

Return Filters - Lightline

**RFT-454 · RFT-464**

Tank top mounting · Connection up to SAE 2 · Nominal flow rate up to 650 l/min / 172 gpm



Return Filter RFT-454

**Description**

**Application**

In the return line circuits of hydraulic systems.

**Performance features**

*Protection against wear:*

By means of filter elements that, in full-flow filtration, meet even 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.

**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

Filter head cover:	Aluminum alloy
Filter head:	Aluminum alloy
Housing:	Steel, phosphated
Housing bottom:	Polyamide, GF 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.

Extension pipes or diffusers on the bowl outlet are available in several lengths on request. Even the combination of both options is possible.

- › Extension pipe:  
A correct extension pipe length ensures oil outlet below minimum oil level and prevents foaming.
- › Diffuser:  
Diffusers reduce oil velocity and direct the oil to 90° outlet flow. This function prevents also oil foaming and whirling up of solid particles settled at the tank bottom.

## Characteristics

### Nominal flow rate

Up to 650 l/min / 172 gpm.

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

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

### Connection

Threaded ports according to

- › ISO 228 or DIN 13 and
- › SAE standard J514
- › SAE flange (3000 psi)

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  $\mu\text{m(c)}$

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

### Operating pressure

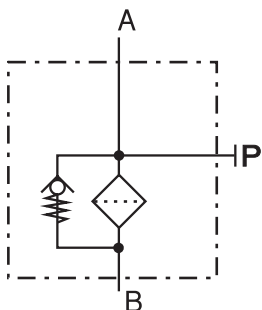
Max. 10 bar / max. 145 psi

### Mounting position

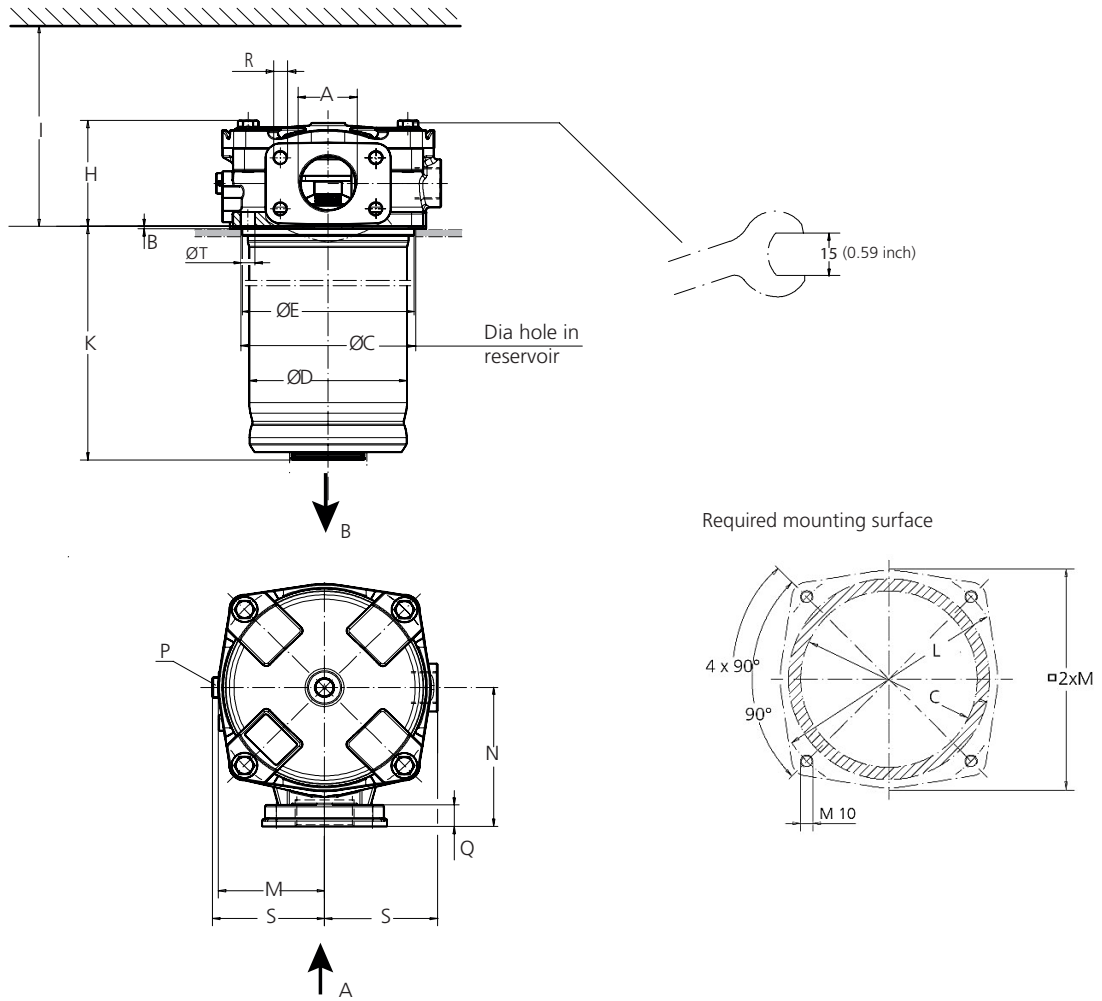
Preferably vertical, outlet downwards.

## Symbol

1



## Dimensions



## Measurements

Type [mm]	A	B	C	D	E	H	I	K	L	M	N	Q	R	S	T
RFT 454	G1½ / SAE 2	2	140.5	128.5	139.9	90	485	362	185	86.5	116	18	M12	92	11.5
RFT 464	G1½ / SAE 2	2	140.5	128.5	139.9	90	650	530	185	86.5	116	18	M12	92	11.5

Type [inch]	A	B	C	D	E	H	I	K	L	M	N	Q	R
RFT 454	-24 SAE* / SAE 2	0.08	5.53	5.06	5.51	3.54	19.09	14.25	7.29	3.41	4.57	0.71	½ -13 UNC
RFT 464	-24 SAE* / SAE 2	0.08	5.53	5.06	5.51	3.54	25.59	20.87	7.29	3.41	4.57	0.71	½ -13 UNC

Type [inch]	S	T
RFT 454	3.62	0.45
RFT 464	3.62	0.45

\*Corresponds to 1 7/8 - 12 UN-2B

## Ordering Code

### Filter assembly

Type of filter	Code
Return Filter, tank mounted	RFT

Flow rate, max.	Code
500 l/min / 132 gpm	454
650 l/min / 172 gpm	464

Connection thread	Code
G 1½ / SAE 2	GF
-24 SAE* / SAE 2	UF

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

\*Corresponds to 1 7/8 - 12 UN-2B

RFT - - - - - 100

### Order example:

RFT - 454 - UF - I2 - OM - 100

Air breather	Code
without air breather	100

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

Filter media	Code
EXAPOR®Light	F
Paper	P

Length	Code
for RFT 454	34
for RFT 464	50

2.12 - - - - -

### Order example:

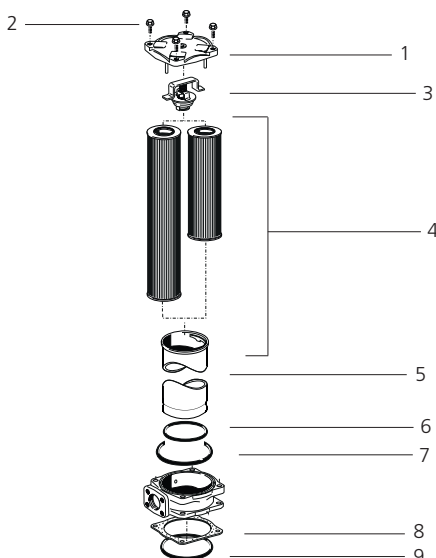
F2.1234-26

Filter fineness (2nd digit)	Code
10EL	6
16EL	8
30P	1

Filter fineness (1st digit)	Code
for RFT 454, 10EL & 16EL	2
for RFT 454, 30P	4
for RFT 464, 10EL & 16EL	0
for RFT 464, 30P	1

## Spare parts

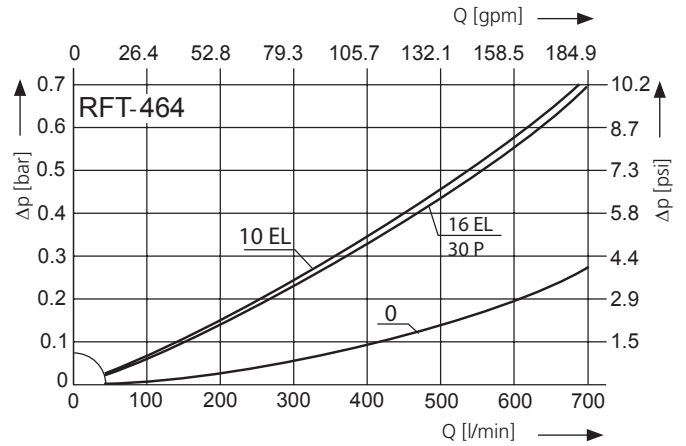
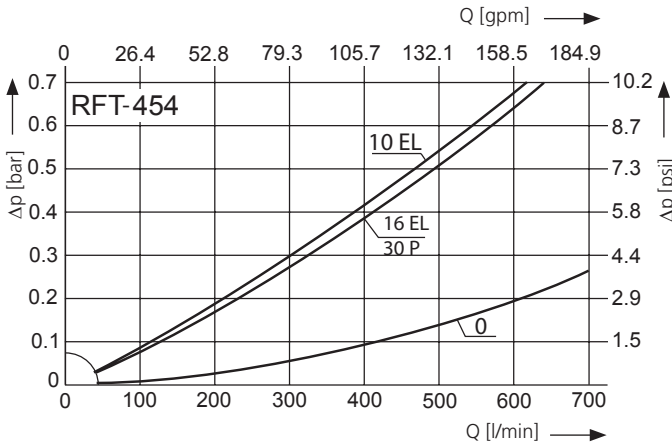


Pos.	Designation	Part No.
1	Cover	E 443.1200
2	Hexagon screw M10 x 35	28213600
3	Bypass valve (1.5 bar / 22 psi)	E 440.1500
3	Bypass valve (2.5 bar / 36 psi)	E 460.1520
4	Replacement filter element	see above
5	Filter bowl RFT 454	E 451.1900
5	Filter bowl RFT 464	E 461.1900
6	O-ring 125 x 6 mm / 4.92 x 0.24 inch	N007.1256
7	O-ring 151.76 x 5.33 mm / 5.98 x 0.21 inch	N007.1525
8	Flat gasket	E 442.0103
9	O-ring 136.5 x 5.34 mm / 5.37 x 0.21 inch	N007.1375

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.

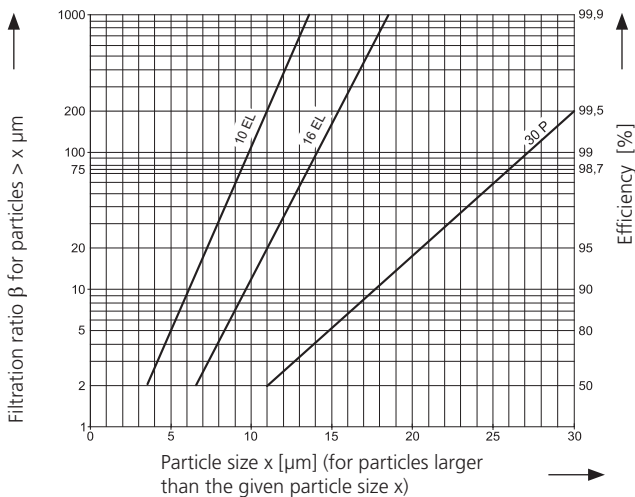
**Δp-curves for complete filters**

**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®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 special applications, finenesses differing from these curves are also available by using special composed filter media.

**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.