**Manual Part # 19-70008MTS-DL:** Puradyn Installation Notes for Detroit Diesel Series 60 / Caterpillar C27/C32 Gen Set Package

**Note Puradyn model nomenclature change: M25 system (prev. MTS 40), and Application Kit # 01-A1M25X-K (prev. 01-70008MTS-DL)**

| Detroit Diesel Series 60/Caterpillar C27/C32 Generator Set Package | | |
|---|---|---|
| **Puradyn Part #** | **Description** | **Qty** |
| | **SYSTEM** | |
| 15-00125 | M25 (DL) Canister W/Ear Stud hardware assembly | 1 |
| 15-00220 | Assembly, Lid M25/45/85 | |
| 02-00407 | Filter, Size 25 XD additives | 1 |
| 19-70008MTS-DL | Manual, Installation Notes for DD Series 60 | 1 |
| 19-00134 | Manual, M Series Standard Installation | 1 |
| | **HOSES** | |
| 15-70079M | Kit, Hose C27 / C32 Application 01-A1M25X-K ) | 1 |
| | **PARTS, HARDWARE NEEDED FOR INSTALLATION** | |
| 24-00109 | Bracket, Z Mounting Plate<br>For C15, C27 & C32 | 1 |
| 15-70119 | Kit , Bolt Mounting Plate C15 Application | 1 |
| 15-70124 | Kit, Return Fitting Assembly ¾ NPT X -12 ORFS CAT C15 MTS Application | 1 |
| 15-70122 | Kit, Bolt STD M85 Model 1US elevated mounting Application | 1 |
| 15-00426 | Kit , Parts Bag- M25 C15 Application | 1 |
| 14-00315 | Fitting, 45 DEG. M27-2.0 ISO 6149 Male X -12 ORFS Male | 1 |
| 14-00229 | Fitting, 90 DEG. M12-1.5 ISO 6149 Male X -12 ORFS Male | 1 |
| 14-00030 | Metering Jet 1/32" Orifice | 1 |
| 07-00016 | Metering Jet Screen 3/8" Dia.<br>80 Mesh per inch, .0055" wire dia., .007 width opening | 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 **pura**DYN Bypass Oil Filtration System Installation Manual that is included in the system box, and as such, should be considered a supplemental source of information. Furthermore, this document covers the installation of the M25 Bypass Oil Filtration System on a Detroit Diesel Series 60 Generator Set Package.

**Picture 1 - Before Installation**

**Picture 2 - After Installation**
*Actual hardware not shown*

**Mounting the System:** The M25 bypass oil filtration system should be mounted to the engine on a robust equipment member as illustrated. Use the 5/8-inch hex bolts provided in the part number 15-70119 bolt kit to secure **'Z Support'** Mounting Plate (part number 24-00109) with the mounting holes in equipment **(See Pictures 3, 4 for an example of mounting on different equipment application**). Holes could be drilled on a robust equipment frame in case of unavailability of holes in the equipment for mounting purpose. Mounting Plate (part number 24-00004 – **not part of kit, to be ordered separately**) can be used as another optional mounting style by integrating (welding) mounting plate to the equipment frame **(See Pictures 5 below).** Use Bolt Kit (part number 15-70122) to secure the bypass filter system with the mounting plate.

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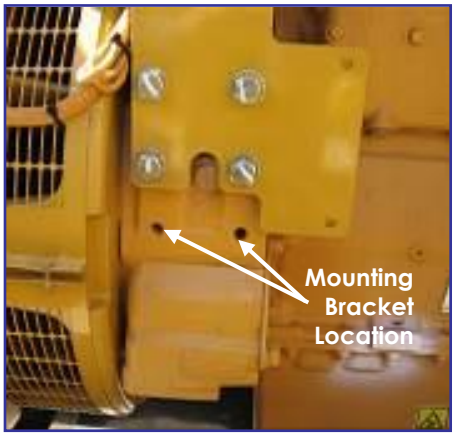


**Picture 3 - Mounting Locations**
*Actual equipment application not shown*

**Pictures 4 - System Mounted**
*Actual equipment application and hardware not shown*

**Picture 5: Mounting Plate 24-00004**
*Welded to a vertical post – Mounting plate not part of the kit - Actual hardware not shown*

**Installing the pressure fittings:** Install the reducer fitting followed by shut-off valve into the oil supply port using supplied fittings from part number 15-00426 ***(Picture 7, 8)***. Assemble (1) 3/16" ID supply hose assembly using supplied hose and field-attachable hose fittings provided in the part number 15-70079M. Route assembled supply hose to the fitting end of the shut-off valve on the engine; connect other end to the **pura**DYN System by fastening hose end fitting to the -4 ORFS Male supply fitting.


**Picture 7 (Oil Supply Port)**


**Picture 8 (Oil supply Shut-off valve)**

**Installing the Return Line:** Remove the oil drain plug on the side of the oil pan. After draining the engine oil and cleaning all surfaces, install return fitting kit part number 15-70124 into the oil pan drain port. Plug fitting included in return fitting kit bag has to be installed with the return fitting assembly depending upon customer's requirement. Assemble (1) 5/8" ID return hose assembly using supplied hose and field-attachable hose fittings provided in the Hose Kit part number 15-70079M. 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 system's return fitting. 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 9 - Oil Return Kit**
*Actual equipment and hardware not shown*


**Picture 10 - Mounted System**
*Actual hardware not shown*

## Testing the Bypass 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 (if applicable) and verify that oil flow is present. After five minutes of engine operation, touch the bottom center of the Bypass Oil Filtration system and verify that it is warm to the touch. Shut engine off and check oil level. Place **pura**DYN Installation Manual in the documentation holder mounted to the equipment.

## Filter Change and Oil Analysis

Replace the **pura**DYN filter element and perform oil analysis at the oil change intervals recommended by your equipment's Original Engine Manufacturer (OEM). **As long as the oil analysis confirms that the oil is suitable for continued use, the oil does not need to be changed.**

| | Before puraDYN Installation | Midpoint of First OEM Interval | Each OEM interval |
|---|---|---|---|
| Take Oil Analysis Sample | ✓ | ✓ | ✓ |
| Change **pura**DYN filter and change/clean full flow filter | | ✓ | ✓ |
| Change Oil | ✓ | If analysis requires | If analysis requires |

Oil analysis is a fast, non-invasive way to monitor the condition of your engine or hydraulic oil and is key to evaluating the benefits that result from optimized oil life and extended oil drain intervals. In addition, oil analysis is the only economical way to measure wear or contamination in the engine or equipment and often serves as an indicator of potentially costly problems.

Samples are easily taken from the oil sample valve provided with each system. Sampling the oil before it enters the **pura**DYN system enables an accurate assessment of the condition of the equipment. The oil analysis is conducted by an independent laboratory and is reported in a three-tier test that includes: spectrographic metals, wear metals, and contaminant metals (these metals must be monitored to fully evaluate the lubrication)

For extended oil drain practices relative to over the road trucks, Puradyn follows the Technology & Maintenance Council's (TMC) stringent requirements.

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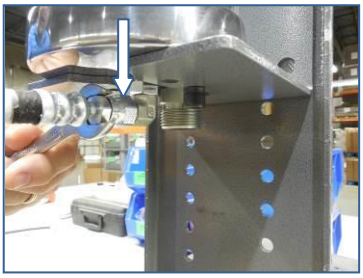
## TROUBLESHOOTING SECTION

The **pura**DYN 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 **pura**DYN system 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

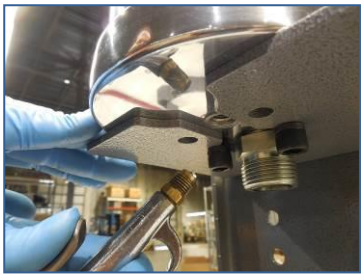
### Cleaning the Metering Jet Assembly (*#01-A1M10X-K App Kits only*)



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

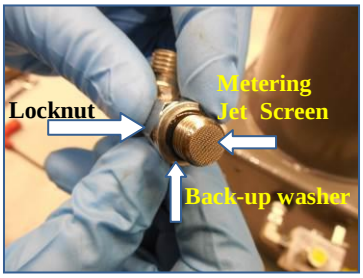
2) Loosen (adjustment) locknut on 90 Degree fitting- allowing rotation of fitting

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



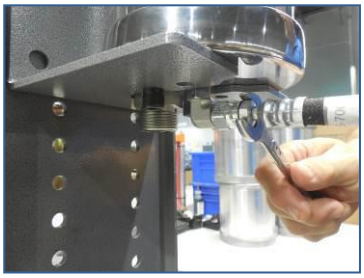
4) Clean port internals & metering jet screen with solvent/fine wire brush; use high-pressure air to blow-out port & screen, clearing any debris

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