



Technical Service Bulletin

Technical Service Bulletin: TSB150187	Released Date: 16-Oct-2019
Fault Codes 322, 323, 324, 325, 331, and 332 Generated By Metallic Debris on Injector	

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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.

Contents

Product Affected

- ISL9 CM2350 L101
- ISL9 CM2350 L111
- ISL9 CM2250
- ISX12 CM2350 X102
- ISX15 CM2350 X101
- L9 CM2350 L116B
- L9 CM2350 L119B
- L9 CM2350 L123B
- QSL9 CM2250 L115
- QSL9 CM2350 L102
- QSL9 CM2350 L118
- QSL9 CM2350 L122
- QSL9 CM2250
- QSX15 CM2350 X105
- QSX15 CM2350 X106
- X15 CM2350 X114B
- X15 CM2350 X116B

Issue

Symptom: Fuel Injector performance issues and fault codes:

- FC322
- FC323
- FC324
- FC325

- FC331
- FC332

Root Cause:

- Metallic debris was introduced onto the injector(s) as a result of a machining processes during engine assembly.
- Metallic sliver can be created when torqueing the injector solenoid wires to the injector solenoid signal post.
- The metallic debris can cause a short circuit path within the injector(s) stator terminals leading to fault code(s).

Verification

Visually inspect the injector stator for metal debris.



Figure 1, Injector Stator Contaminated With Metal Debris.

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Figure 2, Medium Duty Injector Stator Contaminated with Metal Debris.

Resolution

⚠ WARNING ⚠

When using solvents, acids, or alkaline materials for cleaning, follow the manufacturer's recommendations for use. Wear goggles and protective clothing to reduce the possibility of personal injury.

⚠ CAUTION ⚠

Do not use any abrasive or metallic cleaning materials. The use of any cleaning method other than those suggested above will damage the fuel injector.

If metal debris is identified as shown in Figure 1 and 2 above, perform the following:

- With injectors in place, disconnect injector solenoid wires for affected injector. Clean the affected area of the metallic debris with safety solvent and a soft, clean cloth.
- Connect and torque injector solenoid wires. See corresponding service manual. Reference Procedure 019-063 in Section 19.
- Inspect the top of the injector to verify that no metal slivers were created or are present on the top of the injector.

Metallic debris removal and injector stator cleaning will cause active injector circuit fault code(s) to become inactive.

If Fault Code 322, 323, 324, 325, 331, or 332 are still active after removing the metal debris:

- Reference the corresponding Fault Code Troubleshooting Manual.

Publications Affected

Table 1, Publications Affected					
Manual Type	Engine	Bulletin Number	Procedure Title	Procedure	Section
Service Manual	ISL9 CM2350 L101	4310787	Injector	Refer to Procedure 006-026 (/qs3/pubsys2/xml/en/procedures/185/185-006-026-tr.html)	6
Service Manual	ISL9 CM2350 L111	4367223	Injector	Refer to Procedure 006-026 (/qs3/pubsys2/xml/en/procedures/341/341-006-026-tr.html)	6
Service Manual	ISL9 CM2250	4022257	Injector	Refer to Procedure 006-026 (/qs3/pubsys2/xml/en/procedures/045/045-006-026-tr-iscl10.html)	6
Service Manual	ISX12 CM2350 X102	4310646	Injector	Refer to Procedure 006-026 (/qs3/pubsys2/xml/en/procedures/174/174-006-026-tr-pbix13.html)	6

Table 1, Publications Affected					
Manual Type	Engine	Bulletin Number	Procedure Title	Procedure	Section
Service Manual	ISX15 CM2350 X101	4310641	Injector	Refer to Procedure 006-026 (/qs3/pubsys2/xml/en/procedures/173/173-006-026-tr-prix13.html)	6
Service Manual	L9 CM2350 L116B	5411330	Injector	Refer to Procedure 006-026 (/qs3/pubsys2/xml/en/procedures/459/459-006-026.html)	6
Service Manual	L9 CM2350 L119B	5411267	Injector	Refer to Procedure 006-026 (/qs3/pubsys2/xml/en/procedures/425/425-006-026.html)	6
Service Manual	L9 CM2350 L123B	5411465	Injector	Refer to Procedure 006-026 (/qs3/pubsys2/xml/en/procedures/459/459-006-026.html)	6

Table 1, Publications Affected					
Manual Type	Engine	Bulletin Number	Procedure Title	Procedure	Section
Service Manual	QSL9 CM2250 L115	4388626	Injector	Refer to Procedure 006-026 (/qs3/pubsys2/xml/en/procedures/409/409-006-026.html)	6
Service Manual	QSL9 CM2350 L102	4332796	Injector	Refer to Procedure 006-026 (/qs3/pubsys2/xml/en/procedures/261/261-006-026-tr.html)	6
Service Manual	QSL9 CM2350 L118	4388673	Injector	Refer to Procedure 006-026 (/qs3/pubsys2/xml/en/procedures/421/421-006-026.html)	6
Service Manual	QSL9 CM2350 L122	5411278	Injector	Refer to Procedure 006-026 (/qs3/pubsys2/xml/en/procedures/487/487-006-026.html)	6

Table 1, Publications Affected					
Manual Type	Engine	Bulletin Number	Procedure Title	Procedure	Section
Service Manual	QSL9 CM2250	4022256	Injector	Refer to Procedure 006-026 (/qs3/pubsys2/xml/en/procedures/045/045-006-026-tr-qsl4i.html)	6
Service Manual	QSX15 CM2350 X105	4332667	Injector	Refer to Procedure 006-026 (/qs3/pubsys2/xml/en/procedures/250/250-006-026-tr.html)	6
Service Manual	QSX15 CM2350 X106	4332712	Injector	Refer to Procedure 006-026 (/qs3/pubsys2/xml/en/procedures/221/221-006-026-tr.html)	6
Service Manual	X15 CM2350 X11 4B	5411181	Injector	Refer to Procedure 006-026 (/qs3/pubsys2/xml/en/procedures/377/377-006-026.html)	6

Table 1, Publications Affected					
Manual Type	Engine	Bulletin Number	Procedure Title	Procedure	Section
Service Manual	X15 CM2350 X116B	5411186	Injector	Refer to Procedure 006-026 (/qs3/pubsys2/xml/en/procedures/453/453-006-026.html)	6

Document History

Date	Details
2015-12-8	Module Created
2019-10-11	Non-Product Problem Solving (PPS)
2019-10-15	Updating graphic
2019-10-16	Quick Fix application:
2019-10-16	Quick Fix application:

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