

## Return Filters - Standard

### RFT-150

Tank top with 4-hole-mounting · Connection G1 / -16 SAE · Nominal flow rate up to 180 l/min / 47 gpm



Return Filter RFT-150

#### Description

##### Application

In the return line circuits of hydraulic systems.

##### Performance features

###### *Protection against wear:*

By means of filter elements that even in full-flow filtration meet the highest demands regarding cleanliness classes.

###### *Protection against malfunction:*

By means of full-flow filtration in the system return, the pumps above all are protected from dirt particles remaining in the system after assembly, repairs, or which are generated by wear or enter the system from outside.

##### Special features

- › Bypass valve:  
The location close to the inlet port prevents dirt particles retained by the filter element from entering into the clean oil side.
- › Removable bowl:  
In case of maintenance the filter bowl is removed together with the filter element – therefore dirt particles are not flushed back into the tank.
- › Extension pipe:  
A correct extension pipe length ensures oil outlet below minimum oil level and prevents foaming.

##### Filter elements

Flow direction from outside to center.

The star-shaped pleating of the filter material results in:

- › large filter surfaces
- › low pressure drop
- › high dirt-holding capacities
- › long service life

##### Filter maintenance

By using a clogging indicator the correct moment for maintenance is stated and thus the optimum utilization of the filter life is guaranteed.

## Materials

Cover:	Aluminum alloy
Filter head:	Aluminum alloy
Filter bowl:	Polyamide, GF-reinforced
Seals:	NBR
Filter media:	EXAPOR®Standard - inorganic multi-layer microfiber web Paper - cellulose web, impregnated with resin

## Accessories

Electrical and optical clogging indicators are available on request.  
For technical data and dimensions see datasheet 60.20.

Extension pipes on the bowl outlet are available in several lengths on request.

## Characteristics

### Nominal flow rate

Up to 180 l/min / 47 gpm.

The nominal flow rates indicated by ARGO-HYTOS Standard are based on the following features:

- › closed by-pass valve at  $v \leq 150 \text{ mm}^2/\text{s}$  / 698 SUS
- › element service life > 500 operating hours at an average fluid contamination of 0.07 g per l/min / 0.27 g per gpm flow volume
- › flow velocity in the connection lines  $\leq 6 \text{ m/s}$  /  $\leq 20 \text{ ft/s}$

### Connection

Threaded ports according to

- › ISO 228 or DIN 13 and
- › SAE standard J514

Sizes see chapter ordering code  
(other port threads on request).

For installation recommendations, see info sheet 00.325.

### Filter fineness

10  $\mu\text{m(c)}$  ... 30  $\mu\text{m(c)}$

$\beta$ -values according to ISO 16889 (see diagrams).

### Hydraulic fluids

Mineral oil and biodegradable fluids  
(HEES and HETG, see info-sheet 00.20).

### Temperature range

-30 °C ... +100 °C (temporary -40 °C ... +120 °C)  
-22 °F ... +212 °F (temporary -40 °F ... +248 °F)

### Viscosity at nominal flow rate

- › at operating temperature:  $v < 60 \text{ mm}^2/\text{s}$  / 280 SUS
- › as starting viscosity:  $v_{\text{max}} = 1200 \text{ mm}^2/\text{s}$  / 5560 SUS

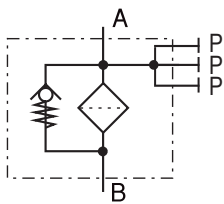
### Operating pressure

Max. 10 bar / 145 psi

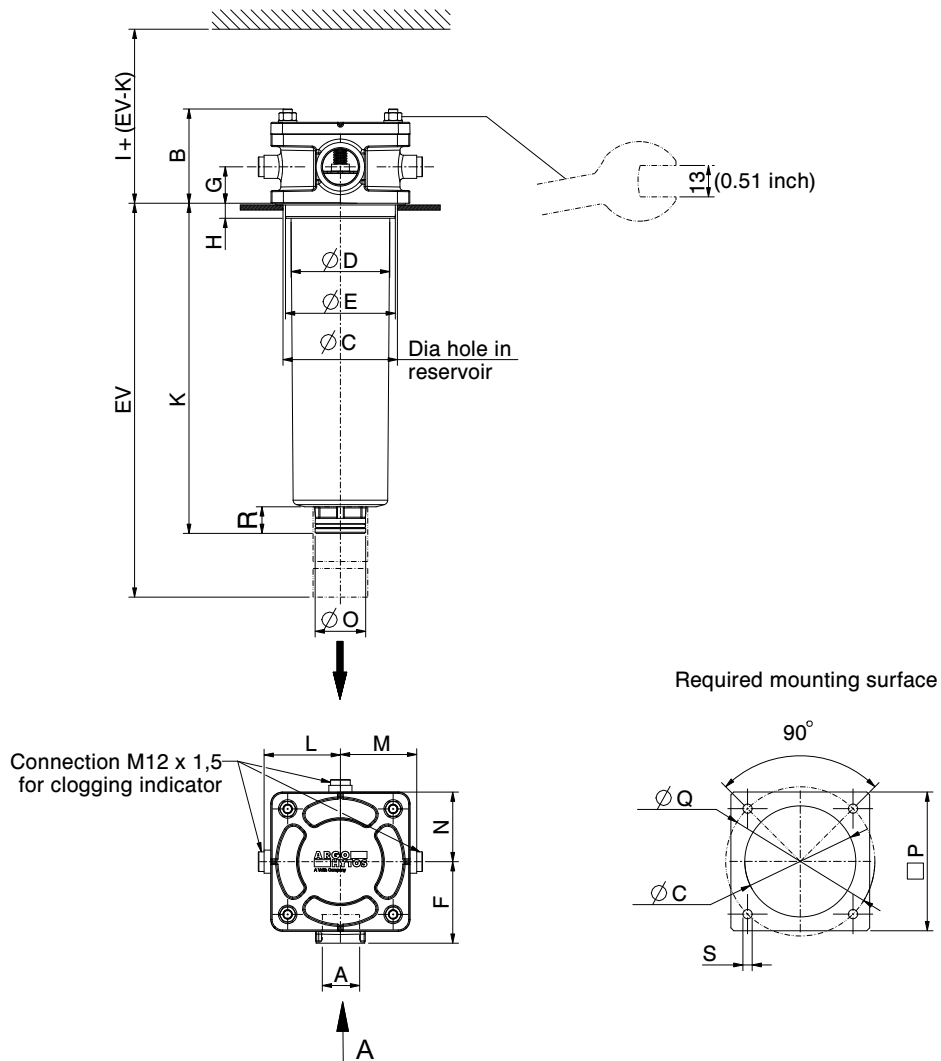
### Mounting position

Preferably vertical, outlet downwards.

## Symbol



## Dimensions



## Measurements in mm

Type [mm]	A	B	C min/max	D	E	F	G	H	I	K	L	M	N	O	P	Q	R	S
RFT-150	G1	82	96 / 99	85	95	70	31.5	13	455	288	66	66	60	44	120	129	23	8

## Measurements in inch

Type [inch]	A	B	C min/max	D	E	F	G	H	I	K	L	M	N	O
RFT-150	-16 SAE*	2.36	3.78 / 3.9	3.34	3.74	2.75	1.24	0.51	17.91	11.33	2.59	2.59	2.36	1.73

Type [inch]	P	Q	R	S										
RFT-150	4.72	5.07	0.90	0.31										

\*Corresponds to 1 5/16 - 12 UN - 2B

## Ordering Code

### Filter assembly

<b>Type of filter</b>	<b>Code</b>	RFT - - - - - 100
Return Filter, tank mounted	RFT	
<b>Flow rate, max. *</b>	<b>Code</b>	
180 l/min / 47 gpm	150	
<b>Connection thread</b>	<b>Code</b>	
G1	GD	
-16 SAE	UD	

### Order example:

RFT - 150 - GD - N3 - KM - 100

<b>Air breather</b>	<b>Code</b>
Without air breather	100
<b>Bypass setting</b>	<b>Code</b>
3.0 bar / 43 psi (10EXS, 16EXS)	RM
1.5 bar / 22 psi (30P)	KM
<b>Filter fineness <math>\beta \times (c)=200</math></b>	<b>Code</b>
10 $\mu\text{m}$ (10EXS)	G2
16 $\mu\text{m}$ (16EXS)	I2
30 $\mu\text{m}$ (30P)	N3

Filters delivered with 3 plugged connections  
M12 x 1.5 for clogging indicators

### Spare filter element

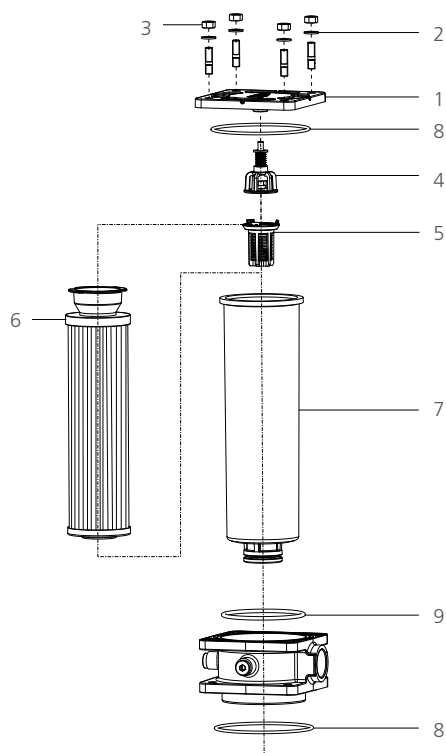
<b>Filter media</b>	<b>Code</b>	7 . 08 29 -
EXAPOR®Standard	F	
Paper	P	
<b>Length</b>	<b>Code</b>	
for RFT-150	29	

### Order example:

P7.0829-11

<b>Filter fineness</b>	<b>Code</b>
10EXS	06
16EXS	08
30P	11

## Spare parts

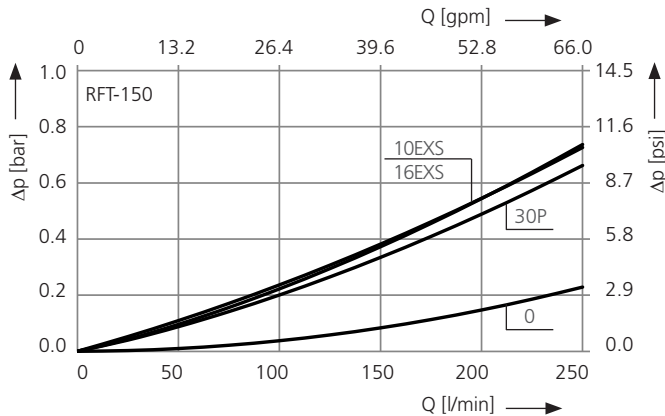


Pos.	Designation	Part No.
1	Cover	47000797
2	Washer M8	32946600
3	Hex nut M8	32941001
4	Connector	34381100
5	Bypass valve 3.0 bar / 43.5 psi Bypass valve 1.5 bar / 21.7 psi	34381000 47004304
6	Replacement filter element	see element order key
7	Filter bowl RFT-150	34381600
8	O-ring 105 x 3.0 mm / 5.90 x 0.11 inch	34381500
9	O-ring 82 x 4.0 mm / 3.22 x 0.15 inch	34381700

The functions of the complete filters as well as the outstanding features of the filter elements assured by ARGO-HYTOS can only be guaranteed if original ARGO-HYTOS spare parts are used.

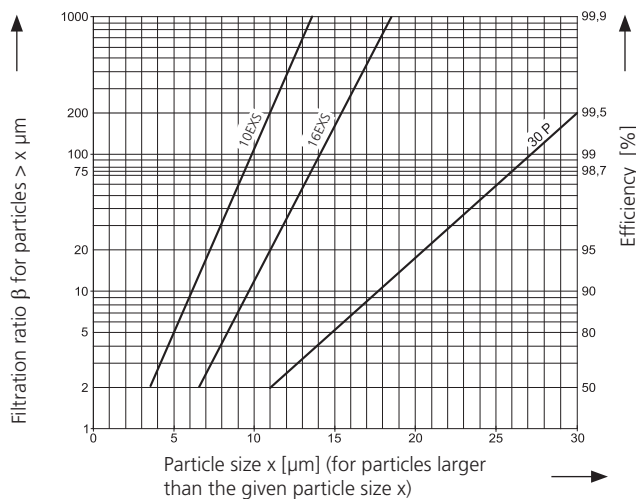
## Δp-curves for complete filters

**D1** Pressure drop as a function of the **flow volume**  
at  $v = 35 \text{ mm}^2/\text{s} / 162 \text{ SUS}$  (0 = housing empty)



## Filter fineness curves

**Dx** Filtration ratio  $\beta$  as a function of particle size  $x$  obtained by the Multi-Pass-Test according to ISO 16889



The abbreviations represent the following  $\beta$ -values resp. finenesses:

### For EXAPOR®Standard and Paper elements:

10EXS =  $\bar{\beta}_{10(c)} = 200$  EXAPOR®Standard  
16EXS =  $\bar{\beta}_{16(c)} = 200$  EXAPOR®Standard  
30P =  $\bar{\beta}_{30(c)} = 200$  Paper

Based on the structure of the filter media of the 30P paper elements, deviations from the printed curves are quite probable.

For special applications, finenesses differing from these curves are also available by using special composed filter material.

# Quality Assurance

## Quality management according to DIN EN ISO 9001

To ensure constant quality in production and operation, ARGO-HYTOS filter elements undergo strict controls and tests according to the following ISO standards:

- ISO 2941 Verification of collapse / burst pressure rating
- ISO 2942 Verification of fabrication integrity (Bubble Point Test)
- ISO 2943 Verification of material compatibility with fluids
- ISO 3968 Evaluation of pressure drop versus flow characteristics
- ISO 16889 Multi-Pass-Test (evaluation of filter fineness and dirt-holding capacity)
- ISO 23181 Determination of resistance to flow fatigue using high viscosity fluid

**Various quality controls during the production process guarantee the leakfree function and solidity of our filters.**

Illustrations may sometimes differ from the original. ARGO-HYTOS is not responsible for any unintentional mistake in this specification sheet.