HYDAC INTERNATIONAL

Offline filters
OLF 15/30/45/60

Description

The OLF 15/30/45/60 series of offline filters consists of robust offline filters for stationary applications in hydraulic and lubrication systems with large oil volumes.

The Dimicron elements used feature a particularly high contamination retention capacity and can be disposed of in an environmentally friendly manner (incinerability).

Comprehensive measurement technology for monitoring the oil condition is available as an option. They can be integrated into the control systems at the customer's location. Measurement and analysis results can also be displayed as graphs and tables on the device display or further processed using Connect Cloud and a network/mobile phone connection. Connectivity to IoT platforms at the customer's location is also possible.

Applications

- Machine tools
- Plastic injection machines
- Oil hydraulics
- Pressing / forming technology
- Test benches
- Thermal power plants

Advantages

- Improved component and system filter lifetime
- Increased machine availability
- Longer oil change intervals
- Easy to service
- High contamination retention capacity of the elements
- Environmentally safe disposal of elements (incinerable)
- Optional sensors available to monitor the contamination in the oil

With optional CMXconnect cloud:

- Remaining level indicator for the filter elements
- Historical development of purity classes, water content, dielectricity
- Overview of purified fluid quantity
- Usage profiles and energy consumption of the unit can be viewed
- Energy saving as a result of automated cleaning, automatic switch-off and purity control

Technical data

Filter housing	OLF-15	OLF-30	OLF-45	OLF-60
Filter element	N15DMxxx (1x)	N15DMxxx (2x)	N15DMxxx (3x)	N15DMxxx (4x)
Housing material	Stainless steel 1.4301			
Housing contents	21 l	40 l	60 l	78 l
Max. operating pressure	6 bar (others on request)			
Sealing material (standard)	NBR (FKM optional)			
Empty weight (housing & frame)	25 kg	30 kg	40 kg	45 kg
Medium temperature	10 to 80 °C			

Motor-pump group	15 l/min	30 l/min	45 l/min	60 l/min
Pump operating temperature	6 bar			
Permitted suction pressure at suction port	-0.4 to 0.5 bar			
Viscosity range with vane pump OLF	15 to 500 mm²/s			
Viscosity range with vane pump OLFCM	15 to 200 mm²/s			
Viscosity range with gear pump	15 to 1000 mm²/s			
Viscosity range with centrifugal pump	1 to 20 mm²/s			
Motor power Vane pump OLF Vane pump OLFCM Gear pump Centrifugal pump	 370 watts 370 watts 370 watts 750 watts	 750 watts 1500 watts 750 watts 750 watts	 1500 watts 1500 watts 1500 watts 1500 watts	 1500 watts 1500 watts 1500 watts 1500 watts
Vane pump weight	9.8 kg	17.2 kg (OLFCM: 23 kg)	23 kg	23 kg
Gear pump weight	12.3 kg	17.6 kg	29 kg	29 kg
Centrifugal pump weight	21.1 kg	21.1 kg	27.5 kg	27.5 kg
Pump sealing material	NBR (FKM optional)			
Ambient temperature	-10 to 40°C			
Protection class	IP 54			

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Model code

OLF – 30/30 – S – N – N15DM002 – E/ – PKZ -V – ACD

Basic type

OLF = stationary offline filter (with dynamic pressure gauge and ball valve for draining)
OLFCM = stationary offline filter with fluid condition monitoring

Size and nominal flow rate

Without pump	15 l/min	30 l/min	45 l/min	60 l/min	
15/Z	15/15	X	X	X	1 filter element
30/Z	30/15	30/30	X	X	2 filter elements
45/Z	45/15	45/30	45/45	X	3 filter elements
60/Z	60/15	60/30	60/45	60/60	4 filter elements

Pump version

S = vane pump (required for OLFCM)	W = centrifugal pump
G = gear pump	Z = without pump

Supply voltage

L = 115 V – 1 Ph	N = 400 V – 3 Ph	B = 480 V – 3 Ph
M = 230 V – 1 Ph	R = 415 V – 3 Ph	S = 500 V – 3 Ph
W = 230 V – 3 Ph	G = 440 V – 3 Ph	P = 575 V – 3 Ph (not for OLFCM with CB / CC)
C = 380 V – 3 Ph	O = 460 V – 3 Ph	Z = without a motor

Other voltages available upon request L60, M60, ... = operation at 60 Hz

Filter element

N15DM002 = 2 µm	N15DM010 = 10 µm	N15DM030 = 30 µm
N15DM005 = 5 µm	N15DM020 = 20 µm	Z = without element

Clogging indicator

E = standard, back pressure gauge
B = differential pressure indicator – visual (VM 2 BM.1)
C = differential pressure indicator – electric (VM 2 C.0)
D3 = differential pressure indicator – visual/electric (VM 2 D.0/-L220)
D4 = ... / ... / ... (VM 2 D.0/-L24)
D5 = ... / ... / ... (VD 2 LZ.1/-DB)
ED = electric or electronic differential pressure indicator (required for CB and CC)
F = pressure switch – electric

Supplementary details

V = with FKM (FPM, Viton®) seals
L = filter housing only, without motor-pump assembly, without sump
PKZ = On/Off switch with motor protection switch
FA0 = On/Off switch with motor protection switch and power supply for the measurement technology (with OLFCM version)
FA1 = On/Off switch with motor protection switch and shut-off when filter gets clogged. Neutral conductor required. Only for voltage up to max. 240 V, 1-phase or max. 415 V, 3-phase
CB = Control Basic; only for OLFCM, on/off switch with motor protection switch and shut-off when filter gets clogged and/or when target cleanliness is achieved. No neutral conductor required. All voltages up to 500 V possible (includes HC as measurement equipment); interface wired in customer networks via ModBus TCP/IP
CC = Connect Cloud; only for OLFCM, functionality same as CB and extensive control and setting options via cloud services (includes HC as measurement equipment). Interface wired in customer networks via Modbus TCP/IP, interface with cloud wireless via WLAN / mobile phone network* via MQTTs

For versions with On/Off switch:
- 230 V/1 Ph: with schuko plug
- 230 V/400 V/3 Ph: with CEE-plug 3319A
The rest: no plug

Measurement technology (only for OLFCM)

C = ContaminationSensor CS1310 (no display)
CD = ContaminationSensor CS1320 (with display)
AC = Contamination Sensor CS1310 (no display) with AquaSensor AS1000 (no display)
ACD = ContaminationSensor CS1320 (with display) and AquaSensor AS3000 (with display) (only for FA0)
HC = HydacLab HLB 14J8-1C000-000 and Contamination Sensor CS1310 (no display)
HCD = HydacLab HLB 14J8-1C000-000 and Contamination Sensor CS1320 (with display) (only for FA0)

For versions with "CB", "CC" and measurement equipment "HC":
M1 = sensor package with cleanliness class indicator/output acc. to ISO, rel. water saturation, fluid temperature, DC, rel. DC change, conductivity, rel. conductivity change
M2 = sensor package with cleanliness class indicator/output acc. to SAE, rel. water saturation, fluid temperature, DC, rel. DC change, conductivity, rel. conductivity change
M3 = sensor package with cleanliness class indicator/output acc. to NAS, rel. water saturation, fluid temperature, DC, rel. DC change, conductivity, rel. conductivity change

Note: At 60 Hz operation, the delivery rate can rise by approx. 20%.
*Supported frequencies (global): **4G (LTE-FDD)**: B1, B2, B3, B4, B5, B7, B8, B12, B13, B18, B19, B20, B25, B26, B28 **4G (LTE-TDD)**: B38, B39, B40, B41 **3G**: B1, B2, B4, B5, B6, B8, B19 **2G**: B2, B3, B5, B8

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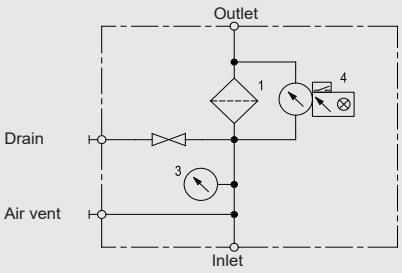
Overview of functions for OLFCM types with CB or CC

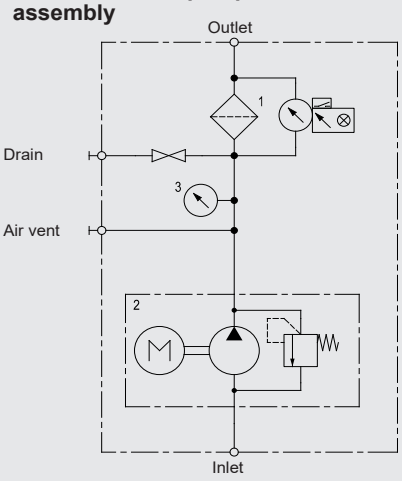
Function	Control Basic (CB)	Connect Cloud (CC)
Automatic shut-off if filter is clogged	√	√
Digital differential pressure indicator	√	√
Fluid cleanliness class indicator (optionally ISO, SAE or NAS)	√	√
Shut-off when target cleanliness achieved	√	√
Fluid temperature indicator	√	√
Relative water saturation indicator	√	√
Dielectric constant indicator	√	√
Relative dielectric constant change indicator	√	√
Electrical conductivity indicator	√	√
Displays the relative change in electrical conductivity	√	√
Touch panel for operating the unit	√	√
Selection between two operating modes 1. Continuous operation – long-term system maintenance 2. Cleaning until target cleanliness is achieved (automatic mode with energy-saving function – independent, cyclical check of set limit values)	√	√
Option to enter system-specific information (system, oil type, quantity and type of installed filter elements, most recent filter element change)	√	√
Current and historical measured values displayed at the touch panel	√	√
Filter monitoring via differential pressure	√	√
Web server to display the measured values and operating status (PC, notebook, tablet)	√	√
Data export of the measured values as a CSV file	√	√
Setting options via web server just like on the touch panel incl. Start/Stop	√	√
CMXconnect-Cloud		√
Device-specific cloud access via the internet providing all important device information on a clear dashboard		√
Current and historic measured values (graphic, error messages)		√
Statistical data, filter process (operating hours, energy consumption, amount of oil treated, etc.)		√
E-mail alert of limit values being exceeded, malfunctions and pending maintenance requirements		√
Filter monitoring function with e-mail alert for better planning of filter changes		√
Filter monitoring function with remaining time algorithm* for optimal planning of filter changes * = not possible for every application or oil type – please contact us if you are interested		√

Hydraulic diagram

OLF without motor-pump assembly

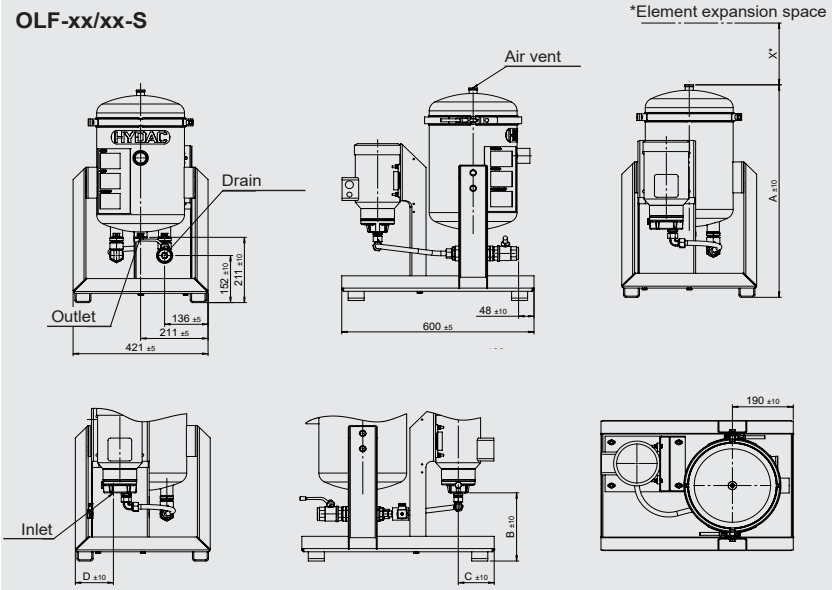


OLF with motor-pump assembly



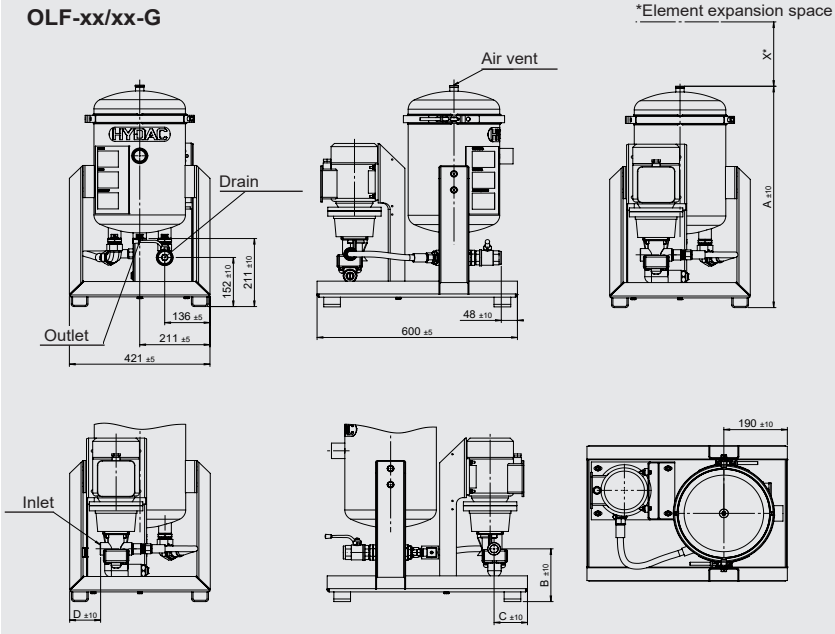
Unit dimensions

OLF-xx/xx-S



Sizes	A	B	C	D	X*
15/15	688 mm	221 mm	112 mm	119 mm	350 mm
30/15	956 mm				
30/30		200 mm	103 mm	109 mm	
45/15	1292 mm	221 mm	112 mm	119 mm	
45/30		200 mm	103 mm	109 mm	
45/45		187 mm	93 mm		
60/15	1560 mm	221 mm	112 mm	119 mm	
60/30		200 mm	103 mm	109 mm	
60/45		187 mm	93 mm		
60/60					

OLF-xx/xx-G



Sizes	A	B	C	D	X*
15/15	688 mm	164 mm	100 mm	92 mm	350 mm
30/15	956 mm				
30/30		248 mm	89 mm	93 mm	
45/15	1292 mm	164 mm	100 mm	92 mm	
45/30		248 mm	89 mm	93 mm	
45/45		198 mm	73 mm		
60/15	1560 mm	164 mm	100 mm	92 mm	
60/30		2248 mm	89 mm	93 mm	
60/45		198 mm	73 mm	42 mm	
60/60					

Ports

	Vane pump	Gear pump	Centri-fugal pump
Inlet (OLF15, OLFCM15)	G 3/4	G 3/4	G 1
Inlet (OLF30)	G 1 1/4	G 1	G 1
Inlet (OLFCM30)	ISO 8434-1-35L (M45x2)	–	–
Inlet (OLF45, OLF60)	G 1 1/4	G 1 1/2	G 1 1/4
Inlet (OLFCM45, OLFCM60)	ISO 8434-1-35L (M45x2)	–	–

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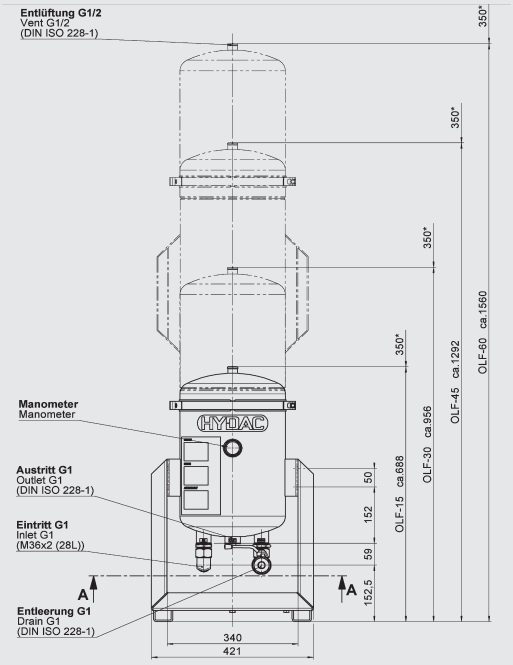
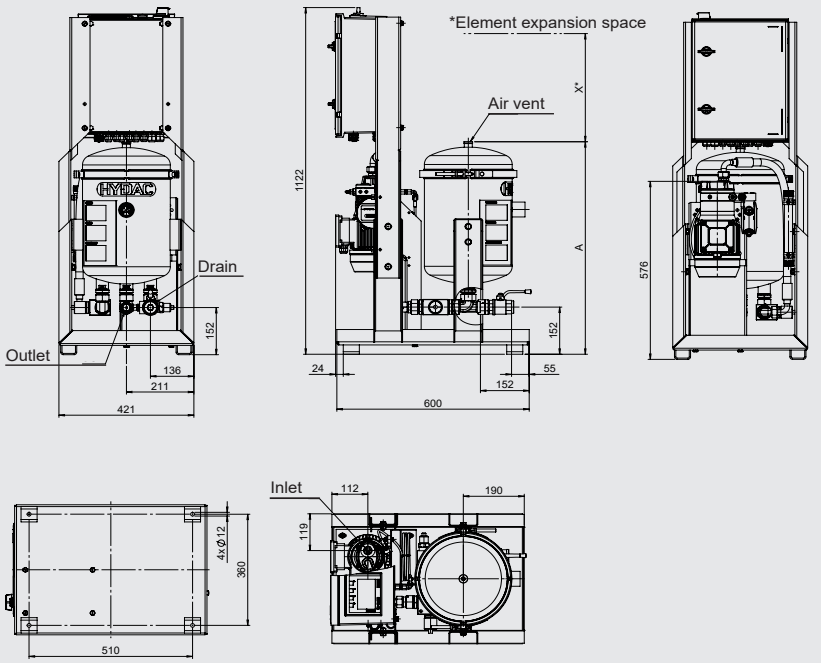
Unit dimensions

OLF-15/Z



Unit dimensions

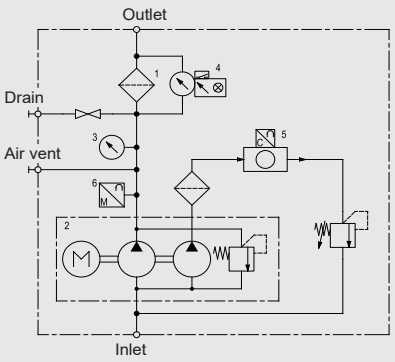
OLFCM-15



Sizes	A	X*
15/15	688 mm	350 mm
30/15	956 mm	
45/15	1292 mm	
60/15	1560 mm	

Hydraulic diagram

OLFCM-15



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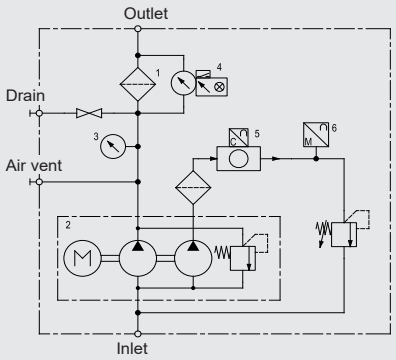
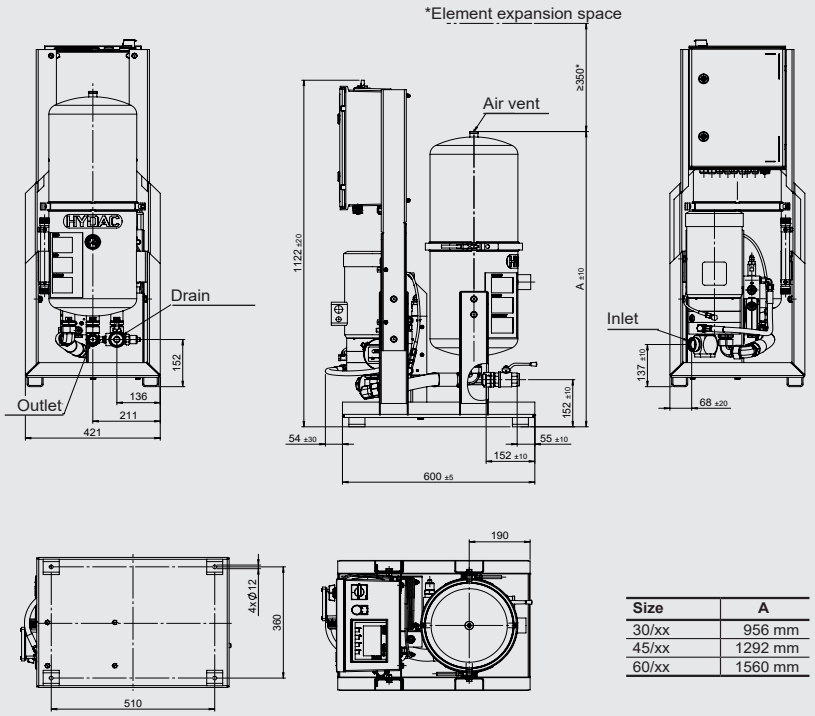
Hydraulic diagram

OLFCM 30 – 60



Unit dimensions

OLFCM-30 – 60



Size	A
30/xx	956 mm
45/xx	1292 mm
60/xx	1560 mm

Note

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.