ARGO HYTOS

Asia Line

Return Line Filter Series RLT

NEW!

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
By-pass valve: The location close to the inlet port prevents dirt particles retained by the filter element from entering into the clear 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 centre. 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 guarantees the optimum utilization of the filter life.

Accessories
Electrical and optical clogging indicators are available.
Dimensions and technical data see backside.

Characteristics

Nominal flow rate
The nominal flow rates indicated by ARGO-HYTOS are based on the following features:
- closed by-pass valve at $\nu \leq 150$ mm²/s
- element service life > 500 operating hours at an average fluid contamination of 0.07 g per l/min flow volume
- flow velocity in the connection lines ≤ 6.0 m/s

Connection
Threaded ports according to ISO 228 or DIN 13 and SAE-flange (3000 psi).

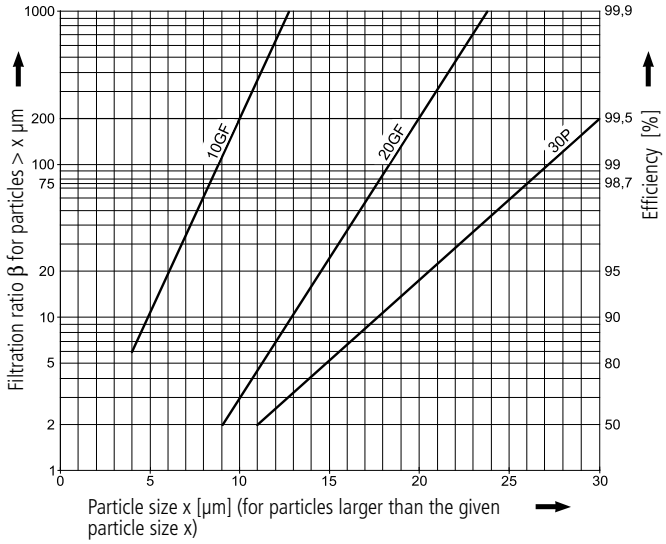
Filter fineness
10 µm(c) ... 30 µm(c)
β-values according to ISO 16889

Viscosity at nominal flow rate
- at operating temperature: $\nu < 60$ mm²/s
- as starting viscosity: $\nu_{max} = 1200$ mm²/s

Mounting position
Preferably vertical, outlet downwards

Filter fineness curves

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 glass fibre and paper elements:

10 GF = $\beta_{10\,(c)} = 200$ Glass fibre
20 GF = $\beta_{20\,(c)} = 200$ Glass fibre
30 P = $\beta_{30\,(c)} = 200$ Cellulose

Based on the structure of the filter media of the 30 P cellulose 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 DIN and ISO standards:

DIN ISO 2941	Verification of collapse/burst resistance
DIN ISO 2943	Verification of material compatibility with fluids
DIN ISO 3724	Verification of flow fatigue characteristics
ISO 2942	Verification of fabrication integrity (Bubble Point Test)
ISO 3968	Evaluation of pressure drop versus flow characteristics
ISO 16889	Multi-Pass-Test (evaluation of filter fineness and dirt-holding capacity)

Various quality controls during the production process guarantee the leak-free function and solidity of our filters.

Selection Chart

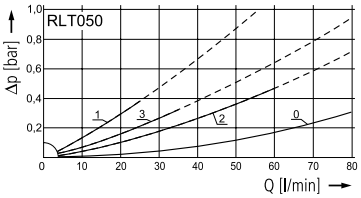
Type of filter	Flow rate, max. [l/min]	Filter fineness [µm]	Bypass valve setting [bar]	Connection	Breather	Indicator	Page
RLT 050	50	10 µm (glass fibre) 20 µm (glass fibre) 30 µm (cellulose)	2.5 bar (glass fibre) 1.5 bar (cellulose)	G¾	available with or without breather	optical / electrical	4 - 5
RLT 090	90						
RLT 125	125			G1			6 - 7
RLT 175	175						
RLT 270	270			G1¼	not available		8 - 9
RLT 500	500			G1½ / SAE2			10 - 11
RLT 650	650						

Technical Specifications

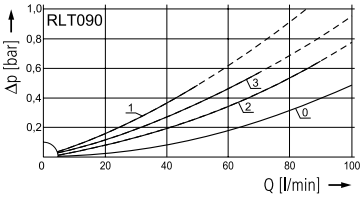
Material	Screw-on cap:	Plastic
	Filter head:	Aluminium
	Filter bowl:	Plastic
	Seals:	NBR
	Filter media:	Glass fibre - inorganic multilayer microfibre web Cellulose - cellulose web, impregnated with resin
Connection:		G¾
Flow:		Up to 90 l/min
Operating pressure:		Max. 10 bar
Temperature range:		-30 °C ... +100 °C
Fineness of filter element:		10 µm, 20 µm, 30 µm
By-pass valve:		Integrated into filter element
Clogging indicator:		Optical, electrical
Hydraulic fluid:		Mineral oil and biodegradable fluids

Diagrams

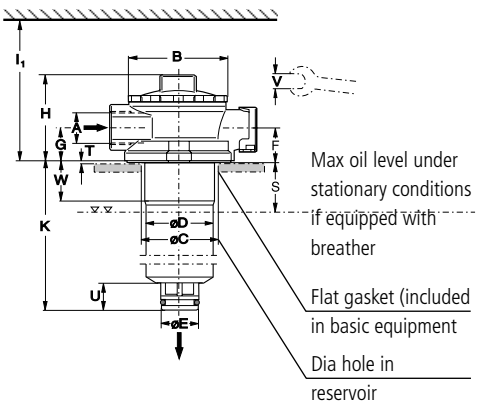
Pressure drop as a function of the flow volume at $\nu = 35$ mm²/s
(1 = 10GF, 2 = 20GF, 3 = 30P, 0 = housing empty)



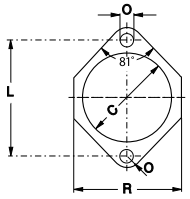
Pressure drop as a function of the flow volume at $\nu = 35$ mm²/s
(1 = 10GF, 2 = 20GF, 3 = 30P, 0 = housing empty)

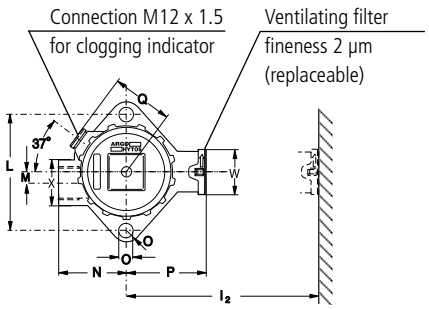


Measurements



Required mounting surface





Type	A	B	C min./max.	D	E	F	G	H	I_1	I_2	K	L	M	N	O	P	Q	R	S	T
RLT 050	G¾	75	60/63	51	27.8	24	26	67	175	110	83	88	9	51	11	59.5	46	79	42	2
RLT 090	G¾	75	60/63	51	27.8	24	26	67	270	110	180	88	9	51	11	59.5	46	79	42	2

Type	U	V	W	X
RLT 050	21	AF 27	35	AF 36
RLT 090	21	AF 27	35	AF 36

Ordering Code

Complete filter

RLT- □ - □ - □ - □ - □ - □ - □

Type of filter	Code
Return line filter tank mounted	RLT

Flow rate, max.	Code
50 l/min	050
90 l/min	090

Connection thread	Code
G¾	GC

Filter fineness	Material	Code
10 µm	Glass fibre	F
20 µm	Glass fibre	J
30 µm	Cellulose	M

Clogging indicator	Code
Without clogging indicator	A
Optical (cellulose element)	D
Optical (glass fibre element)	E
Electrical (cellulose element)	J
Electrical (glass fibre element)	L

Breather	Code
Without breather	1
With breather	2

By-pass setting	Material	Code
2.5 bar	Glass fibre	P
1.5 bar	Cellulose	L

Spare filter element

ERL- □ - □ - □ - □

Type of filter	Code
Return line filter tank mounted	ERL

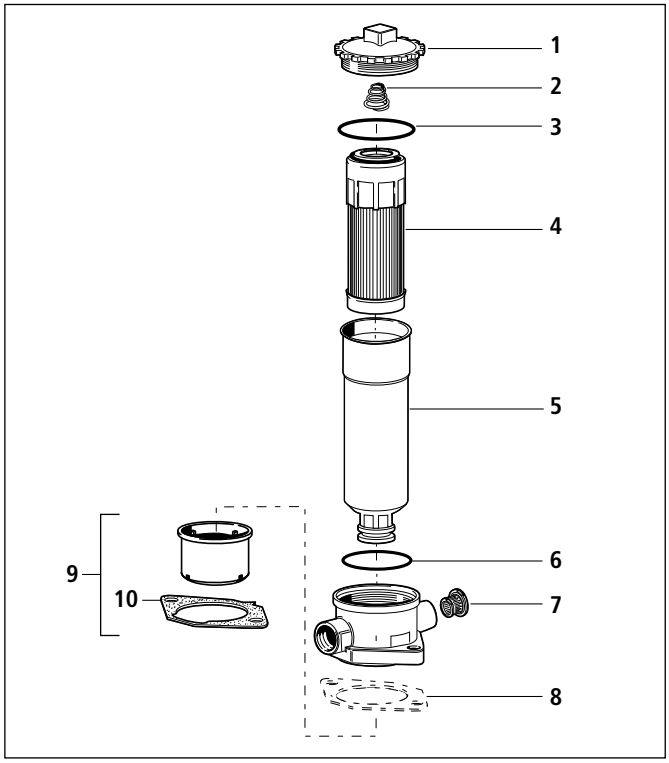
Flow rate, max.	Code
50 l/min	050
90 l/min	090

Filter fineness	Material	Code
10 µm	Glass fibre	F
20 µm	Glass fibre	J
30 µm	Cellulose	M

By-pass setting	Material	Code
2.5 bar	Glass fibre	P
1.5 bar	Cellulose	L

Collapse pressure	Code
10 bar	3

Spare Parts



Pos.	Designation	Part No.
1	Screw-on cap	RLT 050.0201
2	Compression spring	N 015.1606
3	O-ring 57 x 3	N 007.0573
4	Filter element	see spare filter element
5	Filter bowl RLT 050	RLT 050.0101
5	Filter bowl RLT 090	RLT 090.0101
6	O-ring 50 x 2	N 007.0501
7	Ventilating filter	L1.0403-01
8	Flat gasket (for versions without breather)	D 043.0113
9	Oil separator with Pos. 10	E 043.1701
10	Flat gasket (for versions with breather)	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.

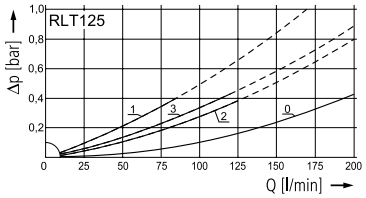
Return Line Filter Series RLT 125 / 175

Technical Specifications

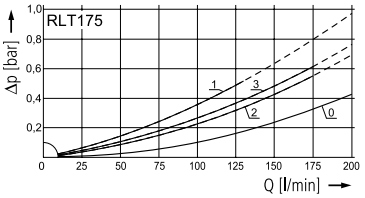
Material	Screw-on cap:	Plastic
	Filter head:	Aluminium
	Filter bowl:	Plastic
	Seals:	NBR
	Filter media:	Glass fibre - inorganic multilayer microfibre web
		Cellulose - cellulose web, impregnated with resin
Connection:		G1
Flow:		Up to 175 l/min
Operating pressure:		Max. 10 bar
Temperature range:		-30 °C ... +100 °C
Fineness of filter element:		10 µm, 20 µm, 30 µm
By-pass valve:		Integrated into filter element
Clogging indicator:		Optical, electrical
Hydraulic fluid:		Mineral oil and biodegradable fluids

Diagrams

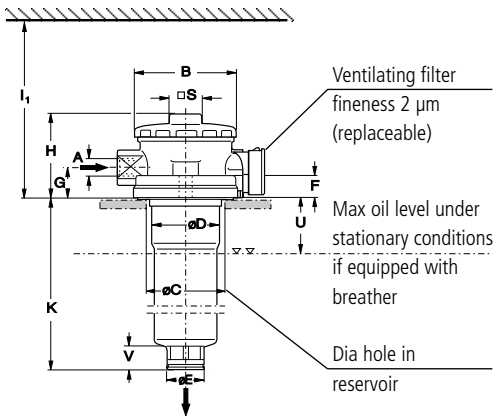
Pressure drop as a function of the flow volume at $\nu = 35$ mm²/s
(1 = 10GF, 2 = 20GF, 3 = 30P, 0 = housing empty)



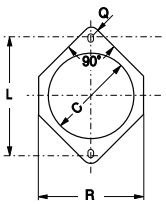
Pressure drop as a function of the flow volume at $\nu = 35$ mm²/s
(1 = 10GF, 2 = 20GF, 3 = 30P, 0 = housing empty)



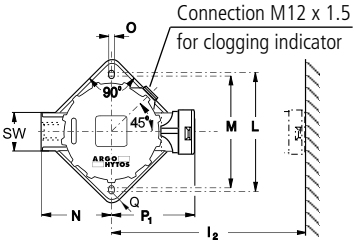
Measurements



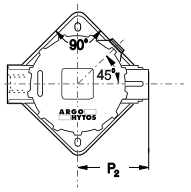
Required mounting surface



Design with ventilating filter



Design without ventilating filter



Type	A	B	C min./max.	D	E	F	G	H	I_1	I_2	K	L	M	N	O	P_1	P_2	Q	R	S	SW	U	V
RLT 125	G1	105	87 / 91	73.5	38	20.5	30	88.5	300	95	177	115	110	70	11	82	69	13.5	107.5	32	41	50	23
RLT 175	G1	105	87 / 91	73.5	38	20.5	30	88.5	400	95	278	115	110	70	11	82	69	13.5	107.5	32	41	50	23

Ordering Code

Complete filter

RLT- □ - □ - □ - □ - □ - □ - □

Type of filter	Code
Return line filter tank mounted	RLT

Flow rate, max.	Code
125 l/min	125
175 l/min	175

Connection thread	Code
G1	GD

Filter fineness	Material	Code
10 µm	Glass fibre	F
20 µm	Glass fibre	J
30 µm	Cellulose	M

Clogging indicator	Code
Without clogging indicator	A
Optical (cellulose element)	D
Optical (glass fibre element)	E
Electrical (cellulose element)	J
Electrical (glass fibre element)	L

Breather	Code
Without breather	1
With breather	2

By-pass setting	Material	Code
2.5 bar	Glass fibre	P
1.5 bar	Cellulose	L

Spare filter element

ERL- □ - □ - □ - □

Type of filter	Code
Return line filter tank mounted	ERL

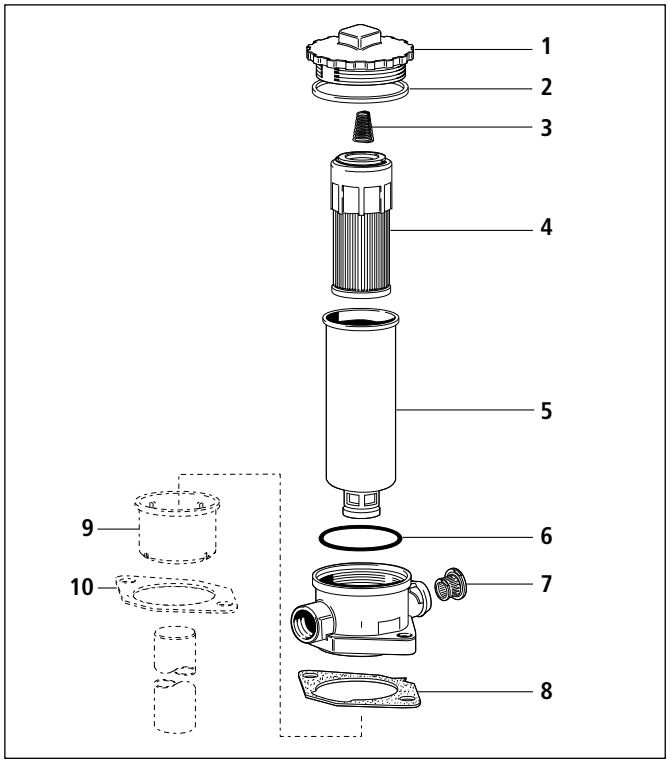
Flow rate, max.	Code
125 l/min	125
175 l/min	175

Filter fineness	Material	Code
10 µm	Glass fibre	F
20 µm	Glass fibre	J
30 µm	Cellulose	M

By-pass setting	Material	Code
2.5 bar	Glass fibre	P
1.5 bar	Cellulose	L

Collapse pressure	Code
10 bar	3

Spare Parts



Pos.	Designation	Part No.
1	Screw-on cap	RLT 125.0201
2	Flat gasket	N 031.0841
3	Compression spring	N015.3703
4	Filter element	see spare filter element
5	Filter bowl RLT 125	RLT 125.0101
5	Filter bowl RLT 175	RLT 175.0101
6	O-ring 69.5 x 3.5	N 007.0703
7	Ventilating filter	L1.0503-03K
8	Flat gasket (for versions without breather)	E 103.0147
9	Oil separator with Pos. 10	E 103.1702
10	Flat gasket (for versions with breather)	E 103.0148

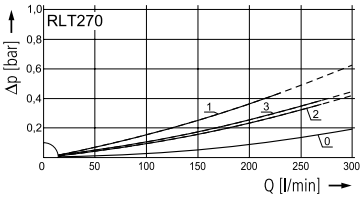
The functions of the complete filters as well as the outstanding features of the filter elements assured by ARGO-HYTOS can only be guaranteed if original ARGO-HYTOS spare parts are used.

Technical Specifications

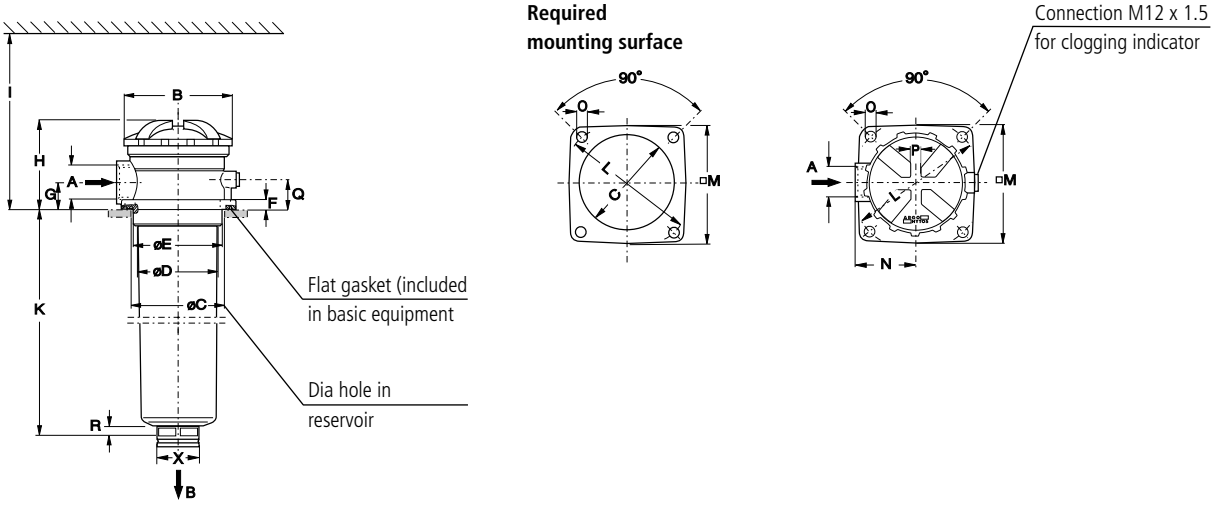
Material	Screw-on cap:	Plastic
	Filter head:	Aluminium
	Filter bowl:	Plastic
	Seals:	NBR
	Filter media:	Glass fibre - inorganic multilayer microfibre web Cellulose - cellulose web, impregnated with resin
Connection:		G1¼
Flow:		Up to 270 l/min
Operating pressure:		Max. 10 bar
Temperature range:		-30 °C ... +100 °C
Fineness of filter element:		10 µm, 20 µm, 30 µm
By-pass valve:		Integrated into filter
Clogging indicator:		Optical, electrical
Hydraulic fluid:		Mineral oil and biodegradable fluids

Diagrams

Pressure drop as a function of the flow volume at $\nu = 35$ mm²/s
(1 = 10GF, 2 = 20GF, 3 = 30P, 0 = housing empty)



Measurements



Type	A	B	C min./max.	D	E	F	G	H	I	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
RLT 270	G1¼	126.5	118/121	95	110	11.5	32	106	455	347	165	141	76	11	13	35	23	113	49	28,5	77	74	44

Ordering Code

Complete filter

RLT- □ - □ - □ - □ - □ - □ - □

Type of filter	Code
Return line filter tank mounted	RLT

Flow rate, max.	Code
270 l/min	270

Connection thread	Code
G1¼	GE

Filter fineness	Material	Code
10 µm	Glass fibre	F
20 µm	Glass fibre	J
30 µm	Cellulose	M

Clogging indicator	Code
Without clogging indicator	A
Optical (cellulose element)	D
Optical (glass fibre element)	E
Electrical (cellulose element)	J
Electrical (glass fibre element)	L

Breather	Code
Without breather	1

By-pass setting	Material	Code
2.5 bar	Glass fibre	P
1.5 bar	Cellulose	L

Spare filter element

ERL- □ - □ - □ - □

Type of filter	Code
Return line filter tank mounted	ERL

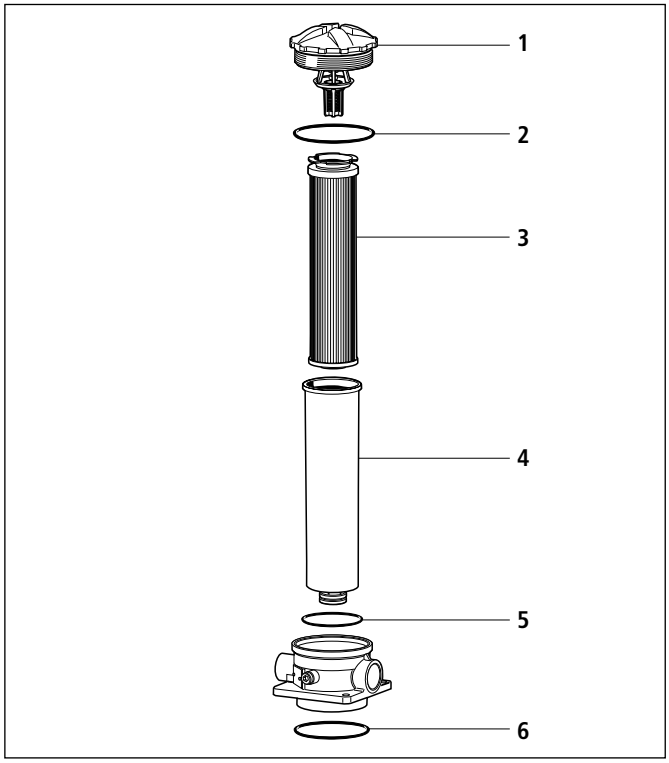
Flow rate, max.	Code
270 l/min	270

Filter fineness	Material	Code
10 µm	Glass fibre	F
20 µm	Glass fibre	J
30 µm	Cellulose	M

By-pass setting	Material	Code
2.5 bar	Glass fibre	P
1.5 bar	Cellulose	L

Collapse pressure	Code
10 bar	3

Spare Parts



Pos.	Designation	Part No.
1	Screw-on cap with valve (2.5 bar) and Pos. 2	RLT 270.1200
1	Screw-on cap with valve (1.5 bar) and Pos. 2	RLT 270.1210
2	O-ring 100 x 4	N007.1004
3	Filter element	see spare filter element
4	Filter bowl RLT 270	E 222.0901
5	O-ring 90 x 4	N007.0904
6	O-ring 126 x 4	N007.1264

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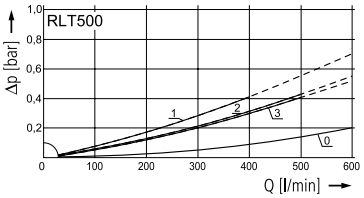
Technical Specifications

Material	Filter head cover:	Aluminium
	Filter head:	Aluminium
	Filter bowl:	Steel
	Seals:	NBR
	Filter media:	Glass fibre - inorganic multilayer microfibre web Cellulose - cellulose web, impregnated with resin
Connection:		G1½ / SAE2
Flow:		Up to 650 l/min
Operating pressure:		Max. 10 bar
Temperature range:		-30 °C ... +100 °C
Fineness of filter element:		10 µm, 20 µm, 30 µm
By-pass valve:		Integrated into filter
Clogging indicator:		Optical, electrical
Hydraulic fluid:		Mineral oil and biodegradable fluids

Diagrams

Pressure drop as a function of the flow volume at $\nu = 35$ mm²/s
(1 = 10GF, 2 = 20GF, 3 = 30P, 0 = housing empty)



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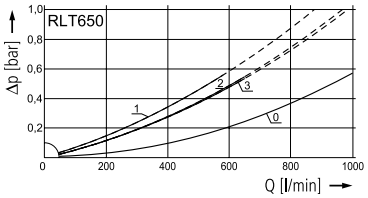
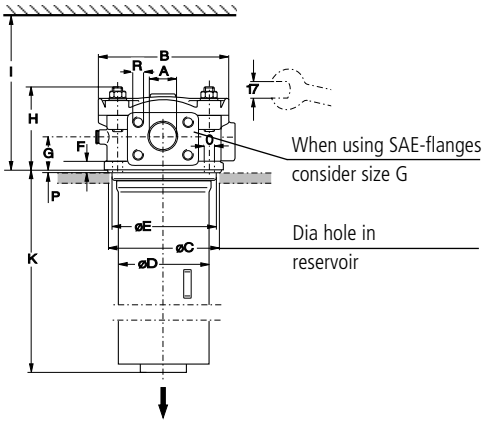
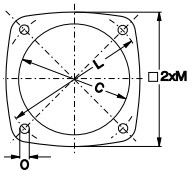
(1 = 10GF, 2 = 20GF, 3 = 30P, 0 = housing empty)



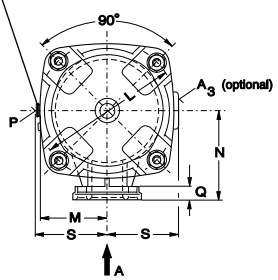
Measurements



Required mounting surface



Connection M12 x 1.5
for clogging indicator



Type	A	B	C	D	E	F	G	H	I	K	L	M	N	O	P	Q	R	S	T	V	W	X	Y	Z
RLT 500	G1½ / SAE 2	174	141	131	139.9	12	36	97	540	368	185	86.5	116	11.5	2	18	M12	92	58	96	106	96	89	32.5
RLT 650	G1½ / SAE 2	174	141	131	139.9	12	36	97	710	536	185	86.5	116	11.5	2	18	M12	92	58	96	106	96	89	32.5

Ordering Code

Complete filter

RLT- □ - □ - □ - □ - □ - □ - □

Type of filter	Code
Return line filter tank mounted	**RLT**

Flow rate, max.	Code
500 l/min	**500**
650 l/min	**650**

Connection thread	Code
G1½ / SAE2	**A**

Filter fineness	Material	Code
10 µm	Glass fibre	**F**
20 µm	Glass fibre	**J**
30 µm	Cellulose	**M**

Clogging indicator	Code
Without clogging indicator	**A**
Optical (cellulose element)	**D**
Optical (glass fibre element)	**E**
Electrical (cellulose element)	**J**
Electrical (glass fibre element)	**L**

Breather	Code
Without breather	**1**

By-pass setting	Material	Code
2.5 bar	Glass fibre	**P**
1.5 bar	Cellulose	**L**

Spare filter element

ERL- □ - □ - □ - □

Type of filter	Code
Return line filter tank mounted	**ERL**

Flow rate, max.	Code
500 l/min (2 elements)	**250**[1]
650 l/min (3 elements)	**250**[2]

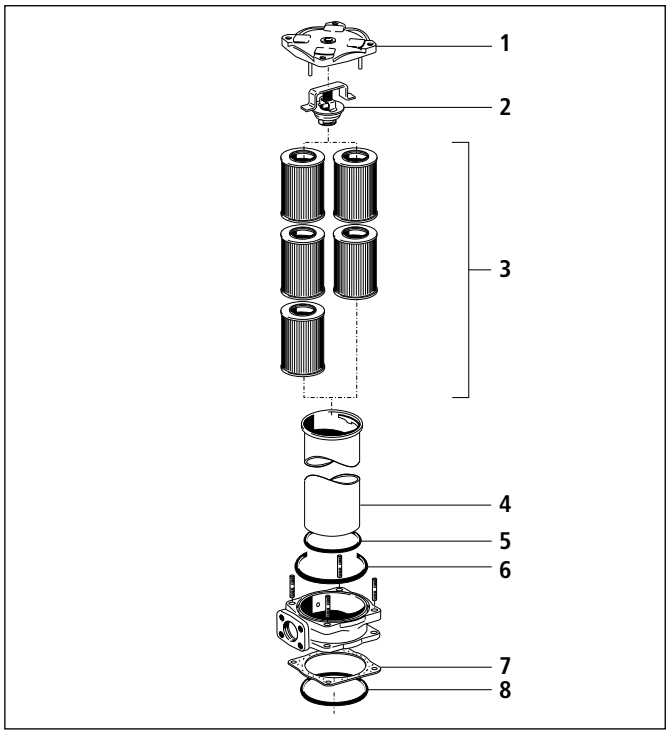
[1] Please order 2 elements, e.g. 2 x ERL-250-...
[2] Please order 3 elements, e.g. 3 x ERL-250-...

Filter fineness	Material	Code
10 µm	Glass fibre	**F**
20 µm	Glass fibre	**J**
30 µm	Cellulose	**M**

By-pass setting	Material	Code
2.5 bar	Glass fibre	**P**
1.5 bar	Cellulose	**L**

Collapse pressure	Code
10 bar	**3**

Spare Parts



Pos.	Designation	Part No.
1	Cover	E 443.1200
2	By-pass (1.5 bar)	E 440.1500
2	By-pass (2.5 bar)	E 460.1520
3	Filter elements	see spare filter element
4	Filter bowl RLT 500	E 450.1906
4	Filter bowl RLT 650	E 460.1915
5	O-ring 125 x 6	N 007.1256
6	O-ring 151.76 x 5.33	N 007.1525
7	Flat gasket	E 442.0103
8	O-ring 136.5 x 5.34	N 007.1375

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.

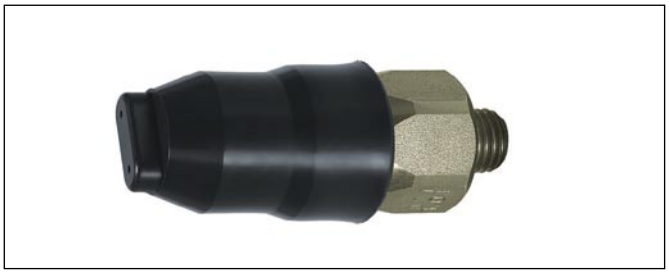
Clogging Indicators

Manometer for Return Filters

Function: Manometer for optical monitoring of the dirt load in return filters.
Green reading area = filter element O.K.,
Red reading area = filter element clogged.

Part No.	Optical indicator	Electrical switch	Temperature suppression < +32 °C	Response/ switching pressure [bar]	Type of contact	Switching voltage U V AC/DC	Switching current I A AC/DC	Switching power P VA/W AC/DC	Weight [kg]	Remarks
DG 200-25	•	-	-	+1.0	-	-	-	-	0.07	fitting on the bottom
DG 200-26	•	-	-	+2.0	-	-	-	-	0.07	fitting on the bottom

Remarks:
- With return filters, the response/switching pressure of the clogging indicator used must be lower than the cracking pressure of the by-pass valve.



Pressure Switch for Return Filters (make)

Function: The diaphragm switch closes as soon as the pressure exceeds the preset value.

Part No.	Optical indicator	Electrical switch	Temperature suppression < +32 °C	Response/ switching pressure [bar]	Type of contact	Switching voltage U V AC/DC	Switching current I A AC/DC	Switching power P VA/W AC/DC	Weight [kg]	Remarks
DG 813-00	-	•	-	+1.2	make	42/42	4.0/4.0	100/100	0.07	with protection cap
DG 813-01	-	•	-	+2.0	make	42/42	4.0/4.0	100/100	0.07	with protection cap

Remarks:
- With return filters, the response/switching pressure of the clogging indicator used must be lower than the cracking pressure of the by-pass valve.

Our engineers will be glad to advice you in questions concerning filter application, selection as well as the cleanliness class of the filtered medium attainable under practical operating conditions.

We produce fluid power solutions
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