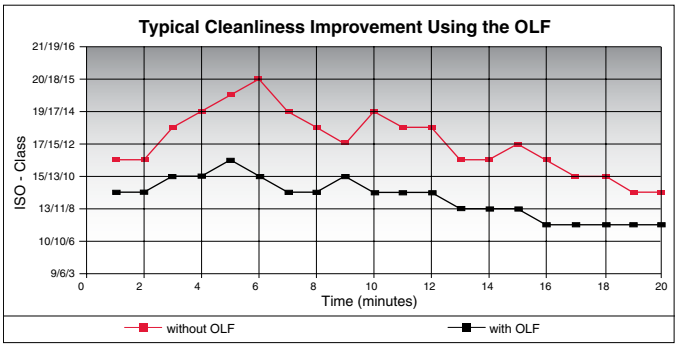
OLF Series



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.

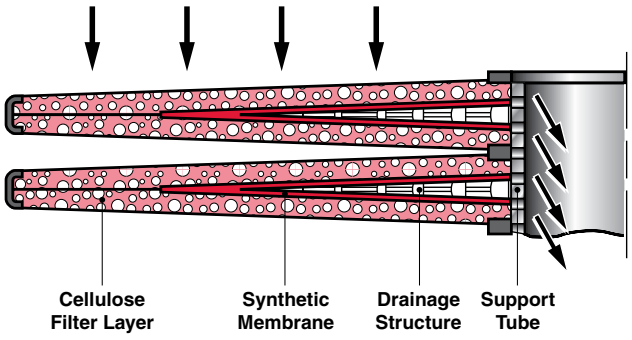
Applications

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.



Model Code

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

Series
OLF = Stationary offline filter with integrated pressure gauge

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
W = centrifugal 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

Clogging Indicator

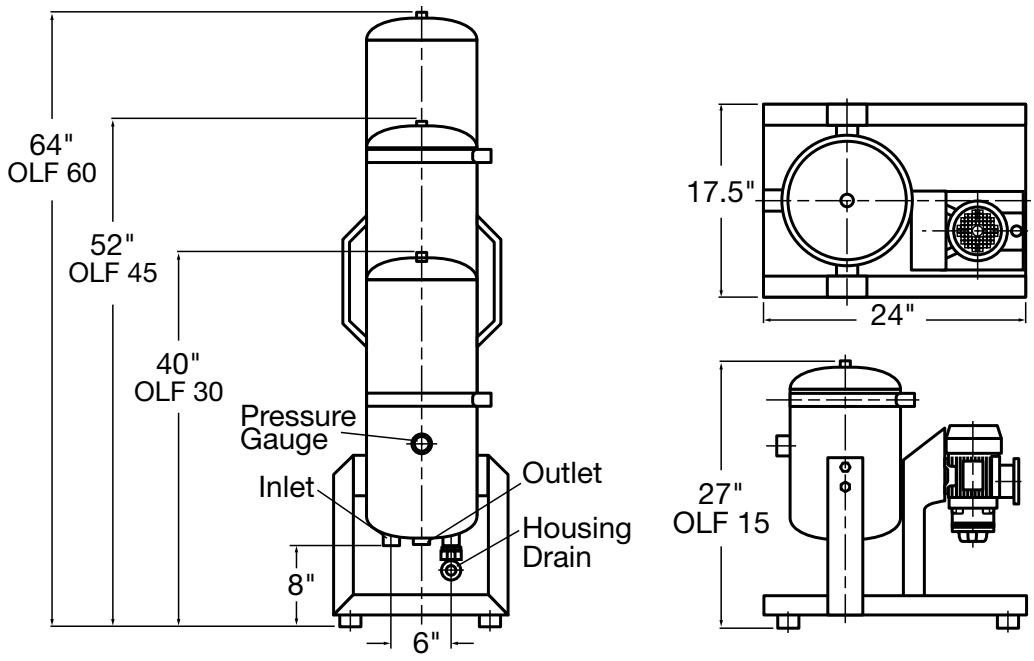
E	= Standard gauge	
BM	= Differential visual	VM2BM.1
C	= Differential electrical	VM2C.0

Supplementary Details
12 = SAE adapters *(BSPP connections are standard)*
V = Viton® Seals *(NBR seals are standard)*

For replacement element part numbers, please see page 69 of this catalog.

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

Dimensions



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

Technical Details

Connections (All Female)									
Housing Inlet & Outlet: 1 5/16 - 12UN (SAE 16) I G1*									
Pump Inlet:									
Model	**Vane**			**Gear**			**Centrifugal**		
OLF-15	1 1/16 -12UN	(SAE 12)	G3/4	1 1/16 -12UN	(SAE 12)	G3/4	1 5/16-12UN	(SAE 16)	G1
OLF-30	1 5/8 -12UN	(SAE 20)	G1 1/4	1 5/16 -12UN	(SAE 16)	G1	1 5/16-12UN	(SAE 16)	G1
OLF-45, 60	1 5/8 -12UN	(SAE 20)	G1 1/4	1 7/8 -12UN	(SAE 24)	G1 1/2	1 5/8 -12UN	(SAE 20)	G1 1/4

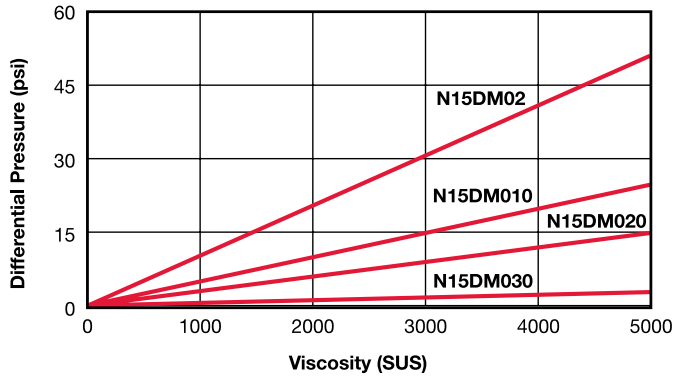
Housing drain standard on all units
BLACK = SAE connections when using adapters which are supplied standard
RED = BSPP connections if supplied adapters are not used

	OLF-15	OLF-30	OLF-45	OLF-60
Filter Element	N15DMxxx(1x)	N15DMxxx(2x)	N15DMxxx(3x)	N15DMxxx(4x)
Contamination Retention Capacity	500g (1.1lbs)	1000g (2.2lbs)	1500g (3.3lbs)	2000g (4.4lbs)
Filter Efficiency	ßx > 1000	ßx > 1000	ßx > 1000	ßx > 1000
Permissible Δp Across the Element (psi)	72.5	72.5	72.5	72.5
Weight Element (lbs)	6.6	13.2	19.8	26.4
Material of Filter Housing	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
Capacity of Pressure Vessel (gallons)	5.25	10.50	15.75	20.5
Max. Operating Pressure Filter Housing (psi)	85	85	85	85
Material of Seals-Housing (standard)	NBR	NBR	NBR	NBR
Weight Housing (lbs)	25	33	53	62
Fluid Temperature in °F	15-175	15-175	15-175	15-175

Motor-Pump Units	**5 gpm**	**10 gpm**	**15 gpm**	**20 gpm**
Operating Pressure of the Pump (psi)	65	65	65	65
Viscosity Range with Vane Pump (SUS)	75-2500	75-2500	75-2500	75-2500
Viscosity Range with Gear Pump (SUS)	75-5000	75-5000	75-5000	75-5000
Viscosity Range with Centrifugal Pump (SUS)	5-100	5-100	5-100	5-100
Motor Capacity (watts)				
Vane Pump	370 W	570 W	1500 W	1500W
Gear Pump	370 W	570 W	1500 W	1500W
Centrifugal Pump	370 W	570 W	1500 W	1500W
Weight Vane Pump (lbs)	17	30	43	43
Weight Gear Pump (lbs)	21	33	49	49
Weight Centrifugal Pump (lbs)	33	33	55	55
Material of Seals in Pumps (standard)	NBR	NBR	NBR	NBR

All details in this brochure are subject to technical modifications.

Differential Pressure at 3.96 gpm (15 L/min)

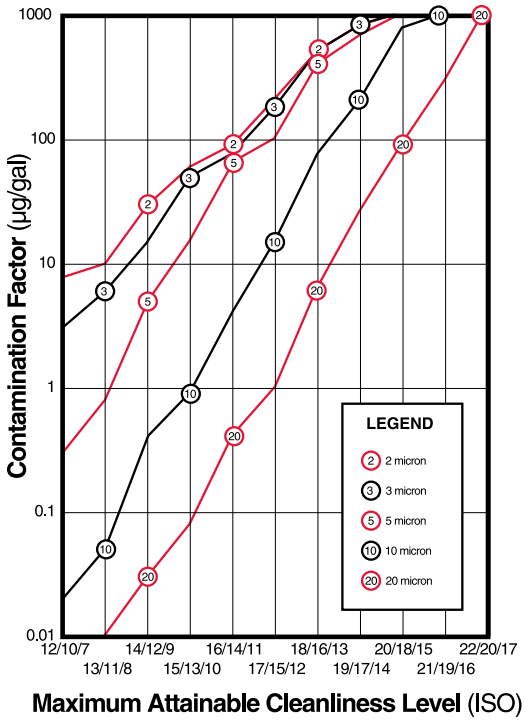


Sizing Offline Filtration

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