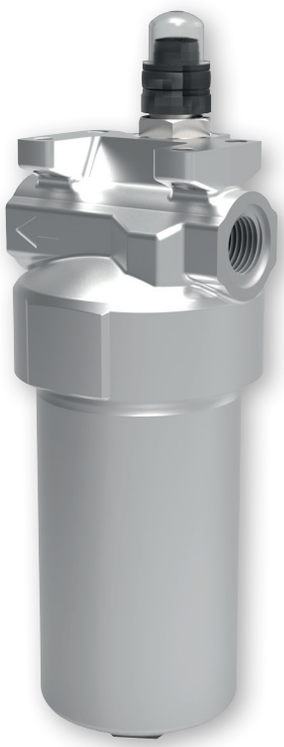
D 072 · D 112 · D 152

In-line mounting · Operating pressure up to 100 bar / 1450 psi · Nominal flow rate up to 170 l/min / 44.9 gpm



Pressure Filter D 072

Description

Application

In the pressure circuits of hydraulic and lubrication 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:
Through installation near to the control valves or other expensive components. The specific determined flow rate guarantees a closed by-pass valve even at $\nu \leq 200$ mm²/s / 927 SUS (cold start condition).

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 guarantees the optimum utilization of the filter life.

Materials

Filter head:	Aluminum alloy
Filter bowl:	Aluminum alloy
Seals:	NBR (FPM on request)
Filter media:	EXAPOR®MAX 3 - inorganic multi-layer microfiber web

Clogging indicators

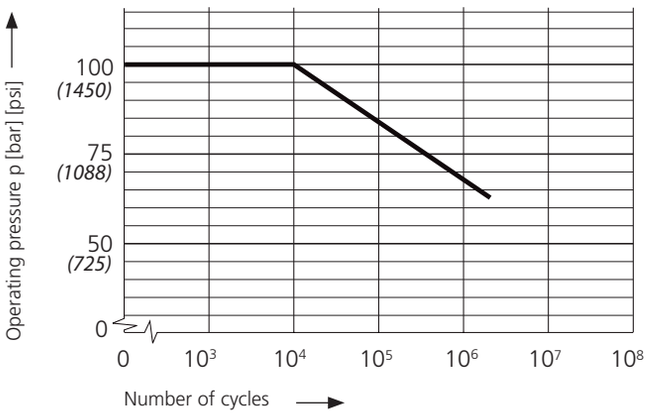
Electrical and / or optical clogging indicators can be integrated in the filter head if desired. For dimensions and technical data see catalog sheet 60.40.

Operating pressure

0 ... 63 bar / 914 psi, min. 3 x 10^6 pressure cycles
Nominal pressure according to DIN 24550

0 ... 100 bar, min. 10^4 pressure cycles
Quasi-static operating pressure

Permissible pressures for other numbers of cycles



Nominal flow rate

Up to 170 l/min / 44.9 gpm (see Selection Chart, column 2)
The nominal flow rates indicated by ARGO-HYTOS are based on the following features:

- closed by-pass valve at $\nu \leq 200$ mm²/s / 927 SUS
- element service life > 1000 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: up to 100 bar ≤ 6 m/s / 1450 psi ≤ 19.7 ft/s

Filter fineness

5 µm(c) ... 16 µm(c)
β-values according to ISO 16889
(see Selection Chart, column 4 and diagram Dx).

Dirt-holding capacity

Values in g test dust ISO MTD according to ISO 16889
(see Selection Chart, column 5).

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: $\nu < 60$ mm²/s / 280 SUS
- as starting viscosity: $\nu_{max} = 1200$ mm²/s / 5560 SUS
- at initial operation:
  The recommended starting viscosity can be read from the diagram D (pressure drop as a function of the kinematic viscosity) as follows: Find the 70% Δp of the cracking pressure of the by-pass valve on the vertical axis. Draw a horizontal line so that it intersects the Δp curve at a point. Read this point on the horizontal axis for the viscosity.

Mounting position

Preferably vertical, filter head on top.

Connection

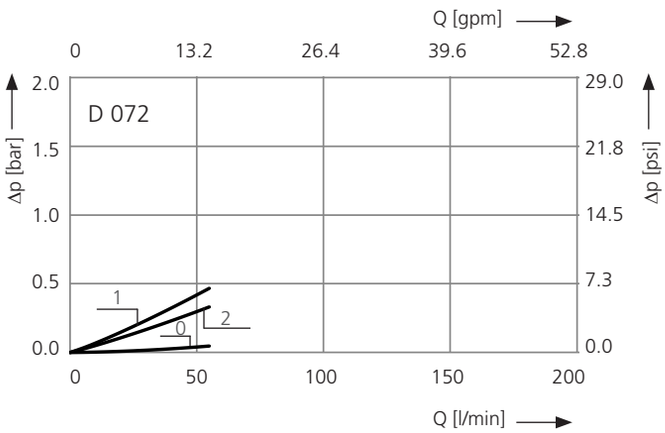
Threaded ports according to

- ISO 228 or DIN 13 /
- SAE standard J514.

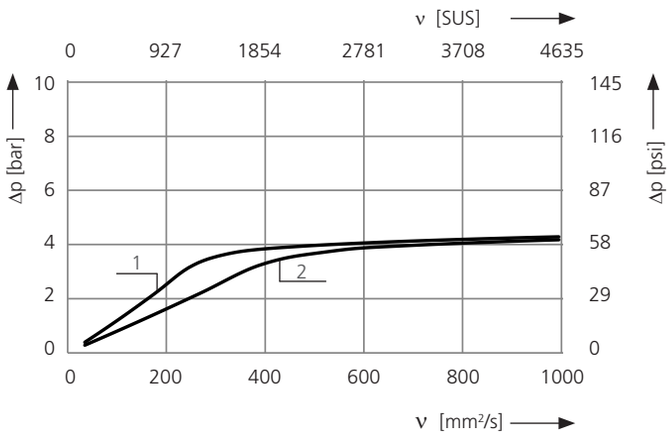
Sizes see Selection Chart, column 6
(other port threads on request).
For installation recommendations, see info sheet 00.325.

Δp-curves for complete filters in Selection Chart, column 3

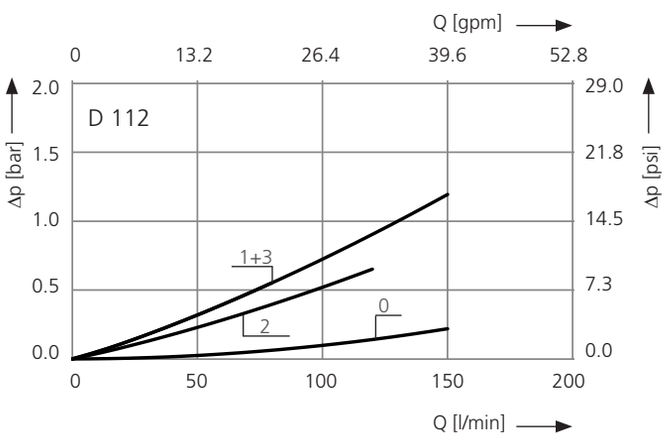
D1 Pressure drop as a function of the **flow volume** at ν = 35 mm²/s / 162 SUS (0 = casing empty)



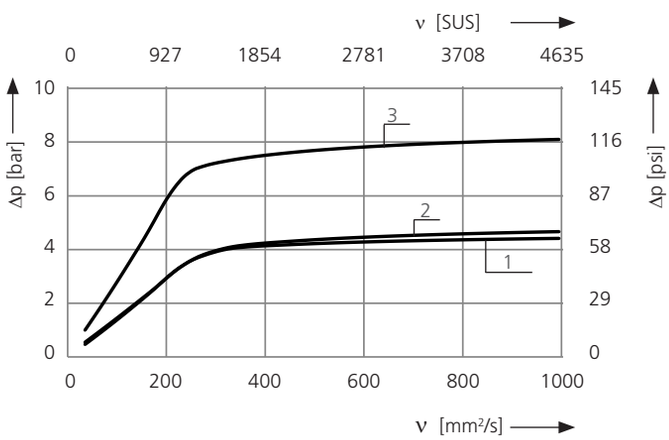
Pressure drop as a function of the **kinematic viscosity** at nominal flow



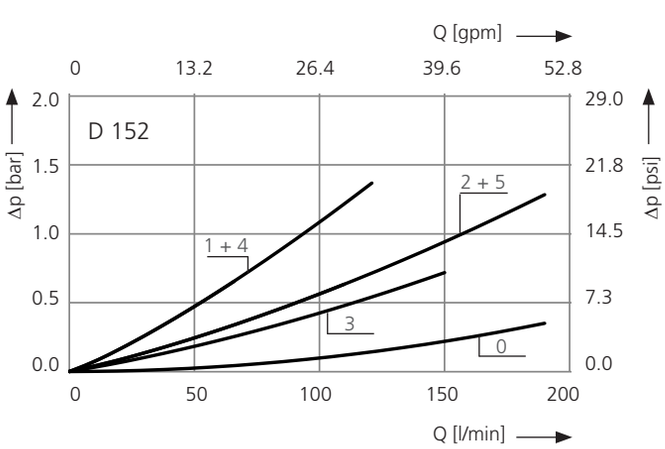
D2 Pressure drop as a function of the **flow volume** at ν = 35 mm²/s / 162 SUS (0 = casing empty)



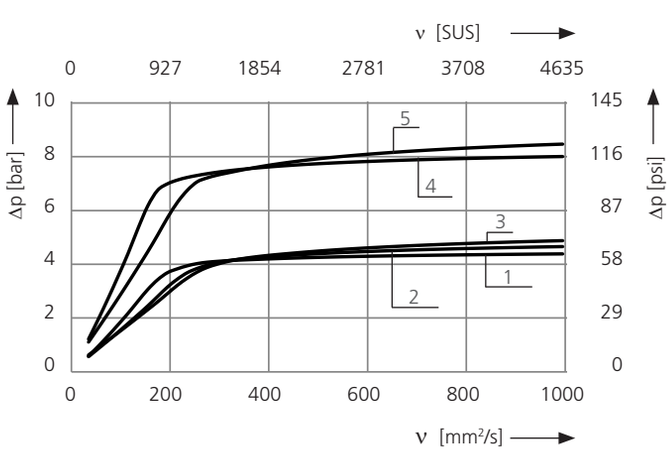
Pressure drop as a function of the **kinematic viscosity** at nominal flow



D3 Pressure drop as a function of the **flow volume** at ν = 35 mm²/s / 162 SUS (0 = casing empty)

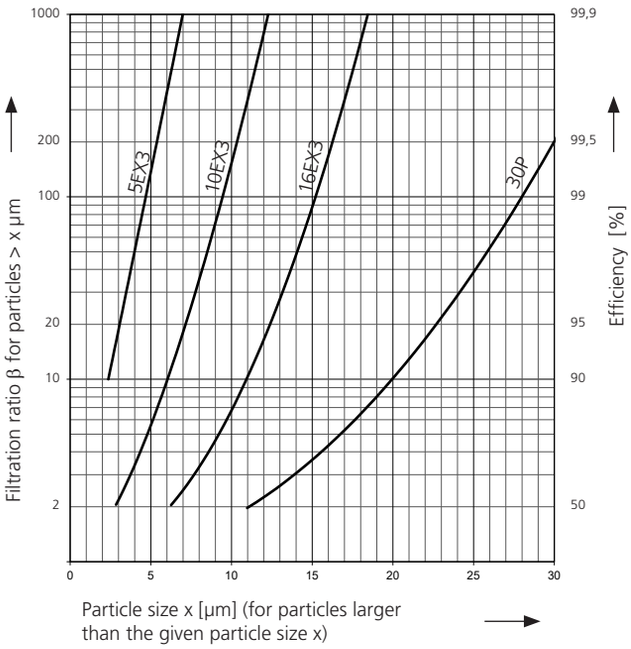


Pressure drop as a function of the **kinematic viscosity** at nominal flow



Filter fineness curves in Selection Chart, column 4

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®MAX3 and Paper elements:

5EX3 =	$\overline{\beta}_{5\,(c)}$	= 200	EXAPOR®MAX 3
10EX3 =	$\overline{\beta}_{10\,(c)}$	= 200	EXAPOR®MAX 3
16EX3 =	$\overline{\beta}_{16\,(c)}$	= 200	EXAPOR®MAX 3
30P =	$\overline{\beta}_{30\,(c)}$	= 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.

Selection Chart

Part No.	Nominal flow rate	Pressure drop see diagram **D**/curve no.	Filter fineness see diagr. **Dx**	Dirt-holding capacity	Connection A/B	Cracking pressure of by-pass	Symbol	Replacement filter element Part No.	Weight	Clogging indicator	Remarks
	l/min			g		bar			kg		
1	2	3	4	5	6	7	8	9	10	11	12
D 072-156	48	**D1**/1	10EX3	12	G½	3.5	1	V3.0613-06	1.1	-	-
D 072-158	48	**D1**/2	16EX3	13	G½	3.5	1	V3.0613-08	1.1	-	-
D 112-156[1]	70	**D2**/1	10EX3	16	G¾	3.5	1	V3.0617-06	1.4	-	-
D 112-158[1]	105	**D2**/2	16EX3	17	G1	3.5	1	V3.0617-08	1.4	-	-
D 112-186	130	**D2**/3	10EX3	16	G1	7.0	1	V3.0617-06	1.4	-	-
D 152-153	60	**D3**/1	5EX3	20	G¾	3.5	1	V3.0623-03	1.7	-	-
D 152-156[1]	100	**D3**/2	10EX3	23	G¾	3.5	1	V3.0623-06	1.7	-	-
D 152-158[1]	135	**D3**/3	16EX3	25	G1	3.5	1	V3.0623-08	1.7	-	-
D 152-183	110	**D3**/4	5EX3	20	G1	7.0	1	V3.0623-03	1.7	-	-
D 152-186	170	**D3**/5	10EX3	23	G1	7.0	1	V3.0623-06	1.7	-	-

[1] Preferred type, no minimum order quantity required

Optical or electrical clogging indicators can be provided for clogging monitoring. When ordering filters with integrated monitoring, the clogging indicator code must be added to the order number of the desired filter variant (basic unit) (to be found in catalog sheet 60.40, column 2).

Suitable clogging indicators can be found in catalog sheet 60.40. The required version of the clogging indicator is specified by the code (selection tables, column 2).

Oder example: The filter D 072-156 is to be supplied with an optical indicator with automatic reset.

Order code: **D 072-156 OD1**

Part No. (Basic unit)

Clogging indicator

Remarks:

- The switching pressure of the clogging indicator has always to be lower than the cracking pressure of the by-pass valve (see Selection Chart, column 7).
- The filters listed in this chart are standard filters. Other designs available on request.
- For versions with electrical clogging indicator, the device socket is not included in the scope of delivery.
- For the electrical clogging indicator of type DIN EN 175301-803 (ED8 and ED9), a device socket with two LEDs is available, which additionally enables visual indication of the filter contamination (order no. DG 041.1200).

Selection Chart

Part No.	Nominal flow rate	Pressure drop see diagram **D**/curve no.	Filter fineness see diagr. **Dx**	Dirt-holding capacity	Connection A/B	Cracking pressure of by-pass	Symbol	Replacement filter element Part No.	Weight	Clogging indicator	Remarks
	gpm			g	SAE	psi			lbs		
1	2	3	4	5	6	7	8	9	10	11	12
D 072-756	12.7	**D1**/1	10EX3	12	-8[2]	51	1	V3.0613-06	2.4	-	-
D 072-758	12.7	**D1**/2	16EX3	13	-8[2]	51	1	V3.0613-08	2.4	-	-
D 112-756[1]	18.5	**D2**/1	10EX3	16	-12[3]	51	1	V3.0617-06	3.1	-	-
D 112-758[1]	27.7	**D2**/2	16EX3	17	-16[4]	51	1	V3.0617-08	3.1	-	-
D 112-786	34.3	**D2**/3	10EX3	16	-16[4]	102	1	V3.0617-06	3.1	-	-
D 152-753	15.9	**D3**/1	5EX3	20	-12[3]	51	1	V3.0623-03	3.7	-	-
D 152-756[1]	26.4	**D3**/2	10EX3	23	-12[3]	51	1	V3.0623-06	3.7	-	-
D 152-758[1]	35.7	**D3**/3	16EX3	25	-16[4]	51	1	V3.0623-08	3.7	-	-
D 152-783	29.1	**D3**/4	5EX3	20	-16[4]	102	1	V3.0623-03	3.7	-	-
D 152-786	44.9	**D3**/5	10EX3	23	-16[4]	102	1	V3.0623-06	3.7	-	-

[1] Preferred type, no minimum order quantity required
[2] Corresponds to ¾-16 UNF-2B
[3] Corresponds to 11/16-12 UN-2B
[4] Corresponds to 1 5/16-12 UN-2B

Optical or electrical clogging indicators can be provided for clogging monitoring. When ordering filters with integrated monitoring, the clogging indicator code must be added to the order number of the desired filter variant (basic unit) (to be found in catalog sheet 60.40, column 2).

Suitable clogging indicators can be found in catalog sheet 60.40. The required version of the clogging indicator is specified by the code (selection tables, column 2).

Oder example: The filter D 072-756 is to be supplied with an optical indicator with automatic reset.

Order code: D 072-756 OD1

Part No. (basic unit)

Clogging indicator

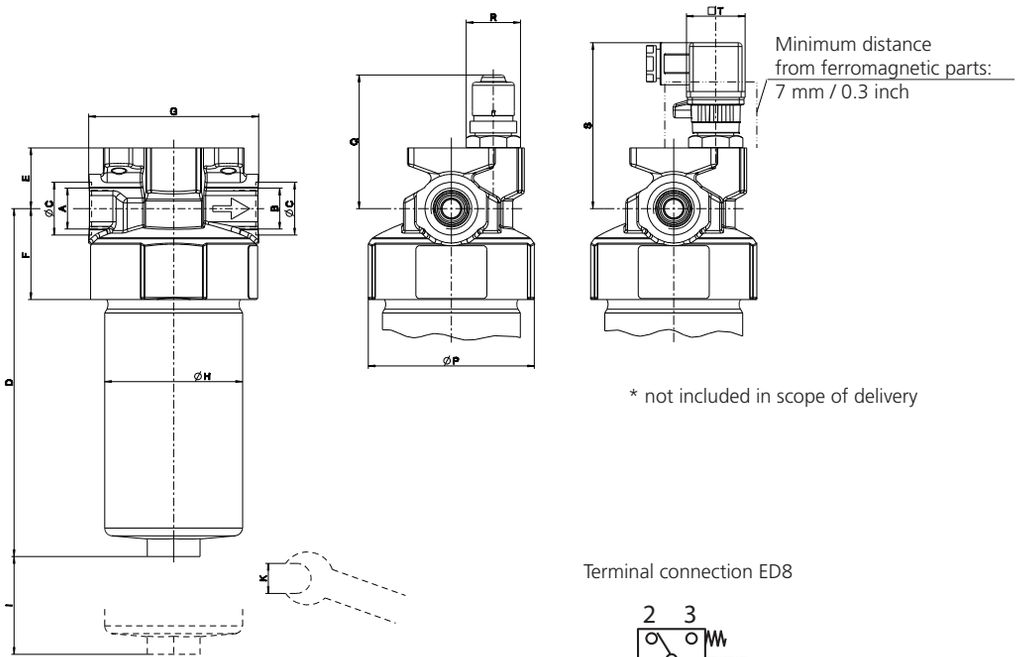
Remarks:

- The switching pressure of the clogging indicator has always to be lower than the cracking pressure of the by-pass valve (see Selection Chart, column 7).
- The filters listed in this chart are standard filters. Other designs available on request.
- For versions with electrical clogging indicator, the device socket is not included in the scope of delivery.
- For the electrical clogging indicator of type DIN EN 175301-803 (ED8 and ED9), a device socket with two LEDs is available, which additionally enables visual indication of the filter contamination (order no. DG 041.1200).

Dimensions

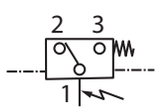
Version with integrated
optical clogging indicator (OD2)

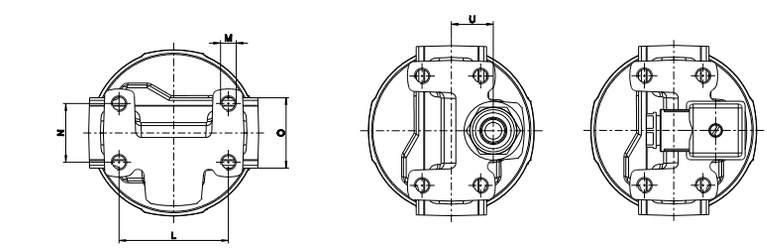
Version with integrated
electrical clogging indicator (ED8) and device socket*



* not included in scope of delivery

Terminal connection ED8





Measurements in mm

Type	A/B	C	D	E	F	G	H	I	K	L	M Ø/depth	N	O	P	Q	R	S	T	U
D 072	G½	27	178	31	46.5	84	70.5	60	AF 27	56	M8 / 8	30	AF 36	85	69	AF 24	80	□ 30	21.5
D 112	G¾ , G1	33	219	37	51	95	70.5	60	AF 27	56	M8 / 8	30	AF 44	85	75	AF 24	86	□ 30	24
D 152	G¾ , G1	41	283	37	51	95	70.5	60	AF 27	56	M8 / 8	30	AF 44	85	75	AF 24	86	□ 30	24

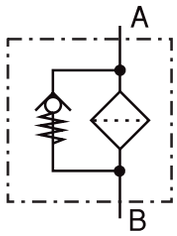
Measurements in inch

Type	A/B SAE	C	D	E	F	G	H	I	K mm	L	M Ø/depth	N	O mm	P	Q
D 072	-8	1.06	7.01	1.22	1.83	3.31	2.78	2.36	AF 27	2.20	M8 / 0.32	1.18	AF 36	3.35	2.72
D 112	-12, -16	1.30	8.62	1.46	2.01	3.74	2.78	2.36	AF 27	2.20	M8 / 0.32	1.18	AF 44	3.35	2.95
D 152	-12, -16	1.61	11.14	1.46	2.01	3.74	2.78	2.36	AF 27	2.20	M8 / 0.32	1.18	AF 44	3.35	2.95

Type	R	S	T	U
D 072	AF 24	3.15	□ 1.18	0.85
D 112	AF 24	3.39	□ 1.18	0.94
D 152	AF 24	3.39	□ 1.18	0.94

Symbols

1



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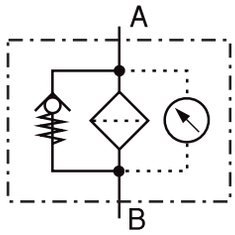

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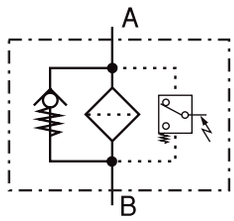
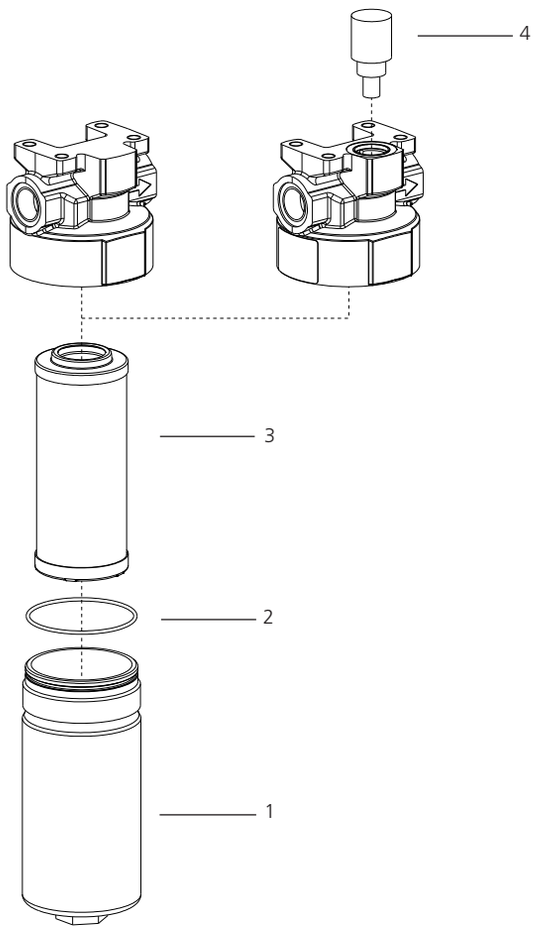


Spare Parts



Pos.	Designation	Part No.
1	Filter bowl D 072	D 072.0101
1	Filter bowl D 112	D 112.0101
1	Filter bowl D 152	D 152.0101
2	O-ring 62 x 2 mm 2.44 x 0.08 inch	N007.0622
3	Replacement filter element (with seal)	see Chart / col. 9
4	Clogging indicator (with seal)	s. catalog sheet 60.40

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.

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

Before release into the series production the filter casing is tested for fatigue strength in our pressure pulse test rig. Various quality controls during the production process guarantee the leakfree function and solidity of our filters.