OLF Series

Features and Benefits

The OLF series of filters is designed to efficiently and cost effectively filter hydraulic oils, lubricating oils, cleaning fluids and coolants which are highly contaminated. The filters can be supplied either as individual filters or as ready-to-install offline units complete with optional motor and pump units.

- Lower Operating Costs
- Extended Element Service Life
- Cleaner, more efficient systems

Dimicron® Technology

Dimicron® technology, which incorporates membrane filtration and multi-disc construction, sets the OLF apart from conventional filters by providing it with exceptional dirt holding capacity and separation efficiency. Each filter element is able to capture and hold more than 1 pound of dirt, meaning that the OLF60, which uses four elements, will hold nearly 5 pounds of dirt. Membrane filtration provides the OLF with a separation efficiency over 99.9% for particles 2 micron and larger (ß2 > 1000) even in a single pass.

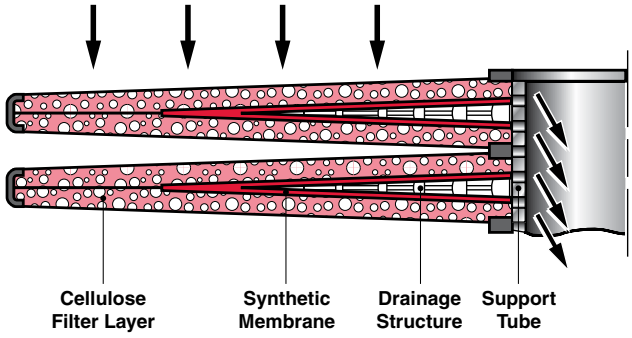
Applications

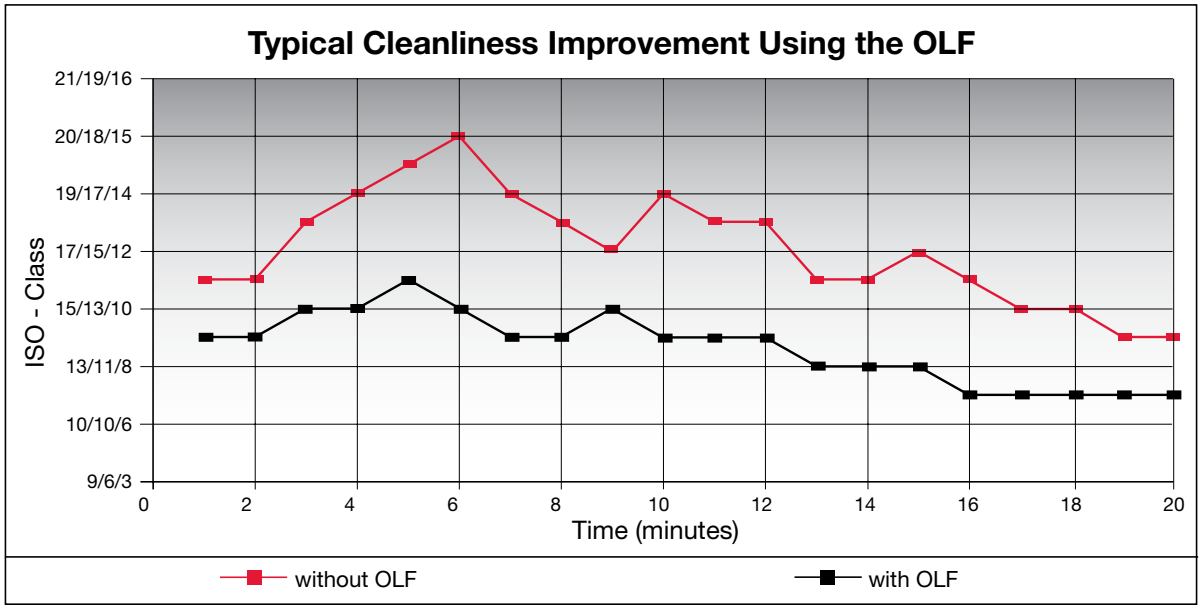
Typical applications include:

- Filling and flushing hydraulic units
- Filtration of fluids for hydraulic systems and test stands
- Filtration of cleaning fluids for parts washing machines
- Filtration of coolants

Dimicron® Element

The synthetic membrane *(2µm absolute)* provides a high filtration rating while the cellulose filter layer collects and holds the bulk of the dirt load. This combination results in excellent removal efficiency, even in a single pass, and extremely high dirt holding capacity.





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Model Code

OLF - 15 / 15 - G - L60 - N15DM002 - E / 12

Series
- OLF = Stationary offline filter with integrated pressure gauge
- OLFCM = Stationary offline filter with integrated contamination monitoring sensors

Size
15 = 1 element, 30 = 2 elements, 45 = 3 elements, 60 = 4 elements

Pump Flow Rate *(must be less than or equal to size)*
- 15 = 5 gpm
- 30 = 10 gpm
- 45 = 15 gpm
- 60 = 20 gpm
- Z = without pump

This code entry (15,30, 45, 60) must be less than or equal to the size entry (15,30, 45, 60)

Pump Type
- S = vane pump
- G = gear pump
- Z = Without motor-pump

Motor Voltage
- L60 = 115V, Single Phase
- O60 = 460V, Three Phase
- Z = Without motor-pump

Filter Element
- N15DM002 = Dimicron® 2 µm Absolute
- N15DM010 = Dimicron® 10µm Absolute
- N15DM020 = Dimicron® 20 µm Absolute
- N15DM030 = Dimicron® 30 µm Absolute
- Z = No filter element supplied

Clogging Indicator

E	= Standard gauge	
BM	= Differential visual	VM2BM.1
C	= Differential electrical	VM2C.0
D	= Differential visual/electrical	

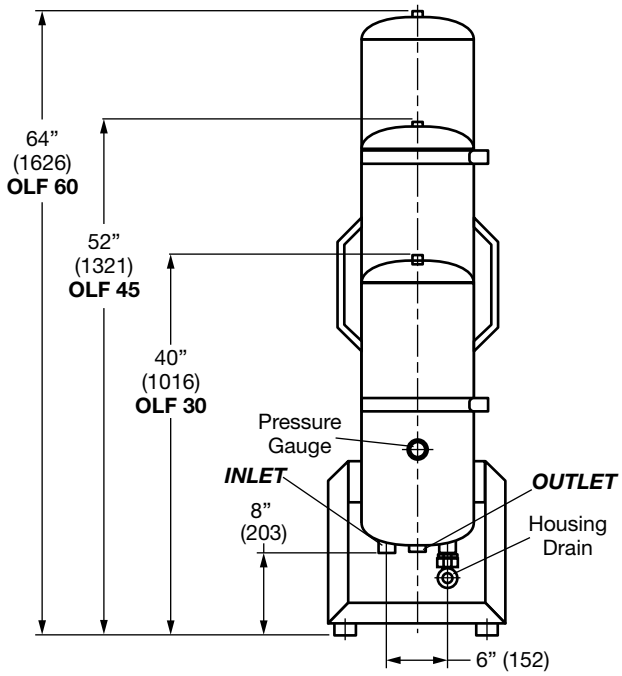
Options
- 12 = SAE adapters *(BSPP connections are standard)*
- V = Viton® Seals *(NBR seals are standard)*
- MP = Integrated TestPoint for connection to FCU via Minimess Line
- C = ContaminationSensor CS1310 (without Display)
- CD = ContaminationSensor CS1320 (with Display)
- CS = ContaminationSensor CS1310 (without Display) with SMU1260
- AC = Contamination Sensor CS1310 and AS 1000 (without Display)
- ACD = ContaminationSensor CS1320 and AS 3000 (with Display)
- ACS = ContaminationSensor CS1310 and AS 1000 (without Display) with SMU1270

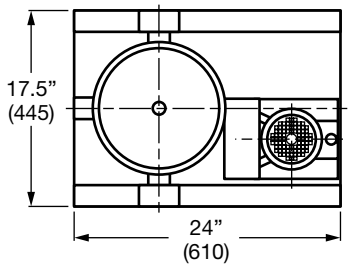
(OLFCM option only)

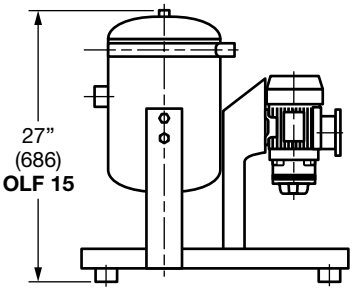
For replacement element part numbers, please see Section E - REPLACEMENT ELEMENTS of this catalog.

Model Codes Containing RED are non-standard items – Minimum quantities and longer lead times may apply - Contact HYDAC for information and availability.

Dimensions







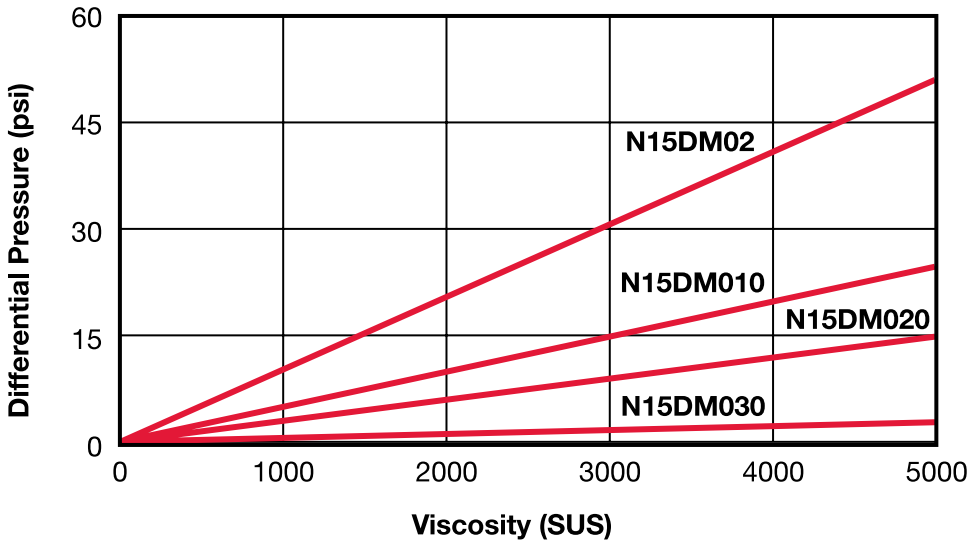
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

Technical Specifications

Model	OLF-15	OLF-30	OLF-45	OLF-60
Connections	Female			
Housing Inlet & Outlet	1 5/16 - 12UN (SAE 16); G 1"*			
Pump Inlet: Vane	1 1/16 -12UN (SAE 12); G 3/4"	1 5/8 -12UN (SAE 20); G 1 1/4"		
Pump Inlet: Gear	1 1/16 -12UN (SAE 12); G 3/4"	1 5/16 -12UN (SAE 16); G "1	1 7/8 -12UN (SAE 24); G 1 1/2"	
Pump Inlet: Centrifugal	1 5/16-12UN (SAE 16); G "1		1 5/8 -12UN (SAE 20); G 1 1/4"	
Filter Element	N15DMxxx(1x)	N15DMxxx(2x)	N15DMxxx(3x)	N15DMxxx(4x)
Contamination Retention Capacity	1.1lbs (500g)	2.2lbs (1000g)	3.3lbs (1500g)	4.4lbs (2000g)
Filter Efficiency	ßx > 1000			
Permissible Δp Across the Element	72.5 psi			
Element Weight	6.6lbs	13.2lbs	19.8lbs	26.4lbs
Material of Filter Housing	Stainless Steel			
Capacity of Pressure Vessel	5.25 gal.	10.50 gal.	15.75 gal.	20.5 gal.
Max. Operating Pressure - Filter Housing	85 psi			
Material of Seals - Housing	NBR *(standard)*			
Housing Weight	25lbs	33lbs	53lbs	62lbs
Fluid Temperature	15-175°F			
Motor-Pump Units	5 gpm	10 gpm	15 gpm	20 gpm
Pump Operating Pressure	65 psi			
Vane Pump Viscosity Range	75-2500 SUS			
Vane Pump Motor Capacity	370 W	570 W	1500 W	1500W
Gear Pump Viscosity Range	75-5000 SUS			
Gear Pump Motor Capacity	370 W	570 W	1500 W	1500W
Material of Seals - Pumps	NBR *(standard)*			

Housing drain standard on all units
BLACK = SAE connections when using adapters which are supplied standard
RED = BSPP connections if supplied adapters are not used

Differential Pressure at 3.96 gpm (15 L/min)



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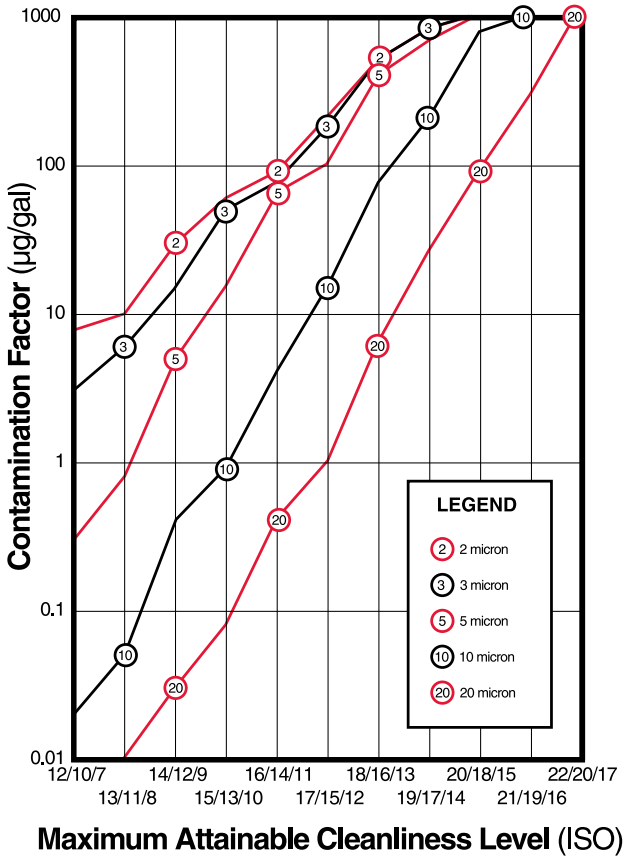
Sizing Offline Filtration

The following calculations will help to approximate the attainable system cleanliness level when applying offline filtration.

Step 1: Select the approximate contamination ingression rate from the chart below. HYDAC quantitative investigations have yielded the following approximate figures.

Type of System	Contamination Ingression (µg/gal) Surroundings		
	Clean	Normal	Polluted
Closed circuit	1	3	5
Injection molding machine	3	6	9
Standard hydraulic system	6	9	12
Lubrication system	8	11	14
Mobile equipment	10	13	16
Heavy industrial press	14	18	22
Flushing test equipment	42	60	78



Step 2: Make the correction required for offline filtration. The contamination input selected above must be multiplied by the factor:

Main System Flow Rate / Desired Offline Flow Rate

Note: Main system flow rate must be corrected for cycle time. For example, if the flow rate is 500 gpm, but only runs for 20% of the system cycle, the main system flow rate would be 100 gpm. (500 gpm X 20%)

This yields the expression:

$$\textbf{Contamination Factor} = \textbf{Contamination Input}\ (\mu g/gal) \times \frac{\textbf{Main System Flow Rate}\ (gpm)}{\textbf{Desired Offline Flow Rate}\ (gpm)}$$

Calculate the contamination factor using this expression.

Step 3: Determine the attainable cleanliness level. Locate the calculated contamination factor on the y-axis of the attached graph. Go to the right to find the intersection point on the curve corresponding to the desired absolute filter micron rating. Read the resulting attainable cleanliness level on the x-axis. *(In case of dynamic flow through the offline filter, the attainable cleanliness level will be 2 to 3 times worse than indicated by the graph.)*

Offline Filtration Sizing Example

Type of System: Heavy industrial press

Surroundings: Normal

Main System Flow Rate: 150 gpm

Desired Offline Flow Rate: 16 gpm (OLF 60)

Step 1: Using this criterion select the approximate contamination ingression rate from the chart above.

This yields a contamination input of **18** µg/gal based on a ***heavy industrial press*** with ***normal*** surroundings.

Step 2: Make the correction required for offline filtration.

Contamination Factor = **18** µg/gal x **150** gpm / **20** gpm = **135**

Step 3: Determine the approximate attainable cleanliness level for each micron rating using the attached graph. If the attainable cleanliness level is not acceptable, the desired offline flow rate should be increased. The approximate attainable levels for this example are as follows.

2µm - ISO 17/15/12

20µm - Between ISO 20/18/15 and ISO 21/19/16