR Nitrile  
FKM Fluoroelastomer on request  
Indicator housing: Brass

### PRESSURE

Max working: 300 kPa (3 bar)  
Collapse, differential for the filter element (ISO 2941):  
300 kPa (3 bar)

### BYPASS VALVE

Setting: 170 kPa (1,7 bar)  $\pm$  10%

### WORKING TEMPERATURE

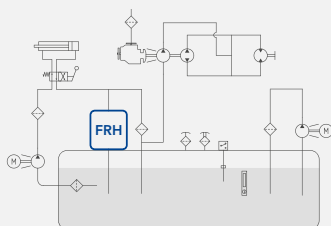
From -25° to +110° C

### 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.

### ORDERING AND OPTION CHART

F	R	H	COMPLETE FILTER FAMILY				FILTER ELEMENT FAMILY	E	R	A
			SIZE & LENGHT	31	32	33	SIZE & LENGHT			
			PORT TYPE							
			B = BSP thread	B	B	B				
			A = BSP thread (double port A08 only)	A	A	A				
			N = NPT thread	N	N	N				
			S = SAE thread	S	S	S				
			PORT SIZE							
			06 = 3/4"	06	06	06				
			08 = 1"	08	08	08				
			10 = 1 1/4"	10	10	10				
		<b>B</b>	BYPASS VALVE							
			B = 170 kPa (1,7 bar)	B	B	B				
			SEALS				SEALS			
			N = NBR Nitrile	N	N	N				
			F = FKM Fluoroelastomer	F	F	F				
			FILTER MEDIA				FILTER MEDIA			
			FA = fibreglass 5 µm(c) β>1.000	FA	FA	FA				
			FB = fibreglass 7 µm(c) β>1.000	FB	FB	FB				
			FC = fibreglass 12 µm(c) β>1.000	FC	FC	FC				
			FD = fibreglass 21 µm(c) β>1.000	FD	FD	FD				
			CC = impregnated cellulose 10 µm β>2	CC	CC	CC				
			CD = impregnated cellulose 25 µm β>2	CD	CD	CD				
			ME = wire mesh 60 µm	ME	ME	ME				
			CLOGGING INDICATOR							
			05 = nr. 2 x 1/8" ports, plugged	05	05	05				
			30 = pressure gauge, rear connection	30	30	30				
			P1 = SPDT, pressure switch	P1	P1	P1				
			ACCESSORIES							
			W = without	W	W	W				
			P = with filling plug	P	P	P				
		<b>X</b>	ACCESSORIES							
			X = no other accessory available	X	X	X				

### SPARE PARTS ELEMENTS

FILTER HOUSING				FILTER ELEMENT				CLOGGING INDICATOR				ACCESSORY			
B	R	H		B											
			X												



### ORDERING AND OPTION CHART

F	R	H	COMPLETE FILTER FAMILY			FILTER ELEMENT FAMILY	E	R	A
			SIZE & LENGHT	41	42	SIZE & LENGHT			
		P	PORT TYPE						
			P = SAE flange 3000 psi, double port	P	P				
1	2		PORT SIZE						
			12 = 1"1/2	12	12				
		B	BYPASS VALVE						
			B = 170 kPa (1,7 bar)	B	B				
			SEALS			SEALS			
			N = NBR Nitrile	N	N				
			F = FKM Fluoroelastomer	F	F				
			FILTER MEDIA			FILTER MEDIA			
			FA = fibreglass 5 µm(c) β>1.000	FA	FA				
			FB = fibreglass 7 µm(c) β>1.000	FB	FB				
			FC = fibreglass 12 µm(c) β>1.000	FC	FC				
			FD = fibreglass 21 µm(c) β>1.000	FD	FD				
			CC = impregnated cellulose 10 µm β>2	CC	CC				
			CD = impregnated cellulose 25 µm β>2	CD	CD				
			ME = wire mesh 60 µm	ME	ME				
			CLOGGING INDICATOR						
			05 = nr. 2 x 1/8"ports, plugged	05	05				
			30 = pressure gauge, rear connection	30	30				
			P1 = SPDT, pressure switch	P1	P1				
			ACCESSORIES						
			W = without	W	W				
			P = with filling plug	P	P				
		X	ACCESSORIES						
			X = no other accessory available	X	X				

### SPARE SEAL KIT

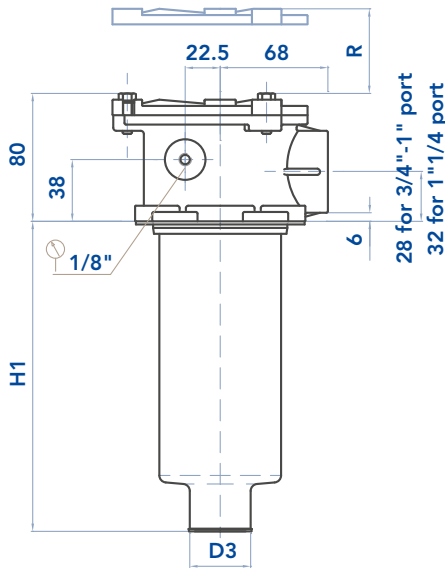
	NBR	FKM
FRH31	521.0022.2	521.0059.2
FRH32	521.0022.2	521.0059.2
FRH33	521.0022.2	521.0059.2
FRH41	521.0060.2	521.0061.2
FRH42	521.0060.2	521.0061.2

### SPARE SPRING

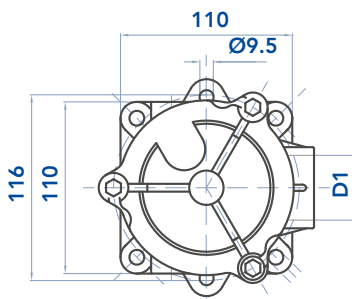
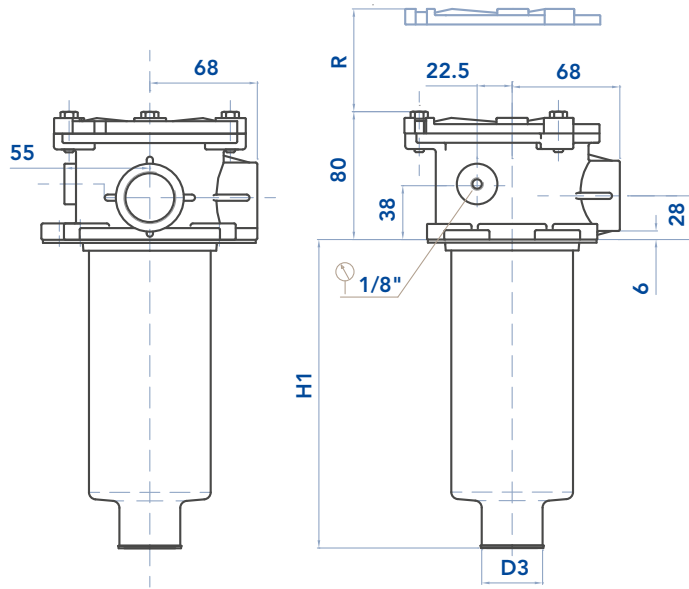
FRH31	008.0267.1
FRH32	008.0267.1
FRH33	008.0267.1
FRH41	008.0151.1
FRH42	008.0151.1

### INSTALLATION DRAWING

FRH 31 - 32 - 33  
SINGLE PORT

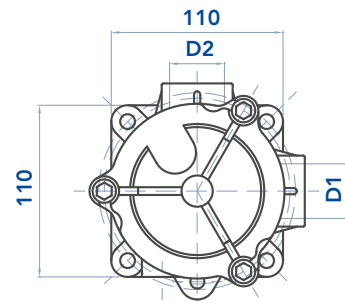


FRH 31 - 32 - 33  
DOUBLE PORT

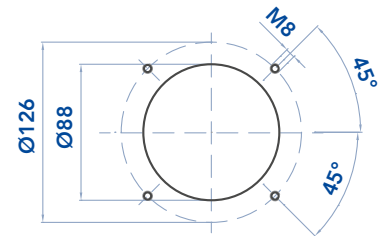
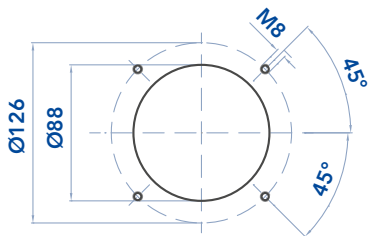


Tank mounting pattern

← OPTION "F" | OPTION "W" →



Tank mounting pattern

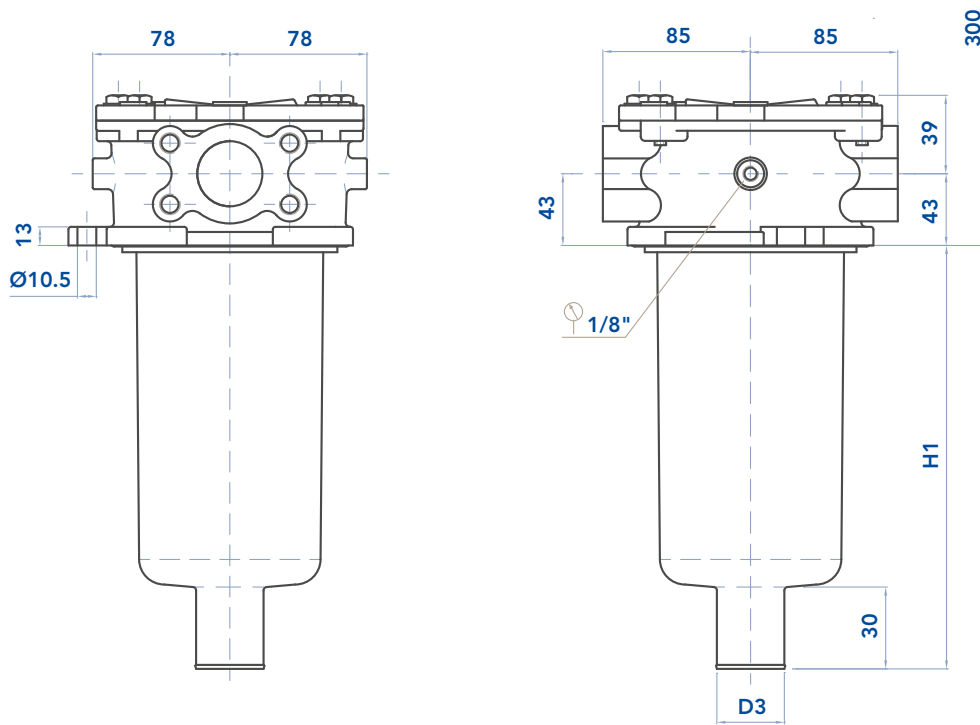


### FILTER HOUSING

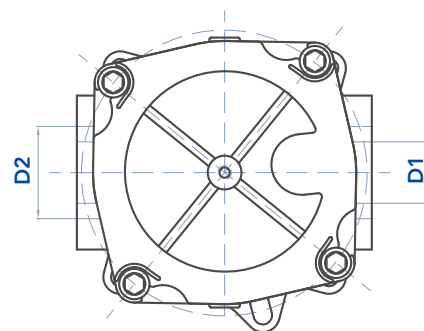
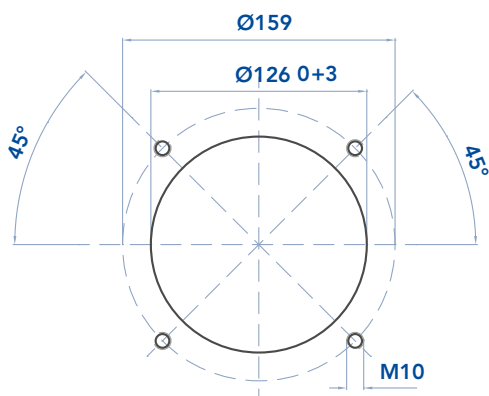
	D1	D2	D3	H1	R	Kg
FRH31	3/4" - 1" - 1" / 4	1"	27	106	165	0,95
FRH32	3/4" - 1" - 1" / 4	1"	27	152	205	1,10
FRH33	3/4" - 1" - 1" / 4	1"	40	235	285	1,25

## INSTALLATION DRAWING

FRH 41 - 42



Tank mounting pattern



## FILTER HOUSING

	D1	D2	D3	H1	R	Kg
FRH41	1"1/2	1"1/2	40	248	289	2,40
FRH42	1"1/2	1"1/2	40	265	306	2,60

# FRH

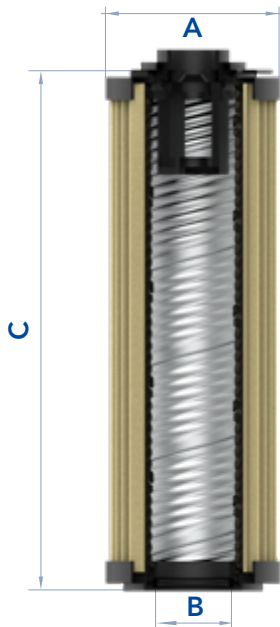
## RETURN FILTERS



### MAINTENANCE

The best time to change your filter element is just before it reaches its maximum dirt-holding capacity. For this reason, we recommend to monitor the pressure of the hydraulic oil flowing through the filter with a clogging indicator. When it is time to change the filter element, switch off the system before opening the filter housing. Unscrew the cover of the filter head and remove the spring (to be hold) and the dirty filter element. Replace it with an original UFI element, verifying the

part number on the filter label or on the catalogue. Clean the bowl; check the gaskets conditions and replace if necessary. Insert the clean element and the spring into his seat, handling with care and cleanliness. Replace the cover on the filter head with the screw. We recommend the stocking of a spare UFI filter element for timely replacement when required.



### FILTER ELEMENT

	A	B	C	Kg	AREA (cm <sup>2</sup> )	
					Media F+	Media C+
ERA31	70	28	85	0,20	620	990
ERA32	70	28	130	0,25	1.000	1.600
ERA33	70	40	210	0,40	1.660	2.670
ERA41	99	40	211	0,75	3.800	4.280
ERA42	99	40	250	0,90	4.550	5.100

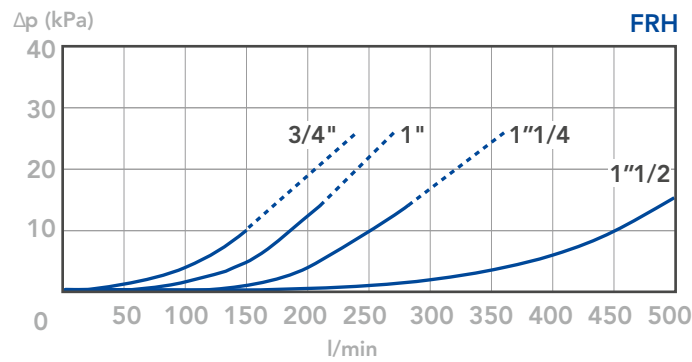
The used filter elements cannot be cleaned and are classified as "Dangerous waste material". They must be disposed according to local laws by authorized Companies. Verify that the Company you choose has the expertise and authorization to dispose this type of waste material.

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

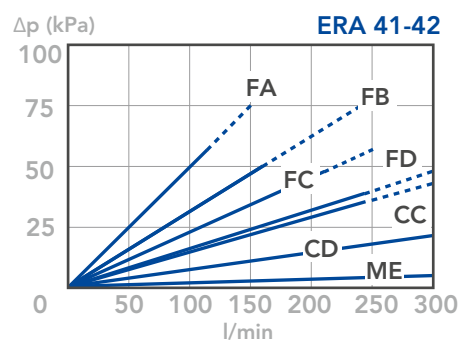
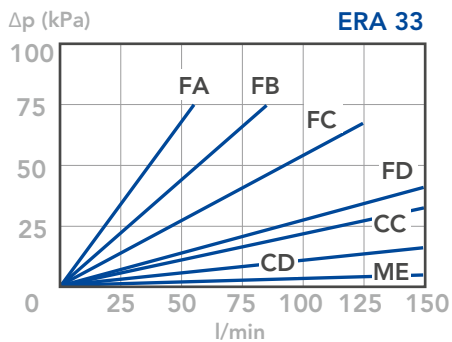
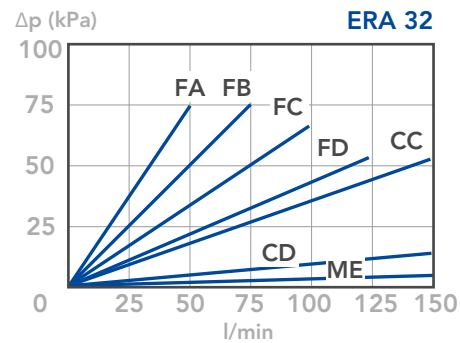
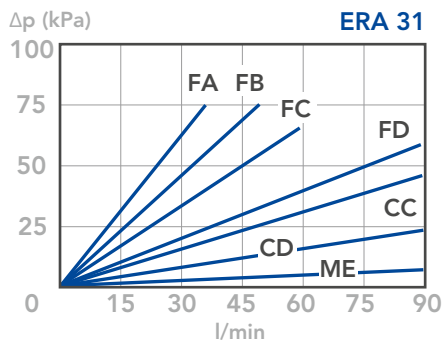
The "Assembly Pressure Drop ( $\Delta p$ )" is obtained by adding the pressure drop values of the Filter Housing and of the Clean Filter Element corresponding to the considered Flow

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)



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)





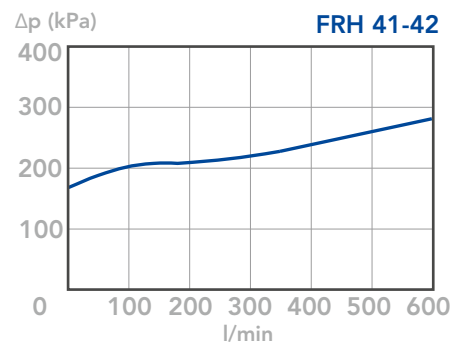
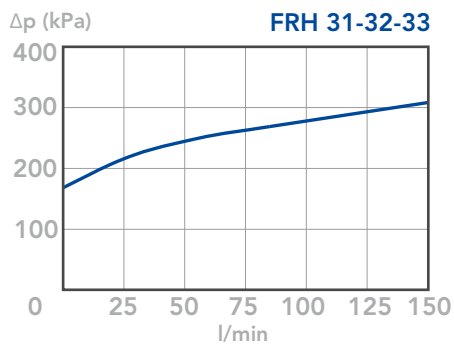
# FRH

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### 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/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 HYDRAULIC DIVISION Laboratory, according to the specification ISO 3968. In case of discrepancy, please check the contamination level, viscosity and features of the fluid in use.