

Manual Part #: 19-70601MTS-DL: Puradyn Installation Notes for CAT 3306(SNG Compressor) /3412 /C32 /C27 /MTU 16V2000 (HP) Gen Set Application

Note Puradyn model nomenclature change: M45 system (prev. MTS60), and Application Kits: 01-A1M45X-K (prev. 01-70601MTS-DL), 01-A1M45X-M (prev. 01-70601MTS-DL2), and 01-A1M45S-K (prev. 01-70601MTS-DL8)

Materials for Caterpillar 3306/ 3412/ C32/ 27/ MTU 16V2000 Application		
Puradyn Part #	Description	Qty
SYSTEM		
15-00251	Assembly, M45 Main	1
15-00251-HP	Assembly, High-Pressure M45 Main (*For App Kit#01-A1M45X-M only)	1
02-M45X1	Filter, Size 45, XD Additives (Pre-Installed)	1
02-M45S1	Filter, Size 45, SNG Additives (Pre-Installed) (*For App Kit#01-A1M45X-K only)	1
19-70601MTS-DL	Manual, Installation Notes for CAT 3306 /3412 /C32 /C27 /MTU 16V2000 Application	1
19-00134	Manual, M Series Standard Installation	1
HOSES		
15-70079M	Kit, Hose C27/C32 App. (60" 5/8 ID Return Hose & 60" 3/16 ID Supply Hose) (*For App Kits#01-A1M45X-K; #01-A1M45X-K only)	1
15-70080M	Kit, Hose MTU 16V2000 App. (60" 5/8 ID Return Hose & 144" 3/16 ID Supply Hose) (*For App Kit#01-A1M45X-M only)	1
PARTS, HARDWARE NEEDED FOR INSTALLATION		
15-70124	Kit, Return fitting assembly ¾ NPT X -12 ORFS CAT C15 MTS Application	1
15-70194	Kit, Assembly Return Fitting 30mm-1.5 X -12 ORFS (*For App Kit#01-A1M45X-M only)	1
15-70122	Kit, Bolt Standard M85 Models	1
15-70119	Kit , Bolt Mounting Plate C15 Application (*For App Kits# 01-A1M45X-K or #01-A1M45X-K only)	1
15-00426	Kit , Parts Bag- M10 C15 Application	1
15-00428	Kit, Parts Bag M45 MTU Application (*For App Kit#01-A1M45X-M only)	1
15-00245	Kit, Inline Push-Button sample Valve -4 ORFS Male/Female Connections (*For App Kit#01-A1M45X-M only)	1

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.

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The following document is used in conjunction with the **puraDYN** 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 M45 Bypass Oil Filtration System on a Caterpillar 3306 (SNG Compressor) /3412 /C32 /27 and MTU 16V2000 (High-Pressure) Generator Set Application (See model installs in **Picture 1 & 2**).



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



Picture 2 (After Installation-MTU16V2000)

Mounting the System: The M45 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**.

- For most applications including CAT & MTU 16V2000, use 3/8"-16 bolt hardware in bolt kit part number 15-70122 to secure M45 system to engine housing as shown in **Picture 3**.
- *Optional:* In CAT applications like C32/27/3306/3412, Mounting Plate 'Z-Bracket' (*Part Number 24-00109, individually sold - does not come with kit) might be needed. In such cases use 5/8-inch hex bolt hardware provided in bolt kit part number 15-70119 to secure 'Z-Bracket' to the engine housing. Now using 3/8"-16 bolt hardware in bolt kit part number 15-70122, secure M45 system to 'Z-Bracket' (See **Picture 4**).



Picture 3 (Mounting Method-MTU 16V2000)



Picture 4 (Mounting Method-C32)

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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** System, by fastening hose end fitting to the -4 Male ORFS 90° fitting on the system 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 engine oil pan. Replace drain plug with Return fitting assembly as advised below,

- For 3306(SNG) /3412 /C32 /C27, 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 system's -12 ORFS 45° return fitting (See **Picture 8**), 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

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Picture 7 (Return fitting assembly)



Picture 8 (M45)



Picture 9 (Return Banjo assembly)

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 and verify that oil flow is present. After five minutes of engine operation, touch the bottom center of the **paraDYN** system and verify that it is warm to the touch. Shut engine off and check oil level. Place **paraDYN** Installation Manual in the documentation holder mounted to the equipment.

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Filter Change and Oil Analysis

Replace the **paraDYN** 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 paraDYN Installation	Midpoint of First OEM Interval	Each OEM interval
Take Oil Analysis Sample	✓	✓	✓
Change paraDYN 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 **paraDYN** 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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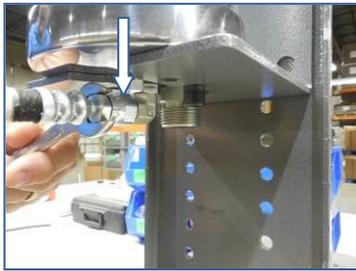
TROUBLESHOOTING SECTION

The **puradYN** 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 **puradYN** system is not functioning properly, check the following conditions as indicated:

1) Restricted oil Flow:

- Pressure line may be cloggedblow line out with high air pressure (**do this first**)
- Shutoff valve maybe closedopen valve
- Filter may be dirty and cloggedreplace with new filter
- Metering jet screen maybe cloggedclean screen thoroughly
- If metering jet is cloggedclean metering jet thoroughly

Cleaning the Metering Jet Assembly (Example: 01-A1M10X-K App Kit)



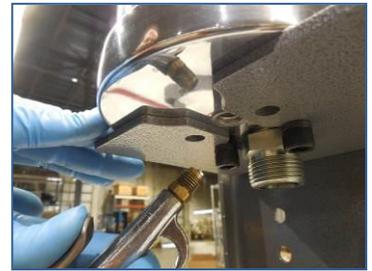
1) Loosen hose fitting, for disconnection of Supply Hose Assembly



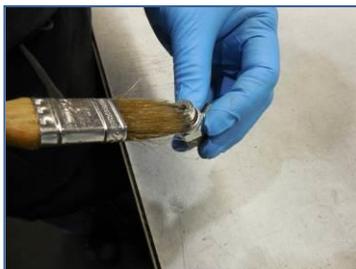
2) Loosen (adjustment) locknut on 90 Degree fitting- allowing rotation of fitting



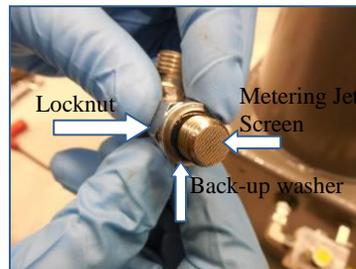
3) Rotate fitting CCW, to remove- metering jet screen will drop down- if screen does not drop, use probe tool to gently dislodge



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