FILTREC®

FHT SERIES

Return/suction filter for hydrostatic systems

Filters for operating pressure up to 10 bar. Flow rate up to 120 l/min.

In systems with hydrostatic drive, this return-suction filter can combine the suction and return filter in one system, providing clean oil to the feed pump while keeping under control the oil contamination of the main return flow.

HOUSING	tested according to NFPA T3.10.5.1*, ISO 10771*, ISO 3968
PRESSURE:	Max operating: up to 10 bar Burst: 20 bar
CONNECTIONS:	G 3/4" ÷ G 1"
MATERIALS:	Head: aluminum Cover: PA6 + GF Bowl: PA6+GF+CF Seal: NBR (FKM on request)
BYPASS VALVE:	2,5 bar
PRESSURIZATION VALVE:	0,5 bar

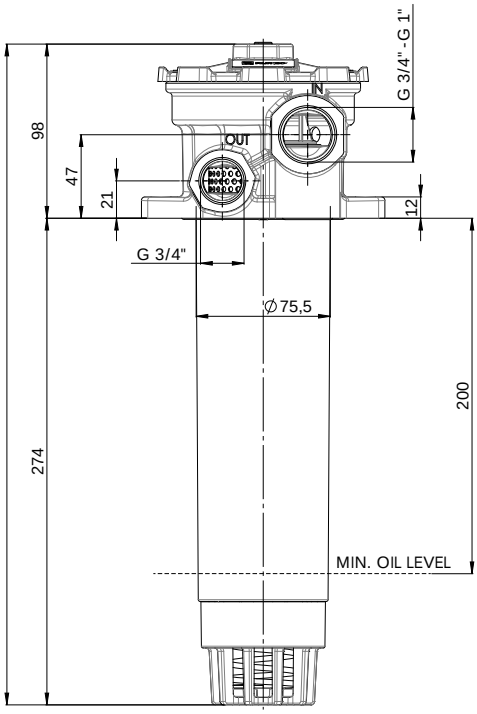
ELEMENT	tested according to ISO 11170, 2941, 2942, 2943, 3724, 3968,16889, 16908, 23181
FILTER MEDIA: Available in std. and antistatic version	Inorganic microfiber: G06 - G10 - G15 - G25 Synthetic: M05 – M10 – M15
COLLAPSE PRESSURE:	10 bar

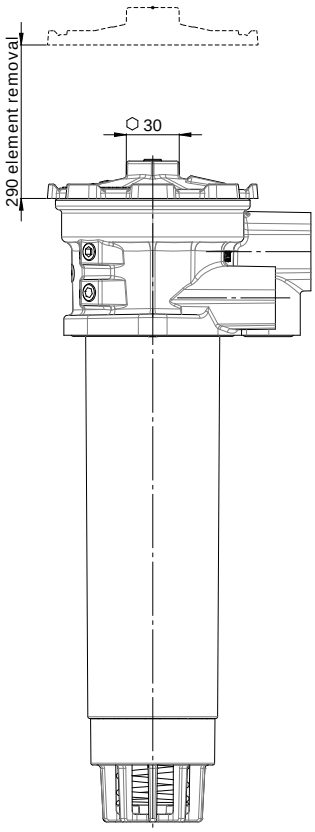
TEMPERATURE RANGE:	with NBR seal from -30 °C to +100 °C (short term up to -40°C) with FKM seal (OPTION) from -25 °C to +120 °C
FLUID COMPATIBILITY:	Full with HH-HL-HM-HV HETG-HEES (acc. to ISO 6743/4). For use with other fluid please contact Filtrec Customer Service (info@filtrec.it).

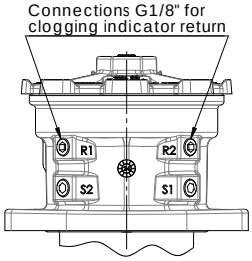
* as reference method only for verifying the pressure fatigue resistance and establishing the burst pressure ratings.

OVERALL DIMENSIONS

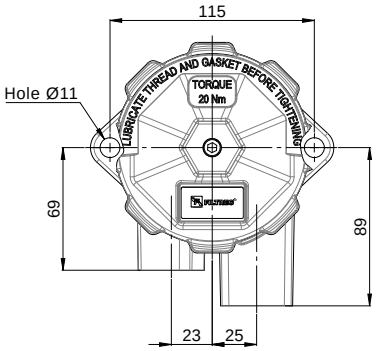
FHT-A/B/C/D



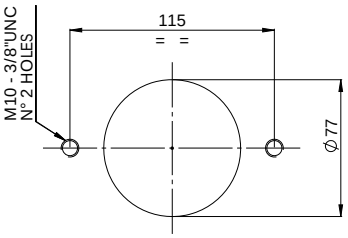


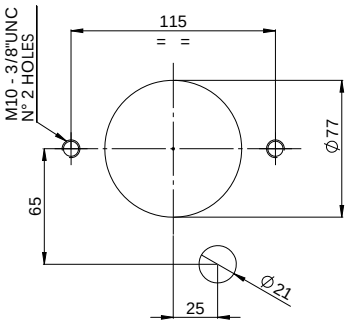


Weight: 1,7 Kg



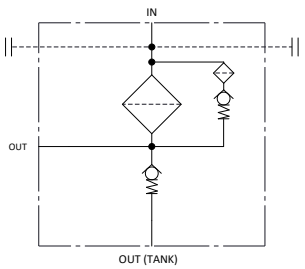
TANK MOUNTING PATTERN POSSIBLE IN BOTH CONFIGURATIONS



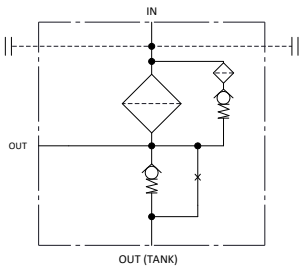


HYDRAULIC SYMBOLS

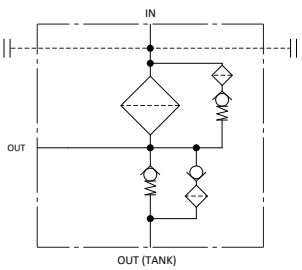
FHT-A-H5-11



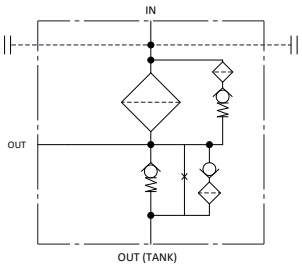
FHT-B-H5-11



FHT-C-H5-11

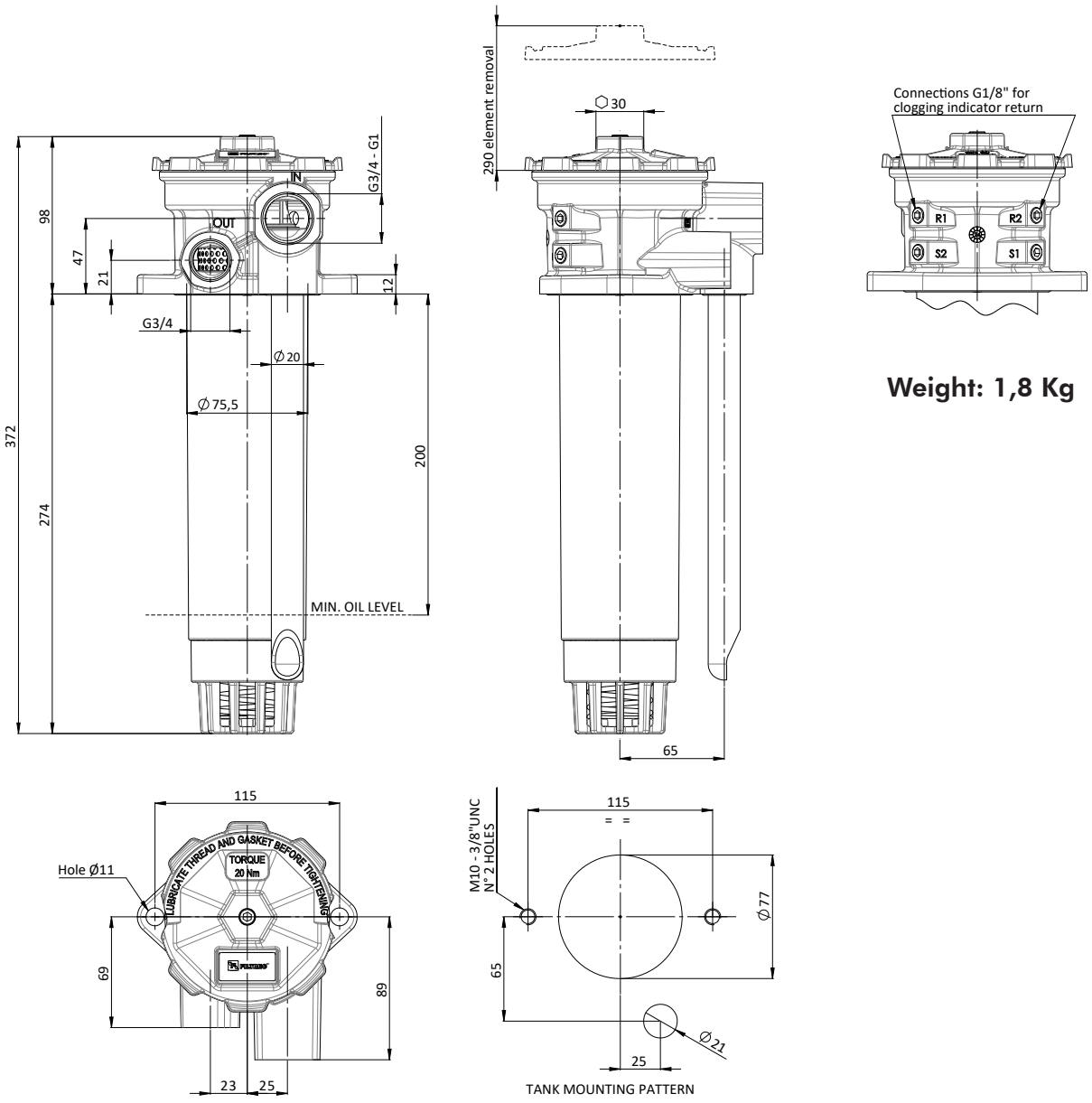


FHT-D-H5-11



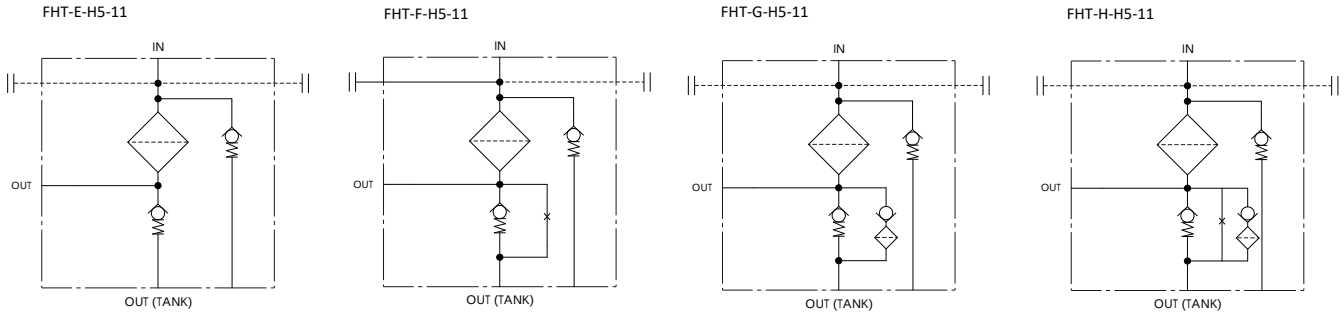
OVERALL DIMENSIONS

FHT-E/F/G/H



Weight: 1,8 Kg

HYDRAULIC SYMBOLS



ORDERING INFORMATION

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
	FHT	**C**	**H5**	**11**	**M15**	**B**	**2**	**ESD**	**B5**	**B4**	**1**	**000**	**S**	**1**
SPARE ELEMENT			**H5**	**11**	**M15**	**B**	**2**	**/ESD**						

1. FILTER SERIES	FHT	
2. CONFIGURATION	A	BYPASS INSIDE THE ELEMENT WITH STRAINER + pressurization valve
	B	BYPASS INSIDE THE ELEMENT WITH STRAINER + pressurization valve + drain hole
	C	BYPASS INSIDE THE ELEMENT WITH STRAINER + pressurization valve + anticavitation valve + safety strainer
	D	BYPASS INSIDE THE ELEMENT WITH STRAINER + pressurization valve + drain hole + anticavitation valve + safety strainer
	E	EXTERNAL BYPASS 2,5bar setting + pressurization valve
	F	EXTERNAL BYPASS 2,5bar setting + pressurization valve + drain hole
	G	EXTERNAL BYPASS 2,5bar setting + pressurization valve + anticavitation valve + safety strainer
	H	EXTERNAL BYPASS 2,5bar setting + pressurization valve + drain hole + anticavitation valve + safety strainer
3. FILTER ELEMENT SERIES	H5	
4. FILTER SIZE	11	
5. FILTER MEDIA	000	no element
	G06	glassfiber $ß_{7\mu m(c)} \geq 1.000$
	G10	glassfiber $ß_{12\mu m(c)} \geq 1.000$
	G15	glassfiber $ß_{17\mu m(c)} \geq 1.000$
	G25	glassfiber $ß_{22\mu m(c)} \geq 1.000$
	M05	synthetic $ß_{10\mu m(c)} \geq 1.000$
	M10	synthetic $ß_{15\mu m(c)} \geq 1.000$
	M15	synthetic $ß_{20\mu m(c)} \geq 1.000$
6. SEALS	B	NBR
7. BYPASS VALVE Inbuilt into the filter element	0	no bypass or no element (only for configuration E-F-G-H or empty housing config)
	2	2,5 bar (only for configuration A-B-C-D)
8. ELEMENT SUFFIX only for spare element "/" before the three-digit suffix is needed	ESD	antistatic version
9. RETURN CONNECTIONS (A)	B4	G 3/4"
	B5	G 1"
10. SUCTION CONNECTIONS (B)	B4	G 3/4"
11. INDICATOR PORT	1	R1+R2 ports (2x1/8" INDICATOR PORTS ON RETURN)
12. COMPULSORY FIELD	000	Filtrec standard
13. CORROSION PROTECTION	S	standard – without treatment
14. OPTION	1	no option std.
	3	1x1/8" INDICATOR PORTS ON COVER – dissipative compound

PREFERRED OPTION

ORDERING INFORMATION

ACCESSORIES

The accessories must be ordered separately

INDICATOR	MPD	pressure gauge rear connection - 2,5 bar setting
	MRD	pressure gauge radial connection - 2,5 bar setting
	PDC	pressure switch - 2 bar setting

FILTER FEATURES

In systems with hydrostatic drive, this return-suction filter can combine the suction and return filter in one system, providing clean oil to the feed pump while keeping under control the oil contamination of the main return flow.

Among the different configurations proposed (hydraulic schemes on page 2 and 3), we suggest the FHT-C one.
This configuration guarantees the cleanliness of the oil to the feed pump, filtered by the main filter or, in case of clogging, by the safety strainer in the element.

In certain conditions, the integrated emergency suction valve provides sufficient oil flow to the feed pump.

Moreover, the back-pressure valve downstream the filter maintains a pressure of about 0,5 bar into the feed line avoiding any cavitation problem. Please consider that the return flow must exceed the suction flow under any operating condition; in general, good tip is to consider that the main return flow must be 2x the feed pump flow.

Both the filter housing and the filter cartridge are by default in anti-static version avoiding any electrostatic discharge inside the filter generated by certain types of fluids (without ZDDP additives and biodegradables).

PRESSURE DROP (Δp) INFORMATION FOR FILTER SIZING

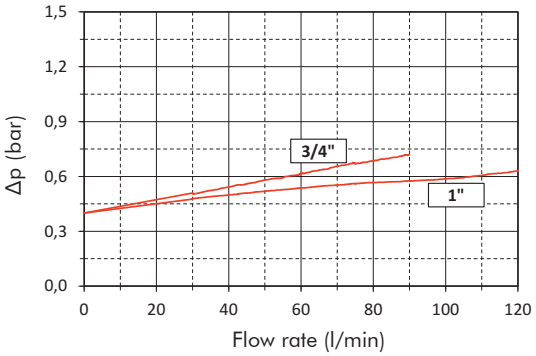
The total Delta P through a filter assembly is given from Housing Δp + Element Δp.
The max recommended total Δp is 1 bar with clean element.

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.

HOUSING PRESSURE DROP

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

FHT-x-H5-11



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 Vx different than 32 cSt a corrective factor Vx/32 must be applied.
Example: 80 l/min with H511M15B2/ESD and oil viscosity 46 cSt: (80 x 2,40)/1000 x (46/32) = 0,276 bar

	G06	G10	G15	G25	M05	M10	M15
H511	5,76	4,27	4,32	3,73	2,88	2,51	2,40

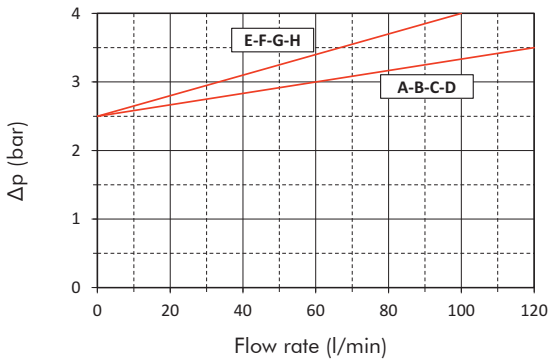
EXAMPLE OF TOTAL Δp CALCULATION

FHTCH511M15B2ESDB5B41000S1 with 80 l/min and oil 46 cSt:
Housing Δp 0,58 bar + element Δp 0,276 bar (80 x 2,40)/1000 x (46/32) = total assembly Δp 0,856 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.

FHT-x-H5-11



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USER TIPS

1. FILTER HEAD
2. INDICATOR PORT
3. COVER
4. FILTER ELEMENT
5. SEAL KIT
6. FILTER BOWL
7. IDENTIFICATION LABEL
8. EXTERNAL BY-PASS (only for configuration E-F-G-H)

INDICATOR TIGHTENING TORQUE

10 Nm

SPARE SEAL KIT PART NUMBER (5)

	NBR
FHT-H5-11	06.021.00453

COVER TIGHTENING TORQUE

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. The filter head (1) must be properly positioned and well secured on the tank lid through the fixing holes.
2. The hoses must be properly connected to the IN and OUT 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 an easily viewable position.
6. When an electrical indicator is used, make sure that it is properly wired.

⚠ 7. Never run the system with no filter element fitted.
8. Keep in stock a spare FILTREC filter element for timely replacement when required.
9. 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 emperature (in cold start conditions, oil temperature lower than 30°C, a false alarm can be given due to oil viscosity).
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. Unscrew the top cover (3) and remove it.
3. Remove the dirty element (4).
4. Fit a new FILTREC element (4), verifying the part number, particularly concerning the micron rating; remove completely the plastic protection and insert the element in the filter head.
5. Check the O-rings (5) conditions and replace them if necessary.

⚠ 6. Screw the top cover (3) onto the head.
7. 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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