



Service Bulletin

File in Section: -

Bulletin No.: 18-NA-073

Date: March, 2018

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	2019	All	All	All	—

Involved Region or Country	North America and any NA Export Regions and Countries.
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 duty cycle, dust in the environment the vehicle is being operated in and local fuel quality. In some instances Service Personnel 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 (see bulletin section titled "Oil Filter – Inspect for Excessive Debris").

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 Cylinder Bore section of this bulletin. (additional reference: PIP5163)

Camshaft

Review the following:

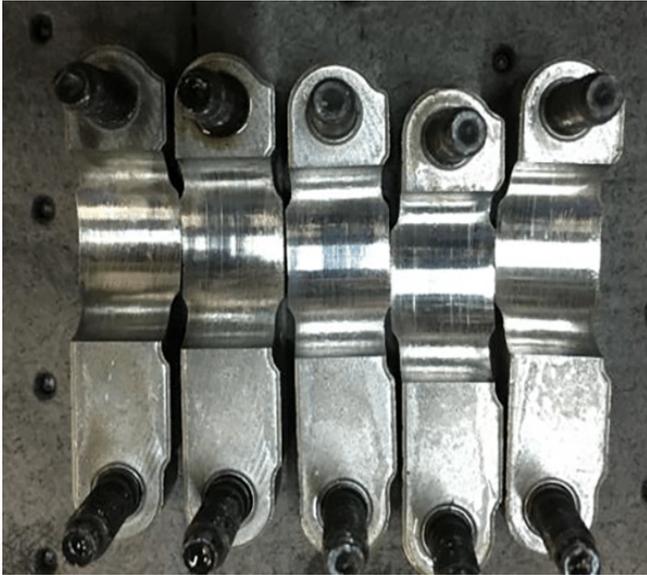


4994025

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:

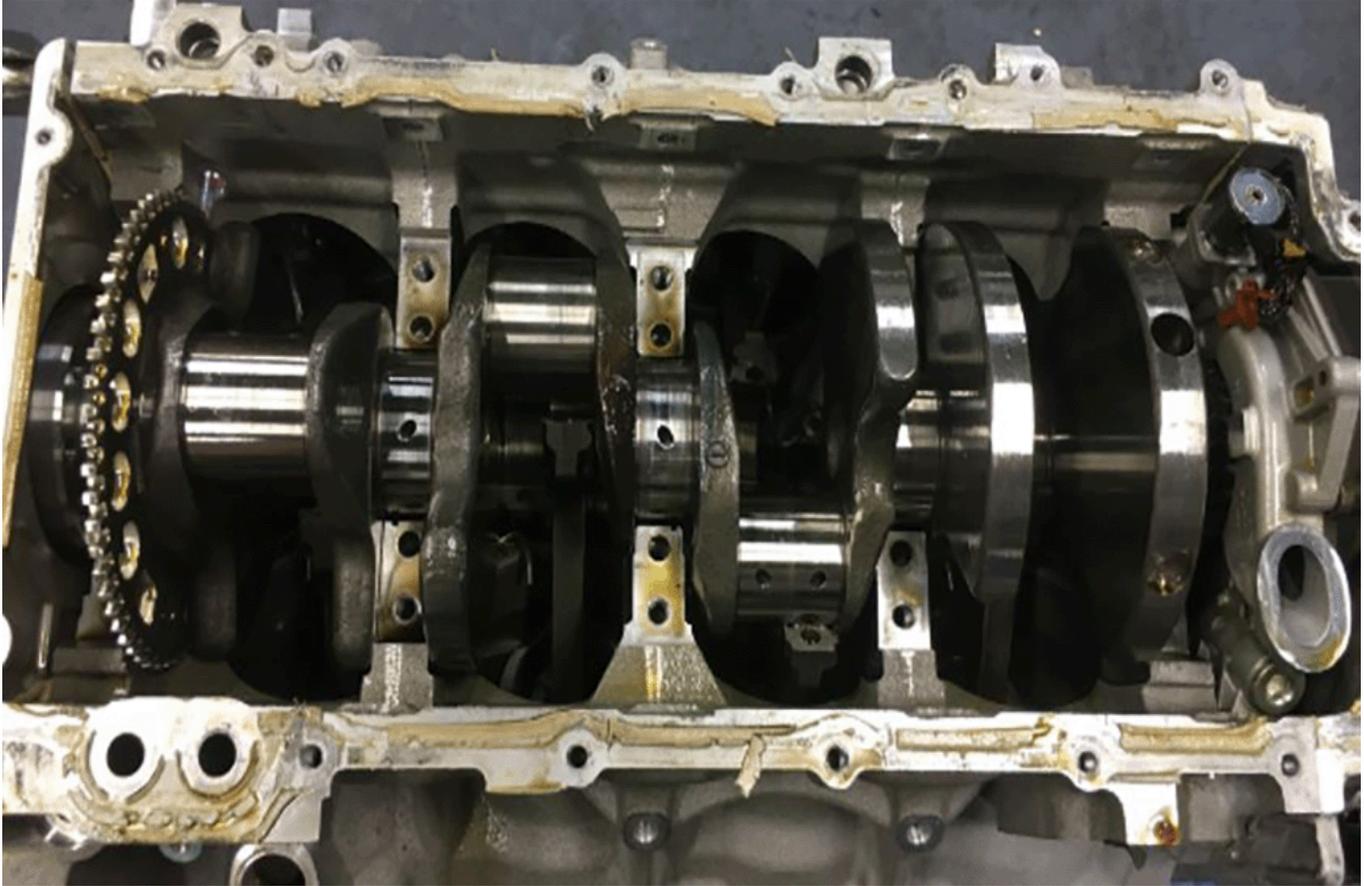


4992132

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:

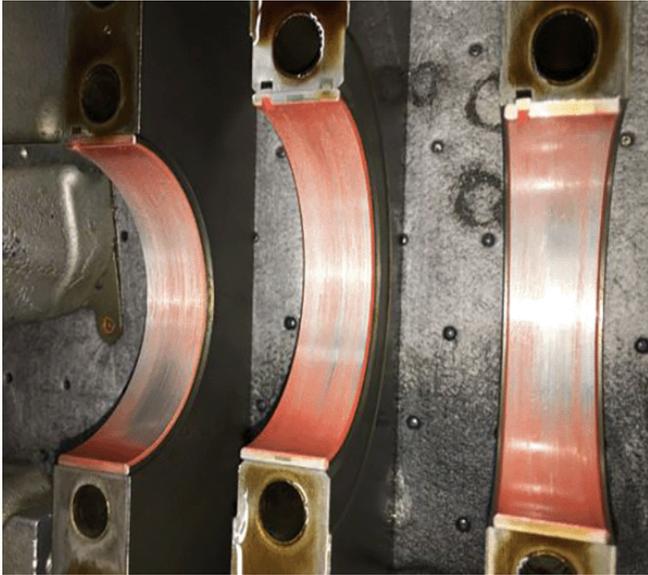


4990880

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

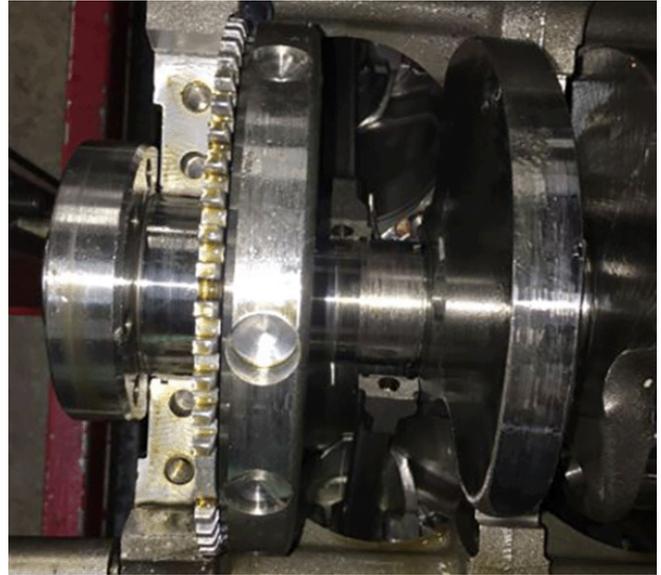
Review the following:



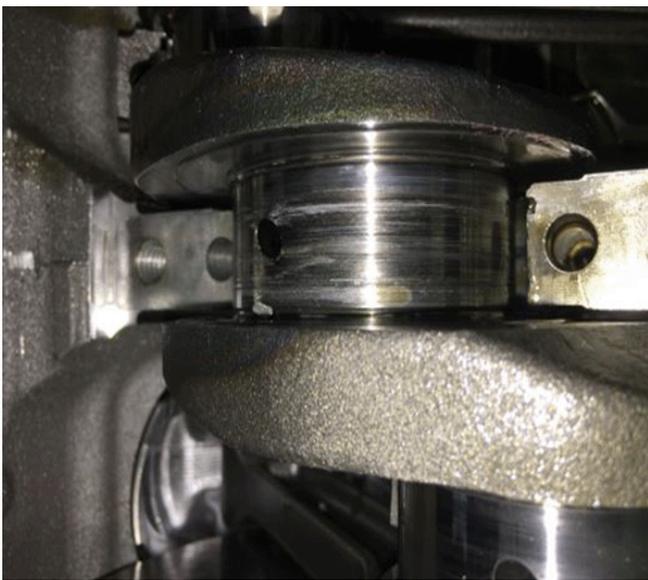
4985936

Crankshaft, Reluctor Ring and Journal

Review the following:

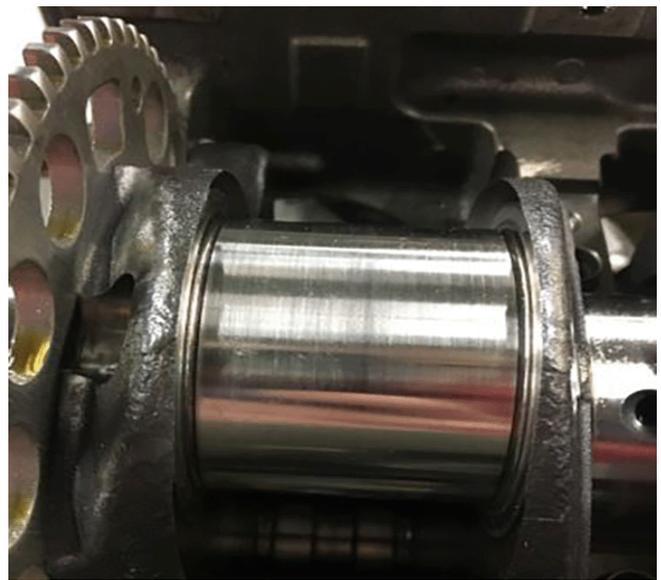


4986393



4986379

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



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 piston is slightly scored, the scored piston can be replaced without need for engine assembly replacement. (additional reference: PIP5163)

Cylinder Bore Honing Marks

Review the following:



4993413



4993544

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 PI0725)

Piston

Review the following:



4992916

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



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 degree of contamination and appropriate repair direction. (Refer to PIP5216 for HFV6 Gen 1 and Gen 2)

Version Information

Version	1
Modified	Released March 07, 2018

