



# **Oil Purification Systems, Inc. Maintenance Manual**

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**Technical Support** ..... Call Toll Free (866) OILPURE

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## Section 1 - Parts List for the Filter

### The Filter – Parts Identification

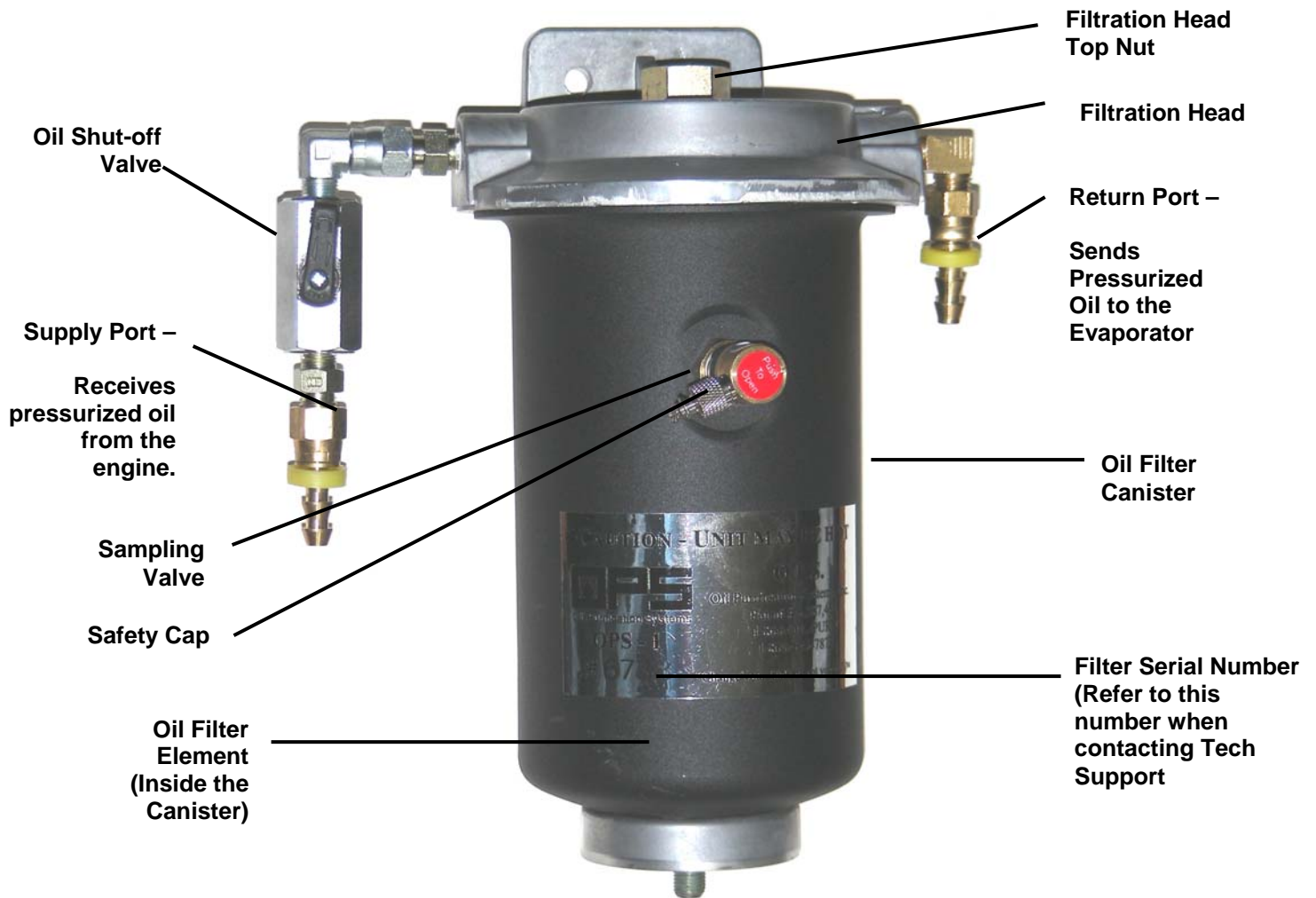


Figure 1 – The Filter Assembly

### Replaceable Parts

Part Description	P/N	Part Description	P/N
Evaporator Assy – 12V	E-100-A	Sampling Valve	P-113-A
Evaporator Assy – 24V	E-101-A	7/16" Zinc Nut	P-331-A
Filter Assy	F-100-A	O-Ring – 4.125" x 3/16"	P-303-A
Filter Element	M-128-A	Copper Washer – 5/8"	P-300-A
Filter Top Nut	M-109-A		

## Section 2 – Replacing the OPS Oil Filter Element

Replace the OPS Filter at the regular oil change mileage interval. If unsure of the proper interval consult the table on page 8.

1. Stop the engine and allow the vehicle to cool.
2. Place an oil drain pan below the filter assembly.
3. Turn the shut-off valve to stop oil flow
4. Grasp the Oil Filter Canister as you loosen the Filtration Head Top Nut. See Figure 1 on page 2. Continue to loosen the Filtration Canister Top Nut until the Oil Filter Canister is released from the Filtration Head.
5. Lower the Oil Filter Canister from the Filtration Head.
6. Remove the Oil Filter Element from the Oil Filter Canister and pour the oil from the Oil Filter Canister into the oil drain pan.
7. Use clean shop towels to wipe the inside of the Oil Filter Canister clean.
8. Insert a new Oil Filter Element into the Oil Filter Canister. Be sure the Centering Spring is in place at the center of the Oil Filter Canister.
9. Check to ensure O Ring is properly seated in groove in the Filter Head and O Ring is undamaged.
10. Position the Oil Filter Canister under the Filtration Head and screw the Filtration Head Top Nut into the Oil Filter Canister. Tighten Top Nut to a torque setting of 15 ft lbs. Over tightening may damage the system.
11. Check the engine oil level and fill, as necessary.
12. Start the engine, open the Shut-off Valve and check for leaks.
13. Stop the engine and check the oil level to ensure it is full.

**NOTE:** Be sure to handle used oil in accordance with all applicable regulations. Wear oil resistant gloves when handling used oil.

## Section 3 – Taking an Oil Sample

### Frequency

We recommend that you:

- Change the OPS oil filter at every normal oil change interval (as recommended by vehicle manufacturer)
- Take oil samples at the normal oil change intervals. Reduce this interval if the results of the previous oil sample indicate a potential problem.

### Procedure

1. Start the vehicle and bring the engine up to operating temperature.
2. If taking a sample during the vehicle's oil change, allow the oil to drain for a few seconds, then take the sample from the stream and submit. See the next section for instructions for submitting the sample.

**If taking a sample *between* oil changes complete the following steps.**

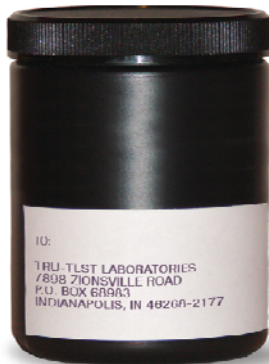
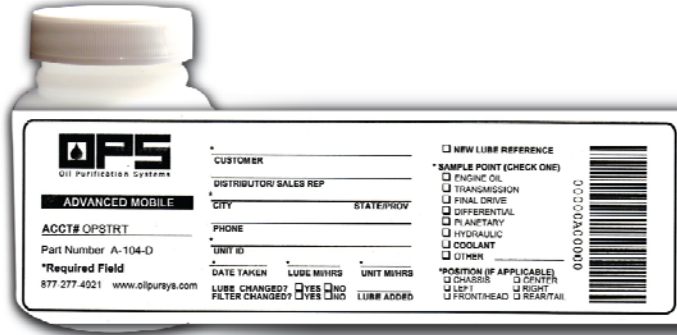
3. Replace the OPS filter (see the previous section) and run the engine for a few minutes to allow the filter canister to fill with oil from the engine.
4. Remove the Safety Cap from the Sampling Valve. See Figure 1 on page 2. Purge the sampling valve to flush out impurities that may have settled in the valve opening to ensure an accurate sample reading.
5. Hold a clean sampling bottle under the Sampling Valve and push on the button until the bottle is  $\frac{3}{4}$  full. **DO NOT completely fill the sample bottle as this may cause leaking during shipping.**
6. Screw the cap back onto the sample bottle.
7. Screw the Safety Cap back onto the Sampling Valve.

**NOTE- Sample oil after changing OPS-1 Filter to properly sample oil in crankcase instead of oil collected in filter canister to ensure proper sample results.**

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Figure 2 – Sample bottle and shipping container

Mark sure to completely fill out the information on the label.



## Section 4 – Submitting the Oil Sample

1. Complete the fields on the information form (keep the yellow copy), the sample bottle, and the shipping container completely.

### NOTES:

- On the sample bottle enter: Company Name, the Company Vehicle Unit number into the Unit ID: field and date .See Figure 2
- On the top of the shipping container enter: Company, City, State and the Company Vehicle ID # in Unit ID field See Figure 2
- On the sample processing form below, you must complete all of the items in **bold** in order to receive a complete sample analysis. See Figure 3 below. Note OPS Serial # is no longer required.
- Include mileage/ hours on engine and mileage/ hours on oil. This is important information for oil analysts to determine correct contamination levels.

ACCOUNT REGISTRATION FORM			
I would like to receive my reports via: <input type="checkbox"/> E-mail <input type="checkbox"/> Fax <span style="float: right;">0000A00000 www.trackmysample.com</span>			
Customer (sample source)			
Distributor/Sales Rep			
Attention			
Telephone			
Email Address			
Customer's Address		Fax Number	
State/Province		City	
Postal Code		Country	
COMPONENT REGISTRATION FORM			
<small>Mandatory for first time component sampling or to make changes. Always use same unit ID on future samples.</small>			
*Account Number (If not available Account Registration Form must be completed)			
OPSIKI		Secondary ID	
Unit ID			
POSITION (if applicable): <input type="checkbox"/> Chassis <input type="checkbox"/> L Left <input type="checkbox"/> R Right <input type="checkbox"/> Front <input type="checkbox"/> Rear <input type="checkbox"/> Center			
UNIT TYPE (check sampled component)			
<b>ENGINES</b>		<b>MOBILE GEAR / BEARING SYSTEM</b>	
<input type="checkbox"/> Diesel	AA	<input type="checkbox"/> Differential	BRDIF
<input type="checkbox"/> Gasoline	ABUNL	<input type="checkbox"/> Final Drive	BBFDR
<input type="checkbox"/> Natural Gas	3ANSE	<input type="checkbox"/> Planetary	BBPLT
<input type="checkbox"/> LP Gas	3ALFG	<input type="checkbox"/> Steering	BBSTG
<input type="checkbox"/> Dual Fuel	AAZF	<input type="checkbox"/> Wheel Hub	BGWHL
		<input type="checkbox"/> Other	
<b>TRANSMISSION</b>		<b>HYDRAULIC</b>	
<input type="checkbox"/> Manual	3BMNT	<input type="checkbox"/> Piston Pump	BHPIP
<input type="checkbox"/> Auto/PowerShift	3BAPT	<input type="checkbox"/> Gear Pump	BHGP
<input type="checkbox"/> Torque Converter	3BTRO	<input type="checkbox"/> Vane Pump	BHVAN
<input type="checkbox"/> Hydrostatic Trans	3HHYD	<input type="checkbox"/> Other	
<input type="checkbox"/> Other			
<b>Unit Manufacturer</b>		<b>Unit Model</b>	
Application <input type="checkbox"/> Transportation-100 <input type="checkbox"/> O.T.R Trucking-11C <input type="checkbox"/> Pickup/Delivery-12J <input type="checkbox"/> City/Highway Trans-130			
<input type="checkbox"/> Municipal Vehicle-155 <input type="checkbox"/> Ready Mix Concrete-160 <input type="checkbox"/> CR-Highway-205 <input type="checkbox"/> Construction-220			
<input type="checkbox"/> Waste Handling/Landfill-230 <input type="checkbox"/> Agricultural-280 <input type="checkbox"/> Quarry-288 <input type="checkbox"/> Marine-500			
<input type="checkbox"/> Mining-450 <input type="checkbox"/> Coal Mining-460 <input type="checkbox"/> Aggregate-480 <input type="checkbox"/> Automotive-700			
<input type="checkbox"/> Railroad-800 <input type="checkbox"/> Other			
<b>Lube Manufacturer</b>		<b>Lube Product Name</b>	
		<b>Lube Grade</b> <input type="checkbox"/> SAE <input type="checkbox"/> ISO	
Filter <input type="checkbox"/> Full-Flow-10 <input type="checkbox"/> By-pass-11 <input type="checkbox"/> Kidney Loop - 16 <input type="checkbox"/> Extended Drain - EX <input type="checkbox"/> None <input type="checkbox"/> Other			
Filter Size <input type="checkbox"/> 4 in <input type="checkbox"/> 6 in <input type="checkbox"/> 8 in <input type="checkbox"/> 10 in <input type="checkbox"/> Cartridge <input type="checkbox"/> Filter Brand <input type="checkbox"/> OPS <input type="checkbox"/> Other			
Smallest Filter Micron Rating in System		Sump Capacity	
Specify additional testing requested			
Special comments or problems?			

Figure 3 – The Oil Sample Submission Form

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2. 3. For U.S. Mail, apply address label for lab nearest your location,(supplied with bottle label form) add proper postage and mail the mailing container,
  
4. For UPS in optional UPS Prepaid box, , place mailing container in UPS box (provided) apply shipping label and drop in UPS box, bring to UPS Store or hand to any UPS Driver. Note- UPS Prepaid boxes are available from OPS.

**Suggested Sampling Intervals & Methods**

	Component Interval*	Service Requirement	Sample Method
Engine – Transportation	20,000 miles or OE recommended interval	Sample oil and change OPS filter	OPS sampling valve
Engine – Vocational Application	250 hours or OE recommended interval	Sample oil and change OPS filter	OPS sampling valve
Engine – Transit Bus	3,000 miles or OE recommended intervals	Sample oil and change OPS filter	OPS sampling valve
Hydraulic Systems	250 – 500 hours	Sample fluid and change OPS filter	OPS sampling valve
Gearboxes or other Industrial fluids	250 – 500 hours	Sample fluid and change OPS filter	OPS sampling valve

\* If you are interested in extended sampling and service intervals, please contact your OPS representative



## Section 6 - Troubleshooting

Symptom	Solution
The filter leaking between head and canister	<ul style="list-style-type: none"> <li>• Check for dirt around the O-Ring and replace the O-Ring, if necessary.</li> <li>• Tighten the head nut to <b>15` lbs</b> of torque.</li> </ul>
The filter leaking at head nut	<ul style="list-style-type: none"> <li>• Check for dirt on the sealing surfaces, and clean as required.</li> <li>• Replace the copper sealing ring.</li> </ul>
The evaporator vent is emitting smoke	<ul style="list-style-type: none"> <li>• Ensure the evaporator and vehicle voltages match.</li> <li>• Check the oil flow rate and adjust the metering valve as necessary.</li> </ul>
The evaporator vent is leaking oil	<ul style="list-style-type: none"> <li>• Ensure the evaporator is higher than the return port.</li> <li>• Ensure the return hose is downward sloping.</li> <li>• Check the oil flow rate, and adjust the metering valve as necessary.</li> <li>• Check for excessive engine blowby.</li> <li>• If the vent is leaking at the threads, reseal the connection with teflon tape.</li> </ul>
Oil leaking from Check Valve NPT (pipe thread) fitting	<ul style="list-style-type: none"> <li>• Remove fitting and apply Teflon tape or thread paste and reassembly. Note: Over-tightening can distort the threads too much and create a leakage path.</li> </ul>
Oil Analysis indicate high levels of liquid contamination	<ul style="list-style-type: none"> <li>• Use a direct current (DC) amp probe to verify amperage from the evaporator canister heating element. Normal operating range is ~4.5 – 5.5 amps.</li> </ul>

Contact a Field Service Tech questions call 866-OILPURE (645-7873) ext 4 if you have any additional issues or concerns.

## OIL PURIFICATION SYSTEMS, INC.

Oil Purification Systems, Inc. ("OPS") warrants that OPS-1 shall be free from defects in materials and workmanship, and will substantially conform to its specifications for a period of five (5) years after the date of purchase (the "Period"), provided OPS-1 is properly installed, operated, and maintained, and, in each instance, in accordance with the documentation.

Should OPS-1 have been found and demonstrated to be defective during the Period for the reasons covered by this Limited Warranty, OPS, at its option, shall:

1. REPAIR OPS-1 or part thereof; or
2. REPLACE OPS-1 or part thereof.

In the event of a discrepancy between any purchase order accepted by OPS and this warranty, the terms of this warranty apply. OPS reserves the right to use either new, used, or refurbished parts.

This Limited Warranty does not cover any damages caused by you or due to external causes, including any act of God, natural disaster, accident, flood, war, sabotage, terrorism, military actions, or problems with the engine, e.g., failure to maintain the engine in accordance with its documentation (other than manufactures recommended oil changes). OPS does not warrant that OPS-1 will be free from design defects or errors.

To request warranty service from OPS, you need to contact OPS within five (5) calendar days following discovery of the defect or damage at the following telephone number: (866) OIL-PURE; or address:

Oil Purification Systems, Inc.  
One Reservoir Corporate Centre  
4 Research Drive  
Shelton, Connecticut 06484; and

return OPS-1 or the defective part for inspection, including in such package a copy of the applicable warranty card, a detailed description of the problem, proof of purchase, and detailed records associated with the installation and maintenance of OPS-1 and the engine, and such other information as requested by OPS.

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