

# Portable OIL PURIFICATION SYSTEMS



Standard Moisture Sensor



Easy access cleanouts



- **Compact Size**
- **Automatic Operation**
- **Vacuum Dehydration Process removes water, gases and solid particles**

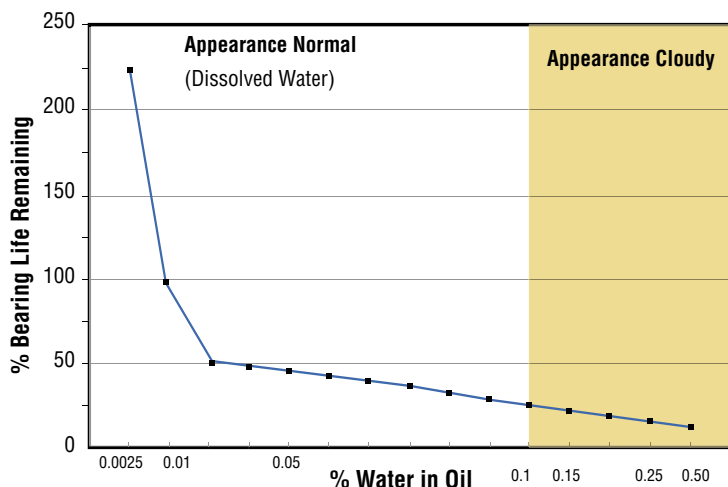
# PURIFYING YOUR OIL WITH AN FXPVS

## Water and other impurities in industrial oil

Water in lubrication and hydraulic fluids takes two forms: free and dissolved. The dissolved water cannot be seen, but once the concentration of water exceeds the saturation point, the water appears as cloudiness in the oil. If this oil is allowed to settle, the water will separate from the oil as free water. If free water exists, we can conclude that dissolved water is also present in the oil. In addition to water, gases and particulates tend to accumulate in industrial oil.

### Effect of water in oil on bearing life

(based on 100% life at 0.01% water in oil.)



Reference: "Machine Design" July 86, "How Dirt and Water Effect Bearing Life" by Timken Bearing Co.

## The problems oil impurities cause

Water, gases and particulates in a lubrication and hydraulic system can cause serious problems such as:

- Abrasive wear in hydraulic components
- Pump cavitation
- Fluid breakdown resulting in the reduction of lubricating properties of oil
- Reduced dielectric strength
- Additive precipitation and oil oxidation

Reduced bearing life is one of the most severe consequences of water in lubricating oil. The graph on the left shows that even if no water is visible (the unshaded area on the left of the graph) bearing life is drastically reduced. For example, a bearing that lasts 6 months operating in oil with a 0.05% (500 PPM) water content, will last almost 4 times as long if the water level is only 0.005% (50 PPM).



## Features of Filtramax Purification Systems

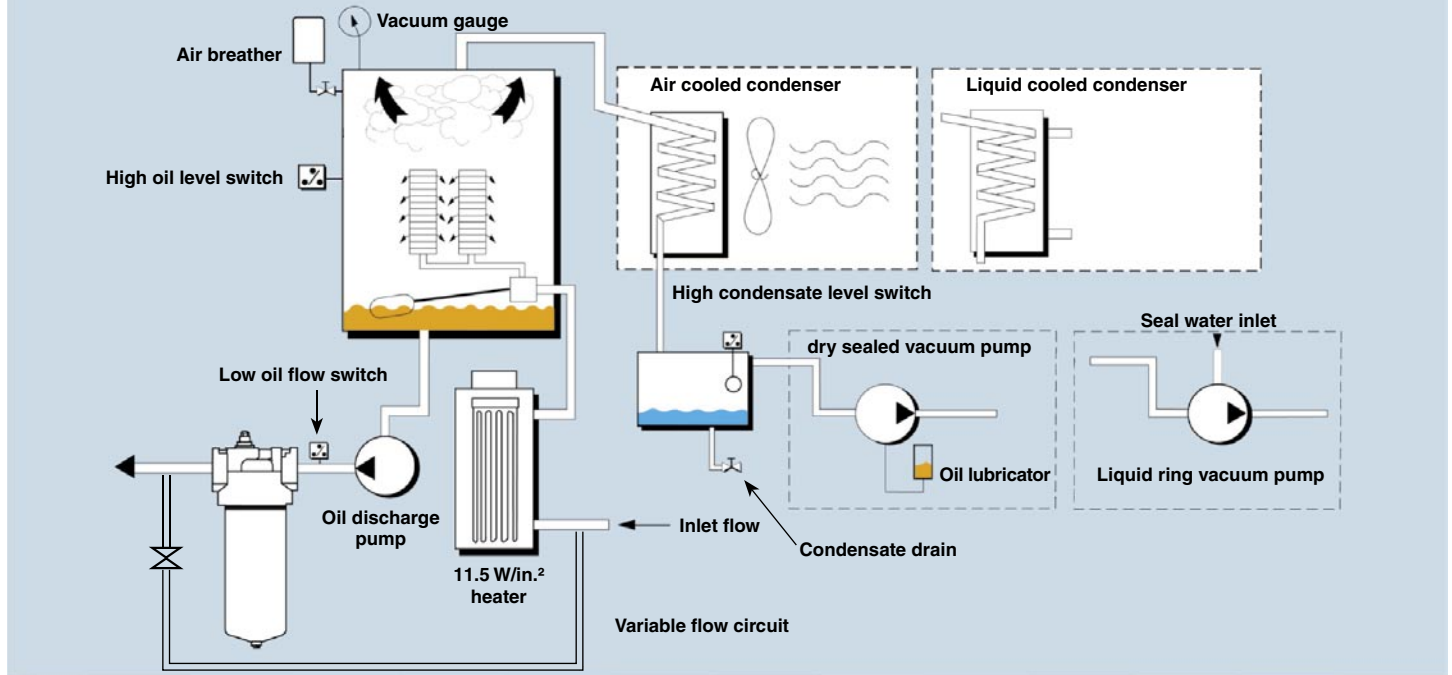
Features	Advantages	Benefits
<b>Compact size</b>	<ul style="list-style-type: none"> <li>• Smallest envelope in the industry</li> <li>• Ease of portability</li> </ul>	<ul style="list-style-type: none"> <li>• Fits through doorways and down narrow aisles</li> <li>• Encourages use</li> </ul>
<b>Condensate holding tank</b>	<ul style="list-style-type: none"> <li>• Captures removed water/solvents</li> <li>• Large enough to provide long service interval</li> </ul>	<ul style="list-style-type: none"> <li>• Eliminates potential hazard of exhausting to atmosphere</li> <li>• Reduces maintenance costs</li> </ul>
<b>Programmable thermostat</b>	<ul style="list-style-type: none"> <li>• Maintains oil within 1°F</li> <li>• Prevents overheating oil</li> </ul>	<ul style="list-style-type: none"> <li>• Unattended operation</li> <li>• Increases oil life</li> </ul>
<b>Automatic operation</b>	<ul style="list-style-type: none"> <li>• Unattended use</li> </ul>	<ul style="list-style-type: none"> <li>• Reduces labor costs</li> <li>• Increases running time</li> </ul>
<b>Reverse pole switch/phase fail</b>	<ul style="list-style-type: none"> <li>• Changes motor rotation for different power source locations</li> </ul>	<ul style="list-style-type: none"> <li>• Flexibility, less maintenance</li> <li>• Prevents incorrect rotation</li> </ul>
<b>Highest efficiency reducing water levels to 5 PPM</b>	<ul style="list-style-type: none"> <li>• Efficient water removal time</li> <li>• Minimizes downtime</li> </ul>	<ul style="list-style-type: none"> <li>• Increases oil life</li> <li>• Increases system life</li> </ul>
<b>Moisture Indicator Sensor</b>	<ul style="list-style-type: none"> <li>• Detects water saturation % in oil</li> </ul>	<ul style="list-style-type: none"> <li>• Minimizes unit run time</li> </ul>
<b>Variable Flow Circuit</b>	<ul style="list-style-type: none"> <li>• Raises oil temperature more quickly</li> </ul>	<ul style="list-style-type: none"> <li>• Starts purification process quicker</li> <li>• Saves energy</li> </ul>

# UNIT DOESN'T COST . . . . . IT PAYS!

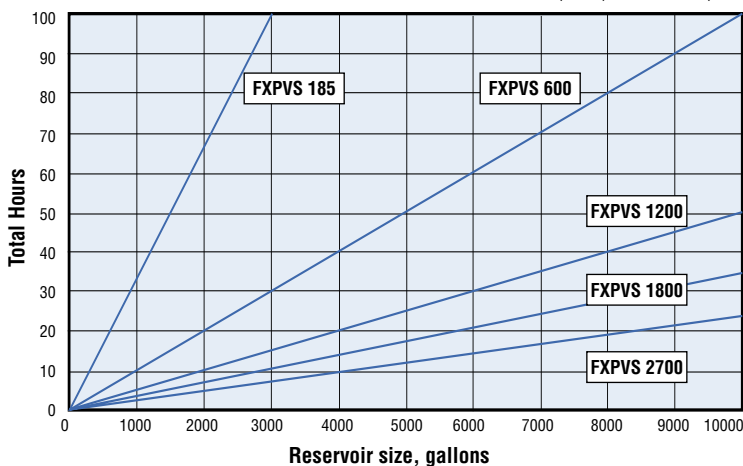
## How the Filtramax Oil Purification System works

- Contaminated oil is drawn into the Filtramax portable purification system by a vacuum of 25 in. Hg.
- The oil is heated to an optimum temperature of 150°F (66°C) by a low watt density heater.
- Then it enters a distillation column where it is exposed to a vacuum through the use of special dispersal elements that increase the exposed surface area of the oil. The water in the oil is vaporized and drawn through a condenser with a vacuum pump.
- The condensed water vapor flows into a condensate tank where it accumulates until the tank is emptied as part of routine maintenance.
- The water-free oil falls to the bottom of the distillation column and is removed by a heavy duty oil pump. This pump forces the dry oil through a high efficiency synthetic particulate removal filter.
- Finally, clean oil leaves the back of the unit and returns to the lubrication or hydraulic system reservoir.

## FXPVS 600 VACUUM DEHYDRATION PROCESS



**FXVPS Estimated Water Removal Time** 5000 PPM(0.5%) to 150 PPM (0.015%)



**Typical Performance (FXPVS 600)**

<b>Tank Size</b>	60 gallons (227 litres)	
<b>Run Time</b>	62 mins	
<b>Water Content (PPM)</b>	Start	10,000 PPM (1.0%)
	Stop	50 PPM (0.005%)
<b>Contamination Level</b>	Start	ISO 21/18/16
	Stop	ISO 16/14/11

# Specifications

**All Models:** Seal material is Fluorocarbon with EPR optional; max. vacuum: 25 in. Hg; max outlet pressure: 60 PSI / 4.1 bar  
 Max viscosity: Disposable: 500 sus (108 cSt); Packed Tower: 2150 sus (460 cSt)

Model:	FXPVS 185	FXPVS 600	FXPVS 1200	FXPVS 1800	FXPVS 2700
<b>Flow rate</b> (gpm / lpm)	5 / 18.9	10 / 37.9	20 / 75.7	30 / 113.6	45 / 170.3
<b>Height</b> (in. / mm)	65 / 1651	65 / 1651	65 / 1651	66 / 1676	66 / 1676
<b>Width</b> (in. / mm)	33 / 838	33 / 838	44 / 1092	42 / 1068	42 / 1068
<b>Length</b> (in. / mm)	48 / 1219	48 / 1219	61 / 1549	73 / 1854	73 / 1854
<b>Weight</b> (lb. / kg)	650 / 295	900 / 408	1550 / 703	2550 / 1157	2550 / 1157
<b>Condensate tank</b> (gal / litres)	4.1 / 15.5	4.1 / 15.5	8.3 / 31.4	8.3 / 31.4	8.3 / 31.4
<b>Dispersal elements</b>	1	2	4	8	8
<b>Min. operating capacity</b> (gal / litres)	5 / 18.9	6 / 22.7	11 / 41.6	18 / 68.1	18 / 68.1
<b>Inlet ports</b>	¾" JIC male	1" JIC male	1½" NPTF	2" NPTF	3" NPTF
<b>Outlet ports</b>	¾" JIC male	1" JIC male	1" JIC male	1½" JIC	2" NPTF
<b>FLA</b> (Amps)	15-41	24-38	30-48	40-65 @ 460V	50-70 @ 460V

**How to order:** Please note the bolded options reflect standard options with reduced lead-times.  
 Consult Filtramax (1-888-924-6233) on all other option lead-time.

Select the desired symbol (in the correct position) to construct a model code.

**Example:**

Box 1	Box 2	Box 3	Box 4	Box 5	Box 6	Box 7	Box 8	Box 9	Box 10
	<b>FXPVS</b>	<b>600</b>	<b>460</b>	<b>DS</b>	<b>D</b>	<b>5Q</b>	<b>12</b>	<b>AC</b>	<b>DFL</b>

Box 1: SEALS	
Symbol	Description
<i>None</i>	<i>Fluorocarbon</i>
E8	EPR

Box 5: VACUUM PUMP	
Symbol	Pressure Setting
<i>DS</i>	<i>Dry sealed</i>
<i>LR</i>	<i>Liquid ring</i>

Box 9: CONDENSER	
Symbol	Description
AC	Air cooled
LC	Liquid cooled
BC	Air and liquid cooled

Box 2: BASIC ASSEMBLY	
Symbol	Description
<b>FXPVS</b>	<b>Portable Purification System</b>

Box 6: DISPERSAL ELEMENT	
Symbol	Description
<i>D</i>	<i>Disposable (Coalescing)</i>
<i>P</i>	<i>Packed tower (cleanable - for use with viscous or highly contaminated fluids)</i>

Box 10: Options	
Symbol	Description
5DW	6" diameter wheels
PNW	Pneumatic wheels
ACD	Auto condensate drain
DFL	Dirty filter light
RHM	Resettable hour meter
SFI	Sight flow indicator
CF	Carbon filter
ICV	Inlet control valve
EXP	Explosion proof
IL8	39" element option is available on 600 models and is standard on 1200 models and larger.

Box 3: FLOW RATE	
Symbol	Description
<b>185</b>	<b>5 GPM (18.9 lpm)</b>
<b>600</b>	<b>10 GPM (37.9 lpm)</b>
<b>1200</b>	<b>20 GPM (75.7 lpm)</b>
1800	30 GPM (113.6 lpm)
2700	45 GPM (170.3 lpm)

Box 7: PARTICULATE ELEMENT	
Symbol	Description
<b>2QE</b>	<b>2 micron Microglass III Coreless</b>
<b>5QE</b>	<b>5 micron Microglass III Coreless</b>
<b>10QE</b>	<b>10 micron Microglass III Coreless</b>
<b>20QE</b>	<b>20 micron Microglass III Coreless</b>

Note: Above elements are rated for Beta 200+ (99.5% efficiency).

Box 4: POWER SUPPLY		
Model	Symbol	Description
185	230	230VAC/3Ph/60Hz
	460	460VAC/3Ph/60Hz
	575	575VAC/3Ph/60Hz
600	230	230VAC/3Ph/60Hz
	460	460VAC/3Ph/60Hz
	575	575VAC/3Ph/60Hz
1200	460	460VAC/3Ph/60Hz
	575	575VAC/3Ph/60Hz
1800	460	460VAC/3Ph/60Hz
	575	575VAC/3Ph/60Hz
2700	460	460VAC/3Ph/60Hz
	575	575VAC/3Ph/60Hz

Box 8: HEATER		
Model	Symbol	Description
<b>185</b>	<b>12</b>	<b>12 kW / 3 phase</b>
	<b>600</b>	<b>12 kW</b>
600	24	24 kW
	<b>1200</b>	<b>24 kW</b>
1800	36	36 kW
2700	48	48 kW

STANDARD FEATURES	
<b>VFC</b>	• Variable flow circuit
<b>MS</b>	• Moisture sensor
<b>LE</b>	• Lifting eyes (4)
<b>CSA</b>	• CSA approval