

# Description

## Cleaning speed

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

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:

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

$t_{\text{actual}}$  = actual cleaning speed

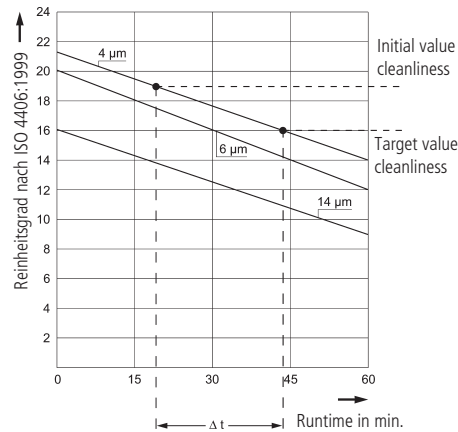
$\Delta t$  = cleaning speed for oil volume of 180 l

$V_{\text{actual}}$  = volume of oil to be cleaned

$Q_{\text{nominal}}$  = nominal volume flow, see selection chart

For monitoring purposes we recommend the ARGO-HYTOS OPCom which is built in the version FAPC 016 or the oil particle counter PODS Pro (Portable Oil Diagnostic System).

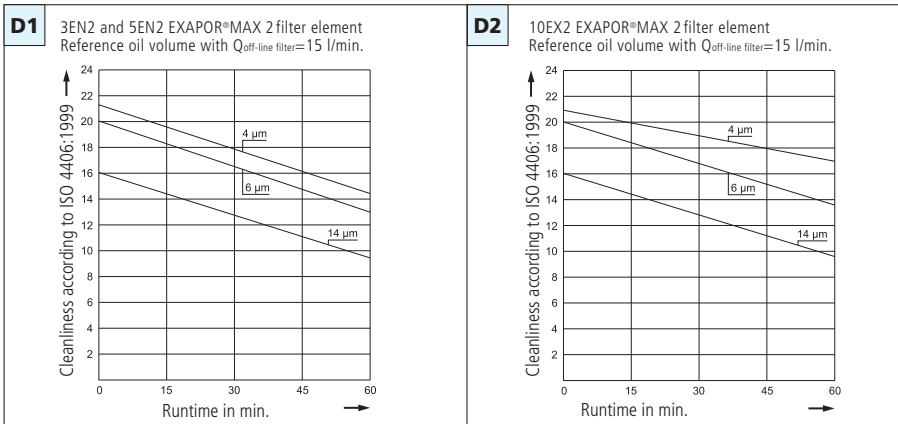
## Determining the cleaning speed



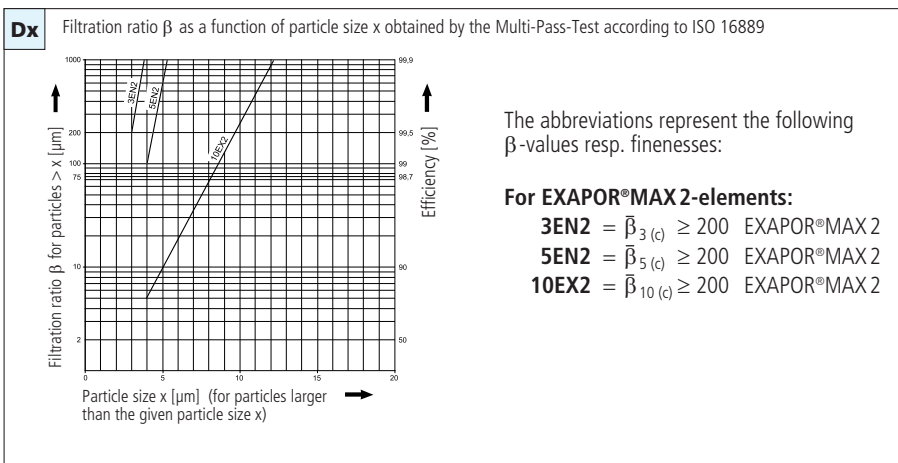
1. Determine the initial cleanliness class and enter it on the graph, e. g. 19/17/14 according to ISO 4406:1999
2. Enter the target cleanliness class on the graph, e.g. 16/14/11 according to ISO 4406:1999
3. Determine  $\Delta t$ , in this case  $\Delta t = 25$  min
4. Insert the value in the formula,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



# Characteristics

## Hydraulic connection

Hoses:

Suction hose NG 32, length 2,7 m, with suction strainer 280 µm,  
pressure hose NG 25, length 2,7 m

## Electrical connection / Electric motor

Electric motor, air cooled fan type

Cable: length 6 m

Electro motor types: 1 ~ 230 V / 50 Hz  
3 ~ 400 V / 50 Hz  
(3 ~ 460 V / 60 Hz)

Type of protection: IP 54  
(See selection chart)

## Tank capacity

approx. 13 l

## Pump design

Internal gear pump

## Operating and transportation position

Operating position: upright

Transportation position: upright or horizontal

## Hydraulic fluids

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

## Temperature range of fluids

0 °C ... +65 °C (also see fluid viscosity range)

## Ambient temperature range

0 °C ... +50 °C

## Options

### Water-absorbing filter elements EXAPOR® AQUA

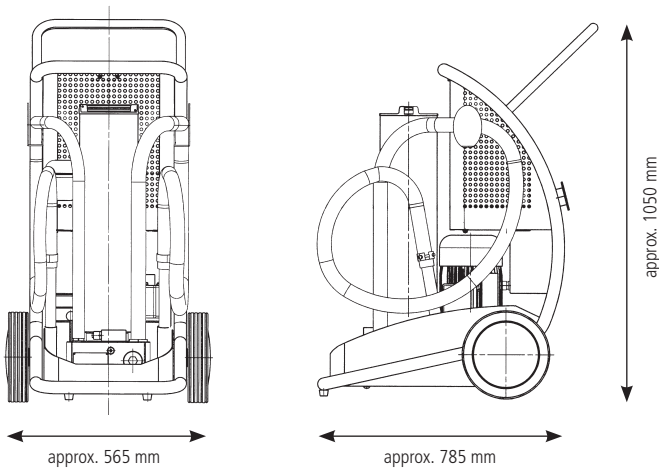
These can be used for short-term water absorption in all standard units. (please inquire)

## Viscosity range

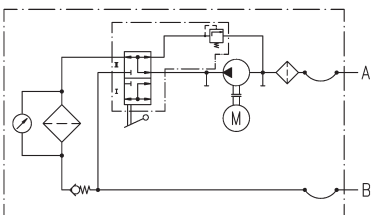
Type	Continuous operation min.	Continuous operation max.	Short-term operation max.
UM 045/UMP 045	15 mm <sup>2</sup> /s	600 mm <sup>2</sup> /s	800 mm <sup>2</sup> /s
UMPC 045	15 mm <sup>2</sup> /s	250 mm <sup>2</sup> /s* 600 mm <sup>2</sup> /s*	800 mm <sup>2</sup> /s

\*Precise determination of the cleanliness class is possible within a viscosity range of 15 mm<sup>2</sup>/s to 250 mm<sup>2</sup>/s

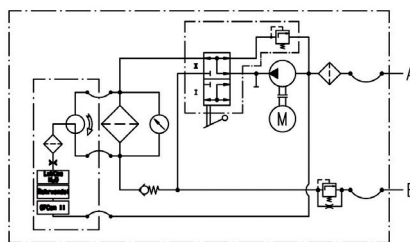
# Dimensions



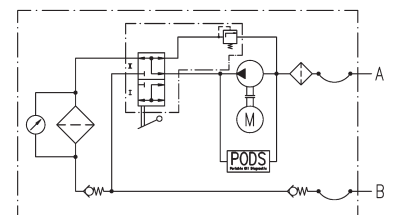
Hydraulic symbol 1 – UM 045



Hydraulic symbol 2 – UMPC 045



Hydraulic symbol 3 – UMP 045



## Selection Chart

Order No.	Nominal flow rate	Filter fineness see diagram <b>Dx</b>	Dirt capacity Mi at Q <sub>nominal</sub>	E-Motor operating voltage	E-Motor max. operating frequency	E-Motor power	Length suction hose (lance incl.)	Length pressure hose (lance incl.)	Viscosity	Suction height max.	Hydraulic symbol	Replacement element order no.	Clogging indicator	Weight
<b>ECOLINE basic model – UM 045</b>														
UM 045-1553	45 l/min***	3EN2	1.950 g	1~230 V	50/60 Hz	1,1 kW***	2,7 m	2,7 m	15 ... 600 mm <sup>2</sup> /s	2,0 m	1	V7.1560-103	optical	76,5 kg
UM 045-4553	45 l/min***	3EN2	1.950 g	3~400 V 50 Hz 3~460 V 60 Hz	50/60 Hz	1,1 kW***	2,7 m	2,7 m	15 ... 600 mm <sup>2</sup> /s	2,0 m	1	V7.1560-103	optical	76,5 kg
UM 045-1153	45 l/min***	5EN2	1.980 g	1~230 V	50/60 Hz	1,1 kW***	2,7 m	2,7 m	15 ... 600 mm <sup>2</sup> /s	2,0 m	1	V7.1560-03	optical	76,5 kg
UM 045-4153	45 l/min***	5EN2	1.980 g	3~400 V 50 Hz 3~460 V 60 Hz	50/60 Hz	1,1 kW***	2,7 m	2,7 m	15 ... 600 mm <sup>2</sup> /s	2,0 m	1	V7.1560-03	optical	76,5 kg

<b>ECOLINE with integrated particle monitor OPCOM – UMPC 045</b>														
UMPC 045-15735	45 l/min***	3EN2	1.950 g	1~230 V	50/60 Hz	1,1 kW***	2,7 m	2,7 m	15 ... 600 mm <sup>2</sup> /s*	2,0 m	2	V7.1560-103	electrical	97 kg
UMPC 045-45735	45 l/min***	3EN2	1.950 g	3~400 V 50 Hz 3~460 V 60 Hz	50/60 Hz	1,1 kW***	2,7 m	2,7 m	15 ... 600 mm <sup>2</sup> /s*	2,0 m	2	V7.1560-103	electrical	97 kg

Please request our data sheet no. 100.10 for more detailed information on the OPCOM particle monitor.

<b>ECOLINE prepared for connection of oil diagnostic system PODS** – UMP 045</b>														
UMP 045-1553	45 l/min***	3EN2	1.950 g	1~230 V	50/60 Hz	1,1 kW***	2,7 m	2,7 m	15 ... 600 mm <sup>2</sup> /s	2,0 m	3	V7.1560-103	optical	84 kg**
UMP 045-4553	45 l/min***	3EN2	1.950 g	3~400 V 50 Hz 3~460 V 60 Hz	50/60 Hz	1,1 kW***	2,7 m	2,7 m	15 ... 600 mm <sup>2</sup> /s	2,0 m	3	V7.1560-103	optical	84 kg**
UMP 045-1153	45 l/min***	5EN2	1.980 g	1~230 V	50/60 Hz	1,1 kW***	2,7 m	2,7 m	15 ... 600 mm <sup>2</sup> /s	2,0 m	3	V7.1560-03	optical	84 kg**
UMP 045-4153	45 l/min***	5EN2	1.980 g	3~400 V 50 Hz 3~460 V 60 Hz	50/60 Hz	1,1 kW***	2,7 m	2,7 m	15 ... 600 mm <sup>2</sup> /s	2,0 m	3	V7.1560-03	optical	84 kg**

Please request our brochure for more detailed information on the PODS Pro oil diagnostic system.

\* The exact determination of the cleanliness class is possible in a viscosity range of 15 mm<sup>2</sup>/s to 250 mm<sup>2</sup>/s.

\*\* without PODS Pro

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

Other versions on request

**Filter elements:** see selection chart.

Water-absorbing filter elements EXAPOR®AQUA on request.

**Accessories:** Hose extensions on request.

For the appropriate clogging indicators see datasheet 60.20.

### We produce fluid power solutions

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