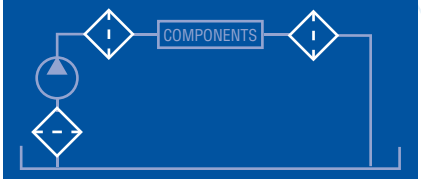


MULTI-FUNCTION FILTERS

MA

MATERIALS

Head:
Aluminium alloy

Bowl:
Cold formed steel

Seals:
NBR Nitrile
FKM Fluoroelastomer (on request)

Indicator housing:
Brass

PRESSURE (ISO 10771-1:2002)

Max working:
0,7 MPa (7 bar)

Test:
1,5 MPa (15 bar)

Bursting:
2,5 MPa (25 bar)

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

WORKING TEMPERATURE

From -25° to +110° C

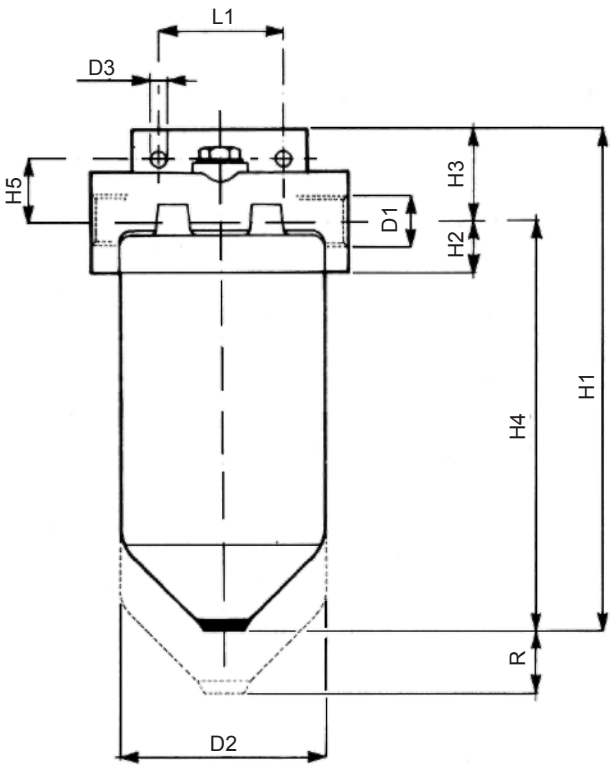
COMPATIBILITY (ISO 2943:1999)

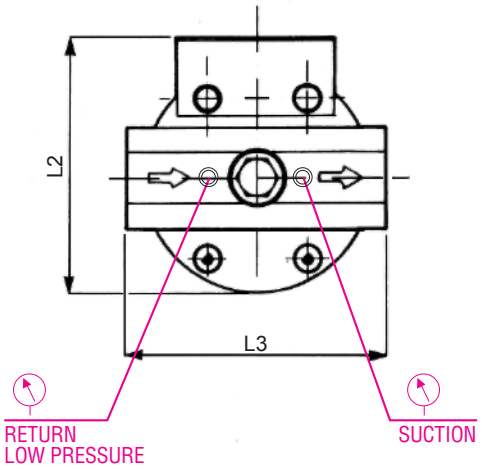
Full with fluids: HH-HL-HM-HV-HTG
(according to ISO 6743/4)
For fluids different than the above mentioned, please contact our Sales Department.

APPLICATION EXAMPLE

UFI FILTERS
HYDRAULIC DIVISION

INSTALLATION DRAWING





FILTER HOUSING

	D1	H1	H2	H3	L1	D2	H4	L2	D3	L3	H5	R	kg
FMA11	3/8" - 1/2"	170	22	38	50	81	132	95	6,5	105	26	20	1,0
FMA21	3/4"	245	37	39	100	114	206	135	8,5	140	24	25	2,0
FMA22	1"	285	37	39	100	114	246	135	8,5	140	24	25	2,5
FMA31	1" 1/4	290	40	50	150	155	240	185	10,5	178	28	25	6,0
FMA32	1" 1/2	345	40	50	150	155	295	185	10,5	178	28	25	6,5

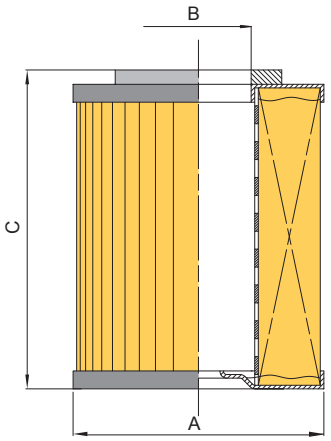
	TYPE						
	F = FILTER COMPLETE	F	F	F	F	F	
	B = FILTER HOUSING	B	B	B	B	B	
M A	FAMILY, NOMINAL SIZE & LENGTH						ELEMENT E
		11	21	22	31	32	FAMILY SIZE & LENGTH M A
B	PORT TYPE						
	B = BSP thread	B	B	B	B	B	
	PORT SIZE (quote D1)						
	03 = 3/8"	03	-	-	-	-	
	04 = 1/2"	04	-	-	-	-	
	06 = 3/4"	-	06	-	-	-	
	08 = 1"	-	-	08	-	-	
	10 = 1" 1/4	-	-	-	10	-	
	12 = 1" 1/2	-	-	-	-	12	
X	BYPASS VALVE						
	X = no available	X	X	X	X	X	
	SEALS						SEALS
	N = NBR Nitrile	N	N	N	N	N	N = NBR
	F = FKM Fluoroelastomer	F	F	F	F	F	F = FKM
	FILTER MEDIA						FILTER MEDIA
	MD = metal wire mesh 25 µm	MD	MD	MD	MD	MD	MD = w. mesh 25µm
	ME = metal wire mesh 60 µm	ME	ME	ME	ME	ME	ME = w. mesh 60µm
	MF = metal wire mesh 90 µm	MF	MF	MF	MF	MF	MF = w. mesh 90µm
	MG = metal wire mesh 250µm	MG	MG	MG	MG	MG	MG = w. mesh 250µm
	CC = cellulose 10 µm	CC	CC	CC	CC	CC	CC = cellulose 10µm
	CD = cellulose 25 µm	CD	CD	CD	CD	CD	CD = cellulose 25µm
	WR = water removal (*)	WR	WR	WR	WR	WR	WR = w. removal

(*) Water removal media - see "hydro-dry" brochure

	CLOGGING INDICATORS						
	0E = nr. 2x1/8" ports, plugged	0E	0E	0E	0E	0E	
	11 = vacuum gauge, rear connection	11	11	11	11	11	} Suction
	91 = SPDT, vacuum switch	91	91	91	91	91	} Suction
	33 = pressure gauge	33	33	33	33	33	} Return and low pressure
	P1 = SPDT, pressure switch	P1	P1	P1	P1	P1	} Return and low pressure
	ACCESSORIES						
	W = no accessory available	W	W	W	W	W	
	B = mounting brackets	B	B	B	B	B	
X	ACCESSORIES						
	X = no accessory available	X	X	X	X	X	

FILTER ELEMENT

	A	B	C	Area (cm²) Media M+	Area (cm²) Media C+
EMA11	70	29,5	88	480	1180
EMA21	70	29,5	134	750	1800
EMA22	95	41	175	1650	2400
EMA31	140	65,5	145	1740	4440
EMA31	140	65,5	205	2490	6390



FLUID SPEED

When selecting the filter size, we suggest to consider also the max recommended fluid speed:
- in suction lines normally 0,1< v < 1 m/s
- in return or low pressure lines normally 1,5< v < 4 m/s

RECOMMENDED FLOW RATES

Type	Media	l/min at Δ p	
		0,03 bar (suction line)	0,5 bar (return or low pressure line)
FMA11B03	MD	7	58
	ME	8	62
	MF	8	72
	MG	8	72
	CC	4	45
	CD	6	55
FMA11B04	MD	11	75
	ME	11	79
	MF	12	95
	MG	12	95
	CC	8	58
	CD	10	72
FMA21	MD	21	177
	ME	23	185
	MF	34	197
	MG	34	197
	CC	17	132
	CD	19	148

Type	Media	l/min at Δ p	
		0,03 bar (suction line)	0,5 bar (return or low pressure line)
FMA22	MD	35	349
	ME	41	265
	MF	45	303
	MG	45	303
	CC	27	185
	CD	30	220
FMA31	MD	91	535
	ME	106	556
	MF	136	590
	MG	136	590
	CC	45	386
	CD	61	428
FMA32	MD	207	638
	ME	235	749
	MF	329	783
	MG	87	503
	CC	87	503
	CD	140	628

N.B. All the data have been obtained with mineral oil having a kinematic viscosity 30 cSt and specific gravity 0,9 kg/dm^3; for fluids with different features, please consider the factors described in the first part of this catalogue. All the data are obtained from test done at the UFI HYDRAULIC DIVISION Laboratory, according to the specification ISO 3968:2005. In case of discrepancy, please check the contamination level, viscosity and features of the fluid in use.

CLOGGING INDICATOR
A visual or electrical indicator is available a san option and allows monitoring of the element condition. The port for the indicator is a standard feature.

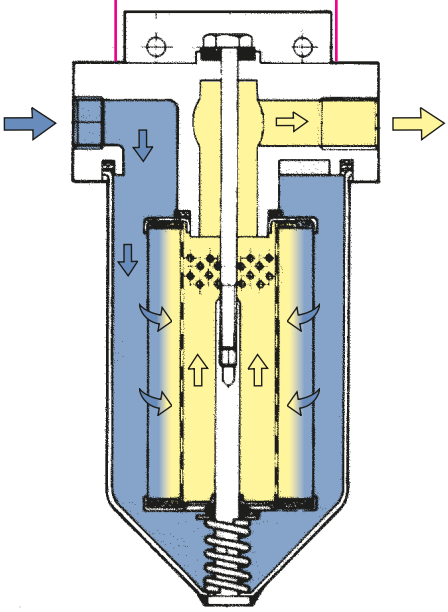
FLEXIBILITY OF APPLICATION
This filter can be used on suction, low pressure or return line, within the recommended working parameters.

"LONG LIFE" FILTER ELEMENT
The filter elements are designed with a very large filter area giving a highest dirt holding capacity.

RETURN & LOW PRESSURE

SUCTION

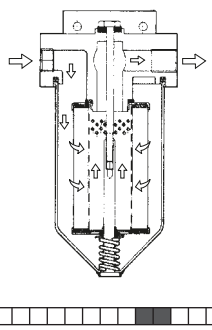
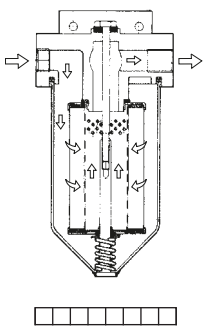
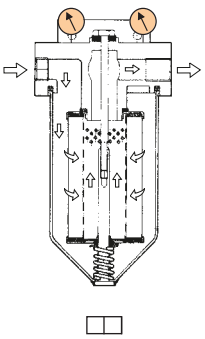
CLOGGING INDICATOR
For further technical informations and other options see General Catalogue.



CLOGGING INDICATOR
For further technical informations and other options see General Catalogue.

SPARE SEAL KIT

	NBR	FKM
FMA11	521.0111.2	521.0112.2
FMA21	521.0113.2	521.0114.2
FMA22	521.0113.2	521.0114.2
FMA31	521.0115.2	521.0116.2
FMA31	521.0115.2	521.0116.2

FILTER HOUSING	FILTER ELEMENT	CLOGGING INDICATOR
		

SPARE PARTS ELEMENTS
(For filling up see table "Ordering and option chart")