

**Off-line Filter Units for High Viscosities****FNA1HV 008 / 016**

Viscosity range 15-1500 mm<sup>2</sup>/s / 70-6950 SUS · Operating pressure up to 6 bar / 87 psi · Nominal flow rate up to 16 l/min / 4.23 gpm



FNA1HV Off-line Filter Unit

**Description****Application**

In the by-pass flow of hydraulic and lubrication systems. The unit is designed to operate with viscosities between 15 and 1500 mm<sup>2</sup>/s / 70 and 6950 SUS. This allows, for example, the filtration of transmission fluids and high viscosity oils even at low temperatures.

**Performance features***Protection against wear:*

By means of filter elements that meet the highest demands regarding cleanliness class and dirt-holding capacity.

*Protection against failure:*

By means of continuous partial filtration, excellent cleanliness classes can be achieved. Machine failures, due to contamination, are reduced, maintenance and oil change intervals are extended.

**Special design features***Housing cover:*

The cover can be opened without special auxiliary tools.

*Compact:*

The unique cover design allows that the filter element can be changed without losing any oil. No pipes are needed except for the connection lines. The filter units feature low power consumption and minimal operational noise.

*Pressure relief valve:*

An integrated PRV (pressure relief valve) protects against overload.

*Dirt retention valve:*

At the bottom of the filter element, flow through from the inside to the 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, the filter element change can be carried out almost without losing any oil.

**Filter elements**

Flow direction from the inside to the 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

Pump housing: Aluminum alloy  
Filter housing: Aluminum alloy, powder painted RAL 5015  
Cover: Aluminum alloy  
Seals: NBR (FPM on request)  
Filter media: EXAPOR®MAX 2 - inorganic, multi-layer microfiber web  
EXAPOR®AQUA - combination of water absorbing filter layers and inorganic, multi-layer microfiber web

### Remarks

Other colors of the filter housing are available on request.

### Accessories

With Part No. FNA 008.1700, a mounting set is available, that facilitates the fitting of incoming and outgoing pipes onto an existing filling / venting connection.

Electrical and / or optical clogging indicators may be ordered together with the off-line filter unit. For choosing the proper clogging indicator see table Clogging Indicator in the Ordering Code. A separate order of the clogging indicator is possible. For dimensions and technical data of the clogging indicators see catalog sheet 60.30.

Hydraulic fittings and hoses for installation of the unit in the system are available on request.

## Characteristics

### Nominal flow rate

Up to 16 l/min / 4.23 gpm

### Viscosity range

15 - 1500 mm<sup>2</sup>/s / 70 - 6950 SUS - continuous operation  
15 - 2000 mm<sup>2</sup>/s / 70 - 9260 SUS - short term operation

### Connection

Threaded port according to ISO 228  
(see Dimension Drawing)

### Filter fineness

3 µm(c) ... 10 µm(c) for EXAPOR®MAX 2  
separating solid particles  
3 µm(c) ... 7 µm(c) for EXAPOR®AQUA  
separating water and solid particles

### Dirt-holding capacity

The dirt-holding capacity values in grams from the ISO MTD test dust are in accordance with the ISO 16889 requirements (see Ordering Code, table Filter Element).

### Hydraulic fluids

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

### Temperature range of fluids

0 °C ... +65 °C / +32 °F ... +149 °F  
(also see viscosity range)

### Ambient temperature range

0 °C ... +50 °C / +32 °F ... +122 °F

### Maximum suction height

1.5 m / 4.9 ft

### Operating pressure

Max. 6 bar / 87 psi, pressure protection with pressure relief valve

### Operating position

Vertical, motor at the bottom

### Weight

Approx. 11 kg / 24.3 lbs

### Recommended tank capacities

Up to 1500 l / 400 gal

## Ordering code

FNA1HV

- / -

Type of filter unit	Code
Off-line filter unit, high viscosity version	FNA1HV

Nominal flow rate*	Code
8 l/min / 2.11 gpm	008
16 l/min / 4.23 gpm	016

Connection ports	Code
In: G1 Out: G $\frac{3}{4}$	G
In: 1 $\frac{5}{16}$ -12 UN-2B Out: 1 $\frac{1}{16}$ -12 UN-2B	U

Filter element					Code
		Fineness ( $\beta=200$ ) Dirt-holding capacity according to ISO 16889 / water capacity		Spare filter element code	
		FNAHV1 008	FNAHV1 016		
EXAPOR <sup>®</sup> MAX 2	3 $\mu$ m	490 g	280 g	V7.1220-113	V003
EXAPOR <sup>®</sup> MAX 2	5 $\mu$ m	460 g	270 g	V7.1220-13	V005
EXAPOR <sup>®</sup> MAX 2	10 $\mu$ m	340 g	190 g	V7.1220-06	V010
EXAPOR <sup>®</sup> AQUA	7 $\mu$ m	64 g / 320 ml	38 g / 190 ml	Y7.1220-05	Y007
EXAPOR <sup>®</sup> AQUA	3 $\mu$ m	45 g / 340 ml	25 g / 205 ml	Y7.1220-113	Y003

Electric motor*				Code
Phase(s), voltage	Frequency	Power FNA1HV 008 / 016	Elec. connection	
3~400/460 VAC	50/60 Hz	0.37 / 0.55 kW	1	40050
1~230 VAC	50/60 Hz	0.37 / 0.55 kW	2	23050

Clogging indicator						Code
Type		Code of indicator	Connection	Datasheet number	Hydraulic symbol	
Differential pressure clogging indicator	optical	DG 042-04	Flange	60.30	1	OD
	electrical	DG 041-32	Flange	60.30	2	ED
	electrical + optical	DG 041-32 DG 041.1200	Flange	60.30	3	EOD
Without clogging indicator					4	XD

\* Indications at 50 Hz. At 60 Hz, the value increases by approx. 20%.

### Order example:

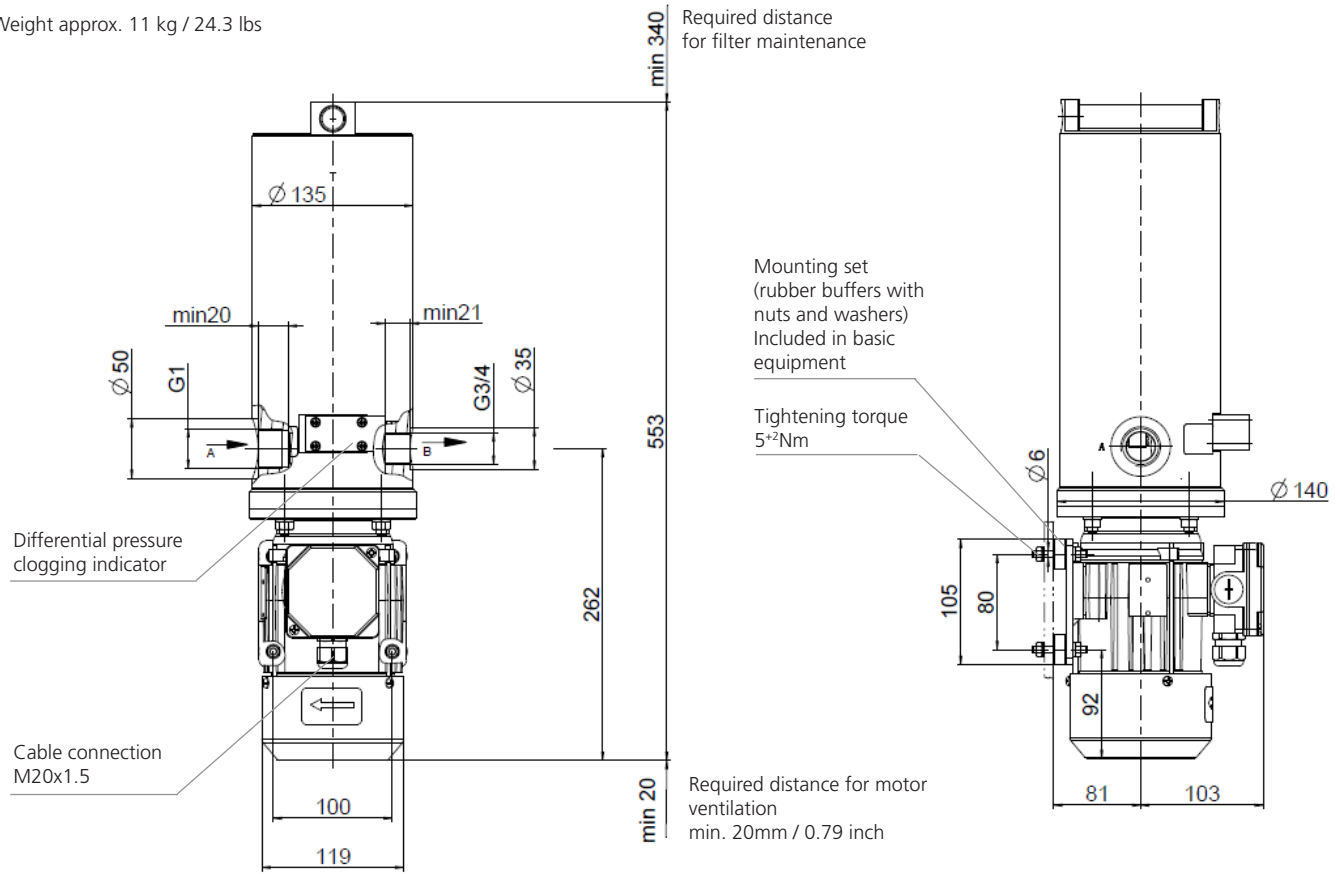
**FNA1HV 008G-V003/40050ED** off-line filter unit, high viscosity version, nominal flow rate 8 l/min / 2.11 gpm, with inlet port G1, outlet port G $\frac{3}{4}$ , equipped with 3  $\mu$ m filter element, 3-phase electric motor and electrical differential pressure clogging indicator.

### Remarks:

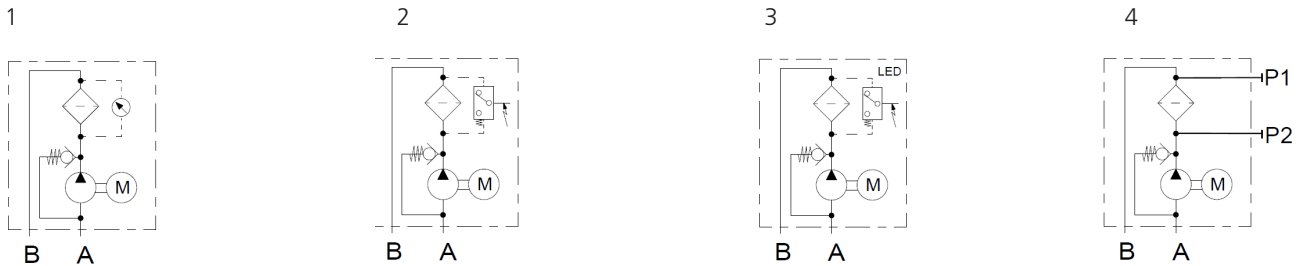
Combinations listed in this ordering code are standard units. If modifications are required, we kindly ask for your request.

## Dimensions

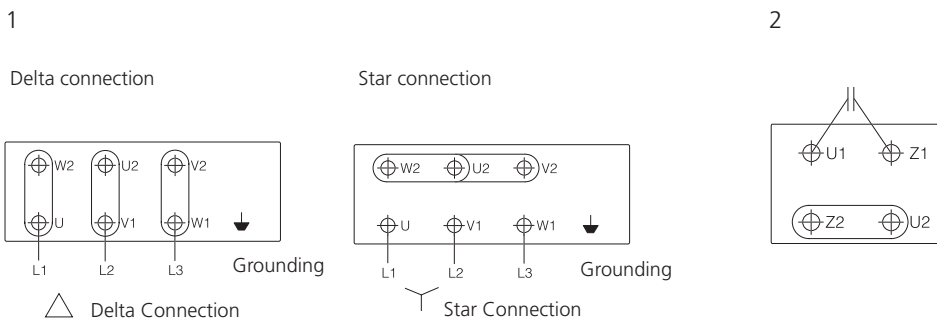
Weight approx. 11 kg / 24.3 lbs



## Hydraulic symbol



## Electric connections



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