

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
- FAPC 016 with data storage

Oil service – simple, quick and compact



Cleanline portable – FA 016

With the Cleanline portable, hydraulic or 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. 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[®]MAX 2 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[®]MAX 2 ultra-fine elements allow economic operation of the Cleanline portable.

Oil service – simple, quick and compact



Cleanline portable with OPCOM II – FAPC 016

2 in 1: Cleanline portable with Oil Cleanliness Monitor OPCOM II

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

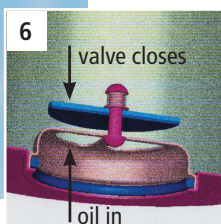
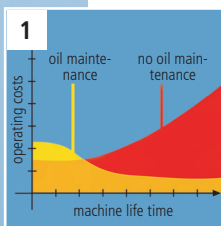
When monitoring the cleanliness classes a ball valve is used to select "behind filter" (e.g. when filling systems) or "before filter" (e.g. when cleaning filled oil). At the display of the OPCOM II the ordinal numbers of the particle sizes 4, 6, 14 and 21 μm are shown according to ISO 4406:1999.

FAPC 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 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 a 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. Fast return on investment by extended service intervals and increased 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 areas of hydraulic systems. Hoses and electric cables can be fixed at the service unit. The Cleanline portable can be operated and transported in both up-right 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 with the cover.

4. Quality in detail

The EXAPOR®MAX 2 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 II

The Cleanline portable can also be equipped with the ARGO-HYTOS Oil Cleanliness Monitor OPCom II 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 RS232-interface.

6. Maintenance-free filter housing thanks to a unique 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 5.9 ft, with suction strainer 300 µm, Ø ca. 1.9 inches pressure hose NG 20, length 6.6 ft, pressure or supply lance Ø ca. 0.8 inches (extensions on request)

Electrical connection / Electric motor

Electric motor, air cooled fan type

Cable: length 8.2 ft

Electro motor types: 1~ 110 V / 60 Hz

1~ 230 V / 50...60 Hz

Protection type: IP 55

Vessel volume

approx. 0.6 gallons

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

+32 °F ... +140 °F

Ambient temperature range

+32 °F ... +122 °F

Accessories

Water-absorbing filter elements EXAPOR® AQUA

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

Trolley

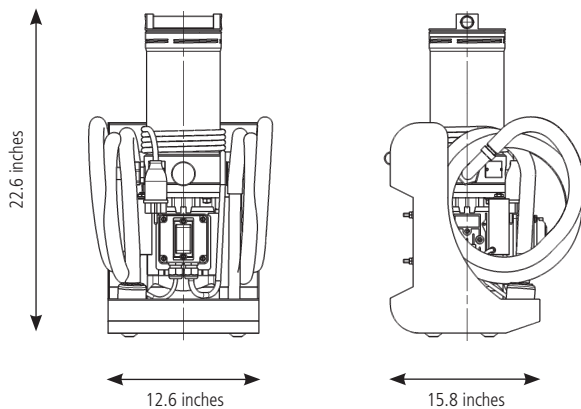
Easy transportation for long transport ways.

Viscosity range

Type	Continuous operation min.	Continuous operation max.	Short-term operation max.
FA 016-1100	70 SUS	1160 SUS	1860 SUS
FA 016-1110	70 SUS	930 SUS	1860 SUS
FA 016-1300	70 SUS	1160 SUS	1860 SUS
FA 016-1600	70 SUS	1160 SUS	1860 SUS
FAPC 016-2175	70 SUS	695 SUS	695 SUS*

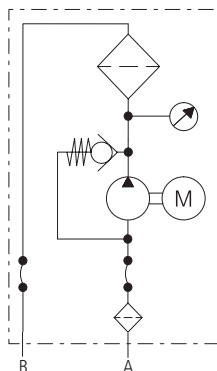
* An exact measurement of the oil cleanliness class is only possible within a viscosity range from 70 SUS to 695 SUS

Dimensions

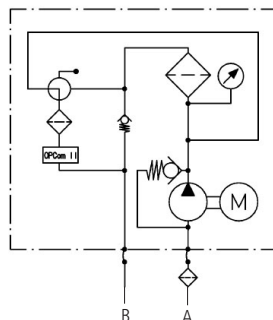


Symbols

Symbol 1



Symbol 2



Description

Cleaning speed

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 (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 47.5 gallons** and a **nominal volume flow of 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

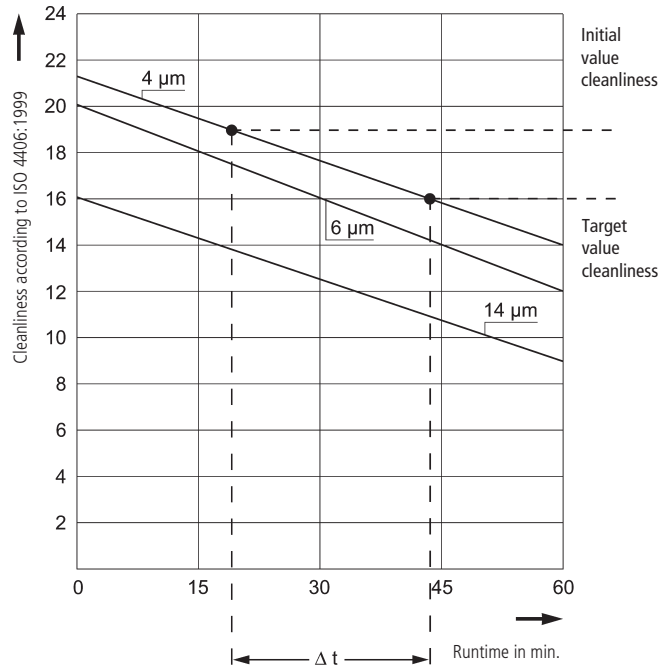
Δt = cleaning speed for oil volume of 47.5 gallons

V_{actual} = volume of oil to be cleaned

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

For monitoring purposes we recommend the OPCOM from ARGO-HYTOS, integrated in the version FAPC 016 or the PODS *Pro* (Portable Oil Diagnostic System) particle counter.

Determining the cleaning time



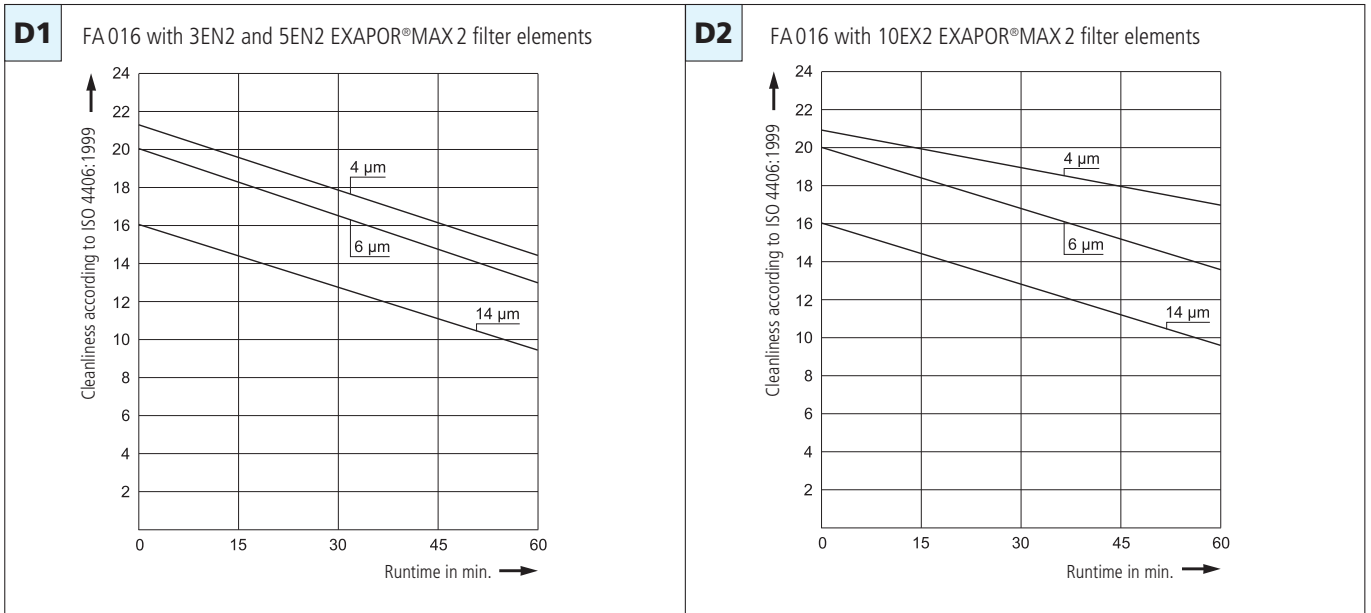
1. Determine the initial cleanliness class and enter it on the graph, e. g. 19/17/14 according to ISO 4406:1999
2. Enter the target cleanliness class on the graph, e.g. 16/14/11 according to ISO 4406:1999
3. Determine Δt , in this case $\Delta t = 25$ min
4. Insert the value in the formula, where $V_{\text{actual}}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

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

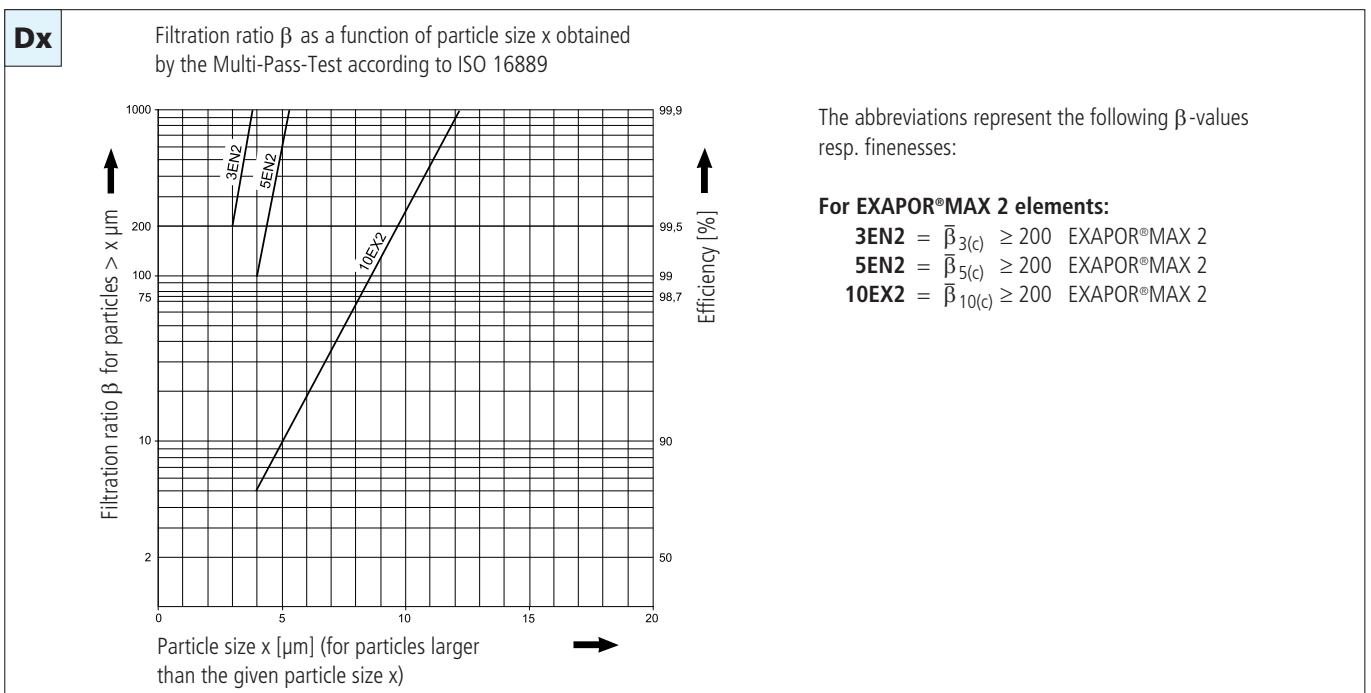
$$= \frac{92.5 \cdot 25}{12 \cdot 4.2} \approx 46 \text{ min}$$

Diagrams

Curves for cleaning time 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. FAPC 016-2175
Nominal flow rate	4.2 gpm*	4.2 gpm*	4.2 gpm*	5.0 gpm	5.0 gpm
Filter fineness see diagram Dx	3EN2	5EN2	10EX2	3EN2	3EN2
Dirt capacity Mi at Q	280 g	270 g	210 g	280 g	280 g
E-Motor operating voltage	1 ~ 230 V	1 ~ 230 V	1 ~ 230 V	1 ~ 110 V	1 ~ 110 V
E-Motor operating frequency	50/60 Hz	50/60 Hz	50/60 Hz	60 Hz	60 Hz
E-Motor power	0,45 kW*	0,45 kW*	0,45 kW*	0,3 kW	0,45 kW*
Length suction hose	5.9 ft	5.9 ft	5.9 ft	5.9 ft	5.9 ft
Length pressure hose	6.6 ft	6.6 ft	6.6 ft	6.6 ft	6.6 ft
Viscosity max.	1860 SUS	1860 SUS	1860 SUS	1860 SUS	695 SUS
Suction height max.	4.9 ft	4.9 ft	4.9 ft	4.9 ft	4.9 ft
Operating pressure PRV max.	58 psi	58 psi	58 psi	58 psi	58 psi
Symbol	1	1	1	1	2
Replacement element order no.	V7.1220-113	V7.1220-13	V7.1220-06	V7.1220-113	V7.1220-113
Weight	41.7 lbs	41.7 lbs	41.7 lbs	41.7 lbs	52.9 lbs
Clogging indicator	Manometer	Manometer	Manometer	Manometer	Manometer
Particle monitor	-	-	-	-	OPCom II

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

Other versions on request.

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.
- Suction strainer set FA 016.1775 for tank openings on request in case the existing suction strainer can't be used.

We produce fluid power solutions

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