

Oil Suction Manifold

EPA07/10/GHG14 HDEP ENGINES

Under Investigation	Solution In Progress	Prod + Svc Solution
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Description

- Broken Oil Suction Manifolds due to welding failures have been identified in the field. Can lead to low oil pressure codes.
- Occurring at the end cap (most), valve cover (some), & suction nozzle (few).
- Engines built in Mar-14 & Apr-14 are most susceptible to this failure.
- ZEUS 1598287 & FSPR 29142.

Factory Resolution

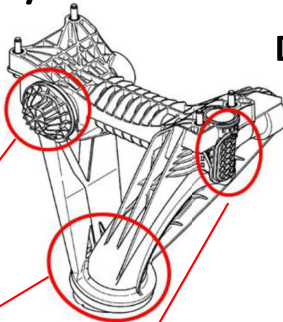
- Vendor implemented changes (melt position sensor) on 24-Oct-14. Effective with approximate engine s/n HDE0301463 built on 1-Dec-14.
- Further process improvements (flow rate system) implemented in both EK-Germany and EK-Canada during CW19/2016 (approximately 9-May-16).

Field Resolution

- Replace oil suction manifold. Reference the *EPA07/10/GHG14 Engine Manual* (DDC-SVC-MAN-0081).
- **Field Service Campaign 18M3** for engines built in Mar-14 & Apr-14 released in Jul-18. 18M3 is 67% complete as of Jun-19.



Valve Cover



End (Side) Cap



Suction Nozzle

For limited distribution - Contains Preliminary and Pre-decisional Information Material Only

Oil Suction Manifold Weld Failures



Description

- CEL, low oil pressure caused by an oil suction manifold weld failure to the cap.

Factory Resolution

- Seven weld failures since the last clean point of May 2016 (three end cap weld failures and four drain back valve cover failures)
- Two oil suction manifolds were sent to EK Canada for analysis and root cause determination; one end cap weld failure and one drain back valve cover failure.
- Per EK Canada this is not the same failure mode that has been seen previously.

Field Resolution

- Replace Oil Suction Manifold

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Oil Suction Manifold Weld Failures

Additional Details since slide update:

- Tracking failure rate, since process improvement, at 0.10%
- Supplier implemented a new welding machine Dec 2020, unrelated to any failure investigation
 - Since new equipment installed failure rate is tracking at 0.01%
- New reported failures are at much higher mileage
 - Average mileage 861,923 miles (1,387,131km)
 - Mileage ranging from
 - 451,988 miles (727,405km) to 1,055,287 miles (1,698,321km)
 - Only one unit under 600,000 miles

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