D

Offline Filtration Systems

Today's hydraulic filter systems have seen a shift from reactionary to preventative, and even predictive maintenance. Total system contamination management begins with our Fluid Conditioning Products. These are hydraulic oil filter systems for removing contaminants and water from various types of hydraulic fluids. Our offline hydraulic oil filter systems include both mobile filtration carts with and without contamination monitoring units, stationary filtration systems from 1.3 gpm flow rates to customizable kidney loop systems up to 140 GPM. Our dewatering units, both vacuum dehydration and mass transfer systems offered and can remove both free and dissolved water from fluids for any reservoir size at various flow rates.

RFSA Series

Reservoir Filtration System Adapter

Description

The RFSA is an aluminum adapter that gives a kidney loop filter access to a reservoir. The adapter can accommodate kidney loop filtration rates up to approximately 15 gpm.

Features

- Suitable to use with many Filter Systems products including: OF5HS/OF5HD/OFCS/OFCD, OF7-BC, OFCD-BC, OFCD-MV, OFCD-HV, MAFH-A, OFS, OFS-AM, OLF
- 1.25” SAE O-Ring Boss Suction Port
- 1.00” SAE O-Ring Boss Return Port
- Suction and Return downtubes included and recommended to be cut to length and bent for proper fluid turnover in a reservoir
- Optional OFCS/OFCD Fitting Kit can be ordered separately. This includes adapters to install CAM-GROOVE hose couplings between Suction/Return hoses/wands and additional CAM-GROOVE adapters for installation in kidney loop adapter. Dust caps and plugs included

Applications

- All applications with a hydraulic reservoir utilizing a 6-bolt mounting connection

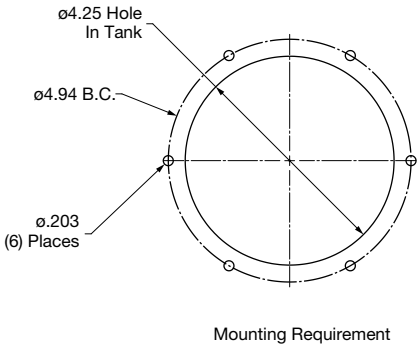
Technical Specifications

Reservoir Mounting Pattern:	Fits standard 6-bolt
Supply Port Thread Size:	1.25” SAE O-Ring Boss Suction Port
Return Port Thread Size:	1.00” SAE O-Ring Boss Return Port
Breather Port Thread Size:	¾” NPT
Return Tubes:	Suction and Return downtubes included and recommended to be cut to length and bent for proper fluid turnover in reservoir

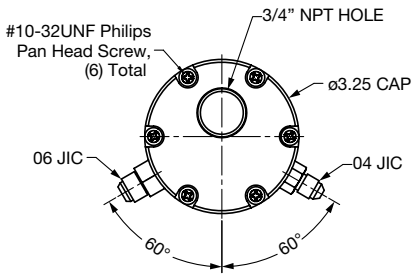
Mounting Pattern

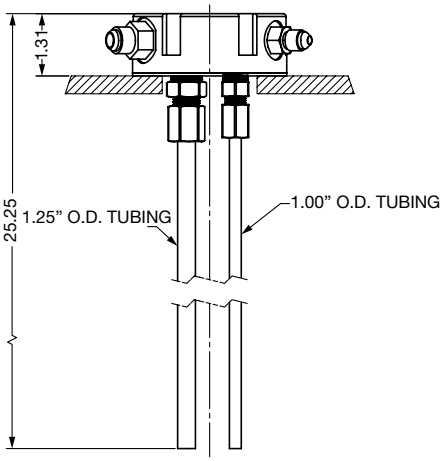
Customer is responsible to cut an appropriately sized hole on top of their tank. This adapter has two (2) ports: one for Suction and one for Return. Also includes a breather port.

Reservoir pattern is six (6) .203” holes on a 4.94” BCD with a 4.25” diameter center hole. See Drawing S-1048.



Mounting Requirement





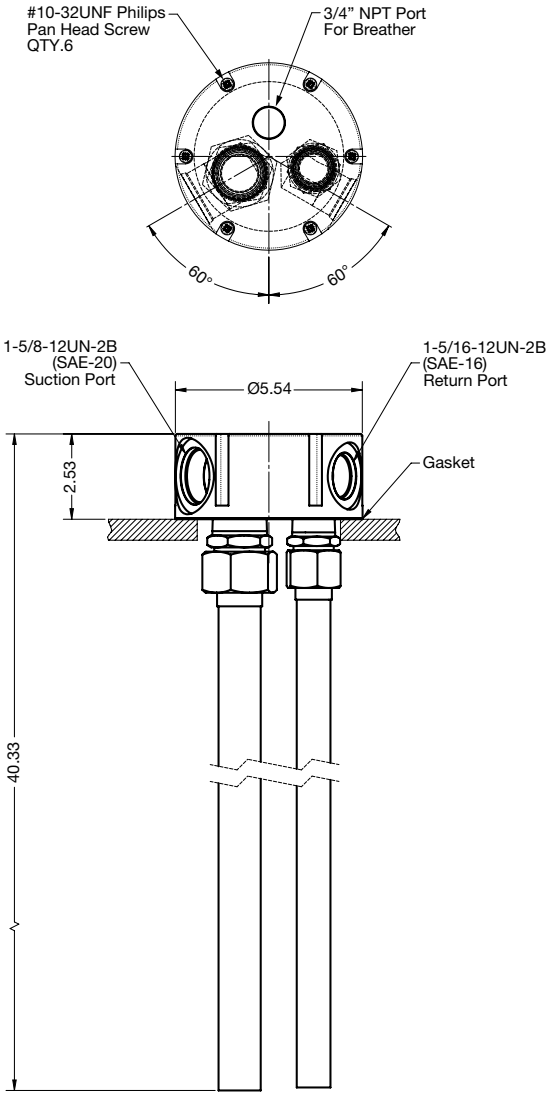
Model Code

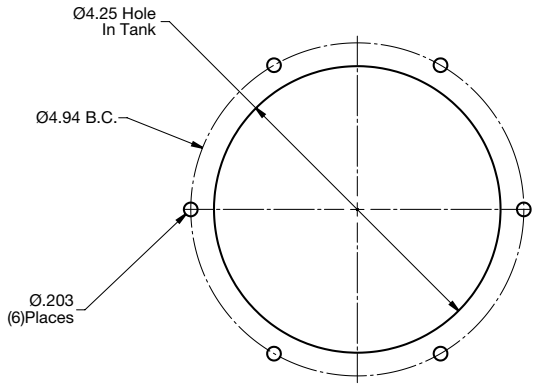
RFSA – 1

Series
RFSA = Reservoir Filtration System Adapter

Options
Omit = For use with Kidney Loop Filtration Products
1 = Optional OFCS/OFCD Fitting Kit

Installation Details





MOUNTING REQUIREMENT

OF7-BC Series

Compact Filtration System Basic Cart

Description

The HYDAC Basic Cart Filter System is a compact, self-contained, “light-duty” filtration system equipped with high efficiency, high capacity elements capable of removing particulate contamination and/or water quickly, conveniently and economically. It is perfect for cleaning up existing systems as well as for pre-filtering new fluids, since new fluids often have contamination levels significantly higher than that recommended for most hydraulic systems.

The filtration system’s compact, lightweight design with replaceable element cartridge and reusable bowl, minimizes landfill waste. Element service is easily accomplished through the top-ported filter housings. The optional dual filter assembly allows for water and particulate removal or staged particulate contamination removal.

Features

- Compact size, easily transported
- Top-ported filter provides easy element service
- Bar-type Dirt Alarm® indicates when filter elements require a change
- Hoses and connection tubes included
- Optional BackPack Version available for ease of transport across distances

Applications

- Supplementing continuous filtration by system filters
- Cleaning up a hydraulic system following component replacement
- Filtering new fluid before it is put into service
- Transferring fluid from storage tanks and drums to system reservoirs

Technical Specifications

Flow Rating:	4 gpm (15.1 lpm)
Maximum Viscosity:	1600 SUS (350 cSt)
Hose Pressure Rating:	30 psig (2.0 bar) @ 150°F (65.6°C) Full vacuum @ 150°F (65.6°C)
Fluid Temperature:	25°F to 150°F (-4°C to 65°C)
Material:	Element Case: Aluminum
Seal Material:	Buna N
Compatibility:	All petroleum based hydraulic fluid. Contact factory for use with other fluids
Motor:	115 VAC Single phase 1 hp
Weight:	Single housing - 40 lbs (18.2 kg) Dual housing - 44 lbs (20 kg) BackPack version - 39 lbs (17.7 kg) *(Does not include weight of hose/wands)*

Replacement Elements

Model Code	Part No.
ELEMENT OFCDBC 003	02099361
ELEMENT OFCDBC 005	02099362
ELEMENT OFCDBC 010	02099363
ELEMENT OFCDBC 020	02099364
ELEMENT OFCDBC AM	02099365

Model Code

OF7-BC - K - 1 - 09 - MXxx - MXxx - B - E

Series
OF7-BC = Compact Filter System Basic Cart

Voltage
omit = 110 V AC, 60Hz, 1 Ph.
A = 230V AC, 60Hz, 1 Ph.
T = 12V DC (supplied with motor starter)

Number of Housing
1 = One 9” element per housing
2 = One 9" element per housing

Element Length
09 = One 9” element supplied per housing

Element Size *(BN only - AM has no rating) (microns)*
MX03, MX05, MX10, MX25 = Betamicron® Absolute Filtration Rating (ßx(c) ≥ 1000)
MXAM* = Aquamicron® Water Removal

Element Size *(BN only - AM has no rating) (microns) (OF7-BC Dual Stage Only)*
MX03, MX05, MX10, MX25 = Betamicron® Absolute Filtration Rating (ßx(c) ≥ 1000)
MXAM* = Aquamicron® Water Removal

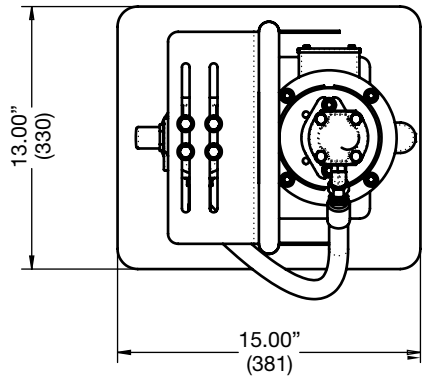
Seals
B = Buna

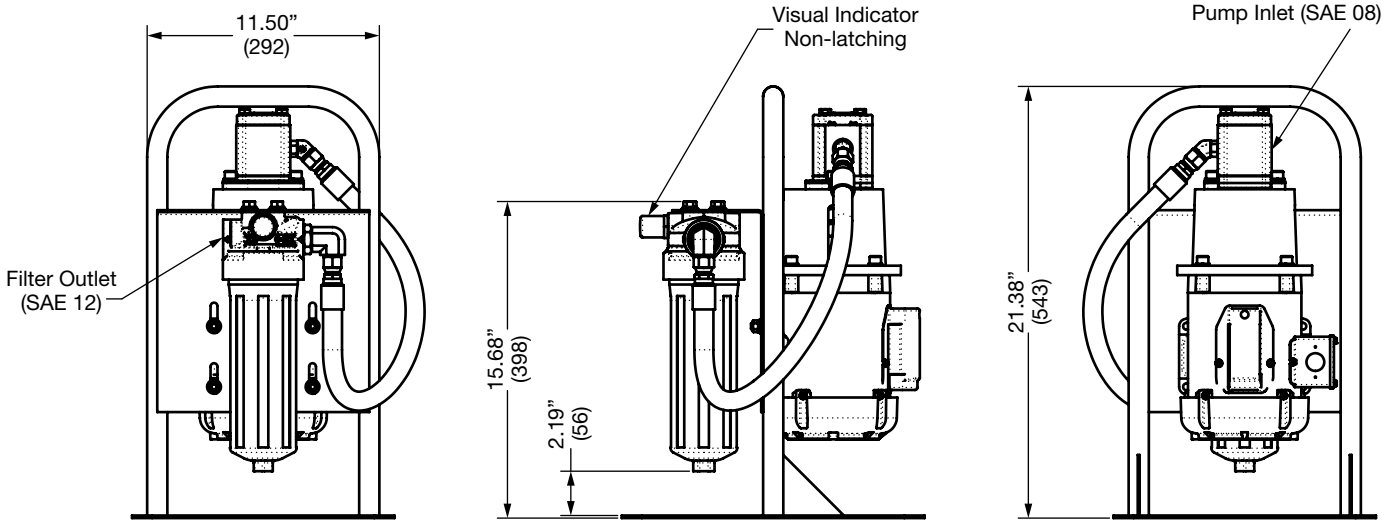
Clogging Indicator
E = Standard Visual Indicator

Options
BP = BackPack Version (Single Housing Only)

*Aquamicron media should be in the first filter housing followed by the BN media in the second housing.

Dimensions



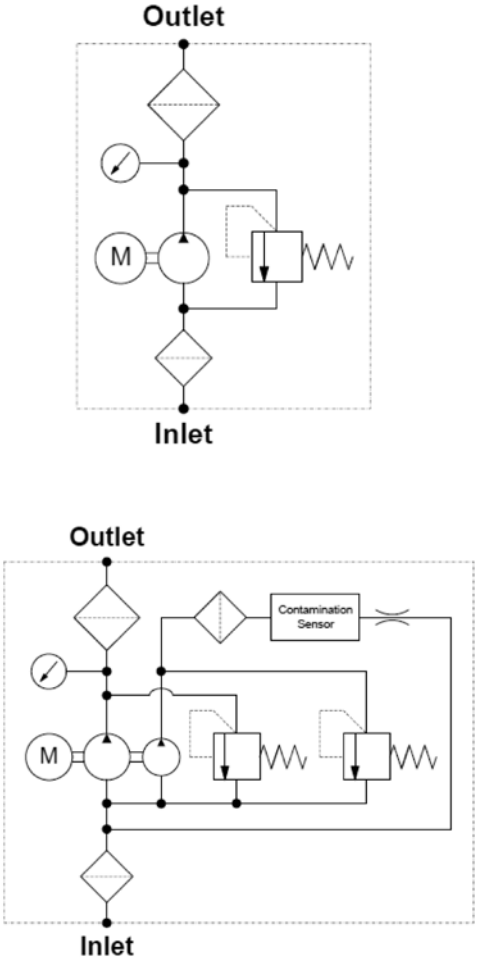


Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

HFS-15 Series

Mobile Filter Unit

Hydraulic Schematic



Description

The HFS MobileFiltration unit is used as a portable service unit for filling hydraulic systems, flushing small hydraulic systems as well as for cleaning in bypass flow. Solid particle contamination as well as free water can be removed by the filter elements.

The HFS can also be fitted with a CS 1000 ContaminationSensor. This allows the solid particle contamination in the oil to be monitored at the same time. The cleanliness class results are displayed according to ISO, SAE or NAS classifications.

Features

- Improvement in service life for components and system filters
- Increased oil service life
- Increased machine availability
- Simple operation
- Compact design
- Integrated dry running protection
- Option: CS 1000 ensures continuous monitoring of oil cleanliness during cleaning

Applications

- Filtered and unfiltered filling of hydraulic systems
- Temporary offline filtration of hydraulic systems
- Filtered or unfiltered fluid transfer
- Unfiltered drainage of hydraulic tanks
- Leakage oil recirculation at test benches

Technical Specifications

Maximum Flow Rating	HFS-E: 4 gpm (15 l/min) HFS-P: 2.6 gpm (10 l/min)
Pump type	Vane pump
Maximum operating pressure	58 psi (4.0 bar)
Permitted suction pressure at suction port	-5.8 to 8.7 psi (-0.4 bar to + 0.6 bar)
Viscosity range	HFS-E: 42 SUS 1623 SUS (5 to 350cSt) HFS-P: 42 SUS 927 SUS (5 to 200cSt)
Length of power cable	9.8’ (3 m) *(incl. plug)*
Permissible fluid temp.	14-176°F (-10 … +80 °C)
Permitted ambient temperature range	14-104°F (-10 to +40°C)
Seal material	*FKM (FPM, Viton®)*
Empty weight	HFS-E: 30.9 lb (14 kg) HFS-P: 36.4 lb (16.5 kg)

PN#02075860 / 06.18 / FSP1710-1942

Model Code

HFS - 15 - E - 9 - DM - 2 - S - K - F - E

Series
HFS = Mobile Filter Unit

Size
15 = 15 l/min (for type “E”)
10 = 10 l/min (for type “P”)

Type
E = Economy
P = Premium (with Condition Monitoring)

Element length
9 = 9”

Filter Media
DM = NX9DM Particulate Removal Element
AM = NX9AM Particulate and Water Removal

Filtration Rating
2, 5, 10, 20

Pump version
S = Vane pump

Power supply
K = 120 V, 60 Hz, 1 Ph (0.25 kW)
others on request

Material of seal
F = FKM (FPM, Viton®)
others on request

Clogging indicator
E = Back-pressure indicator

Scope of delivery

- HFS (with filter element and hoses)
- Operating and maintenance instructions

Description	Part no.	Filtration rating	Water absorption
Filtration			
NX9DM002-F	4265955	2 µm	-
NX9DM005-F	4265956	5 µm	-
NX9DM010-F	4265957	10 µm	-
NX9DM020-F	4265958	20 µm	-
Filtration and dewatering			
NX9AM002-F	4265959	2 µm	☞
NX9AM005-F	4265960	5 µm	☞
NX9AM010-F	4265961	10 µ	☞
NX9AM020-F	4265962	20 µm	☞
Adapter for unfiltered operation			
NX9-xxxxx-F	4265963	-	-

Optional Hose Assemblies Offered

Hoses with lance (depressurized suction up to max. 350 mm²/s)				
Description	**Part no.**	**Suction hose / Pressure hose**	**Lance**	**Material Suction / pressure hose**
HFS-15-SDN	4270478	8.2’ (2.5 m) / 08.2’ (2.5 m)	.82’ (0.25 m)	PVC / PVC*
HFS-15-SDF	4270479	8.2’ (2.5 m) / 08.2’ (2.5 m)	.82’ (0.25 m)	1SN / 2TE
HFS-15-SD5N	4270480	8.2’ (2.5 m) / 16.4’ (5 m)	.82’ (0.25 m)	PVC / PVC
HFS-15-SD5F	4270481	8.2’ (2.5 m) / 16.4’ (5 m)	.82’ (0.25 m)	1SN / 2TE

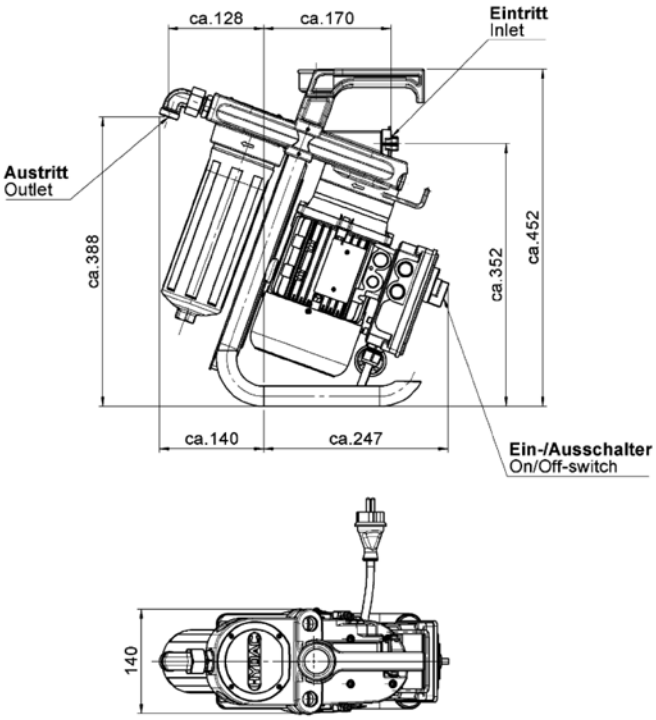
*Included with HFS-15

Hoses with threaded connection (depressurized suction up to max. 350 mm²/s)				
Description	**Part no.**	**Suction hose / Pressure hose**	**Thread**	**Material Suction / pressure hose**
HFS-15-SKDKN	4270482	08.2’ (2.5 m) / 08.2’ (2.5 m)	M30x2 / M26x1.5	PVC / PVC
HFS-15-SKDKF	4270483	08.2’ (2.5 m) / 08.2’ (2.5 m)	M30x2 / M26x1.5	1SN / 2TE
HFS-15-SKDK5N	4270484	08.2’ (2.5 m) / 16.4’ (5 m)	M30x2 / M26x1.5	PVC / PVC
HFS-15-SKDK5F	4270516	08.2’ (2.5 m) / 16.4’ (5 m)	M30x2 / M26x1.5	1SN / 2TE

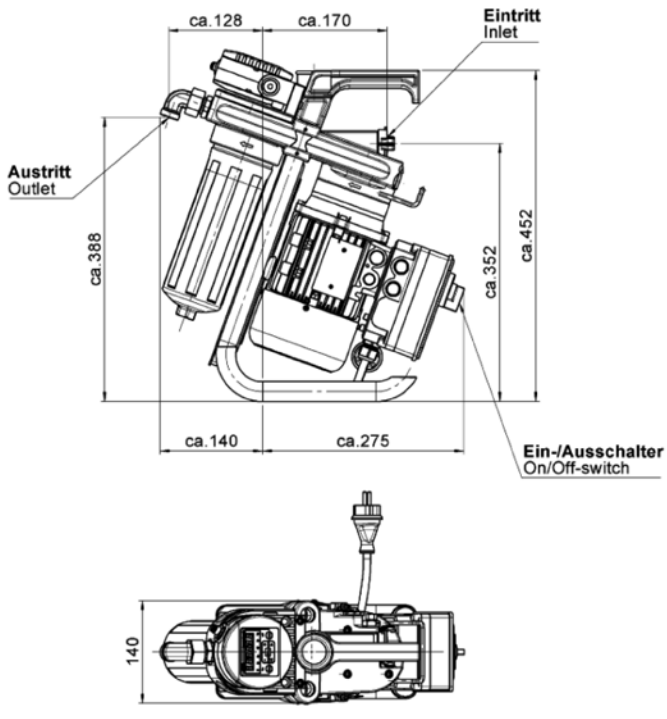
Accessories for hoses with threaded connection		
Description	**Part no.**	**Function**
HFS-15-SKDK-LF	4270559	Lance1 (length of 4.3’) (1.30 m)
HFS-15-SKDK-SF	4270560	Suction filter[1]
HFS-15-SKDK-ZWF	4270518	Counter
HFS-15-SKDK-ZPF	4270561	Pump nozzle[2]
HFS-15-SKDK-ZPWF	4270519	Pump nozzle + counter[2]

[1] max. viscosity 927 SUS (200 cSt)
[2] max. operation duration of the unit with closed pump nozzle of 5-10 min.

Dimensions – HFS-15E



Dimensions – HFS-15P



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

Notes

OFCD-BC Series

Compact Dual Stage Filtration System Basic Cart

Description

The HYDAC Basic Cart Mobile Filter System is a compact, self-contained, “light-duty” filtration system equipped with high efficiency, high capacity elements capable of removing particulate contamination and/or water quickly, conveniently and economically. It is perfect for cleaning up existing systems as well as for pre-filtering new fluids, since new fluids often have contamination levels significantly higher than that recommended for most hydraulic systems.

The filtration system’s compact, lightweight design with replaceable element cartridge and reusable bowl, minimizes landfill waste. Element service is easily accomplished through the top-ported filter housings. The OFCD-BC includes a drip pan to help catch any oil before it falls to the ground. The dual filter assembly allows for water and particulate removal or staged particulate contamination removal.

Features

- Compact size, easily transported
- Top-ported filter provides easy element service
- Bar-type Dirt Alarm® indicates when filter elements require a change
- Hoses and connection tubes included
- Drip pan catches oil before it falls to the ground

Applications

- Supplementing continuous filtration by system filters
- Cleaning up a hydraulic system following component replacement
- Filtering new fluid before it is put into service
- Transferring fluid from storage tanks and drums to system reservoirs

Technical Specifications

Flow Rating:	10 gpm (37.9- L/min) max
Maximum Viscosity:	1000 SUS (216 cSt)
Hose Pressure Rating:	30 psig (2.0 bar) @ 150°F (65.6°C) Full vacuum @ 150°F (65.6°C)
Fluid Temperature:	25°F to 150°F (-4°C to 65°C)
Bypass Valve Setting:	Cracking: 25 psi (1.7 bar)
Material:	Element Case: Aluminum
Seal Material:	Buna N
Compatibility:	All petroleum based hydraulic fluid. Contact factory for use with other fluids
Motor:	115 VAC Single phase 1 hp
Weight:	102 lbs. (46.3 kg)

Replacement Elements

Model Code	Part No.
ELEMENT OFCDBC 003	02099361
ELEMENT OFCDBC 005	02099362
ELEMENT OFCDBC 010	02099363
ELEMENT OFCDBC 020	02099364
ELEMENT OFCDBC AM	02099365

Model Code

OFCD-BC - 1 - 09 MX10 - MX05 - B - 10

Series
OFCD-BC = Compact Dual Stage Filter System Basic Cart

Number of Elements
1 = One 9” element per housing

Element Length
09 = One 9” element supplied per housing

Element Size *(BN only - AM has no rating) (microns)*
MX03, MX05, MX10, MX20 = Betamicron® Absolute Filtration Rating (ßx(c) ≥ 1000)
MXAM* = Aquamicron® Water Removal

Element Size *(BN only - AM has no rating) (microns)*
MX03, MX05, MX10, MX25 = Betamicron® Absolute Filtration Rating (ßx(c) ≥ 1000)
MXAM* = Aquamicron® Water Removal

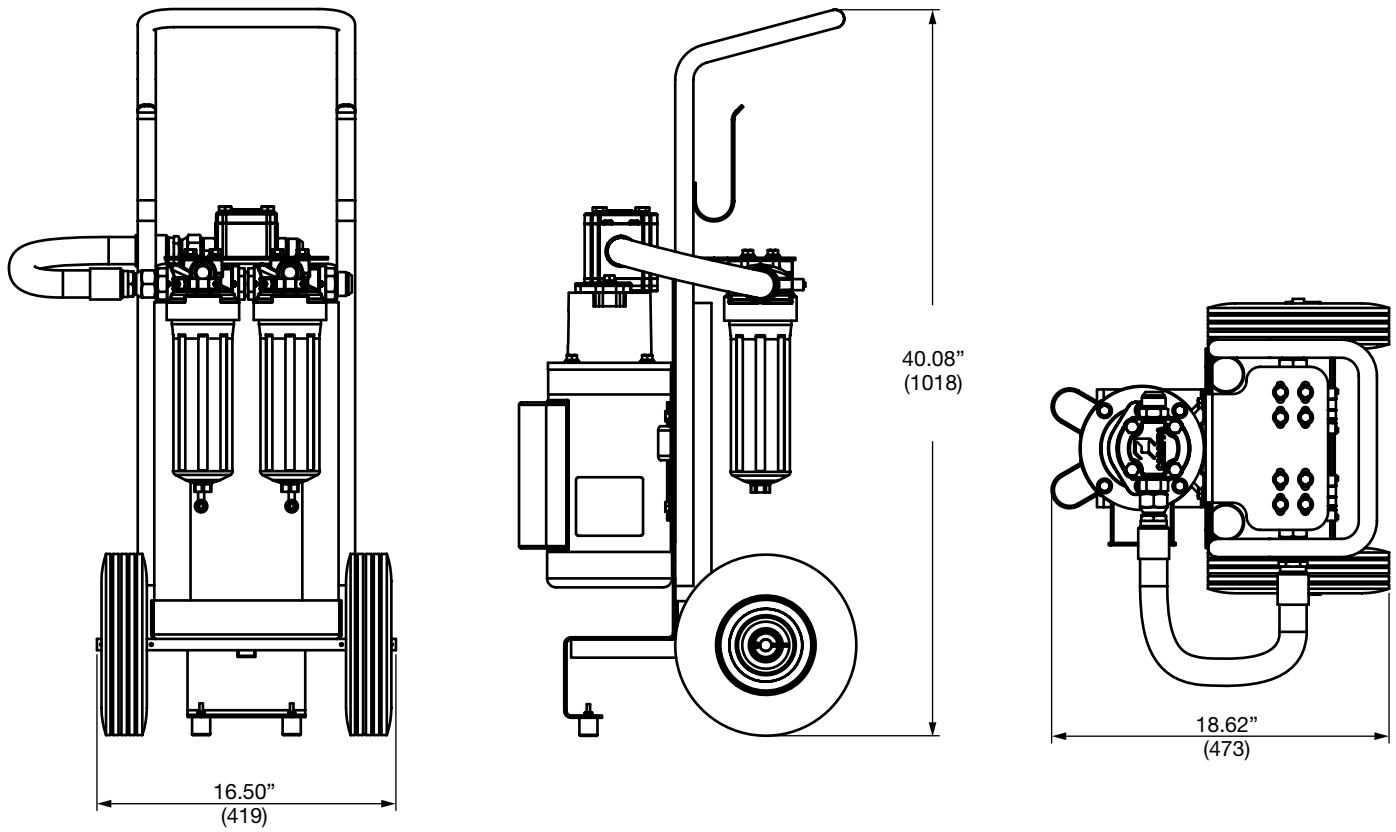
Seals
B = Buna

Pump
10 = 10 gpm

Voltage
(Omit) = 115 VAC 60 Hz
A = 230 VAC 60 Hz
B = 230 VAC 50 Hz *(flow rate reduced to 8gpm; no plug supplied)*

*Aquamicron media should be in the first filter housing followed by the BN media in the second housing.

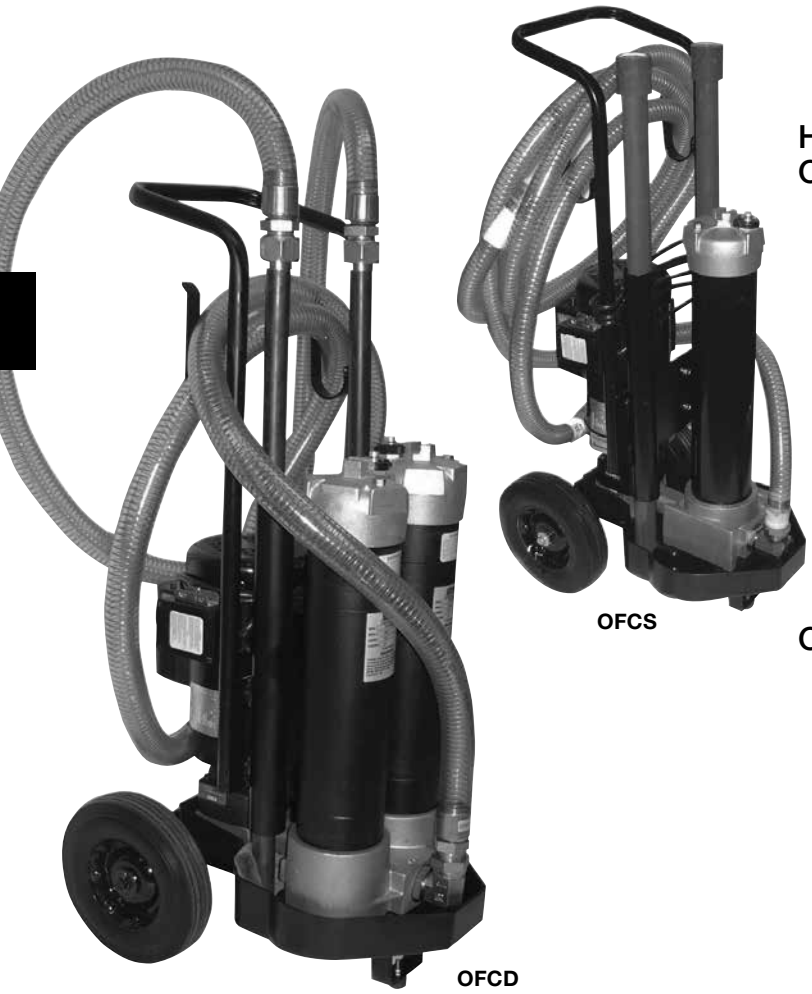
Dimensions



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

OFCS & OFCD Series

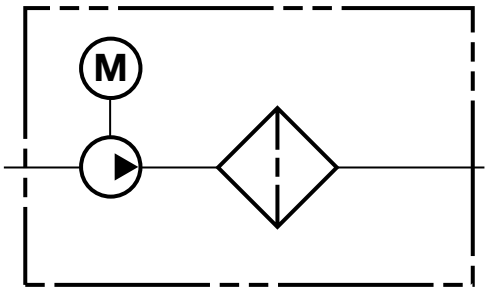
Single & Dual Stage Filtration Systems



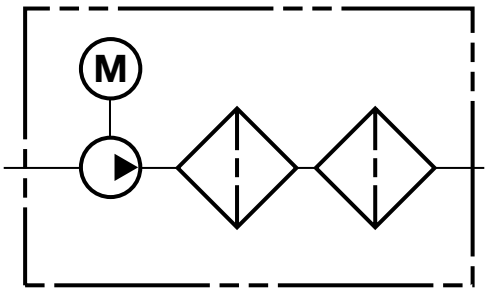
OFCS

OFCD

Hydraulic Schematics
OFCS Series



OFCD Series



Description

The OFCS and OFCD Series are compact, self-contained filtration system equipped with high efficiency, high capacity elements capable of removing particulate contamination and/or water quickly, conveniently and economically. It is perfect for cleaning up existing systems as well as for prefiltering new fluids, since new fluids often have contamination levels significantly higher than that recommended for most hydraulic systems.

HY-TRAX manual fluid sampling system: HYDAC now offers the HY-TRAX manual fluid sampling system as an additional option allowing for real-time fluid condition monitoring. ISO particle counts are visually displayed on the CS1000. Users will now know when they have reached their desired ISO contamination levels.

CSI-C-11: HYDAC also offers the CSI-C-11 Communication Interface for WLAN or LAN transmission of data and data storage capabilities.

The OFCS single filtration unit can remove either water or particulate contamination. The OFCD dual filtration unit can be used to remove both water and particulate contamination, or for staged particulate contaminant removal.

Features

- Modular base eliminates hoses between components and minimizes leakage
- Base-ported filter provides easy element service from the top cap
- Ten-foot hose and extension tubes included
  (1" dia. for 7 gpm; 1.25" dia. for 14 gpm)
- Drip pan catches oil before it falls to the ground
- Integral suction strainer protects pump

Applications

- Supplementing continuous filtration by system filters
- Cleaning up a hydraulic system following component replacement
- Filtering new fluid before it is put into service
- Transferring fluid from storage tanks and drums to system reservoirs

Technical Specifications

Flow Rating	7 gpm max (26.5 lpm) or 14 gpm max (53 lpm)	
Maximum Viscosity	1000 SUS (216 cSt) Higher viscosity version available.	
Hose Pressure Rating	30 psig (2.0 bar) @ 150°F (65.6°C) Full vacuum @ 150°F (65.6°C)	
Maximum Operating Temperature	-20° to 150°F (-29° to 65°C)	
Bypass Valve Setting	Cracking: 30 psi (2 bar)	
Material	Manifold and cap: Cast aluminum Element case: Steel	
Compatibility	All petroleum based hydraulic fluid. Contact factory for use with other fluids.	
Motor	115 V AC Single phase 3/4 hp (7 gpm) or 1-1/2 hp (14 gpm)	
Weight - lbs (kg) 7 gpm 14 gpm	OFCS 190 (86) 197 (89)	OFCD 220 (100) 227 (103)

PN#02075860 / 06.18 / FSP1710-1942

Model Code

OFCD __ - 27 - BN 10 - BN 10 - B - A - 14 - G2187

Series
- OFCS = Single Filter System
- OFCD = Dual Filter System

Pneumatic Option
- *(omit)* = Electric motor *(standard)*
- P = Pneumatic motor only

Element Length
- 1-09 = One 9” Element Supplied
- 2-09 = Two 9” Elements Supplied *(must be same micron rating)*
- 3-09 = Three 9” Elements Supplied *(must be same micron rating)*
- 18 = One 18” Element Supplied
- 27 = One 27” Elements supplied

Filter Media
- BN = Betamicron® Low Collapse
- AM* = Aquamicron® Water Removal
- G = Betamicron GeoSeal®

Filtration Rating *(BN only - AM has no rating) (microns)*
- 3, 5, 10, 20 = Betamicron® (BN/HC) Absolute Filtration Rating ($\beta_{x(c)} \geq 1000$)

Filter Media *(OFCD only)*
- BN = Betamicron® Low Collapse
- AM* = Aquamicron® Water Removal
- G = Betamicron GeoSeal®

Filtration Rating *(BN only - AM has no rating) (microns) (OFCD only)*
- 3, 5, 10, 20 = Betamicron® (BN/HC) Absolute Filtration Rating ($\beta_{x(c)} \geq 1000$)

Seals
- B = Buna N
- V = FPM

Voltage
- *(omit)* = 115 VAC 60HZ/1Phase
- A = 230 VAC 60HZ/3Phase
- B = 460 VAC 60HZ/3Phase
- C = 220 VAC 50HZ/1Phase
- D = 230 VAC 60HZ/1Phase

Pump Size
- 07 = 7 gpm
- 14 = 14 gpm

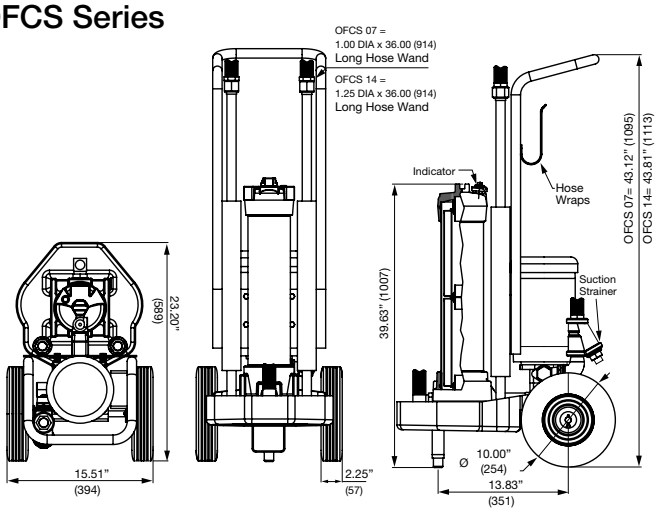
Options
- G2185 = for 14 gpm unit; up to 2500 SUS fluids; flow reduced to ~10 gpm
- G2187 = for 7 gpm unit; up to 2500 SUS fluids; flow reduced to ~3 gpm
- PC = Hytrax Contamination Monitoring Unit (will work with G2185 option for oils up to 2500SUS)
- CSI = CSI-C-11 Sensor Interface Option for data acquistion (only with PC option)
- CSI-W = CSI-C-11 Sensor Interface Option for data acquistion with AS1008 Water Saturation Sensor (only with PC option)

*Aquamicron media should be in the first filter housing followed by the BN media in the second housing.
For replacement element part numbers, please see Section E - REPLACEMENT ELEMENTS of this catalog.

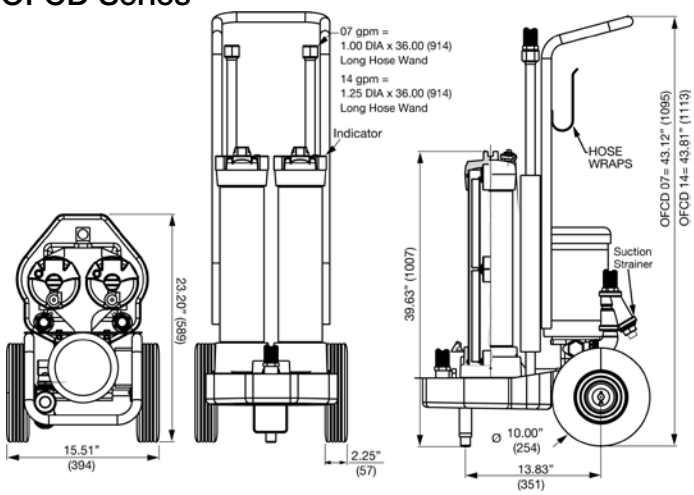
Model Codes Containing RED are non-standard items – Minimum quantities and longer lead times may apply - Contact HYDAC for information and availability

Dimensions

OFCS Series



OFCD Series

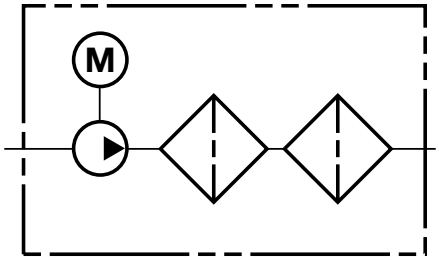


Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

OFCD-MV Series

Compact Dual Stage Filtration System up to 5,000 SUS

Hydraulic Schematic



Description

HYDAC's newest addition to the portable filtration carts offers the user the ability to filter up to 5,000 SUS fluids.

The OFCD-MV is a compact, self-contained filtration system equipped with high efficiency, high capacity elements capable of removing particulate contamination and/or water quickly, conveniently and economically. It is perfect for cleaning up existing systems as well as for prefiltering new fluids, since new fluids often have contamination levels significantly higher than that recommended for most hydraulic systems.

The OFCD-MV dual filtration unit can be used to remove both water and particulate contamination or for staged particulate contamination removal.

Features

- Ability to filter fluids having a viscosity up to 5,000 SUS
- Top-ported filter provides easy element service
- Ten-foot hose and extension tubes included

Applications

- Supplementing continuous filtration by the system's filters
- Cleaning up a hydraulic system following component replacement
- Filtering new fluid before it is put into service
- Transferring fluid from storage tanks and drums to system reservoirs

Technical Specifications

Flow Rating	up to 10 gpm (37.9 lpm)
Maximum Viscosity	up to 5,000 SUS (1079 cSt)
Hose Pressure Rating	30 psig (2.0 bar) @ 150°F (65°C) Full vacuum @ 150°F (65°C)
Maximum Operating Temperature	-20° to 150°F (-29° to 65°C)
Bypass Valve Setting	Cracking: 30 psi (2 bar)
Material	Manifold and Cap: Cast Aluminum Element case: Steel
Compatibility	All petroleum based hydraulic fluid. Contact factory for use with other fluids
Motor	1.0HP 110VAC/60HZ TEFC (6gpm)
	1.5HP 110VAC/60HZ (10gpm)

Model Code

OFCD-MV - 18 - G 10 - G 10 - V - 6

Series
OFCD-MV = Dual Filter System

Element Length
18 = One 18” element supplied per housing

Filter Media
G = Betamicron GeoSeal®
GAM* = Aquamicron® Water Removal

Filtration Rating *(G only - GAM has no rating) (microns)*
3
5
10
20
Betamicron® (BN/HC)
Absolute Filtration Rating
($ß_{x(c)} \geq 1000$)

Filter Media
G = Betamicron GeoSeal®
GAM* = Aquamicron® Water Removal

Filtration Rating *(G only - GAM has no rating) (microns)*
3
5
10
20
Betamicron® (BN/HC)
Absolute Filtration Rating
($ß_{x(c)} \geq 1000$)

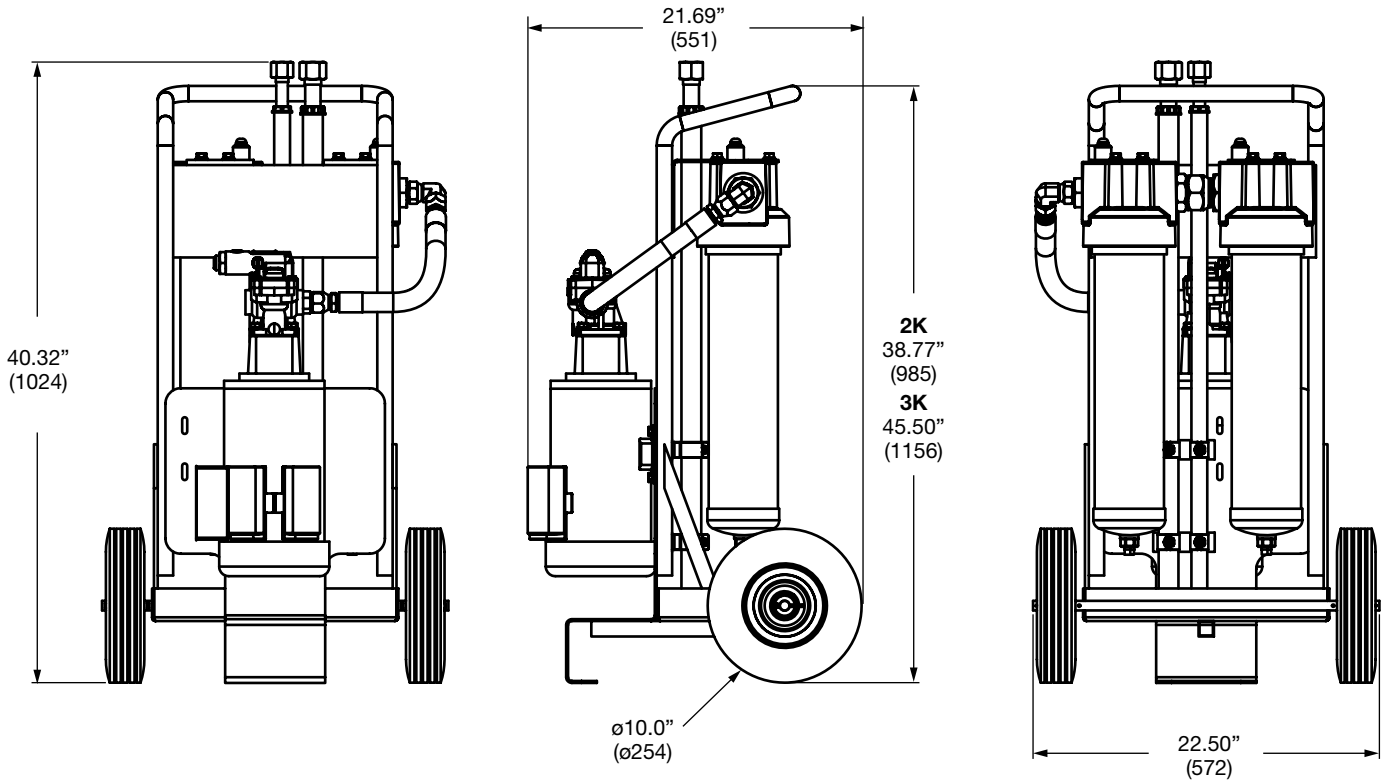
Seals
V = FPM

Pump Size *(gpm)*
6 = 6 gpm
10 = 10 gpm

*Aquamicron media should be in the first filter housing followed by the Betamicron media in the second housing.
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

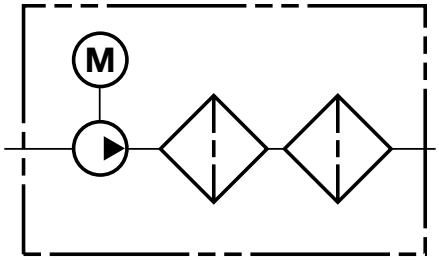


Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

OFCD-HV Series

Compact Dual Stage Filtration System for High Viscosity

Hydraulic Schematic



Description

A portable filtration cart that offers the user the ability to filter high viscosity fluids.

The OFCD-HV is a compact, self-contained filtration system equipped with high efficiency, high capacity elements capable of removing particulate contamination and/or water quickly, conveniently and economically. It is perfect for cleaning up existing systems as well as for prefiltering new fluids, since new fluids often have contamination levels significantly higher than that recommended for most hydraulic systems.

The OFCD-HV dual filtration unit can be used to remove both water and particulate contamination or for staged particulate contamination removal. Additional features include a modular base that eliminates hoses and fittings between components, a drip pan and easier element servicing.

Technical Specifications

Flow Rating	Maximum 3 gpm (11.4 lpm)
Maximum Viscosity	15,000 SUS (3236 cSt)
Hose Pressure Rating	30 psig (2.0 bar) @ 150°F (65°C) Full vacuum @ 150°F (65°C)
Maximum Operating Temperature	-20° to 150°F (-29° to 65°C)
Bypass Valve Setting	Cracking: 40 psi (2.8 bar)
Material	Manifold and Cap: Cast Aluminum Element case: Steel
Compatibility	All petroleum based hydraulic fluid. Contact factory for use with other fluids
Motor	115V AC Single phase, 1.5 HP

Features

- An integrated lifting eye option for lifting the OFCD-HV
- Ability to filter fluids having a viscosity up to 15,000 SUS
- Base-ported filter provides easy element service from the top cap
- Ten-foot hose and extension tubes included
- Dip pan catches oil before it falls to the ground

Applications

- Cleaning high viscosity fluids used in wind applications
- Supplementing continuous filtration by the system's filters
- Cleaning up a hydraulic system following component replacement
- Filtering new fluid before it is put into service
- Transferring fluid from storage tanks and drums to system reservoirs

PN#02075860 / 06.18 / FSP1710-1942

Model Code

OFCD-HV - 27 - BN 10 - BN 10 - B - G2502

Series
OFCD-HV = Dual Filter System

Element Length
18 = One 18” element supplied per housing
27 = One 27” elements supplied per housing

Filter Media
BN = Betamicron® Low Collapse
AM* = Aquamicron® Water Removal
G = Betamicron GeoSeal®

Filtration Rating *(BN only - AM has no rating) (microns)*
3
5
10
20
Betamicron® (BN/HC)
Absolute Filtration Rating
($\beta_{x(c)} \geq 1000$)

Filter Media
BN = Betamicron® Low Collapse
AM* = Aquamicron® Water Removal

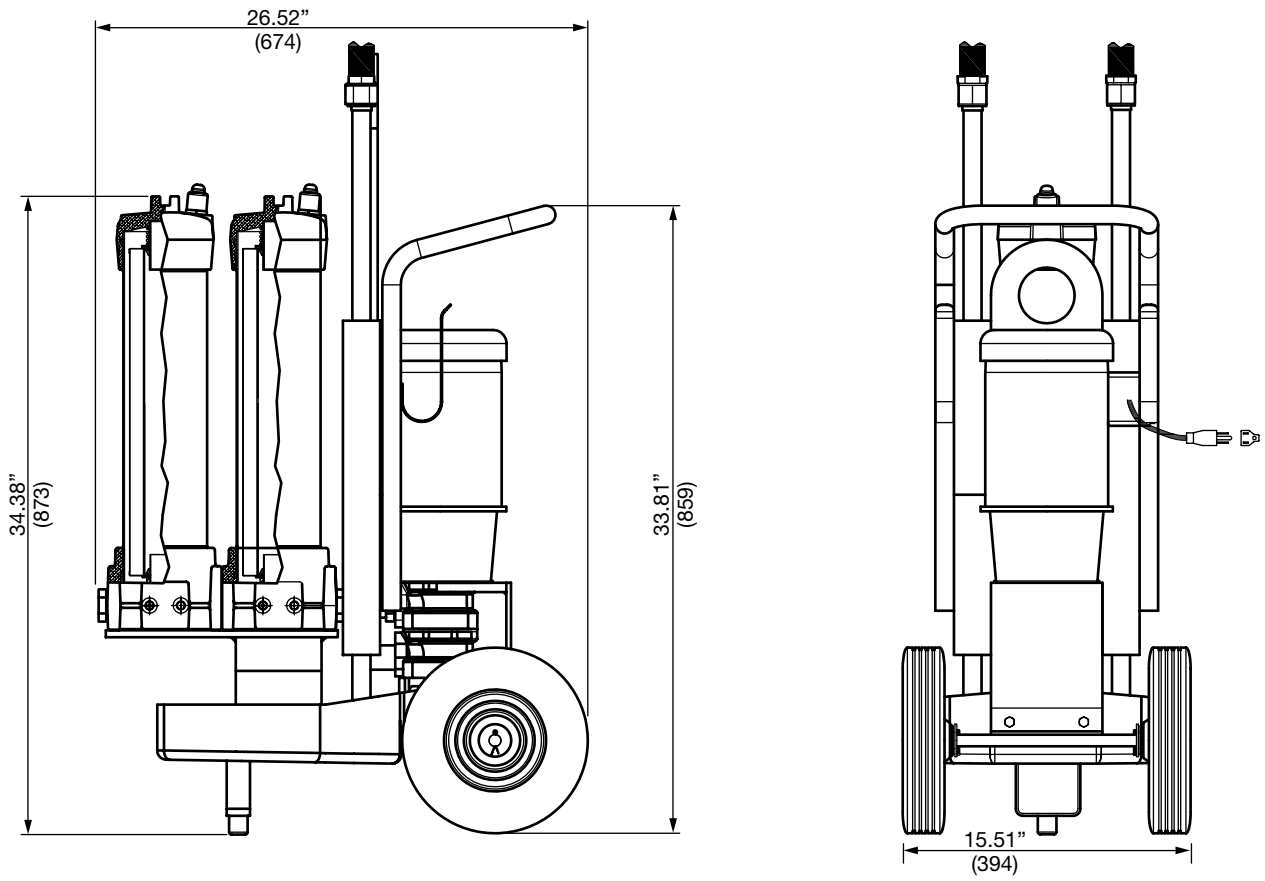
Filtration Rating *(BN only - AM has no rating) (microns)*
3
5
10
20
Betamicron® (BN/HC)
Absolute Filtration Rating
($\beta_{x(c)} \geq 1000$)

Seals
B = Buna N
V = FPM

Options
G2502 = for fluids up to 15,000 SUS at 3 gpm
G2538 = for fluids up to 15,000 SUS at 3 gpm, integrated, balanced lifting eye

*Aquamicron media should be in the first filter housing followed by the BN media in the second housing.
For replacement element part numbers, please see Section E - REPLACEMENT ELEMENTS of this catalog.

Dimensions



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

OFS Series

Filtration Station

Description

The HYDAC Filtration System (OFS) is capable of flushing, filtering, and monitoring ISO cleanliness with user-defined, automatic features. **The OFS is designed to transfer fluid through two filters in series for staged particulate or water/particulate removal.** Both filters are top-loading and include element indicators in the cap. A particle monitor reads samples from the pump discharge and displays ISO contamination codes on the control panel. The monitor allows the user to input the desired ISO cleanliness codes for the fluid. In auto mode, the system will run until the cleanliness codes are reached. Upon reaching the codes, the pump will stop and the cycle complete light will come on. When in manual mode, the system will run continuously and display the ISO codes. A water sensor is included for providing the water saturation of the fluid, both displayed on the control panel.

Features

- Real time monitoring of ISO cleanliness classes
- Automatic shutdown when user defined ISO codes are reached
- USB port allows the ISO code data to be downloaded for further processing and/or printing
- 30 mesh suction strainer and 230 micron filter and included to protect the particle monitor from clogging
- The AS 1000 allows real-time water saturation and temperature values of the fluid to be displayed
- Bypass valve so cart can be used as a transfer cart
- Single lift point
- Plastic removable drip pan

Applications

- **In-Plant Service** – Filter to desired cleanliness levels and extend component life
- **Mobile Dealer Networks** – Aid in certified re-builds, service maintenance contracts and total maintenance & repair programs
- **Original Equipment Manufacturer** – Filter to required roll-off cleanliness levels
- **Lubricant Reclamation/Recycling** – Clean oil to extend oil life and reduce hazardous waste

Technical Specifications

Flow Rating	9 gpm (34 lpm) *(AC option)*; 3-8 gpm (11.4 to 30.3 lpm) *(DC option)*
Motor	1 1/2 HP, 115/220VAC motor *(AC option)* 1 HP, 90 V DC variable speed *(DC option)*
Viscosity	1000 SUS (230cSt)
Operating Temperature	-20° F to 150° F (-29° C to 65° C)
Bypass Valve Setting	Cracking: 30 psi (2 bar) x 2
Compatibility	All petroleum based hydraulic fluid. *(Contact factory for use with other fluids.)*
Element Change Clearance	18” or 27” *(depending on model configuration)*
Weight	245 lbs (112 kg)

PN#02075860 / 06.18 / FSP1710-1942

Model Code

OFS - A - 1 - 27 - BN - 10 - BN - 01 - V - 9 - W

Series
OFS = Filtration Station

Voltage
A = 120 VAC 60 Hz 1 Ph
B = 220 VAC 60 Hz 1 Ph
C = 220 VAC 50 Hz 1 Ph
(A plug is not provided for these options.)

Number of Elements *(18" and 27" housings only)*
1 = Element length must be either 18" or 27"
2 = Two 9" elements per 18" housing
3 = Three 9" elements per 27" housing

Element Length *(18" and 27" housings only)*
09 = Two 9" elements per 18" housing
Three 9" elements per 27" housing
18 = One 18" element per 18" housing
27 = One 27" element per 27" housing

Element Media
BN = Betamicron®
AM* = Aquamicron®

Filtration Rating *(BN only - AM has no rating) (microns)*
01, 03, 05, 10, 25

Element Media
BN = Betamicron®
AM* = Aquamicron®

Filtration Rating *(BN only - AM has no rating) (microns)*
01, 03, 05, 10, 25

Seals
V = Fluoroelastomer (FPM)
B = Buna N

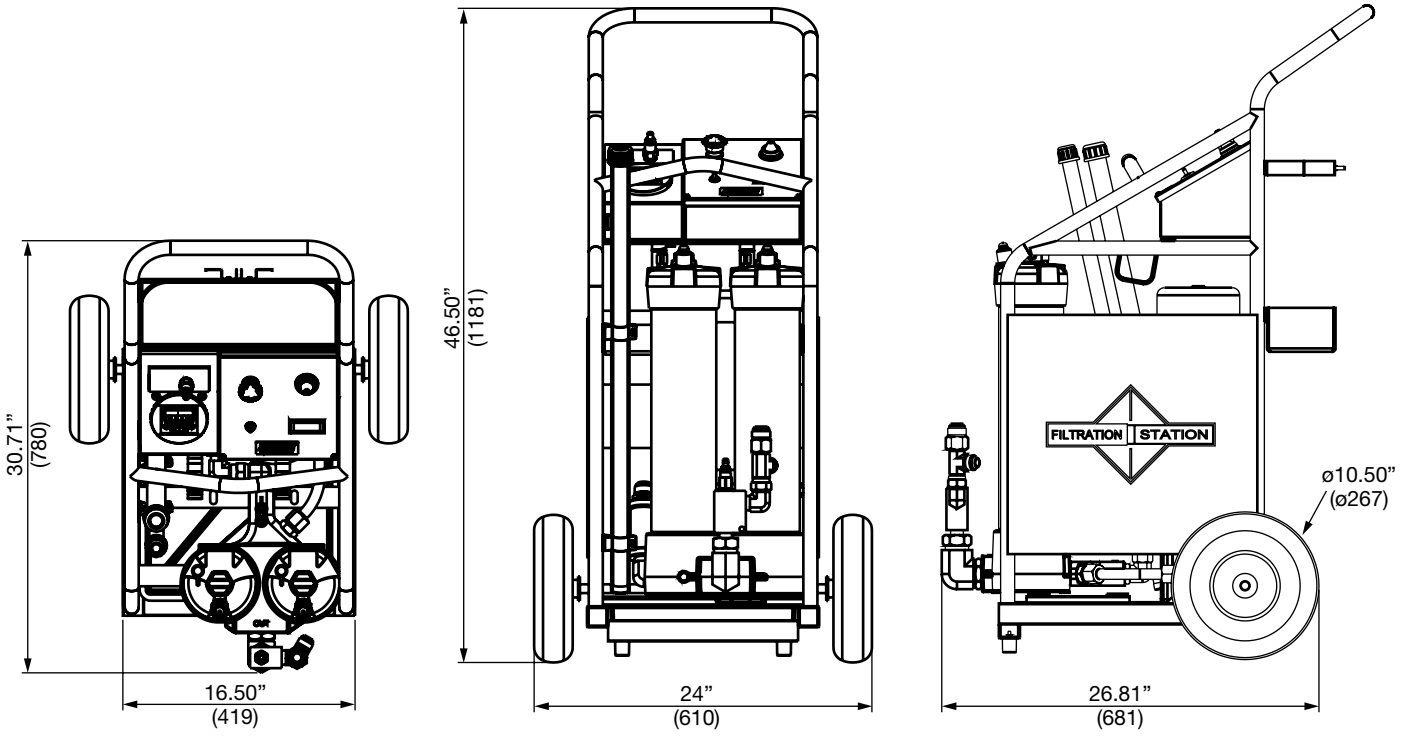
Pump Size *(gpm)*
9 = Fixed Speed Drive, Gear Pump, 9 gpm
DC = Variable Speed Drive, Gear Pump, 3 to 8 gpm

Options
W = AS1000 Water Sensor *(standard on all units)*

*Aquamicron media should be in the first filter housing followed by the BN media in the second housing.
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.

OFS-AM Series

Filtration Station for Asset Management

Asset Management

- Real Time data displays cleanliness and water saturation
- Selectable ISO target levels
- Only 3 entry fields needed to start the system and record data

Description

The Offline Filtration Station for Asset Management (OFS-AM) is a complete fluid management system designed to manage fluid cleanliness, so that the greatest return of that asset is achieved. The OFS-AM is an all-in one system that monitors your fluid condition, filters out contaminants and tracks all the necessary data needed for trend analysis and record keeping by asset number or name. The on-board ruggedized PC records the ISO code and water saturation level, provides a graphical display of the data in real time and shuts down when the selected cleanliness level is reached. Each asset file created automatically is separately labeled and summarized to quickly inform maintenance on the condition of the fluid, and each run of the fluid is logged by date and time, providing a complete history of the equipment's fluid.

Features

- Complete tracking of hydraulic fluid conditions by equipment name
- Provides automatic record-keeping, trending and analysis of the fluid condition per fluid power system asset
- Ideal for managing multiple equipment assets
- Automatically shuts down when the selected ISO cleanliness is reached
- Dual staged filters for both water and/or particulate contamination removal
- Bypass valve allows the OFS-AM to be used as a transfer cart

Applications

- **In-Plant Service** – Filter to desired cleanliness levels and extend component life
- **Mobile Dealer Networks** – Aid in certified re-builds, service maintenance contracts and total maintenance & repair programs

Technical Specifications

Flow Rating	5 gpm (19 L/min)
Motor	1.5 HP - 15 FLA at 120 volts AC
Viscosity	up to 1000 SUS (216 cSt)
Operating Temp.	-20°F to 150°F (-29°C to 65°C)
Bypass Valve Setting	Cracking: 30 psi (2 bar) x 2
Compatibility	All petroleum based hydraulic fluid compatible with Viton®
Weight	200 lbs (90.7 kg) approx.
Dimensions	26.6" x 25.25" x 50.0"(675 x 641 x 1270 mm)

PN#02075860 / 06.18 / FSP1710-1942

Model Code

OFS-AM - 1 - 18 G10 - G05

Series
OFS-AM = Filtration Station for Asset Management

Number of Elements
1 = Element length must be either 18” or 27”

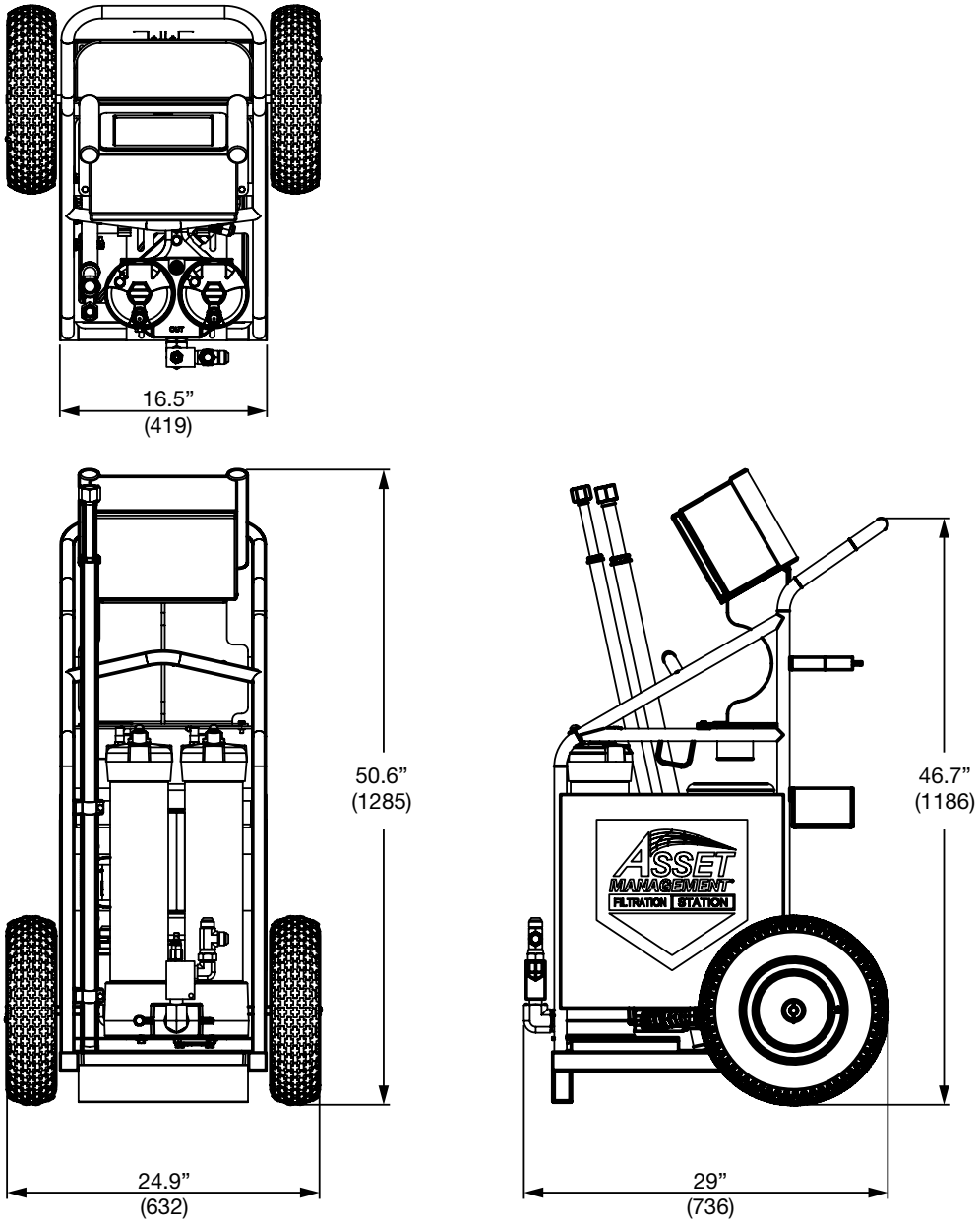
Element Length
18 = One 18” element supplied per housing
27 = One 27” element supplied per housing

Element Size *(BN only - AM has no rating) (microns)*
G03, G05, G10 = Betamicron GeoSeal® Absolute Filtration Rating ($\beta_{x(c)} \geq 1000$)
GAM* = Aquamicron GeoSeal® Water Removal

Element Size *(BN only - AM has no rating) (microns)*
G03, G05, G10 = Betamicron GeoSeal® Absolute Filtration Rating ($\beta_{x(c)} \geq 1000$)
GAM* = Aquamicron GeoSeal® Water Removal

*Aquamicron media should be in the first filter housing followed by the BN media in the second housing.
For replacement element part numbers, please see Section E - REPLACEMENT ELEMENTS of this catalog.

Dimensions



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

OF5HS & OF5HD Series

Single & Dual Stage Kidney Loop Systems

OF5HD

OF5HS

Description

HYDAC's off-line Kidney Loop System is a stationary version of the mobile filtration system (OFCS & OFCD). It is a compact, self-contained filtration system equipped with high efficiency, high capacity elements capable of removing particulate contamination and/or water quickly, conveniently and economically.

HY-TRAX manual fluid sampling system: HYDAC now offers the HY-TRAX manual fluid sampling system as an additional option allowing for real-time fluid condition monitoring. ISO particle counts are visually displayed on the CS1000. Users will now know when they have reached their desired ISO contamination levels.

CSI-C-11: HYDAC also offers the CSI-C-11 Communication Interface for WLAN or LAN transmission of data and data storage capabilities.

Features

- Modular base eliminates connections between components and minimizes leakage
- Base-ported filter provides easy element service from the top cap
- Visual Dirt Alarm® indicates when filter element needs to be changed
- Two 7/16 – 20 UNF sampling port included on all models

Applications

- Supplementing in-line filtration by system filters when adequate turnover cannot be attained
- Large volume systems requiring multiple filters in different locations
- Cleaning up a hydraulic system following component replacement

Technical Specifications

Flow Rating	7 gpm max (26.5 lpm) or 14 gpm max (53 lpm)
Maximum Viscosity	1000 SUS (216 cSt) Higher viscosity version available.
Maximum Operating Temperature	-20° to 150°F (-29° to 65°C)
Bypass Valve Setting	Cracking: 30 psi (2 bar)
Material	Manifold and cap: Cast aluminum Element case: Steel
Compatibility	All petroleum based hydraulic fluid. Contact factory for use with other fluids.
Motor	115 V AC Single phase 3/4 hp (7 gpm) or 1-1/2 hp (14 gpm)
Weight	OF5HS-1: 101 lb (45.9 kg) OF5HS-2: 112 lb (50.9 kg) OF5HS-3: 123 lb (55.9 kg) OF5HD-1: 117 lb (53.2 kg) OF5HD-2: 139 lb (63.2 kg) OF5HD-3: 161 lb (73.2 kg)

Model Code

OF5HD - 27 - BN 10 - BN 10 - B - A - 14 -

Series
- OF5HS = Single Filter System
- OF5HD = Dual Filter System

Element Length
- 1-09 = One 9” Element Supplied
- 2-09 = Two 9” Elements Supplied *(must be same micron rating)*
- 3-09 = Three 9” Elements Supplied *(must be same micron rating)*
- 18 = One 18” Element Supplied
- 27 = One 27” Element supplied

Element Media
- BN = Betamicron® AM* = Aquamicron® G = Betamicron GeoSeal®

Filtration Rating *(BN only - AM has no rating) (microns)*
- 3, 5, 10, 25

Element Media *(OF5HD only)*
- BN = Betamicron® AM* = Aquamicron® G = Betamicron GeoSeal®

Filtration Rating *(BN only - AM has no rating) (microns)*
- 3, 5, 10, 25

Seals
- B = Buna N V = FPM

Voltage
- *(omit)* = 115 VAC 60HZ/1Phase
- A = 230 VAC 60HZ/3Phase C = 220 VAC 50HZ/1Phase
- B = 460 VAC 60HZ/3Phase D = 230 VAC 60HZ/1Phase

Pump Size
- 07 = 7 gpm 14= 14 gpm

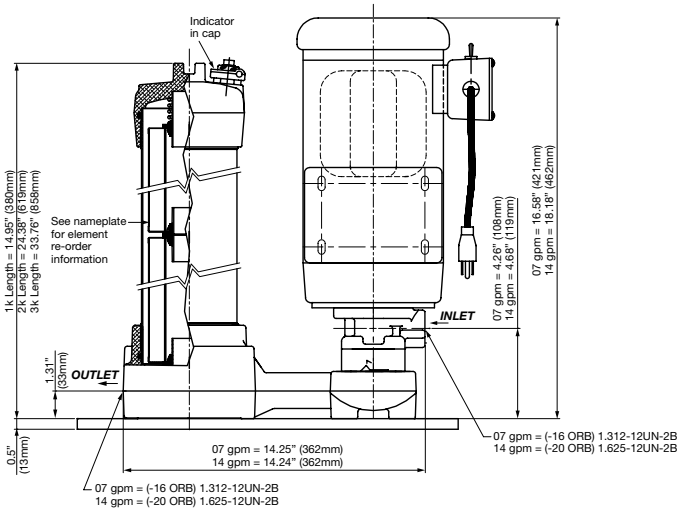
Options
- G2185 = for 14 gpm unit; up to 2500 SUS fluids; flow reduced to ~10 gpm
- G2187 = for 7 gpm unit; up to 2500 SUS fluids; flow reduced to ~3 gpm
- PC = HyTRAX Contamination Monitoring System
- CSI = CSI-C-11 Sensor Interface Option for data acquistion (only with PC option)
- CSI-W = CSI-C-11 Sensor Interface Option for data acquistion with AS1008 Water Saturation Sensor (only with PC option)

NOTE: Contact factory if EPR seals are required.
*Aquamicron media should be in the first filter housing followed by the BN media in the second housing.
For replacement element part numbers, please see Section E - REPLACEMENT ELEMENTS of this catalog.

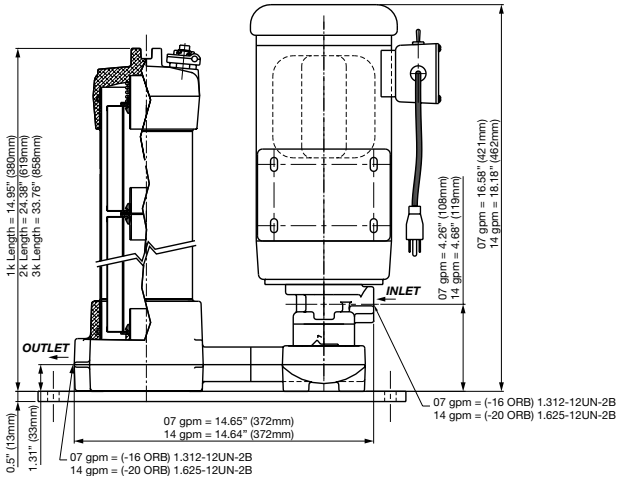
Model Codes Containing RED are non-standard items – Minimum quantities and longer lead times may apply - Contact HYDAC for information and availability.

Dimensions

OF5HS



OF5HD



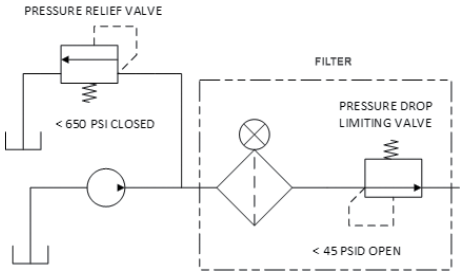
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

MCO Series

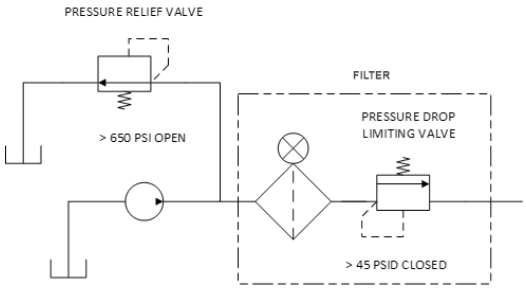
Fail-Safe In-Line Mechanical Clean Oil Dispensing Filter

Hydraulic Schematic

Normal Operation



"Bypass" Operation



Description

- Fail-safe In-Line Mechanical Clean Oil Dispensing Filter rated for 900 psi and 30 gpm
- Ideal for dispensing applications where clean fluid delivery is a must
- Dispensed fluid is filtered or it is returned to the tank
- Field proven to deliver ISO cleanliness levels of 18/15/13 or better in a single pass
- Series filtration with MCO2 and MCO3 filters

Features

- Housings incorporate a non-bypassing but low cost 150 psi ßeta X ≥ 1000 rated element
- Low element cost is achieved through the use of a unique proportional valve that, when used with an external relief valve, redirects the flow back to the tank as element DP increases
- As the element loads, the element service life indicator, located on the housing, **indicates** that service is required before the fluid flow begins to return to tank. Unfiltered “dirty” oil cannot pass the filter even if the service life indicator is ignored.
- Fluid Cleanliness Sampling Ports provided for proof of filtration into the system being filled
- Easy to install and designed with top service for easy element service

Applications

- Mobile equipment
- Cleaning up a hydraulic system following component replacement
- Filtering new fluid before it is put into service
- Transferring fluid from storage tanks and drums to system reservoirs

Technical Specifications

Flow Rating	Up to 30 gpm (113 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure	900 psi (60 bar)
Min. Yield Pressure	3200 psi (220 bar), per NFPA T2.6.1
Rated Fatigue Pressure	750 psi (52 bar) per NFPA T2.6.1-R1-2005
Temp. Range	-20°F to 225°F (-29°C to 107°C)
Bypass Setting	Non-Bypassing System
Porting Head & Cap Element Case	Cast Aluminum Steel
Weight of MCO-1K Weight of MCO-2K Weight of MCO-3K	21 lbs. (9.5 kg) 32 lbs. (14.5 kg) 43 lbs. (19.5 kg)
Element Change Clearance	17.50” (445 mm) for KK; 26.5” (673 mm) for 27K

Model Code

MCO - 3 - 27 - G05 - G03 - G03 - B - S - D5 - RV

Series
MCO = Mechanical Clean Oil Filter System

Number of Housings
1, 2, 3

Element Length
27

Element Micron Rating First Filter *(MCO1, MCO2, MCO3)*
G01 = 1 µm Z-Media® *(synthetic)*
G03 = 3 µm Z-Media® *(synthetic)*
G05 = 5 µm Z-Media® *(synthetic)*
G010 = 10 µm Z-Media® *(synthetic)*
G025 = 25 µm Z-Media® *(synthetic)*

Element Micron Rating Second Filter (MCO2, MCO3)
G01 = 1 µm Z-Media® *(synthetic)*
G03 = 3 µm Z-Media® *(synthetic)*
G05 = 5 µm Z-Media® *(synthetic)*
G10 = 10 µm Z-Media® *(synthetic)*
G25 = 25 µm Z-Media® *(synthetic)*

Element Micron Rating Third Filter (MCO3 Only)
G01 = 1 µm Z-Media® *(synthetic)*
G03 = 3 µm Z-Media® *(synthetic)*
G05 = 5 µm Z-Media® *(synthetic)*
G10 = 10 µm Z-Media® *(synthetic)*
G25 = 25 µm Z-Media® *(synthetic)*

Seal Material
V = Viton®

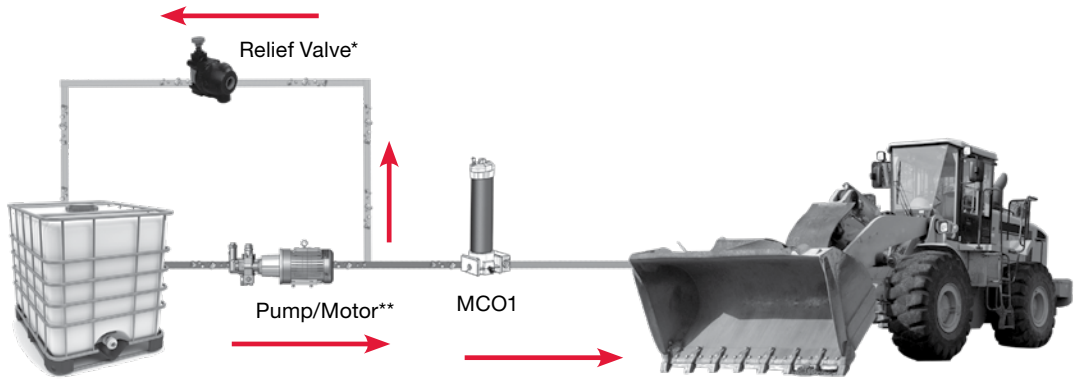
Porting
S = SAE 20
P = 1 1/4 NPTF

Indicator Options *(Only for outlet block)*
D5 = Visual Pop-up
MS10 = Electrical with DIN Connector *(male end only)*
MS11 = Electrical with 12ft. 4-conductor wire
MS14 = Supplied with 5-pin Brad Harrison make connector and light (male end)

Relief Valve
Omit = Customer Supplied
RV = HYDAC Relief Valve (set at 650 psi)*

*The “RV” option is supplied as a loose item. Users have to install the relief valve within their Hydraulic System.

Application Circuit

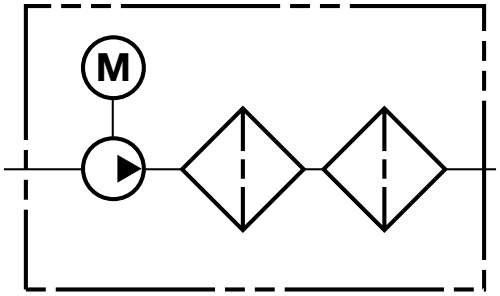


* Product not included in base model pricing.
** Product is customer supplied.

OF5HD-HV Framed Series

Compact Dual Stage Filtration System for High Viscosity

Hydraulic Schematic



Description

HYDAC's newest addition to the off-line kidney loop family offers the user the ability to filter high viscosity fluids - up to 15,000 SUS.

The OF5HD-HV is a compact, self-contained filtration system equipped with high efficiency, high capacity elements capable of removing particulate contamination and/or water quickly, conveniently and economically. It is perfect for cleaning up existing systems as well as for prefiltering new fluids, since new fluids often have contamination levels significantly higher than that recommended for most hydraulic systems.

The OF5HD-HV dual filtration unit can be used to remove both water and particulate contamination or for staged particulate contamination removal. Additional features include a modular base that eliminates hoses and fittings between components with easy to change element design.

Features

- Rugged, protective frame with integrated lifting eyes for lifting the filter skid via crane or hoist
- Ability to filter fluids having a viscosity up to 15,000 SUS
- Modular base eliminates hoses between components and minimizes leakage
- Base-ported filter provides easy element service from the top cap
- 18-inch housing is standard

Applications

- Compact design in protective frame allows for easy transport uptower in wind applications
- Supplementing continuous filtration by the system's filters
- Cleaning up a hydraulic system following component replacement
- Filtering new fluid before it is put into service
- Transferring fluid from storage tanks and drums to system reservoirs

Technical Specifications

Flow Rating	Maximum 3 gpm (11.4 lpm)
Maximum Viscosity	15,000 SUS (2150 cSt)
Maximum Operating Temperature	-20° to 150°F (-29° to 65°C)
Bypass Valve Setting	Cracking: 40 psi (2.8 bar)
Material	Manifold and Cap: Cast Aluminum Element case: Steel Protective Frame: Tubular Steel
Compatibility	All petroleum based hydraulic fluid. Contact factory for use with other fluids
Motor	115V AC Single phase, 1.5 HP

PN#02075860 / 06.18 / FSP1710-1942

Model Code

OF5HD-HV - 18 - G10 - G05 - V - G2820

Series
OF5HD-HV = Dual Filter System

Element Length
18 = One 18” Element supplied per housing

Element Size *(BN only - AM has no rating) (microns)*
G03, G05, G10 = Betamicron® Absolute Filtration Rating ($\beta_{x(c)} \geq 1000$)
GAM* = Aquamicron® Water Removal

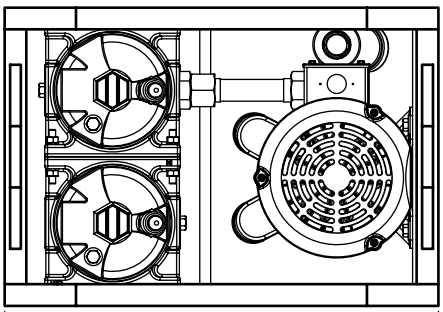
Element Size *(BN only - AM has no rating) (microns)*
G03, G05, G10 = Betamicron® Absolute Filtration Rating ($\beta_{x(c)} \geq 1000$)
GAM* = Aquamicron® Water Removal

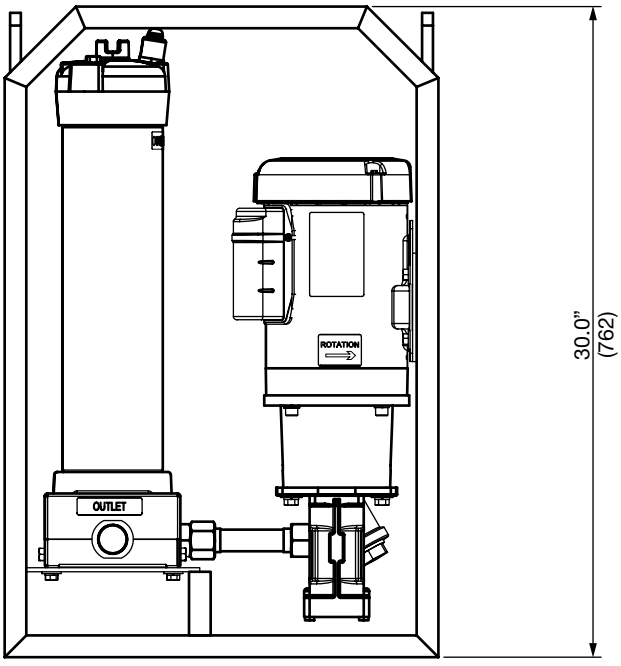
Seals
V = FPM

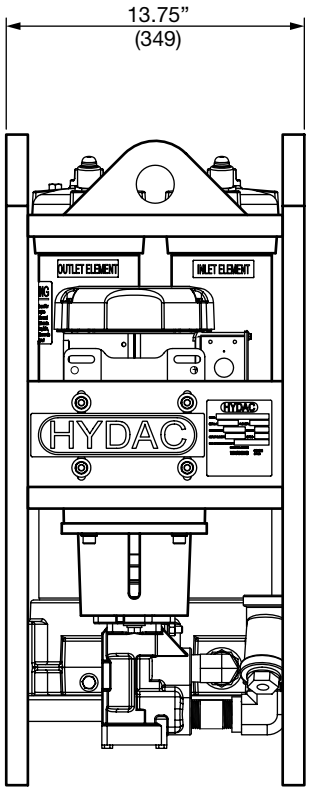
Options
G2820 = High Viscosity Filter Skid with rugged protective frame

*Aquamicron media should be in the first filter housing followed by the BN media in the second housing.
For replacement element part numbers, please see Section E - REPLACEMENT ELEMENTS of this catalog.

Dimensions







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

OFAS & OFAD Series

Single & Dual Stage Air-Operated Kidney Loop Systems

OFAS

Description

HYDAC offers a kidney loop filtration system with a pneumatic motor in place of the standard electric motor. The pneumatic motor offers the same flow capability using the same components, but without the need for an electrical outlet. This provides a major advantage in the application of this unit. With no need for an electrical outlet, it is more portable than the standard electric-motored skids and carts.

Because most trucks and industrial machinery are already equipped with an air compressor, a simple connection to the 1/4" NPT port will easily power the 1.5 HP (or 4.0 HP) motor. At 70 psi, and 2000 rpm, this motor consumes less than 40 cfm (70 cfm for the 4.0HP motor) of compressed air. Because no electricity is used, the pneumatic motor is ideal for working in hazardous environments such as mines.

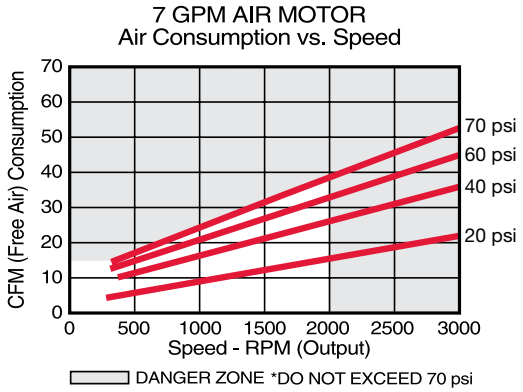
Applications

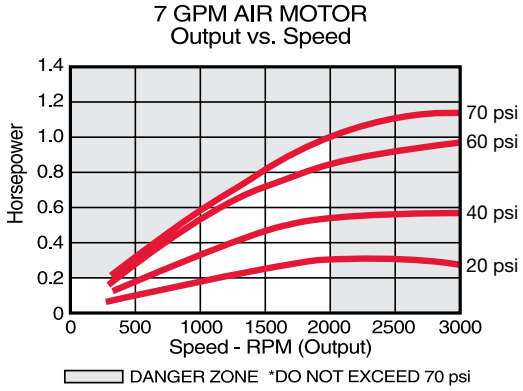
- Supplementing in-line filtration by system filters when adequate turnover cannot be attained
- Large volume systems requiring multiple filters in different locations
- Cleaning up a hydraulic system following component replacement
- Field applications on service trucks

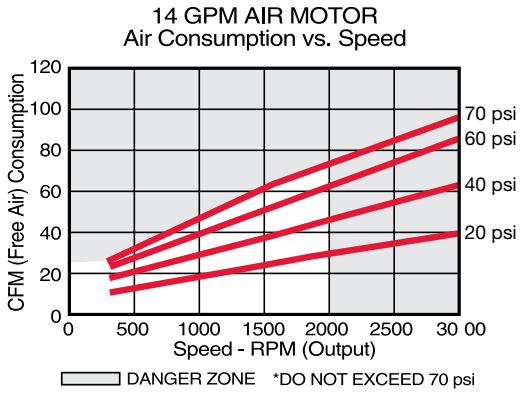
Technical Specifications

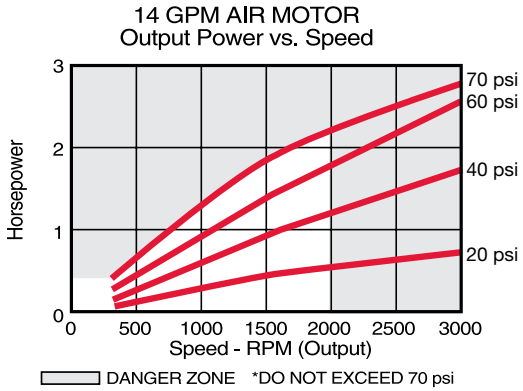
Flow Rating	7 gpm (26.5 L/min) max and 14 gpm (53.0 L/min) max
Maximum Viscosity	1000 SUS (216 cSt) Higher viscosity version available. Contact factory for details
Maximum Operating Temperature	-20° to 150°F (-29° to 65°C) For higher temperature applications contact factory.
Bypass Valve Setting	Cracking: 30 psi (2 bar)
Material	Manifold and cap: Cast aluminum Element case: Steel
Compatibility	All petroleum based hydraulic fluid. Contact factory for use with other fluids.
Element Change Clearance	9", 18" or 27" *(depending on model configuration)*

Performance









Note: Performance data represents a 4-vane model with no exhaust restriction.

Model Code

OFAD - 27 - BN 10 - BN 10 - B - 14

Series
- OFAS = Air Operated Single Filter System
- OFAD = Air Operated Dual Filter System

Element Length
- 1-09 = One 9” Element Supplied
- 2-09 = Two 9” Elements Supplied *(must be same micron rating)*
- 3-09 = Three 9” Elements Supplied *(must be same micron rating)*
- 18 = One 18” Element Supplied
- 27 = One 27” Element supplied

Element Media
- BN = Betamicron®
- AM* = Aquamicron®
- G = Betamicron GeoSeal®

Filtration Rating *(BN only - AM has no rating) (microns)*
- 3, 5, 10, 20

Element Media *(OFAD only)*
- BN = Betamicron®
- AM* = Aquamicron®
- G = Betamicron GeoSeal®

Filtration Rating *(BN only - AM has no rating) (microns)*
- 3, 5, 10, 20

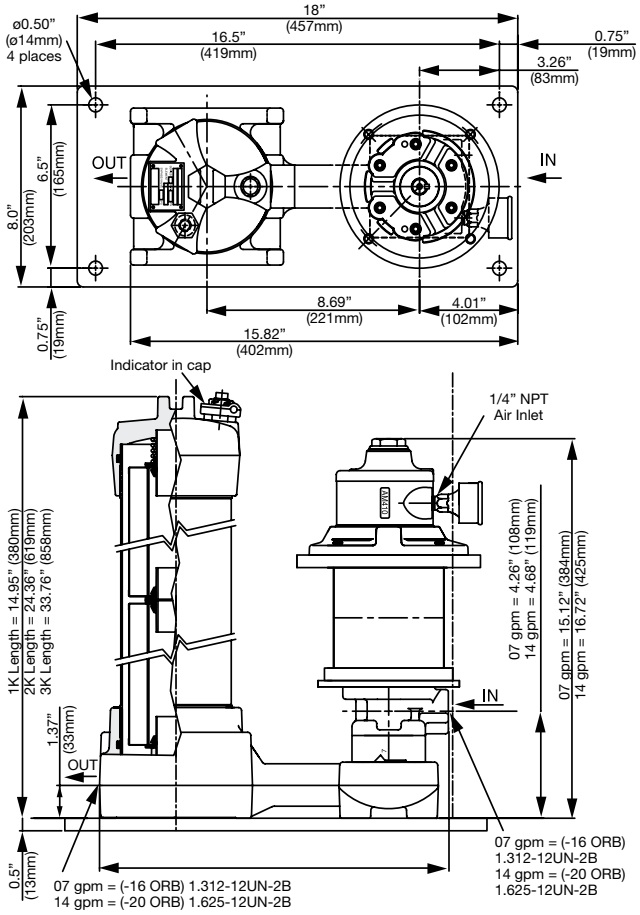
Seals
- B = Buna N

Pump Size
- 07 = 7 gpm
- 14 = 14 gpm

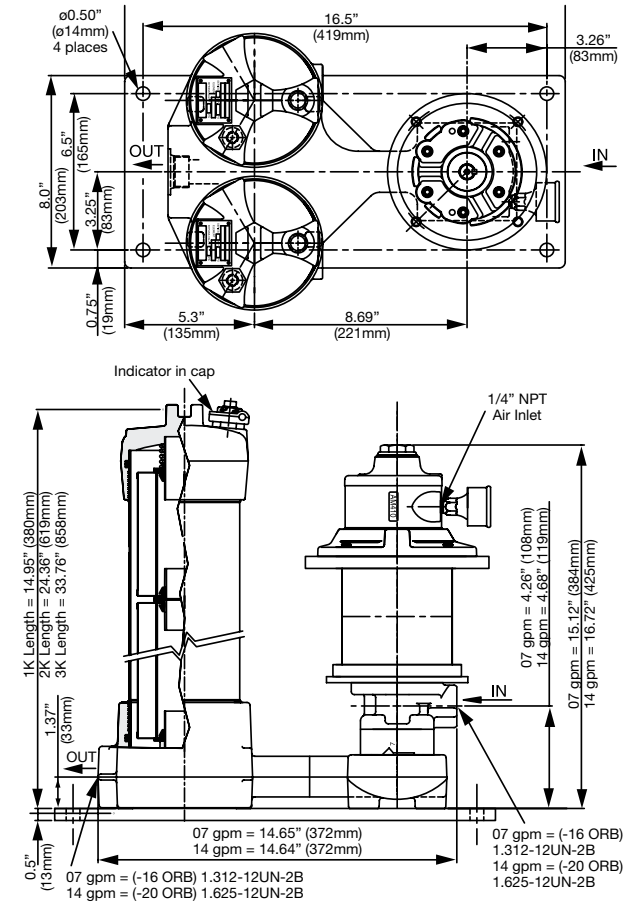
*Aquamicron media should be in the first filter housing followed by the BN media in the second housing.
For replacement element part numbers, please see Section E - REPLACEMENT ELEMENTS of this catalog.

Dimensions

OFAS



OFAD

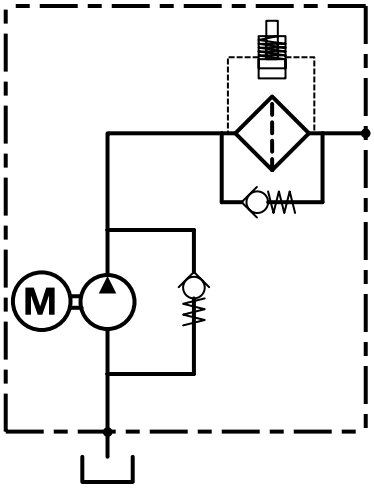


Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

LSN Series

Lube Skid Kidney Loop Systems

Hydraulic Schematic



Description

HYDAC's new off-line filter system has been designed to be a modular system to fit most hydraulic, lubrication and fluid transfer applications as a kidney loop system. The LSN is a compact, stand-alone pump/motor/filter configuration for removing particulate contamination. This off-line system can be used to supplement in-line filters when adequate turnover cannot be achieved in the system.

Features

- Modular hydraulic accessories
- Multiple filtration options (FLND, LPF, LF)
- Built in clogging indicator
- AC Motors available in 208V, 230V, 460V and 575V
- 50/60 HZ
- Gear pump
- Flows available from 1.2 gpm (4.5 lpm) up to 45.2 gpm (171.1 lpm)
- Standard Viscosity range up to 1,000 SUS (216 cSt)
- Designed for up to 22,720 SUS (5000 cSt) viscosity (optional)
- Condition monitoring and control panels available

Applications

- Supplemental filtration
- Bulk oil storage | transfer
- System flushing
- In-plant maintenance
- Recycling
- Injection molding machines
- Machine tools
- Gear boxes
- Mobile equipment
- Filtration of fluids for intermittently operated hydraulic systems and test stands

Technical Specifications

Mounting Position:	Vertical
Operating Pressure	145 psi (10 bar) standard available up to 217 psi (15 bar)
Filter Bypass:	44 psi (3 bar) and 87 psi (6 bar)
Pressure Drop:	14.5 psi (1 bar)
Fluid Temperature:	46°F (8°C) to 176°F (80°C)
Ambient Temperature:	-4°F (-20°C) to 122°F (50°C)
Standard Viscosity:	250-1000 SUS (54-216 cSt)
Fluids	Gear Oil: Up to VG320 Mineral Oil: DIN 51524 Part 1 and Part 2 Water Glycol: HFC based

PN#02075860 / 06.18 / FSP1710-1942

Model Code

LSN - 1 - P4L A - FLND250 10 - BM - 2

Series
LSN = Lube Skid System

Size
1, 2, 3, 4

Pump
P4L = 1.2 gpm, P5L = 1.5 gpm, P6L = 1.9 gpm, P8L = 2.4 gpm, P10L = 3.0 gpm, P12L = 3.8 gpm *(Size 1)*
P16L = 4.8 gpm, P20L = 6.0 gpm, P25L = 7.5 gpm *(Size 2)*
P32L = 9.6 gpm, P40L = 12.0 gpm, P50L = 15.0 gpm, P63L = 18.9 gpm *(Size 3)*
P80L = 24.1 gpm, P100L = 30.2 gpm, P80S = 36.1 gpm, P100S = 45.2 gpm *(Size 4)*

Motor Voltage
A = 115/230V (1-phase) *(Size 1 only)*
B = 208-230/460V (3-phase)
C = 575V-3 (3-phase)

Filter
FLND 250 *(Size 1, 2, and 3)*
FLND 400 *(Size 2, 3, and 4)*
LPF 160 *(Size 1, 2, and 3)*
LPF 240 *(Size 2 and 3)*
LF 660 *(Size 4)*

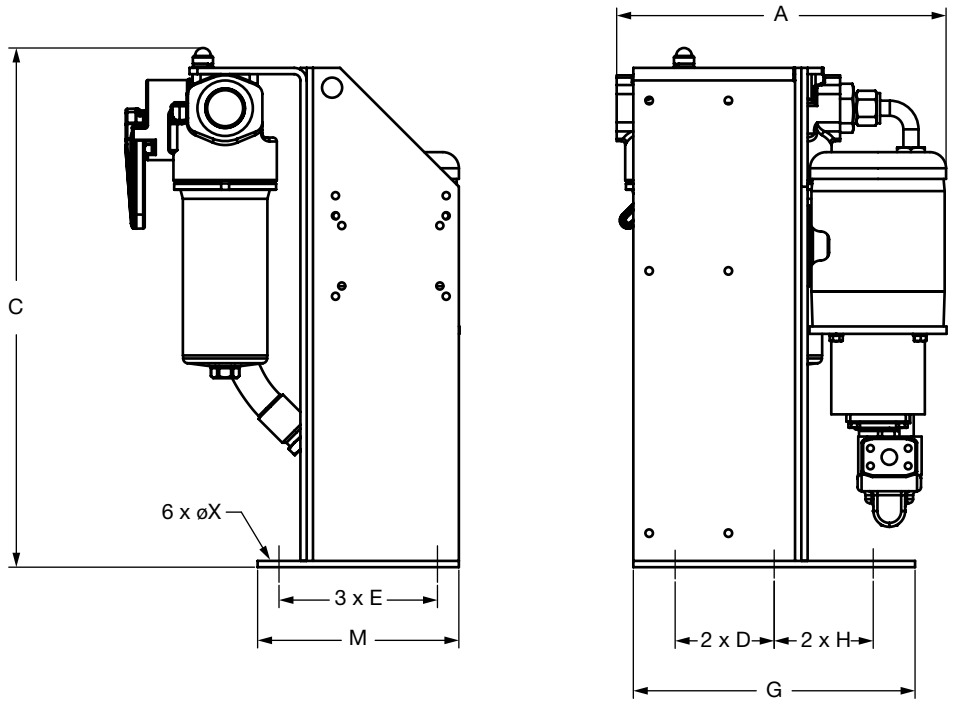
Filtration Rating *(microns)*
3, 5, 10, 20

Clogging Indicator
BM = visual
C = electric
D = visual and electric

Clogging Indicator Pressure Setting
2 = 29 psi (2 bar)
5 = 72.5 psi (5 bar)

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

Dimensions

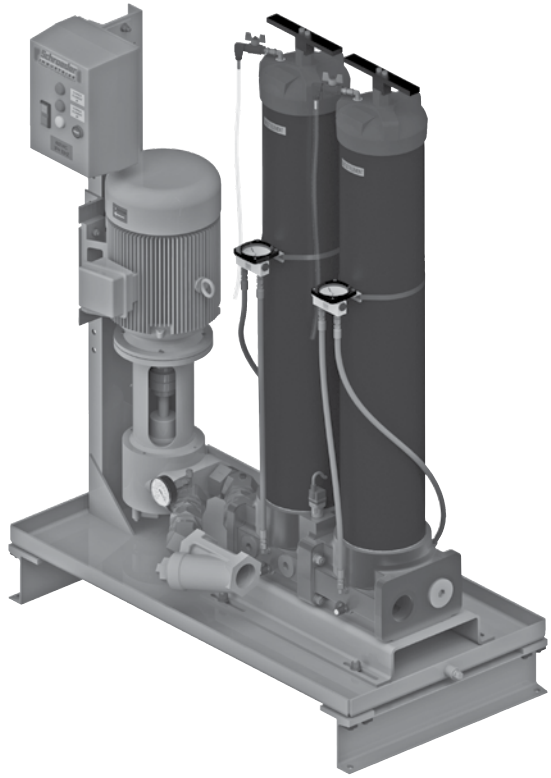


Size	A Max	B Max	C Max	D	E	G	H	M	X
LSN 1	16.45 (417.83)	19.4 (492.76)	27.6 (701.04)	4.92 (124.97)	7.87 (199.9)	11.81 (299.97)	4.92 (124.97)	9.84 (249.94)	.55 (13.97)
LSN 2	20.6 (523.24)	21.5 (546.1)	28 (711.2)	6 (152.4)	10 (254)	14 (355.6)	6 (152.4)	12 (304.8)	.55 (13.97)
LSN 3	22.1 (561.34)	24.11 (612.39)	33.61 (853.69)	6.52 (165.61)	13.28 (337.31)	15 (381)	6.52 (165.61)	15.25 (387.35)	.55 (13.97)
LSN 4	24.16 (613.66)	25.77 (654.56)	39.34 (999.24)	5.93 (150.62)	13.28 (337.31)	17 (431.8)	9.07 (230.38)	15.25 (387.35)	.55 (13.97)

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

OFX Series

Filter Skids



Description

HYDAC's OFX Series filtration skids are compact, self-contained filtration systems equipped with high efficiency, high capacity elements capable of removing particulate contamination and/or water quickly and economically. They supplement in-line filters whenever the existing filtration is incapable of obtaining the desired ISO cleanliness level.

It is not uncommon for viscosity to be overlooked when specifying an off-line filtration unit. The results of this oversight can severely affect system efficiency and longevity, and render the filtration system useless when high viscosity fluid causes the filter to be in constant bypass. HYDAC considers maximum fluid viscosity, *(at the minimum operating temperature)* in conjunction with flow to properly size the pump and motor.

Standard OFX Series OFX2 – OFX6 skids include a hydraulic pump, electric motor, single or dual stage filtration, and standard or high-capacity housing(s). Many different component combinations provide the flexibility to match specific system viscosity, flow, and cleanliness requirements. Multiple housing lengths give the option of adding additional dirt holding capacity.

HYDAC's high viscosity OFX Series skids, OFX7 & OFX8, are designed to handle fluids that have a viscosity as high as 25,000 SUS. The skids have 39" long high capacity filters to efficiently clean the viscous fluids. The filters have a high dirt-holding capacity, capable of holding almost 1000 grams of dirt depending on the element. OFX7 & OFX8 Series skids include a pump, motor, high capacity filter, suction strainer, and dirt indicator. Various options can account for specific user needs.

Features

- Protects and extends the life of expensive components
- Minimizes downtime and maintenance costs
- Designed to handle high viscosity oils up to 25,000 SUS *(see Skid Selection)*
- Many component combinations and variable starter options allow the flexibility to match specific user needs
- Four wheel cart option provides product portability
- Integral drip pan with drain plug
- Sample valves provided at filter base for fluid sampling
- Market leading HYDAC Betamicron® synthetic filtering media provides for quick, efficient clean up with maximum element life

Technical Specifications

Flow Rating	Up to 82 gpm (310 L/min)
Temp. Range	0°F to 180°F (-17°C to 82°C)
Bypass Valve Setting	50 psi (3.5 bar) for skid series OFX2, OFX3, OFX5, OFX7 & OFX8 40 psi (2.8 bar) for skid series OFX6
Fluid Viscosity	Up to 25,000 SUS *(see Skid Selection)*
Compatibility	All petroleum based hydraulic fluids. Contact HYDAC for use with other fluids, including ester and skydrol
Pump	OFX2, 3, 5, 6: Continuous duty gear pump with integral 150 psi relief. Flow dependent on skid series and motor. *(Refer to Pump, Motor & Weight Data table)* OFX7-OFX8: Positive displacement rotary screw-pumps.
Motor	Horsepower dependent on skid series and flow. *(Refer to Pump, Motor & Weight Data table)*
Porting	Dependent on flow. *(Refer to Porting Data table)*

Skid Selection

Series	Viscosity Range	Filter Housing(s)	Maximum Flow
OFX2	100 - 2000 SUS	(1) High Capacity or Standard Capacity	82 gpm (310 lpm)
OFX3	100 - 5000 SUS	(1) High Capacity or Standard Capacity	37 gpm (140 lpm)
OFX5	100 - 2000 SUS	(2) High Cap. or Std. Cap. in series	82 gpm (310 lpm)
OFX6	100 - 5000 SUS	(2) High Cap. or Std. Cap. in series	37 gpm (140 lpm)
OFX7	100 - 25,000 SUS	(1) High Capacity	6 gpm (23 lpm)
OFX8	100 - 25,000 SUS	(2) High Capacity in parallel	30 gpm (114 lpm)

Porting Data

Series	Flow (gpm)	Inlet Port Sizes	Outlet Port Szs. w/Std. Cap. Filters	Outlet Port Szs. w/High Cap. Filters
OFX2	17	1.50" NPT	-	#32 SAE (2")
OFX2	37	2" NPT	-	#32 SAE (2")
OFX2	60	2" NPT	-	#32 SAE (2")
OFX2	82	2" NPT	-	#32 SAE (2")
OFX3	17	2" NPT	-	#32 SAE (2")
OFX3	37	2" NPT	-	#32 SAE (2")
OFX5	17	1.50" NPT	#20 SAE (1.25")	#32 SAE (2")
OFX5	37	2" NPT	#24 SAE (1.50")	#32 SAE (2")
OFX5	60	2" NPT	#24 SAE (1.50")	#32 SAE (2")
OFX5	82	2" NPT	-	#32 SAE (2")
OFX6	17	2" NPT	#24 SAE (1.50")	#32 SAE (2")
OFX6	37	2" NPT	#24 SAE (1.50")	#32 SAE (2")
OFX7	06	1.50" NPT	-	#32 SAE (2")
OFX8	30	2.50" NPT	-	#32 SAE (2")

Model Code

OFX5 - 37 - H3 - BN - 3 - BN - 3 - B - N - N - B - G - N - S - C

Series
OFX = Filter Skid

Size
2, 3, 5, 6, 7, 8

Flow Rate
06 = 6 gpm (22.7 lpm) *(size 7 only)*
17 = 17 gpm (64.3 lpm) *(size 2, 3, 5, 6)*
30 = 30 gpm (113.6 lpm) *(size 8 only)*
37 = 37 gpm (140 lpm) *(size 2, 3, 5, 6)*
60 = 60 gpm (227 lpm) *(sizes 2, 5)*
82 = 82 gpm (310.4 lpm) *(size 2 and 5 only)*

Filter Designation
Standard Capacity (S)
S3 = 17, 37 gpm *(sizes 2, 3, 5, 6)*, 82 gpm *(sizes 2 & 5)*

High Capacity (H)
H3 = 6 gpm *(size 7)*, 17 gpm *(sizes 3 & 6)*, 30 gpm *(size 8)*, 37 gpm *(sizes 2, 3, 5, 6)*, 82 gpm *(sizes 2 & 5)*

Filter Media *(first stage all sizes)*
BN = Betamicron®
AM = Aquamicron® water removal

Filtration Rating *(micron) (first stage all sizes)*
3, 5, 10, 20
5, 10, 20
10, 20 *(sizes 7 & 8)*
= BN
10 = AM

Filter Media *(second stage)*
BN = Betamicron®
AM = Aquamicron® water removal

Filtration Rating *(micron) (second stage)*
3, 5, 10, 20
5, 10, 20
10, 20 *(size 8)*
= BN
10 = AM

Seals
B = Buna *(standard)*
H = EPR
V = Fluroelastomer (FPM)

Voltage
N = 230 /460 VAC 3 ph *(sizes 1-8)*
E = 575 VAC 3 ph *(Built to CSA standards)*

Motor
N = TEFC
W = Washdown *(NEMA Design B)*

Starter Control Options*
N = None
A = 230 VAC
B = 460 VAC
E = 575 VAC

Clogging Indicator
N = Visual pop-up in cap *(standard)*
G = Differential pressure gauge
M = Electric with 12 ft. 4 in. conductor wire
C = Differential pressure gauge with electric switch*

Vacuum Gauge
(omit) = Standard *(all units)*

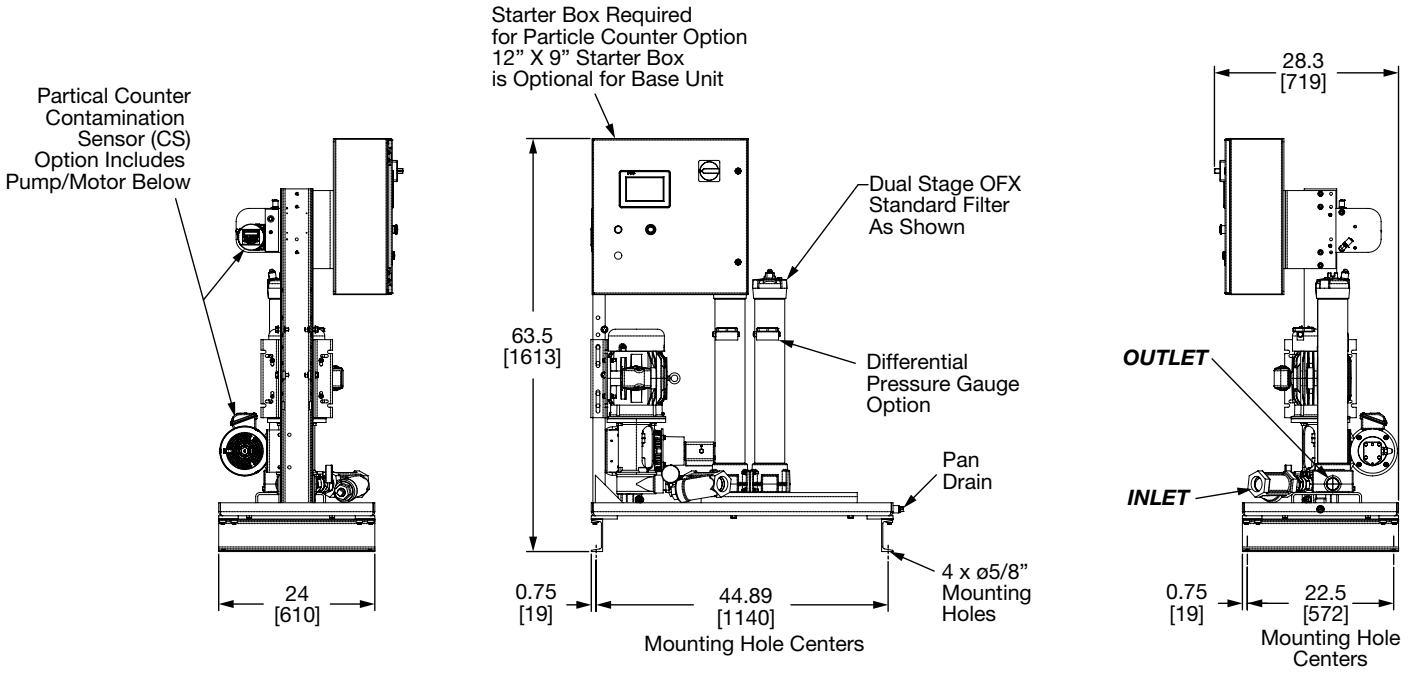
Suction Strainer
(omit) = Standard *(all units)*

Options
N = None
C = 4 wheeled cart *(sizes 2, 3, 5, 6)*
B = Continuous bleed *(for continuously aerated systems - includes cap vent port, valve and return line)*
P = Particle counter *(sizes 2, 3, 5, 6) need to specifiy oil type being used)*

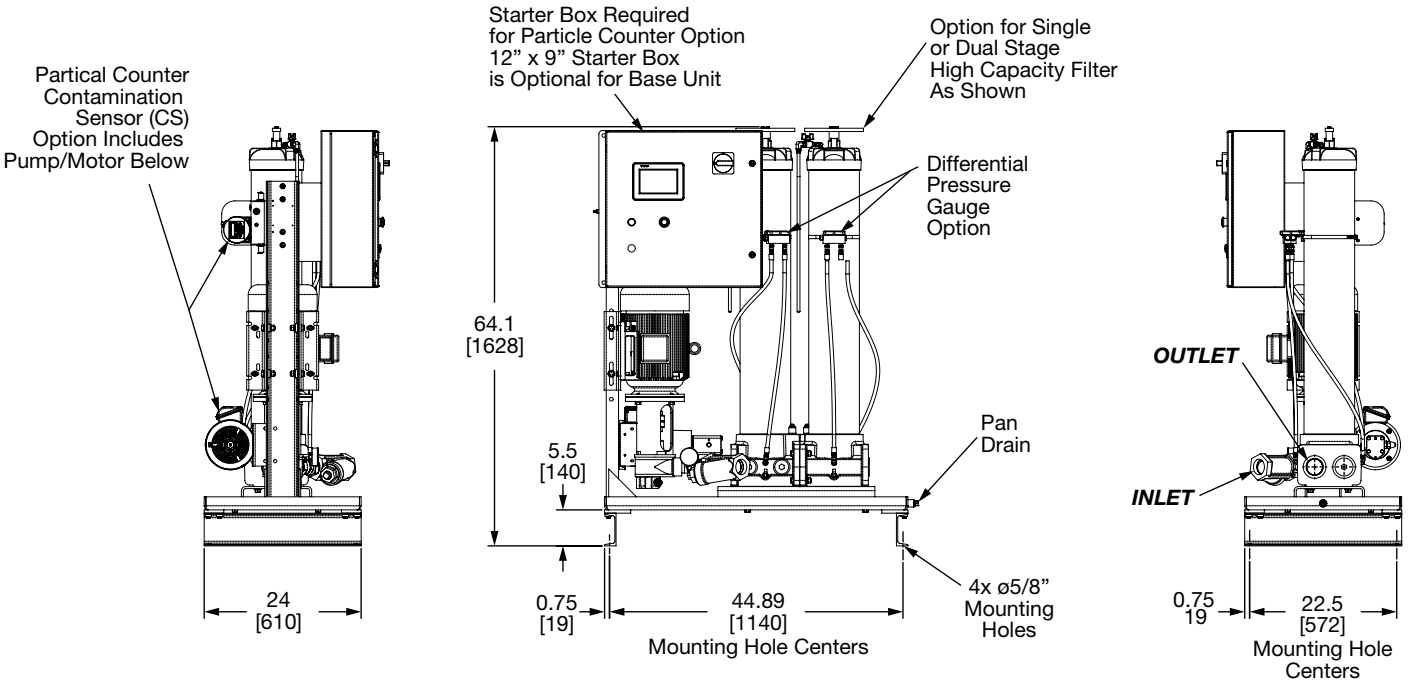
*Motor starter control option - C-series, non-disconnect shut-off, "motor on" light, electrical indicator "change element" light, and type 4x wash down enclosure. VFD units available upon request.

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

Dimensions
Dual OFX5, & OFX6 Series
Standard with 27” filter housing option

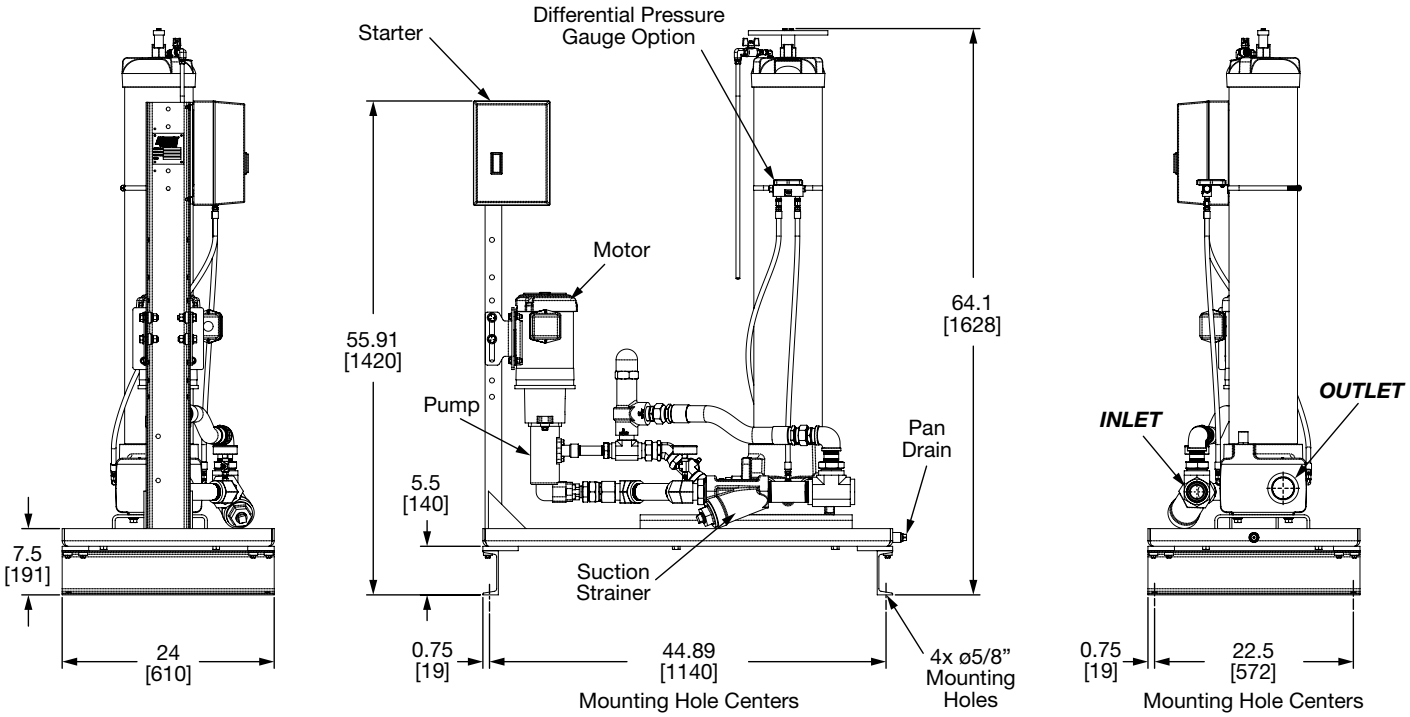


Dimensions
Dual OFX5, & OFX6 Series
with the H3 - high capacity housing option

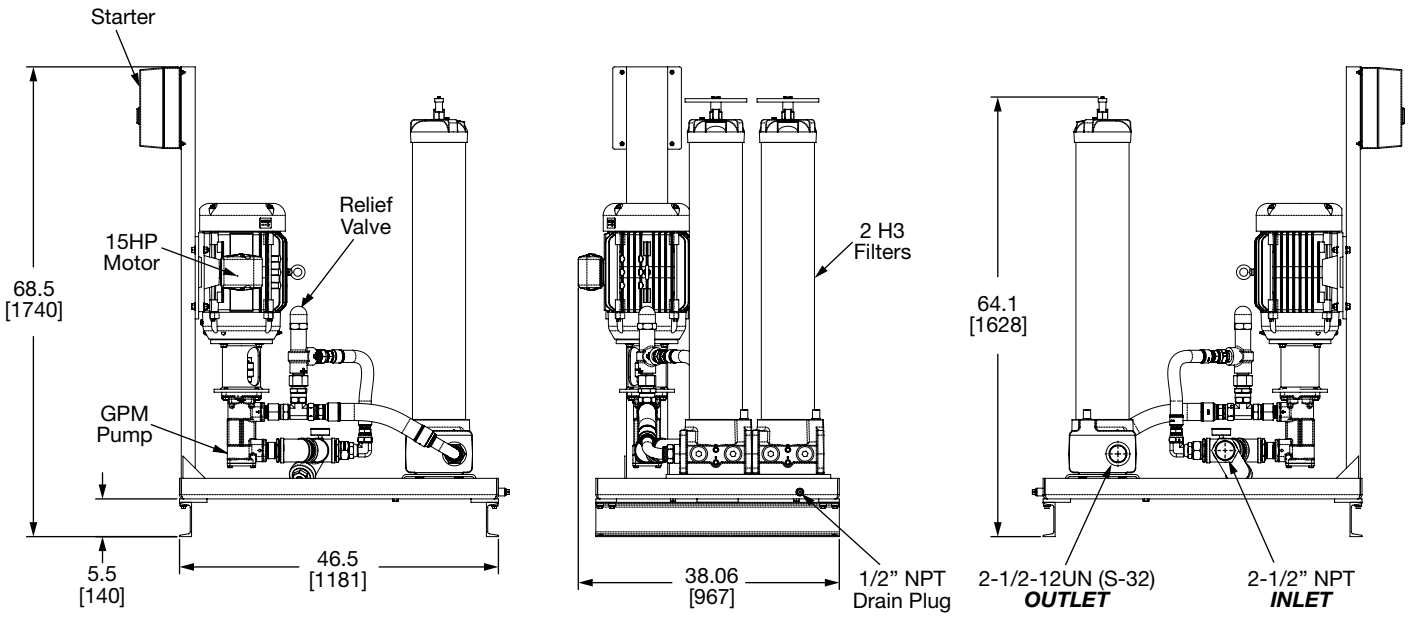


Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print. Dimensions shown are in inches [millimeters].

Dimensions
Single OFX7 Series
with the H3 - high capacity housing option



Dimensions
Dual OFX8 Series
with the H3 - high capacity housing option



Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print. Dimensions shown are in inches [millimeters].

OLF Compact Series

Features

The OLF Compact filter is designed to be used offline to efficiently and cost effectively filter standard hydraulic oils which are highly contaminated. The OLF Compact is specifically designed to be used on hydraulic systems with a reservoir volume of up to 1000 gallons. The standard filters can be supplied as ready to install offline units complete with motor and pump units as shown or as individual filters.

Benefits

- Lower operating costs
- Extended element service life
- Extended fluid life
- Cleaner, more efficient systems
- Incinerable elements
- Easy installation

Applications

Typical applications include:

- Injection molding machinery
- Machine tools
- Gear boxes
- Mobile equipment
- Filtration of fluids for intermittently operated hydraulic systems and test stands

Technical Specifications

Operating Range		
Viscosity: *(see pressure drop curves)*	to 700 SUS (150 cSt) (OLF-5) to 3000 SUS (650 cSt) (OLF-5/15) to 10,000 SUS (2160 cSt) (OLF-5/4)	
Operating Pressure:	45 psi (3 bar) max up to 87 psi (-0.4 to 6 bar)	
Suction Pressure:	11” Hg (-0.4 to 6 bar) max	
Inlet Pressure *(Model with flow control valve)*:	145 psi (10 bar) min / 725 psi (50 bar) max	
Fluid Temperature:	32° to 175°F (0 to 80°C)	
Ambient Temperature:	-4° to 104°F (-20 to 40°C)	
Seals:	NBR *(standard)*	
Maximum Flow Rate:	OLF-5 = 1.6 gpm (6.1 lpm) OLF-5/15 = 4.9 gpm (18.6 lpm) OLF-5/4 = 1.3 gpm (4.9 lpm)	
Fluids	Standard Mineral Oils / Water/Oil based fluids *(Minimum 40% Oil in Fluid)* *(Consult factory for other fluids.)*	
Elements		
Media:	Dimicron - 2µm, 20µm / Water Removal - 2µm, 20µm	
Number required:	OLF-5, 5/15, and 5/4 = 1	
Dirt Holding Capacity - ΔP = 36 psi (2.5 bar)	200g ISO MTD *(N5DM...)* / 185g ISO MTD *(N5AM...)*	
Water Retention - ΔP = 36 psi (2.5 bar):	Approximately 0.5 quarts (0.5 liters)	
Beta Ratio:	ßx > 1000 *(absolute value)*	
Maximum ΔP:	45 psi (3 bar)	
Connections *(All Female)*		
OLF-5 with motor/pump:	Inlet & Outlet:	3/4 - 16UNF (SAE 8) (BSPP G1/2)
OLF-5/15 & 5/4:	Inlet & Outlet:	1 5/16-12UN (SAE 16) (BSPP G1)
OLF-5 without motor/pump:	Inlet: Outlet:	9/16-18UNF (SAE 6) (BSPP G3/8) 3/4-16UNF (SAE 8) (BSPP G1/2)
Weight	OLF-5-S = 15.5 lbs. (7.0 kg) OLF-5-E = 5.5 lbs. (2.5 kg) OLF-5/15 = 24.3 lbs. (11 kg) OLF-5/4 = 24.3 lbs. (11 kg)	

Housing drain standard on all units
Black = SAE connections when using supplied adapters (standard)
Red = BSPP connections if supplied adapters are not used

PN#02075860 / 06.18 / FSP1710-1942

Model Code

OLF-5 - S - 120 - K - N5DM002 - E / 12 / CD

Series
- OLF-5 = Series 5 (1.6 gpm)
- OLF-5/15 = Series 15 (4.9 gpm)
- OLF-5/4 = Series 15 (1.3 gpm)
- OLFCM-5/15 = With Fluid Condition Monitoring

Pump Type
- S = Vane Pump* *(standard)*
- E = Flow Control Valve *(series 5 only)*
- TV = Toploader with Motor *(available for OLF-5/15 & OLFCM-5/15 only)*

Power Consumption
- 120 = 120W for all OLF 5
- 200 = 200W for all 24VDC
- 370 = 370W for all Series 5/15 & 5/4
- Z = Without motor-pump unit *(series 5 only)*

Voltage
- K = 115V single phase
- M = 220V single phase
- N = 440V 3 phase
- T = 12VDC
- U = 24VDC
- Z = Without motor-pump unit

Element
- N5DM002 = 2 micron
- N5DM005 = 5 micron
- N5DM010 = 10 micron
- N5DM020 = 20 micron
- N5AM002 = 2 micron with water removal
- N5AM020 = 20 micron with water removal

Clogging Indicator
- E = Standard gauge *(series 5 & 5/4 only)*
- F = Static electrical switch — VMF2F.0 *(series 5 & 5/4 only)*
- BM = Differential visual — VM2BM.1 *(series 5/15 & 5/4 only)*
- C = Differential electrical — VM2C.0 *(series 5/15 & 5/4 only)*
- D = Differential electrical/visual — VM2D.0/L... *(series 5/15 & 5/4 only)*

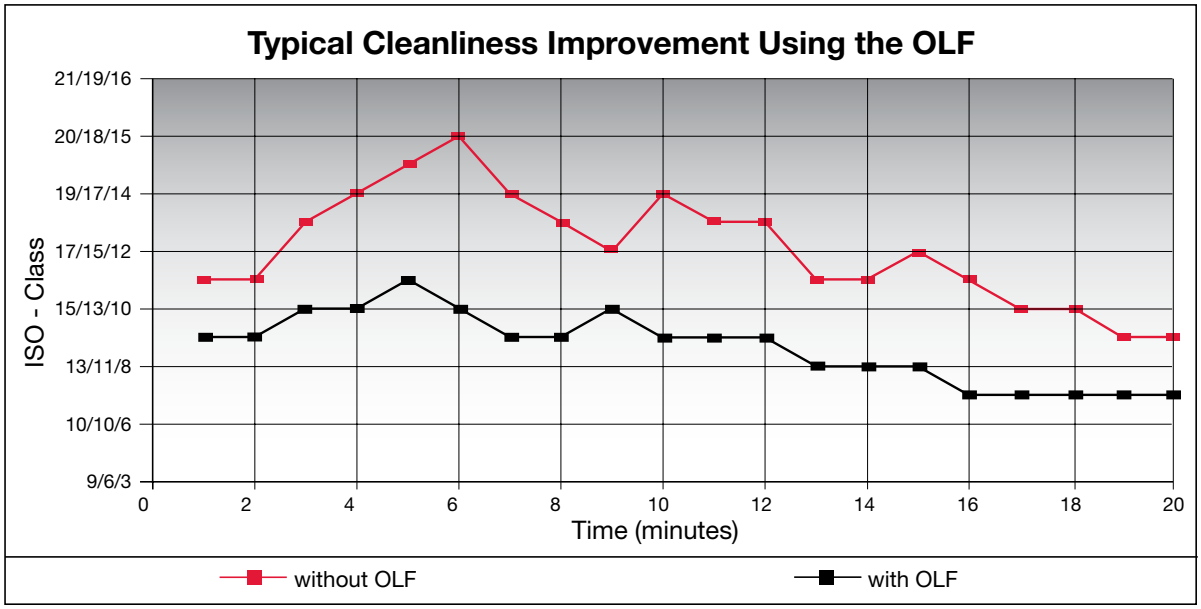
Mechanical Connections
- 12 = SAE Connections *(standard)*

Supplementary Details

L24, L48, L115, L230 = Lamp for D-type clogging indicator *(LXX, XX = voltage)*
- C = with ContaminationSensor CS 1310 *(without display; OLFCM only)*
- CD = with ContaminationSensor CS 1320 *(with display; OLFCM only)*
- AC = with ContaminationSensor CS 1310 and AquaSensor AS 1000 *(without display; OLFCM only)*
- ACD = with ContaminationSensor CS 1320 and AquaSensor AS 3000 *(with display; OLFCM only)*

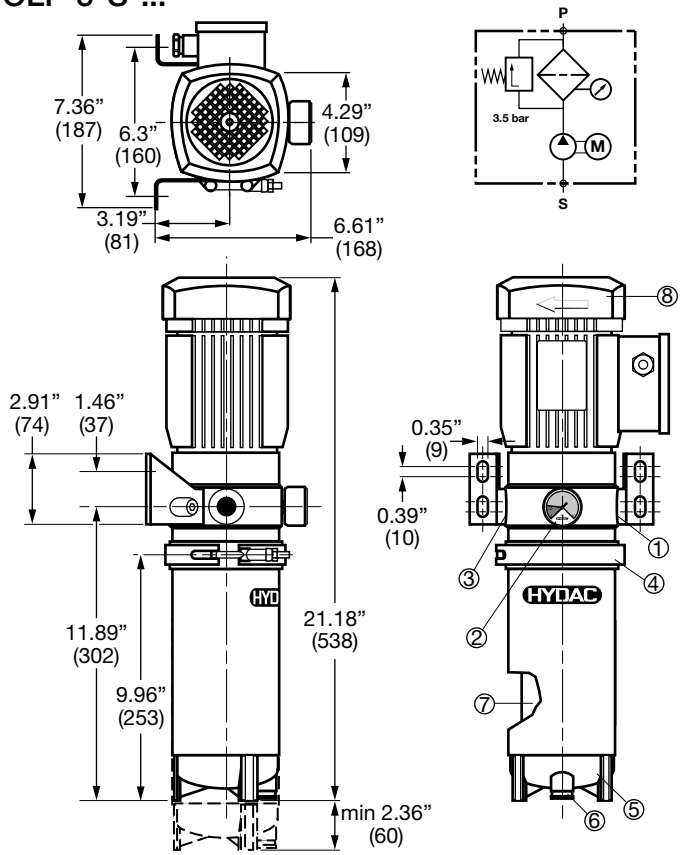
Consult Factory for special options.
Not all combinations available.
*Choose “S” for model without motor-pump and without flow control valve.
For replacement element part numbers, please see Section E - REPLACEMENT ELEMENTS of this catalog.

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

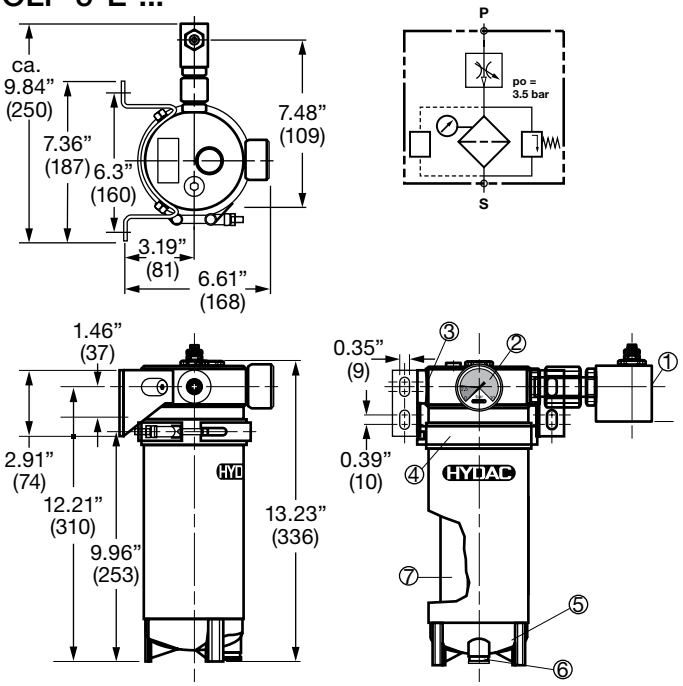


Dimensions

OLF-5-S-...



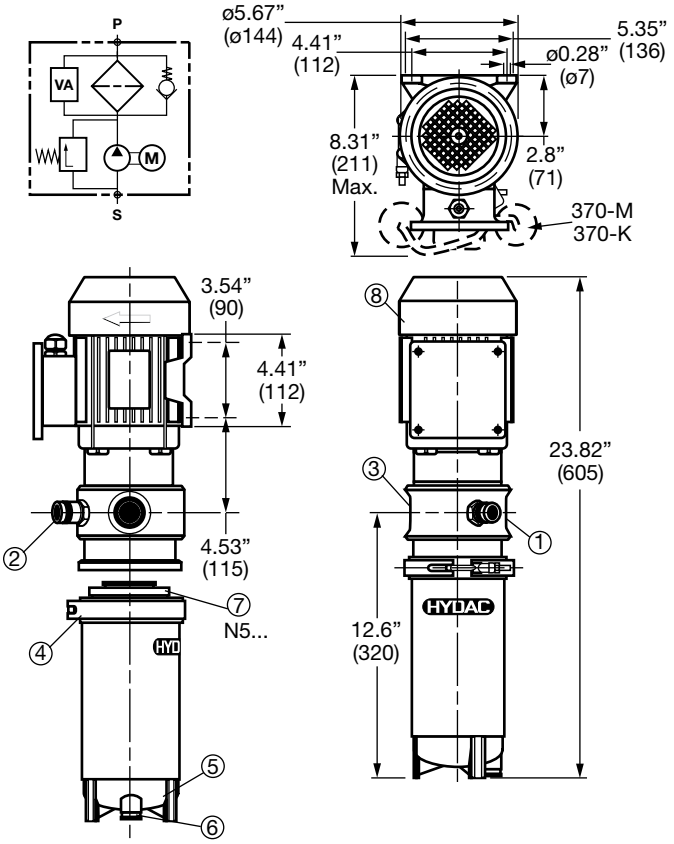
OLF-5-E-...



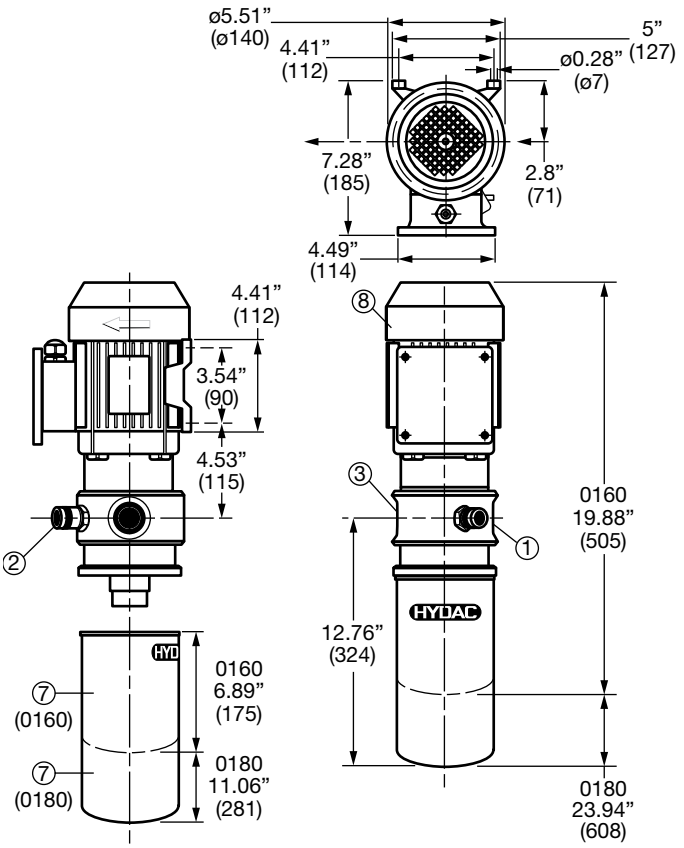
Key

1	=	Inlet	5	=	Filter Bowl
2	=	Clogging Indicator	6	=	Drain
3	=	Outlet	7	=	Filter Element
4	=	Clamp	8	=	Electric Motor

OLF-5/4-S-... and OLF-5/15-S...



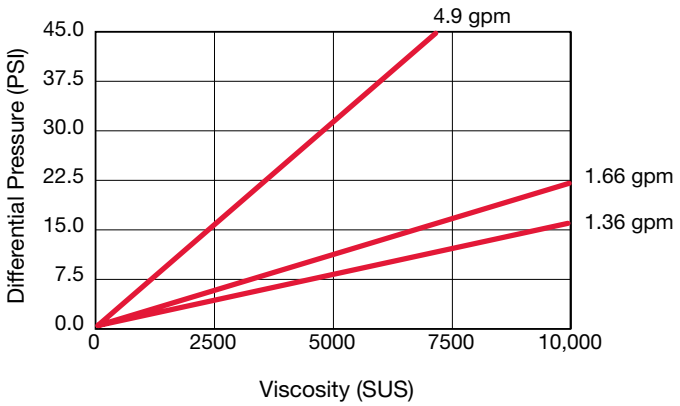
OLF-5/4-SP-...



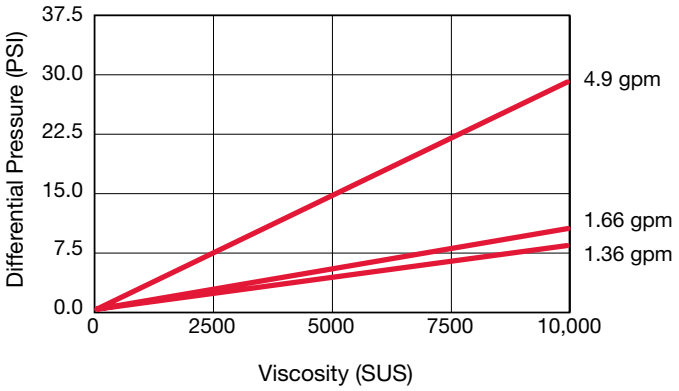
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

Differential Pressure

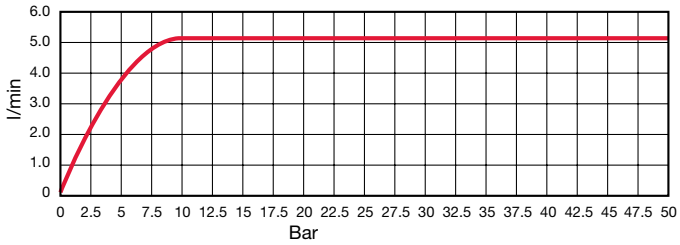
N5DM002



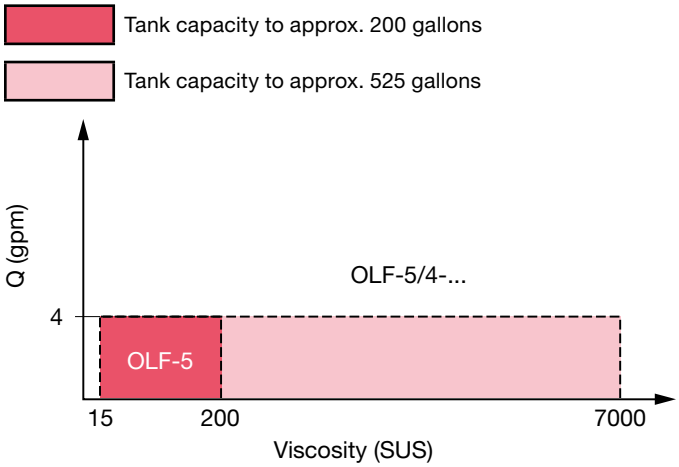
N5DM020



SRV Flow Control Valve Curve



Application



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.

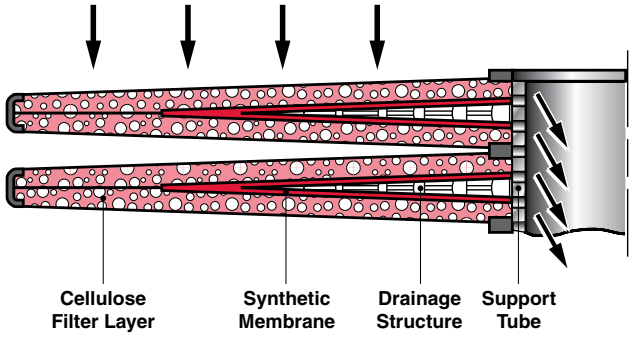
Applications

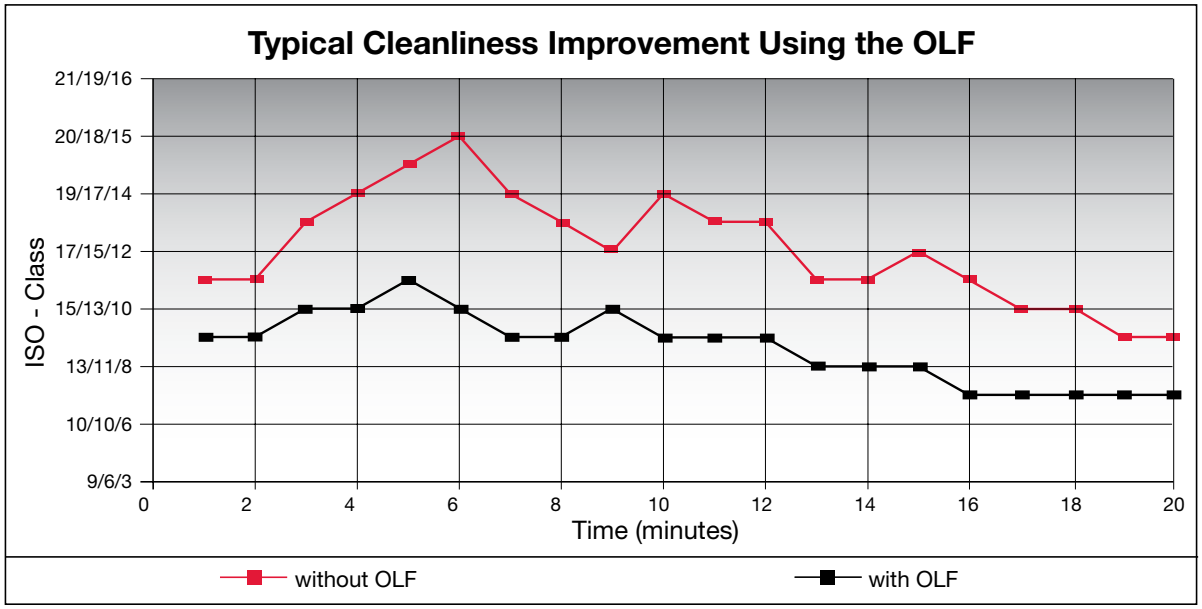
Typical applications include:

- 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.





PN#02075860 / 06.18 / FSP1710-1942

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 *(only with OLFCM option)*
- 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	

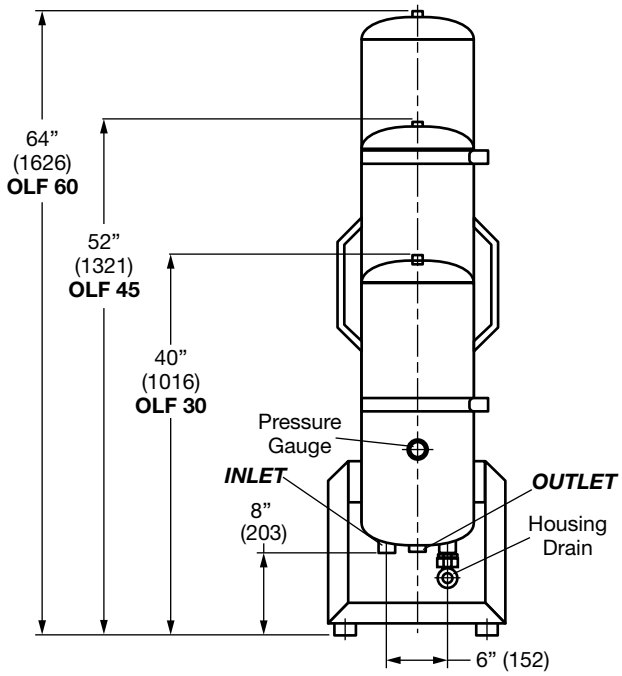
Options
- 12 = SAE adapters *(BSPP connections are standard)*
- V = Viton® Seals *(NBR seals are standard)*
- MP = Integrated TestPoint for connection to FCU via Minimess Line
- C = ContaminationSensor CS 1310 (without Display)
- CD = ContaminationSensor CS 1320 (with Display)
- CS = ContaminationSensor CS 1310 (without Display) with SMU1260
- AC = Contamination Sensor CS 1310 and AS 1000 (without Display)
- ACD = ContaminationSensor CS 1320 and AS 3000 (with Display)
- ACS = ContaminationSensor CS 1310 and AS 1000 (without Display) with SMU1270

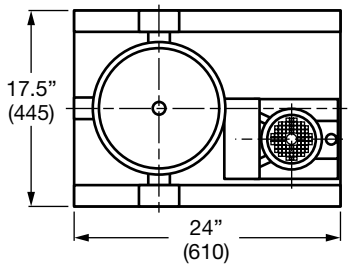
(OLFCM option only)

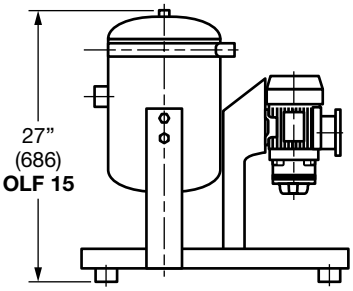
For replacement element part numbers, please see Section E - REPLACEMENT ELEMENTS of this catalog.

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

Dimensions







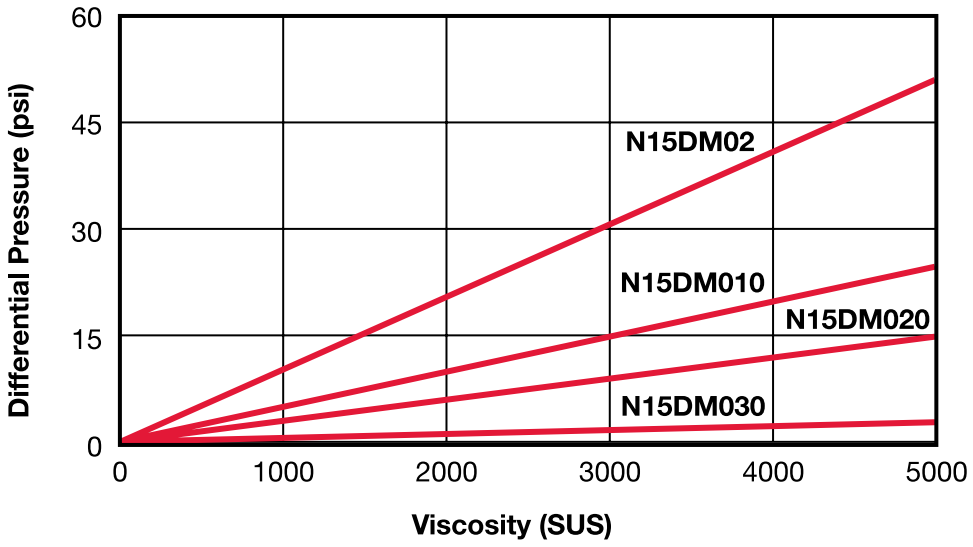
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

Technical Specifications

Model	OLF-15	OLF-30	OLF-45	OLF-60
Connections	Female			
Housing Inlet & Outlet	1 5/16 - 12UN (SAE 16); G 1"* BSPP			
Pump Inlet: Vane	1 1/16 -12UN (SAE 12); G 3/4" BSPP	1 5/8 -12UN (SAE 20); G 1 1/4" BSPP		
Pump Inlet: Gear	1 1/16 -12UN (SAE 12); G 3/4" BSPP	1 5/16 -12UN (SAE 16); G 1" BSPP	1 7/8 -12UN (SAE 24); G 1 1/2" BSPP	
Pump Inlet: Centrifugal	1 5/16-12UN (SAE 16); G 1" BSPP		1 5/8 -12UN (SAE 20); G 1 1/4" BSPP	
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 (5 bar)			
Element Weight	6.6lbs (3 kg)	13.2lbs (6 kg)	19.8lbs (9 kg)	26.4lbs (12 kg)
Material of Filter Housing	Stainless Steel			
Capacity of Pressure Vessel	5.25 gal. (20 l)	10.50 gal. (39.7 l)	15.75 gal. (59.6 l)	20.5 gal. (28.1 l)
Max. Operating Pressure - Filter Housing	85 psi (5.86)			
Material of Seals - Housing	NBR *(standard)*			
Housing Weight	25lbs (11.3 kg)	33lbs (15 kg)	53lbs (24 kg)	62lbs (28.1 kg)
Fluid Temperature	15 to 175°F (-9.4 to 79.4°C)			
Motor-Pump Units	5 gpm (18.9 lpm)	10 gpm (37.8 lpm)	15 gpm (56.8 lpm)	20 gpm (75.5 lpm)
Pump Operating Pressure	65 psi (4.5 bar)			
Vane Pump Viscosity Range	75-2500 SUS (14 to 540 cSt)			
Vane Pump Motor Capacity	370 W	570 W	1500 W	1500W
Gear Pump Viscosity Range	7-5000 SUS (14 to 1078 cSt)			
Gear Pump Motor Capacity	370 W	570 W	1500 W	1500W
Material of Seals - Pumps	NBR *(standard)*			
Dry Weight of OLF System	50 lbs. (22.7 kg)	77 lbs. (34.9 kg)	116 lbs. (57.6 kg)	132 lbs. (60 kg)

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)

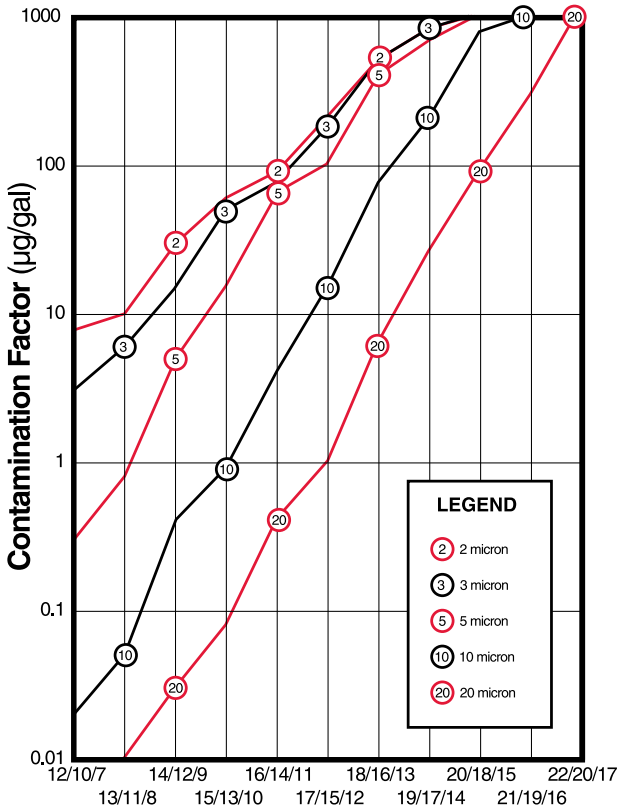


Sizing Offline Filtration

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: 20 gpm = **135** (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

VEU-F Series

Varnish Elimination Unit

Description

The service-friendly Varnish Elimination Unit (VEU) is used to prepare mineral oils and is particularly effective at removing oil aging products (varnish) from mineral oils. Varnish takes the form of oil-insoluble aging products which settle in the tank, in valves or in bearings. These can be filterable gels or solid paint-type deposits. The VEU-F series product is used in bypass flow. The removal of varnish is based on reducing the oil solubility for varnish with subsequent filtration using a combination of a HYDAC air-cooled heat exchanger with a Dimicron filter element.

Features

- Removal of solid and gel-like oil aging products
- Increased operating reliability of the system as a result of fewer deposits in hydraulic valves
- Increase in the oil service life
- Available to existing systems and for new systems

Applications

- Turbine Lubrication Systems
- Plastic Injection Molding Machines
- Industrial Forges and Presses

Technical Specifications

Size	**VEU-F-10**	**VEU-F-15**
Flow Rate	10 gpm	15 gpm
Fluid Viscosity	75-2000 SUS	
Permitted Operating Fluids	Mineral-based	
Fluid Service Temperature	15°-140°F	
Maximum Pump Operating Pressure	100 psi	
Max. Differential Pressure Across Filter Elements	72.5 psi	
INLET Port Connection	1-5/8 x 12UNF - Male	
OUTLET Port Connection	1-5/8 x 12UNF - Male	
Supply Voltage	460V AC / 60Hz / 3 Ph.	575V AC / 60Hz / 3 Ph.
Protection Class	NEMA 2	
Seal Material	NBR, FKM (optional)	
Permitted Ambient Temperature Range	32°-155°F	
Permitted Storage Temperature Range	32°-140°F	
Weight *(empty)*	900 lbs.	975 lbs.

Model Code

VEU-F - 15 - M - O60 - DM02

Series
VEU-F = Varnish Elimination Unit

Size
10 = 10 gpm
15 = 15 gpm

Version
S = Stationary
M = Mobile

Motor Voltage
O60 = 460V, Three Phase
P60 = 575V, Three Phase

Filter Element
DM02 = N15DM002, 2µm Absolute
DM05 = N15DM005, 5µm Absolute
DM10 = N15DM010, 10µm Absolute

Sizing

As a rough guide, the VEU-F can be sized according to the tank volume of the system.

Size	Tank Vol. Min. (gal)	Tank Vol. Max. (gal)
VEU-F-10	150	1200
VEU-F-15	225	2000

Replacement Filter Elements

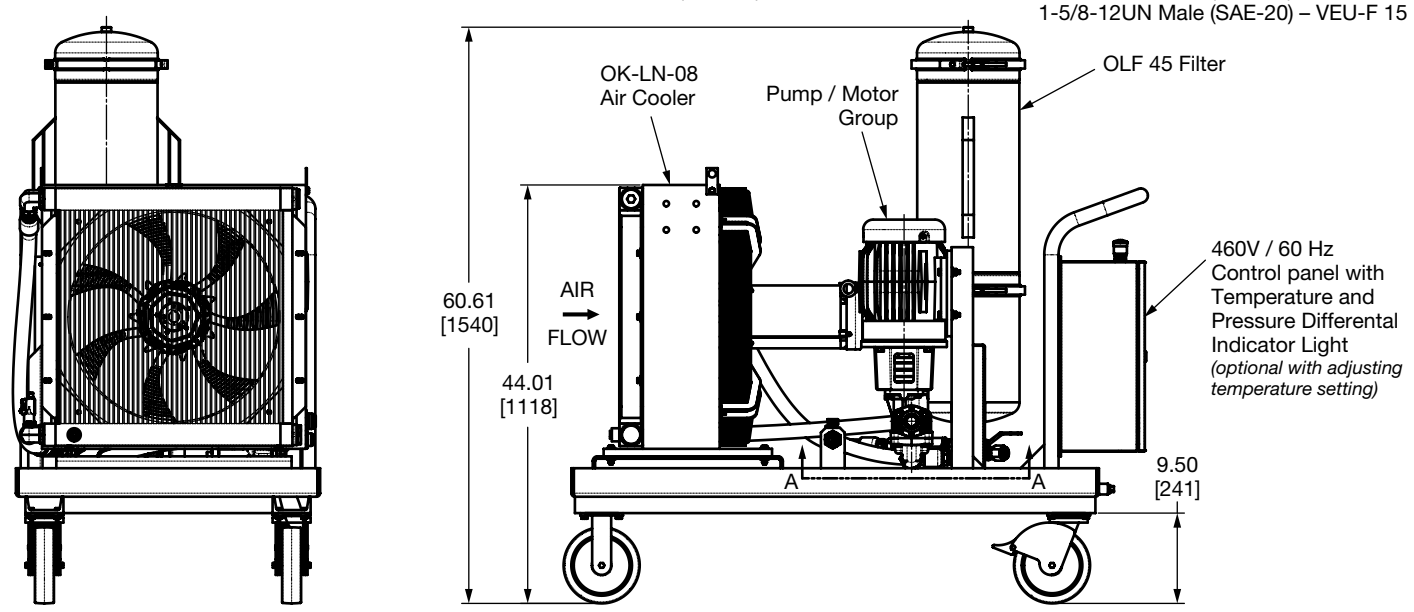
3 elements required

Model number	Part number
N15DM002	1251590
N15DM005	3252552
N15DM010	3115180

Scope of Delivery

- VEU-F according to Model Code
- Operating and Maintenance Instructions

Dimensions
VEU-F



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

OLFP 1 / 3 / 6 Series

Offline Filter Pressure

Description

The OffLine Filter Pressure (OLFP) system is a stationary offline filter and is used to remove oil aging products, water and solid particles from hydraulic and lubrication fluids.

Thanks to its compact construction, the OLFP is also ideally suited for use in even the smallest of installation spaces. The housings are pressure resistant up to 290 psi (20 bar). Since the housing material is aluminium, the filters are also suitable for low-temperature applications.

The flow can be taken directly from the main flow through an orifice and the orifice determines the flow rate. The offline filters can also be equipped with a motor-pump unit and an inductive particle counter, as an option.

The Trimicron series of filter elements NxTMxxx have been specially developed for the combined removal of fine particles, water and oil aging products. The most modern filter materials with reliable separation characteristics and high contamination retention capacity are used for this purpose.

Features

- Removal of oil aging products, solid particles and water
- Improvement in component lifetime
- Greater machine availability
- Less space required due to compact construction
- Very easy maintenance
- High contamination retention capacity of the elements

Applications

- Wind power plants
- Industrial transmission systems

Technical Specifications

Model	OLFP 1	OLFP 3	OLFP 6
Operating Pressure	Max. 363 psi (25 bar)	Max. 290 psi (20 bar)	
Fluid Temp. Range	-22° F to 176° F (-30° C to 80° C)		
Max. Operating Viscosity	4635 SUS (1000 cSt)		
Ambient Temp. Range	-22° F to 176° F (-30° C to 80° C)		
Survival Temp.	-40˚F (-40˚C)		
Storage Temperature	-40˚F to 176° F (-40˚C to 80° C)		
Head Material	Aluminum		
Bowl Material	Aluminum		
Seals	FPM/NBR		
Filter Housing Content	~2.4 gal. (~9 liters)	~7.1 gal. (~27 liters)	~11 gal. (~43 liters)
Hydraulic Port (IN/OUT)	See table “Hydraulic Connections”		
Filter Element	1 x N1TMXXX	1 x N3TMXXX	2 x N3TMXXX
Weight	~46.3 lbs (~21 kg)	~82 lbs (~37 kg)	~90 lbs (~41 kg)

PN#02075860 / 06.18 / FSP1710-1942

Model Code

OLFP - 1 / 2 - G M - M - TM - N E

Series
- OLFP = Offline Filter - Pressure
- OLFPCM = Offline Filter - Pressure with Condition Monitoring (CM)

Size
- 1 = Filter size 1 *(1 x filter element N1TM003 *)*
- 3 = Filter size 3 *(1 x filter element N3TM003 *)*
- 6 = Filter size 6 *(2 x filter element N3TM003 *)*

Nominal Flow Rate / type of orifice
- 2 = 0.53 gpm (2 l/min) - orifice A
- 3 = 0.79 gpm (3 l/min) - orifice B
- 6 = 1.59 gpm (6 l/min) - orifice C
- Z = variable (without orifice, without pump)

Pump Unit
- O = with orifice
- G = gear pump
- Z = without

Electric Motor
- M = 230 V / 50 HZ / 1 Ph / 0.37 kW
- N = 400 V / 50 HZ / 3 Ph / 0.37 kW
- AB = 690 V / 50 HZ / 1 Ph / 0.37 kW
- X = Other voltages
- N60, M60 = Operation at 60 HZ
- Z = Without electric motor

Measurement Technology
- M = MCS 14xx MetallicContamination Sensor
- A = AS 1000 Aqua Sensor
- Z = without *(for basic type OLFP)*

Element Type
- TM = Trimicron

Sealing Material
- N = NBR
- F = FPM

Clogging Indicator
- E = Standard, back-pressure indicator
- B = Differential pressure indicator, visual (VM2BM.x)
- C = Differential pressure indicator, electrical (VM2C.x)
- D3 = Differential pressure indicator, visual/electrical (VM2D.x)
- D38 = Differential pressure indicator, visual/electrical (VL x GW.0 /-V-113)
- Z = without

* filter element not supplied. These must be ordered separately.

Items supplied *(Preferred models, designed for 87 psi (6 bar) inlet pressure)*
OffLine Filter OLFP 1 - OffLine Filter OLFP-1/2-OZ-Z-TM-NZ Part no. 3738168
OffLine Filter OLFP 3 - OffLine Filter OLFP-3/3-OZ-Z-TM-NZ Part no. 3712592
OffLine Filter OLFP 6 - OffLine Filter OLFP-6/6-OZ-Z-TM-NZ Part no. 3712591

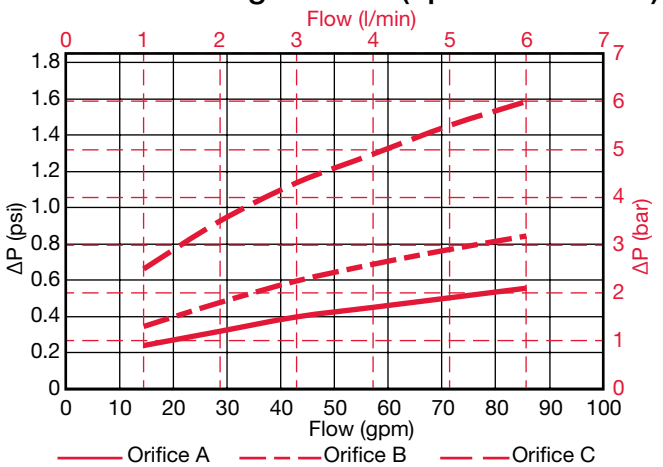
Hydraulic Connections

Type	IN				OUT		
	SAE 2”	SAE 3/4”	G 3/4”	G 1/2”	SAE 2”	G 3/4”	G 1/2”
OLFP-1/Z-ZZ-Z-TM-NZ	•	–	–	–	•	–	–
OLFP-1/2-OZ-Z-TM-NZ	–	–	•	–	•	–	–
OLFP-3/Z-ZZ-Z-TM-NZ	–	•	–	•	–	–	•
OLFP-3/3-OZ-Z-TM-NZ	–	–	•	–	–	•	–
OLFP-6/3-GN-Z-TM-NZ	–	•	–	–	–	–	•
OLFPCM-6/3-GN-MA-TM-NZ	–	•	–	–	–	–	•

Replacement Elements

Model Code	Micron Rating	Part No.
N1TM003	3	3284980
N3TM003	3	3566060

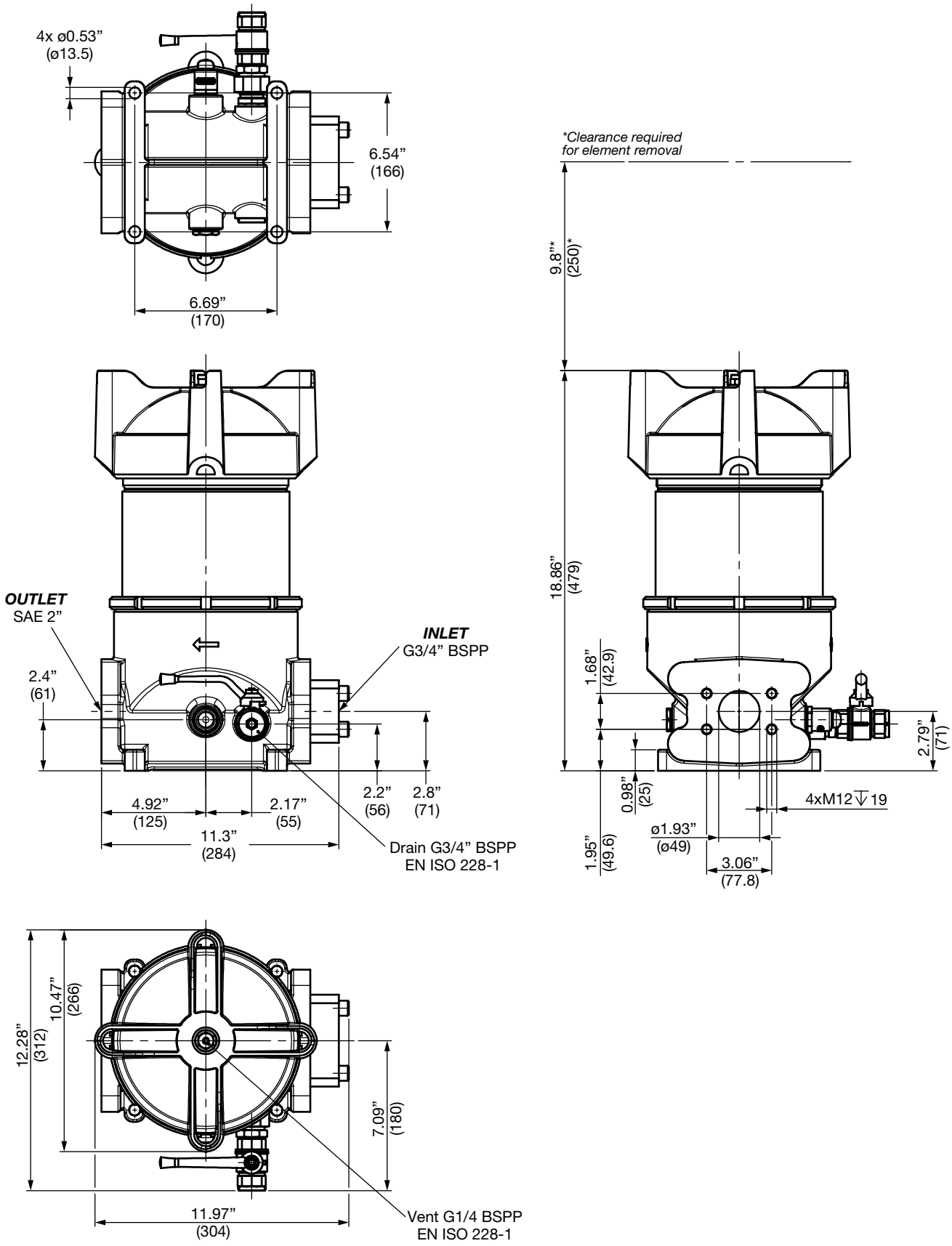
Flow Rate Through Orifice (up to 200 mm²/s)



Type	Nomial Flow Rate	Orifice
OLFP x/2	0.53 gpm (2 l/min)	A
OLFP x/3	0.79 gpm (3 l/min)	B
OLFP x/6	1.59 gpm (6 l/min)	C
OLFP x/z	variable	–

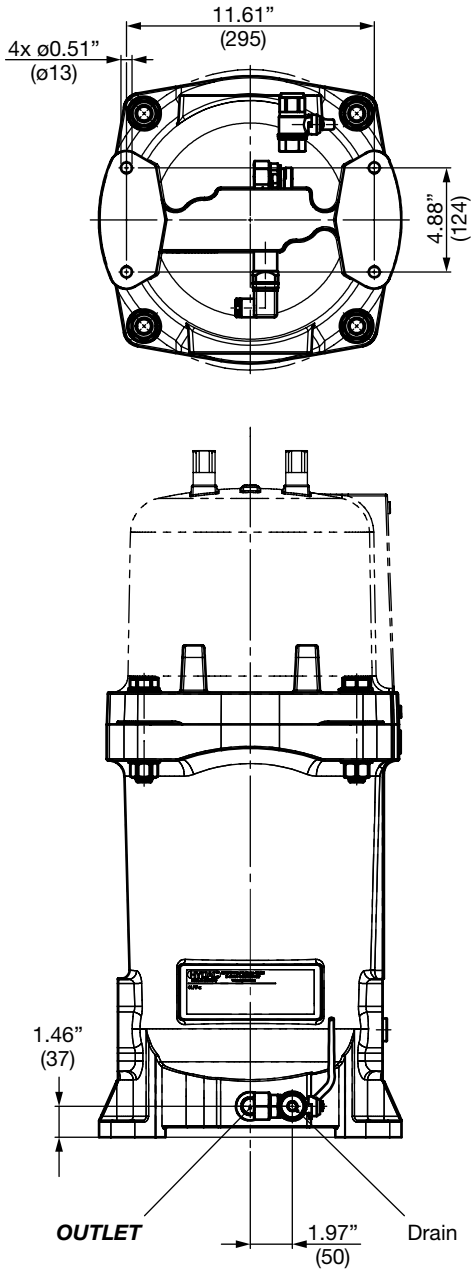
Values are valid for clean elements only.

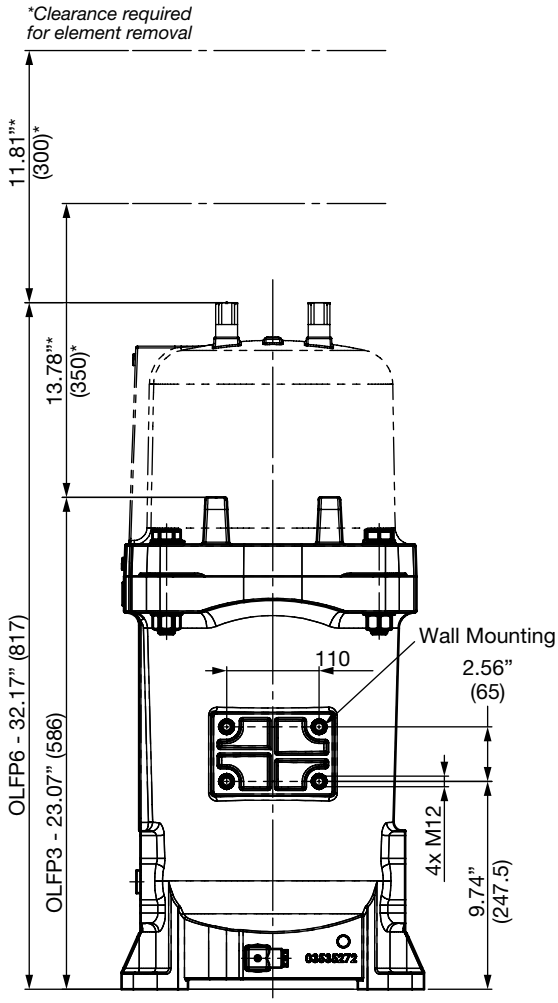
Dimensions
OLFP 1



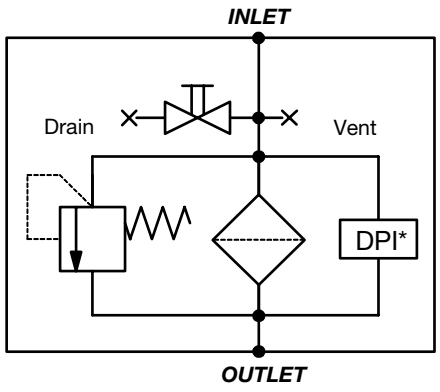
Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

Dimensions
OLFP 3 / 6





Hydraulic Schematic



*Option: Differential pressure indicator

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

NxTM TriMicron Element Series

Description

The filter elements in the TriMicron series have been specially developed for the combined filtration of

- fine solid particle contamination,
- water and
- oil-ageing products from hydraulic and lubrication oils in the bypass flow.

They are a combination of pleated and SpunSpray depth filter elements. The filter layers are produced using melt-blown technology (synthetic fibers).

Features

- Excellent filtration performance ($ß_{5(c)} > 1000$)
- Low initial differential pressure
- High contamination retention capacity
- Fine particle contamination, water and oil aging products removed by depth filter material
- Broad range of fluid compatibility
- Simple element change

Applications

- Offline filtration in lubrication systems (e.g. in wind turbines)
- Offline filtration in hydraulic systems
- Transmission and hydraulic test rigs

Technical Specifications

Model	N1	N3
Contamination Retention Capacity ISOMTD at ΔP = 36.3 psi (2.5 bar)	~ 410 g	~ 2500 g
Water Retention Capacity	~ 680 ml	~ 2.1 l
Beta value $ß_{5(c)}$ @ 29 psi (2 bar)	> 1,000	
Filtration Rating	3 µm	
Differential Pressure at Starting Point	1.45 psid (< 0.1 bar)	
Permitted Fluid Temperature Range	14 to 176 °F (-10 to 80 °C)	
Storage Temperature Range	41 to 104 °F (5 to 40 °C)	

Model Code

N 1 TM 003 /- N

Nominal Flow Rate
- 1 = Nominal flow rate 0.26 gpm (1 lpm)
- 3 = Nominal flow rate 0.79 gpm (3 lpm)

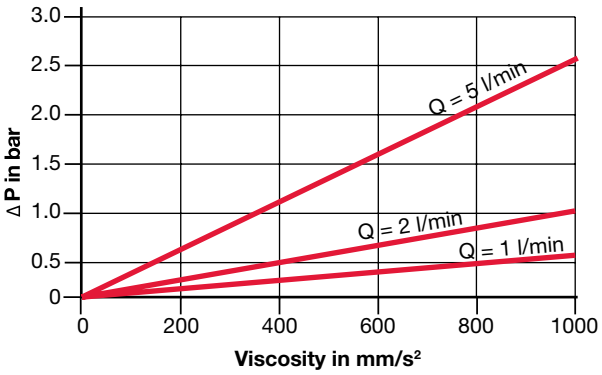
Element Type
- TM = TriMicron

Filtration Rating *(microns)*
- 003 = 3

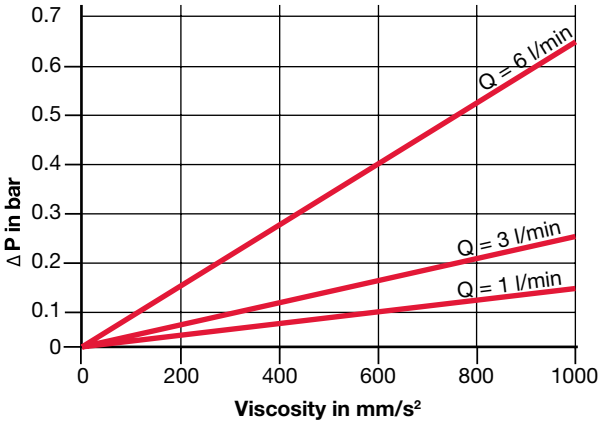
Sealing Material
- N = NBR
- F = FPM

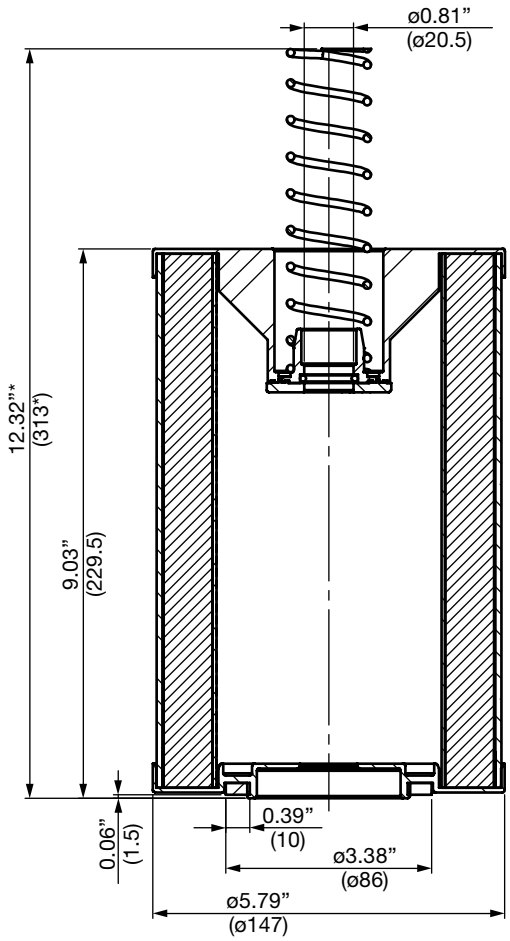
Element Differential Pressure

N1TM

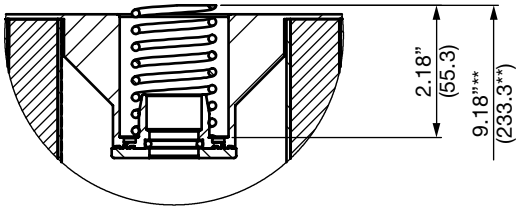


N3TM





* spring unloaded
** spring loaded



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

MAFH-A Series

Dehydration Station

Cart

Description

Water contamination in hydraulic systems can severely reduce the life of hydraulic systems and fluids. The MAFH is designed to eliminate 100% of free and up to 90% of dissolved water from small reservoirs, barrels, and gear boxes. Using a patented transfer process, the MAFH efficiently removes water and particulate contamination quickly in all environments. A proprietary design reduces aeration of free and entrained gases of returned fluid. The unit was designed to be extremely portable due to small footprint and cart to access tight areas.

Principle of Operation

The MAFH uses a new mass transfer dewatering technology. Ambient air is conditioned to increase its water holding capability before injecting to the reaction chamber. Fluid is equally distributed and cascaded down through reticulated media and the conditioned air stream. Water is transformed to water vapor and is expelled from the unit as a moist air stream. The relative humidity of the incoming fluid is continually monitored by an integral AS 1000 AquaSensor and displayed real-time on the control panel.

Applications

- Steel and rolling mills
- Pulp and paper plants
- Power generation plants
- Tool machines / Plastic machines
- Hydraulic operated presses
- Oil conditioning

Features

- High Dewatering Rates and particulate removal in one system
- Simple Controls; RUN/DRAIN modes
- Reduce fluid recycling cost
- No expensive vacuum pump to service and replace
- Patented mass transfer technology uses ambient air to optimize and control dewatering rates
- Remove free and dissolved water
- Highly effective in low and high humidity elements

Technical Specifications

Type	Cart Ver. *(standard)*
Dimensions	44”h x 20.3”w x 36.7”d
Weight	295 lbs (134 kg)
Inlet Connections	1” SAE
Outlet Connections	
Flow Rate	90 gallons/hour (341 lph)
Inlet Pressure	Atmospheric
Outlet Pressure	to 40 psi (2.75 bar)
Fluid Service Temp.	50° F to 175°F (10°C to 79°C)
Power Supply	110 VAC, 60 Hz, 12 AMP Explosion proof version (Option X): 460 VAC, 60Hz, 3Ph
Attainable Water Content	< 50 ppm
Relative Humidity Display	Standard, 0-99% Range
Materials of Construction	Vessel: Stainless steel Seals: FPM
Fluid Viscosity	1000 SUS Explosion proof ver. (Option X): 500 SUS max
Operating Fluids	Recommended for use with Hydraulic Fluids and Petroleum Based Fluids; *(Consult factory for use with other fluid types)*
Max. Recommended Hose L/Dia. 15 ft. max. hose length at 1000 SUS 1 1/4” *(inlet)*, 1/2” *(outlet)*	At 70 SUS - 10 ft/0.75 *(inlet)* 15ft/0.5 *(outlet)* At 1000 SUS - 8ft/1.0 *(inlet)* 10ft/0.75 *(outlet)*
Max. Suction Pressure	-5.8 psi (-0.4 bar) (11.97 in Hg)

Model Code

MAFH - A - C - V - S - A - B - 01 - X

Series
MAFH = Dehydration station

Flow Rate
A = 1.5 gpm average

Type
C = Cart *(standard)*

Seals
V = Fluoroelastomer (FPM)

Mobility
S = Stationary
M = Caster base

Voltage
A = 110V/60 Hz/1 Phase
B = 220V/60 Hz /1 Phase

Air Source
B = Integral blower
C = Compressed air *(customer must supply clean, dry air)*

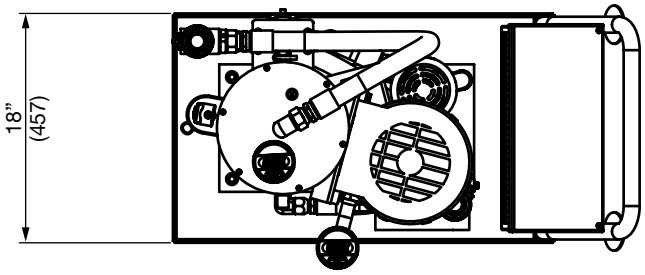
Element Size
01, 03, 05, 10, 25

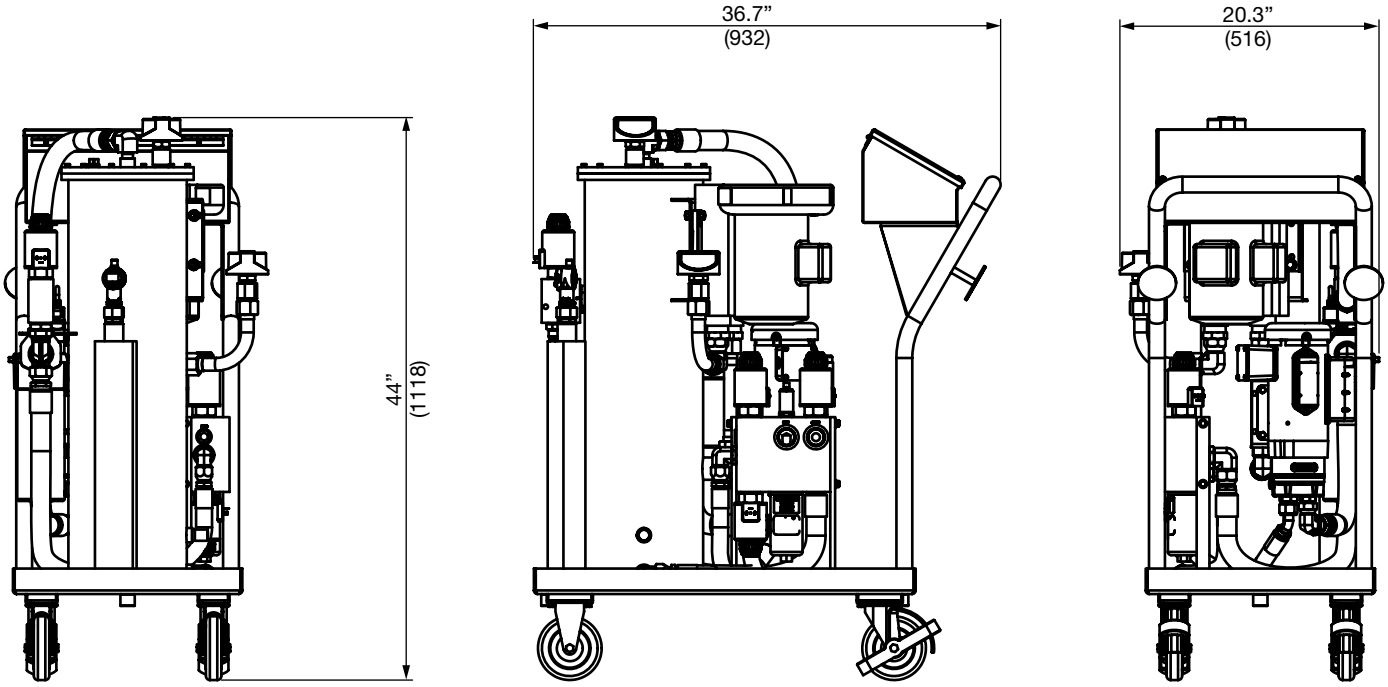
Options
X = Class 1, Div 2 explosion-proof, Supplied Voltage: 460V / 60Hz / 3Ph *(contact factory if this option is required in for your application)*

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
Cart





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

MAFH-E Series

Dehydration Station

Description

Water contamination in hydraulic systems can severely reduce the life of hydraulic systems and fluids. The MAFH-E is designed to eliminate 100% of free and up to 90% of dissolved water from reservoirs, barrels, and gear boxes. Using a patented transfer process, the MAFH-E efficiently removes water and particulate contamination quickly in all environments. A proprietary design reduces aeration of free and entrained gases of returned fluid. The unit was designed to be extremely portable using either the integrated lifting lugs located on each corner of the cart or the optional wheeled cart.

Principle of Operation

The MAFH-E uses a new mass transfer dewatering technology. Ambient air is conditioned to increase its water holding capability before injecting to the reaction chamber. Fluid is equally distributed and cascaded down through reticulated media and the conditioned air stream. Water is transformed to water vapor and is expelled from the unit as a moist air stream. The relative humidity of the incoming fluid is continually monitored by an integral AS 1000 AquaSensor and displayed real-time on the control panel.

Applications

- Steel and rolling mills
- Pulp and paper plants
- Power generation plants
- Tool machines / Plastic machines
- Hydraulic operated presses
- Oil conditioning

Features

- High Dewatering Rates and particulate removal in one system
- Simple Controls; RUN/DRAIN modes
- Reduce fluid recycling cost
- No expensive vacuum pump to service and replace
- Patented mass transfer technology uses ambient air to optimize and control dewatering rates
- Remove free and disolved water
- Highly effective in low and high humidity

Technical Specifications

Dimensions	32” W x 59” L x 70.25” H
Dry Mass	Without Heater: 1050lbs (476 kg); With Heater: 1230lbs (558 kg)
Inlet Connections	1-1/2” MJIC
Outlet Connections	1-1/2” MJIC
Oil Viscosity	Min 75 SUS; Max 2500 SUS (14 to 539 cSt)
Flow Rate	up to 22 gpm (1320 gallons/hour)
Inlet Pressure	Atmospheric
Outlet Pressure	To 100psi (6.9 bar)
Fluid Service Temperature	50°F to 160°F (10°C to 71°C)
Power Supply	460V/3/60Hz, 13 amps 460V/3/60Hz, 28 amps w/Heater 575V/3/60Hz, 10.5 amps 575V/3/60Hz, 23 amps w/Heater
Attainable Water Content	<50ppm
Relative Humidity Display	Standard, 0-99% Range
Construction	Base Frame: Carbon Steel Vessel: Stainless Steel Seals: Viton
Protection Class	NEMA-2

PN#02075860 / 06.18 / FSP1710-1942

Model Code

MAFH-E - __ - V - M - A - B - G05 - H

Series
MAFH-E = Dehydration Station

Flow Rate
(omit) = 15gpm
22 = 22gpm
VF = 3-15gpm Variable Flow

Seals
V = Fluoroelastomer (FPM)

Mobility
S = Stationary
M = Mobile

Voltage
A = 460V/3/60 Hz
B = 575V/3/60Hz

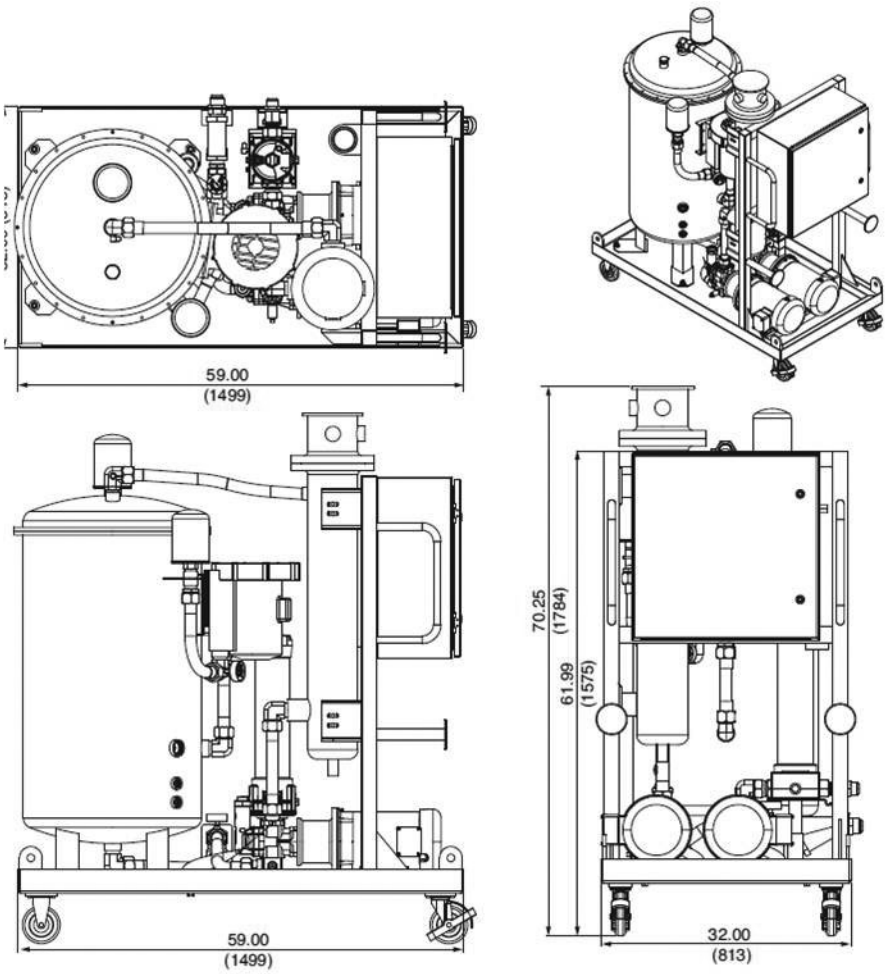
Air Source
B = Integral Blower

Element Size
G01, G03, G05, G10, G25

Optional Heater
H = 12500W Heater

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

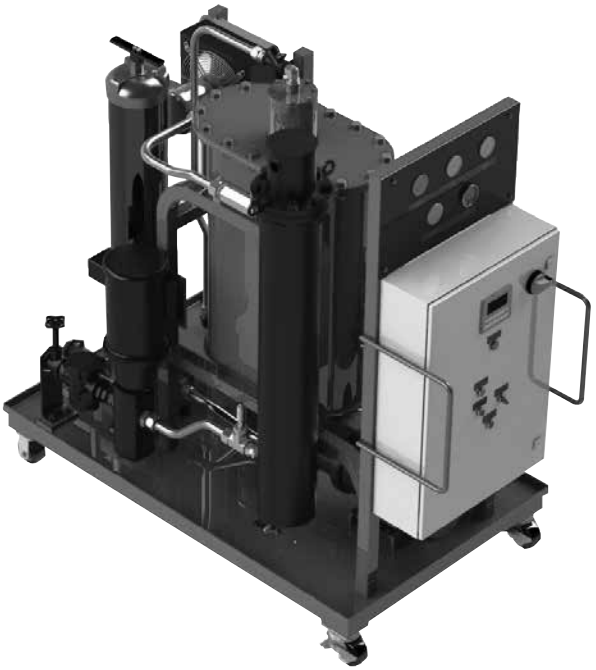
Dimensions



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

NAV Series

North American Vacuum Dehydrator



Description

The North American Vacuum Dehydrator (NAV) uses vacuum dehydrating technology to remove both free and dissolved water, and gases, from oil. In addition to water and gas, the NAV also removes solid contaminants from the oil with the use of highly efficient filter elements installed on the unit. The NAV is designed for use with larger applications, such as the conditioning of oil in larger hydraulic and lube reservoirs.

Features and Benefits

- Water Sensor standard on all units to show percent saturation
- Removes 100% of free and over 90% of dissolved water, as well as 100% of free and over 90% of dissolved gases
- Maintenance, operating, troubleshooting instructions are in HMI (touchscreen)
- Automatic mode enables user-defined system shutdowns
- Use of a low maintenance, dry running claw vacuum pump helps to avoid any dangerous, chemically reactive by-products

Applications

- Steel Mills
- Pulp and Paper Plants
- Power Generation Plants
- Any customer with a water problem in a large reservoir

Technical Specifications

Overall Dimensions *(height x width x length)*	39” W x 76” L x 74” H
Dry Mass	1990 lbs (903 kg)
Inlet Connections	2” NPT
Outlet Connections	1 ½” NPT
Flow Rate	30 gpm (114 L/min)
Inlet Pressure	22 in. Hg - 10 psi
Outlet Pressure	110 psi (7.6 bar)
Fluid Service Temperature	39°F to 170°F (3.8°C to 77°C)
Operating Temperature	39°F to 105°F (3.8°C to 40.6°C)
Fluid Viscosity	150-3280 SUS (23-700 cSt)
Power Supply	460V or 575V
Attainable Water Content	<10ppm
Relative Humidity Display	Standard, 0 - 99%
Constructions	Base Frame: Carbon Steel Vessel: Carbon Steel Seals: Viton
Protection Class	NEMA 4

PN#02075860 / 06.18 / FSP1710-1942

Model Code

NAV - 30 - M - 2 - A - H - 10

Series
NAV = North American Vacuum Dehydrator

Flow Rate
30 = 30 gpm

Operating Fluid
M = Mineral Oils (including oils w/ max. Viscosity as identified in specifications

Type
1 = Stationary
2 = Mobile

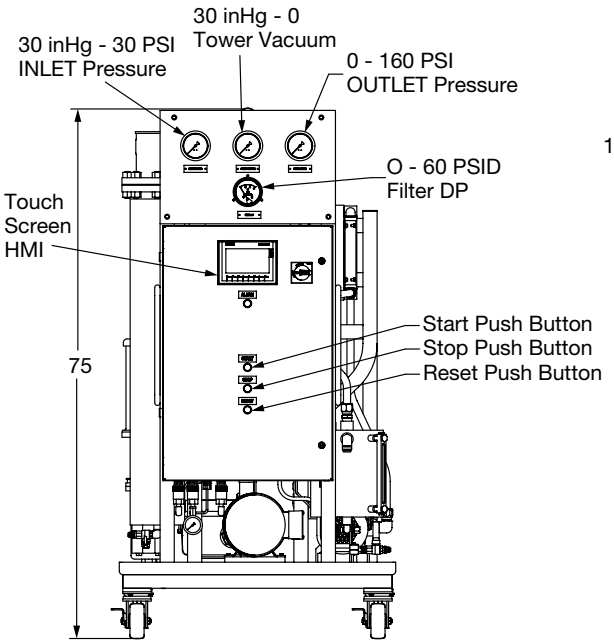
Voltage/Frequency
A = 460V / 60Hz / 3Ph+PE
B = 575V / 60HZ / 3PH+PE

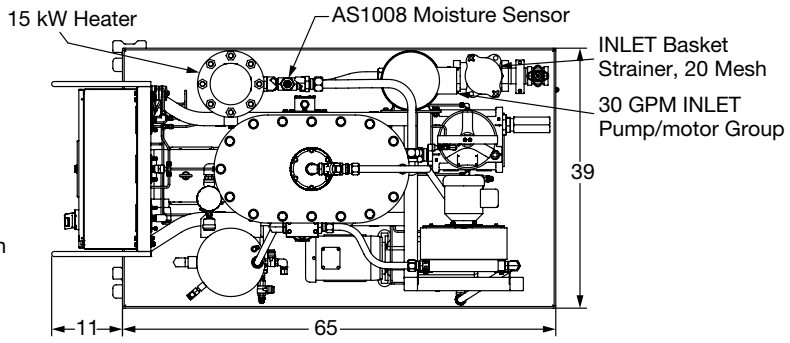
Heater
H = Standard

Filtration Rating
3 = 3 Micron
5 = 5 Micron
10 = 10 Micron
25 = 25 Micron

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

Dimensions
NAV North American Vacuum Dehydrator

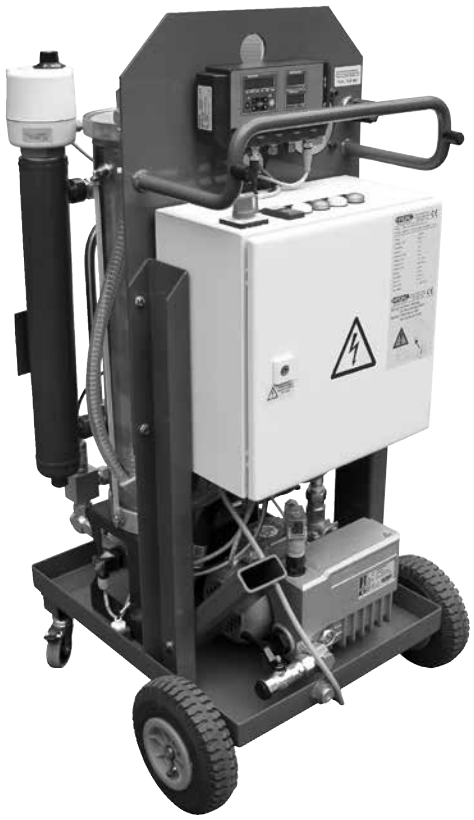




Dimensions are for general information only, all critical dimensions should be verified by requesting a certified print.

FAM5 Series

Fluid Aqua Mobile



Description

The Fluid Aqua Mobile FAM 5 is designed for dewatering, degassing and filtering hydraulic and lubrication fluids.

It operates on the principle of vacuum dewatering to eliminate free and dissolved water as well as free and dissolved gases. By using HYDAC Dimicron filter technology which has a high contamination retention capacity and filtration efficiency, the FAM 5 is extremely cost effective.

Its compact and mobile design makes it ideally suited for service work. The version designed for permanent installation provides continuous protection for applications where operating fluids require optimal conditioning, where valuable bio-oils or fire-resistant operating fluids are used, or where water frequently gets into the system.

Features

- Small, compact and easy-to-use unit for prompt deployment during service calls or emergencies
- Reliable and convenient for fixed and permanent use due to extensive monitoring functions
- Optional integrated heater to increase dewatering performance, especially for cold or high viscosity oils
- Optional integrated water content and particle measurement technology with continuous display of the measurements and storage of the values
- Very low residual water content, gas content and particle contamination result in longer oil change intervals, improved life expectancy of components, higher machine availability and as a result, a reduction in the Life Cycle Cost (LCC)

Applications

- Steel and rolling mills
- Pulp and paper plants
- Power generation plants
- Tool machines / Plastic machines
- Hydraulic operated presses
- Oil conditioning

Technical Specifications

Flow rate at 50 Hz	≈ 5 l/min
Permitted fluids**	Fluids compatible with NBR seals: • Mineral oils to DIN 50524 • Gear oils to DIN 51517, 51524 Operating fluids compatible with FPM (FKM, Viton®) seals: • Synthetic esters (HEES) DIN 51524/2 • Vegetable oils (HETG, HTG) • HFD fluids *(not for pure phosphate esters which require EPDM seals)*
Sealing material	NBR or FPM *(see model code "Operating fluid")*
Filter size of fluid filter	OLF 5
Filter element for fluid filter (xxx = filtration rating)	N5DMxxx Filter element must be ordered separately, *(see table "Filter elements for fluid filters")*
Clogging indicator	Differential pressure switch with cut-off function when filter is clogged
Type of vacuum pump	Rotary vane vacuum pump
Pump type for filling & draining	Gear pump
Operating pressure	0 to 116 psi (0 to 8 bar)
Permissible pressure at suction port *(without suction hose)*	-2.9 to 14.5 psi (-0.2 to 1 bar)
Permissible operating viscosity range**	78 to 1623 SUS (15 to 350 mm²/cSt) *(w/o integrated heater)* 78 to 2550 SUS (15 to 550 mm²/cSt) *(with integrated heater)*
Permitted viscosity range for particle measurement	78 to 297 SUS (15 to 200 mm²/cSt) *(with ACS measuring equipment)*
Fluid temperature range**	50 to 176 °F (10 to 80 °C)
Ambient temperature **	32 to 104 °F (0 to 40 °C)
Storage temp. range**	32 to 104 °F (0 to 40 °C)
Relative ambient humidity**	Maximum 90%, non-condensing
Electrical power consumption *(without heater)* / required external fuse*	≈ 1 kW / 16 A for circuit breakers with trip characteristics type C
Heating output *(optional)*	Max. 2.4 kW *(depending on the nominal voltage, see model code)*
Protection class	IP54
Length of power cable / plug	10 m / CEE *(depending on the nominal voltage, see model code)*
Length of connection hoses	197" (5 m) *(mobile version only)*
Material of hoses	see Model Code
Hydraulic connections	see table "Connection Summary"
Weight when empty	~26.5 lb. (~120 kg)
Achievable residual water content	< 100 ppm - Hydraulic and lube oils < 50 ppm - Turbine oils (ISO VG 32/46) < 10 ppm - Transformer oils ***

*Maximum specifications given, depends on equipment
**For other fluids, viscosities or temperature ranges, please contact HYDAC
***Units are not suitable for "Online" and "Onload" operation
(transformer in operation and connected to grid).

PN#02075860 / 06.18 / FSP1710-1942

Model Code

FAM – 5 – M – 2 – E – 05 – R – H – B – ACS – 00/–V

Series
- FAM = Fluid Aqua Mobile

Size
- 5 = ~ 1.32 gpm (~ 5 l/min)

Operating fluid
- M = Mineral oil - NBR seals, NBR hoses, tested with mineral oil*
- I = Insulating oil - NBR seals, NBR hoses, tested with insulating oil (e.g. Shell Diala)* / **
- X = HFD-R fluids - Fluroelastomer (FPM) seals, UPE/PE-PA hoses, tested with HFD-R fluid (e.g. Fyrquel)*
- B = Biodegradable (ester-based) - Fluroelastomer (FPM) seals, NBR hoses, tested with biodegradable operating fluid based on esters*

Mechanical type
- 1 = Stationary *(with feet)*
- 2 = Mobile *(with castors and connection hoses)*

Voltage / Frequency / Power supply
- E = 220 V/60 Hz/3Ph+PE
- M = 230 V/50 Hz/1Ph+PE
- O = 460 V/60 Hz/3Ph+PE[1)]
- AD = 220 V/60 Hz/1Ph+PE
- X = other voltage on request

Filter Size of Fine Filter
- 05 = OLF5

Type of Vacuum Pump
- R = Rotary vane vacuum pump

Heater
- H = Heater
- Z = Without heater *(for 200 to 359 V = 1 kW, for 360 to 690 V = 2.4 kW, heater only possible from 200 V)*

Control Concept
- B = basic

Measuring Equipment
- Z = without
- AD = Aqua Sensor (AS 3000), (with display directly on the sensor), without control function.
- ACS = Aqua Sensor AS 1000 + Contamination Sensor CS 1000 + Sensor Monitoring Unit (SMU 1200). Display and storage of the measurements, without control function.

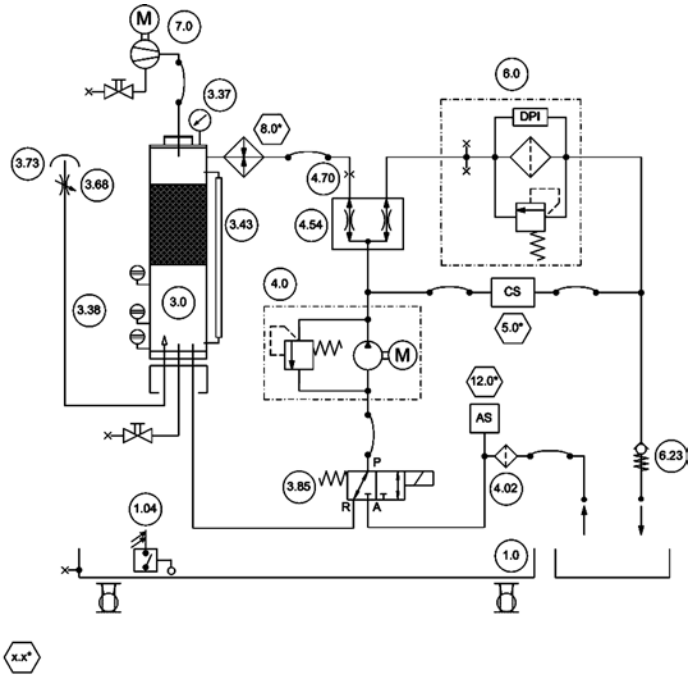
Modification Number
- 00 = The latest version is always supplied.

Supplementary Details
- None = standard
- V = Fluroelastomer (FPM) seals for “M” and “I” fluids

1) Supplied without connector
* Residues of test fluid will remain in the unit after testing
** Units not suitable for “Online” and “Onload” operation *(transformer in operation and connected to grid)*
For replacement element part numbers, please see Section E - REPLACEMENT ELEMENTS of this catalog.

See next page for factors that affect water removal rate.

Hydraulic Schematic



Item	Description
1.0	Drip tray
1.04	"Drip pan full" float switch
3.0	Vacuum column
3.38	Level sensor for vacuum column
3.68	Needle valve to regulate the necessary vacuum in the vacuum column
3.73	Breather filter
3.85	3/2 directional valve
4.0	Motor pump assembly
4.02	Suction screen
4.54	Flow divider
5.0	ContaminationSensor CS1000 *(optional)*
6.0	Fluid filter for elimination of solid particles, with differential pressure switch for filter monitoring
7.0	Vacuum pump
8.0	Heater (optional)
12.0	AquaSensor AS 1000 / AS 3000 *(optional)*

Type of vacuum pump

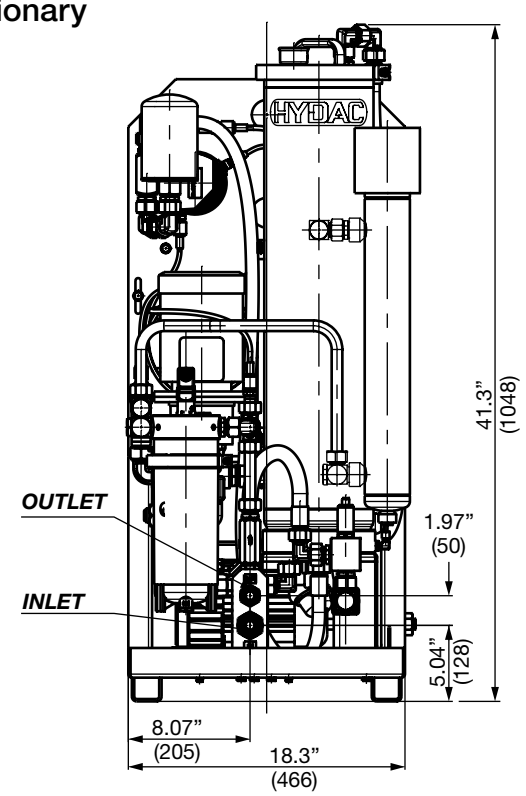
The vacuum pump used is an oil lubricated rotary vane pump.

The air discharged by the vacuum pump can, in addition to water, contain constituent elements of the operating fluid concerned, as well as any gases it contained.

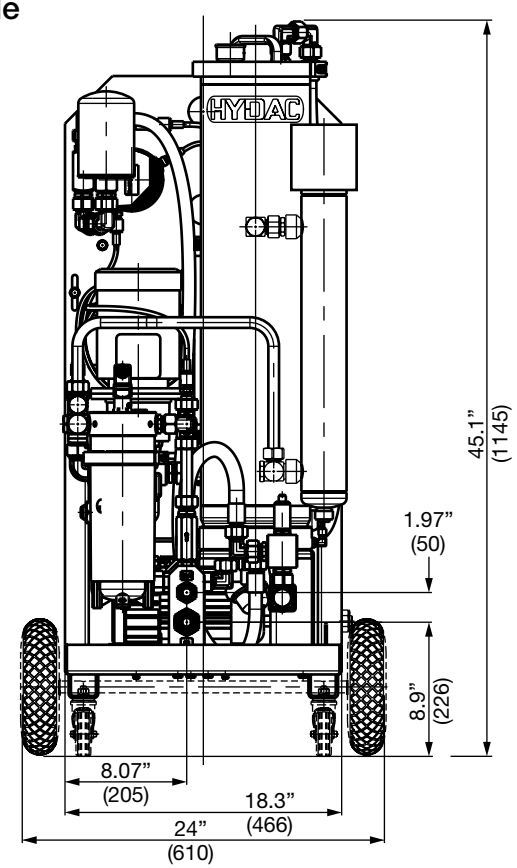
Therefore, please ensure that the area in which the FAM is operated is adequately ventilated.

Dimensions

Stationary



Mobile



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

Sizing

As a rough guide, the FluidAqua Mobil can be sized according to the tank volume of the system.

Tank Volume (gallons)	Model
< 396 (< 1,500 L)	FAM 5

In general, it must however be noted that sizing will depend on the application, the fluid, the temperature of the fluid and the ambient temperature, the fluid quantity and the water ingress into the system. These have a great affect on the dewatering efficiency. Therefore the specifications can only serve as an indication.

Factors That Affect Water Removal Rate

	Factor (increasing/decreasing)	Dewatering Speed
Water Content	↑	↑
Fluid Temperature*	↑	↑
Detergent Additives	↑	↓
FAM Flow Rate	↑	↑

Heater

By using the built-in heater, the dewatering capacity can be increased, particularly in the case of high viscosity fluids or fluids at low temperatures.

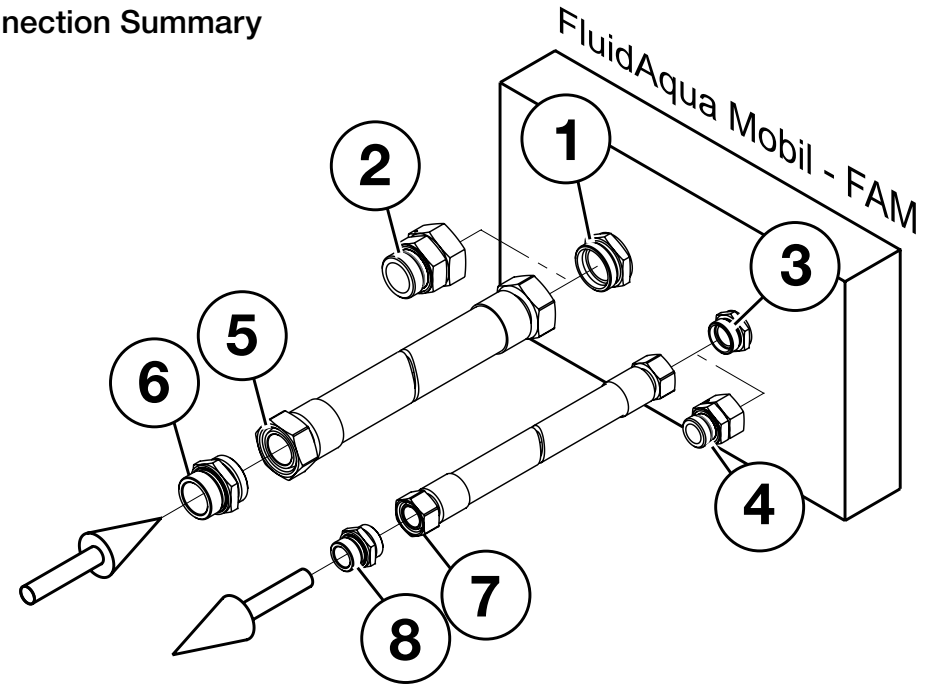
If the temperature of the fluid is raised by 50˚F(10°C) then the dewatering capacity increases by up to 50 %. The ideal temperature for dewatering is ~122 to 140˚F (~50 to 60°C).

Generally speaking, for operating viscosities of between 2086 to 3708 SUS (350 to 800 mm2/cSt) the heater option must be selected and the heater must be used.

Instrumentation

If the water and particle measuring options *(AquaSensor and ContaminationSensor)* are included, it is possible to display the water content relative to the saturation point *(saturation level, relative humidity)*, as well as the particle contamination and temperature of the fluid. The measured data is stored in the SensorMonitoring Unit with a date and time stamp and can be easily transferred using a USB memory stick.

Connection Summary



Item	FAM 5
1 - FAM inlet connector	28L / M36x2 (male thread)*
2 - Adapter	Adapter G1 A (male thread)**
3 - FAM outlet connector	18L / M26x1.5 (male thread)*
4 - Adapter	Adapter G ½ A (male thread)**
5 - Suction hose connection	28L / M36x2 (female thread)***
6 - Adapter	Adapter G1 A (male thread)**
7 - Pressure hose connection	18L / M26x1.5 (female thread)***
8 - Adapter	Adapter G ½ A (male thread)**

* Connection Form D to ISO 8434-1 Series L
(corresponds to ISO 12151, Form S, Series L)
** Screw-in spigot to ISO 1179-2 *(Form E)*
*** Connection Form N to ISO 8434-4 Series L
(corresponds to ISO 12151, Form SWS, Series L)
Items 1 to 4 are supplied with the stationary FAM.
Items 1 to 8 are supplied with the mobile FAM.

Accessories

Description	Material	Part No.
Lance set for suction and return hose, consisting of: 2x lances ø0.71" (ø18 mm), length = 19.7" (0.5 m)	FPM	3685146

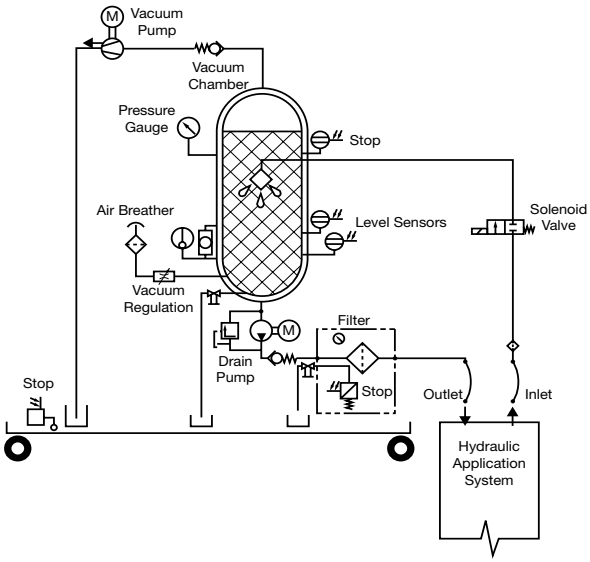
Items supplied

- Fluid Aqua Mobile
- With suction and return hose *(only on mobile version)*
- 0.26 gal. (1L) vacuum pump oil for initial filling of vacuum pump
- Control cabinet key
- Technical documentation:
  - Operating and Maintenance Manual
  - Electrical wiring diagram
  - Test certificate
  - CE declaration of conformity

FAMH Series

Vacuum Dehydrator - Water & Solid Removal

Hydraulic Schematic



Description

The dewatering and filtration unit FAMH is a bypass unit which has been specially designed for the conditioning of lubrication and hydraulic fluids. Use of HYDAC's Dimicron® filter element technology provides a high contamination retention capacity.

The FAMH has been redesigned to include a touch screen menu for ease of diagnostics.

Advantages

- Nema 12 Standard
- Separation of 100% free and 90% dissolved water through vacuum dehydration
- Removal of 100% free and 95% dissolved gases
- Separation of particles with high contamination retention capacity
- Easy handling and automatic supervision of the PLC controlled process
- User friendly touch screen diagnostics
- Standard aquasensor provides % water saturation
- JIC connections

Applications

- Steel and rolling mills
- Pulp and paper plants
- Power generation plants
- Tool machines / Plastic machines
- Hydraulic operated presses
- Oil conditioning

Options

- Nema 4 Enclosure

HYDAC FAMH vs Other

- Water removal below saturation point
- Static flow through the filter
- Optimal particle removal efficiency
- No corrosion within the vacuum pump
- Low operating costs
- User friendly on screen operational and maintenance instructions

The contamination of hydraulic fluids with water can either be caused by condensation or by ingression. Variations in temperature of the hydraulic tank lead to condensation. The ingression of water can be caused by defective cooler hoses, defective seals or external leakages into the system.

In lubrication and hydraulic fluids water can occur in two different forms:

- free water *(visible)*
- dissolved water *(not visible)*

Aquamicron® elements, centrifuges and condensation methods normally only separate free water, the FAMH separates both forms of water from the oil. While dewatering the fluid, dissolved gases are also removed. Thereby the lubricating properties are improved which extends oil life, reduces component wear rates, and eliminates production losses caused by breakdowns.

Model Code

FAMH 30 M 2 O / 19200 030 DM 02 D A 1*

Series
FAMH = Fluid Aqua Mobile

Flow Rate
15 = 5 gpm
30 = 10 gpm
50 = 16 gpm
70 = 23 gpm

Operating Fluid
M = Mineral Oils *(including Oils with max. viscosity as identified in Technical Data)*
I = Transformer Oil *(heater required)*
X = Synthetic & Fire Resistant Oil *(please specify exact fluid type)* - FPM seals

Type
1 = Stationary
2 = Mobile

Voltage/Frequency
F = 230 V / 60 Hz / 3Ph+PE
O = 460 V / 60 Hz / 3Ph+PE
N = 575 V / 60 Hz / 3Ph+PE

Power

without heater			with heater		
1900	=	1900 W *(FAMH 15)*	8650	=	8650 W *(FAMH 15)*
2700	=	2700 W *(FAMH 30)*	19200	=	19200 W *(FAMH 30)*
3200	=	3200 W *(FAMH 50)*	21200	=	21200 W *(FAMH 50)*
5100	=	5100 W *(FAMH 70)*	26100	=	26100 W *(FAMH 70)*

Filter Size *(microns)* **& Number of Elements**
015 = 1 x N15DMxx *(FAMH 15 only)*
030 = 2 x N15DMxx *(FAMH 15 and 30 only)*
045 = 3 x N15DMxx *(FAMH 30 and 50 only)*
060 = 4 x N15DMxx *(FAMH 50 and 70 only)*
075 = 5 x N15DMxx *(FAMH 70 only)*

Filter Material
DM = Dimicron®

Absolute Filtration Rating *(micron)*
02 = 2 µm (DM)
10 = 10 µm (DM)
20 = 20 µm (DM)
30 = 30 µm (DM)

Vacuum Pump Type/Size
D = Rotary vane pump

Measuring Equipment
A = AquaSensor *(standard)*

Modification Number *(latest version always supplied)*
1

Note: Please consult factory for NEMA4 enclosure.

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

***Sample Model Code** *(top of the page)* **is a standard version.**
FAMH 30 M 2 O / 2700 030 DM 02 D A 1 - Standard FAMH without a heater
FAMH 30 M 2 O / 19200 030 DM 02 D A 1 - Standard FAMH with a heater

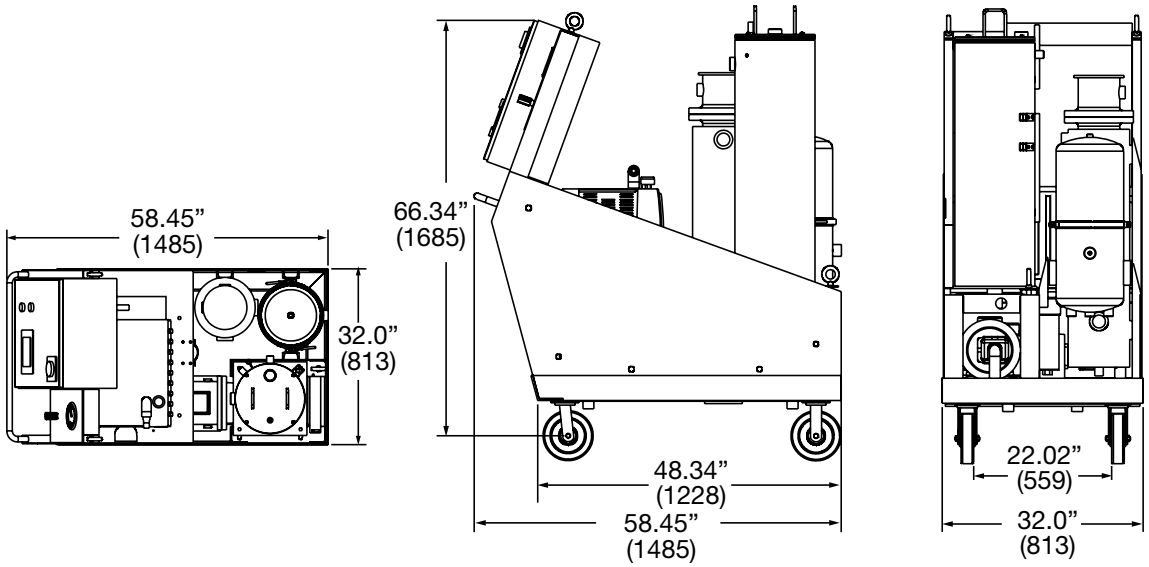
For replacement element part numbers, please see Section E - REPLACEMENT ELEMENTS of this catalog.

For special models, please contact our sales/technical department.
*See next page for factors that affect water removal rate

Technical Specifications

Series	FAMH 15	FAMH 30	FAMH 50	FAMH 70
Filter Size	OLF-15	OLF-30	OLF-45	OLF-70
Filter Element	N15DMxxx(1x)	N15DMxxx(2x)	N15DMxxx(3x)	N15DMxxx(5x)
Capacity of Pressure Vessel gal (liters)	5.25 (20)	10.5 (40)	20.5 (78)	26.25 (100)
Approx. Solid Contamination removal to ISO 4572 lbs (g)	1.1 (500)	2.2 (1000)	3.3 (1500)	5.5 (2500)
Electric Clogging Indicator	VM 2C.x			
Bypass Cracking Pressure psi (bar)	29 (2)			
Pump Type	Gear pump			
Flow rate gpm	5	10	16	23
Maximum Operating Pressure psi (bar)	87 (4.5)			
Viscosity Range (without) SUS (cst)	75-2500 (15-500)			
Electrical Cable Length ft (m)	32 (10)			
Hose Length ft (m)	16 (5)			
Hose Material	NBR			
Inlet - Outlet	JIC 20 (1 1/4") - JIC 16 (1")			
Seal Material (FPM for operating fluid B, X)	NBR			
Dry Weight (lbs.)	940	970	1100	1145
Fluid Temperature	50° to 175°F			
Ambient Temperature	5° to 105°F			
Attainable water content (ppm)	< 100 ppm			
Power Requirements	60 AMP Circuit Required			

Dimensions



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

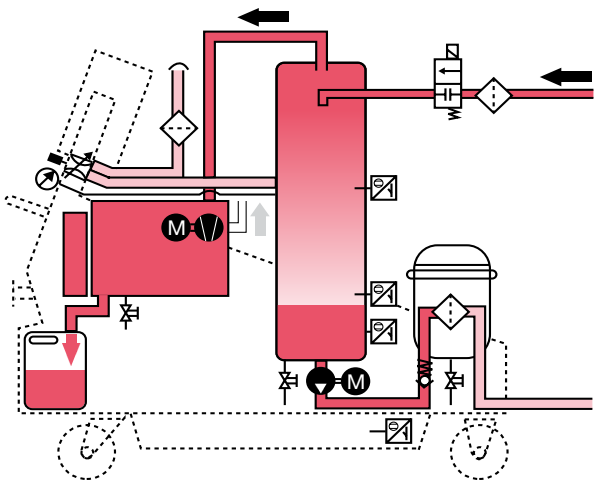
Water Extraction Process

(for FAMH 15 - 70 without heater only)

The operating fluid is drawn from the oil reservoir by the vacuum in the reactor through the suction strainer and the shut-off valve. The oil trickles down slowly and from there is fed back into the oil reservoir by the gear pump through the filter. When Dimicron filter element technology is used the unit is especially economical.

Water is removed from the fluid in the reactor. The vacuum present has the effect of reducing the boiling point of the water.

The water vapor is released into the atmosphere or the water reservoir through the vacuum pump.



PN#02075860 / 06.18 / FSP1710-1942

Negative Effects of Water on Oils

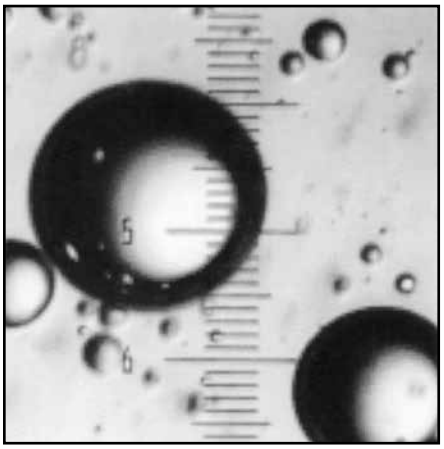
It is almost certain that there is water in a hydraulic system. The most frequent causes are: ambient humidity, splash water, and new oil. Mineral based oils show a faster aging process, if there is water in the oil. This aging process is accelerated through contamination particles by a catalytic effect. The additives are quickly used up and the lifetime of the operating fluid is much shorter than that of “dry” oil.

Water in Mineral Oil causes

- Aging of the fluid
- Fluid deterioration
  - Reduced air separating — results in: Cavitation
  - Increased foaming — results in: Cavitation
  - Reduced lubrication — results in: Vibration & Wear
  - Erratic operation — results in: Inaccuracy
- Depletes additives
- Clogged filters
- Corrosion

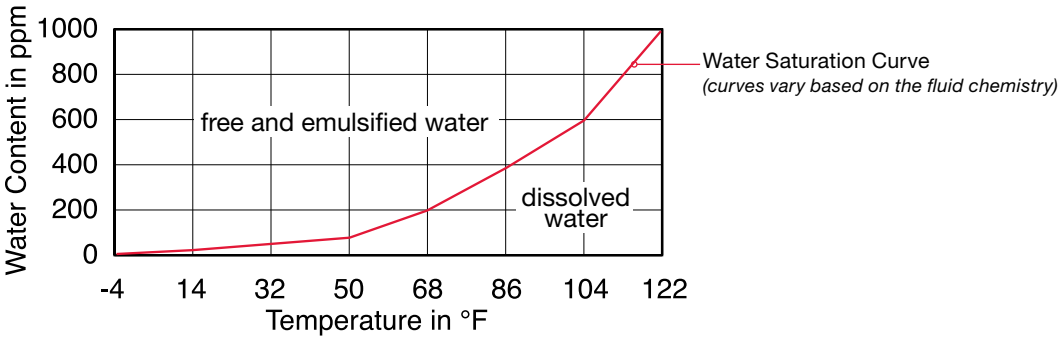
Water in Ester Oils causes:

- Hydrolysis
- Seal deterioration
- Leakage



Tiny water droplets in hydraulics fluid
(1 unit equals 10 micron)

Typical Saturation Limit of Hydraulic Oil for Water



FAMH Sizing

Sizing of the FAMH is normally done through periodic measuring of the water content which will determine the hourly ingression of water. The typical dewatering speed of the FAMH is listed in the technical data table. If there is a continuous ingression of water the recommended flow rate of the FAMH can be determined by the system size *(total gallons)*.

Sizing Chart Limits

(continuous water ingression)

Tank Volume (gallons)	FAMH Model
1000 to 2000	FAMH 15
2000 to 4000	FAMH 30
4000 to 7000	FAMH 50
7000 and up	FAMH 70

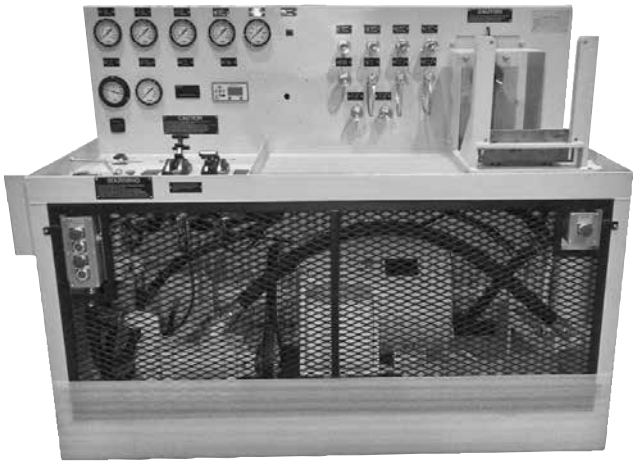
*Please note that the fluid temperature should be a minimum of 20°F warmer than the ambient air temperature to enable efficient dewatering. An inline heater is available for reclaim applications. Please contact our sales/technical department.

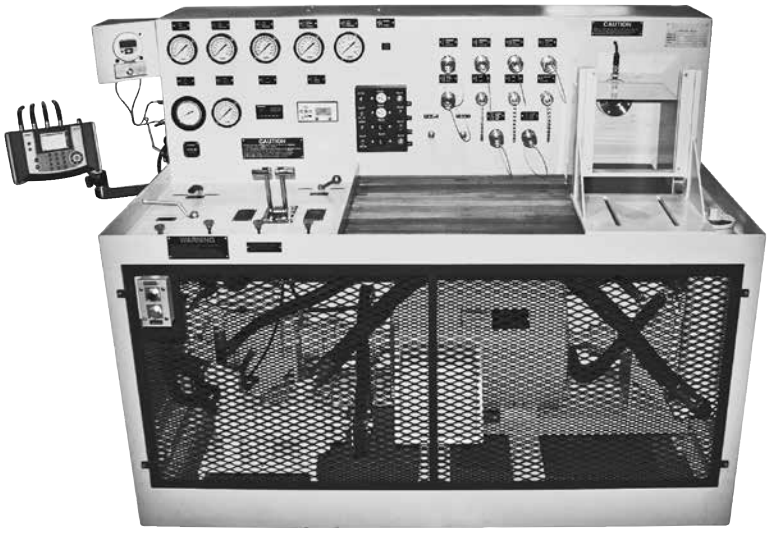
Factors That Affect Water Removal Rate

	Factor (increasing/decreasing)	Dewatering Speed
Water Content	↑	↑
Fluid Temperature*	↑	↑
Detergent Additives		↓
Absolute Pressure in Vacuum Chamber	↓	↑
Humidity	↓	↑
FAM Flow Rate	↑	↑
Ester Oils		↘

HTB Series

Hydraulic Test Bench





Description

The HYDAC HTB hydraulic test bench is the ultimate diagnostic tool, capable of thoroughly testing a vast array of new or rebuilt components and subassemblies prior to their installation in a working system. Test bench instrumentation has been designed to make diagnosis fast and accurate, with virtually no requirement for connecting external instruments. The bench panel includes a digital flow gauge, a tachometer to measure the speed of tested pumps or motors, and a reservoir temperature gauge. Individual gauges measure pressure on the test bench main pump, the pump or motor being tested, the test bench load pump, the cylinder and valve pressure port, and the test bench super charge pump.

Every HTB includes efficient HYDAC hydraulic filters to keep the bench oil at optimum cleanliness, providing assurance that newly rebuilt components will not be subjected to harmful levels of dirt. To keep filters operating at peak efficiency, the instrument panel includes a red pilot light that signals the operator when any bench filter needs a new element.

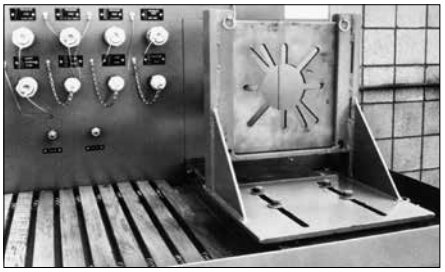
These benches have been refined for over 30 years by HYDAC engineers, based on the comments and requests of over 700 test bench owners. The versatile hydraulic circuitry present in each of the three models can shorten troubleshooting time and take the guesswork out of diagnoses. Current models are powerful, compact units that pay for themselves quickly in saved maintenance time and expenses.

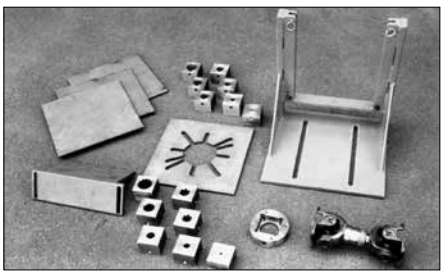
Applications

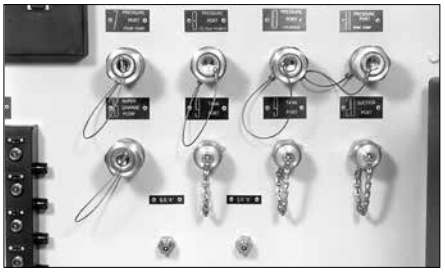
- **Pumps and motors** can be tested dynamically. Pump and motor testing is aided by the wide speed and torque ranges built into the bench and by the universal mounting bracket and mounting accessories that come with the bench. An open loop hydrostatic variable volume hydraulic system provides the power and speed control for the drive shaft. Motors can be dynamically tested, under load, for operating efficiency. Pumps can be tested for external leakage and volumetric efficiency in either direction, at speeds from 100 to 2400 rpm. The test bench can also be used to break-in pumps and motors to manufacturer's specifications before they are installed in a system.
- **Cylinder** leaks are easy to find. Double-acting cylinders may be cycled, and tested for both internal and external leakage at any point of piston travel. Scored cylinder walls and defective packing are easily detected. Single-acting cylinders are tested at maximum stroke.
- **Valve** testing time is minimized. Pressures can be set, external and internal leakage spotted, flow and pressure data can be generated and checked against operating requirements and overall valve efficiency determined. Optional electrical and pilot pressure supplies are available on the bench for testing solenoid-actuated and pilot-operated valves.

Features

- An ingenious universal mounting bracket makes mounting pumps and motors on the bench a simple, quick operation
- Mounting plates are furnished to accommodate flange-mounted and foot-mounted pumps or motors
- Drive adapter equipment includes inserts for keyed shafts, an insert chuck and a universal drive shaft
- Quick disconnect porting on the bench provides convenient hook-up for test components
- Includes a factory-trained technician for a two-day, on-site training session
- Two complete operating manuals are supplied with each bench
- Kits and spare parts available for upgrades and maintenance







PN#02075860 / 06.18 / FSP1710-1942

Model Code

HTB 100 A AD

Series
HTB = Hydraulic Test Bench

HP
50, 100, 150

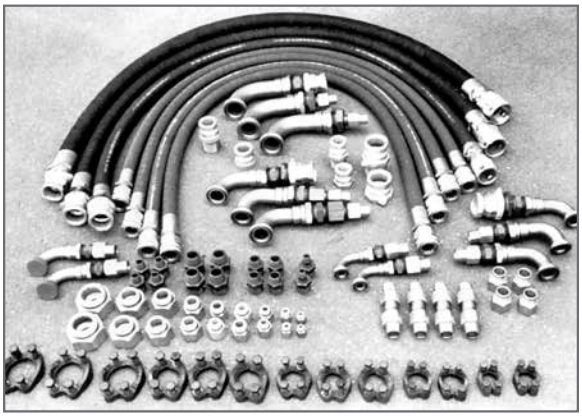
Voltage
A = 230V 60Hz, **B** = 460V 60Hv, **C** = 575V 60Hz, **D** = 380V 50Hz, **E** = 415V 50Hz, **F** = 380V 60Hz

Options

A	=	Water Cooled Heat Exchanger	G	=	Closed Loop Circuit
B	=	Solenoid & Pilot Operated Valve Group	H	=	HMG Digital Electronic Group
C	=	Jib Crane Group	I	=	Air Cooled Heat Exchanger
D	=	Filtration Group (included on all HTB's)	J	=	25 GPM Case Drain Meter
E	=	Safety Enclosure Group	K	=	Digital Gauges
		Splined Shaft Group*	L	=	CS1000 Kit
					Hose & Fitting Group*

*Note: Ordered as a separate line item.

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



Hose and Fittings Group Option
(contains hose connection with female quick disconnects on both ends, plus a series of separate national pipe thread, straight thread, and SAE four-bolt flange adapters, ranging in size from 3/8" through 2", equipped with male quick disconnects)

Features	Model HTB-50-E	Model HTB-100-E	Model HTB-150-E
Speed Range in either direction	200 to 2400 rpm	200 to 2400 rpm	200 to 2400 rpm
Power Available for testing pumps Expressed torque	275 ft-lbs to 1200 rpm	458 ft-lbs to 1200 rpm *(decreasing proportionately to 2400 rpm)*	670 ft-lbs to 1200 rpm
Expressed in horsepower	60 hp at 1200 rpm	115 hp at 1200 rpm *(with constant hp to 2400 rpm)*	150 hp at 1200 rpm
Test Pressure	0 to 5000 psi (345 bar)	0 to 5000 psi (345 bar)	0 to 5000 psi (345 bar)
Test Motor Load Maximum in either direction	275 ft-lbs (373 Nm)	458 ft-lbs (621 Nm)	670 ft-lbs (908 Nm)
Electrical Drive Motor-230/460V, 1800 rpm; 3 phase, 60 hertz (*A start-stop push button is mounted on the bench: Starter(s) is/are not included. Customer must advise type of starter(s) and service voltage he will use.)*	50 hp	100 hp	100 hp and 50 hp
Hydraulics Main Bench Pump (variable piston)	23 gpm/5000 psi (87 L/min/345 bar)	38 gpm/5000 psi (144 L/min/345 bar)	38 gpm/5000 psi (144 L/min/345 bar)
Auxiliary Main Pump (variable piston)	N/A	N/A	23 gpm/5000 psi (87 L/min/345 bar)
Supplemental Pump	20 gpm/2000 psi (76 L/min/138 bar)	20 gpm/2000 psi (76 L/min/138 bar)	20 gpm/2000 psi (76 L/min/138 bar)
Pressure and Return Ports	1" quick disconnects	1" quick disconnects	1" quick disconnects
Suction Porting	1" & 2" quick disconnects	1" & 2" quick disconnects	1" & 2" quick disconnects
Flow Gauge Scales	Three Scales: 2 to 14; 8 to 36; 24 to 100 gpm (all models)		
Reservoir Capacity	100 gallons (378 L)	100 gallons (378 L)	200 gallons (757 L)
General	Full flow 3 micron filtration maintains excellent system cleanliness level; bench includes a 30" x 30" work pan, oil level gauge, fill cap mesh strainer, digital tachometer.		
Bench Dimensions and Weight	62" H x 76" L x 43" W 4100 lbs (1860 kg)	62" H x 76" L x 43" W 4500 lbs (2041 kg)	62" H x 76" L x 55" W 6000 lbs (2722 kg) Auxiliary Power Unit 30" H x 50" L x 30" W 900 lbs (408 kg)

Notes

Replacement Elements

Each of our hydraulic filtration systems are equipped with high efficiency elements to remove solid particulates and/or water quickly and efficiently. A complete listing of the replacement elements used through-out the Filter Systems catalog can be found on the following pages.

Pressure Elements

Used in OFS Series, OFCS & OFCD Series, OFAS & OFAD Series, OF5HS & OFCD-HV Series, and OFX Skid - Standard Capacity Series

9 inch Elements		18 inch Elements		27 inch Elements	
Model Code	**Part No.**	**Model Code**	**Part No.**	**Model Code**	**Part No.**
5.03.09D03BN	02060528	5.03.18D03BN	02060430	5.03.27D03BN	02065003
5.03.09D03BN/-V	02056713	5.03.18D03BN/-V	02071680	5.03.27D03BN/-V	02082855
5.03.09D05BN	02060529	5.03.18D05BN	02060431	5.03.27D05BN	02065004
5.03.09D05BN/-V	02056714	5.03.18D05BN/-V	02056457	5.03.27D05BN/-V	02073488
5.03.09D10BN	02060530	5.03.18D10BN	02060432	5.03.27D10BN	02065005
5.03.09D10BN/-V	1278599	5.03.18D10BN/-V	02056492	5.03.27D10BN/-V	02056493
5.03.09D20BN	02060531	5.03.18D20BN	02060433	5.03.27D20BN	02065006
5.03.09D20BN/-V	1294016	5.03.18D20BN/-V	02072428	5.03.27D20BN/-V	02096052
5.03.09D40AM	02075265	5.03.18D40AM	02091879	5.03.27D40AM	02088358
—	—	—	—	5.03.27D40AM/-V	02088359
—	—	—	—	—	—
5.03.09D10BN/AM	02075258	—	—	—	—
5.03.09D40AM/-V	02561740	—	—	—	—
HK/HJ *(connector element)*	7630900	—	—	—	—

Element Performance

Micron Rating	Filtration Rating per ISO 4572/NFPA T3.10.8.8 *Using automated particle counter (APC) calibrated per ISO 4402*			Filtration Rating wrt ISO 16889 *Using APC calibrated per ISO 11171*	
Element	Bx≥75	Bx≥100	Bx≥200	Bx≥200	Bx≥1000
5	2.5	3.0	4.0	4.8	6.3
10	7.4	8.2	10.0	8.0	10.0
25	18.0	20.0	22.5	19.0	24.0

Dirt Holding Capacity

9" Element Micron Rating	DHC(gm)	18" Element Micron Rating	DHC(gm)
5	119	5	238
10	108	10	216
25	93	25	186

Used in OFCD-MV Series, OFS-AM Series, OF5HD-HV Series, MAFH-E Series

18 inch Element		27 inch Element	
Model Code	**Part No.**	**Model Code**	**Part No.**
5.03.18D03BN/-V-G	02094523	5.03.27D03BN/-V-G	02098195
5.03.18D05BN/-V-G	02094528	5.03.27D05BN/-V-G	02200583
5.03.18D10BN/-V-G	02094529	5.03.27D10BN/-V-G	02200584
5.03.18D20BN/-V-G	02098097	5.03.27D20BN/-V-G	02200585
5.03.18D10AM/-V-G	02097600	5.03.27D40AM/-V-G	02098194

Note: G = Betamicron GeoSeal® (r) replacement elements

Element Performance

Micron Rating	Filtration Rating per ISO 4572/NFPA T3.10.8.8 *Using automated particle counter (APC) calibrated per ISO 4402*			Filtration Rating wrt ISO 16889 *Using APC calibrated per ISO 11171*	
Element	Bx≥75	Bx≥100	Bx≥200	Bx≥200	Bx≥1000
3	<1.0	<1.0	<2.0	4.0	4.8
5	2.5	3.0	4.0	4.8	6.3
10	7.4	8.2	10	8.0	10.0

Dirt Holding Capacity

18" Element Micron Rating	DHC(gm)	27" Element Micron Rating	DHC(gm)
3	230	3	345
5	238	5	357
10	216	10	324

Used in OFX Skid - High Capacity Series

16 inch Element		39 inch Element	
Model Code	Part No.	Model Code	Part No.
1.14.16D03BN	1252836	1.14.39D03BN	1252840
1.14.16D03BN/-V	1252837	1.14.39D03BN/-V	1252841
1.14.16D06BN	1252838	1.14.39D06BN	1253294
1.14.16D06BN/-V	7602185	1.14.39D06BN/-V	2094525
1.14.16D12BN	1253292	1.14.39D12BN	1253295
1.14.16D12BN/-V	C/F	1.14.39D12BN/-V	02071197
1.14.16D25BN	1253293	1.14.39D25BN	1253384
1.14.16D25BN/-V	1252839	1.14.39D25BN/-V	C/F

Used in MAFH-A Series

Model Code	Part No.
5.12.09D10BN/-V	02561354
5.12.09B03BN/-V	02093367
5.12.09B05BN/-V	02091885
Breather Element *(Shrouded)*	02561357
Breather Element *(Cart)*	1296639

Element Performance

Micron Rating	Filter Rating	DHC (gm)
1	ß 4.2(c) ≥1000	55
3	ß 4.8(c) ≥1000	57
5	ß 6.3(c) ≥1000	62
10	ß 10(c) ≥1000	52

Used in IXU 1/4 Series

Model Code	Part No.
IXE 200	03348961
5.03.18D05BN/V SO103H	02077497
5.03.18D10BN/-V SO103H	02056369

Used in OFCD-BC Series, OF7-BC Series

Model Code	Part No.
ELEMENT OFCDBC 003	02099361
ELEMENT OFCDBC 005	02099362
ELEMENT OFCDBC 010	02099363
ELEMENT OFCDBC 020	02099364
ELEMENT OFCDBC AM	02099365

Dimicron® Elements

Used in OLF Series & FAMH Series

Model Code	Micron Rating	Part No.
N15DM002	2	01251590
N15DM010	10	03115180
N15DM020	20	00349576
N15DM030	30	03048790

Be sure to order the correct number of elements:
OLF 15 = 1, OLF 30 = 2, OLF 45 = 3, OLF 60 = 4

Cartridge Elements

Used in FAM5 & OLF Compact Series

Model Code	Micron Rating	Media Type	Part No.
N5DM002*	2	Dimicron®	00349494
N5DM005*	5	Dimicron®	03068101
N5DM010*	10	Dimicron®	03102924
N5DM020*	20	Dimicron®	03023508
N5AM002*	2	Aquamicron®	00349677
N5AM020*	20	Aquamicron®	03040345

*Cartridge element can not be used with OLF 5/4-SP

Aquamicron® (AM) Elements

Aquamicron® filter elements are specially designed to separate water from mineral oils. They are only supplied in the dimensions of HYDAC return line filter elements from size 330 and larger. This means that they can be installed in all HYDAC filter housings from size 330 which are fitted with return line filter elements.

The increasing pressure loss in a filter element which is being saturated with water indicates, by means of standard clogging indicators, that it is time to change the element. When the Aquamicron® technique is employed, particle contaminants are also separated from the hydraulic medium as a by-product. This means that the Aquamicron® element doubles as a safety filter. The “filtration rating” is 40 µm absolute (ß40 ≥ 100 to Δp = 43.5 psi / 3 bar).

In order to guarantee the greatest efficiency, it is recommended that these elements be installed in an off-line recirculation loop configuration.

For complete details please contact your HYDAC distributor.

Betamicron®/Aquamicron® (BN/AM) Elements

BN/AM filter elements are specifically designed to absorb water and achieve absolute filtration of solid particles from mineral oils, HFD-R oils, and rapidly biodegradable oils. A super absorber reacts with the water present in the fluid and expands to form a gel from which the water can no longer be extracted even by increasing the system pressure. These filter elements do not remove dissolved water below the saturation level of the hydraulic medium. Solid particle filtration (3 µm, 10 µm absolute) is achieved due to the Betamicron® filter construction.

For complete details please contact your HYDAC distributor.

Betterfit® Interchange Elements

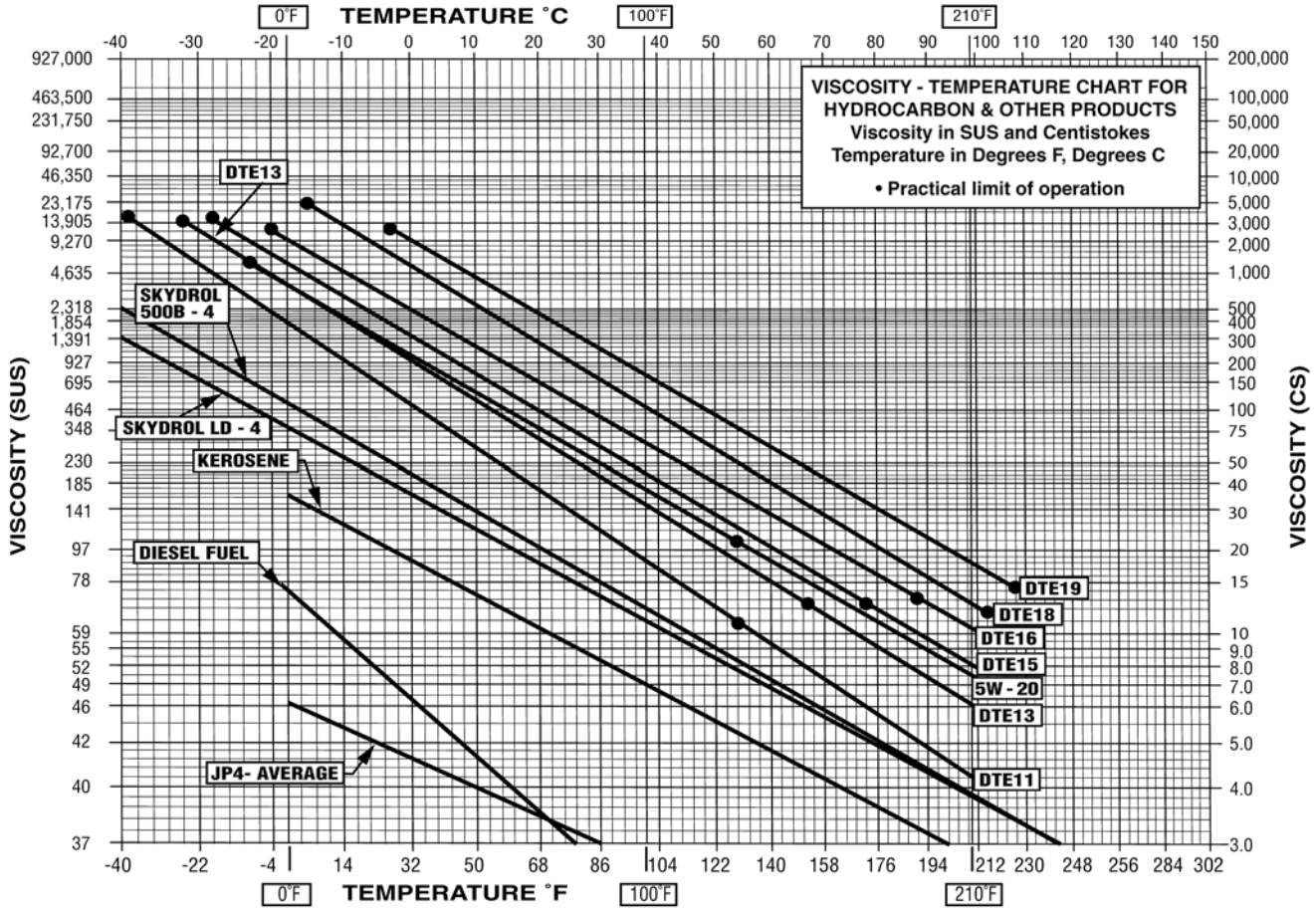
HYDAC’s family of interchange elements has a new name and a new focus. The former Betafit line will now be called Betterfit, and will incorporate an exclusive outer wrap that not only improves performance, but also provides quality protection. It features a unique oval-hole design that improves flow for more efficient filtration, ensuring long system life and cost savings. This is a one-of-a-kind oval design, so you can be assured that when your element includes this outer wrap that it is a HYDAC original and not a low quality imitation.

F

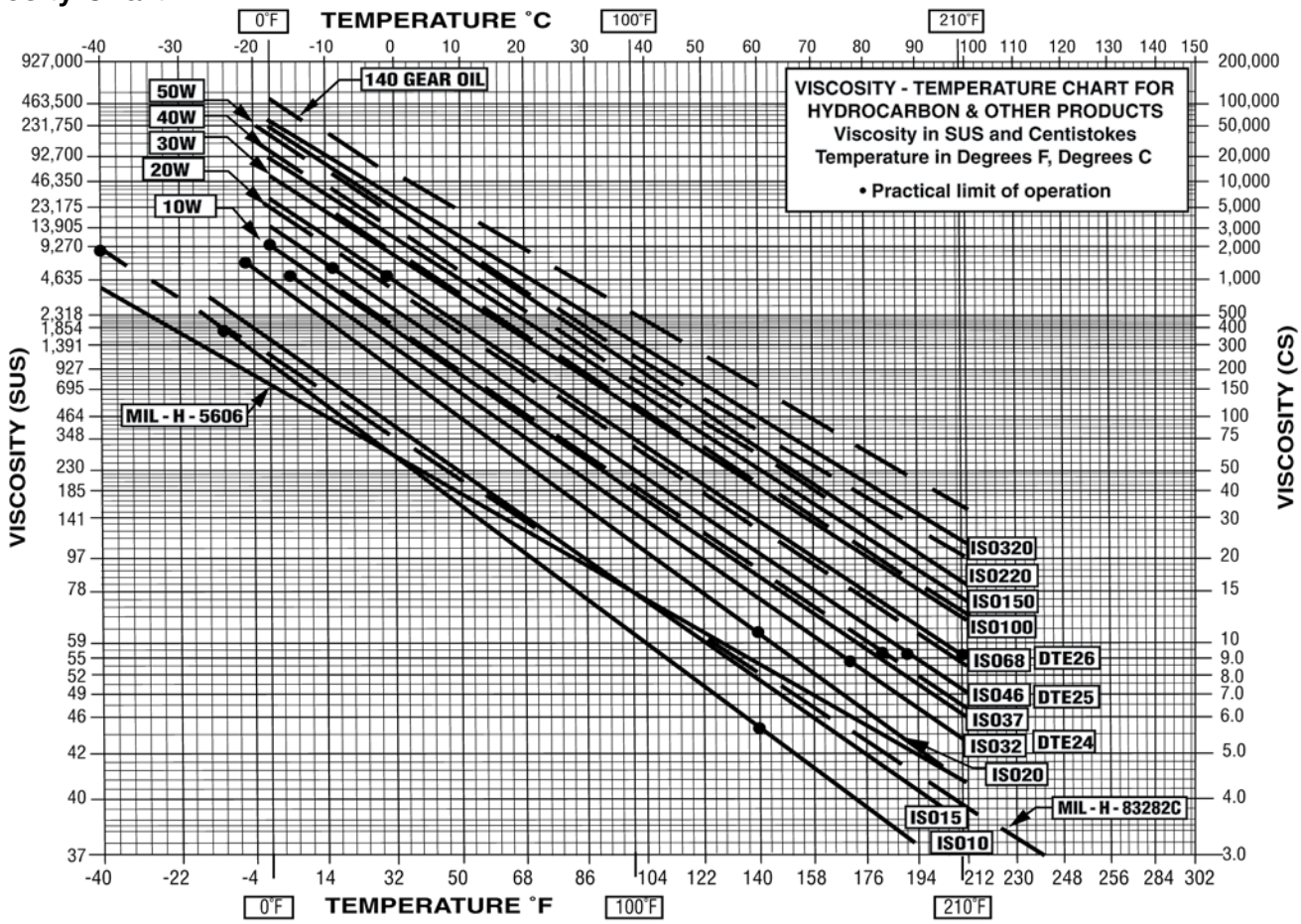
Reference Material

A quick reference of information and conversion charts to help guide you through this catalog.

Viscosity Chart #1



Viscosity Chart #2



Ordering HYDAC Literature...

HYDAC literature is available for ordering via our website, **www.hydacusa.com** then click on the **Downloads** button to proceed with ordering printed copies **(digitial versons excluded)* or email us at **HYD.catalog@hydacusa.com** using the appropriate Part Number (PN) and name. Other brochures, manuals and technical documents are also available when ordering from our website.

Overview Brochure
PN02088157

Filters Catalog
PN02081318

Accumulators Catalog
PN02068195

Compact Hydraulics Catalog - PN02087369

Accessories Catalog
PN02080105

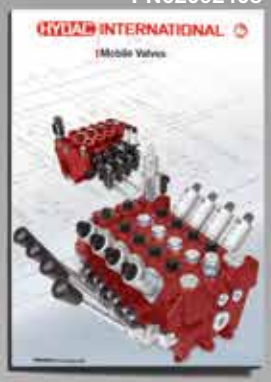
Standard Coolers Catalog - PN02085359

Filter Systems Catalog
PN02075860

Electronics Catalog* (online only)

Process Technology* Catalog (online only)

Mobile Valves Catalog
PN02092408



Hydraulic Cylinders Catalog (Release: TBD)

Control Technology* Catalog (online only)

***These catalogs are digital file versions only.**

Various market and product brochures are also available for ordering.

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