

Ventilating Filter - with replaceable element

VFT-2500

Connection up to G1¼ or 6-hole · Nominal flow rate up to 2500 l/min / 660 gpm



Ventilating Filter VFT-2500
(with and without clogging indication)

Description

Application

Filling / ventilation of tanks for hydraulic and lubrication systems as well as gearboxes.

General

The oil levels in the tanks of hydraulic systems are subject to continuous variation due to temperature changes and the operation of cylinders and pressure vessels. To prevent over pressurizing of tanks, an exchange of air with the external atmosphere is necessary. By the use of a ventilating filter, the outside air that is drawn in is filtered and the ingress of dust is therefore prevented.

Special features

The filter housings, which can be screwed onto the tank, contain a replaceable filter element. In addition, the lockable housings make the ventilating filters secure from misuse and provide protection from the ingress of dirt via the tank fill port. The ventilation openings are designed that dust on the surface of the tank is not drawn in, and that the ingress of spray and rainwater is largely prevented. The use in marine applications presents no problem due to the choice of materials used.

Design

Bi-directional air flow (air IN/OUT).

The star-shaped pleating of the filter material results in:

- › large filter surfaces
- › low pressure drop
- › high dirt-holding capacities
- › long service life

Ordering options / versions

Housing connection:

Various threaded ports are available, as well as a 6-hole design that allows direct flange-mounting to the tank surface.

Clogging indication:

A visual, manually resettable vacuum indicator is available to indicate filter maintenance.

Maintenance

The elements of the ventilating filters should be changed on a yearly interval or at least every 1000 operating hours. By using a clogging indicator, the correct time for maintenance is stated. This helps to ensure optimal utilization of the element life.

Nominal flow rate

Up to 2500 l/min / 660 gpm (see Selection Chart, column 2).
The nominal flow rates indicated by ARGO-HYTOS are based on the following criteria:

- › Ventilating filters without double check valve:
 $\Delta p \leq 0.03 \text{ bar} / \Delta p \leq 0.44 \text{ psi}$ for air IN
- › Ventilating filters with double check valve:
 $\Delta p \leq 0.1 \text{ bar} / \Delta p \leq 1.45 \text{ psi}$ for air IN

Connection

Threaded ports according to

- › ISO 228
- or 6-hole flange $\varnothing 73 \text{ mm}$, according to
- › DIN 24557/T2 (hole pattern)

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

Mounting / sealing

Version with threaded connection:
Sealing to the tank by means of O-ring

Version with 6-hole flange:
6 hexagon socket head cap screws ISO 4762 M5x16
with washers DIN 125.
Flange sealing by means of molded gasket

(Mounting accessories and gasket included in basic equipment)

Filter fineness

2 μm
Tested in a single pass test with ISO MTD.

Hydraulic fluids

Mineral oil and biodegradable fluids
(HEES and HETG, see info sheet 00.20).

Temperature range hydraulic fluid

-30 °C ... +100 °C (temporary -40 °C ... +120 °C)
-22 °F ... +212 °F (temporary -40 °F ... +248 °F)

Temperature range environment

-30 °C ... +100 °C
-22 °F ... +212 °F

Materials

Cap:	Polyamide, GF reinforced
Base:	Polyamide, GF reinforced
Gaskets:	O-rings: NBR (FPM on request) Molded gasket: HNBR
Filter media:	Composite, multi-layer

Mounting position

Preferably vertical, position on the tank see section Layout.
For installation recommendations, see info sheet 00.325.

Layout

Sizes

The determining factor for selecting the size is the maximum over / under pressure allowed in the tank.

The initial pressure drop with a clean air filter should not exceed 0.03 bar / 0.44 psi.

Filter fineness

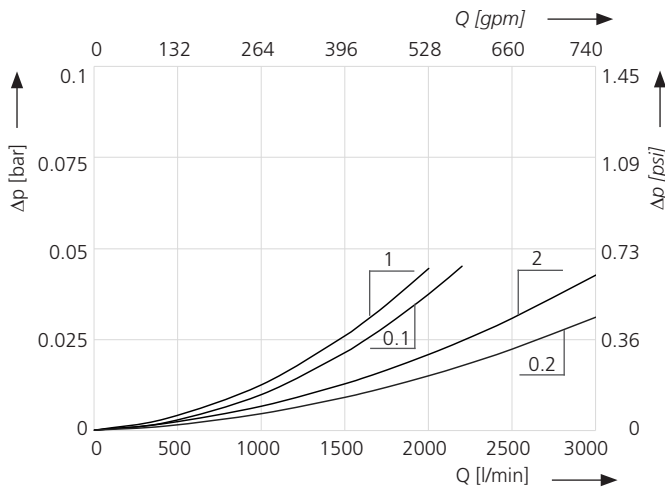
In the ideal case, the fineness of the ventilating filter matches the fineness of the system filter (see also CETOP RP 98 H).
By the use of ARGO-HYTOS filter fineness 2CL the ingress of dust into the tank is effectively reduced.

Mounting

The ventilating filter should be mounted in a low-dust area of the machine and not in depressions where water can collect. For mobile use, the ventilating filter is to be mounted on the tank such that neither splashing oil from the inside nor spray water from the outside can reach the area of the ventilation opening.

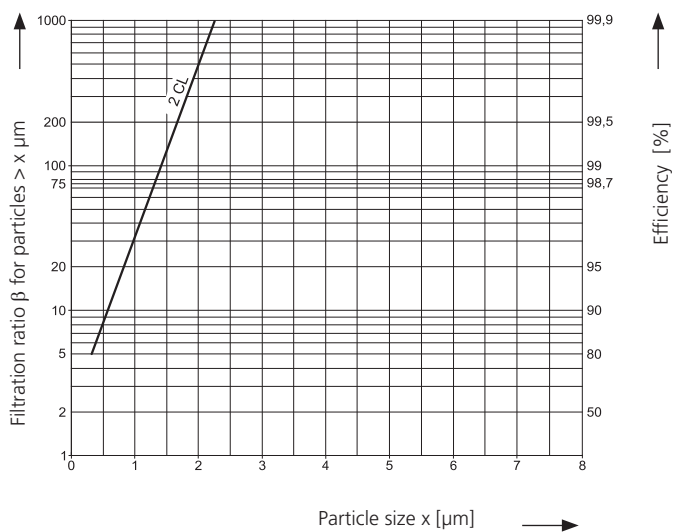
Δp -curves for complete filters in Selection Chart, column 3

D1 Pressure drop as a function of the **flow volume**
AIR IN/OUT (0.x = housing empty)



Filter fineness curves in Selection Chart, column 4

Dx Filtration ratio β as a function of particle size x tested in a single pass test with ISO MTD



The abbreviation represents the following β -values resp. finenesses:

2CL

- 2 μm Composite
 99.5% efficiency for particles of size 2 μm
 tested in a single pass test with ISO MTD

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 diagramm D /curve no.	Filter fineness see diagr. Dx	Filter surface area		Connection A	Replacement filter element	Symbol	Weight		Remarks
	l/min	gpm			cm ²	inch ²				g	lbs	
1	2		3	4	5		6	7	8	9		10
VFT-2500-GI-C1-AAA-100	1500	396	D1/1	2CL	1260	195.3	G1	X2.0909-05	1	300	0.66	-
VFT-2500-GJ-C1-AAA-100	2500	660	D1/2	2CL	1260	195.3	G1¼	X2.0909-05	1	300	0.66	-
VFT-2500-FA-C1-AAA-300	2500	660	D1/2	2CL	1260	195.3	6-hole	X2.0909-05	1	300	0.66	-
VFT-2500-GI-C1-AAN-100	1500	396	D1/1	2CL	1260	195.3	G1	X2.0909-05	2	345	0.76	with clogging indicator (optical) ²
VFT-2500-GJ-C1-AAN-100¹	2500	660	D1/2	2CL	1260	195.3	G1¼	X2.0909-05	2	345	0.76	with clogging indicator (optical) ²
VFT-2500-FA-C1-AAN-300	2500	660	D1/2	2CL	1260	195.3	6-hole	X2.0909-05	2	345	0.76	with clogging indicator (optical) ²

¹ Preferred type, no minimum order quantity required

² Response pressure of vacuum indicator: -75 mbar / -1.09 psi

Order example: Filter with G1¼ connection and clogging indicator
VFT-2500-GJ-C1-AAN-100

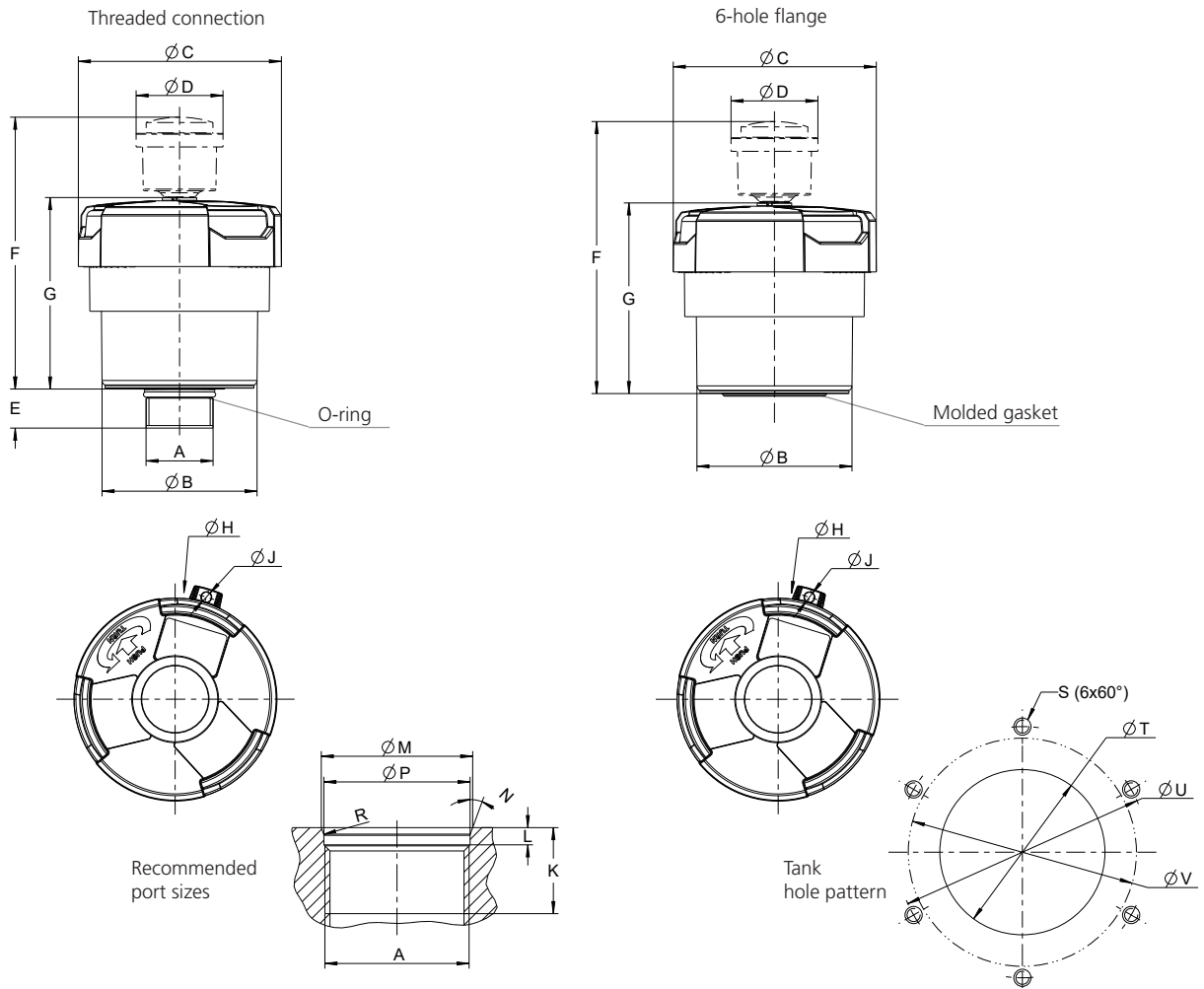
Remarks:

The ventilating filters from the selection chart are standard models. If other versions are required, e.g. with 60 µm screen element (wet air filter), splash protection or G¾ connection, please contact us.

ARGO-HYTOS offers ventilating filters with a wide selection of technical features:

- › Ventilating filters for smaller flow rates see catalog sheet 50.10.
- › Ventilating filters in Vandalism Proof design see catalog sheet 50.20.
- › Ventilating filters with filling filter basket see catalog sheet 50.30.
- › Desiccant ventilating filters for water adsorption see catalog sheet 50.40.

Dimensions



All measurements and tolerances required for machining are available on request.

Measurements in mm

Type	A	B	C	D	E	F	G	H	J
VFT-2500	G1 ¹	90.1	118	50.5	17	158	111	124	5.9
	G1¼ ¹	90.1	118	50.5	22.7	158	111	124	5.9
	6-hole	90.1	118	50.5	-	158	111	124	5.9

Type	K	L	M	N	P	R	S	T	U	V
VFT-2500	min. 25	5 ⁺¹	35.5	20 °	33.9	1	-	-	-	-
	min. 25	5 ⁺¹	44	20 °	42.5	1	-	-	-	-
	-	-	-	-	-	-	M5	48	73	65

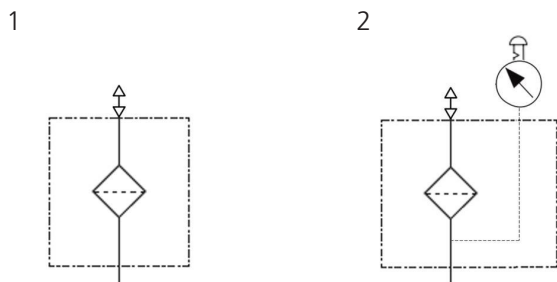
Measurements in inch

Type	A	B	C	D	E	F	G	H	J
VFT-2500	G1 ¹	3.55	4.65	1.99	0.67	6.22	4.37	4.88	0.23
	G1¼ ¹	3.55	4.65	1.99	0.89	6.22	4.37	4.88	0.23
	6-hole	3.55	4.65	1.99	-	6.22	4.37	4.88	0.23

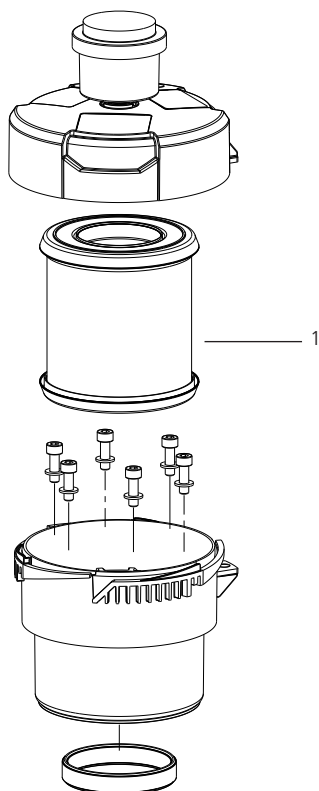
Type	K	L	M	N	P	R	S mm	T	U	V
VFT-2500	min. 0.98	0.2 ^{+0.04}	1.40	20 °	1.33	0.04	-	-	-	-
	min. 0.98	0.2 ^{+0.04}	1.73	20 °	1.67	0.04	-	-	-	-
	-	-	-	-	-	-	M5	1.89	2.87	2.56

¹ The thread dimensions do not exactly conform to the DIN ISO standard thread (functioning with the DIN ISO standard thread is guaranteed).

Symbols



Spare Parts



Pos.	Designation	Part No.
1	Replacement filter element	s. Chart / col. 7

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

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.