

**Technical Service Bulletin Number**

TSB140019

**Technical Service Bulletin****Subject**

ISX15 CM2250, QSX15 CM2250 ECF, ISX12 CM2250, and QSX11.9 CM2250 ECF Fuel Pump - Ceramic Plunger and Tappet Roller Inspection and Repair

**Warranty Statement**

The information in this document has no effect on present warranty coverage or repair practices, nor does it authorize TRP or Campaign actions.

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Lubricating Oil Filter Bypass Valve	Refer to Procedure 007-014	QSX15 CM2250 ECF	2883557
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This document, in conjunction with the information provided within the manuals listed in the table above, provides the inspection and repair practice when ceramic plungers are found to be fractured (see Figure 1) and/or tappet roller damage is found on fuel pumps with ceramic plungers (see Figure 2). Ceramic plungers can be identified by their white color. See Procedure 005-227 in the Associated Procedures Table for removal of the fuel pump head.



Figure 1: Fractured Fuel Pump Ceramic Pumping Plunger



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Figure 2: Fuel Pump Tappet Roller Assemblies

If the ceramic plungers are fractured (see Figure 1), but no damage is found on the fuel pump tappet rollers (see Figure 2), no further inspection is needed. Perform the following steps for the appropriate engine (ISX15 CM2250, QSX15 CM2250 ECF, ISX12/ISX11.9 CM2250, or QSX11.9 CM2250 ECF):

1. Replace the fuel pump per one of the options below:
  - a. For ISX15 CM2250 engines with two-cylinder pumps and fuel pump gear pump top mount fuel lines, there is a cost effective option to use a fuel pump short block service kit. See Technical Service Bulletin, New Fuel Pump Short Block Service Kit, TSB150033.
  - b. For ISX15 CM2250 or QSX15 CM2250 ECF: See Technical Service Bulletin, New Two-Cylinder High-Pressure Fuel Pump Assembly, TSB110064 , if replacing a three-cylinder two-piston pump with a two-cylinder pump.
  - c. For ISX15 CM2250 or QSX15 CM2250 ECF: New fuel lines are required if replacing a fuel pump gear pump with bottom mount fuel lines. See Technical Service Bulletin, New Fuel Pump Gear Pump with Revised Fuel Line Locations, TSB130044.
2. Change the engine lubricating oil and lubricating oil filter. See Procedure 007-013 in the Associated Procedures Table.

If the fuel pump tappet rollers are damaged (see Figure 2), perform the following steps for the appropriate engine (ISX15 CM2250, QSX15 CM2250 ECF, ISX12/ISX11.9 CM2250, or QSX11.9 CM2250 ECF):

1. See options below:
  - a. For ISX15 CM2250 engines with two-cylinder pumps and fuel pump gear pump top mount fuel lines, there is a cost effective option to use a fuel pump short block service kit. See Technical Service Bulletin, New Fuel Pump Short Block Service Kit, TSB150033.
  - b. For ISX15 CM2250 or QSX15 CM2250 ECF: See Technical Service Bulletin, New Two-Cylinder High-Pressure Fuel Pump Assembly, TSB110064, if replacing a three-cylinder two-piston pump with a two-cylinder pump.
  - c. For ISX15 CM2250 or QSX15 CM2250 ECF: New fuel lines are required if replacing a fuel pump gear pump with bottom mount fuel lines. See Technical Service Bulletin, New Fuel Pump Gear Pump with Revised Fuel Line Locations, TSB130044.
2. Drain the engine lubricating oil and remove the lubricating oil filter. See Procedure 007-013 in the Associated Procedures Table.
3. Thoroughly clean the oil cooler housing. See Procedure 007-003 in the Associated Procedures Table.
4. Replace the lubricating oil cooler element. See Procedure 007-007 in the Associated Procedures Table.
5. Replace the oil filter bypass valve. See Procedure 007-014 in the Associated Procedures Table.
6. Replace the lubricating oil thermostat. See Procedure 007-039 in the Associated Procedures Table.
7. Install a new lubricating oil filter. See Procedure 007-013 in the Associated Procedures Table.
8. Fill the engine with new lubricating oil.
9. Perform an aftertreatment diesel particulate filter regeneration. See Procedure 014-013 in the Associated Procedures Table.
10. Perform a second lubricating oil and lubricating oil filter change. See Procedure 007-013 in the Associated Procedures Table.

## CAUTION

Immediately upon removal of the lubricating oil cooler assembly, a plug must be inserted into the housing and cylinder block oil passage drillings. Failure to insert the oil passage plug can result in a bearing failure, crankshaft failure, or both.

## CAUTION

Do not allow dirt or foreign material to enter oil passages in the cylinder block when cleaning the gasket sealing surfaces. Connecting rod bearing failures can be caused if debris is introduced into the cylinder block or lubricating oil cooler housing oil passages. Therefore, use of power tools combined with abrasive pads to clean gasket surfaces is not

recommended.

## Document History

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Date	Details
2014-2-14	Module Created
2014-9-4	none
2014-10-24	Broken link
2014-10-29	typo
2015-1-7	Procedure steps need updated
2015-3-17	Added the fuel pump short block service kit TSB reference
2015-10-19	Modified the fuel pump tappet rollers are damaged section step 1 and options a, b, and c.

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**Last Modified: 09-Nov-2015**

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