



High Pressure Filters - Worldline 300

**HD 319 • HD 419
HD 619**

- In-line mounting
- Operating pressure up to 630 bar
- Nominal flow rate up to 450 l/min

Description

Application

In the high pressure 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: Through installation near to the control valves or other expensive components. The specific determined flow rate guarantees a closed by-pass valve even at $v \leq 200 \text{ mm}^2/\text{s}$ (cold start condition).

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.

Materials

Filter head: Spheroidal graphite cast iron (SGI)
 Filter bowl: Cold extruded steel
 Coating: Powder paint
 Seals: NBR (FPM on request)
 Filter media: EXAPOR®MAX - inorganic multi-layer microfibre web

Accessories

If an electrical indicator is used, a transparent socket with LED for optical indication is also available with Part No. DG 041.1200.

Characteristics

Operating pressure

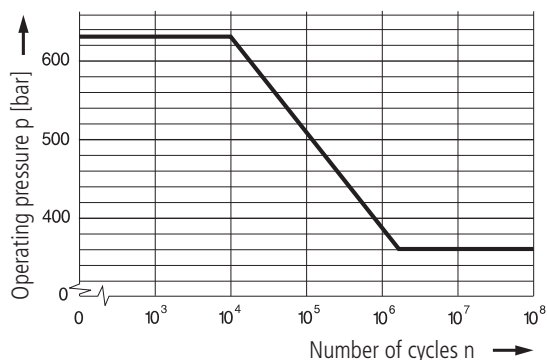
0 ... 360 bar, min. 2×10^6 pressure cycles

Nominal pressure according to DIN 24550

0 ... 630 bar, min. 10^4 pressure cycles

Quasi-static operating pressure

Permissible pressures for other numbers of cycles



Nominal flow rate

Up to 450 l/min (see Selection Chart, column 2)

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

- closed by-pass valve at $v \leq 200 \text{ mm}^2/\text{s}$
- element service life > 1.000 operating hours at an average fluid contamination of 0,07 g per l/min flow volume
- flow velocity in the connection lines:
 - up to 250 bar $\leq 8 \text{ m/s}$
 - > 250 bar $\leq 12 \text{ m/s}$

Filter fineness

5 $\mu\text{m(c)}$... 16 $\mu\text{m(c)}$

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)

Viscosity at nominal flow rate

- at operating temperature: $v < 60 \text{ mm}^2/\text{s}$
- as starting viscosity: $v_{\text{max}} = 1.200 \text{ mm}^2/\text{s}$
- 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

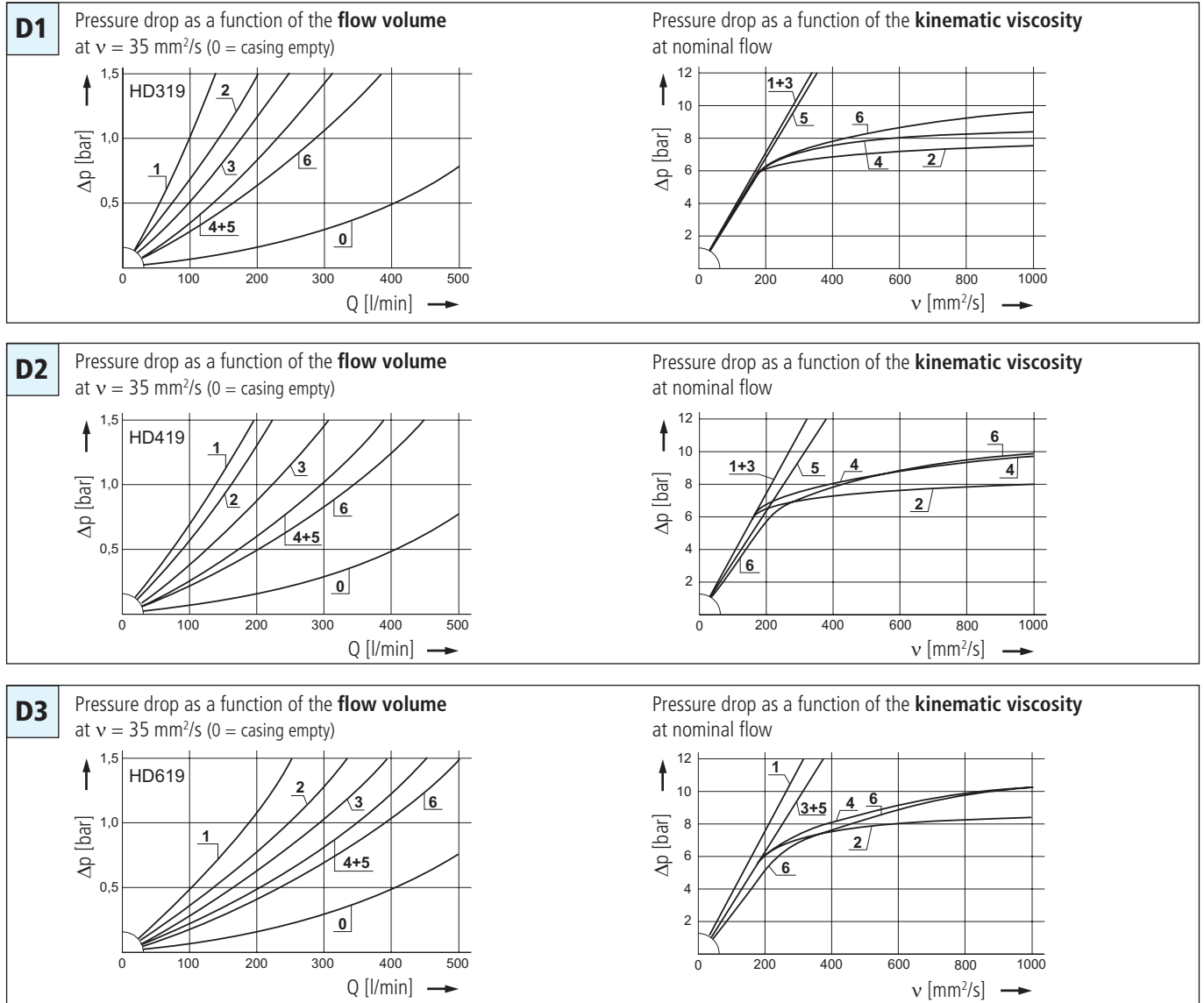
- Threaded ports according to ISO 228 or DIN 13.
 - SAE-flange (6000 psi)
- Sizes see Selection Chart, column 6 and ordering example (other connections on request).

Electrical clogging indicator

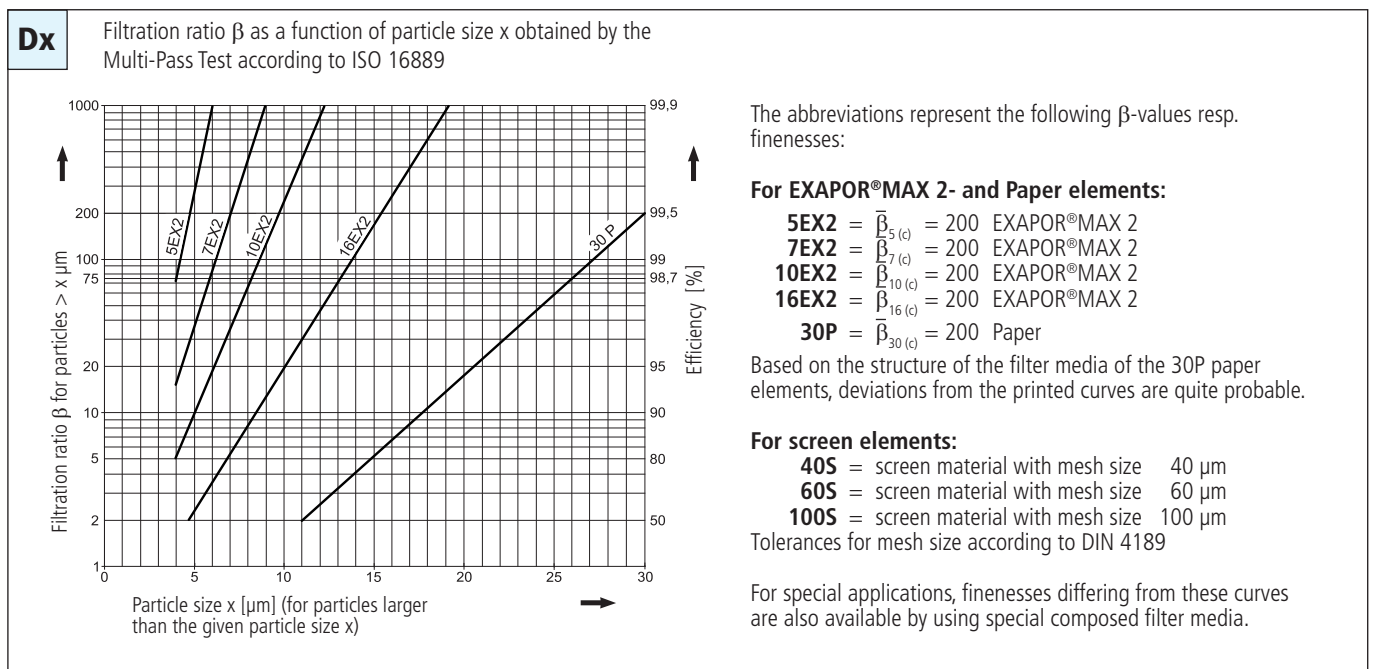
- Switching voltage: max. 120 V AC / 175 V DC
- Switching current: max. 0,17 A AC / 0,25 A DC
- Switching power: max. 3,5 VA AC / 5 W DC
- Type of contact: Change-over
- Electrical protection: IP 65 (with mounted and secured socket)

Diagrams

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



Filter fineness curves in Selection Chart, column 4



Selection Chart

Part No.	Nominal flow rate	Pressure drop see diagram D/curve no.	Filter fineness	Dirt-holding capacity	Connection A/B	Cracking pressure of by-pass	Symbol	Replacement filter element	Weight	Clogging indicator	Cracking pressure in ()	Remarks
1	l/min	3	4	g	6	7	8	9	10	11	bar	12
HD 319-289	110	D1/1	5EX2	20	G1¼	-	6	V3.0817-13 ¹	16,3	electrical (5)		change-over
HD 319-279	155	D1/2	5EX2	24	G1¼	7	2	V3.0817-03	15,9	optical (5)		-
HD 319-259	155	D1/2	5EX2	24	G1¼	7	3	V3.0817-03	15,9	electrical (5)		change-over
HD 319-286	195	D1/3	10EX2	24	G1¼	-	6	V3.0817-16 ¹	16,3	electrical (5)		change-over
HD 319-276	250	D1/4	10EX2	33	G1¼	7	2	V3.0817-06	15,9	optical (5)		-
HD 319-256	250	D1/4	10EX2	33	G1¼	7	3	V3.0817-06	15,9	electrical (5)		change-over
HD 319-288	270	D1/5	16EX2	25	G1¼	-	6	V3.0817-18 ¹	16,3	electrical (5)		change-over
HD 319-278	330	D1/6	16EX2	33	G1¼	7	2	V3.0817-08	15,9	optical (5)		-
HD 319-258	330	D1/6	16EX2	33	G1¼	7	3	V3.0817-08	15,9	electrical (5)		change-over
HD 419-289	155	D2/1	5EX2	29	G1¼	-	6	V3.0823-13 ¹	17,8	electrical (5)		change-over
HD 419-279	190	D2/2	5EX2	33	G1¼	7	2	V3.0823-03	17,2	optical (5)		-
HD 419-259	190	D2/2	5EX2	33	G1¼	7	3	V3.0823-03	17,2	electrical (5)		change-over
HD 419-286	265	D2/3	10EX2	33	G1¼	-	6	V3.0823-16 ¹	17,8	electrical (5)		change-over
HD 419-276	330	D2/4	10EX2	47	G1¼	7	2	V3.0823-06	17,2	optical (5)		-
HD 419-256	330	D2/4	10EX2	47	G1¼	7	3	V3.0823-06	17,2	electrical (5)		change-over
HD 419-288	330	D2/5	16EX2	35	G1¼	-	6	V3.0823-18 ¹	17,8	electrical (5)		change-over
HD 419-278	380	D2/6	16EX2	48	G1¼	7	2	V3.0823-08	17,2	optical (5)		-
HD 419-258	380	D2/6	16EX2	48	G1¼	7	3	V3.0823-08	17,2	electrical (5)		change-over
HD 619-289	220	D3/1	5EX2	41	G1½	-	6	V3.0833-13 ¹	20,6	electrical (5)		change-over
HD 619-279	280	D3/2	5EX2	49	G1½	7	2	V3.0833-03	19,9	optical (5)		-
HD 619-259	280	D3/2	5EX2	49	G1½	7	3	V3.0833-03	19,9	electrical (5)		change-over
HD 619-286	330	D3/3	10EX2	49	G1½	-	6	V3.0833-16 ¹	20,6	electrical (5)		change-over
HD 619-276	400	D3/4	10EX2	67	G1½	7	2	V3.0833-06	19,9	optical (5)		-
HD 619-256	400	D3/4	10EX2	67	G1½	7	3	V3.0833-06	19,9	electrical (5)		change-over
HD 619-288	450	D3/5	16EX2	51	G1½	-	6	V3.0833-18 ¹	20,6	electrical (5)		change-over
HD 619-278	450	D3/6	16EX2	68	G1½	7	2	V3.0833-08	19,9	optical (5)		-
HD 619-258	450	D3/6	16EX2	68	G1½	7	3	V3.0833-08	19,9	electrical (5)		change-over

Two different head pieces with two various connecting options are available.

Order example: The Filter HD 319-289 has to be supplied with SAE1¼ flanged connection.

Order description:

HD 319-189

Connections:

2 various options are available

Flanged connection (A/B) SAE1¼ (6000 psi) ————— 1 —————

Threaded port (A/B) G1¼ or G1½² ————— 2 —————

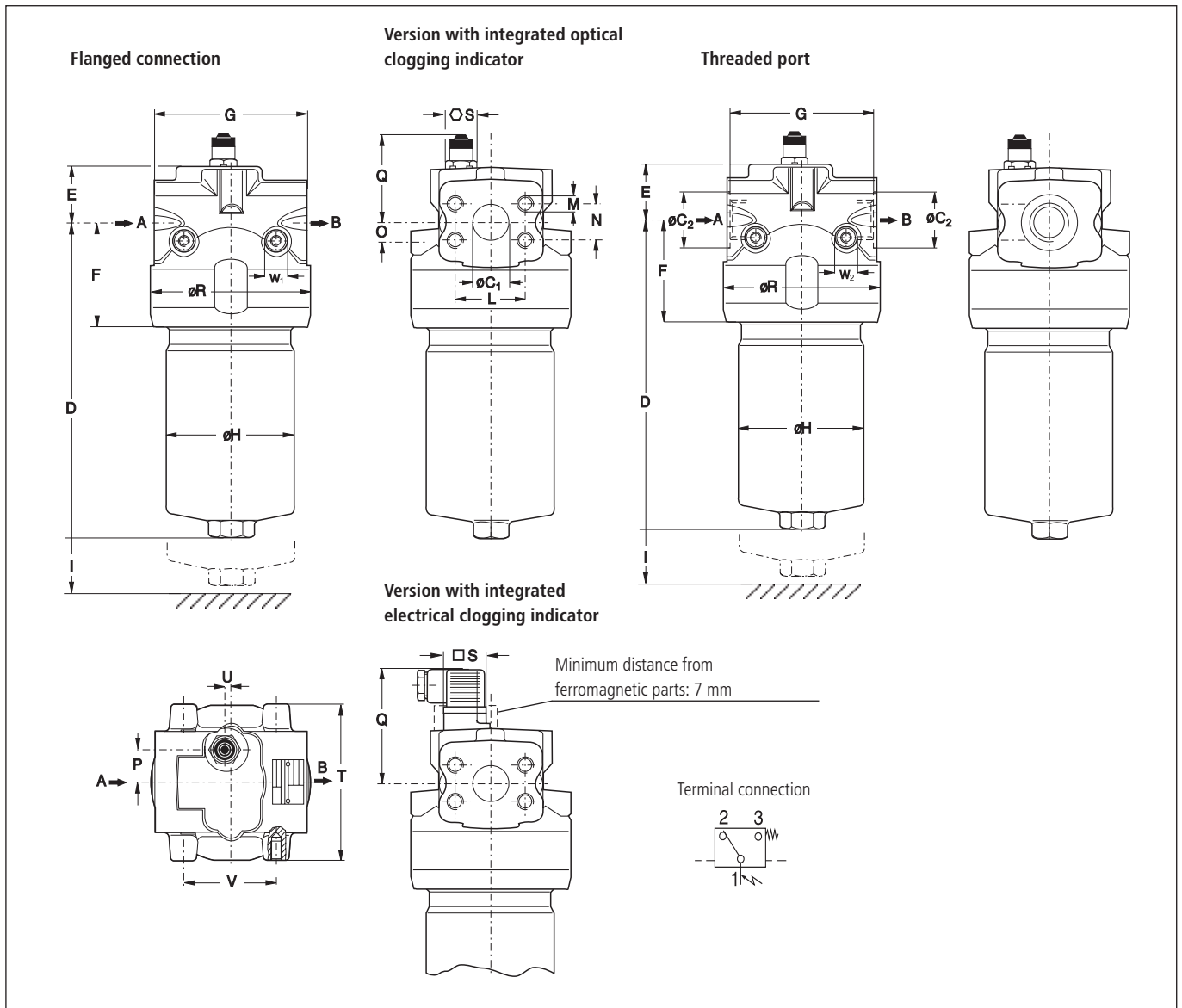
Remarks:

- The filters listed in this chart are standard filters. If modifications are required, e.g. bolt mounted indicators according to catalogue sheet 60.30, we kindly ask for your request.
- If an electrical indicator is used, a transparent socket with LED for optical indication is also available with Part No. DG 041.1200.

¹ Element differential pressure stable up to 160 bar

² G1½ for series HD 619

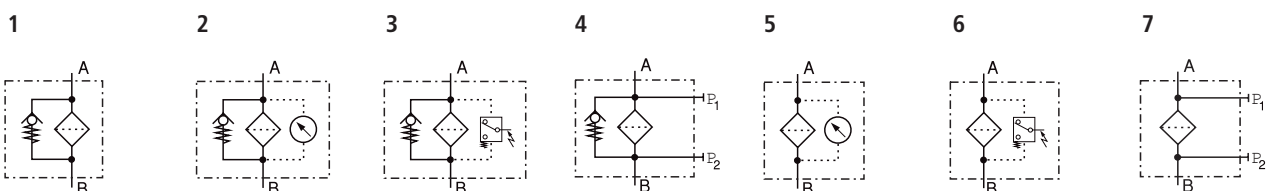
Dimensions



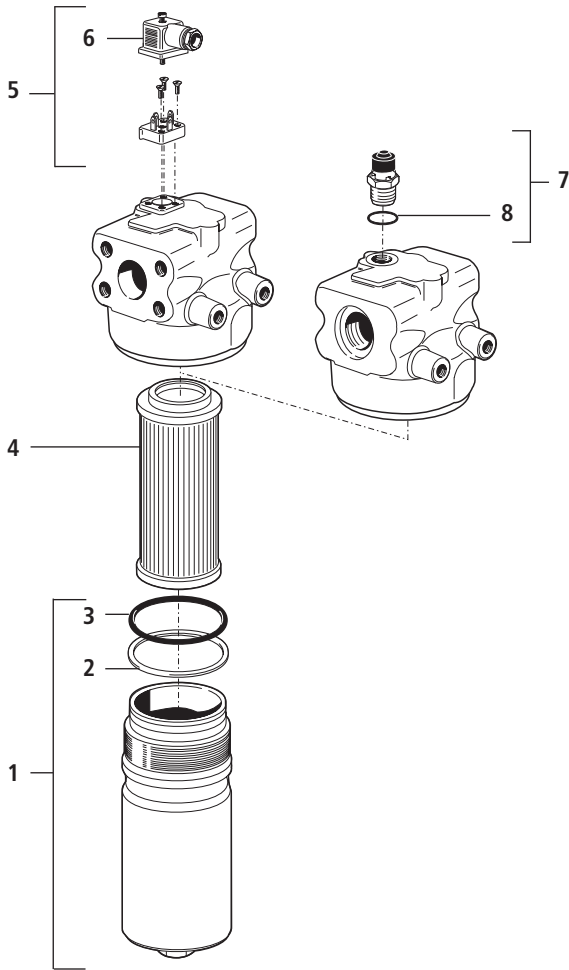
Measurements

Type	A/B	C ₁	C ₂	D	E	F	G	H	I	K	L	M	N	O	P	Q	R	S	T	U	V	W
												Ø/depth				opt./electr.		opt./electr.				Ø/depth
HD 319	see	31	65	255	45	86	145	109	80	32	66,7	M 14/22	31,8	18,5	33	75/92	152	24/30	148	8	80	M 12/18
HD 419	Selection	31	65	319	45	86	145	109	80	32	66,7	M 14/22	31,8	18,5	33	75/92	152	24/30	148	8	80	M 12/18
HD 619	Chart	31	65	420	45	86	145	109	80	32	66,7	M 14/22	31,8	18,5	33	75/92	152	24/30	148	8	80	M 12/18

Symbols



Spare Parts



Pos.	Designation	Part No.
1	Filter bowl HD 319 (with Pos. 2 and 3)	HD 250.0701
1	Filter bowl HD 419 (with Pos. 2 and 3)	HD 451.0702
1	Filter bowl HD 619 (with Pos. 2 and 3)	HD 619.0701
2	Back-ring	HD 255.0102
3	O-ring 94,84 x 3,53	N007.0953
4	Filter element	see Chart / col. 9
5	Reed switch with screws and socket (Pos. 6)	HD 049.1410
6	Reed switch with screws DIN 43650 - AF3	DG 041.1220
7	Optical indicator (with Pos. 8)	HD 049.1400
8	O-ring 17 x 2	N007.0172

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.

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

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



We produce fluid power solutions

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