

Return Filters - Lightline

RFT 043 · RFT 072

Tank top mounting · Connection G $\frac{3}{4}$ / -12 SAE · Nominal flow rate up to 90 l/min / 24 gpm



Return Filter RFT 043

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

Ventilating filter

Ventilation of the reservoir by an integral star-shape pleated filter element:

- › removable (replace annually!)
- › splash-proof
- › fineness 2 μ m

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

Screw-on cap:	Polyester, GF-reinforced
Filter head:	Aluminum alloy
Filter bowl:	Polyamide, CF-reinforced
Seals:	NBR (FPM on request)
Filter media:	EXAPOR®Light - 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.

An optional oil separator (Part No. E 043.1701) is available on request.

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

Characteristics

Nominal flow rate

Up to 90 l/min / 24 gpm.

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

- › closed bypass valve at $v \leq 150 \text{ mm}^2/\text{s} / 698 \text{ SUS}$
- › 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 $\leq 6 \text{ m/s} / 20 \text{ ft/s}$

Connection

Threaded ports according to

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

Sizes see Selection Chart, page 3

(other port threads on request).

For installation recommendations, see info sheet 00.325.

Filter fineness

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

β -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: $v < 60 \text{ mm}^2/\text{s} / 280 \text{ SUS}$

› as starting viscosity: $v_{\text{max}} = 1200 \text{ mm}^2/\text{s} / 5560 \text{ SUS}$

Operating pressure

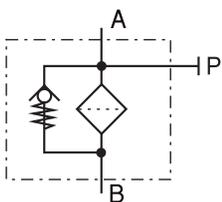
Max. 10 bar / 145 psi

Mounting position

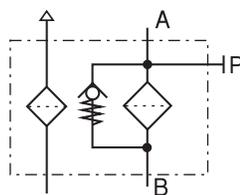
Preferably vertical, outlet downwards.

Symbols

Without air breather



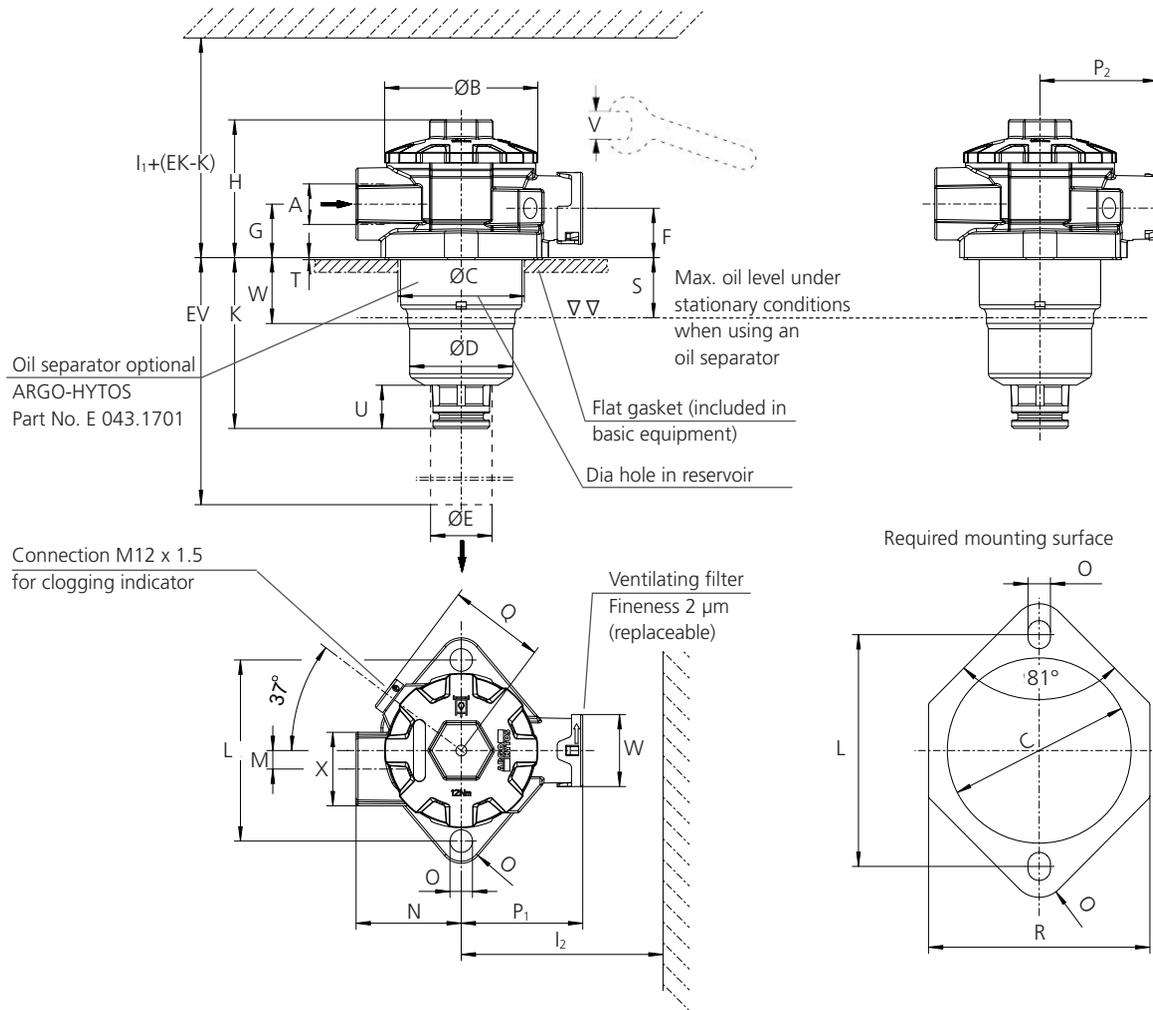
With air breather



Dimensions

Design with ventilating filter

Design without ventilating filter



Measurements

Type [mm]	A	B	C min/max	D	E	F	G	H	I ₁	I ₂	K	L	M	N	O
RFT 043	G $\frac{3}{4}$	75	60/63	51	27.8	24	26	67	175	110	83	88	9	51	11
RFT 072	G $\frac{3}{4}$	75	60/63	51	27.8	24	26	67	270	110	180	88	9	51	11

Type [mm]	P ₁	P ₂	Q	R	S	T	U	V	W	X					
RFT 043	59.5	57.5	46	79	42	2	21	AF 27	35	AF 36					
RFT 072	59.5	57.5	46	79	42	2	21	AF 27	35	AF 36					

Type [inch]	A	B	C min/max	D	E	F	G	H	I ₁	I ₂	K	L	M	N	O
RFT 043	-12 SAE*	2.95	2.36/2.48	2.01	1.09	0.94	1.02	2.64	6.89	4.33	3.27	3.46	0.35	2.01	0.43
RFT 072	-12 SAE*	2.95	2.36/2.48	2.01	1.09	0.94	1.02	2.64	10.63	4.33	7.09	3.46	0.35	2.01	0.43

Type [inch]	P ₁	P ₂	Q	R	S	T	U	V mm	W	X mm					
RFT 043	2.34	2.26	1.81	3.11	1.65	0.08	0.83	AF 27	1.38	AF 36					
RFT 072	2.34	2.26	1.81	3.11	1.65	0.08	0.83	AF 27	1.38	AF 36					

*Corresponds to 1 $\frac{1}{16}$ - 12 UN - 2B

Ordering Code

Filter assembly

Order example:

RFT - 043 - GC - G2 - OM - 101

Type of filter	Code
Return Filter, tank mounted	RFT

Flow rate, max.	Code
50 l/min / 13 gpm	043
90 l/min / 24 gpm	072

Connection thread	Code
G $\frac{3}{4}$	GC
-12 SAE	UC

Filter fineness	Code
10 μ m (10EL)	G2
16 μ m (16EL)	I2
30 μ m (30P)	N3

RFT - - - - -

Air breather	Code
Without air breather	100
With air breather	101

Bypass setting	Code
2.5 bar / 36 psi (for 10EL, 16EL)	OM
1.5 bar / 22 psi (for 30P)	KM

Filters delivered with plugged connection M12 x 1.5 for clogging indicator.

Spare filter element

Order example:

F3.0510-56

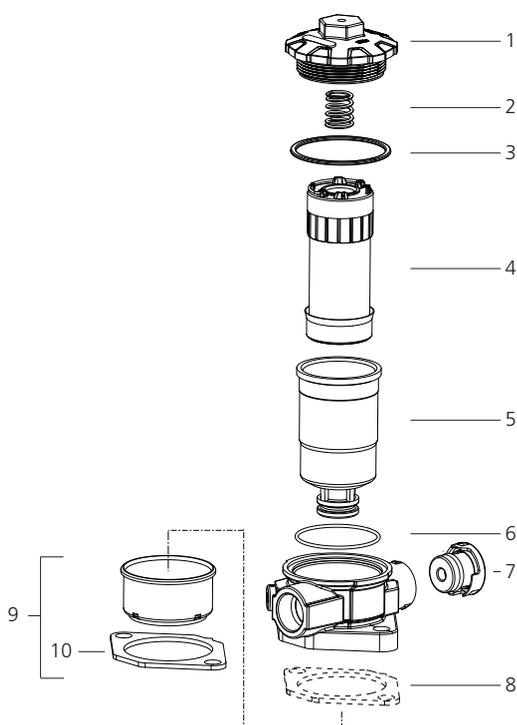
Filter media	Code
EXAPOR®Light	F
Paper	P

Length	Code
for RFT 043	10
for RFT 072	20

3 . 05 - 5

Filter fineness	Code
10EL	6
16EL	8
30P	1

Spare parts

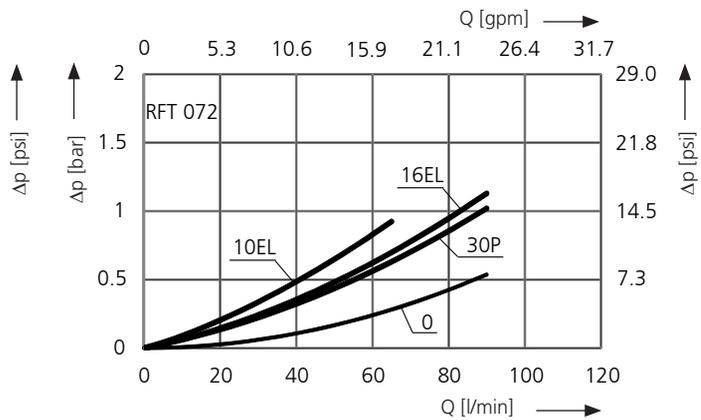
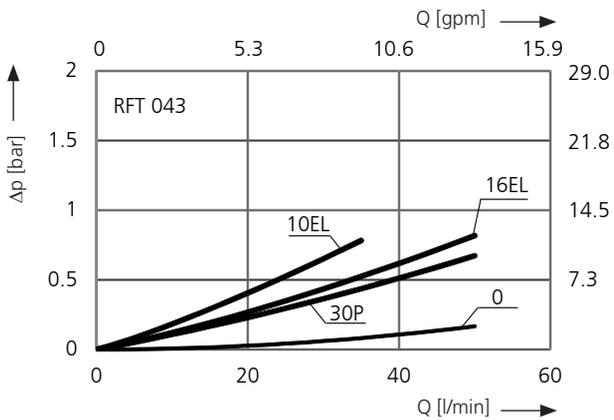


Pos.	Designation	Part No.
1	Screw-on cap	FR 043.0201
2	Compression spring	N015.1606
3	O-ring 57 x 3 mm / 2.24 x 0.12 inch	N007.0573
4	Replacement Filter element	see above
5	Filter bowl RFT 043	FR 043.0107
5	Filter bowl RFT 072	FR 072.0104
6	O-ring 50 x 2 mm / 1.97 x 0.08 inch	N007.0501
7	Replacement air breather	L1.0403-01K
8	Flat gasket (for versions without breather / oil separator)	D 043.0113
9	Oil separator (incl. pos. 10)	E 043.1701
10	Flat gasket (for versions with breather / oil separator)	D 043.0118

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

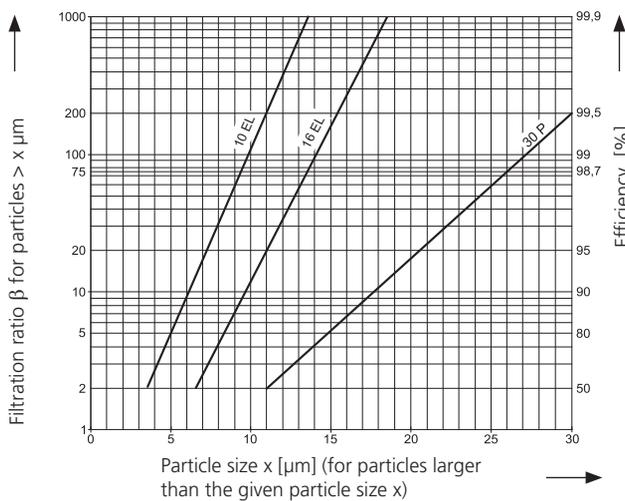
D1 Pressure drop as a function of the **flow volume** at $v = 35 \text{ mm}^2/\text{s} / 162 \text{ SUS}$ (0 = housing empty)



Filter fineness curves

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

The abbreviations represent the following β -values resp. finenesses:



For EXAPOR®Light and Paper elements:

- 10 EL = $\bar{\beta}_{10(c)} = 200$ EXAPOR®Light
- 16 EL = $\bar{\beta}_{16(c)} = 200$ EXAPOR®Light
- 30 P = $\bar{\beta}_{30(c)} = 200$ Paper

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

For ventilating filter elements:

- 2 CL = 99.5 % efficiency for particles of size 2 μm

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.