



Service Bulletin

Bulletin No.: 18-NA-073

Date: January, 2021

INFORMATION

Subject: Repair Guidelines for Engine Component Wear

| Brand: | Model: | Model Year: | | VIN: | | Engine: | Transmission: |
|------------------------------|--------|-------------|------|------|-----|---------|---------------|
| | | from | to | from | to | | |
| GM Passenger Cars and Trucks | | 2015 | 2021 | All | All | All | — |

| | |
|-----------------------------------|--|
| Involved Region or Country | North America, Europe, Russia, Uzbekistan, Middle East, Iraq, Israel, Palestine, Argentina, Brazil, Bolivia, Chile, Colombia, Ecuador, Paraguay, Peru, Uruguay, Venezuela, Japan, Cadillac Korea (South Korea), GM Korea Company, China, Taiwan, Thailand, Singapore, Philippines, Australia, New Zealand, Egypt, Other Africa, South Africa |
| Condition | Whenever engines have been disassembled, technicians may encounter some visible engine wear characteristics on critical engine components. Some technicians may be replacing engines instead of repairing and replacing worn components as needed. |
| Cause | These conditions may be caused by the vehicle duty cycle, dust in the environment the vehicle is being operated in and local fuel quality. In some instances, service personnel may be improperly diagnosing normal engine wear. |
| Correction | Review the following graphic examples and information in this bulletin. |

Information

The purpose of this bulletin is to assist the service personnel with graphics and information to use as guidelines in order to perform the necessary engine repairs and prevent unnecessary engine replacement.

Important: Prior to component replacement: Refer to SI to diagnose and identify the root cause of the original failure. In cases involving suspected bearing failure, remove and inspect the oil filter. Refer to the Oil Filter – Inspect for Excessive Debris section in this bulletin.

Important: Prior to completing repairs, do a cost analysis; in some instances, an engine replacement may be considered.

Important: If SI diagnosis leads to an inspection of the cylinder bores and reveals cylinder wall damage (i.e. excessive scoring or out-of-round), an engine replacement may be required. Refer to the Cylinder Bore section in this bulletin (additional reference: PIP5163D).

Camshaft

Review the following:



4994025

Example of minor scratching/scoring visible on camshaft lobes and/or camshaft bearing journals. In this example, the scored components can be replaced without need for engine assembly replacement.

Camshaft Bearing Caps

Review the following:

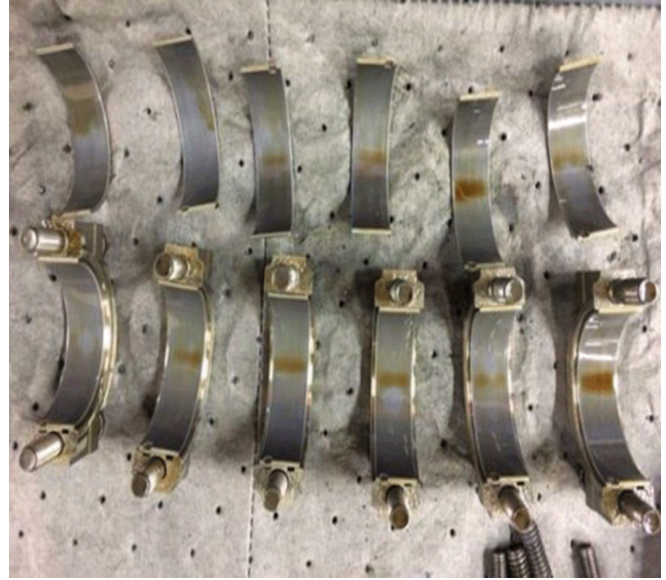


4991477

Example of minor scratching/scoring visible on camshaft bearing caps. In this example, the scored components can be replaced without need for engine assembly replacement.

Connecting Rod End Caps and Bearings

Review the following:

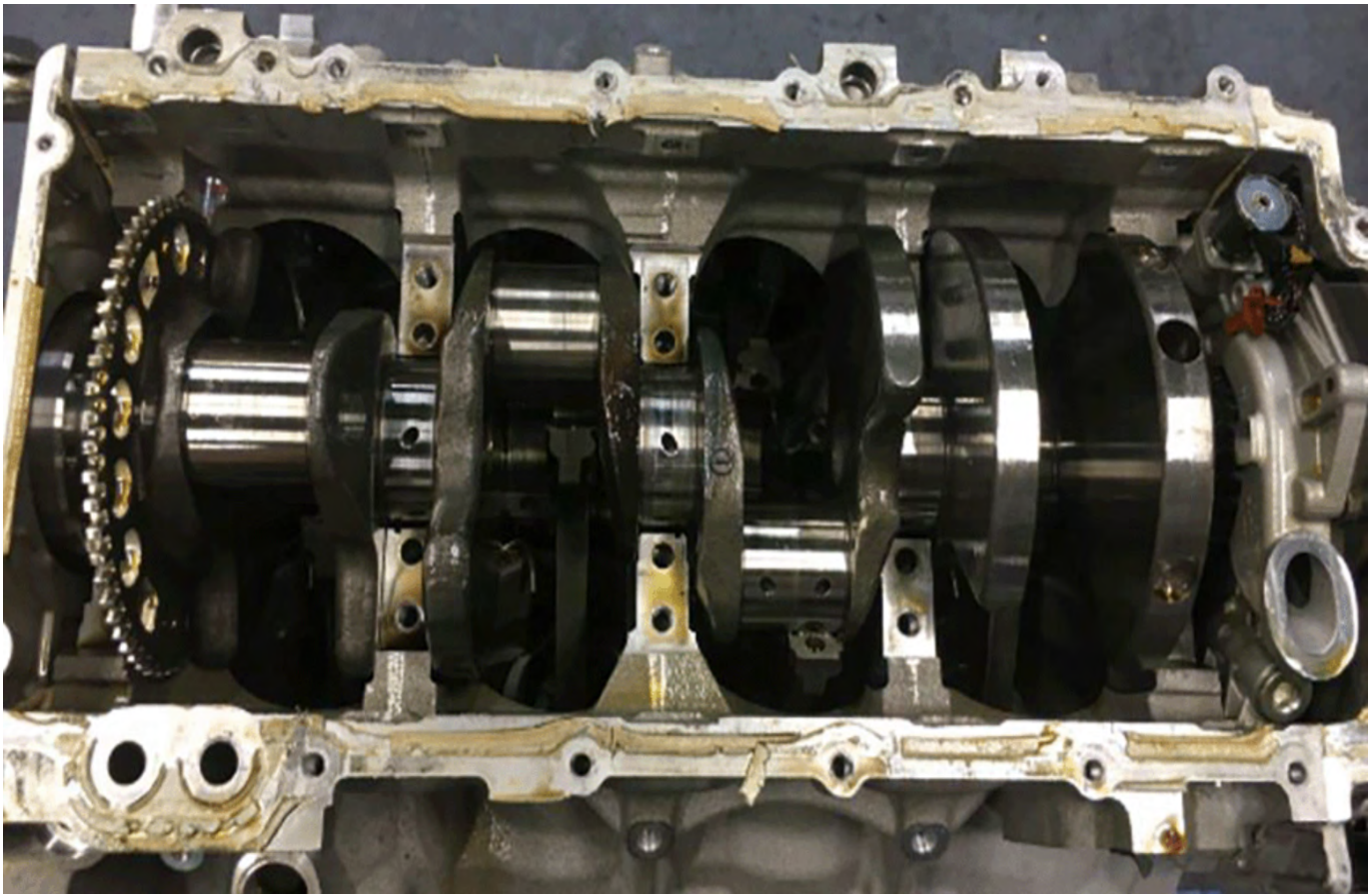


4992132

Example of minor scratching/scoring visible on connecting rod bearings. In this example, the scored components can be replaced without need for engine assembly replacement.

Crankshaft in Crankcase

Review the following:

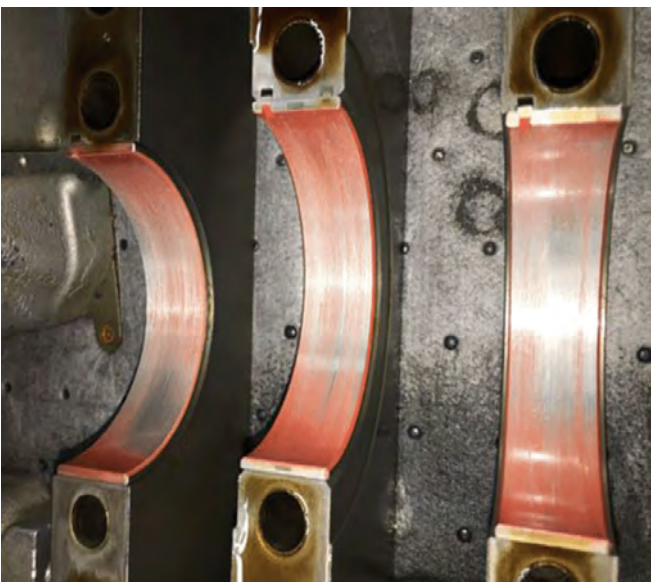


4990880

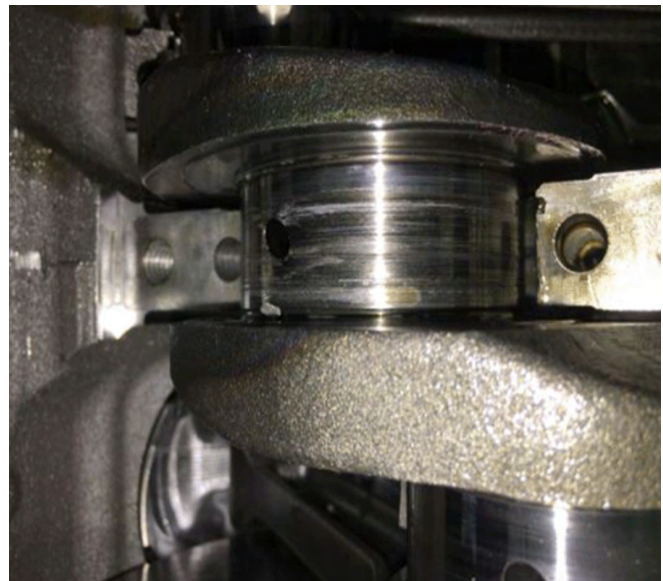
Example of minor scratching/scoring visible on crankshaft. In this example, the scored components can be replaced without need for engine assembly replacement.

Crankshaft Main Bearings and Journal

Review the following:



4985936

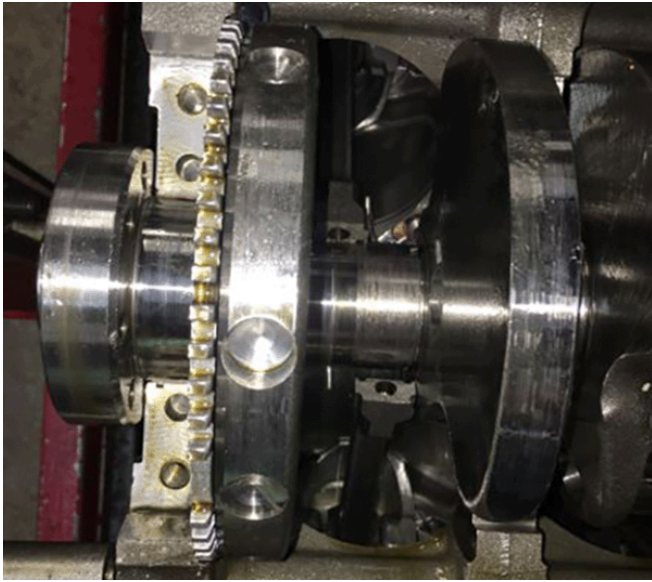


4986379

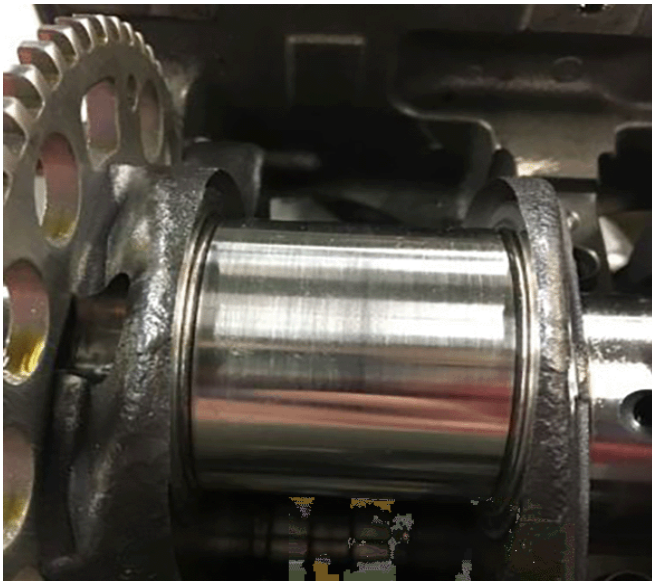
Example of minor scratching/scoring visible on crankshaft. In this example, the scored components can be replaced without need for engine assembly replacement.

Crankshaft, Reluctor Ring and Journal

Review the following:



4986393



4990640

Example of minor scratching/scoring visible on crankshaft. In this example, the scored components can be replaced without need for engine assembly replacement.

Cylinder Bore

Review the following:



4992739

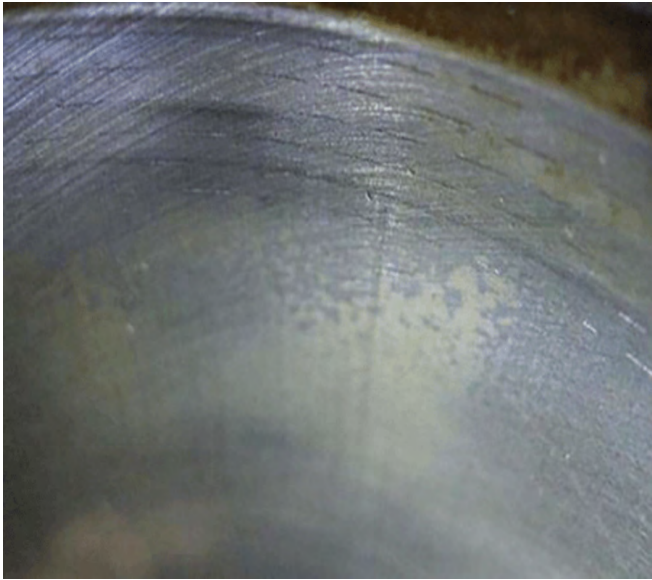
Example of minor scratching/scoring visible on cylinder wall. In this example, if you cannot catch a toothpick or fingernail on the scratch, the cylinder bore / engine block does not require replacement. If the piston is slightly scored, the scored piston can be replaced without need for engine assembly replacement (additional reference: PIP5163D).

Cylinder Bore Honing Marks

Review the following:



4993413



4993544

Example of minor scratching/scoring visible on piston. In this example, inspect for broken and/or stuck rings and piston ring lands and cylinder wall for damage. If no cylinder wall damage or other significant damage, components can be replaced without requiring an engine assembly replacement.

Oil Filter — Inspect for Excessive Debris

In cases involving suspected bearing failure, remove and inspect the oil filter for excessive debris and damaged pleats. Use the inspection as an indicator of the amount of material that is displaced through the engine and lubrication circuits. This may help to avoid unnecessary engine removal.

Review the following:



4994104

Some technicians may be replacing entire engine assemblies due to marks found at the top of the cylinder bore. These marks are considered normal and are left as a result of a manufacturing laser honing process. **DO NOT** replace the cylinder block or the engine for these normal laser honing marks (refer to PI0725B).

Piston

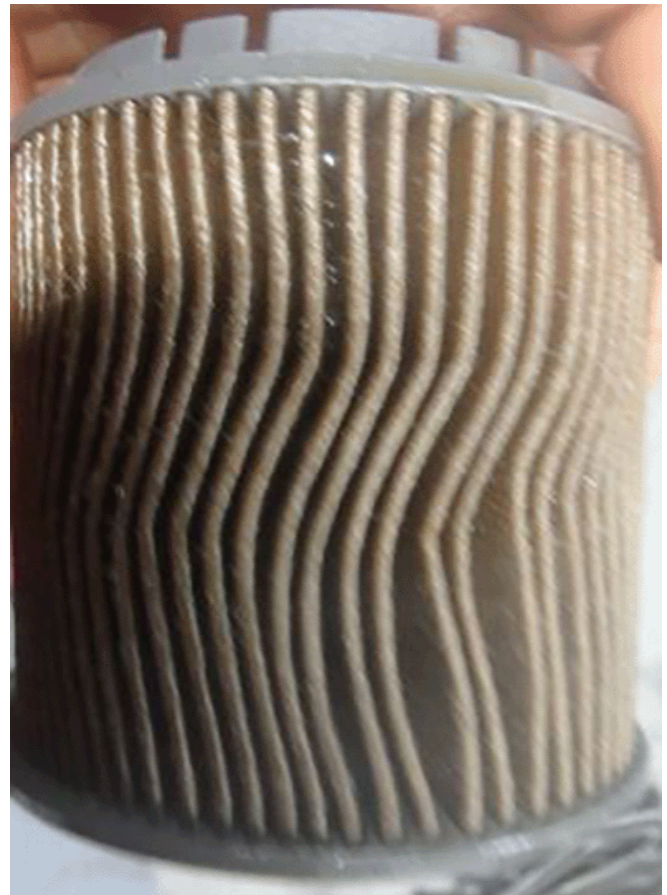
Review the following:



4992916



4994257



4994408

Shown are oil filter pleats with visible metal particles. In this example, minimal amounts of metal particles are visible on oil filter pleats and should not pose a concern.

If excessive amounts of metal particles are observed, or if there is evidence of damaged oil filter pleats, then unfiltered oil with bearing debris may have been pumped into the oil lubrication galleries throughout the engine. This will require further inspection to confirm the degree of contamination and appropriate repair direction. Refer to Service Bulletin 19-NA-256 for HFV6 Gen 1 and Gen 2.

Version Information

| | |
|-----------------|---|
| Version | 3 |
| Modified | Released March 07, 2018 February 07, 2020 – Added the 2020 Model Year, updated the Involved Region or Country section, updated some PI references and changed the bulletin reference in the Oil Filter – Inspect for Excessive Debris section. January 22, 2021 – Added the 2021 Model Year and updated Involved Region or Country section. |

