



PHX-C4 OR C8 - 4 OR 8 GPM PORTABLE FILTER CART AND MEMBRANE DEHYDRATOR



GEAR OIL BEFORE AND AFTER 4000 PPM WATER - 50 PPM



PHX-M - 1 GPM 110/220V HARD CARRY MEMBRANE DEHYDRATOR



PHX-C1 1GPM PORTABLE FILTER CART AND MEMBRANE DEHYDRATOR



Simple

Safe

Reliable

Efficient

PHoenix™

Disclaimer: Membrane description is illustrative only. Membrane is not claimed to be defect free and some very slight oil carryover will happen to vacuum side. This does not effect the effect the many benefits or performance of the Phoenix Purifier. Water Removal is multipass and requires multiple passes across the membrane to be fully effective.



PHOENIX C4 OR C8 - 4 GPM OR
8 GPM - 20 - 2000 GALLONS

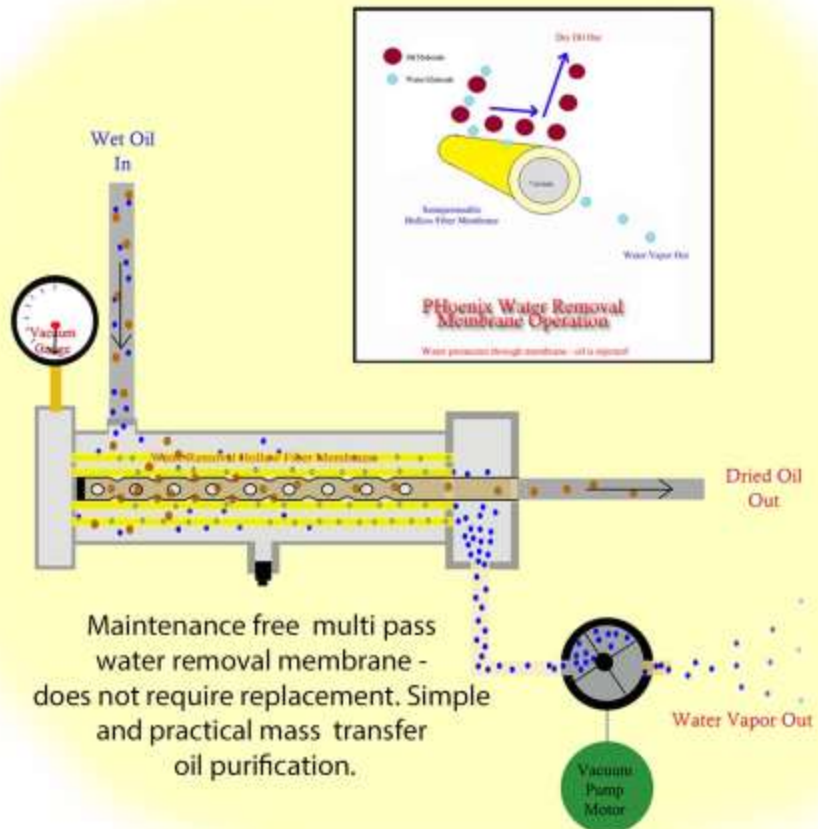


PHOENIX C - 1 GPM
5 - 150 GALLONS



PHOENIX M - MINI
HAND CARRIED 1 GPM
5- 150 GALLONS

ITS REVOLUTIONARY

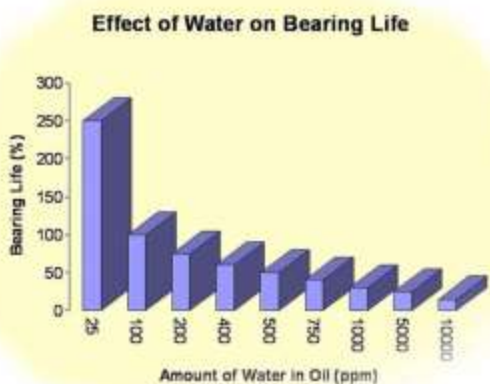


IT'S RELIABILITY THROUGH SIMPLICITY

- * Simple Design
- * Easy to use
- * Few moving parts
- * Small footprint
- * Very little maintenance required
- * Unlimited water removal
- * Autonomous
- * Extremely portable
- * Effective



Why throw away perfectly good oil? Instead flush your system or reclaim with the PHoenix .



Cantley, R.E.,
"The Effect of Water in Lubricating Oil on Bearing Fatigue Life"
ASLE Transactions, 20(3), 244-248, 1997.

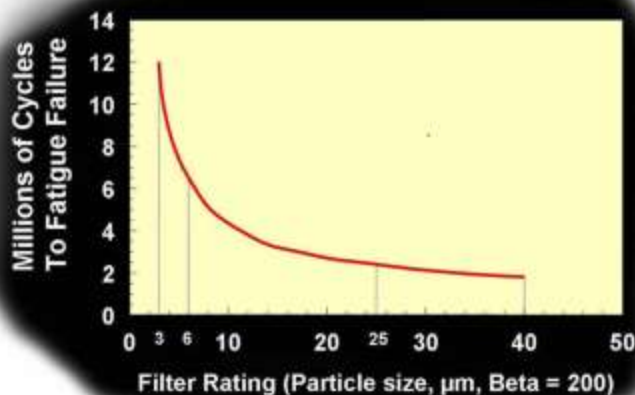
THE PHOENIX REMOVES:

- * Free Water 100%
- * Emulsified Water 100%
- * Dissolved Water - < 50 ppm
- * Particulates - < 3 microns

ITS SIMPLE!

The freer your lube and hydraulic systems are of water and particulate the fewer equipment breakdowns you will experience !

This means longer uninterrupted manufacturing run times along with more profits for your organization and less stress for you!



Mcperson, P., Bhachu, R., Sayles, R.,
"The Influence of Filtration on Rolling Element Bearing Life".



**HYDRAULIC CRANE RESERVOIR
CONTAMINATED WITH 2000 PPM WATER**

APPLICATIONS AND INDUSTRIES SERVED

ROAD CONSTRUCTION AND MINING

- * Lift Hydraulic System flushing
- * Track and Drive Train Gear Box flushing
- * Bucket Truck Dielectric Hydraulic purification
- * Transmission System flushing
- * Conveyor Gear Box flushing



COOLING TOWER GEARBOXES

Durable enough to be used outdoors on ACC (Air Cooled Condenser) or WCC (Water Cooled Condenser) fan Gear Boxes even in high vibration areas.

OTHER POTENTIAL APPLICATION

Power Generation

- * Combustion Turbine Lube
- * Coal Mill Gear Boxes
- * Conveyor Gear Boxes
- * Boiler Feed Pump Lube
- * Windturbine Gear Boxes
- * EHC Control
- * ACC - WCC Gear Boxes
- * Scrubber Equipment Gear Boxes

Food and Beverage

- * Food Grade Hydraulic Oil
- * Conveyor Gear Boxes

Agriculture

- * Conveyor Gear Boxes
- * Harvesting Equipment Hydraulic

Pulp and Paper

- * Wet end/dryer lube
- * Press section lube and hydraulics
- * Boiler Feed Pump lube
- * Cooling Tower Gear Boxes

Primary Metals

- * Roll mill gear and pinion lube

Transportation

- * Ship Board Hydraulic-Lube
- * Diesel Locomotive Gear Box
- * Transmission Systems

Military

- * Military Equipment Hydraulics
- * Aircraft - Road Equipment

Light Industrial

- * Oil Reclamation
- * Blow Molding Hydraulic
- * Machine Tool Hydraulic
- * Injection Molding
- * Automotive transfer line Hydraulic Oil

Fuels and Chemical

- * Drilling Equipment Gear Box Flushing
- * Extruder Gear Boxes
- * Compressor Lube
- * Boiler Feed Pump Lube
- * Offshore Drilling Platforms

PHoenix™ C4 OR C8

4 gpm or 8 gpm portable Membrane Oil Purifier Cart for 10 - 2000 Gallon Oil Reservoirs:

(Larger reservoirs possible depending on water ingress rate)

OPTIONAL 1" INLET/OUTLET HOSES SOLD SEPERATELY

PN: PHXC4MHS - MINERAL OIL
PN: PHXC4PEHS - PHOSPHATE ESTER

PHOENIX SHOWN WITH OPTIONAL AQUATREX MOISTURE MONITORING SYSTEM (SEE PAGES 11-12 FOR DETAILS).



QUALITY

VERSATILITY

RELIABILITY

PHoenix™ C4

Specifications

Flow Rate: 4 gpm constant
 Inlet/Outlet Connections: 1" Male JIC
 Available Voltage: 110 V or 220V
 Max Amp Draw: 10 Amps
 Fluid Pump Motor: 1/2 HP Washdown
 Dry Weight: 250 Lbs
 Inlet Pressure Range : -10 hg - 10 psig
 Max Outlet Pressure: 45 psig
 Maximum Oil Viscosity: 3000 Cst
 Minimum Oil Viscosity: 10 Cst
 Maximum Operating Temp: 190 F
 Minimum Operating Ambient: 33F
 Maximum Free Water Removal: 2-3 Gallons/Day
 (Depending on Water Content, Oil Temp and Oil Type)

Oil Type: Low Volatile Mineral Based
 Phosphate Ester Optional

Recommended Oil Reservoir Size: 10 - 1500 gallons
 (Larger Possible depending on water ingress rate)

Ordering Information

PHX-C4	Table 1	Table 2	Table 3	Table 4	Table 5
	Voltage	Aquatrex	Filter	Oil Type	Mount

Table 1: Voltage Options

A	110 V 60Hz - SP Standard
B	220 V 60Hz - SP Optional

Table 2: Aquatrex Moisture Monitoring

C	Without Aquatrex
D	With Aquatrex



Dimensions

Spare Parts	Qty	Part Number
6000 hr PmKit	1	PHXC4KIT
7 Micron Filter	1	MSCP568665

Table 3: Filter Housing Option

2	8 Micron B2000 Spin On Filter
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Table 4: Oil Type

G	Mineral Based Only
H	Phosphate Ester

Table 5: Mounting

BLANK	Portable Cart
1	Permanent Mount

PHoenix™ C1

1 gpm portable Membrane Oil Purifier Cart for 5-200 gallon oil reservoirs!

Larger reservoirs possible depending on water ingress rates!

PHOENIX SHOWN WITH OPTIONAL AQUATREX MOISTURE MONITORING SYSTEM

2" WATER REMOVAL MEMBRANE HOUSING



FRONT

PUNCTURE PROOF TIRES

CART FINISH - CHEMICALLY RESISTANT POWDER COATING - NOT PAINTED

OPTIONAL 3/4" INLET/OUTLET HOSES SOLD SEPERATELY

PN: PHXC1MHS - MINERAL OIL
PN: PHXC1PEHS - PHOSPHATE ESTER

LOW MAINTENANCE GAST ROCKING PISTON VACUUM PUMP

CART RIGGING AND LIFTING LUG

INLET OIL SAMPLE VALVE

PARTICULATE FILTER PLUGGED INDICATOR

OUTLET OIL FLOW INDICATOR SIGHT GLASS



HIGH QUALITY HEAVY DUTY BALDOR WASHDOWN DUTY MOTOR

8 MICRON B2000 SPIN ON FILTER ELEMENT AND FILTER DIFFERENTIAL CHANGEOUT INDICATOR

PUMP INLET VACUUM GAUGE AND HIGH VACUUM CUT OFF SWITCH SUPPLIED WHEN AQUATREX OPTION IS PURCHASED

JIC OR ORB HYDRAULIC LEAK RESISTANT FITTINGS AND CONNECTIONS WHERE ALLOWABLE.

HIGH QUALITY 1 GPM VIKING GEAR PUMP

BACK

QUALITY

VERSATILITY

RELIABILITY

PHoenix™ C1

Specifications

Flow Rate: 1 gpm constant
 Inlet/Outlet Connections: 3/4" Male JIC
 Available Voltage: 110 V or 220V
 Max Amp Draw: 7 Amps
 Fluid Pump Motor: 1/2 HP Washdown
 Dry Weight: 180 Lbs
 Inlet Pressure Range : -10 hg - 10 psig
 Max Outlet Pressure: 45 psig
 Maximum Oil Viscosity: 3000 Cst
 Minimum Oil Viscosity: 10 Cst
 Maximum Operating Temp: 190 F
 Minimum Operating Ambient: 1/2 C or 33F
 Maximum Free Water Removal: 1 - 2 Gal/Day
 (Depending on Water Content, Oil Temp and Oil Type)
 Dimensions: 19"W X 20" D X 50" H
 Oil Type: Low Volatile Mineral Based
 Phosphate Ester Optional

Recommended Oil Reservoir Size: 5-200 gallons
 (Larger Possible depending on water ingress rate)

Ordering Information

PHX-C	Table 1	Table 2	Table 3	Table 4	Table 5
	Voltage	Aquatrex	Filter	Oil Type	Mount

Table 1: Voltage Options

A	110 V 60Hz - SP Standard
B	220 V 60Hz - SP Optional

Table 2: Aquatrex Moisture Monitoring

C	Without Aquatrex
D	With Aquatrex



Dimensions

Spare Parts	Qty	Part Number
6000 hr PmKit	1	PHXC4KIT
7 Micron Filter	1	MSCP568665

Table 3: Filter Element

2	8 Micron B2000 Spin On Filter
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Table 4: Oil Type

G	Mineral Based Only
H	Phosphate Ester

Table 5: Oil Type

BLANK	Portable Cart
1	Permanent Mount

PHoenix™ M

Mini - 1 gpm hand carried portable Membrane Purifier for oil reservoirs between 5 and 200 gallons.

(Larger reservoirs possible depending on water ingress rate)

OPTIONAL AQUATREX MOISTURE MONITORING SYSTEM NEMA 4 CONTROL BOX



2" WATER REMOVAL MEMBRANE HOUSING WITH GLYCOL FILLED OIL PRESSURE AND VACUUM GAUGES



SHOWN WITHOUT OPTIONAL AQUATREX MOISTURE MONITORING SYSTEM

EASY TO GRAB LIFT HANDLE

LOW MAINTENANCE GAST ROCKING PISTON VACUUM PUMP

WATER SENSOR SUPPLIED WITH OPTIONAL AQUATREX MOISTURE MONITORING SYSTEM

CHEMICAL RESISTANT POWDER COATED ALUMINUM FRAME



OPTIONAL REMOVABLE MAGNETIC RAILS, TO LOCK DOWN PHOENIX TO METAL SURFACES. HELPFUL IN HIGH VIBRATION AREAS SUCH AS WINDTURBINES TO PREVENT TRAVEL FROM VIBRATION.

8 MICRON NON BYPASS BETA 2000 SPIN ON FILTER WITH FILTER PLUGGED INDICATOR

PHoenix™ M - Mini

Specifications

Flow Rate: 1 gpm constant
 Inlet/Outlet Connections: 1/2" Male JIC
 Available Voltage: 110 V or 220V
 Max Amp Draw: 4 Amps
 Dry Weight: 55 Lbs with Aquatrex
 35 Lbs without Aquatrex
 Max Outlet Pressure: 45 psig
 Maximum Oil Viscosity: 3000 Cst
 Minimum Oil Viscosity: 10 Cst
 Maximum Operating Temp: 190 F/
 Minimum Operating Ambient: 1/2 C or 33F
 Maximum Free Water Removal: 3/4 - 1 Liter/Day
 (Depending on Water Content, Oil Temp and Oil Type)

Oil Type: Low Volatile Mineral Based
 Phosphate Ester Optional

Recommended Oil Reservoir Size: 5-150 gallons
 (Larger Possible depending on water ingress rate)

Ordering Information

PHX-C

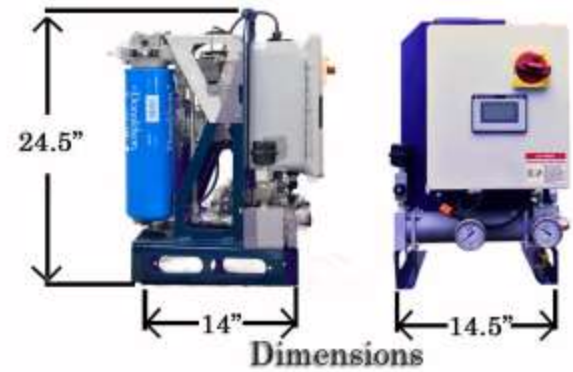
Table 1	Table 2	Table 3	Table 4	Table 5
Voltage	Aquatrex	Housing	Oil Type	Mag Rails

Table 1: Voltage Options

A	110 V 60Hz - SP Standard
B	220 V 60Hz - SP Optional

Table 2: Aquatrex Moisture Monitoring

C	Without Aquatrex
D	With Aquatrex



Spare Parts	Qty	Part Number
6000 HrPmKit	1	PHXC4KIT
MSCP568665	1	8 Micron Filter

Table 3: Filter Housing Option

2	8 Micron B 2000 Spin On Filter
F *	No Filter Housing Supplied

Table 4: Oil Type

G	Mineral Based Only
H	Phosphate Ester

Table 5: Magnetic Rails

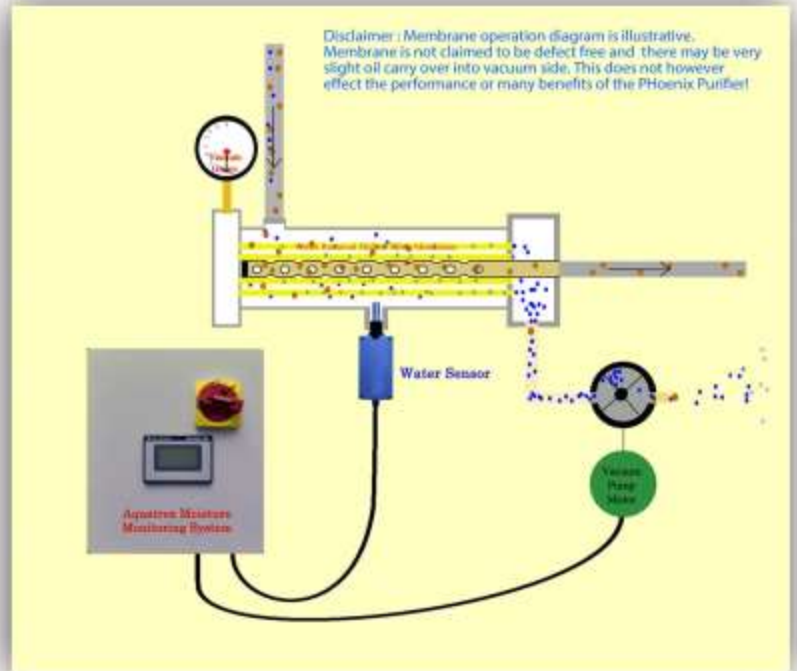
I	With Magnetic Rails
J	Without Magnetic Rails

* Only use option F if Phoenix is to be used with existing Donaldson 7 micron or lower filtration such as permanent filter/pump skids or Filter/Pump Cooler Packages.

DO I EVEN HAVE WATER IN MY OIL?



Water Sensor



Optional PHOenix Aquatrex
Moisture Monitoring System



HOW CAN I TELL ?

The optional Aquatrex Moisture Monitoring System measures the level of water contamination in your oil using a Watersensor and displays it in percent saturation on the Aquatrex PLC touchscreen.



WHAT ELSE CAN IT DO ?

A SIMPLE DIAGNOSTIC TOOL.

The Aquatrex is also helpful when trying to identify troublesome and difficult to quantify intermittent water ingression. The Aquatrex touchscreen allows operators to program low and high water level set points. The Aquatrex will monitor the water level of the oil and only turn the water removing vacuum pump on when the high level has been reached and turn it back off when the low acceptable level has been reached.

A resettable vacuum pump run time clock and cycle counter will monitor how often and for how long the PHoenix had to run to remove the water. More cycles and longer vacuum pump run times mean more water ingression.



FLUID PUMP CONTROLER .

When used on the PHoenix C1 and C4 the Aquatrex will prevent cavitation and potential damage to the fluid pump where the inlet suction might become restricted. Restriction may be caused by accidental deadhead or due to temperature drops and significant oil viscosity increases from intermittent use of the lube or hydraulic system.

In the event of shutdown the Aquatrex will automatically try to start itself back up every hour if the oil viscosity lowers to acceptable levels. This feature makes the PHoenix totally autonomous and does not require operator reset.



Aquatrex System Includes

- * Weather Resistant Nema 4 Control Box
- * Allen Bradley PLC and Components
- * Epluse Water Sensor
- * C1 & C4 only: Fluid Pump Vacuum Switch

Note: Aquatrex not compatible with Water Soluable PAG Oils.

PHoenix™

STILL NOT CONVINCED ?

Check with MSC Filtration Technologies
for rental and or lease opportunities.

MSC **FILTRATION**
TECHNOLOGIES

MSC Filtration Technologies
198 Freshwater Blvd, Enfield CT (USA)
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