Injectorsleeve Seal Leakage Causing Fuel and Coolant Cross-Contamination: Optional Repair

Warranty Statement

The information in this document authorizes specific changes to the repair practice for failures covered under product warranty coverages.

Contents

Product Affected

- ISX CM570
- ISX CM870
- ISX CM871
- ISX CM871 E
- QSX CM570

Issue

Symptom:

- Fuel in coolant system
- Coolant in fuel system
- Fault Code 418: Water-in-fuel indicator
- Pressurized cooling system

Root Cause:

- Shrinkage of injector sleeve seal material can create a leak path between cylinder head cooling jacket and injector bore.
• Progressive damage could be seen on the lowest injector O-ring (green), Part Number 3347937.

**Verification**

• Injector sleeve seal material shrinkage is **only** one possible cause of symptoms discussed in this document. Published troubleshooting procedures **must** be followed to determine root cause.
• Inspection for fuel or coolant leakage past injector sleeve seal should **only** be completed when other possible sources of contamination, such as fuel heaters, have been ruled out.

**Verification Step:**

• Injector sleeve seal leaks are to be verified in-chassis by pressurizing cooling system. See corresponding Service Manual. Reference Procedure 002-014 in Section 2.

**Note:** If cylinder head has already been removed, injector sleeve seal leaks can be verified by leak testing coolant passage. See corresponding Service Manual. Reference Procedure 002-004 in Section 2.

**Resolution**

**Note:** If a cylinder head with base, extended, or parts warranty coverage is found to have leaking injector sleeves, the cylinder head **must** be replaced. The repair option described below is **not** for components in warranty

• Service O-ring, Part Number 5440257, can be used to replace the lowest green injector o-ring, Part Number 3347937, as an optional repair.
  ◦ The replacement of the lowest injector o-ring **must** be completed on all injectors. For removal and replacement information as well as maintenance concerning injector o-rings, see corresponding Service Manual. Reference Procedure 006-026 in Section 2.
  ◦ After injectors are installed, a leak check **must** be performed. See corresponding Service Manual. Reference Procedure 002-014 in Section 2.
• Inspect the fuel tank and filter for contamination.

**Service Parts Availability**

Service parts are available. See Table 1 below.

<table>
<thead>
<tr>
<th>Table 1, Service Parts</th>
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<tbody>
<tr>
<td><strong>Part Description</strong></td>
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<td>Seal, O Ring</td>
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</table>

**Publications Affected**

Table 2, Publications Affected

<table>
<thead>
<tr>
<th>Manual Type</th>
<th>Engine</th>
<th>Bulletin Number</th>
<th>Procedure Title</th>
<th>Procedure</th>
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Document History

<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
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<tbody>
<tr>
<td>2017-1-11</td>
<td>Module Created</td>
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<tr>
<td>2017-3-21</td>
<td>Updated part number from 3347939 to 3347937.</td>
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<tr>
<td>2017-3-28</td>
<td>Updated Service Procedure link.</td>
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<tr>
<td>2018-5-22</td>
<td>Updated with optional repair. Updated to &quot;yes&quot; warranty statement.</td>
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<td>2019-4-15</td>
<td>Added &quot;Inspect the fuel tank or filter for contamination.&quot;</td>
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