

Forwarded to:
Motorlife Distributors, Inc

Re: Engine Flush

Miami-Dade Transit conducted a test to address the sludge accumulation on our Detroit Diesel, Series 50 engines. The coaches chosen for the test have consistently shown a propensity to accumulate sludge and consequently present one of the highest cost per mile figures in the fleet. Miami-Dade Transit through our Preventive Maintenance Program performs an engine oil and filter change every three thousand miles on these coaches. The three thousand mile interval is arrived at on average every 21 to 28 days apart.

The listed coaches for the test had a de-sludging procedure performed by the Detroit Diesel dealer less than 12 months prior to the test. The candidates were chosen by means of oil analysis results. MDT has an oil analysis performed for every coach at every inspection. The analysis is performed by an independent laboratory.

The analysis identified coaches that were at or close to the agencies soot limit. The coaches were then subjected to an engine flush procedure. Principal to the procedure is an industrial engine flush machine. Engine Flushing machine is a Model EFM-100 and the solution is a proprietary product. The machine connects to the engine via a supplied adapter on the oil filter housing. The provided solution is heated and then pumped into the engine. The solution is cycled through the engine and filtered five times. The following list illustrates test data recorded prior and subsequent to the use of the engine flush procedure;

<u>MDT Coach#</u>	<u>Soot Level</u>	<u>Date</u>	<u>Results</u>	<u>Soot Level</u>
4103	2.6	4/5/2007	Engine flushed	5/25/2007 1.5
4113	3.0	4/9/2007	Engine flushed	5/23/2007 .6
4121	3.9	4/8/2007	Engine flushed	5/15/2007 1.5
4131	2.5	4/27/2007	Engine flushed	5/18/2007 1.3
4132	2.8	4/23/2007	Engine flushed	5/23/2007 .8

For comparison purposes, the valve covers of two of the engines tested were removed prior and post procedure. Pictures were taken to document the change if any. The removal of accumulated soot was evident and notable in both cases. Given the results obtained by the above tests, and taken in consideration that MDT has repeated the tests with equally notable results the agency has moved to;

A) Purchase machines for all operating garages.

B) Incorporate the engine flush procedure into its preventive maintenance program to combat soot accumulation.

The incorporation of the engine flush procedure, as illustrated above, is principle to the agencies cost reduction strategy relevant to sludge built up in our engines. MiamiDade Transit currently operates o fleet of 891 coaches. During Fiscal year 2007-2008 MiamiDade Transit realized a 70% cost reduction related to slugged engines and a substantial increase in our “Mean Distance between Breakdowns”. The cost reduction is expected to remain constant as well as the improvements in fleet reliability.

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