

Manual Part # 19-00304DMTS-DL: Puradyn Installation Notes for Caterpillar D398 Gen Set Package -

Note Puradyn model nomenclature change: M85 system (prev. MTS 240) and Application Kits # 01-A1M85X-K1 (prev. 01-70002DMTS-DL) and 01-A1M85S-K1 (prev. 01-72002MTS-DL8)

Caterpillar D398 Generator Set Package		
Puradyn Part #	Description	Qty
SYSTEM		
15-70022-3	M85 Main Assembly w/FPS Manifold Oil & Gas Services 1-us, Top Return (*For 01-A1M85X-K1 App Kit only)	1
	02-M85X1 Filter, Size 85, XD Additive (pre-installed)	
15-70025-3	M85 Main Assembly w/FPS Manifold SNG Oil & Gas Services 1-us, Top Return (*For 01-A1M85S-K1 App Kit only)	1
	02-M85S1 Filter, Size 85, SNG (pre-installed)	
19-00304DMTS-DL	Manual, Installation Notes for CAT D398 Genset-M85 (85 Gal. Sump)	1
19-00134	Manual, M System Standard Installation	1
HOSES		
15-70081M	Kit, 1-Unit System Hose (for 01-A1M85X-K1 , includes 70" Supply Hose & 84" Return Hose, Off-road)	1
PARTS, ADDITIONAL KIT HARDWARE		
15-00427	Kit , Std. Parts Bag- 1 thru 3-unit, M85 App. Kits	1
24-00110	Mounting Plate, CAT 3512	1
15-70120	Kit , Bolt Bag CAT 3512	1
15-70087	Kit , Return Manifold 1" NPT Fittings, Single-Port W/ CAT Square Plate	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 (part number 19-00134) 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 an M85Bypass Oil Filtration System on a Caterpillar D398 Generator Set Package.



Picture 1: Before Installation



Picture 2: After Installation
Actual Kit Materials not Shown

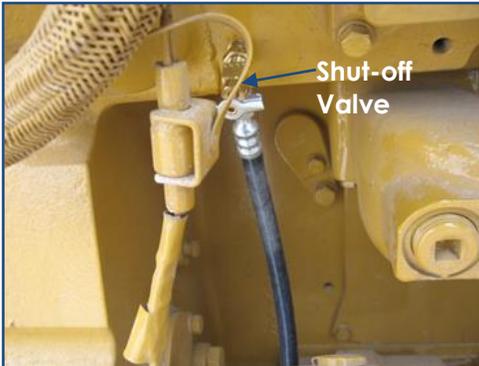
Mounting the System:

The (1) M85 Bypass Filter Unit should be mounted at the location as shown in **Picture 2**, for rail-mounted set-ups. Prepare the mounting holes on the frame as shown in **Pictures 3 & 4**, by using the mounting plate (part# 24-00110) as a template for bolt locations. The mounting plate will also have (4) studs protruding, allowing the filter system bottom frame to be bolted to the plate. Secure the filter system using bolt hardware provided in the part number 15-70120 bolt kit.

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Installing the Pressure Fittings:

Install the ball type shut-off valve to engine using supplied fittings as shown in **Picture 5**. Assemble (1) 3/16" ID supply hose assembly using supplied hose length and field-attachable hose fittings provided in the part number 15-70081M 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 the **puradYN** System, by fastening hose end fitting to the -4 Male ORFS fitting on the one end of FPS Manifold Assembly (**see Picture 6**).



Picture 5: Actual hardware not shown



FPS
Manifold
Assembly

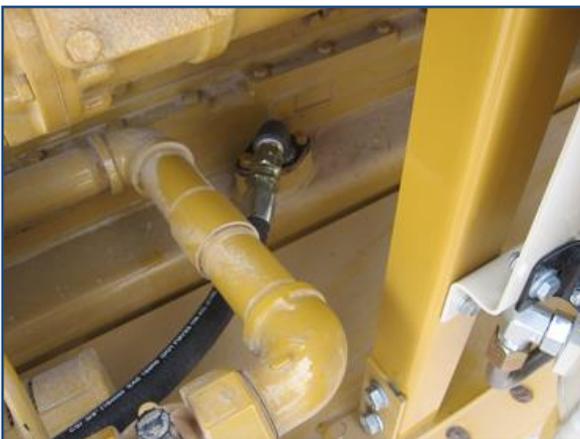
Picture 6: Pre-production hardware shown

Installing the Return Line:

Locate and remove the front alternate dipstick cover on the right-hand side of the engine. Replace the cover with the Return Fitting Assembly (includes new gasket) provided in this application kit- P/N 15-70087, as shown in **Picture 7, 8**. Assemble (1) 5/8" ID return hose assembly using supplied hose length and field-attachable hose fittings provided in the part number 15-70081M Hose Kit. Connect (1) end of the return hose assembly to the Return Fitting Assembly and route other end of return hose assembly to the filter system's 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.

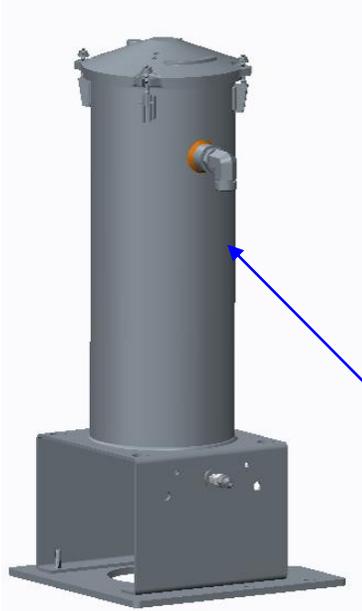


Picture 7



Picture 8

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Connect return hose from Return Manifold Assembly to return fitting

Picture 9

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 Bypass Oil Filtration system 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

. Filter Change and Oil Analysis

Replace the **puradYN** 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 puradYN 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 unit. Sampling the oil before it enters the **puradYN** 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:

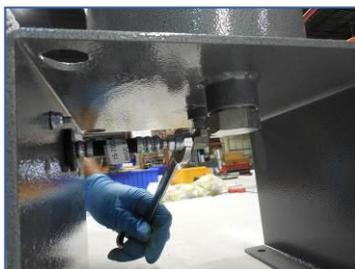
Restricted oil Flow:

- 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 (M System Models)



1) Loosen locknut, which secures FPS Manifold Assembly to unit base



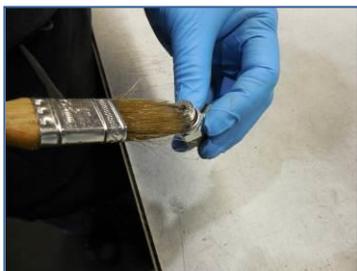
2) Loosen hose fitting, to disconnect 'Inlet Plumbing Hose Assembly'



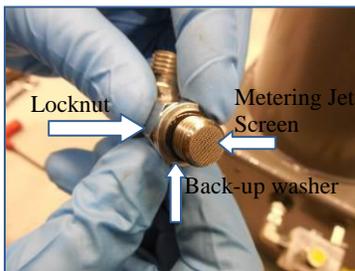
3) Loosen (adjustment) locknut on 90 Degree fitting, then rotate entire fitting CCW to remove- metering jet screen will drop down



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 align with hose assembly, then use (2) wrenches to hold fitting in place while tightening locknut; reconnect hose assembly



8) Check all fittings for tightness, then re-tighten locknut- securing FPS Manifold Assembly to unit base