PHOENIX™
Membrane Based lube and Hydraulic Oil Purifiers

Gears Oil Before and After
5000 PPM Water - 50 PPM

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

PHX-C4 or C6 - 4 or 6 GPM PORTABLE FILTER CART AND MEMBRANE DEHYDRATOR

PHX-C1 1 GPM PORTABLE FILTER CART AND MEMBRANE DEHYDRATOR

Simple  Safe  Reliable  Efficient
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 affect 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.

**IT'S REVOLUTIONARY**

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

PHOENIX C - 1 GPM 5 - 150 GALLONS

**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

The Latest in Mass Transfer Oil Purification Technology
**WHY THROW AWAY PERFECTLY GOOD OIL?**

**INSTEAD FLUSH YOUR SYSTEM OR RECLAIM WITH THE PHOENIX.**

**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!

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**THE PHOENIX REMOVES:**

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

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Cantley, R.E.,
"The Effect of Water in Lubricating Oil on Bearing Fatigue Life"

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

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

**BEFORE WATER 2000 PPM**

**AFTER LESS THAN 50 PPM**
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™
**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 ingestion rate)

**Ordering Information**

**Table 1: Voltage Options**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>110 V 60Hz - SP Standard</td>
</tr>
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<td>B</td>
<td>220 V 60Hz - SP Optional</td>
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</table>

**Table 2: Aquatrex Moisture Monitoring**

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>Without Aquatrex</td>
</tr>
<tr>
<td>D</td>
<td>With Aquatrex</td>
</tr>
</tbody>
</table>

**Table 3: Filter Housing Option**

<table>
<thead>
<tr>
<th>Qty</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>8</td>
<td>Micron B2000 Spin On Filter</td>
</tr>
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</table>

**Table 4: Oil Type**

<table>
<thead>
<tr>
<th>Value</th>
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<tbody>
<tr>
<td>G</td>
<td>Mineral Based Only</td>
</tr>
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<td>H</td>
<td>Phosphate Ester</td>
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**Table 5: Mounting**

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>BLANK</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>Portable Cart</td>
</tr>
<tr>
<td>Permanent Mount</td>
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</table>
PH\textsuperscript{3}o\textsubscript{e}nix \textsuperscript{TM} C1
1 gpm portable Membrane Oil Purifier Cart for 5-200 gallon oil reservoirs!

Larger reservoirs possible depending on water ingestion rates!

PHOENIX SHOWN WITH OPTIONAL AQUATUREX MOISTURE MONITORING SYSTEM

2" WATER REMOVAL MEMBRANE HOUSING

FRONT

PUNCTURE PROOF TIRES

OPTIONAL 3/4" INLET/OUTLET HOSES SOLD SEPERATELY
PN: PHXC1MHS - MINERAL OIL
PN: PHXC1PEHS - PHOSPHATE ESTER

CART FINISH - CHEMICALLY RESISTANT POWDER COATING - NOT PAINTED

LOW MAINTENANCE GAST ROCKING PISTON VACUUM PUMP

CART RIGGING AND LIFTING LUG

INLET OIL SAMPLE VALVE

PARTICULATE FILTER PLUGGED INDICATOR

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

OUTLET OIL FLOW INDICATOR SIGHT GLASS

HIGH QUALITY HEAVY DUTY BALDOR WASHDOWN DUTY MOTOR

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

HIGH QUALITY 1 GPM VIKING GEAR PUMP

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

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 ingestion rate)

Ordering Information

PHX-C

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Table 3: Filter Element

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

(Larger reservoirs possible depending on water ingestion 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

Quality

Versatility

Reliability
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 ingestion rate)

Ordering Information

PHX-C

Table 1: Voltage Options

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Table 3: Filter Housing Option

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<tr>
<td>2</td>
<td>8 Micron B 2000 Spin On Filter</td>
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<tr>
<td>F*</td>
<td>No Filter Housing Supplied</td>
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<td>I</td>
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<tr>
<td>J</td>
<td>Without Magnetic Rails</td>
</tr>
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</table>

* 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 Saturation Probe

Optional PHoenix Aquatrex 2G Moisture Monitoring System

HOW CAN I TELL I HAVE WATER?

The optional Aquatrex 2G Moisture Monitoring System measures the level of water contamination in your oil using a water sensor and displays it in real time on the Aquatrex touchscreen in % saturation.

HOW DO I KNOW IT'S WORKING?

The Aquatrex 2G Moisture Monitoring System has a moisture history trending screen where past moisture content of your oil can be compared to your current moisture content.

Nothing is left to chance!

Aquatrex 2G provides both reliability and accountability!
ALLOWS YOU TO RUN INTERMITTENTLY!

The optional Aquatrex 2G programmable controller allows operators to run the PHoenix in continuous mode or intermittent mode by just selecting one of two buttons.

**Continuous Mode:** Phoenix will run 24/7.

**Intermittent Mode:** The PHoenix will run each day for a field programmable period of time and as long as the moisture content in the oil has dropped below an operator programmed set point, will shut down and go into hybernation. Hybernation time is also field programmable based on operator preference.

**BUT THAT’S NOT ALL!**

In addition to all that the Optional Aquatrex 2G moisture tracking system also includes:

- Alarm History Page
- Alarm Indications and Explanation Page
- Vacuum Pump PM Auto Reminder

**Optional Aquatrex 2G System Includes**

* Weather Resistant Nema 4 Control Box   * Water Sensor  
* Touchscreen Display, PLC and Components  * C1 & C4 only: Fluid Pump Vacuum Switch
STILL NOT CONVINCED?

Check with MSC Filtration Technologies for rental opportunities.

MSC Filtration Technologies
198 Freshwater Blvd, Enfield CT (USA)
Phone 860-745-7475 - Toll Free 800-237-7359
www.mscliquidfiltration.com