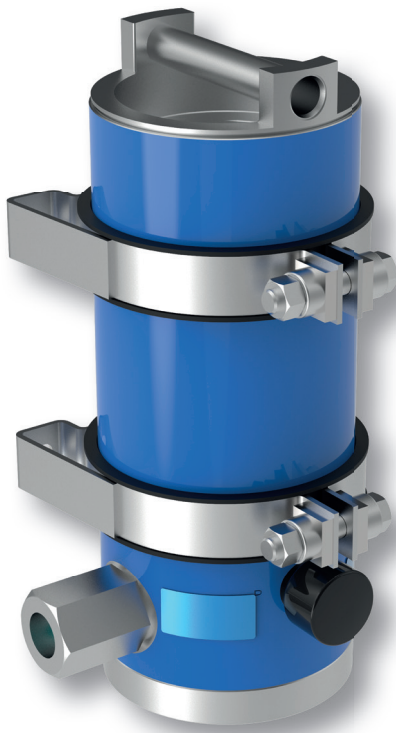


Off-line Filter
FNS 040

Operating pressure up to 320 bar / 4640 psi · Nominal flow rate up to 6 l/min / 1.6 gpm · Water capacity approx. 350 ml / 0.09 gal



Off-line Filter FNS 040

Description
Application

Suitable for high-pressure circuits in hydraulic and lubrication systems.

Performance features
Protection against wear:

The EXAPOR[®]MAX 2 ultra-fine element meets the highest cleanliness standards, even at full flow.

Protection against failure:

The off-line filter includes a feature that guarantees a closed by-pass valve even at $v \leq 200 \text{ mm}^2/\text{s}$ / 930 SUS (cold start condition) within specified operating parameters.

Special design features
Housing cover:

The cover can be opened without special auxiliary tools.

Flow control valve:

Through a pressure compensated flow control valve, the FNS off-line filters are directly connected to the high pressure pipe. The surplus volume (e.g. in circuits with fixed displacement pumps) from the high-pressure circuit is cleaned by the ultra-fine filter element.

Dirt retention valve:

At the bottom of the filter element, flow through from inside to outside, there is a dirt retention valve. This closes while pulling the filter element, which is hung up at the cover, out of the housing. Sedimented dirt is removed together with the filter element. Because of the cover design, filter element change can be carried out almost without losing any oil.

Filter elements

Flow direction from inside to outside. The star-shaped pleating of the filter material results in:

- › large filter surfaces
- › low pressure drop
- › high dirt-holding capacities
- › particularly long maintenance intervals

Filter maintenance

By using a clogging indicator, the correct moment for maintenance is stated, what guarantees optimum utilization of the filter life.

Materials

Filter housing: Aluminum alloy
Cover: Aluminum alloy
Seals: NBR (FPM on request)
Filter media: EXAPOR®AQUA

Accessories

EXAPOR®MAX 2 filter elements are available on request.

Characteristics

Nominal flow rate

Up to 6 l/min / 1.6 gpm (see Selection Chart, column 2)
Refers to the medium flow rate of the flow control valve. With selection of the flow control valve, a sufficient surplus volume from the high-pressure circuit has to be guaranteed. If necessary, the machine manufacturer should be consulted.

Connection

Threaded port according to ISO 228 or DIN 13.
Sizes see Selection Chart, column 6
(other port threads on request)

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: $v < 35 \text{ mm}^2/\text{s} / 162 \text{ SUS}$
- › as starting viscosity: $v_{\text{max}} = 400 \text{ mm}^2/\text{s} / 5560 \text{ SUS}$

Operating pressure

Max. 320 bar / 4640 psi
(max. 12 bar / 174 psi without pressure compensated flow control valve)
Minimum inlet pressure at the pressure compensated flow control valve: 10 bar / 145 psi

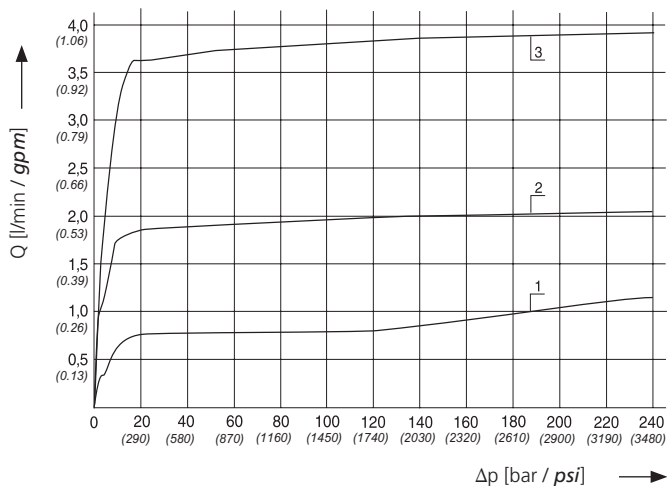
Mounting position

Vertical, connection port at the bottom

Diagrams

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

D1 Flow volume as a function of the differential pressure at the flow control valve at $v = 35 \text{ mm}^2/\text{s} / 162 \text{ SUS}$



Selection Chart

Part No.	Nominal flow rate		Filter fineness			Dirt-holding capacity		Connection A/B	Replacement filter element		Clogging indicator	Flow control valve	Remarks
	l/min	gpm	µm	g	ml	gal	kg		lbs				
1	2		3	4	5		6	7	8		9	10	11
FNS 040-1105	6	1.6	7µm	65	350	0.09	G1/G¾	Y7.1220-05	8.8	19.4	optical	FNS 060.1550	–
FNS 040-1115	4	1.06	7µm	65	350	0.09	G1/G¾	Y7.1220-05	7.2	15.9	optical	FNS 060.1540	–
Pressure compensated flow control valve - inlet pressure min. 10 bar / 145 psi, max. 320 bar / 4640 psi:													
FNS 060.1520	1	0.26					G1/G¾						–
FNS 060.1530	2	0.53					G1/G¾						–
FNS 060.1540	4	1.06					G1/G¾						–

Combinations with other filter elements are available on request.

Possible elements to choose:

V7.1220-113	3 µm
V7.1220-13	5 µm
V7.1220-06	10 µm
Y7.1220-05	7 µm, water absorbing
Y7.1220-113	3 µm, water absorbing

The housing of the off-line filter is designed for a max. operating pressure of 12 bar / 174 psi. To avoid back pressures, no components as e.g. ball valves must be inserted at the housing outlet and in the continuative circuit.

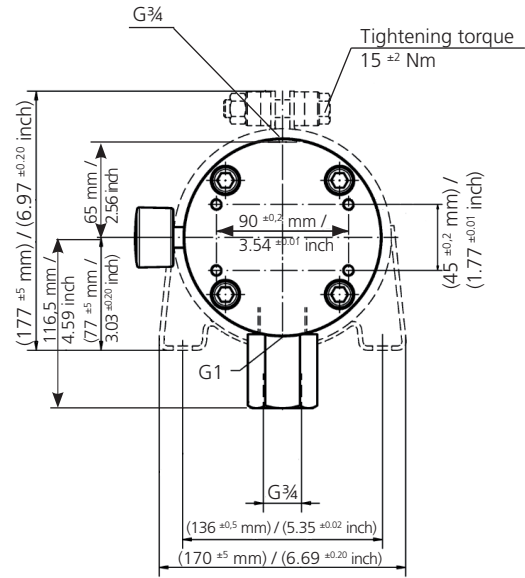
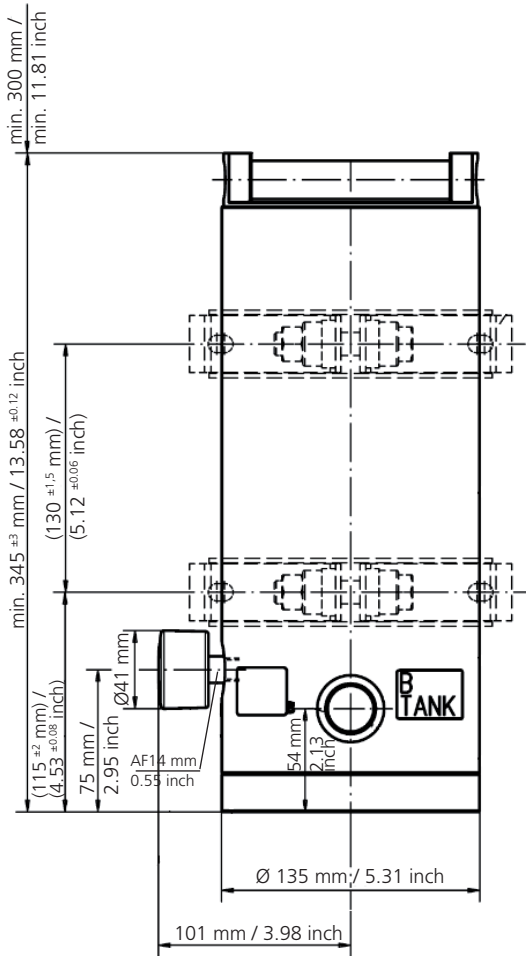
For contamination monitoring, manometers or electrical pressure switches can be used.

For appropriate clogging indicators see catalog sheet 60.20.

Remarks:

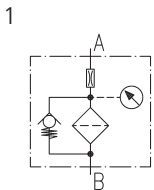
- › The cut-in pressure of the pressure switch must be lower than the cracking pressure of the by-pass valve (see Selection Chart, column 7).
- › Clogging indicators and flow control valves are optionally available and will be supplied separately, if ordered.
- › The off-line filters listed in this chart are standard units. If modifications are required, e.g. with water-absorbing filter elements, we kindly ask for your request.

Dimensions



Version FNS 040-1115 without clamps.
Clamps may be ordered separately.
Order Code FNS 060.1730 (2 clamps).

Symbol



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 leak-free 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.