



## Off-Line Filtration:

### Where and Why Used

The Donaldson Filter Cart, Filter Panel and Filter Buddy™ offer convenient off-line filtration, flushing and fluid transfer.\* Use them with your in-plant machinery and mobile hydraulic equipment to achieve and maintain proper ISO cleanliness levels.

\*Not for use with diesel fuel or gasoline.

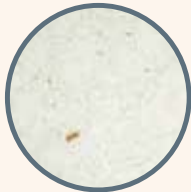
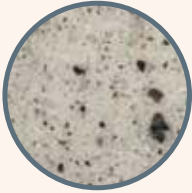
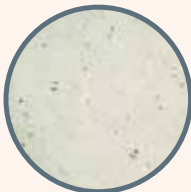
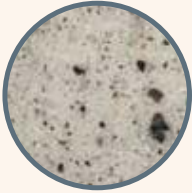


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### New oil isn't clean oil.

To optimize system performance and lengthen component life, new oil should be filtered before being transferred into a reservoir or gearbox.

Typical Fluid Applications	Viscosity	Target ISO Cleanliness & Photo Micropatch	
Hydraulic Oil Transmission Oil Glycols (<150°F) Hydraulic Based Water Emulsions	0-500 cSt	<b>16/14/11</b> 	<b>ISO 22/21/18</b> Typical Cleanliness of New, Delivered Fluids 
Gear Oils Glycols Phosphate Esters	0-6000 cSt	<b>18/16/13</b> 	

## Recommended Storage Practices

Donaldson Filter Carts, Filter Buddy™, and Panels include electric motors and indoor storage is required. Exposure to rain, snow and other elements may cause electric motors to fail. Failures that result from misapplication, improper use or storage are not covered by the Donaldson warranty.

Reference document no. F110064 at [www.donaldson.com/en/engine/support/datalibrary/000194.pdf](http://www.donaldson.com/en/engine/support/datalibrary/000194.pdf)

## Calculating the Time Required to Filter All Your Fluid Once

When using offline filtration the fluid will need to pass through the filter cart approximately seven times to filter all your fluid once. Use to following formula to calculate the amount of time needed to filter all your fluid once:

$$(Reservoir\ Size\ x\ 7) / Flow\ Rate = Time^*$$

**For example:** if you have a 50 gallon reservoir, it will take approximately 35\* minutes to filter all your fluid once.

$$(50\ gallons\ x\ 7) / 10\ gpm = 35\ minutes$$

\*Times will vary depending on initial cleanliness of oil, system ingress, choice of media grades and other variables.

## Custom Product Configurations

The following pages highlight Donaldson's stocked off-line filtration offering for quick access and convenient ordering. If an appropriate solution is not available, Donaldson is able to configure a custom solution to meet most specifications requirements. Please be prepared to provide the following information prior to contacting our qualified solutions partner. Note: product lead times will vary.

### Operating Conditions

**Flow Rate:** \_\_\_\_\_ gpm

**Temperature:**  ° C or  ° F

Ambient \_\_\_\_\_ Normal Operating \_\_\_\_\_

### Fluid Type:

- Mineral Hydraulic Oil       Water-glycol
- Synthetic Hydraulic Oil     HWBF
- Synthetic Gear Oil           Turbine Oil
- Industrial Gear Oil          Food Grade Oil
- Phosphate-ester             Other \_\_\_\_\_

### Viscosity: (2 required)

\_\_\_\_\_ cSt or Ssu @ 40° C Temp

\_\_\_\_\_ cSt or Ssu @ 100° C Temp

**Brand of Fluid:** \_\_\_\_\_

### Target ISO Cleanliness

**In the chart to the right, circle the target cleanliness for the most stringent component in the circuit.**

Beta<sub>x(c)</sub> = 1000: \_\_\_\_\_ μm

Current ISO Level: \_\_\_\_\_ (18/16/13)

Capacity of Reservoir: \_\_\_\_\_ gallons/liters

Application: \_\_\_\_\_ (power unit)

Filter Media:  Synthetic  Cellulose  Wire Mesh

### Electrical

115 Volt     230 Volt

### Use and Storage

Indoor       Outdoor

Pumps	ISO Ratings
Fixed Gear Pump	19/17/15
Fixed Vane Pump	19/17/14
Fixed Piston Pump	18/16/14
Variable Vane Pump	18/16/14
Variable Piston Pump	17/15/13
<b>Valves</b>	
Directional (solenoid)	20/18/15
Pressure (modulating)	19/17/14
Flow Controls (standard)	19/17/14
Check Valves	20/18/15
Cartridge Valves	20/18/15
Load-sensing Directional Valves	18/16/14
Proportional Pressure Controls	18/16/13
Proportional Cartridge Valves	18/16/13
Servo Valves	16/14/11*
<b>Actuators</b>	
Cylinders	20/18/15
Vane Motors	19/17/14
Axial Piston Motors	18/16/13
Gear Motors	20/18/15
Radial Piston Motors	19/17/15

## Filter Cart

The Donaldson Filter Cart provides a convenient portable mode of off-line/kidney loop filtration, flushing and fluid transfer. Use it with your in-plant machinery and hydraulic equipment to achieve and maintain proper ISO cleanliness levels.

Dual in-series HMK05 pressure filters can provide coarse/fine particle removal or, install a water absorbing filter to obtain particulate and water removal. A SP50/60 suction filter is required to protect the pump. The powerful one horsepower motor won't bog down and when coupled with a gear pump, it provides efficient fluid transfer and filtration. Convenient features include a rear mounted motor for better balance, a removable angled drip tray and clear braided hoses.

### Notice

Donaldson Filter Carts include electric motors and indoor use is recommended. Exposure to rain, snow and other elements may cause electric motors to fail. Failures that result from misapplication, improper use or storage are not covered by the Donaldson warranty.

Reference the aftermarket warranty: document no. F110064.

### Fluid Compatibility

Not for use with diesel fuel or gasoline. For fuel solutions, please contact the Donaldson Clean Solutions team at clean.solutions@donaldson.com or 800-518-7784.



### Applications

- Transferring New Oil
- Cleaning Stored Oil
- System Draining
- Line Flushing
- Hose Cleaning
- Kidney Loop Filtration
- Repairs & Equipment Rebuild Flushing
- Flushing During Equipment Commissioning

Features	Benefits
<b>Rugged and durable frame</b>	Enables long service life
<b>High efficiency media</b>	Cost effective filtration
<b>Two pressure filters</b>	Two-stage filtration – coarse/fine or particulate/water
<b>Safety relief valve</b>	Prevents over pressurizing and damage to pump, hoses and filters
<b>Overload protected switch</b>	Prevents motor from overheating
Applications	
<b>Filter new fluid</b>	New fluids are usually above the recommended ISO cleanliness levels
<b>Offline filtration</b>	Filter cart can be used to supplement existing filtration
<b>Water removal</b>	Using Donaldson water removal filters to remove free water from the system.
<b>Transferring fluid</b>	Fluid is transferred from a storage container (tote, drum, tank, etc.) to a machine's reservoir
<b>Flushing</b>	After repairs & builds machines need to be flushed thoroughly before returning to service. During equipment commissioning, new machines have original fabrication debris and dirt that has ingressed during transport and storage.

# Filter Cart



## Filter Cart Features

### Stainless steel wands

- Will not break, corrosion resistant

### Differential pressure indicators

- Lets you know when to change filters

### Two pressure filters mounted in series

- Allows for particulate/water removal or coarse/fine particle removal

### Removable angled drip tray

- Easy clean up, fluid will not leak out when tipped back

### Clear braided hoses

- Visually shows fluid flowing
- 85 psi working pressure

### Suction filter

- Protects pump



### Oil sampling valve

- Monitors filter performance and cleanliness of oil

### Motor/Pump

- Industrial brand 10 gpm / 38 lpm flow

### Motor mounted on back

- Better balance
- Fluid will not drip on motor when changing filters

### Overload protected switch

- Protects motor from overheating

### Integrated safety relief valve

- Protects against overpressurizing
- Set at 85 psi

### Foam filled tires

- Tires will not go flat



## Filter Cart Assembly Choices

NOTE: FILTERS ORDERED SEPARATELY

### The Importance of Temperature When Selecting a Filter Cart

Consider operating temperature ranges when determining the proper viscosity filtration solution. It's crucial to select the proper viscosity option to maintain adequate flow and avoid restriction. Refer to the oil viscosity with temperature chart located on the front cover of the catalog.

Example: ISO Grade 32 Hydraulic Oil @ 68°F = 86.7 (cSt)

Assembly Part No.	Low Viscosity	High Viscosity
	Max Viscosity 500 SUS (108 cSt)* Filters ordered separately <b>X011297</b>	Max Viscosity 8000 SUS (1700 cSt)* Filters ordered separately <b>X011298</b>
Operating Temperature Range:	----- -10° F to 160° F (-23° C to 71° C) -----	
Filter Bypass Valve Settings:	Suction – 5 psid/0.34 bar	Suction – Y strainer
	Pressure – 25 psid/1.7 bar	Pressure – 25 psid/1.7 bar
Electrical Service:	----- 115 volts: 14 amp, single phase, 60 Hz -----	
Cord Length:	----- 7 ft./2.1 m cord with storage for 50 ft./15 m -----	
Gear Pump Flow Rate*:	10.4 gpm/38 lpm	2 gpm/8 lpm
TEFC** Motor:	1 hp, 1800 RPM	1 hp, 1200 RPM
Fluid Compatibility:	----- Mineral-based fluids, water glycols, polyol esters -----	
Dry Weight:	Approximately 140 lbs. (63.5 kg)	Approximately 175 lbs. (79.38 kg)
Dimensions:	Height: 47" (1194 mm) Width: 24" (610 mm) Length: 23" (585 mm)	
	----- Hose/Wand assembly length: 10' (3.05 m) -----	
Filter Notes:	Requires 3 filters: 2 pressure, 1 suction	Requires 4 pressure filters



## Pressure Filter Choices

Media Type	$\beta_{x(c)} = 2$ Rating based on ISO 16889	$\beta_{x(c)} = 1000$	Length in mm	Donaldson Part No.	Comments
Synteq Synthetic	10 µm	<4 µm	14.2 361	P564468	
		6 µm	11.6 294	P165675	
		6 µm	11.6 294	P171274 <sup>1</sup>	
		6 µm	14.2 361	P179763	
		11 µm	7.6 193	P176207	
		11 µm	11.6 294	P165659	
		11 µm	11.6 294	P171275 <sup>1</sup>	
		11 µm	14.2 361	P170949	
		23 µm	7.6 193	P176208	
		23 µm	11.6 294	P165569	
		23 µm	11.6 294	P171276 <sup>1</sup>	
		23 µm	14.2 361	P173789	
		50 µm	11.6 294	P165672	
50 µm	14.2 361	P573353			
Water Absorbing	10 µm		11.6 294	P179075	Absorbs 300 ml water

<sup>1</sup>Viton® O-ring, Epoxy

## Suction Filter Choices

Media Type	$\beta_{x(c)} = 2$ Rating based on ISO 16889	Length in mm	Donaldson Part No.
Wire Mesh	150 µm	6.7 170	P550275
	150 µm	10.7 271	P550276

\*Contact Donaldson for special order options

\*\*Totally Enclosed Fan-Cooled

### Filter Notes

- Refer to table in the Technical Reference Guide for fluid compatibility with our filter media.
- Thread sizes are 1 3/4"-12 UNF-2B (HMK05) and 1 1/2"-16 UN-2B (suction filter)
- Filters with seals made of Viton® (a fluoroelastomer) are required when using diester, phosphate ester fluids, water glycol, water/oil emulsions, and HWCF (high water content fluids) over 150°F. Filters with seals made of Buna-N® are appropriate for most applications involving petroleum oil.
- Viton® is a registered trademark of E. I. DuPont de Nemours and Company.



## Filter Buddy™ Handheld Portable Filtration System

The Donaldson Filter Buddy™ is a handheld portable system allowing you to kidney loop reservoirs that you normally cannot with larger filter carts. Its small size and light weight allows carrying up and down stairs and into tight or confined spaces. It also fits on top of a drum for convenient transferring and filtering from a drum to a reservoir.

The Filter Buddy features dual HMK04 filtration utilizing Donaldson's exclusive high efficiency Synteq™ media. The filters are plumbed in series giving you the option of coarse/fine particle removal or install a water absorbing filter for water/ particle removal.

### Notice

Donaldson Filter Buddys include electric motors and indoor use is recommended. Exposure to rain, snow and other elements may cause electric motors to fail. Failures that result from misapplication, improper use or storage are not covered by the Donaldson warranty.

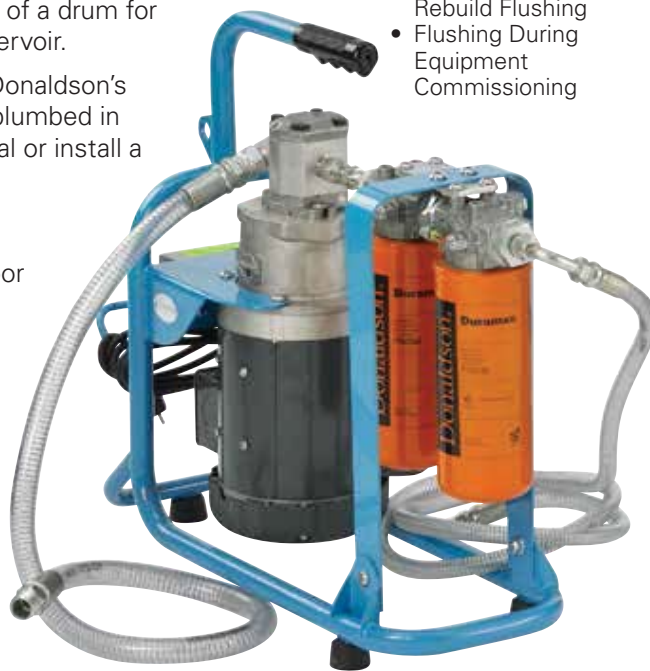
Reference the aftermarket warranty: document no. F110064.

### Fluid Compatibility

Not for use with diesel fuel or gasoline. For fuel solutions, please contact the Donaldson Clean Solutions team at [clean.solutions@donaldson.com](mailto:clean.solutions@donaldson.com) or 800-518-7784.

### Applications

- Transferring New Oil
- Cleaning Stored Oil
- System Draining
- Line Flushing
- Hose Cleaning
- Kidney Loop Filtration
- Repairs and Equipment Rebuild Flushing
- Flushing During Equipment Commissioning



Features	Benefits
Rugged and durable frame	Enables long service life
Compact size	Allows filtration in hard to reach locations
High efficiency media grades	Cost effective filtration
Dual stage filtration	Coarse/fine or water/particulate removal
Overload protected switch	Prevents motor from overheating
Sample ports	Enables system cleanliness measurements

Applications	
Fluid transfer	Ensure that the fluid you are transferring from a drum or tote is clean.
Offline filtration	Supplement existing filtration to achieve target ISO cleanliness levels.
Water removal	Using Donaldson water removal filters to remove free water from the system.
Filter new fluid	Clean up new fluids because they are usually highly contaminated. Don't contaminate your equipment with new fluids. Protect your equipment with proper filtration.

## Filter Buddy™ Assembly Choices

NOTE: FILTERS ORDERED SEPARATELY

### The Importance of Temperature When Selecting a Filter Cart

Consider operating temperature ranges when determining the proper viscosity filtration solution. It's crucial to select the proper viscosity option to maintain adequate flow and avoid restriction. Refer to the oil viscosity with temperature chart located on the front cover of the catalog.

Example: ISO Grade 32 Hydraulic Oil @ 68°F = 86.7 (cSt)

Assembly Part No.	Low Viscosity Max Viscosity 900 SUS (200 cSt)* Filters ordered separately	High Viscosity Max Viscosity 8000 SUS (1700 cSt)* Filters ordered separately	
	X011303	X011304	X011305
Operating Temperature Range:	----- -10° F to 160° F (-23° C to 71° C) -----		
Electrical Service:	115 volts: 8.4 amp, single phase, 60 Hz		
Gear Pump Flow Rate*:	2 gpm (7.6 lpm)	1.8 gpm (6.8 lpm)	5 gpm (18.9 lpm)
TEFC** Motor: Totally Enclosed Fan-Cooled	1/2 hp, 1725 rpm	3/4 hp, 1725 rpm	1 1/2 hp, 1725 rpm
Compatibility:	----- Mineral-based fluids, water glycols, polyol esters -----		
Hose: terminated with male NPT connections	<b>Suction:</b> 4' (1.2m) Length, 3/4" (1.9 cm) OD	<b>Suction:</b> 4' (1.2m) Length, 1" (2.5cm) OD	
	<b>Discharge:</b> 7' (2.1m) Length, 1/2" (1.3 cm) OD	<b>Discharge:</b> 7' (2.1m) Length, 3/4" (1.9 cm) OD	
P573154 Stainless Steel Wand Kit (optional):	----- Suction: 40" (1.0 m) Length Discharge 20" (.5 m) Length -----		
Dry Weight:	Approximately 55 lbs. (25 kg)	Approximately 65 lbs. (29 kg)	Approximately 90 lbs. (40 kg)
Dimensions:	Height: 21" (533 mm) Width: 13" (330 mm) Length: 26" (660 mm)	Height: 25" (635 mm) Width: 13" (330 mm) Length: 26" (660 mm)	
Filter Notes:	----- Requires 2 Filters -----		

### Filter Choices for X011303 and X011304

Media Type	$\beta_{x(c)} = 2$ Rating based on ISO 16889	$\beta_{x(c)} = 1000$	Length in mm	Donaldson Part No.
Synteq Synthetic	<4 μm	9.4	240	P165185 <sup>1</sup>
	6 μm	5.97	152	P165354
	6 μm	9.4	240	P165332
	11 μm	5.97	152	P163542 <sup>2</sup>
	11 μm	5.97	152	P164375
	11 μm	9.4	240	P164378
	13 μm	9.4	240	P164056 <sup>1</sup>
	14 μm	9.4	240	P177047
	22 μm	9.4	240	P164059 <sup>1</sup>
	23 μm	9.4	240	P163567 <sup>2</sup>
	23 μm	5.97	152	P164381
	23 μm	9.4	240	P164384
	50 μm	5.97	152	P165335
50 μm	9.4	240	P165338	
Water Absorbing	10 μm	9.4	240	P560584

### Filter Choices for X011305

Media Type	$\beta_{x(c)} = 2$ Rating based on ISO 16889	$\beta_{x(c)} = 1000$	Length in mm	Donaldson Part No.	Comments
Synteq Synthetic	<4 μm	14.2	361	P564468	
	6 μm	11.6	294	P165675	
	6 μm	11.6	294	P171274 <sup>1</sup>	
	6 μm	14.2	361	P179763	
	11 μm	7.6	193	P176207	
	11 μm	11.6	294	P165659	
	11 μm	11.6	294	P171275 <sup>1</sup>	
	11 μm	14.2	361	P170949	
	23 μm	7.6	193	P176208	
	23 μm	11.6	294	P165569	
	23 μm	11.6	294	P171276 <sup>1</sup>	
	23 μm	14.2	361	P173789	
	50 μm	11.6	294	P165672	
50 μm	14.2	361	P573353		
Water Absorbing	10 μm	11.6	294	P179075	Absorbs 300 ml water

<sup>1</sup>Viton® O-rings are required when using diester, phosphate ester fluids, water glycol, water/oil emulsions and HWCF (high water content fluids) over 150°F.

<sup>2</sup>500 psi collapse

Filter Notes: • Standard filter collapse rating is 150 psi, except as noted.  
• X011303 and X011304 thread sizes: 1 3/8"-12 UNF-2B (HMK04)  
• X011305 thread size: 1 3/4"-12 UNF-2B (HMK05)  
• Refer to table in the Technical Reference Guide for fluid compatibility with our filter media.

## Filter Panels Fixed-Mounted Off-Line Filtration

Donaldson Filter Panels provide fixed-mount offline/ kidney loop filtration and a turnkey approach to supplemental filtration for your in-plant machinery and hydraulic equipment – helping to reduce costs and achieve and maintain proper ISO cleanliness levels.

Donaldson filter panels are offered with 4 different pump flow rates. Reservoir size, fluid viscosity and fluid temperature will help determine the correct flow rate. Filter panels feature dual HMK05 filtration utilizing Donaldson’s exclusive high efficiency Synteq™ media. The filters are plumbed in series giving you the option of coarse/fine particle removal or install a water absorbing filter for water/particle removal.

### Notice

Donaldson Filter Panels include electric motors and indoor installation is recommended. Exposure to rain, snow and other elements may cause electric motors to fail. Failures that result from misapplication, improper use or storage are not covered by the Donaldson warranty.

Reference the aftermarket warranty: document no. F110064.

### Fluid Compatibility

Not for use with diesel fuel or gasoline. For fuel solutions, please contact the Donaldson Clean Solutions team at [clean.solutions@donaldson.com](mailto:clean.solutions@donaldson.com) or 800-518-7784.



### Applications

- Transferring New Oil
- Cleaning Stored Oil

Features	Benefits
High efficiency media grades	Cost effective filtration
Dual-stage filtration	Coarse/Fine or Water/Particulate removal
Differential pressure indicators	Alerts you when to change filters
Optional overload protected switch	Prevents motor from overheating
Sample port	Enables system cleanliness measurements
Applications	
Offline filtration	Supplement existing filtration to achieve target ISO cleanliness levels.
Water removal	Using Donaldson water removal filters to remove free water from the system.
Filter new fluid	Clean up new fluids because they are usually highly contaminated. Don't contaminate your equipment with new fluids. Protect your equipment with proper filtration.



## Filter Panel Assembly Choices

**NOTE: FILTERS ORDERED SEPARATELY**

### The Importance of Temperature When Selecting a Filter Cart

Consider operating temperature ranges when determining the proper viscosity filtration solution. It's crucial to select the proper viscosity option to maintain adequate flow and avoid restriction. Refer to the oil viscosity with temperature chart located on the front cover of the catalog.

**Example: ISO Grade 32 Hydraulic Oil @ 68°F = 86.7 (cSt)**

Assembly Part No.	Low Viscosity Max Viscosity 500 SUS (108 cSt)* Filters ordered separately			High Viscosity Max Viscosity 8000 SUS (1700 cSt)* Filters ordered separately
	X011299	X011300	X011301	X011302
Operating Temperature:	----- -10° F to 160° F (-23° C to 71° C) -----			
Gear Pump Flow Rate*:	3 gpm (11.4 lpm)	5 gpm (18.9 lpm)	10 gpm (37.9 lpm)	2 gpm (7.57 lpm)
TEFC** Motor:	1/2 hp, 1800 rpm	3/4 hp, 1800 rpm	1 hp, 1800 rpm	1 hp, 1200 rpm
Fluid Compatibility:	----- Mineral-based fluids, water glycols, polyol esters -----			
Connections	Inlet (pump) : SAE 12 O-Ring Outlet: SAE 20 O-Ring			Inlet (pump) : SAE 12 O-Ring Outlet: SAE 20 O-Ring
Electrical Service: 115 volts, 60 Hz single phase	8.4 amp	14 amp	14 amp	14 amp
Dry Weight:	Approx. 95 lbs. (43 kg)			Approx. 120 lbs. (54 kg)
Dimensions:	Height: 20" (508 mm)		Width: 36" (915 mm)	Depth: 8" (203 mm)
Filter Notes:	Requires 2 Filters			Requires 4 Filters

\*\*Totally Enclosed Fan-Cooled

## Filter Choices

Media Type	$\beta_{x(e)} = 2$ Rating based on ISO 16889	$\beta_{x(e)} = 1000$	Length in mm	Donaldson Part No.	Comments
Synteq Synthetic	<4 μm		14.2 361	P564468	
	6 μm		11.6 294	P165675	
	6 μm		11.6 294	P171274 <sup>1</sup>	
	6 μm		14.2 361	P179763	
	11 μm		7.6 193	P176207	
	11 μm		11.6 294	P165659	
	11 μm		11.6 294	P171275 <sup>1</sup>	
	11 μm		14.2 361	P170949	
	23 μm		7.6 193	P176208	
	23 μm		11.6 294	P165569	
	23 μm		11.6 294	P171276 <sup>1</sup>	
	23 μm		14.2 361	P173789	
	50 μm		11.6 294	P165672	
	50 μm		14.2 361	P573353	
	Water Absorbing	10 μm		11.6 294	P179075

<sup>1</sup>Viton® O-ring, Epoxy are required when using diester, phosphate ester fluids, water glycol, water/oil emulsions and HWCF (high water content fluids) over 150°F.

## VDOPS Vacuum Dehydration Oil Purification System

### Features

- Variable frequency drive to improve inlet condition and performance
- Claw vacuum pump for superior performance and long life
- All controls and system function viewable from the front
- Alarm when filter is plugged and needs to be changed
- Upstream & downstream oil sample ports
- Custom options
- Space efficient
- High water extraction rates



**Example Model Number:** VDOPS-50VFD-840X-64kW-AWD-480-N4-V

Classification	Code	Description
Product Type	VDOPS	Vacuum Dehydration Oil Purification System
Flow Rate	50VFD	50 GPM (189 lpm) Variable Frequency Drive (Variable Flow)
Housing Size and Style	840X	840X Carbon Steel Filter Housing
Heater Size	64kW	64 Kilowatt Heater
Optional Equipment	AWD	Auto Water Drain
Electrical Requirement	480	480 Volts
NEMA Rating	N4	NEMA 4
Seal Material	V	Viton

#### Installation Requirements

Input Voltage	480 V / 3 Phase / 60 Hz
Designed FLA (Full Load Amps)	98 AMPS
Inlet Connection Size	2" Female Camlock
Outlet Connection Size	2" Male Camlock

#### Electrical Operating Specifications

Oil Pump Motor	(Nameplate Rating)
Vacuum Pump Motor	(Nameplate Rating)

#### Mechanical Operating Specifications

Flow Rate	50 GPM (189 lpm)
Maximum Discharge Pressure	100 PSI (6.9 bar)
Normal Discharge Press	30 PSI (2.1 bar)
Maximum Vacuum Setting	27" Hg (686 mm Hg)
Minimum Vacuum Setting	15" Hg (381 mm Hg)
Normal Heater Set Point Setting	150° F (66° C)
Maximum Oil Viscosity	1500 SSU (323 cSt)
Seal Material	Viton

#### IMPORTANT Product Restriction

The **Vacuum Dehydration Oil Purification System** should never be used to remove particulates from volatile fluids such as gasoline since the pump cannot be used for solvents with low lubricity. In addition, the unit should not be used on liquids with a flash point below 200°F (93°C).

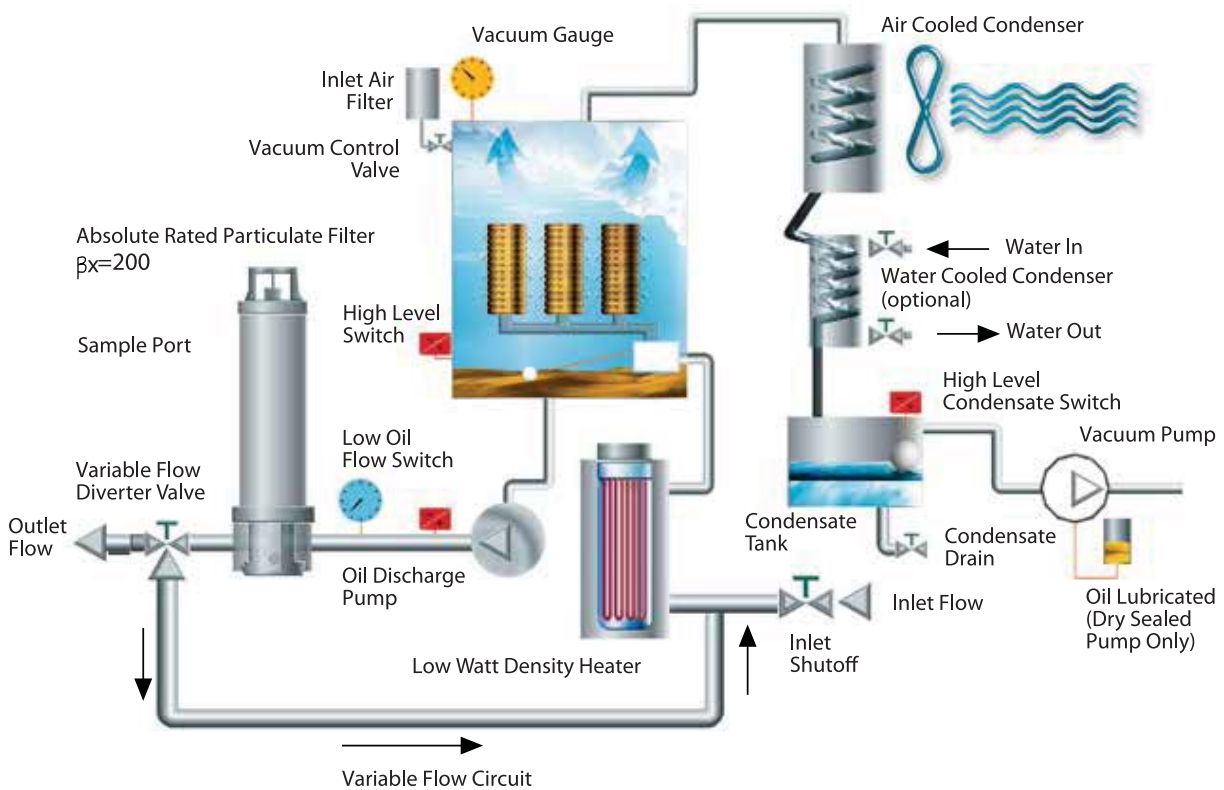
#### LEAD TIME NOTE:

This product is configured with the specifications and features of your choice. Please contact your Donaldson sales representative for lead time details.

## Vacuum Dehydrators

The ultimate piece of equipment to effectively remove particulate, water and dissolved gases from petroleum and synthetically based fluids. This system removes 100% of free and emulsified water from oils, and 90% of dissolved water from oils to as low as 20 ppm. It also removes particulate to as low as ISO 12/10/9. In addition, this system removes 90% of dissolved gases. It is available in flow rates from 1-200 gpm (4-760 lpm), NEMA 4 and 7 Explosion Proof with custom options.

## VDOPS Schematic



The water removal principle used in the Vacuum Dehydrators dependably removes water well below the oil saturation point, even when tightly bound in an emulsion. A vacuum pump draws fluid into the unit where it is heated and then flows through dispersal filters inside the vacuum tower. Contaminated oil flows through the pores of these filters, is exposed to the vacuum and dehydrated. Dried oil is removed, filtered and pumped back into the reservoir.

## COPS Coalescer Oil Purification System

### Features

- Variable frequency drive to improve inlet condition and performance
- Positive displacement pump for superior performance
- All controls and system function viewable from the front
- Auto mode for auto water drain
- Upstream and downstream oil sample ports
- Custom options
- Space efficient
- High free water extraction rates



### Coalescers

Designed to rapidly remove free water and particulates from diesel fuel, fuel oil and most other hydraulic/lubricating oils. Coalescing technology outperforms centrifuges, are simpler to use, cost less to maintain and are lower in initial purchase price. Designed to run continuously in an outdoor environment, virtually no mechanical maintenance is needed. Flow rates available from 20-275 gpm (76-1041 lpm).

#### Example Model Number: COPS-20VFD-840X/2-24kW-480-TS-N4-B

Classification	Code	Description
Product Type	COPS	Coalescer Oil Purification System
Flow Rate	20VFD	20 GPM (76 lpm), Variable Flow Drive
Housing Size and Style	840X/2	Qty (2) 840X Housings in Series
Heater Size	24kW	24 kilowatts
Electrical Requirement	480	480 / 3 Phase / 60 Hz
Optional Equipment	TS	Touch Screen
NEMA Rating	N4	NEMA 4
Seal Material	B	Buna-N

#### Installation Requirements

Input Voltage	480 / 3 Phase / 60 Hz
Designed FLA (Full Load Amps)	35 AMPS
Inlet Connection Size	2" Flanged
Outlet Connection Size	1-1/2" Flanged

#### Mechanical Operating Specifications

Flow Rate	20 GPM (76 lpm)
Maximum Discharge Pressure	100 PSI (6.9 bar)
Maximum Oil Viscosity	1500 SSU (323 cSt)
Seal Material	Buna-N®

#### IMPORTANT Product Restriction

The **Coalescer Oil Purification System** should never be used to remove particulates from volatile fluids such as gasoline since the pump cannot be used for solvents with low lubricity.

#### LEAD TIME NOTE:

This product is configured with the specifications and features of your choice. Please contact your Donaldson sales representative for lead time details.

## Fluid Purification Systems

### LTC Transformer Filtration

Bolt this system onto a transformer and continuously remove particulate (carbon) and water contamination, maintaining high dielectric values. Ideally suited for kidney loop filtration applications.



### Bearing Lubrication

This system will remove particulate and heat from bearing lube oils to increase bearing life. It will achieve particulate removal from fluids to as low as ISO 12/10/9. It is available with optional flow and temperature monitoring devices.

### High Flow Filter Skids

This system is ideal for rapidly removing particulate contamination from large reservoirs. Furthermore, this system creates turbulent flows in piping for oil flushing and efficiently removes particulate contamination to as low as ISO 12/10/9 levels. Flow rates are available from 50–2000 gpm (190-7600 lpm) with many quality features and additional options to increase its capabilities.



### Common Fluid Purification Applications:

Turbine Lube Oil / Petro-Chemical Compressors / Diesel and Gas Fired Engines /  
 Substation Maintenance Transformer Oil / EHC Speed Control Systems /  
 Hydraulic Power Units for All Industries





The Donaldson Filter Buddy™ in use – cleaning up dirty oil in a small power unit.

Donaldson Delivers *any*  
**Performance Under Pressure**

