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Service Information Bulletin

SUBJECT	DATE
Diagnostic Test - Engine Oil Leaks - Oil Developer Method	January 2017

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0191	GHG17 DD Platform HD	Engine Oil Leaks - Oil Developer Method	This section is to replace the "Oil Dye Method."
DDC-SVC-MAN-0084	EPA07/10G HG14 DD Platform		



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2 Engine Oil Leaks - Oil Developer Method

This test is only to be performed after determining the area of the engine containing the leak. Prior to completing this test complete the Symptom Oil Leaks diagnostics, refer to "Symptom Diagnostics - Oil Leaks" to determine the area of the engine where the leak is most evident. The purpose of this procedure is to help narrow down an oil leak when an engine is heavily coated with grime or oil, making it difficult to identify the source of the oil leak.

NOTE: Detroit™ and the Department of Transportation (DOT) define an external fluid leak as a condition where fluids are pooling up or leaking onto the ground.



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Figure 1. Example of an Oil Leak: Very Wet with Evidence that Fluid Leaks onto the Ground



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Figure 2. Example of a Seep: Residue Accumulation on the Surface but Remains on that Surface and does not Drip onto the Ground

Check as follows:

NOTE: When diagnosing an engine oil leak, the source and location of the leak **MUST** be positively identified prior to repair.

1. Shut off the engine, apply the parking brake, chock the wheels, and perform any other applicable safety steps.
2. Inspect the engine for any oil leaks. If oil leaks are present, record the location of the oil leak.



WARNING: FIRE HAZARD

Do not power wash or steam clean the engine bay in the area of vehicle electrical components, unless specified by vehicle manuals or service literature. Power washing/steam cleaning can permanently damage these components, which could result in fire, personal injury, or property damage.

3. Steam clean the engine. Refer to section "Enhanced Steam Clean".



WARNING: ENGINE EXHAUST

To avoid injury from inhaling engine exhaust, always operate the engine in a well-ventilated area. Engine exhaust is toxic.

4. Start a Parked Regen and allow it to run for 30 minutes. This will allow the engine to reach operating temperature and to run through various rpm ranges.
5. Turn ignition ON (key ON, engine OFF).

NOTE: On hard-to-reach areas you may need to attach tube extender to the end of aerosol can.

6. Spray a thin even layer of Magnaflux Spotcheck SKD-S2 Aerosol Developer (commonly known as Spotcheck Developer) on the suspected area. Additional coating may be necessary if the area is heavily covered with road grime or debris.
7. Allow the Spotcheck Developer to dry for two minutes.
8. The Spotcheck Developer will turn white over dry areas. It will leave a white haze over any area where fresh oil is not present. Fresh oil leaks will show as a damp or wet trace of oil.

Table 1.

Spotcheck Developer Sprayed on a Leaking Cylinder Block Cover Plate, Allowed Two Minutes to Dry. The Developer Will Only Turn White on the Areas that Do Not Have Fresh Oil.



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Table 2.

Spotcheck Developer Sprayed on a Leaking Crankcase Breather, Allowed Two Minutes to Dry. The Developer Will Only Turn White on the Areas That Do Not Have Fresh Oil.



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Table 3.

Spotcheck Developer Sprayed on a Leaking Cam Housing Cup Plug, Allowed Two Minutes to Dry. The Developer Will Only Turn White on the Areas that Do Not Have Fresh Oil.



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Table 4.

Spotcheck Developer Sprayed on a Leaking Oil Gallery Cup Plug, Allowed Two Minutes to Dry. The Developer Will Only Turn White on the Areas That Do Not Have Fresh Oil.



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Table 5.

Spotcheck Developer Sprayed on a Leaking Oil Coolant Module, Allowed Two Minutes to Dry. The Developer Will Only Turn White on the Areas That Do Not Have Fresh Oil.



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Table 6.

Spotcheck Developer Will Leave a White Haze Over Areas Where Fresh Oil is Not Present, Allowed Two Minutes to Dry. The Black Areas Indicate Fresh Oil.



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9. Identify the source of the oil leak by observing the visible fresh oil on top of the Spotcheck Developer and tracing it down to the source of the oil leak.

3 Engine Oil Leaks - Oil Developer Method

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Figure 3. Example of an Oil Leak: Very Wet with Evidence that Fluid Leaks onto the Ground



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Figure 4. Example of a Seep: Residue Accumulation on the Surface but Remains on that Surface and does not Drip onto the Ground

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Spotcheck Developer Sprayed on a Leaking Oil Coolant Module, Allowed Two Minutes to Dry. The Developer Will Only Turn White on the Areas That Do Not Have Fresh Oil.



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Spotcheck Developer Will Leave a White Haze Over Areas Where Fresh Oil is Not Present, Allowed Two Minutes to Dry. The Black Areas Indicate Fresh Oil.



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