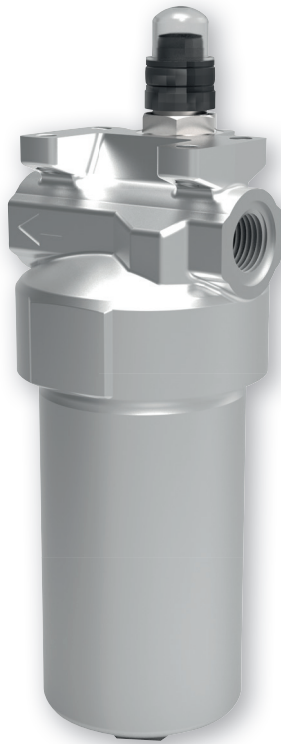


**Pressure Filters**
**D 072 · D 112 · D 152**

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  $v \leq 200 \text{ mm}^2/\text{s}$  / 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 2- inorganic multi-layer microfiber web

**Clogging indicators**

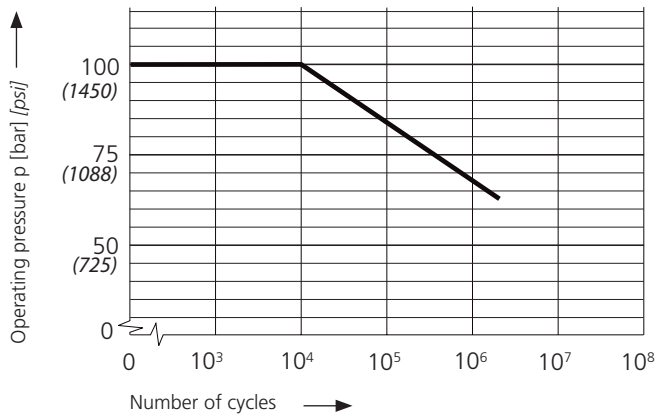
Electrical and / or optical clogging indicators can be integrated in the filter head if desired. For dimensions and technical data see catalog sheet 60.40.

### Operating pressure

0 ... 63 bar / 914 psi, min.  $3 \times 10^6$  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  $v \leq 200 \text{ mm}^2/\text{s} / 927 \text{ SUS}$
- › 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  $100 \text{ bar} \leq 6 \text{ m/s} / 1450 \text{ psi} \leq 19.7 \text{ ft/s}$

### Filter fineness

$5 \mu\text{m(c)} \dots 16 \mu\text{m(c)}$   
 $\beta$ -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

$-30 \text{ }^\circ\text{C} \dots +100 \text{ }^\circ\text{C}$  (temporary  $-40 \text{ }^\circ\text{C} \dots +120 \text{ }^\circ\text{C}$ )  
 $-22 \text{ }^\circ\text{F} \dots +212 \text{ }^\circ\text{F}$  (temporary  $-40 \text{ }^\circ\text{F} \dots +248 \text{ }^\circ\text{F}$ )

### Viscosity at nominal flow rate

- › at operating temperature:  $v < 60 \text{ mm}^2/\text{s} / 280 \text{ SUS}$
- › as starting viscosity:  $v_{\text{max}} = 1200 \text{ mm}^2/\text{s} / 5560 \text{ SUS}$
- › 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%  $\Delta p$  of the cracking pressure of the by-pass valve on the vertical axis. Draw a horizontal line so that it intersects the  $\Delta p$  curve at a point. Read this point on the horizontal axis for the viscosity.

### Mounting position

Preferably vertical, filter head on top.

### Connection

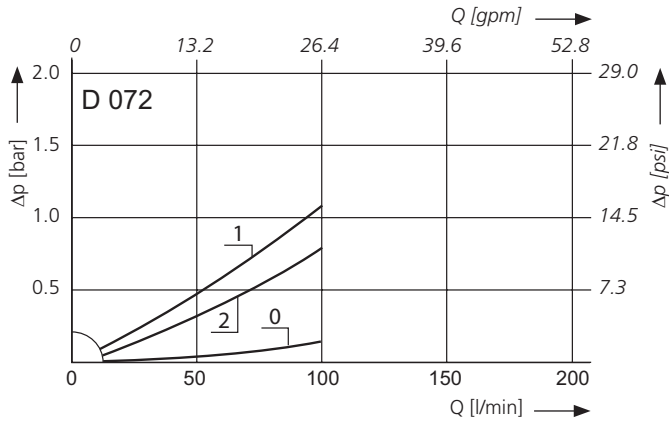
Threaded ports according to

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

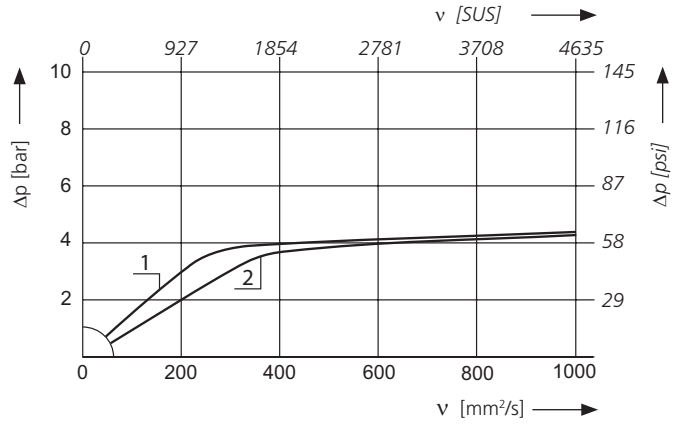
Sizes see Selection Chart, column 6  
(other port threads on request).

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

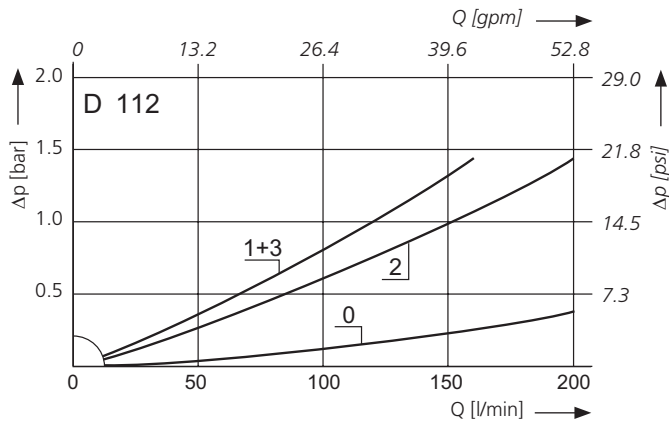
**D1** Pressure drop as a function of the **flow volume** at  $v = 35 \text{ mm}^2/\text{s} / 162 \text{ SUS}$  (0 = casing empty)



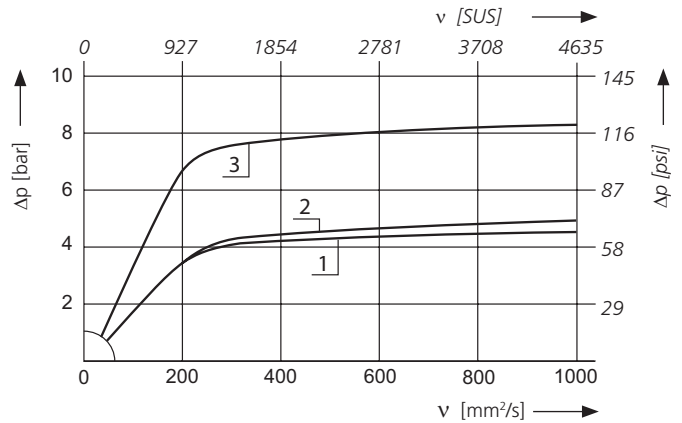
Pressure drop as a function of the **kinematic viscosity** at nominal flow



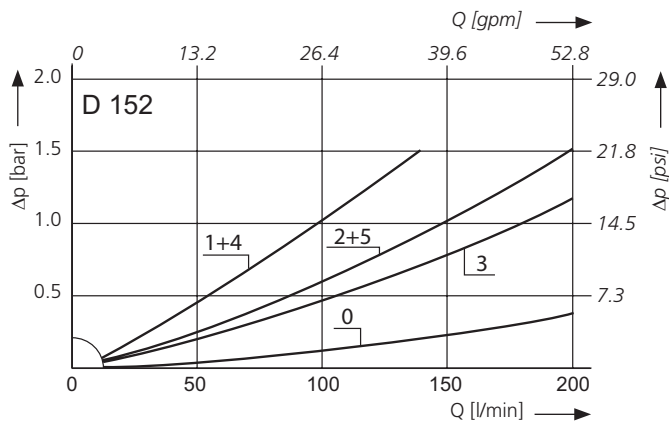
**D2** Pressure drop as a function of the **flow volume** at  $v = 35 \text{ mm}^2/\text{s} / 162 \text{ SUS}$  (0 = casing empty)



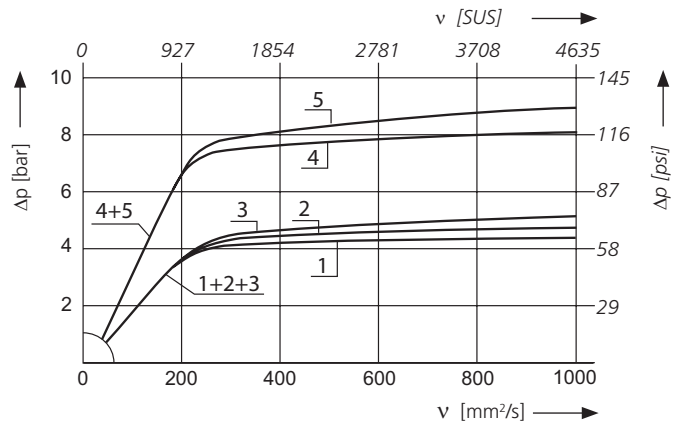
Pressure drop as a function of the **kinematic viscosity** at nominal flow



**D3** Pressure drop as a function of the **flow volume** at  $v = 35 \text{ mm}^2/\text{s} / 162 \text{ SUS}$  (0 = casing empty)

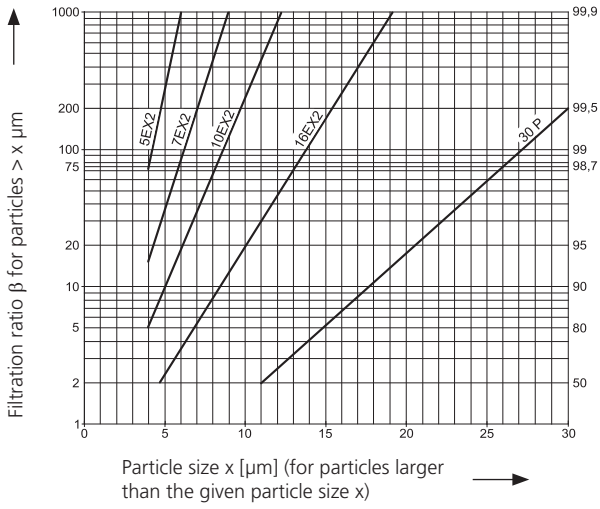


Pressure drop as a function of the **kinematic viscosity** at nominal flow



**Filter fineness curves in Selection Chart, column 4**

**Dx** Filtration ratio  $\beta$  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<sup>®</sup>MAX2 and Paper elements:**

- 5EX2 =  $\bar{\beta}_{5(c)} = 200$  EXAPOR<sup>®</sup>MAX 2
- 7EX2 =  $\bar{\beta}_{7(c)} = 200$  EXAPOR<sup>®</sup>MAX 2
- 10EX2 =  $\bar{\beta}_{10(c)} = 200$  EXAPOR<sup>®</sup>MAX 2
- 16EX2 =  $\bar{\beta}_{16(c)} = 200$  EXAPOR<sup>®</sup>MAX 2
- 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 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
1	l/min	3	4	g	bar	8	9	10	11	12	
D 072-156	48	D1/1	10EX2	12	G½	3.5	1	V3.0613-06	1.1	-	-
D 072-158	48	D1/2	16EX2	12	G½	3.5	1	V3.0613-08	1.1	-	-
<b>D 112-156<sup>1</sup></b>	70	<b>D2/1</b>	10EX2	17	G¾	3.5	1	V3.0617-06	1.4	-	-
<b>D 112-158<sup>1</sup></b>	105	<b>D2/2</b>	16EX2	17	G1	3.5	1	V3.0617-08	1.4	-	-
D 112-186	130	D2/3	10EX2	17	G1	7.0	1	V3.0617-06	1.4	-	-
D 152-153	60	D3/1	5EX2	17	G¾	3.5	1	V3.0623-03	1.7	-	-
<b>D 152-156<sup>1</sup></b>	100	<b>D3/2</b>	10EX2	23	G¾	3.5	1	V3.0623-06	1.7	-	-
<b>D 152-158<sup>1</sup></b>	135	<b>D3/3</b>	16EX2	25	G1	3.5	1	V3.0623-08	1.7	-	-
D 152-183	110	D3/4	5EX2	17	G1	7.0	1	V3.0623-03	1.7	-	-
D 152-186	170	D3/5	10EX2	23	G1	7.0	1	V3.0623-06	1.7	-	-

<sup>1</sup> Preferred type, no minimum order quantity required

Optical or electrical clogging indicators are available to monitor the clogging condition of the element. When ordering filters with integrated monitoring, the abbreviation of the clogging indicator has to be added to the order code of the desired filter variant.

For the appropriate clogging indicator see catalog sheet 60.40.

**Order 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 diagram Dx	Dirt-holding capacity	Connection A/B	Cracking pressure of by-pass	Symbol	Replacement filter element Part No.	Weight	Clogging indicator	Remarks
1	gpm	3	g	SAE	psi	8	9	lbs	11	12	
D 072-756	12.7	<b>D1/1</b>	10EX2	12	-8 <sup>2</sup>	51	1	V3.0613-06	2.4	-	-
D 072-758	12.7	<b>D1/2</b>	16EX2	12	-8 <sup>2</sup>	51	1	V3.0613-08	2.4	-	-
<b>D 112-756<sup>1</sup></b>	18.5	<b>D2/1</b>	10EX2	17	-12 <sup>3</sup>	51	1	V3.0617-06	3.1	-	-
<b>D 112-758<sup>1</sup></b>	27.7	<b>D2/2</b>	16EX2	17	-16 <sup>4</sup>	51	1	V3.0617-08	3.1	-	-
D 112-786	34.3	<b>D2/3</b>	10EX2	17	-16 <sup>4</sup>	102	1	V3.0617-06	3.1	-	-
D 152-753	15.9	<b>D3/1</b>	5EX2	17	-12 <sup>3</sup>	51	1	V3.0623-03	3.7	-	-
<b>D 152-756<sup>1</sup></b>	26.4	<b>D3/2</b>	10EX2	23	-12 <sup>3</sup>	51	1	V3.0623-06	3.7	-	-
<b>D 152-758<sup>1</sup></b>	35.7	<b>D3/3</b>	16EX2	25	-16 <sup>4</sup>	51	1	V3.0623-08	3.7	-	-
D 152-783	29.1	<b>D3/4</b>	5EX2	17	-16 <sup>4</sup>	102	1	V3.0623-03	3.7	-	-
D 152-786	44.9	<b>D3/5</b>	10EX2	23	-16 <sup>4</sup>	102	1	V3.0623-06	3.7	-	-

<sup>1</sup> Preferred type, no minimum order quantity required

<sup>2</sup> Corresponds to 3/4-16 UNF-2B

<sup>3</sup> Corresponds to 1 1/16-12 UN-2B

<sup>4</sup> Corresponds to 1 3/16-12 UN-2B

Optical or electrical clogging indicators are available to monitor the clogging condition of the element. When ordering filters with integrated monitoring, the abbreviation of the clogging indicator has to be added to the order code of the desired filter variant.

**For the appropriate clogging indicator see catalog sheet 60.40.**

**Order 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**

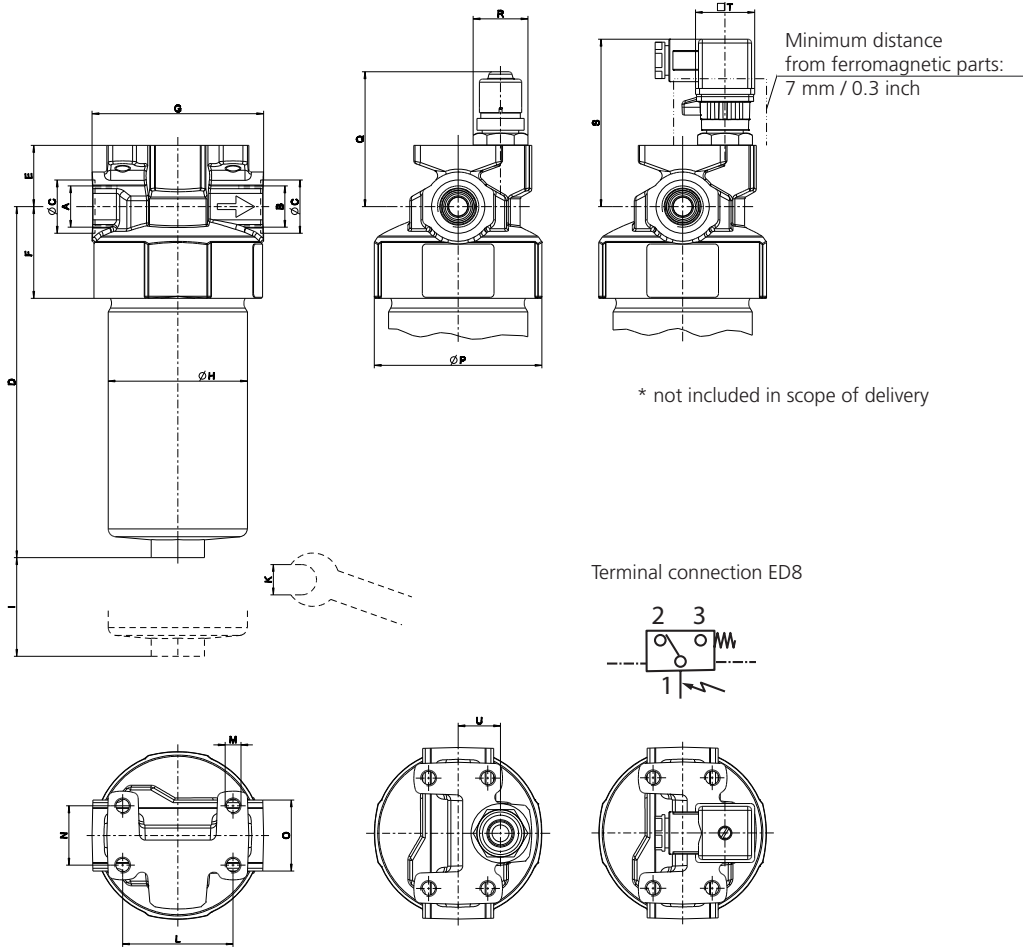
### Remarks:

- › 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\*



## Measurements in mm

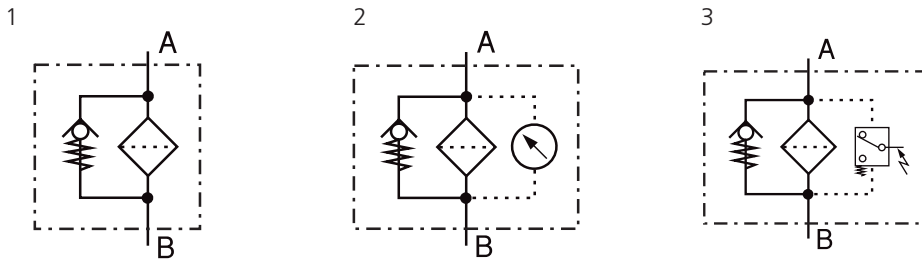
Type	A/B	C	D	E	F	G	H	I	K	L	M Ø/depth	N	O	P	Q	R	S	T	U
D 072	G½	27	178	31	46.5	84	70.5	60	AF 27	56	M8 / 8	30	AF 36	85	69	AF 24	80	□ 30	21.5
D 112	G¾, G1	33	219	37	51	95	70.5	60	AF 27	56	M8 / 8	30	AF 44	85	75	AF 24	86	□ 30	24
D 152	G¾, G1	41	283	37	51	95	70.5	60	AF 27	56	M8 / 8	30	AF 44	85	75	AF 24	86	□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

## Measurements in inch

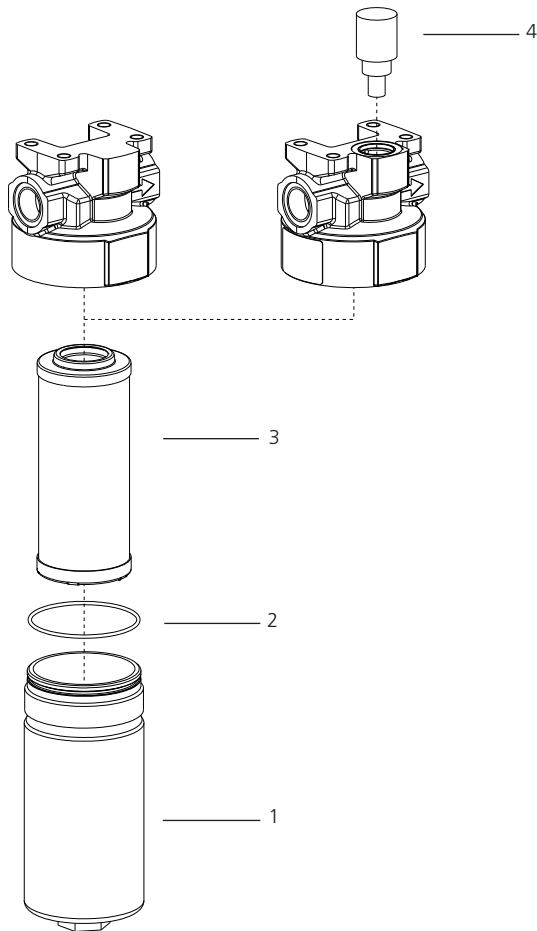
Type	A/B SAE	C	D	E	F	G	H	I	K mm	L	M Ø/depth	N	O mm	P	Q
D 072	-8	1.06	7.01	1.22	1.83	3.31	2.78	2.36	AF 27	2.20	M8 / 0.32	1.18	AF 36	3.35	2.72
D 112	-12, -16	1.30	8.62	1.46	2.01	3.74	2.78	2.36	AF 27	2.20	M8 / 0.32	1.18	AF 44	3.35	2.95
D 152	-12, -16	1.61	11.14	1.46	2.01	3.74	2.78	2.36	AF 27	2.20	M8 / 0.32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



## 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.**

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