V3.0304 · V7.0309 · W3.0307

For block mounting · Collapse pressure up to 200 bar / 2900.75 psi · Nominal flow rate up to 20 l/min / 5.3 gpm

Built-in filter elements V3.0304 and W3.0307

Description

Application

- In the pressure and high pressure circuit of hydraulic systems. When used in the pressure line, a pressure relief valve must be installed to protect the element. The opening pressure must be adjusted to the element collapse pressure (see Selection Chart, column 8).
- Assembly in the hydraulic block

Features

Filter element 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
- particularly long maintenance intervals

Performance features

Protection against wear:

By means of filter elements that even in full-flow filtration meet the highest demands regarding cleanliness classes.

If necessary, an additional filter must be provided elsewhere in the system.

Protection against malfunction:

By installation directly in front of the hydraulic components.

Filter maintenance

By using a clogging indicator, the correct moment for maintenance is stated and an optimal utilization of the filter service life is achieved.

Materials

Threaded connection (if provided):	steel, galvanized
Seals:	NBR (FPM on request)
Filter media:	EXAPOR® or EXAPOR®MAX 3 - inorganic multi-layer microfiber web
End caps:	aluminum alloy (Exception: V7.0309 → alloy and steel)

Accessories

To monitor the clogging, screw-in (see section Dimensions) or flange-mounted differential pressure switches are available.
For dimensions and technical data of integratable clogging indicators, see catalog sheet 60.40.
Flange-mounted clogging indicators optionally with one or two switching points resp. temperature suppression – dimensions and technical data see catalog sheet 60.30.

Characteristics

Nominal flow rate

Up to 20 l/min / 5.3 gpm
(see Selection Chart, column 2)
The nominal flow rates indicated by ARGO-HYTOS are based on the following features:

› Flow velocity in the connecting lines
≤ 6 m/s / 19.7 ft/s

Filter fineness

5 µm(c) ... 20 µm(c)
ß 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 Charts, 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)
* < 1% of total operating time, but max. 1 hour continuously

Mounting position

Any mounting position possible

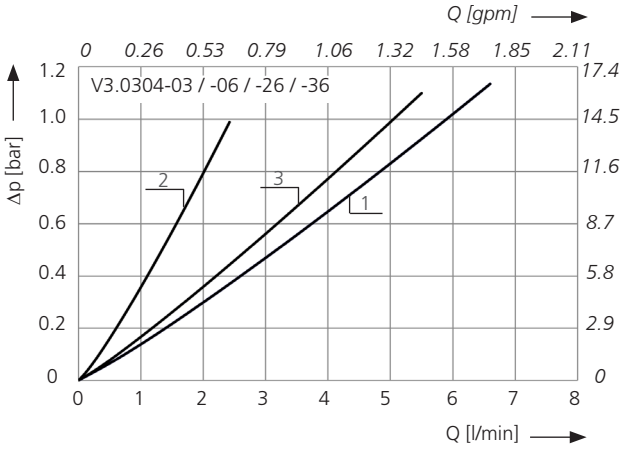
Connection

Block installation (in bore) or threaded connection according to ISO 228 or DIN 13.
Sizes see Selection Chart, column 6
(other port threads on request).
For installation recommendations, see info sheet 00.325

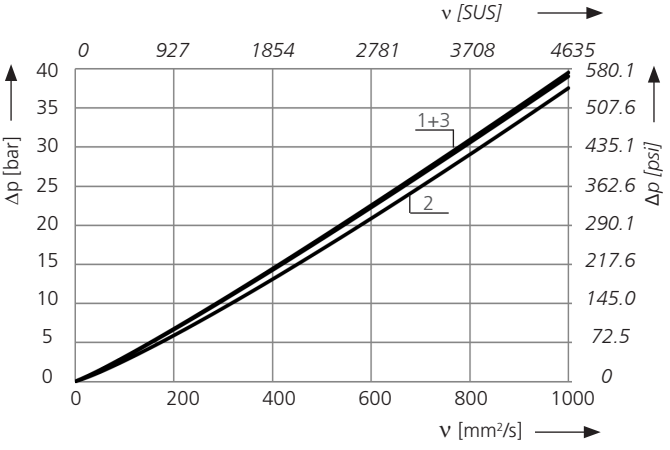
Diagrams

Δp-curves for filter elements in Selection Chart, column 3

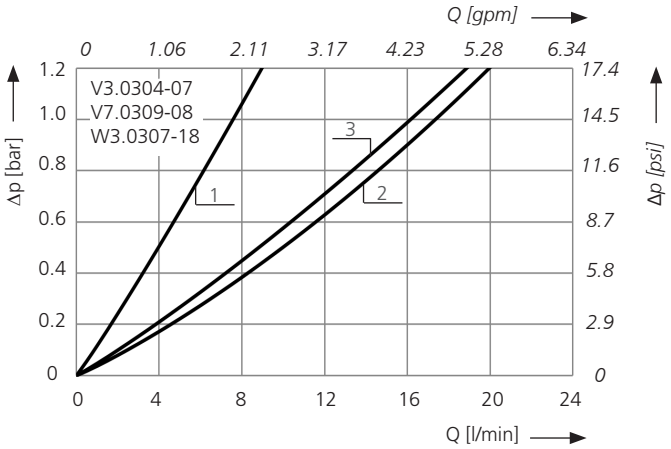
D1 Pressure drop as a function of the **volume flow** at ν = 35 mm²/s / 162 SUS



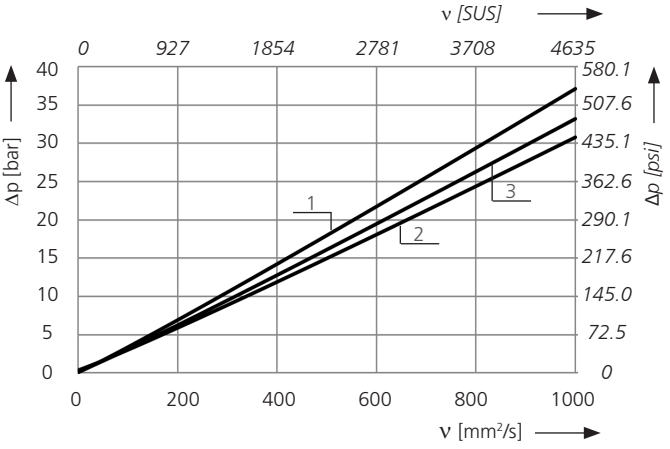
Pressure drop as a function of the **kinematic viscosity** at nominal flow



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

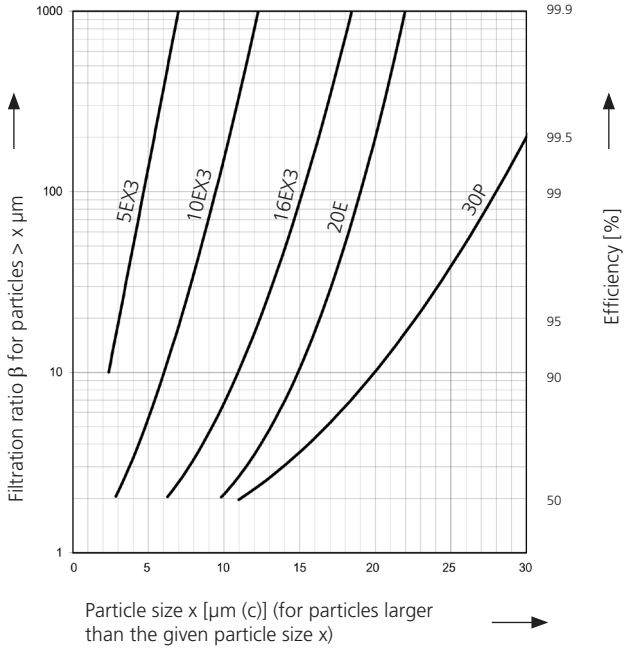


Pressure drop as a function of the **kinematic viscosity** at nominal flow



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®MAX 3 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
20E =	$\overline{\beta}_{20\,(c)}$	= 200	EXAPOR®
30P =	$\beta_{30\,(c)}$	= 200	Papier

Based on the structure of the filter media of the 30P paper elements, deviations from the printed curve 30P are quite probable.

For screen elements:

40S	=	screen material with mesh size	40 µm
60S	=	screen material with mesh size	60 µm
100S	=	screen material with mesh size	100 µm

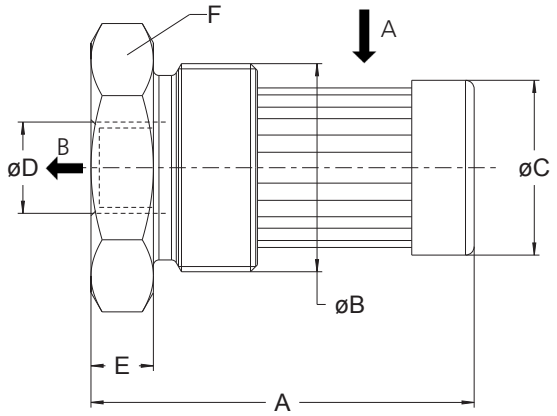
Tolerances for mesh size according to DIN 4189.

For special applications, finenesses differing from these curves are also available by using special composed filter material.

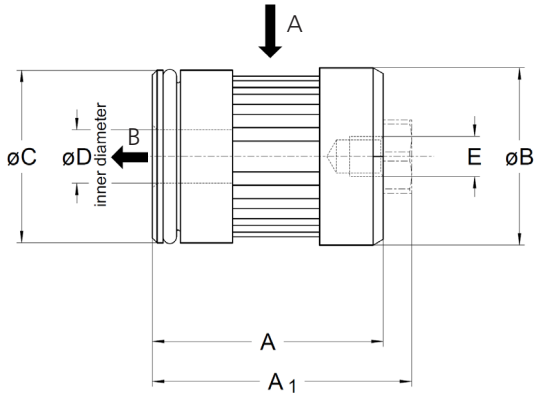
Selection Chart

Part No.	Nominal flow rate		Pressure drop see diagram **D**/curve no.	Filter fineness see diagr. **Dx**	Dirt holding capacity	Connection	Symbol	Collapse pressure		Weight		Remarks
	l/min	gpm		µm	g			bar	psi	kg	lbs	
1	2		3	4	5	6	7	8		9		10
V3.0304-06	6.0	1.6	**D1**/1	10	0.7	M30 x 1.5	1	40	580	0.135	0.300	Screw connection
V3.0304-26	6.0	1.6	**D1**/1	10	0.7	M30 x 1.5	1	40	580	0.133	0.290	Screw connection
V3.0304-03	2.0	0.5	**D1**/2	5	0.3	Ø 25.8	1	20	290	0.024	0.053	
V3.0304-36	5.0	1.3	**D1**/3	10	0.4	Ø 25.8	1	20	290	0.024	0.053	
V3.0304-07	8.5	2.2	**D2**/1	20	0.2	Ø 25.8	1	250	3626	0.024	0.053	
V7.0309-08	20	5.3	**D2**/2	16	0.2	Ø 25.2	1	160	2320	0.041	0.090	
W3.0307-18	18	4.7	**D2**/3	20	0.5	Ø 25.8	1	200	2900	0.257	0.567	

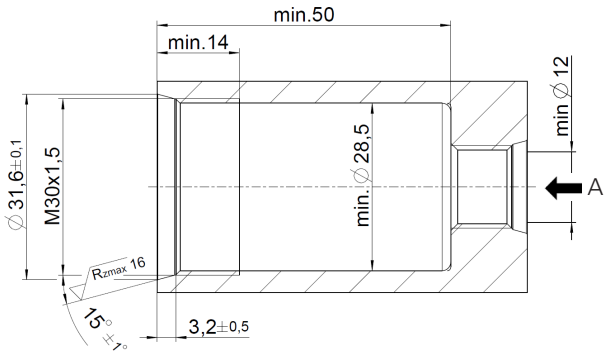
Version with screw connection
V3.0304-06 / -26

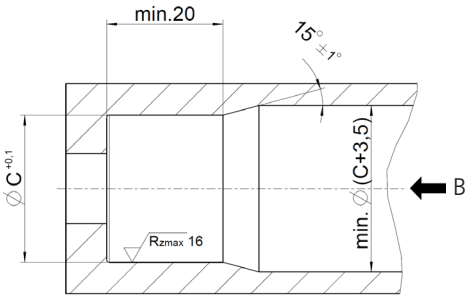


Version without screw connection
V3.0304-03 / -07 / -36 / V7.0309 / W3.0307



Installation condition / installation recommendation





Remarks:

- Optional integrable clogging indicators for screwing into the hydraulic block can be found under section Dimensions and in the catalog sheet 60.40.
- Flange-mounted clogging indicators, optionally with one or two switching points resp. temperature suppression are available in catalog sheet 60.30.
- The products listed in this chart are standard parts. Other designs available on request..

Measurements in mm

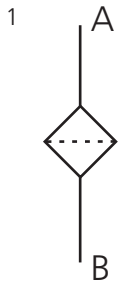
Type	A	A1	B	C	D	E	F
V3.0304-06	55		M 30 x 1.5	25.2	G ¼	9	AF 36
V3.0304-26	55		M 30 x 1.5	25.2	M 14 x 1.5	9	AF 36
V3.0304-03	35		26.5	25.8	8	M6, depth 5	-
V3.0304-36	35		26.5	25.8	8	M6, depth 5	-
V3.0304-07	35		26.5	25.8	8	M6, depth 5	-
V7.0309-08		87.5	25.2	25.2	7	M6, depth 5	-
W3.0307-18	63.25		26.5	25.8	8	M6, depth 5	-

Measurements in inch

Type	A	A1	B	C	D	E	F
V3.0304-06	2.17		M 30 x 1.5	0.99	G ¼	9	AF 36
V3.0304-26	2.17		M 30 x 1.5	0.99	M 14 x 1.5	9	AF 36
V3.0304-03	1.38		1.04	1.02	0.32	M6, depth 0.2	-
V3.0304-36	1.38		1.04	1.02	0.32	M6, depth 0.2	-
V3.0304-07	1.38		1.04	1.02	0.32	M6, depth 0.2	-
V7.0309-08		3.45	0.99	0.99	0.28	M6, depth 0.2	-
W3.0307-18	2.49		1.04	1.02	0.32	M6, depth 0.2	-

All dimensions and tolerances necessary for machining are available on request.

Symbols



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 products.