FCR7F-1 SERIES

Tank top return filters

Return filter for mounting on the tank lid. Filtration from inside to outside.
Flow rates up to 400 l/min.

HOUSING	tested according to NFPA T3.10.5.1*, ISO 10771*, ISO 3968	
PRESSURE:	Max operating:	10 bar
	Burst:	20 bar
CONNECTIONS:	G 1″ - G 1 1/4″ - G 1 1/2″	
MATERIALS:	Head:	aluminium alloy
	Top cover:	PA6
	Element holder:	aluminium alloy
	Diffuser:	stainless steel
	Seal:	NBR (FKM on request)
BYPASS VALVE:	B version 1,7 bar C version 3 bar	

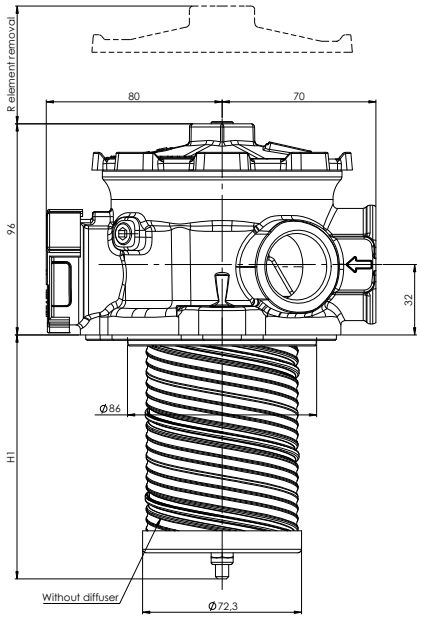
ELEMENT	tested according to ISO 11170, 2941, 2942, 2943, 3724, 3968,16889, 16908, 23181
FILTER MEDIA:	Inorganic microfiber G03 - G06 - G10 - G15 - G25 - G40 Paper: C10 - C25 Wire mesh: T60 Synthetic: M05 - M10 - M15
BURST PRESSURE:	10 bar

TEMPERATURE RANGE:	-30°C +100°C
FLUID COMPATIBILITY:	Full with HH-HL-HM-HV HETG-HEES (acc. to ISO 6743/4). For use with other fluid please contact Filtrec Customer Service (info@filtrec.it).

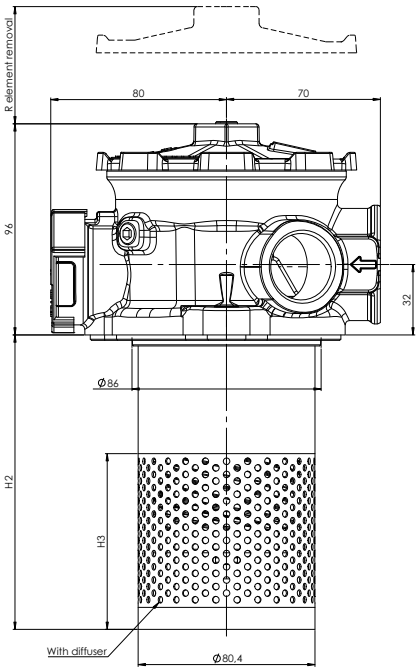
* as reference method only for verifying the pressure fatigue resistance and establishing the burst pressure ratings.

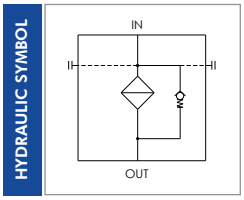
FCR7F-1X-...-X-2A

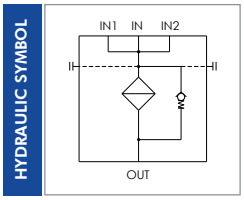
VERSION 0

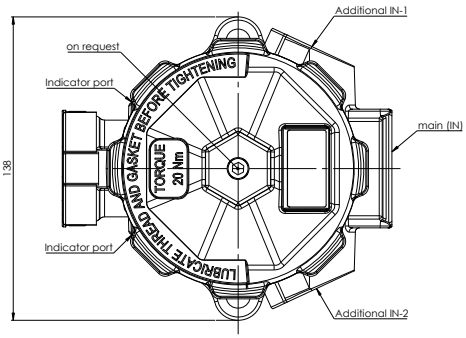


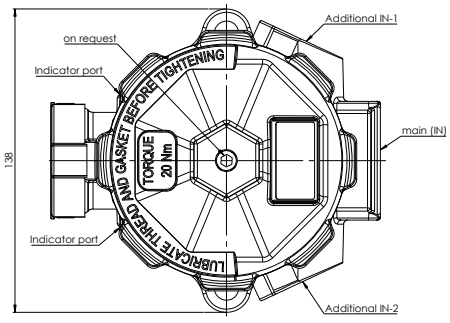
VERSION S

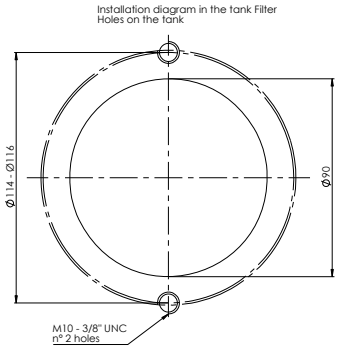












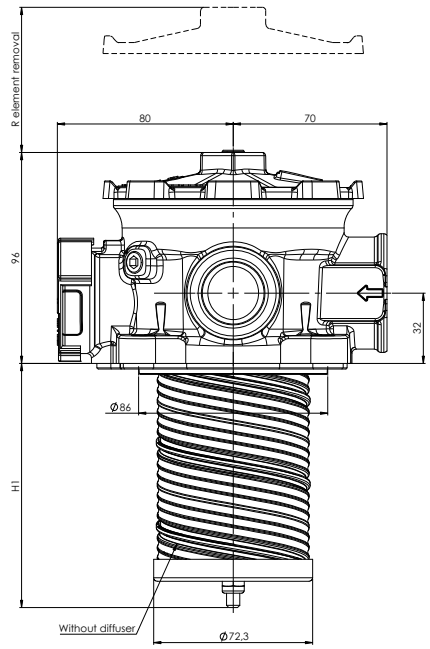
NOMINAL SIZE

MODEL	IN	IN-1	IN-2	H1	H2	H3	R	WEIGHT* Vers. 0	WEIGHT* Vers. S
FCR7F-11	G 1" G 1 1/4"	not machined or G 1"		111	134	80	220	1,7 Kg	2 Kg
FCR7F-12				156	179		265	1,7 Kg	2 Kg
FCR7F-13				206	229		315	1,8 Kg	2,2 Kg
FCR7F-14				306	329	100	415	1,8 Kg	2,3 Kg

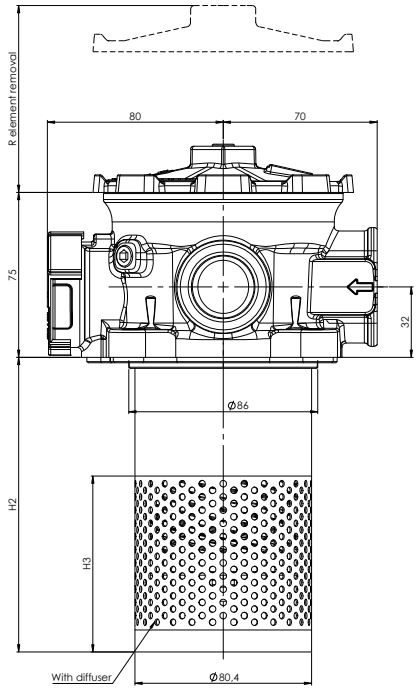
* Weight without element and magnets

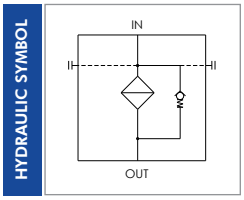
FC-R7F-1X-...-X-4A

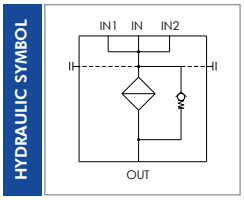
VERSION 0

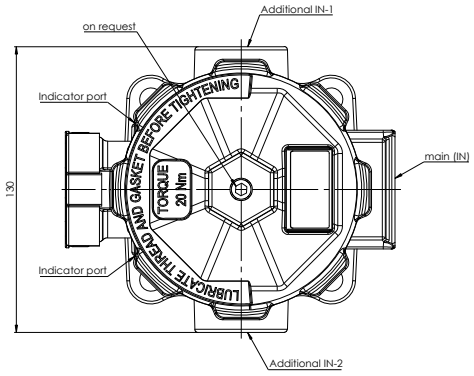


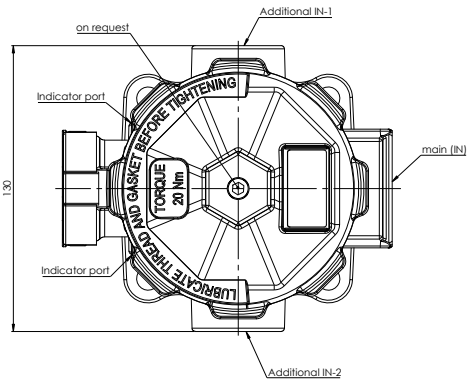
VERSION S

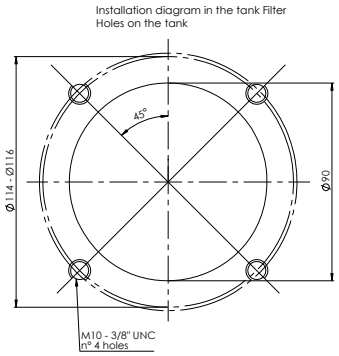












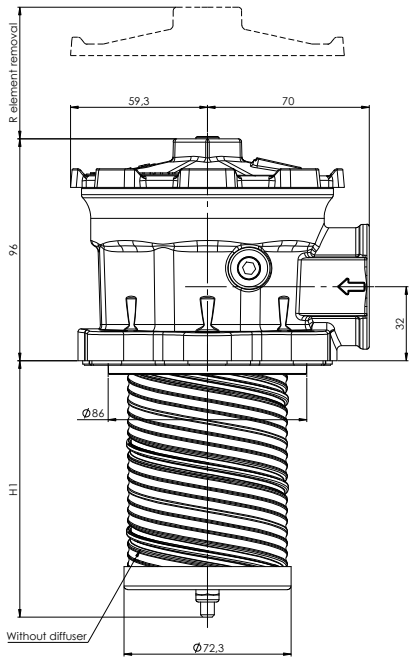
NOMINAL SIZE

MODEL	IN	IN-1	IN-2	H1	H2	H3	R	WEIGHT* Vers. 0	WEIGHT* Vers. S
FCR7F-11	G 1" G 1 1/4"	not machined or G 1"		111	134	80	220	1,8 Kg	2,1 Kg
FCR7F-12				156	179		265	1,8 Kg	2,2 Kg
FCR7F-13				206	229		315	1,9 Kg	2,3 Kg
FCR7F-14				306	329	100	415	1,9 Kg	2,4 Kg

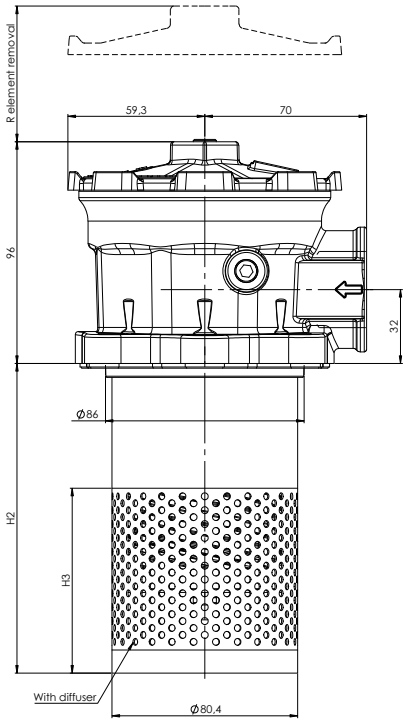
* Weight without element and magnets

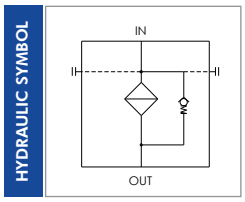
FC-R7F-1X-...-0-6A

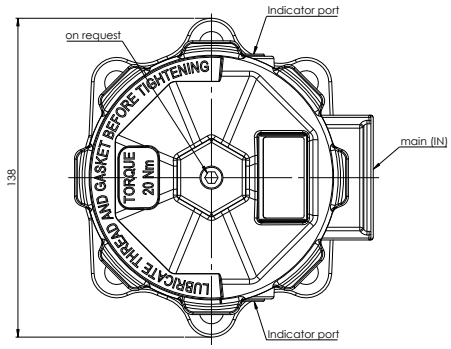
VERSION 0

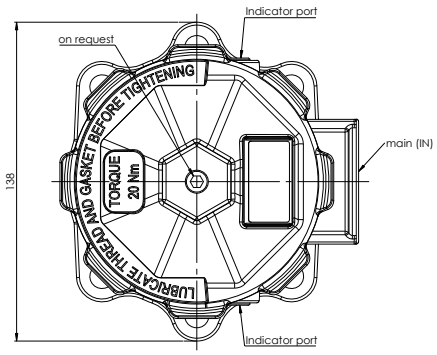


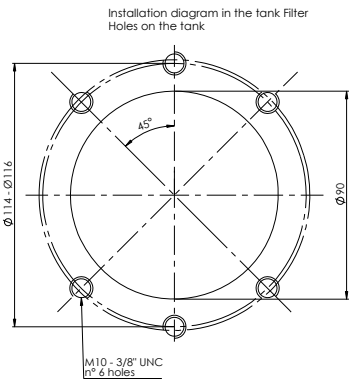
VERSION S











NOMINAL SIZE

MODEL	IN	H1	H2	H3	R	WEIGHT* Vers. 0	WEIGHT* Vers. S
FCR7F-11	G 1" G 1 1/4"	111	134	80	220	1,5 Kg	1,8 Kg
FCR7F-12		156	179		265	1,5 Kg	1,9 Kg
FCR7F-13		206	229		315	1,6 Kg	2 Kg
FCR7F-14		306	329	100	415	1,6 Kg	2,1 Kg

* Weight without element and magnets

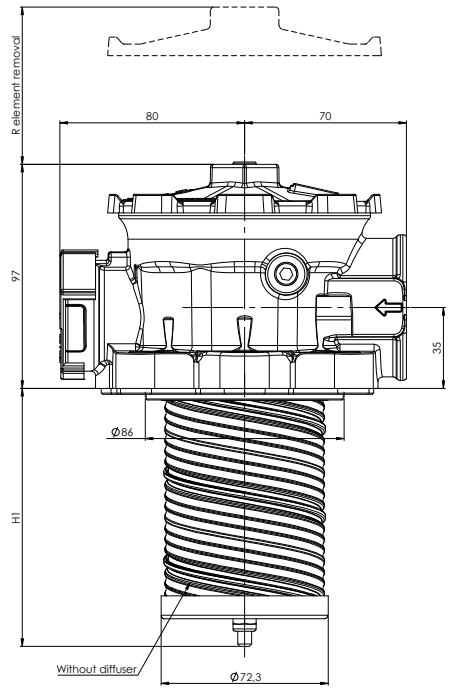
ORDERING INFORMATION

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
	FC	**R7F**	**14**	**G40**	**B**	**B6**	**00**	**B**	**0**	**0**	**B**	**0**	**000**	**1**	**2A**
SPARE ELEMENT		**R7F**	**14**	**G40**	**B**										

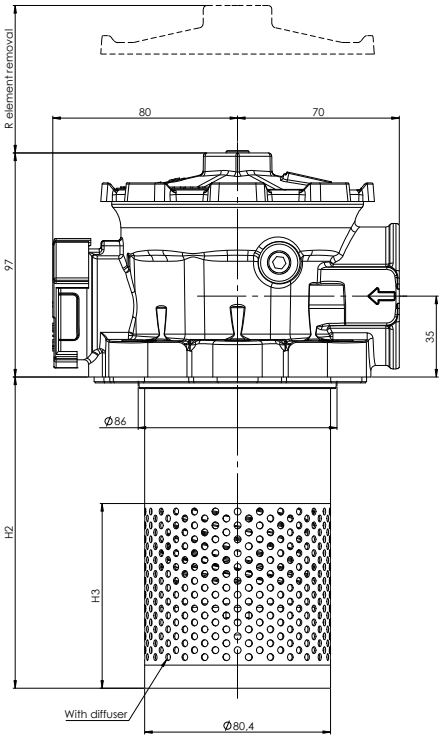
1. FILTER SERIES	FC		
2. FILTER ELEMENT SERIES	R7F		
3. FILTER SIZE	11		
	12		
	13		
	14		
4. FILTER MEDIA	000	no element	
	G03	glassfiber $ß_{5\mu m(c)} > 1.000$	
	G06	glassfiber $ß_{7\mu m(c)} > 1.000$	
	G10	glassfiber $ß_{12\mu m(c)} > 1.000$	
	G15	glassfiber $ß_{17\mu m(c)} > 1.000$	
	G25	glassfiber $ß_{22\mu m(c)} > 1.000$	
	G40	glassfiber $ß_{35\mu m(c)} > 1.000$	
	C10	paper $ß_{10\mu m(c)} > 2$	
	C25	paper $ß_{25\mu m(c)} > 2$	
	T60	wire mesh 60 μm	
	M05	synthetic $ß_{10\mu m(c)} > 1.000$	
	M10	synthetic $ß_{15\mu m(c)} > 1.000$	
	M15	synthetic $ß_{20\mu m(c)} > 1.000$	
5. SEALS	B	NBR	
	V	FKM (on request)	
6. MAIN PORT	B5	G 1"	
	B6	G 1 1/4"	
7. ADDITIONAL PORT	00	no additional port	
	B5	G 1"x 2	not available for 6A
8. BYPASS VALVE	B	1,7 bar	
	C	3 bar	
9. MAGNETS	0	no magnets	
	M	with magnets	
10. DIFFUSER	0	no diffuser	
	S	with diffuser	
11. INDICATOR PORT OPTION	B	2x G 1/8"	
12. COVER OPTION	0	without	
13. COMPULSORY FIELD	000	Filtrec standard	
14. INBUILT AIR BREATHER	0	no airbreather	
	1	with airbreather	not available for 6A
15. TANK MOUNTING HOLES	2A	2 holes - tank mounting pattern Ø 114-116mm M10	
	4A	4 holes - tank mounting pattern Ø 114-116mm M10	
	6A	2+4 holes - tank mounting pattern Ø 114-116mm M10	
ACCESSORIES	B610F03	spare airbreather	
The accessories must be ordered separately	DS350	dipstick	
	MPB	pressure gauge rear connection	with "B" bypass option
	MRB	pressure gauge radial connection	
	PDB	pressure switch	
	MPC	pressure gauge rear connection	with "C" bypass option
	MRC	pressure gauge radial connection	
	PDC	pressure switch	
	LC24	LED connector for pressure switch	

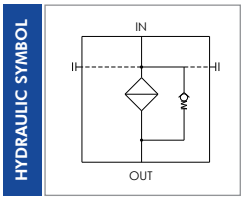
FC-R7F-1X-...-1-6A

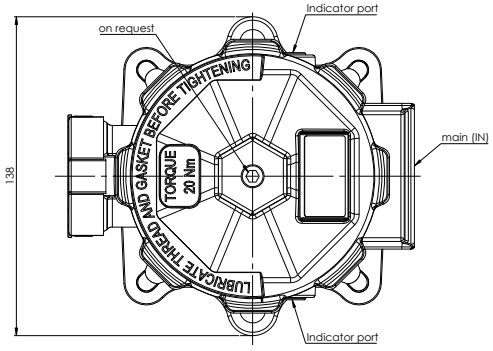
VERSION 0

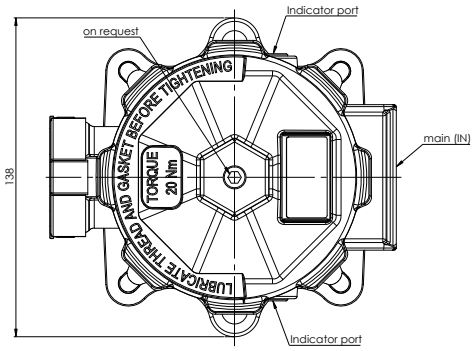


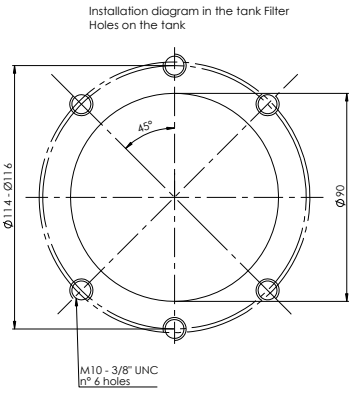
VERSION S









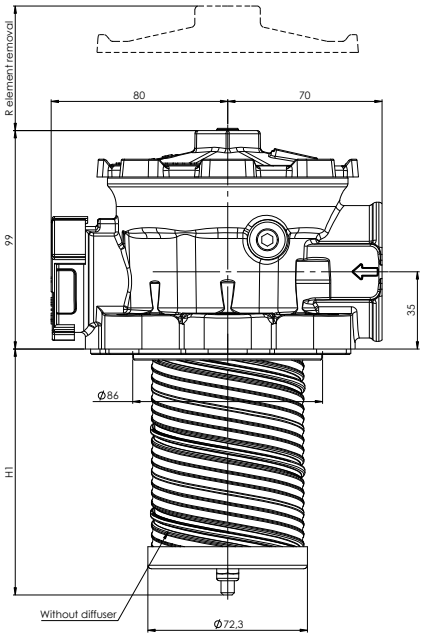


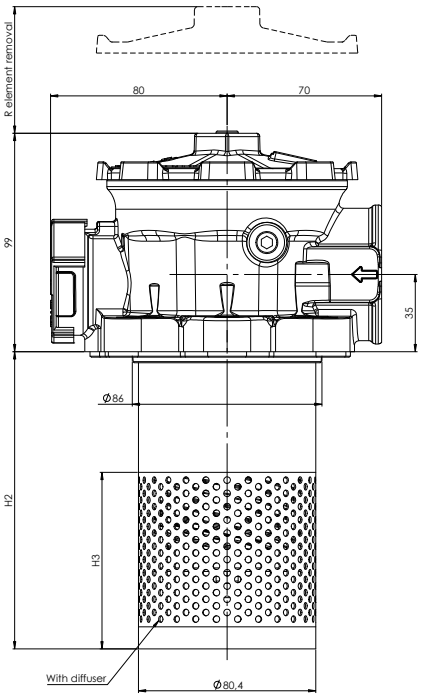
NOMINAL SIZE

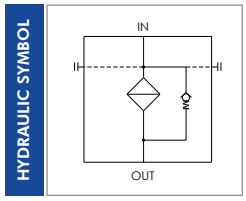
MODEL	IN	H1	H2	H3	R	WEIGHT* Vers. 0	WEIGHT* Vers. S
FCR7F-13	G 1 1/2"	206	229	80	315	1,7 Kg	2,1 Kg
FCR7F-14		306	329	100	415	1,8 Kg	2,3 Kg

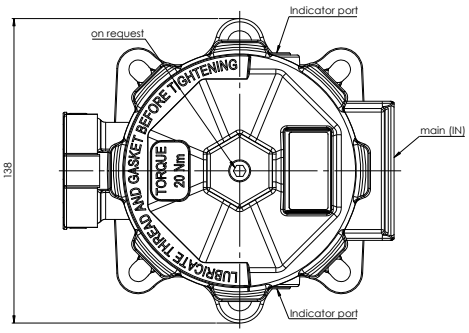
* Weight without element and magnets

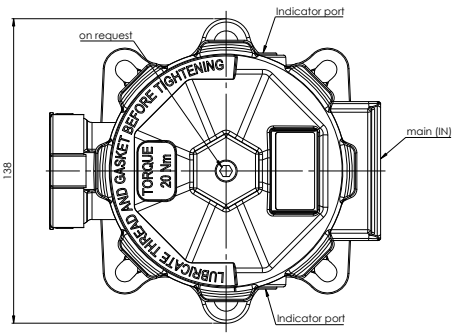
FC-R7F-1X-...-1-6B



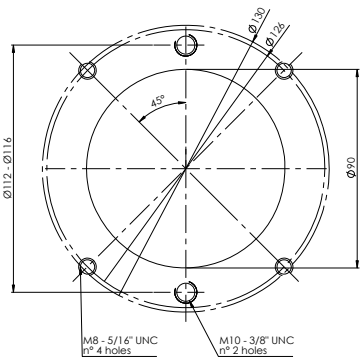








Installation diagram in the tank Filter
Holes on the tank



NOMINAL SIZE

MODEL	IN	H1	H2	H3	R	WEIGHT* Vers. 0	WEIGHT* Vers. S
FCR7F-13	G 1 1/2"	206	229	80	315	1,9 Kg	2,3 Kg
FCR7F-14		306	329	100	415	2 Kg	2,5 Kg

* Weight without element and magnets

ORDERING INFORMATION

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
	FC	**R7F**	**14**	**G40**	**B**	**B7**	**00**	**B**	**0**	**0**	**B**	**0**	**000**	**1**	**6B**
SPARE ELEMENT		**R7F**	**14**	**G40**	**B**										

1. FILTER SERIES	FC	
2. FILTER ELEMENT SERIES	R7F	
3. FILTER SIZE	13	
	14	
4. FILTER MEDIA	000	no element
	G03	glassfiber $ß_{5\mu m(c)} > 1.000$
	G06	glassfiber $ß_{7\mu m(c)} > 1.000$
	G10	glassfiber $ß_{12\mu m(c)} > 1.000$
	G15	glassfiber $ß_{17\mu m(c)} > 1.000$
	G25	glassfiber $ß_{22\mu m(c)} > 1.000$
	G40	glassfiber $ß_{35\mu m(c)} > 1.000$
	C10	paper $ß_{10\mu m(c)} > 2$
	C25	paper $ß_{25\mu m(c)} > 2$
	T60	wire mesh 60 μm
	M05	synthetic $ß_{10\mu m(c)} > 1.000$
	M10	synthetic $ß_{15\mu m(c)} > 1.000$
	M15	synthetic $ß_{20\mu m(c)} > 1.000$
5. SEALS	B	NBR
	V	FKM (on request)
6. MAIN PORT	B7	G 1 1/2"
7. ADDITIONAL PORT	00	no additional port
8. BYPASS VALVE	B	1,7 bar
	C	3 bar
9. MAGNETS	0	no magnets
	M	with magnets
10. DIFFUSER	0	no diffuser
	S	with diffuser
11. INDICATOR PORT OPTION	B	2x G 1/8"
12. COVER OPTION	0	without
13. COMPULSORY FIELD	000	Filtrec standard
14. INBUILT AIR BREATHER	1	with airbreather
15. TANK MOUNTING HOLES	6A	2+4 holes - tank mounting pattern Ø 114-116mm M10
	6B	2+4 holes 2 hole tank mounting pattern Ø 112-116mm M10 4 hole tank mounting pattern Ø 126-130mm M8

ACCESSORIES	B610F03	spare airbreather	
The accessories must be ordered separately	DS350	dipstick	
	MPB	pressure gauge rear connection	with "B" bypass option
	MRB	pressure gauge radial connection	
	PDB	pressure switch	
	MPC	pressure gauge rear connection	with "C" bypass option
	MRC	pressure gauge radial connection	
	PDC	pressure switch	
	LC24	LED connector for pressure switch	

PRESSURE DROP (Δp) INFORMATION FOR FILTER SIZING

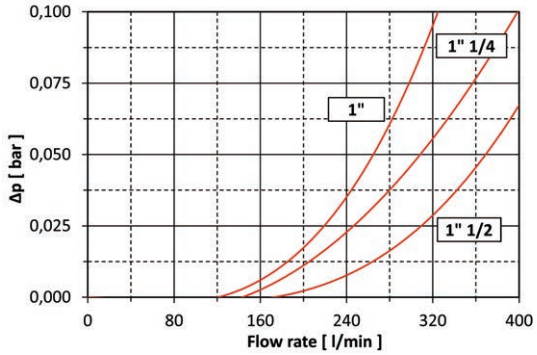
The total Delta P through a filter assembly is given from Housing Δp + Element Δp.
The max recommended total Δp for return filters is 0,4 – 0,6 bar with clean element.
For multiport versions, the housing Δp to be considered is the sum of the Δp through all the ports that can be used contemporarily.

N.B. All the reported data have been obtained at our laboratory, according to specification ISO3968 with mineral oil having 32 cSt viscosity at 40°C and density 0,875 kg/dm^3.

HOUSING PRESSURE DROP

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

FCR7F-1



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 V_1 different than 32 cSt a corrective factor $V_1/32$ must be applied.
Example: 300 l/min with R7F14G40B and oil viscosity 46 cSt: 300 x 1,10/1000 x 46/32 = 0,47 bar

	G03	G06	G10	G15	G25	G40	M05	M10	M15	C10	C25	T60
R7F11	17,12	15,19	6,24	4,77	4,15	2,53	4,70	3,51	2,60	2,95	2,47	0,30
R7F12	10,51	9,73	3,89	3,10	2,79	2,49	3,02	2,70	2,54	2,68	2,38	0,28
R7F13	6,98	6,17	3,35	2,70	2,46	1,93	2,60	2,20	1,97	2,10	1,85	0,22
R7F14	4,97	4,46	2,14	1,96	1,56	1,10	1,66	1,34	1,20	1,22	1,00	0,20

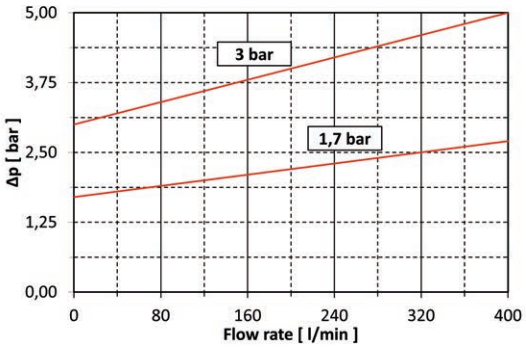
EXAMPLE OF TOTAL Δp CALCULATION

FCR7F14G40BB700B00B000016B with **300** l/min and oil **46** cSt:
Housing Δp 0,02 bar + element Δp 0,47 bar (300 x 1,10/1000 x 46/32) = total assembly Δp 0,49 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.

FCR7F-1



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.

ACCESSORIES

These accessories fit all our standard models and must be ordered separately.
For clogging indicators see the catalogue.

A DIPSTICK
for oil level detection

When reduced space available, one of the tank fixing hole can be used for a dipstick to check the oil level; it is supplied with a M10 bolt support.

PART NR.	DESCRIPTION
DS350	dipstick 350 mm long

B AIR BREATHER

PART NR.	FILTRATION	FLOW RATE	Δp
B610F03	3 μm	up to 300 Nl/min	50 mbar

N.B. we recommend to replace the air breather when replacing the oil filter element.
(when working in a very dirt environment, a more frequent air breather replacement could be necessary)

C LED CONNECTOR

The LC24 connector can replace the standard black connector of the pressure switch indicators (N.B. supplied separately).
Feeded with 24V, it gives a visual indication of the filter element conditions: normally the GREEN light is on, the RED light switch on when the element is clogged.

PART NR.	DESCRIPTION
LC24	LED connector for pressure switch

USER TIPS

1. COVER
2. SPRING
3. ELEMENT HOLDER
4. GASKETS
5. MAGNETS
6. FILTER ELEMENT
7. FIXING NUT
8. DIFFUSER
9. FILTER HEAD
10. AIR BREATHER (if included)

SPARE SEALS KIT (4)

	NBR	FKM (on request)
FCR7F1-X-XX-X-2A	06.021.00341	06.021.00346
FCR7F1-X-XX-X-4A	06.021.00342	06.021.00347
FCR7F1-X-XX-0-6A	06.021.00343	06.021.00348
FCR7F1-X-XX-1-6A	06.021.00344	06.021.00349
FCR7F1-X-XX-1-6B	06.021.00345	06.021.00350

INDICATOR TIGHTENING TORQUE

10 Nm

COVER TIGHTENING TORQUE (1)

20 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. Make sure that all the filter components are properly mounted as per exploded view directions.
2. Enough space must be available for filter element replacement.
3. Keep in stock a spare FILTREC filter element for timely replacement when required.
4. Filter housing should be earthed.

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 access cover (1), ensure that the system is switched off and there is no residual pressure in the filter.
2. Remove the access cover (1).
3. Remove the spring (2) and extract the filter element 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/o-ring (4) conditions, replace them if necessary.
7. Fit a new FILTREC element, the spacer and the washer over the tie rod, then screw on it the fixing nut. To achieve the optimal element fitting, tighten the nut until it gets in touch with the washer and the element is stuck; then screw in the nut for one more turn.
8. Put the insert assembly into its seat within the tank, put the spring (2) in its position over the element holder(3), then mount the access cover (1) and secure it properly.

⚠
9. The used filter elements cannot be cleaned and re-used.

FILTREC®

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Technical information may change without notice

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