

**Installation Notes for CAT C32\_27\_3412 / MTU 16V2000 Gen Set Package**

Part #: 19-70601MTS-DL

Kit #01-70601MTS-DL/DL2

<b>Caterpillar C32_27_3412 / MTU 16V2000 Generator Set Package</b>		
<b>Puradyn Part #</b>	<b>Description</b>	<b>Qty</b>
<b>UNIT</b>		
15-00251	Assembly, MTS-DL 60 Main ( <i>*01-70601MTS-DL only</i> )	1
	15-MTS60 - Assembly, MTS 60 Core	
15-00251-HP	Assembly, High-Pressure MTS-DL 60 Main ( <i>*01-70601MTS-DL2 only</i> )	1
	15-MTS60 - Assembly, MTS 60 Core	
02-00607	Filter, Size 60 CGP W/ SAP/ Additives XD Polydry	1
19-70601MTS-DL	Manual, Installation Notes for CAT C32_27_3412 / MTU 16V2000 App.	1
19-00134	Manual, MTS Standard Install (TF)	1
<b>HOSES</b>		
15-70079M	Kit, Hose C27/C32 Application (includes 60" 5/8 ID Return Hose & 60" 3/16 ID Supply Hose)	1
15-70080M	Kit, Hose MTU 16V2000 Application (includes 60" 5/8 ID Return Hose & 144" 3/16 ID Supply Hose)	1
<b>PARTS, HARDWARE NEEDED FOR INSTALLATION</b>		
15-70124	Kit, Return fitting assembly 3/4 NPT X -12 ORFS CAT C15 MTS Application ( <i>*01-70601MTS-DL only</i> )	1
15-70194	Kit, Assembly Return Fitting 30mm-1.5 X -12 ORFS ( <i>*01-70601MTS-DL2 only</i> )	1
15-70122	Kit, Bolt Standard TF/MTS 240 Models	1
15-70119	Kit , Bolt Mounting Plate C15 Application ( <i>*01-70601MTS-DL only</i> )	1
15-00426	Kit , Parts Bag- MTS24 C15 Application ( <i>*01-70601MTS-DL Kit Only</i> )	1
15-00428	Kit, Parts Bag MTS-DL60 MTU Application ( <i>*01-70601MTS-DL2 Kit Only</i> )	1
15-00245	Kit, Inline Push-Button sample Valve -4 ORFS Male/Female Connections ( <i>*01-70601MTS-DL2 Kit Only</i> )	1

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### **Customer Care Alert:**

**The owner/operator of this equipment is responsible for proper installation, care, maintenance, product registration and usage as outlined in the puraDYN Bypass Oil Filtration System Installation Manual.**

The following document is used in conjunction with the puraDYN Bypass Oil Filtration System Installation Manual that is included in the unit box, and as such, should be considered a supplemental source of information. Furthermore, this document covers the installation of a MTS60 Bypass Oil Filtration System on a Caterpillar C32/27/3412 and MTU 16V2000 Generator Set Package.



**Picture 1 (After Installation-C32)**  
(Actual kit materials not shown)



**Picture 2 (After Installation-MTU16V2000)**

**Mounting the Unit:** The MTS60 bypass oil filtration system (Assembly Part Number 15-00251/15-00251-HP) should be mounted to the respective engine housing as shown in Picture 3 & 4.

- In the case of C32/27/3412, use 5/8-inch hex bolt hardware provided in bolt kit part number 15-70119 to secure Mounting Plate 'Z' Support (part number 24-00109) to the engine housing. Now using 3/8"-16 bolt hardware in bolt kit part number 15-70122, secure MTS60 unit to Mounting Plate 'Z' Support (See Picture 3 below - *Brackets not included for MTS60*).
- For MTU 16V2000, use 3/8"-16 bolt hardware in bolt kit part number 15-70122 to secure MTS60 unit to engine housing as shown in Picture 4.



**Picture 3 (Mounting Method-C32)**  
(Actual kit materials not shown)



**Picture 4 (Mounting Method-MTU 16V2000)**

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**Installing the pressure fittings:** Install the shut-off valve to engine using supplied fittings from parts bag (part number 15-00426/15-00428) as shown in Picture 5 & 6. Assemble (1) 3/16" ID supply hose assembly using supplied hose and field-attachable hose fittings provided in the respective part number 15-70079M/15-70080M Hose Kit. Route the supply hose assembly to the shut-off valve on the engine, connect line to the -4 Male ORFS fitting end of shut-off valve. Connect other end of supply hose assembly to **puraDYN** Unit, by fastening hose end fitting to the -4 Male ORFS 90° fitting on the unit base.



Picture 5 (Oil supply Shut-valve- C32)



Picture 6 (Oil supply Shut-valve- MTU16V2000)  
(Pressure gauge setup not part of kit)

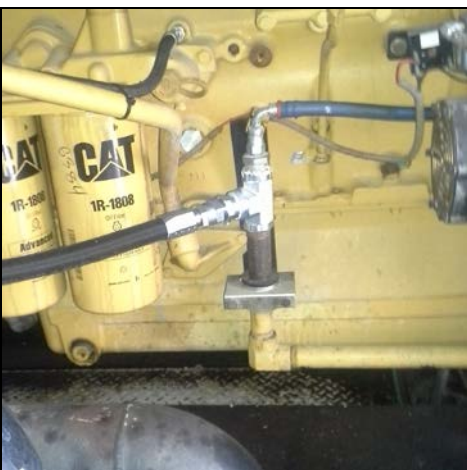
**Installing the Return Line:** Locate and remove the oil drain plug from the oil pan of engine.

- For C32/27/3412, install the Return Fitting Assembly provided in this application kit- P/N 15-70124, as shown in Picture 7.
- For MTU 16V2000, install the Return Fitting Assembly provided in this application kit- P/N 15-70194 as shown in Picture 9.

Assemble (1) 5/8" ID return hose assembly using supplied hose and field-attachable hose fittings provided in the respective part number 15-70079M/15-70080M Hose Kit. Connect one end of the return hose assembly to the return fitting assembly and route other end of return hose assembly to the bypass filter unit's -12 ORFS 45° return fitting, and connect. The oil return hose assembly must be routed to assure it does not come in contact with any sharp edges or moving parts; **make sure hose is routed in downward slope, with no kinks or traps, to oil pan. Oil is returned by gravity (SEE INSTALLATION MANUAL).** Secure in place with clamps if necessary. Drain the engine oil and clean all surfaces.

**Note:** Properly orient the fitting in order to avoid damage from debris.

**Note:** If necessary, cover the oil return hose with a secondary hose (or equivalent) to better protect it from potential damage



Picture 7 (Return fitting assembly)



Picture 8 (MTS 60)



Picture 9 (Return Banjo assembly)

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### **Testing the By-pass System:**

Clean all surfaces and wipe off oil. Check all fittings tightness. Check operation of shut-off and sampling valve. Tie off all lines with tie wraps. Fill engine with oil. Start engine and check all connections for oil leaks. Press FPS Manifold's sample valve and verify that oil flow is present. After five minutes of engine operation, touch the bottom center of the Bypass Oil Filtration unit and verify that it is warm to the touch. Shut engine off and check oil level. Place **puraDYN** Installation Manual in the documentation holder mounted to the equipment.



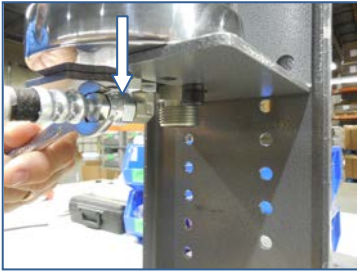
## TROUBLESHOOTING SECTION

The **paraDYN** system has been engineered in a quality system certified to ISO 9001. It is manufactured from the highest quality materials available with superior workmanship. If, however, your **paraDYN** unit is not functioning properly, check the following conditions as indicated:

### 1) Restricted oil Flow:

- Pressure line may be clogged .....blow line out with high air pressure (**do this first**)
- Shutoff valve maybe closed .....open valve
- Filter may be dirty and clogged .....replace with new filter
- Metering jet screen maybe clogged..clean screen thoroughly
- If metering jet is clogged .....clean metering jet thoroughly

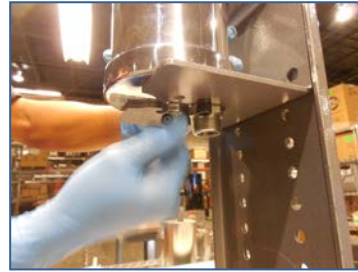
### Cleaning the Metering Jet Assembly (MTS MODEL Example-01-70001MTS App Kit)



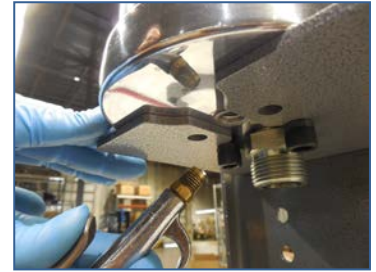
1) Loosen hose fitting, for disconnection of Supply Hose Assembly



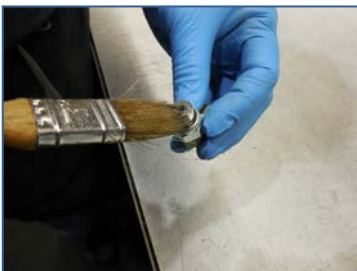
2) Loosen (adjustment) locknut on 90 Degree fitting- allowing rotation of fitting



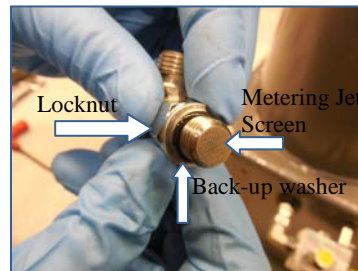
3) Rotate fitting CCW, to remove- metering jet screen will drop down- if screen does not drop, use probe tool to gently dislodge



4) Clean port internals & metering jet screen with solvent/fine wire brush; use high-pressure air to blow-out port & screen, clearing any debris



5) Back-off locknut/back-up washer on 90 degree fitting and lubricate external o-ring w/system fluid, also applying a dab on face of fitting- for screen adherence



6) Place screen on face of fitting, centered, against dabbed oil; screw this end of fitting into port- by hand, until back-up washer contacts face of port.



7) Slightly unscrew fitting- as required to orient fitting facing forward (or in direction required for install), then use (2) wrenches to hold fitting in place while tightening locknut



8) Reconnect hose assembly, and check all fittings for tightness

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### **Oil Analysis Procedures**

The Puradyn Filter Technologies Oil Management Program includes an oil analysis schedule that assists our customers in achieving the benefits of extended oil drain intervals and longer service life for their engines and equipment.

Oil analysis is the key to achieving the benefits that result from optimized oil life (with reasonable safety precautions) and extended drain intervals. In addition, oil analysis is the only economical way to measure wear or contamination in the engine or equipment. Of primary importance is the interpretation of the test data, which is easy to read and self-explanatory.

The Puradyn oil analysis is conducted by an independent laboratory and is reported in an easy to understand format, which includes the following data of the oil:

- **Spectrophotometric analysis**
- **TBN & TAN**
- **Wear metals**
- **Contaminant levels**
- **Oil operating condition**

This analysis should be conducted in order to monitor and evaluate the lubrication system. The oil analysis can present warnings of any existing or potential problems, along with measuring the performance of the puraDYN system.