

Manual Part # 19-00305MTS-DL: Puradyn Installation Notes for Caterpillar 3516 Gen Set Package

Note Puradyn model nomenclature change: M85 system (prev. MTS 240), and Application Kits # 01-A3M85X-K1 (prev. 01-70006MTS-DL), 01-A3M85X-K2 (prev. 01-70006MTS-DL7), and 01-A3M85S-K (prev. 01-70006MTS-DL8)

Caterpillar 3516 Generator Set Package		
Puradyn Part #	Description	Qty
SYSTEM		
15-70022-2/ 15-70025-2	M85 Main Assy. w/Supply Line Conn. Oil & Gas Svcs. 1-3 US, Top Return/ M85Main Assy. w/Supply Line Conn. SNG Oil & Gas Svcs. 1-3 US, Top Return- <i>*for 01-A3M85S-K Kit Only</i>	3
02-M85X1/ 02-M85S1	Filter, 85, XD Additives (pre-installed)/ Filter, 85, SNG Additives (pre-installed)- <i>*for 01-A3M85S-K Kit Only</i>	3
19-00305MTS-DL	Manual, Installation Notes for CAT3512 Genset (255 Gal. Sump)	1
19-00134	Manual, M Series Standard Installation	1
HOSES		
15-70083M	Kit, Hose 3-Unit M85System (For 01-A3M85X-K1 , Includes 40ft Supply Hose & 90ft Return Hose, Off-Road) <i>*Note: Hose Kit not included in P/N 01-A3M85X-K2 App. Kit</i>	1
PARTS, ADDITIONAL KIT HARDWARE		
15-00422	Assembly, Press. Manifold W/FPS Port & ORFS Connections w/ Sample Valve, 3-System System	1
15-70031	Assembly, Hose 3/16" ID M85 Press. Manifold To Filter Inlet 2 & 3-Unit Systems- <i>Pre-installed</i>	1
15-00427	Kit Bag, Parts Nabors 1US, 2US & 3US M85 App Kits	1
06-00004	Washer, Flat 3/8" (pre-assembled)	4
04-00011	Bolt, 3/8-16 X 1" Long Hex (pre-assembled)	2
03-00004	Nut, Nylon Insert, 3/8-16 (pre-assembled)	2
24-00116	Mounting Plate, Pressure Manifold CAT 3512 (pre-assembled)	1
24-00117	Mounting Plate, CAT3516	3
15-70121	Kit , Bolt Bag CAT 3516	3
15-70091	Kit, Return Manifold 1" NPT Fittings, 3-Port ORFS	1

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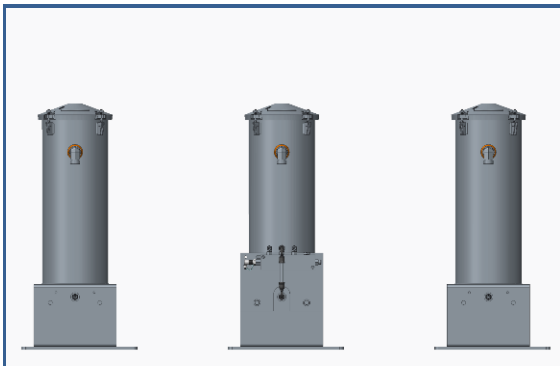
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Customer Care Alert:

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 a 3-system M85Bypass Oil Filtration System on a Caterpillar 3516 Generator Set Package.

Mounting the Systems: The (3) Bypass Filter Systems should be mounted side-by-side located at a suitable area along the frame-rail where the systems can be secured in place. As shown in **Picture 1**, arrange the (3) filter systems side-by-side, identifying the system that has the 'Pressure Manifold Assembly' for future supply line connections. Prepare the mounting plates (part number 24-00117) to be secured to ground or a structural frame that can support these (3) M85systems (**Picture 2**).

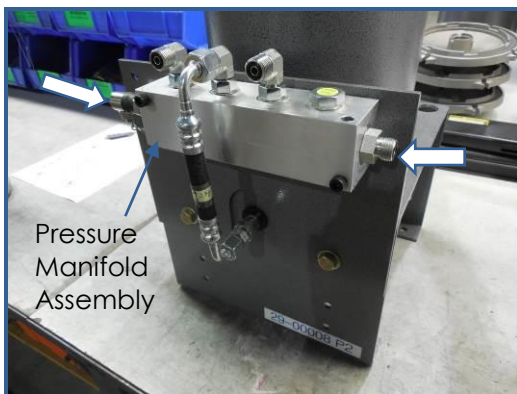


Picture 1
(Side-by-Side arrangement)



Picture 2
(Base plate mounting arrangement)

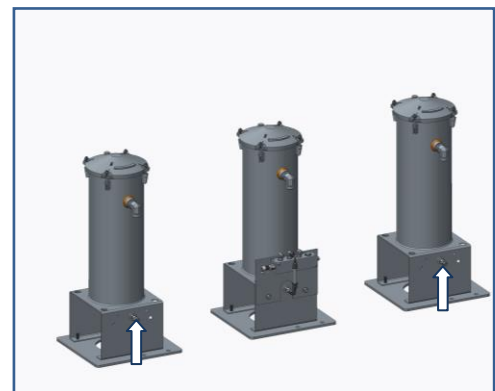
Do not secure the (3) filter systems to the base-plates yet.



Picture 3

For Pressure Manifold Assembly connections, note that (1) end of assembly features a Push-Button Sample Valve, while the other end features an ORFS fitting for connection to supply line

Connect from Pressure Manifold Assembly to supply fittings on (2) adjacent bypass filter systems.



Picture 4

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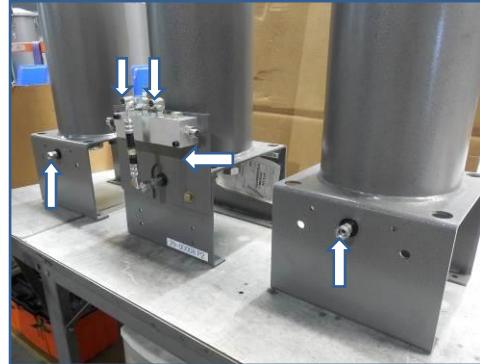
Installing the Pressure Fittings: Install the Shut-off Valve to engine using fittings supplied in part number 15-00427 kit bag as shown in **Picture 5**. Assemble (3) 3/16" ID supply hose assemblies using supplies provided in the part number 15-70083M Hose Kit. ***Note:** Hose Kit not included in P/N 01-A3M85X-K2 App. Kit; (2) 90° field-attachable hose fitting are included in this Hose Kit, and should be fitted to hose ends which connects to bypass filters' supply fitting (allowing for more direct hose routing). Use (1) supply hose assembly (built with (2) straight field-attachable hose fittings installed at ends) to connect the -4 male ORFS end of shut-off valve to the Pressure Manifold Assembly, by fastening hose end fitting to -4 male ORFS fitting on manifold end (**see Picture 6**). Connect (2) additional supply hose assemblies- each built with (1) straight and (1) 90° field-attachable hose fitting, to the (2) unused -4 male 90° ORFS fittings on top face of Pressure Manifold Assembly (**see Picture 6**). Connect other ends of supply hose assemblies, with 90° field-attachable hose fittings, to supply fittings on adjacent bypass filter systems (**see Picture 6**).

Note: Cut (supply/return) hose lengths as required for specific equipment installation, with consideration given to location of members being connected- as outlined in installation notes



Picture 5

(Install high pressure fitting and valve-
Actual hardware not shown)



Picture 6

(Connect supply line from engine)

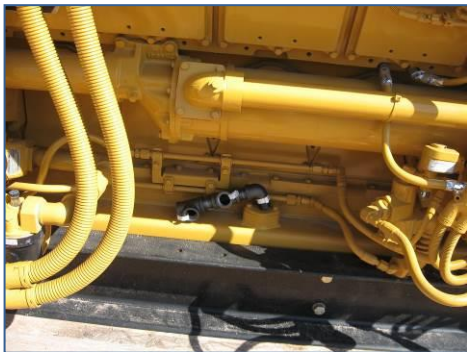
Installing the Return Line: Locate and remove the front alternate dipstick cover on engine. Replace the cover with the Return Manifold Assembly (includes new gasket) provided in this application kit- P/N 15-70091 (**see Pictures 7,8**). Assemble (3) 5/8" ID return hose assemblies using supplies provided in the part number 15-70083M Hose Kit. ***Note:** Hose Kit not included in P/N 01-A3M85X-K2 App. Kit. Connect (3) ends of Return Manifold Assembly to return hose assemblies and route to each of the M85Bypass Filter Systems' return fittings, and connect (**see Picture 9**). The oil return hoses must be routed to ensure they do not come in contact with any sharp edges or moving parts; **make sure hoses are 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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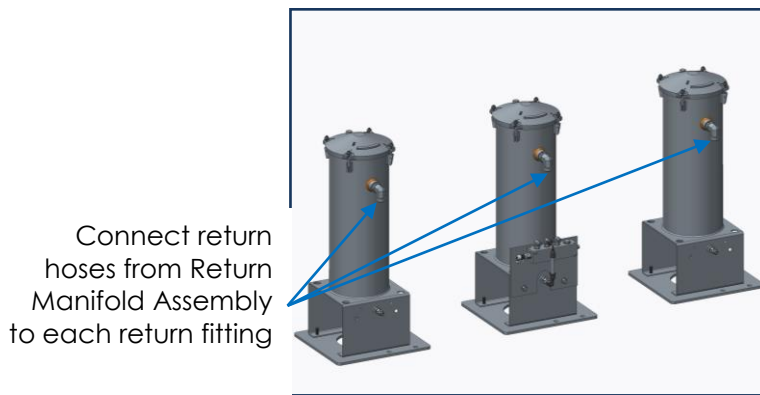
Picture 7

(Locate Oil Cover Plate & replace with Return Manifold Assembly)



Picture 8

(Close-up view of Return Manifold Assembly)



Picture 9

(Return Hose Installation)

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. Open sample valve and verify that oil flow is present. Shut engine off and check oil level. Place **puradYN** 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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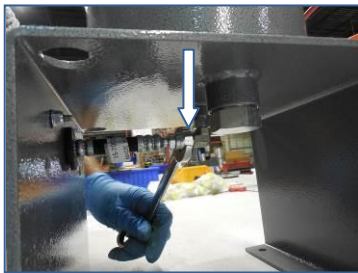
TROUBLESHOOTING SECTION

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:

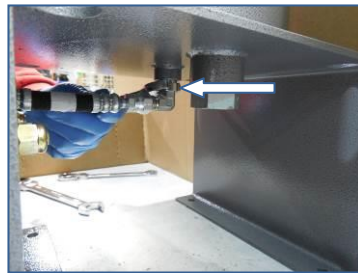
1) Restricted oil Flow:

- Pressure line may be 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

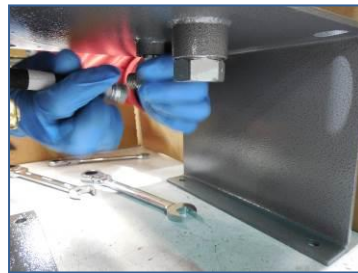
Cleaning the Metering Jet Assembly (2 & 3-Unit Systems)



1) Loosen hose fitting, for disconnection of 'Inlet Plumbing Hose Assembly'



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



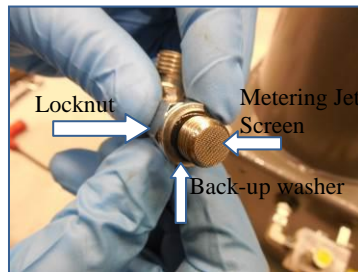
3) Slightly rotate fitting CCW, while gently pulling hose assembly rearward/downward- to fully disconnect; continue rotating fitting to remove- metering jet screen will drop down



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