

FA2 016 · FAPC2 016



- › Easy filling and cleaning
- › Compact design, comfortable handling
- › High filtration efficiency
- › Option: with oil cleanliness monitor and data storage



Oil Service Unit FA2 016



Oil Service Unit FAPC2 016

Description

FA2 016

With the FA2 016, hydraulic and lubricating systems can be easily filled or cleaned with off-line filtration.

Compact design and comfortable handling

The compact design allows easy access to the oil tank. The unit comes ready to connect with hose packages. The ultra-fine elements can quickly be changed without special auxiliary tools. Residual oil from the hoses is collected in the oil pan.

Protection of components through ultra-fine filtration

Ultra-fine filter element is the heart of the FA2 / FAPC2 oil service unit. High separation efficiencies guarantee excellent cleanliness levels and thereby highest protection of components. Huge dirt holding capacity of filter elements allows economic operation of the device.

FAPC2 016: filtration & oil cleanliness monitoring

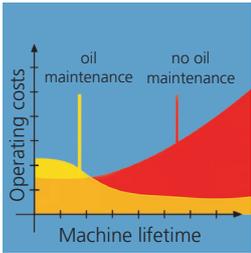
The FA2 016 can be equipped with an oil cleanliness monitor. The ARGO-HYTOS OPCOM Particle Monitor permanently monitors the current cleanliness class during the cleaning or filling process.

When monitoring the cleanliness class, a ball valve is used to select "behind filter" (e.g. when filling systems) or "before filter" (e.g. when cleaning filled oil). At the display of the OPCOM Particle Monitor, the result is shown according to ISO 4406:1999, NAS 1638, SAE AS 4059 or GOST 17216.

The FAPC2 016 can store up to 3000 data sets. A PC-software for data recording and representation of the measured values can be downloaded for free at www.argo-hytos.com. The data can be transmitted to a computer via an USB port so that the cleaning trend can be visualized and followed graphically or in table form.

Easy Transport

For easy transportation of the FA2 016 and FAPC2 016, an optional trolley can be hooked onto the standing unit - for more information see chapter Accessories.



Economical

The FA2 016 · FAPC2 016 Oil Service Unit offers protection that can extend the lifetime of machinery. This protection gives a direct return on investment through extended service intervals and increased machine availability.



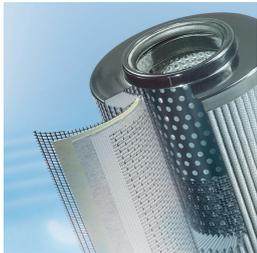
Portable in any position

Thanks to the compact design, the FA2 016 · FAPC2 016 can be easily carried and also be used in inaccessible areas of hydraulic systems. Hoses and electric cables can be fixed at the service unit. The device can be operated and transported in both upright and horizontal positions.



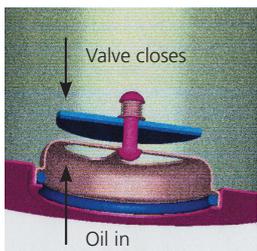
User-friendly filter element change

The filter element can be removed from the housing together with the cover. The dirt retention valve ensures that solid particle sediment is completely removed with the filter element.



Quality in detail

The ultra-fine element is the heart of the FA2 016 · FA2PC 016. A high separation efficiency and dirt holding capacity guarantee maximum cleanliness levels and service intervals in line with practical needs.



Maintenance-free filter housing thanks to a unique filter element technique

Fluid flows through the element from the inside to the outside. The built-in dirt retention valve closes automatically when the element is removed, ensuring that all dirt is removed from the housing together with the element.



Controlled cleaning with Oil Cleanliness Monitor OPCOM

The FA2 016 · can optionally be equipped with the Oil Particle Monitor OPCOM which allows to monitor the oil cleanliness during the cleaning or filling process. The current cleanliness classes are indicated on the display or can be queried via the USB port.

Characteristics

Flow rate

up to 16 l/min / 4.2 gpm

Operating pressure

max. 4 bar / 58 psi

Viscosity range

15 - 250 mm²/s - continuous operation
 15 - 400 mm²/s - short term operation
 15 - 150 mm²/s - continuous operation of the FAPC2 to assure exact measurement of the oil cleanliness class

Temperature range of fluids

0 °C ... +65 °C / +32 °F ... +149 °F

Ambient temperature range

0 °C ... +50 °C / +32 °F ... +122 °F

Applicable filter elements



for efficient separation of solid particles



for separation of solid particles and protection against electrostatic discharges (oils with low electrical conductivity < 500 pS/m at 20 °C)



for separation of free 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).

Clogging indicator

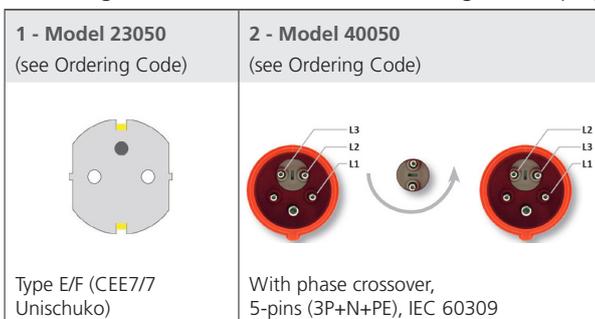
Optical, absolute or differential pressure version. (see Ordering Code, table Clogging Indicator).

Hydraulic fluids

Mineral oil and biodegradable fluids (HEES and HETG, see info service sheet 00.20). Other fluids on request.

Electrical connection*

Cable length 2.5 m / 8.2 ft with the following electric plug:



* For electric cable extension - see Ordering Code
 Model 11050 is delivered without electric plug or the plug version should be defined individually by the customer

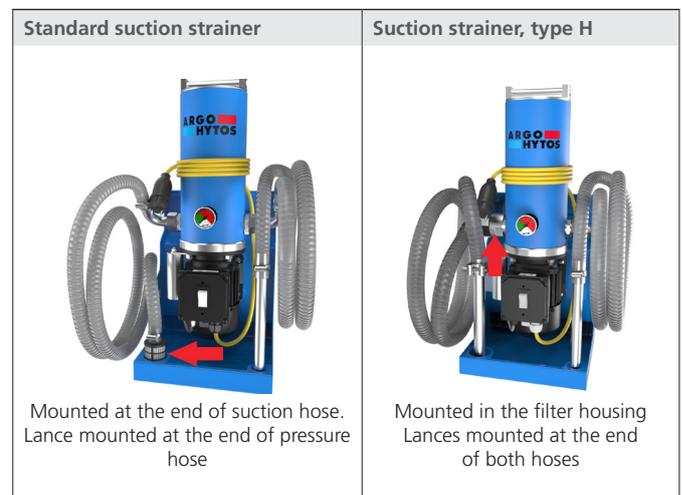
Electrical motor

Single or three phase version:
 1~ 110-120 V / 50 / 60 Hz
 1~ 220-240 V / 50 / 60 Hz
 3~ 380-480V / 50 / 60 Hz
 (see Ordering Code, table Electric Motor).
 Special motors on request

Hydraulic connection** (see also in table below)

Suction side:

- › Standard version (no extra coding):
 hose DN 20, length 1,8 m / 5.9 ft with with suction strainer 600 µm, Ø approx. 44 mm / 1.7 inch mounted at the free end of the hose
- › On request (letter **H** in the ordering code):
 Hose DN 25, length 1,8 m / 5.9 ft with with suction strainer 200 µm mounted directly in the filter housing. Lance Ø approx. 25 mm / 0.98 inch mounted at free end of hose.



Pressure side:

- › Hose DN 20, length 2 m / 6.6 ft with lance Ø approx. 20 mm / 0.8 inch (extensions on request)

Permitted suction heights

max. 1,5 m (unfilled)
 max. 6 m (in operating condition)

Weight

FA2 approx. 17 kg / 37.5 lbs
 FAPC2 approx. 21 kg / 46 lbs

Operating and transport position

Operating position: upright
 Transport position: upright or horizontal

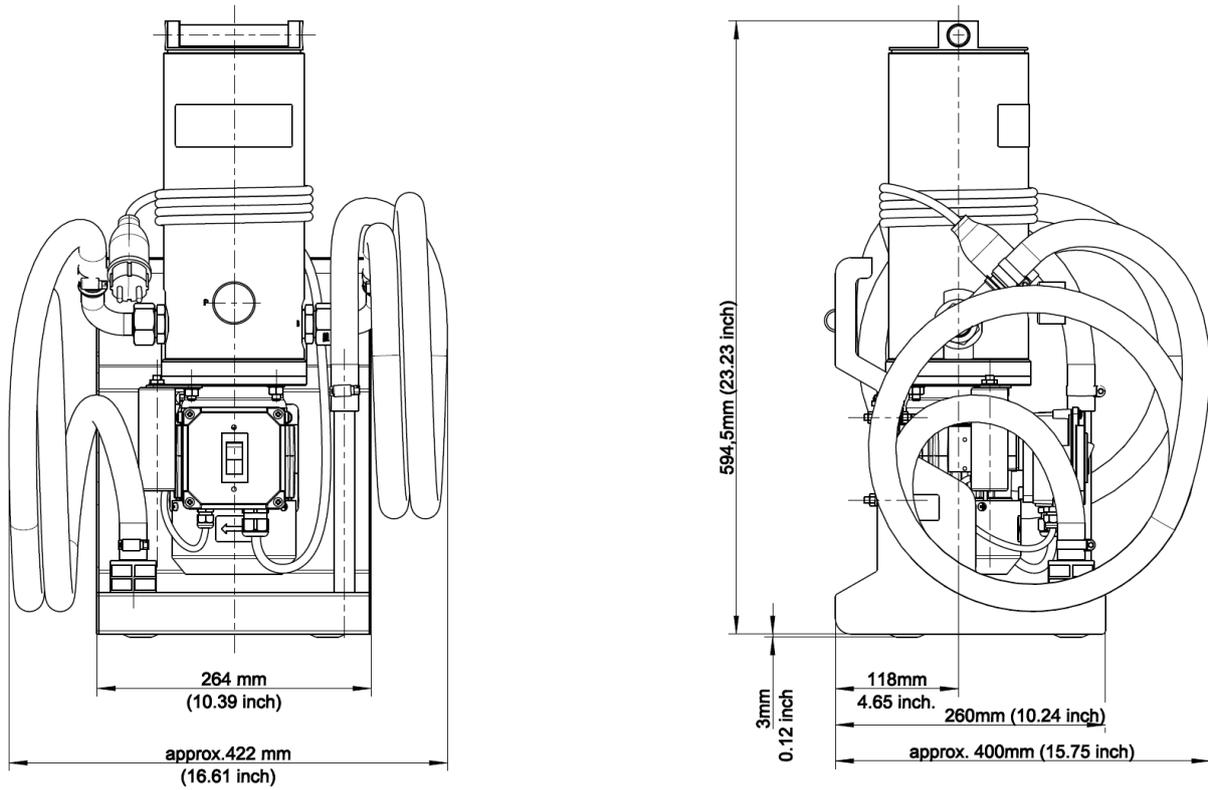
** Hoses and lances extension on request

Ordering code

Type of unit		Code		FA	2	016 /	-						
Oil service unit		FA											
Product version		Code											
Without oil cleanliness monitor													
With oil cleanliness monitor		PC											
Series		Code											
Series		2											
Nominal flow rate*		Code											
16 l/min / 4.23 gpm		016											
Filter element				Code									
	Fineness ($\beta=200$) Dirt-holding capacity according to ISO 16889 / water capacity		Code of spare filter element										
EXAPOR®MAX	3 μ m	280 g	V7.1220-113		V003								
EXAPOR®MAX	5 μ m	270 g	V7.1220-13		V005								
EXAPOR®MAX	10 μ m	210 g	V7.1220-06		V010								
EXAPOR®AQUA	7 μ m	85 g / 190 ml	Y7.1220-05		Y007								
EXAPOR®AQUA	3 μ m	105 g / 205 ml	Y7.1220-113		Y003								
EXAPOR®SPARK PROTECT	3 μ m	280 g	Z7.1220-113		Z003								
Electric motor*				Code									
Phase(s), voltage	Frequency	Power	Electric plug										
1~220-240 VAC	50/60 Hz	0.45 kW	1		23050								
1~110-120 VAC	50/60 Hz	0.45 kW	-		11050								
3~380-480 VAC	50/60 Hz	0.45 kW	2		40050								
Clogging indicator				Code									
Type	Code of indicator	Datasheet number	Hydraulic symbol										
Optical - manometer	DG 200-16	60.20	1		O								
Optical - differential pressure indicator	DG 042-05	60.30	2		OD								
Suction strainer (see section Hydraulic connection on previous page)				Code									
Standard, \varnothing approx. 44 mm / 1.7 inch mounted at the free end of the hose													
Mounted directly in the filter housing. Free end of hose equipped with Lance \varnothing approx. 25 mm / 0.98 inch				H									
Optional pressure hose extension													
Customized length of the pressure hose (maximum 5 m / 16.4 ft). Example of order P4.5 - pressure hose length 4.5 m / 14.8 ft				Px.x									
Optional electric cable extension **													
Customized length of the electric cable Example of order C8.5 - cable length 8.5 m / 27.8 ft equipped with electric plug				Cx.x									

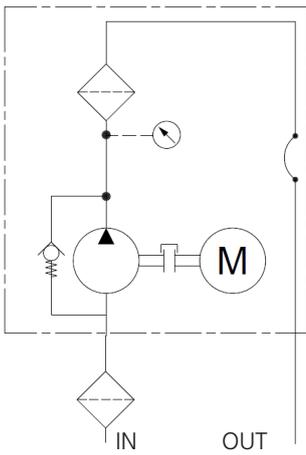
* Indications at 50 Hz. At 60 Hz the value increases by approx. 20 %

Dimensions

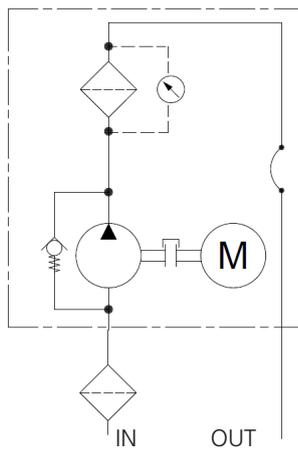


Hydraulic symbols

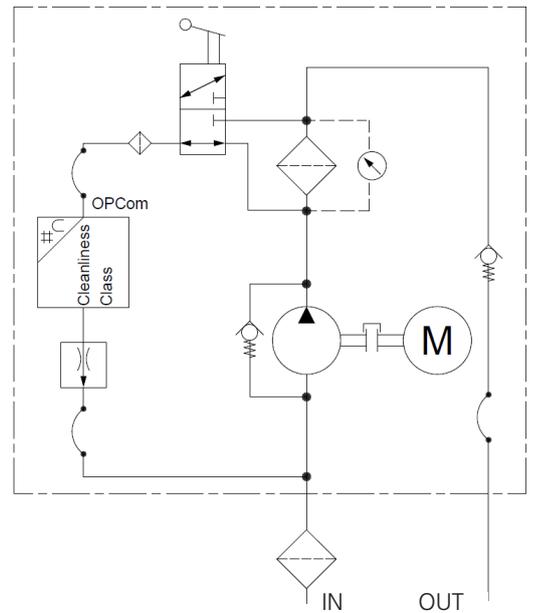
1



2



3



How to calculate cleaning time for unit without Particle Monitor?

The cleaning speed depends on the efficiency of the filter elements ($\beta_{x(c)}$), the nominal volume flow (Q_{nominal}) and the oil volume (V_{actual}).

In graph D1-D2, the cleaning time is shown in relation to the filter fineness (indication of cleanliness classes according to ISO 4406:1999). The values are recorded by laboratory methods and may be influenced by environmental conditions (such as continuous additional introduction of dirt on running systems, high water content, etc.).

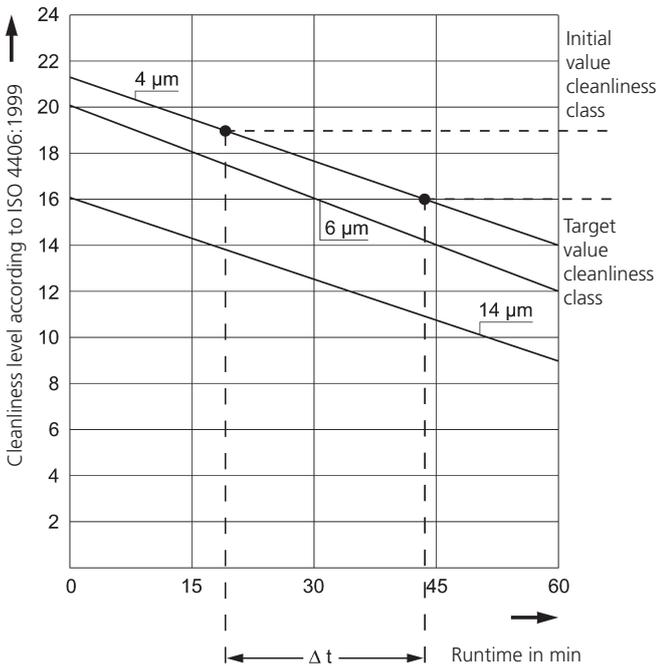
All characteristic curves (see graphs D1-D2) relate to a **reference oil volume of 180 l / 47.5 gal** and a **nominal volume flow of 15 l/min / 4 gpm**.

The following formula should be used to convert to the actual oil volume:

$$t_{\text{actual}} = \frac{V_{\text{actual}} \cdot \Delta t}{12 \cdot Q_{\text{nominal}}}$$

t_{actual} = actual cleaning speed
 Δt = cleaning speed for oil volume of 180 l / 47.5 gal
 V_{actual} = volume of oil to be cleaned
 Q_{nominal} = nominal volume flow, see selection chart

Determining the cleaning time



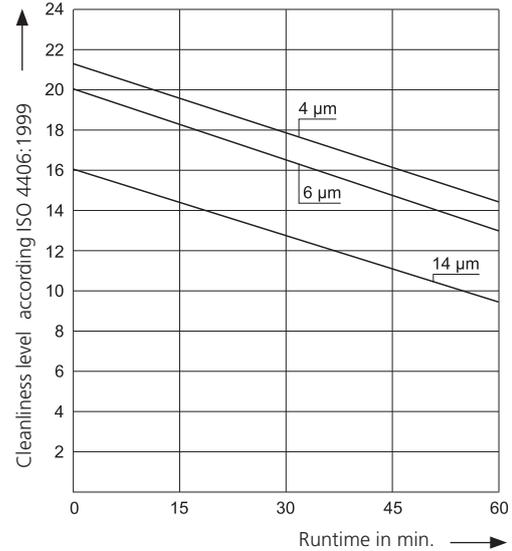
- › Determine the initial cleanliness class and enter it on the graph, e.g. 19/17/14 according to ISO 4406:1999
- › Enter the target cleanliness class on the graph, e.g. 16/14/11 according to ISO 4406:1999
- › Determine Δt , in this case $\Delta t = 25$ min
- › Insert the value in the formula, where $V_{\text{actual}} = 350$ l / 92.5 gal and $Q_{\text{nominal}} = 16$ l/min / 4.2 gpm

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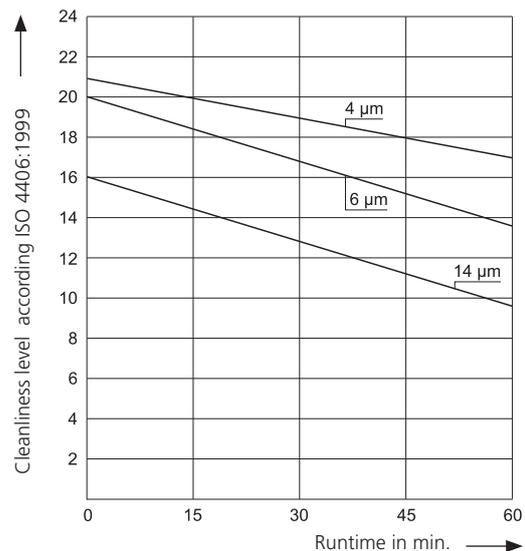
$$t_{\text{actual}} = \frac{V_{\text{actual}} \cdot \Delta t}{12 \cdot Q_{\text{nominal}}} = \frac{350 (92.5) \cdot 25}{12 \cdot 16 (4.2)} \approx 46 \text{ min}$$

Curves for the cleaning time as a function of the fineness

D1: FA2 016 with 3 and 5µm EXAPOR®MAX filter element



D2: FA2 016 with 10µm EXAPOR®MAX filter element



Trolley for easy transportation

- › Compatible with all versions of FA2 016 and FAPC2 016.
- › Order code. **FA-T**



FA-T trolley



FA-T trolley attached to the filter unit

Suction strainer for direct installation in the filter housing

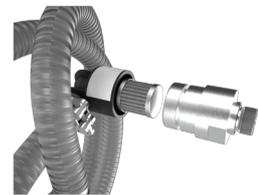
- › Used in case when standard strainer mounted at the end of the suction hose cannot be used
- › When ordered separately use code **FA-SH/18/025** (strainer + hose DN25 length 1,8m + lance Ø 25 mm, length 0,25m)
- › When ordered together with the FA2 /FAPC2 unit put **H** in the Ordering code, table Suction Strainer.



FA-SH/18/025 suction strainer set



Strainer set mounted in the filter housing



Suction strainer set - exploded view

Suction-return set

- › For easy connection of the suction and return hose to the tank provided that there is a connection for a ventilating filter (e.g. LE.0716 or LE.0817... 0827) at the tank cover. For more information see data sheet no. 80.920.
- › Order code **FNA 008.1700**



FNA 008.1700 suction return adapter



FNA 008.1700 - example of installation