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Coding Information

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Title: I6 Camshaft and Lifter Service Overview
Applies To: All I-6 Engines Serial Number 2000000 and up

CHANGE LOG

8/22/2014 - Fixed some content showing coding that should not have been there.
8/21/-2014 - Initial Article Release

DESCRIPTION

This document is intended to provide direction in the event an applicable engine is being serviced in a manner that accesses the camshaft and lifters.

NOTE:

Warranty Pre- Approval (iApprove) is required for any major engine repair. This includes replacement of the crankcase or bare engine block on all International / MaxxForce engines within the covered warranty period or covered by a Service Contract.

Note: It is important that the following four service procedures are adhered to at all times.

To check cam bushing alignment, see: [Cam Bushing Oil Slot Alignment](#)

Pre-Checks

1. All related valve train components are inspected for reuse or replaced as required.
2. Upon engine reassembly, all components must be lubed with engine oil or assembly grease such as Lubriplate 105.
3. The camshaft must spin freely within the block upon installation.
4. Prior to engine startup, the engine must be pressure lubed with no less than 8 quarts of oil per the outlined procedure defined in [Pre-lubing an I-6 Engine](#)

Servicing a component failure (example cylinder head removal) that allows access to or focuses on the camshaft and lifters.

Assessment of Camshaft Components:

1. No visual valve train deterioration on any components:
 - a. Replace all 12 lifters and install 12 new guide plates, see: [Valve Train Damage Repair Procedure I-6 Engines](#)
2. Lifter or camshaft lobe damage present:

- a. Replace camshaft.
 - b. Replace all 12 lifters and install 12 new guide plates, see: [Valve Train Damage Repair Procedure I-6 Engines](#)
3. Evidence of bearing journal surface damage on the camshaft - indicating a spun bushing in the block.
 - a. Replace with bare block (if in warranty an iApprove casefile is required to be submitted to Medium Duty Engine Tech Support).
 - b. Replace camshaft.
 - c. Replace all 12 lifters and install 12 new guide plates, see: [Valve Train Damage Repair Procedure I-6 Engines](#)
 - d. Install new oil cooler heat exchanger

During In Frame Overhaul

Assessment of Camshaft Components:

1. No visual valve train deterioration on any components:
 - a. Replace all 12 lifters and install 12 new guide plates, see: [Valve Train Damage Repair Procedure I-6 Engines](#)
2. Lifter or camshaft lobe damage present:
 - a. Replace camshaft.
 - b. Replace all 12 lifters and install 12 new guide plates, see: [Valve Train Damage Repair Procedure I-6 Engines](#)
3. Evidence of bearing journal surface damage on the camshaft - indicating a spun bushing in the block
 - a. Replace with bare block .See the Parts Catalog for part number.
 - b. Replace camshaft.
 - c. Replace all 12 lifters and install 12 new guide plates. See: [Valve Train Damage Repair Procedure I-6 Engines](#)
 - d. Install new oil cooler heat exchanger.

Out of Frame Overhaul

Assessment of Camshaft components:

1. No visual valve train deterioration on any components:
 - a. Replace camshaft bushings.
 - b. Reuse camshaft.
 - c. Replace all 12 lifters and install 12 new guide plates, see: [Valve Train Damage Repair Procedure I-6 Engines](#)
2. Lifter or camshaft lobe damage present:
 - a. Replace camshaft bushings.
 - b. Replace camshaft.
 - c. Replace all 12 lifters and install 12 new guide plates, see: [Valve Train Damage Repair Procedure I-6 Engines](#)
3. Evidence of bearing journal surface damage on the camshaft - indicating a spun bushing in the block:
 - a. Replace with bare block (if in warranty an iApprove casefile is required to be submitted to Medium Duty Engine Tech Support).
 - b. Replace camshaft.
 - c. Replace all 12 lifters and install 12 new guide plates, see: [Valve Train Damage Repair Procedure I-6 Engines](#)
 - d. Install new oil cooler heat exchanger.

PARTS INFORMATION

Lifter / guide plate, see: [Valve Train Damage Repair Procedure I-6 Engines](#)

- Camshaft / Lifter / guide plate.
- Oil cooler heat exchanger
- Assembly grease

REQUIRED TOOLS

- iOTC-6492 Engine Pre-luber Kit
- ZTSE-4579-1 kit has fitting ZTSE-4594 for pre-lubing
- ZTSE-2893B Camshaft Bushing Service Set

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