



Oil Service Units

Cleanline portable

FA 016/FAPC 016

- Easy filling and cleaning
- Compact design, comfortable handling
- High filtration efficiency
- Option: with Oil Cleanliness Monitor

Oil service – simple, quick and compact



Cleanline portable

With the Cleanline portable hydraulic or lubricating systems can be easily filled or cleaned in off-line filtration.

Compact design and comfortable handling

The compact design allows easy access to the oil tank. Cleanline portable comes ready to connect, with hose packages. The suction hose and the pressure hose can be wound around the hose fixtures. Residual oil from the hoses is collected in the oil pan. The ultra-fine elements can be quickly changed without special auxiliary tools.

Protection of components through ultra-fine filtration

The EXAPOR® ultra-fine elements are the heart of the ARGO-HYTOS filter units Cleanline portable. High separation efficiency guarantees excellent cleanliness levels and thereby highest protection of components. The high dirt holding capacity of the EXAPOR® ultra-fine elements allow economic operation of the Cleanline portable.



Cleanline portable with OPCOM

2 in 1: Cleanline portable with Oil Cleanliness Monitor OPCOM

The Cleanline portable can be equipped with a Oil Cleanliness Monitor. The ARGO-HYTOS OPCOM permanently monitors the current cleanliness class during the cleaning or filling process.

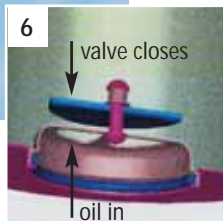
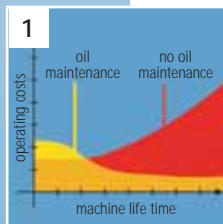
When monitoring the cleanliness class a ball valve is used to select "upstream" (before filter, e.g. when cleaning filled oil) or "downstream" (behind filter, e.g. when filling systems). The display area allows a choice of particle sizes: 4, 6, 14 or 21 μm . The display shows the classification number of the selected particle size, as specified by ISO 4406:1999.

The OPCOM can be reconfigured with a PALM Organizer or alternatively via a PC with an infrared interface. The data can be transmitted to the computer via the RS232 interface so that the progression can be visualized and followed graphically or in table form.

Easy Transport

For easy transportation for FA 016 and FAPC 016 the trolley can be hooked onto the standing unit. Also, trouble-free transportation is possible for long distances.

Advantages at a glance



1. Economical

Efficiency through ARGO-HYTOS Fluid Management systems. After just a short time your investments will be amortized due to longer service intervals and increase of machine availability.

2. Portable in any position

Thanks to the compact design the Cleanline portable can be easily carried and also be used in difficult zones of hydraulic systems. Hoses and electric cables can be fixed at the service unit. The Cleanline portable can be operated and transported in both upright and horizontal positions.

3. User-friendly filter element change

Optimal operator handling has been a key feature in the development of Cleanline portable. No extra tools are needed to open the housing and the filter element can be pulled out through the hang-in technique.

4. Quality in detail

The EXAPOR® ultra-fine element is the heart of the Cleanline portable. High separation efficiency and dirt holding capacities guarantee maximum cleanliness levels and service intervals in line with practical needs.

5. Controlled cleaning by Oil Cleanliness Monitor OPCOM

The Cleanline portable can be optionally equipped with the ARGO-HYTOS Oil Cleanliness 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 transferred by the provided infrared- or RS232-interface.

6. Maintenance-free filter housing thanks to a clever filter element technique

On the bottom of the from inside to outside flown through filter elements there is a dirt retention valve. If the filter element is pulled out of the filter housing with the cover, the dirt retention valve will close. Sedimented dirt is removed from the housing with the filter element.

Characteristics

Hydraulic connection

Hoses:
Suction hose NG 20, length 1,8 m, with suction strainer 300 µm,
Ø ca. 49 mm pressure hose NG 20, length 2 m, pressure or
supply lance Ø ca. 20 mm (extensions on request)

Electrical connection / Electric motor

Electric motor, air cooled fan type
Cable: length 2,5 m
Electro motor types: 1~ 110 V / 50...60 Hz
1~ 230 V / 50...60 Hz
Protection type IP 55
Electro motor type 24 V DC
Protection type IP 54

See selection chart

Tank capacity

ca. 2,4 l

Pump design

Internal gear pump

Operating and transportation position

Upright or horizontal

Hydraulic fluids

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

Temperature range of fluids

0 °C...+60 °C (also see fluid viscosity range).

Ambient temperature range

0 °C...+50 °C

Accessories

Water-absorbing filter elements EXAPOR® Aqua

These can be used for short-term water absorption in
all standard units. (please inquire)

Trolley

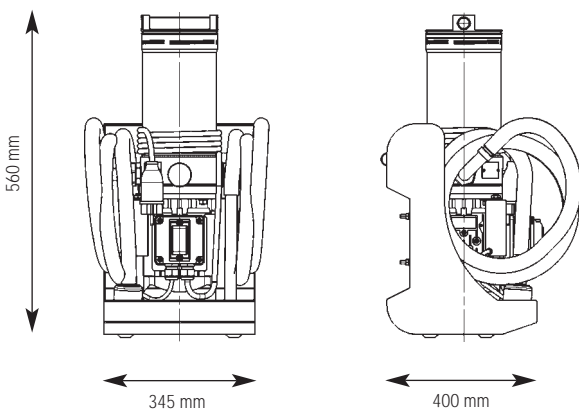
Easy transportation for long transport ways.

Viscosity range

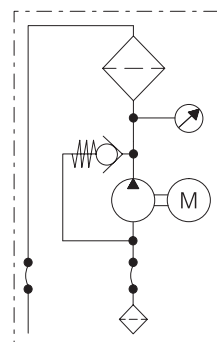
Type	Continuous operation min.	Continuous operation max.	Short-term operation max.
FA 016-1100	15 mm ² /s	250 mm ² /s	400 mm ² /s
FA 016-1110	15 mm ² /s	200 mm ² /s	400 mm ² /s
FA 016-1300	15 mm ² /s	250 mm ² /s	400 mm ² /s
FA 016-1600	15 mm ² /s	250 mm ² /s	400 mm ² /s
FA 016-1150	15 mm ² /s	100 mm ² /s	200 mm ² /s
FAPC 016-1100	15 mm ² /s	150 mm ² /s	150 mm ² /s*

* An exact measurement of the oil cleanliness class is only possible within a viscosity range from 15 mm²/s to 150 mm²/s

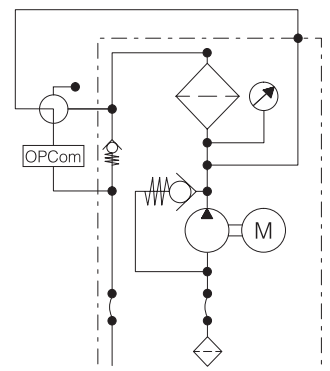
Dimensions



Symbol 1



Symbol 2



Description

Cleaning speed

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

In graph D1-D2 the cleaning speeds are shown in relation to the filter fineness (cleanliness information according to ISO 4406:1999). The values are recorded by laboratory methods and they 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** and a **nominal volume flow of 15 l/min**.

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

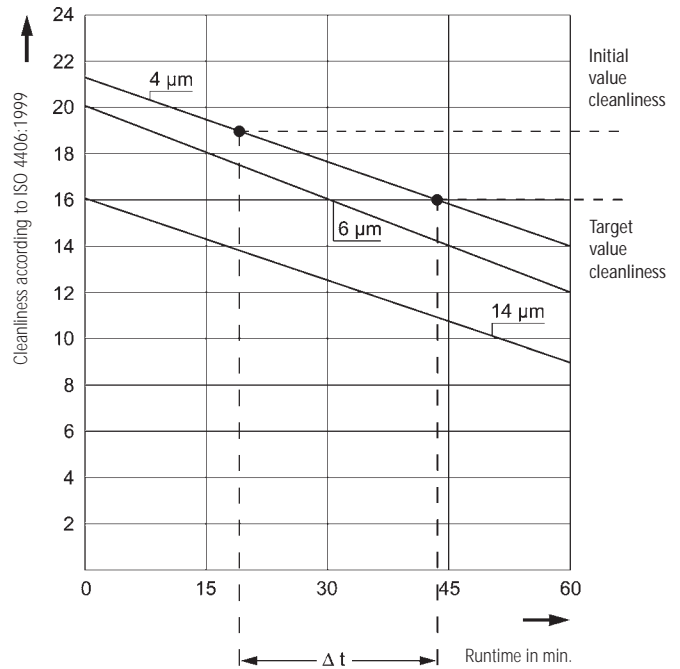
Δt = cleaning speed for oil volume of 180 l

V_{actual} = volume of oil to be cleaned

Q_{nominal} = nominal volume flow, see selection chart

For monitoring purposes we recommend the PODS *Pro* (Portable Oil Diagnostic System) particle counter from ARGO-HYTOS.

Determining the cleaning speed

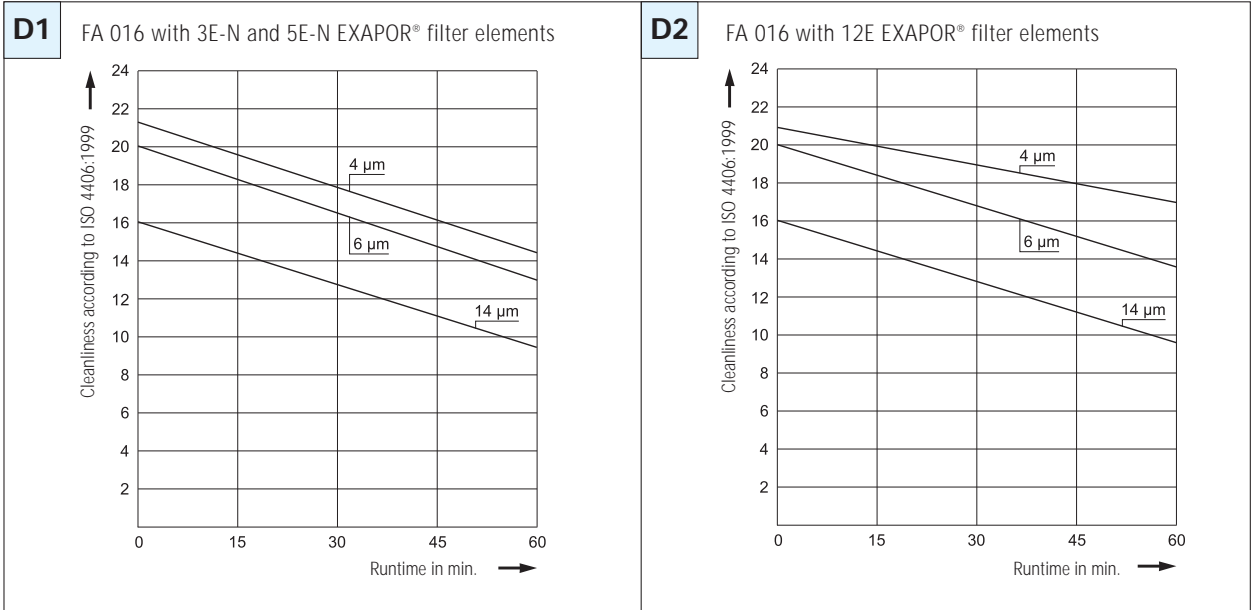


1. Determine the initial cleanliness class and enter it on the graph, e. g. 19/17/14 according to ISO 4406:1999
2. Enter the target cleanliness class on the graph, e.g. 16/14/11 according to ISO 4406:1999
3. Determine Δt , in this case $\Delta t = 25$ min
4. Insert the value in the formula, where $V_{\text{actual}}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

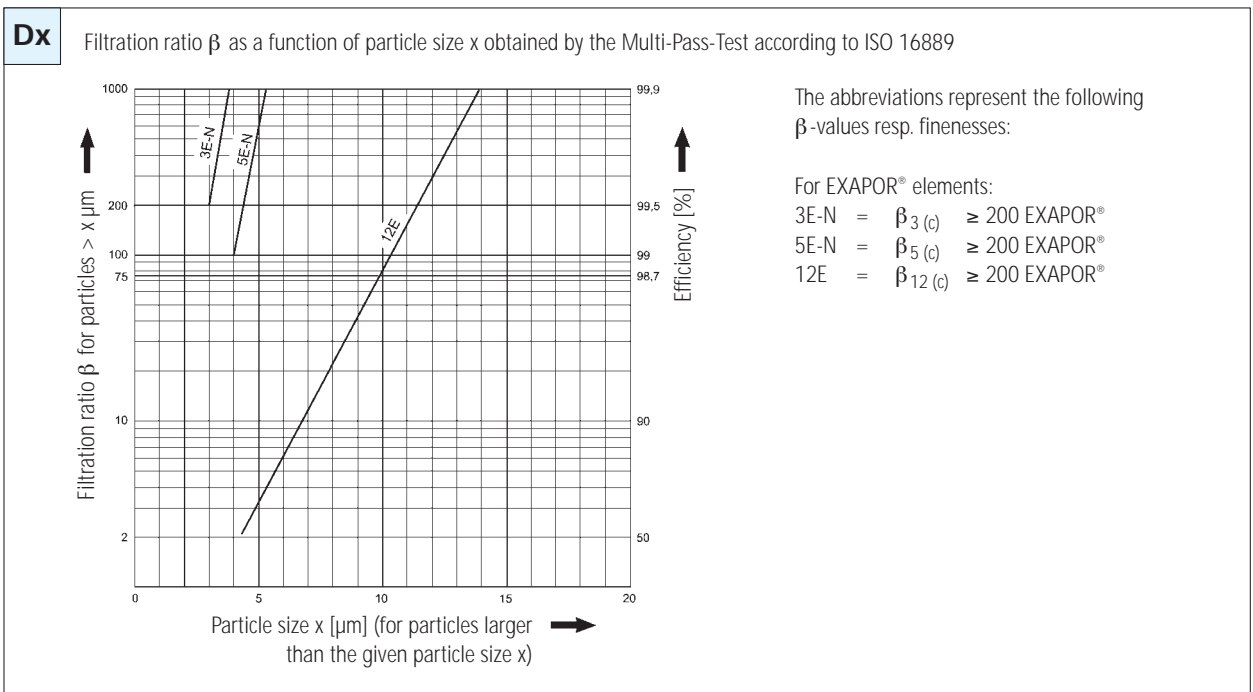
$$t_{\text{actual}} = \frac{V_{\text{actual}} \cdot \Delta t}{12 \cdot Q_{\text{nominal}}}$$

$$= \frac{350 \cdot 25}{12 \cdot 16} \approx 46 \text{ min}$$

Curves for cleaning speed as a function of the filter fineness



Filter fineness curves in selection chart



Selection Chart

	Order no. FA 016-1100	Order no. FA 016-1300	Order no. FA 016-1600	Order no. FA 016-1110	Order no. FA 016-1150*	Order no. FAPC 016-1100
Nominal flow rate	16 l/min	16 l/min	16 l/min	16 l/min	16 l/min	16 l/min
Filter fineness see diagram Dx	3 E-N	5 E-N	12 E	3 E-N	3 E-N	3 E-N
Dirt capacity Mi at Q	160 g	160 g	90 g	160 g	160 g	160 g
E-Motor operating voltage	1 ~ 230 V	1 ~ 230 V	1 ~ 230 V	1 ~ 110 V	24 V DC	1 ~ 230 V
E-Motor max. operating frequency	50 (60) Hz	50 (60) Hz	50 (60) Hz	60 Hz	DC	50 (60) Hz
E-Motor power	0,45 kW	0,45 kW	0,45 kW	0,3 kW	0,25 kW	0,45 kW
Length suction hose	1,8 m	1,8 m	1,8 m	1,8 m	1,8 m	1,8 m
Length pressure hose	2 m	2 m	2 m	2 m	2 m	2 m
Viscosity max.	400 mm ² /s	400 mm ² /s	400 mm ² /s	400 mm ² /s	200 mm ² /s	150 mm ² /s
Suction height max.	1,5 m	1,5 m	1,5 m	1,5 m	1,5 m	1,5 m
Operating pressure PRV max.	4 bar	4 bar	4 bar	4 bar	4 bar	4 bar
Symbol	1	1	1	1	1	2
Replacement element order no.	V7.1220-113	V7.1220-13	V7.1220-06	V7.1220-113	V7.1220-113	V7.1220-113
Weight	18,9 kg	18,9 kg	18,9 kg	18,9 kg	18,9 kg	24 kg
Clogging indicator	Manometer	Manometer	Manometer	Manometer	Manometer	Manometer

Other versions on request.

* without plug

Filter elements: see selection chart.

Water-absorbing filter elements order no. Y7.1220-05 on request.

Accessories: Hose extensions on request.

For the appropriate clogging indicators see datasheet 60.20.

Trolley for FA 016 and FAPC 016 order no. FA 016-1760

Subject to technical changes.