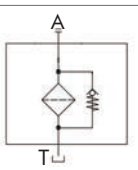
FCR7 SERIES
Tank top return filters

Return filter for mounting on the tank lid. Filtration from inside to outside.
Flow rates up to 600 l/min.

TECHNICAL INFORMATION

HOUSING

HYDRAULIC SYMBOL:		
PRESSURE:	Max working Burst	8 bar 16 bar
CONNECTION PORTS:	G 1/2"÷ G 2"	
MATERIALS:	Head and cover: Top cover: Insert holder: Diffuser: Seal:	aluminium alloy PA6 (sizes 10 to 14 only) aluminium alloy zinc plated steel NBR
BYPASS:	1,7 bar	

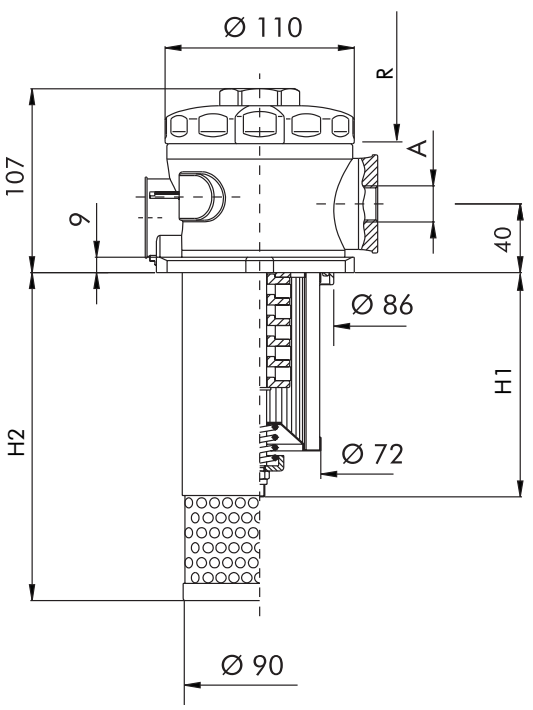
ELEMENT

tested according to ISO 2941, 2942, 2943, 3968, 16889, 23181

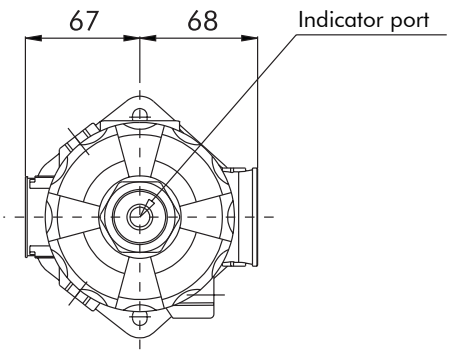
FILTER MEDIA:	Microglass fiber: Paper: Wire mesh	G03 - G06 - G10 - G25 C10 - C25 T60
DIFFERENTIAL BURST PRESSURE:	10 bar	
OPERATING TEMPERATURE RANGE:	-25°C +100°C	
FLUID COMPATIBILITY:	Full with HH-HL-HM-HV (acc. To ISO 2943). For use with other fluid please contact Filtrec Customer Service (info@filtrec.it).	

OVERALL DIMENSIONS

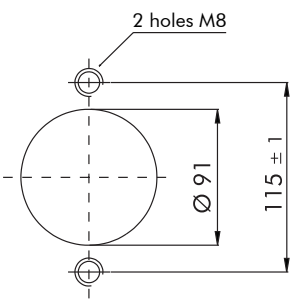
FCR-7 **11 / 12 / 13 / 14**



option “S” with diffusor option “0” without diffusor



TANK MOUNTING PATTERN

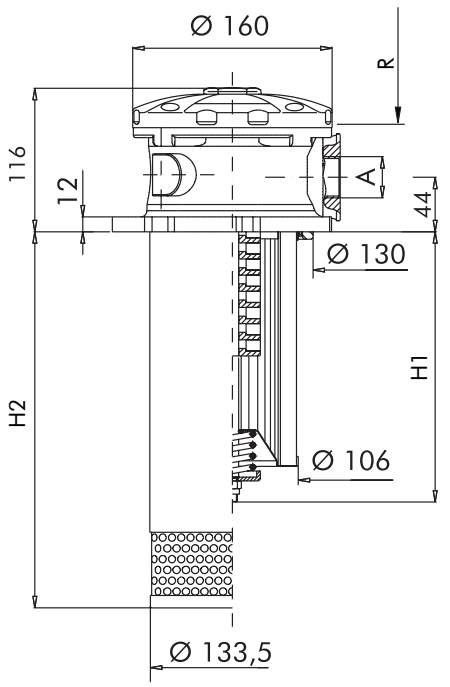


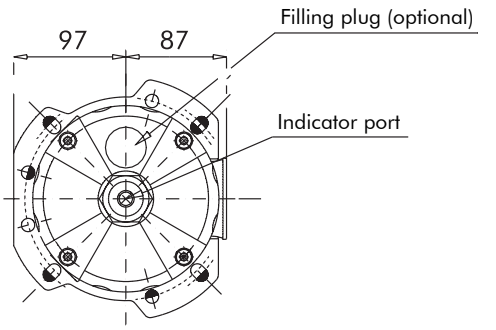
NOMINAL SIZE

MODEL	A	H1	H2	R	WEIGHT
FCR7-11	G 1/2"	133	195	206	2 Kg
FCR7-12	G 3/4”	178		250	2,2 Kg
FCR7-13	G 1”	228	345	300	2,4 Kg
FCR7-14	G 1” 1/4	328		400	2,8 Kg

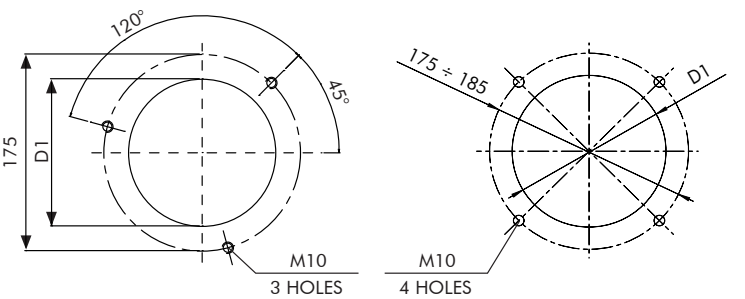
OVERALL DIMENSIONS

FCR-7 **20 / 21 / 22**





MULTIFIX FLANGE ALLOWING TWO TANK MOUNTING PATTERNS



option "S" with diffusor / option "0" without diffusor

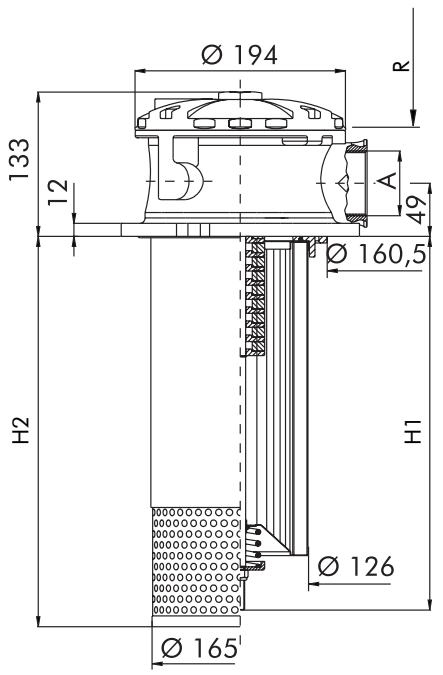
D1= 134 for option "S" / 131 for option "0"

NOMINAL SIZE

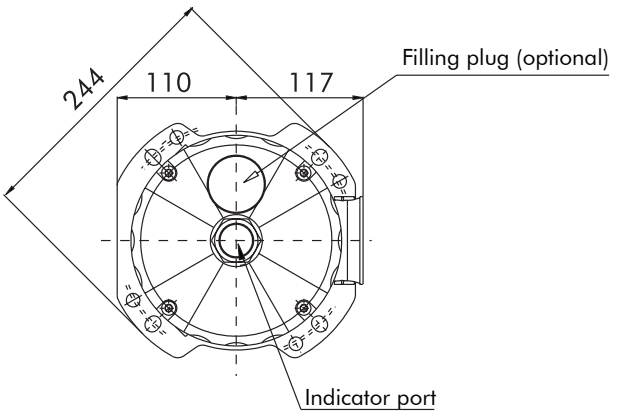
MODEL	A	H1	H2	R	WEIGHT
FCR7-20	G 1"	233	310	330	5,3 Kg
FCR7-21	G 1" 1/4	303		400	5,6 Kg
FCR7-22	G 1" 1/2	508	515	515	6,9 Kg

OVERALL DIMENSIONS

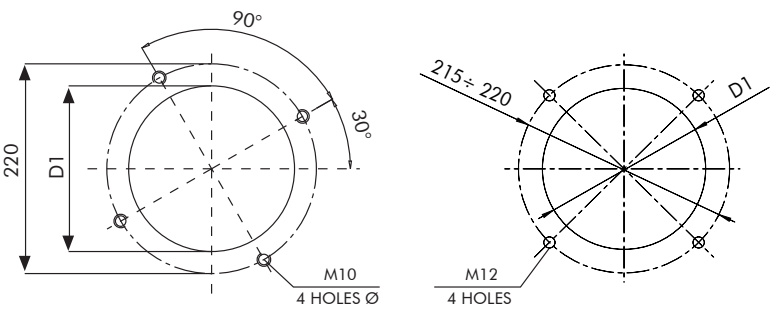
FCR-7 **30 / 31 / 32 / 33**



option “S” with diffusor / option “0” without diffusor



MULTIFIX FLANGE ALLOWING TWO TANK MOUNTING PATTERNS



D1= 166 for option “S” / 161 for option “0”

NOMINAL SIZE

MODEL	A	H1	H2	R	WEIGHT
FCR7-30	G 1” 1/2 G 2”	265	360	380	7,2 Kg
FCR7-31		345		460	7,5 Kg
FCR7-32		535	550	650	9,1 Kg
FCR7-33		445		560	9,8 Kg

ORDERING INFORMATION

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
FCR7	**30**	**G10**	**B**	**B6**	**B**	**M**	**S**	**0**	**C**	**000**
R7	**30**	**G10**	SPARE ELEMENT							

1. FILTER SERIES	FCR7		
2. FILTER SIZE	11-12-13-14		
	20-21-22		
	30-31-32-33		
3. FILTER MEDIA	G03	glassfiber $ß_{4,5\mu m(c)} > 1.000$	
	G06	glassfiber $ß_{7\mu m(c)} > 1.000$	
	G10	glassfiber $ß_{12\mu m(c)} > 1.000$	
	G25	glassfiber $ß_{22\mu m(c)} > 1.000$	
	C10	paper $ß_{10\mu m(c)} > 2$	
	C25	paper $ß_{25\mu m(c)} > 2$	
	T60	wire mesh 60 μm	
4. SEALS	B	NBR	
5. CONNECTIONS	B3	G 1/2"	size 11 to 14
	B4	G 3/4"	
	B5	G 1"	size 11 to 22
	B6	G 1 1/4"	
	B7	G 1 1/2"	size 30 to 33
	B8	G 2"	
6. BYPASS VALVE	B	1,7 bar	
7. MAGNET	0	no magnet	
	M	with magnets	
8. DIFFUSER	0	no diffuser	
	S	with diffuser	
9. FILLING PLUG	0	no filling plug	
	T	with filling plug	
10. INDICATOR PORT	C	1/8" plugged	
11. INDICATOR	000	no indicator	
	MPB (ex R9)	press. gauge rear connection	
	MRB (ex R10)	press. gauge radial connection	
	PDB (ex R13)	pressure switch	

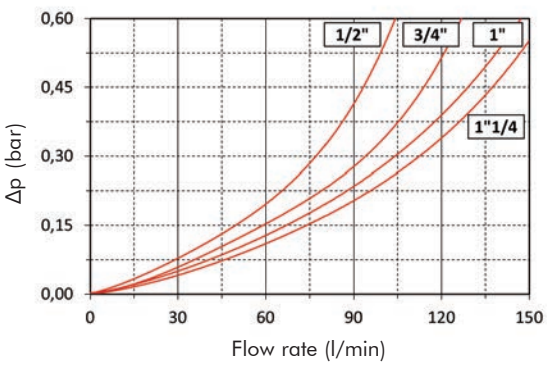
PRESSURE DROP (Δp) INFORMATION FOR FILTER SIZING

The total Delta P through a filter assembly is given from Housing Δp + Element Δp .
The max recommended total Δp for return filters is 0,4 – 0,6 bar with clean element.

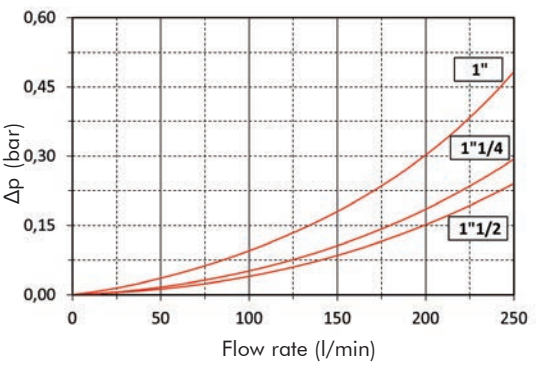
HOUSING PRESSURE DROP

The housing Δp is given by the curve of the considered model and port, in correspondence of the flow rate value.

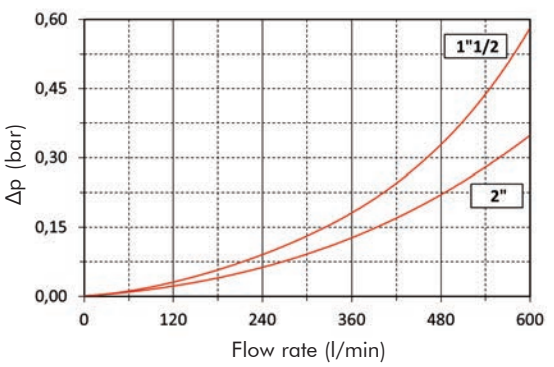
FCR7 11-14



FCR7 20-22



FCR730-33



N.B. All the reported data have been obtained at our laboratory, according to specification ISO3968 with mineral oil having 32 cSt viscosity and density 0,875 Kg/dm^3.

ELEMENT PRESSURE DROP

The element Δp (bar) is given by the flow rate (l/min) multiplied by the factor in the table here below corresponding to the selected media and divided by 1000.
If the oil has a viscosity V1different than 32 cSt a corrective factor V1/32 must be applied.
Example: 200 l/min with R722G10 and oil viscosity 46 cSt > 200 x 0,69/1000 x 46/32 = 0,20 bar

	G03	G06	G10	G25	C10	C25	T60
R711	19,02	16,88	6,93	4,61	2,95	2,52	1,58
R712	11,68	10,81	4,32	3,10	2,93	2,50	1,36
R713	7,75	6,85	3,72	2,73	2,15	1,85	1,34
R714	5,52	4,95	2,38	2,18	1,74	1,49	1,32
R720	4,02	3,28	1,45	1,08	0,98	0,85	0,14
R721	2,61	2,21	1,09	0,85	0,76	0,65	0,12
R722	1,86	1,58	0,69	0,46	0,38	0,25	0,11
R730	3,12	2,49	1,34	0,92	0,84	0,70	0,10
R731	2,06	1,90	0,84	0,39	0,33	0,25	0,09
R732	1,31	1,19	0,49	0,26	0,23	0,18	0,08
R733	1,47	1,23	0,62	0,28	0,25	0,20	0,09

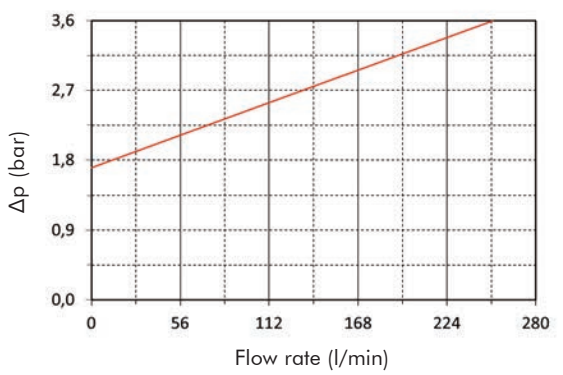
EXAMPLE OF TOTAL Δp CALCULATION

FCR722G10BB6BMSC000 with 200 l/min and oil 46 cSt:
Housing Δp 0,18 bar + element Δp 0,20 bar (200 x 0,69/1000 x 46/32) = total assembly Δp 0,38 bar

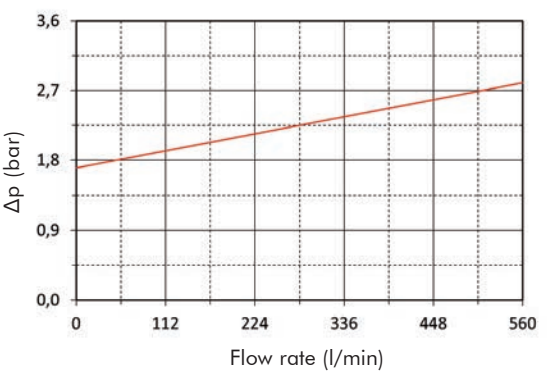
BYPASS VALVE PRESSURE DROP

The bypass valve Δp is given by the curve of the considered model and setting, in correspondence of the flow rate value.

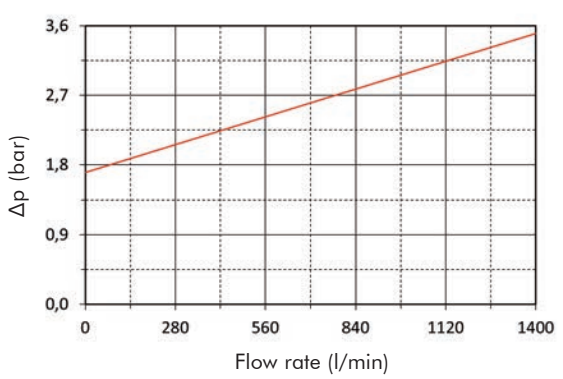
FCR7 11-14



FCR7 20-22



FCR730-33



USER TIPS

1. COVER
2. FILTER HEAD
3. FILTER ELEMENT
4. DIFFUSER
5. SEAL
6. INDICATOR PORT
7. IDENTIFICATION LABEL

INDICATOR TIGHTENING TORQUE
10 Nm

FIXING BOLTS TIGHTENING TORQUE	
M6	10 Nm
M8	25 Nm
M10	50 Nm

WARNING

⚠ Make sure that Personal Protective Equipment (PPE) is worn during installation and maintenance operation.

DISPOSAL OF FILTER ELEMENT

⚠ The used filter elements and the filter parts dirty of oil are classified as "Dangerous waste material": they must be disposed according to the local laws by authorized Companies.

INSTALLATION

1. the filter head must be properly positioned and well secured on the tank lid through the fixing holes
2. ⚠ the hose must be properly connected to the IN port
3. verify that no tension is present on the filter after mounting
4. enough space must be available for filter element replacement
5. the visual clogging indicator must be in a easily viewable position
6. when a electrical indicator is used, make sure that it is properly wired
7. keep in stock a spare FILTREC filter element for timely replacement when required

OPERATION

1. ⚠ the filter must work within the operating conditions of pressure, temperature and compatibility given in the first page of this data sheet
2. the filter element must be replaced as soon as the clogging indicator signals at working temperature
3. If no clogging indicator is mounted, replace the element according to the system manufacturer's recommendations

MAINTENANCE

1. ⚠ before removing the top cover from the head, ensure that the system is switched off and there is no residual pressure in the filter
2. remove the top cover
3. remove the spring and extract the filter assembly
4. ⚠ warning : a certain quantity of oil can be retained within the filter element, provide to have a proper container available for it
5. unscrew the nut at the bottom of the insert and slip the dirty filter element carefully
6. Clean the tie rod (and the magnets if present) and check the support gaskets conditions, replace them if necessary.
7. Fit a new FILTREC element over the tie rod and block it by tightening the bottom nut
8. put the insert assembly into the head, put the spring in its position over the insert support, then mount the top cover and secure it properly
9. ⚠ the used filter elements cannot be cleaned and re-used

CT09-rev.00-05/20