



# Technical Service Bulletin

<b>Technical Service Bulletin:</b> TSB210113	<b>Released Date:</b> 27-May-2021
<b>Fuel Rail Assembly Inspection and Repair Procedure: External Fuel Leaks</b>	

## Fuel Rail Assembly Inspection and Repair Procedure: External Fuel Leaks

### Warranty Statement

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

### Contents

#### Product Affected

- ISL9 CM2350 L111
- ISX12 CM2350 X102
- L9 CM2350 L116B
- L9 CM2350 L119B
- L9 CM2350 L123B
- QSL9 CM2350 L107
- QSL9 M CM2250 L106

#### Issue

Symptom:

- External Fuel Leak from the pressure relief valve or the high-pressure fuel fitting on the fuel rail.

Root Cause:

- The rail end sealing bores in the high-pressure fuel rail may have undersized pilot bores for the sealing washer, thus preventing the washer from properly seating, potentially resulting in inadequate load for the joint to remain properly sealed in service.

#### Verification

- Remove the pressure relief valve and the high-pressure fuel fitting from the fuel rail.

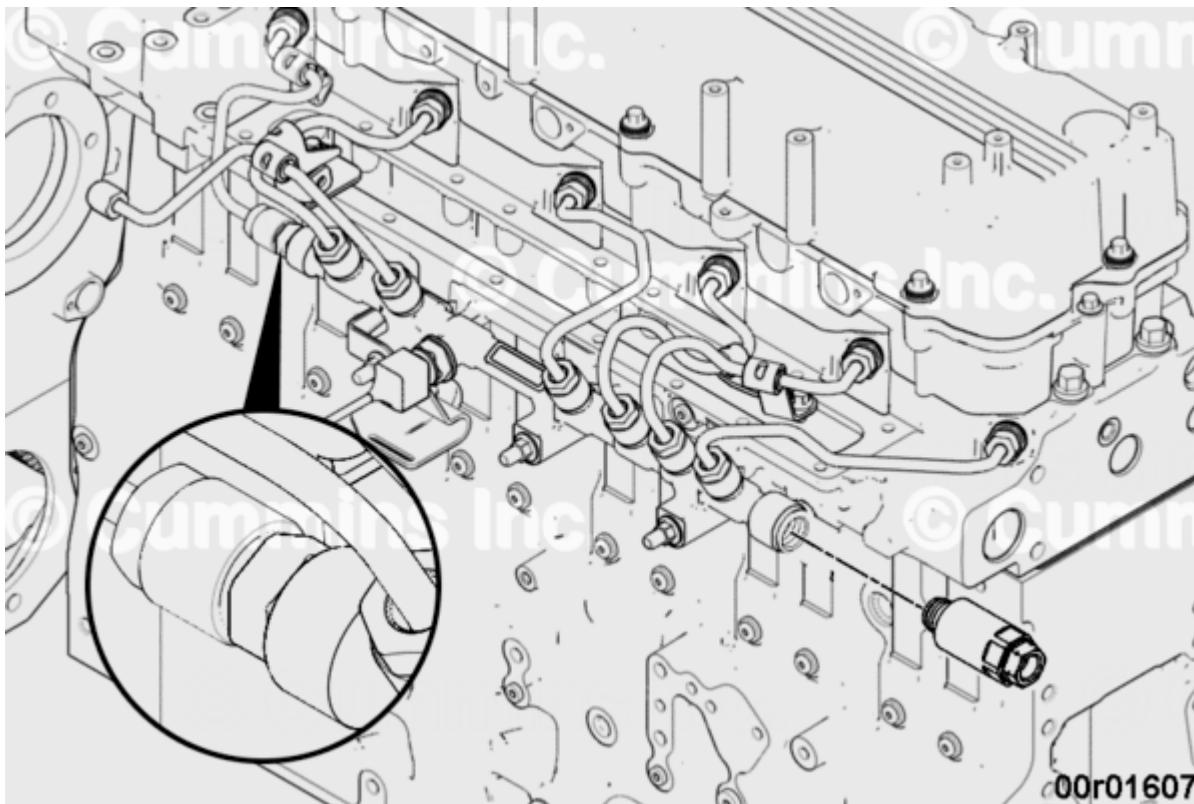


Figure 1, Removing the pressure relief valve and the high pressure fuel fitting.

- Remove and discard the sealing washers. The procedure below outlines how to remove the sealing washers.

**⚠ CAUTION ⚠**

**Special care should be taken to avoid damage to threads during removal process.**

- A special tool **must** be created for the removal of the sealing washers by grinding a 45 degree angle on the short leg of a 1/8-inch or 3/16-inch Allen wrench, so that the wrench is no longer than 13 mm [ ½ in ] long (measured from the outside of the long leg.)
- This tool acts as a mini heel bar to pry out the sealing washer without damaging the back of the hole.
- Use the modified Allen wrench to pry out the old sealing washer from the threaded hole in the fuel rail. Considerable force is required to remove the sealing washer.

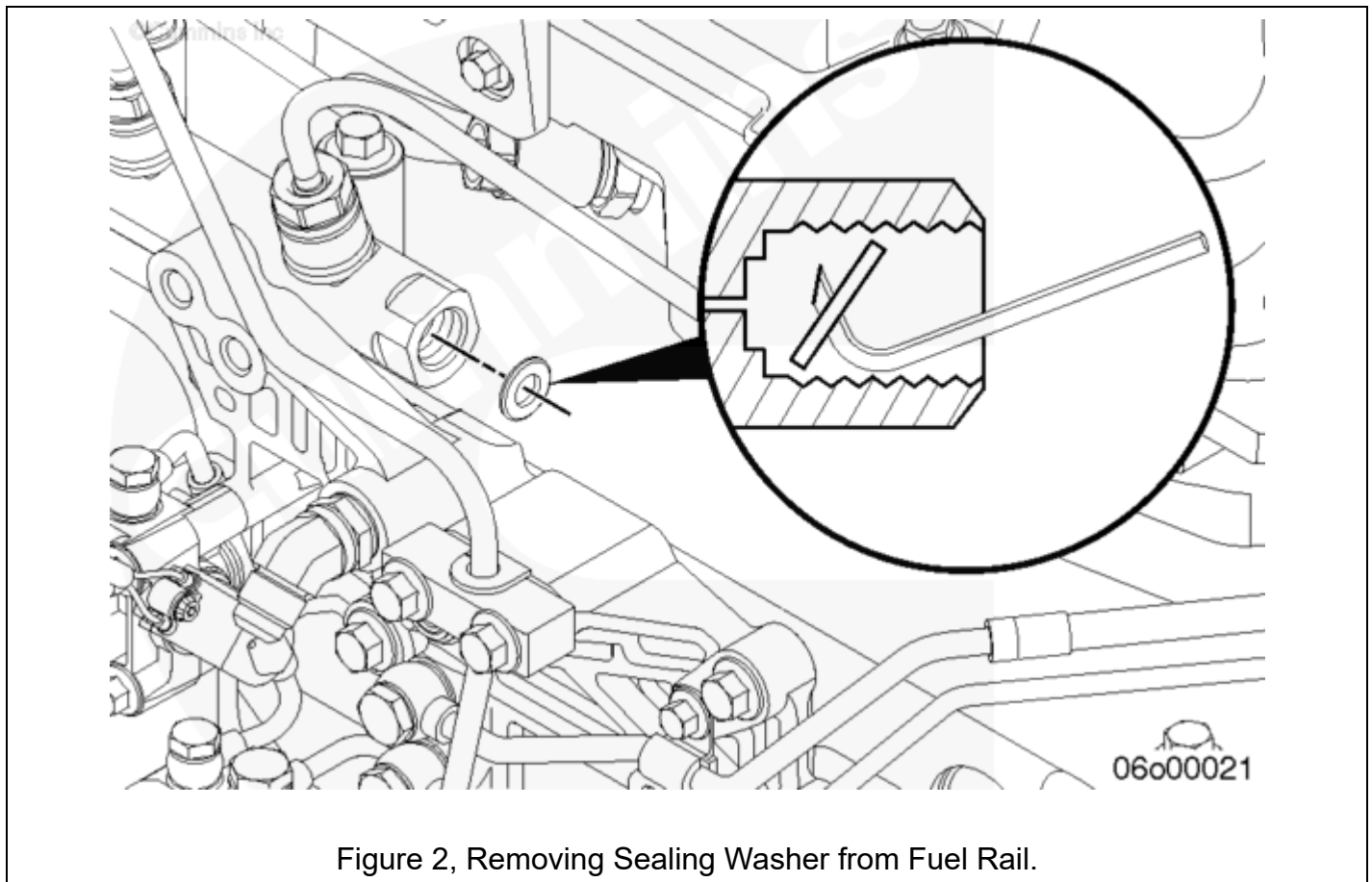


Figure 2, Removing Sealing Washer from Fuel Rail.

- Visually inspect the thread surfaces of the fuel rail, fuel pressure relief valve and the high-pressure fuel fitting for damage. Review Figures 3 and 4 below for guidance.
- Do **not** reuse components if the threads or sealing surfaces are damaged.

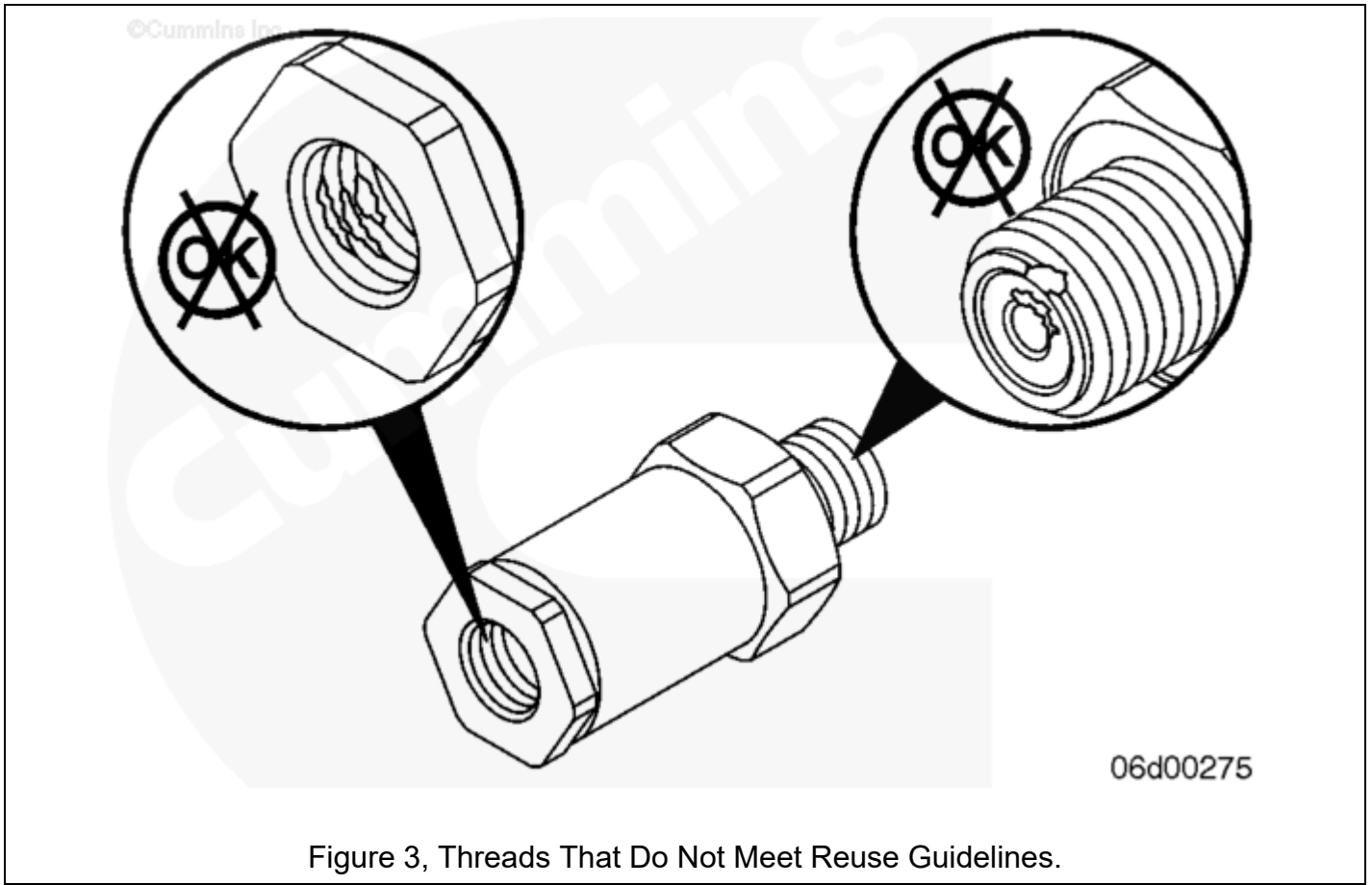


Figure 3, Threads That Do Not Meet Reuse Guidelines.



Figure 4, Left: Not Acceptable For Reuse, Right: Acceptable For Reuse.

**Resolution**

- A new seal installer tool, Part Number 5573487, is now available for this repair.

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Figure 5, New Seal Installer Tool, Part Number 5573487.

- The new seal installer tool **must** be used for all repairs requiring the installation of pressure relief valve or the high pressure fuel fitting on the fuel rail. See Service Instructions section below.

**⚠ CAUTION ⚠**

**Do not perform the repair if the seal installer tool is not available or is damaged as damage to components can result.**

### Service Instructions

- If the threads or sealing surfaces are damaged, replace the fuel rail assembly. See corresponding Service Manual. Reference Procedure 006-060, 006-061 in Section 6 and Technical Service Bulletin, New Fuel Rail, High Pressure Injector Supply Lines, Fuel Supply Line, and Fuel Supply Line Braces, TSB210055 for directions.
- If the threads or sealing surfaces are **not** damaged, install the pressure relief valve and the end fitting with the following procedure:

1. Inspect the seal installer tool for damage on the threads or sealing surfaces. Do **not** use the seal installer tool if the threads or sealing surfaces are damaged.

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Figure 6, Seal Installer Tool Threads Not Acceptable for Use.

2. Install a new sealing washer on the pressure relief valve bore in the fuel rail. Use assembly lubricant, Part Number 3163087, or equivalent, on the threads and the face of the seal installer tool. Use seal installer tool, Part Number 5573487, to seat the sealing washer fully in the fuel rail bore.

3. Torque the seal installer tool.

**Torque Value:** 81 n•m [ 60 ft-lb ]

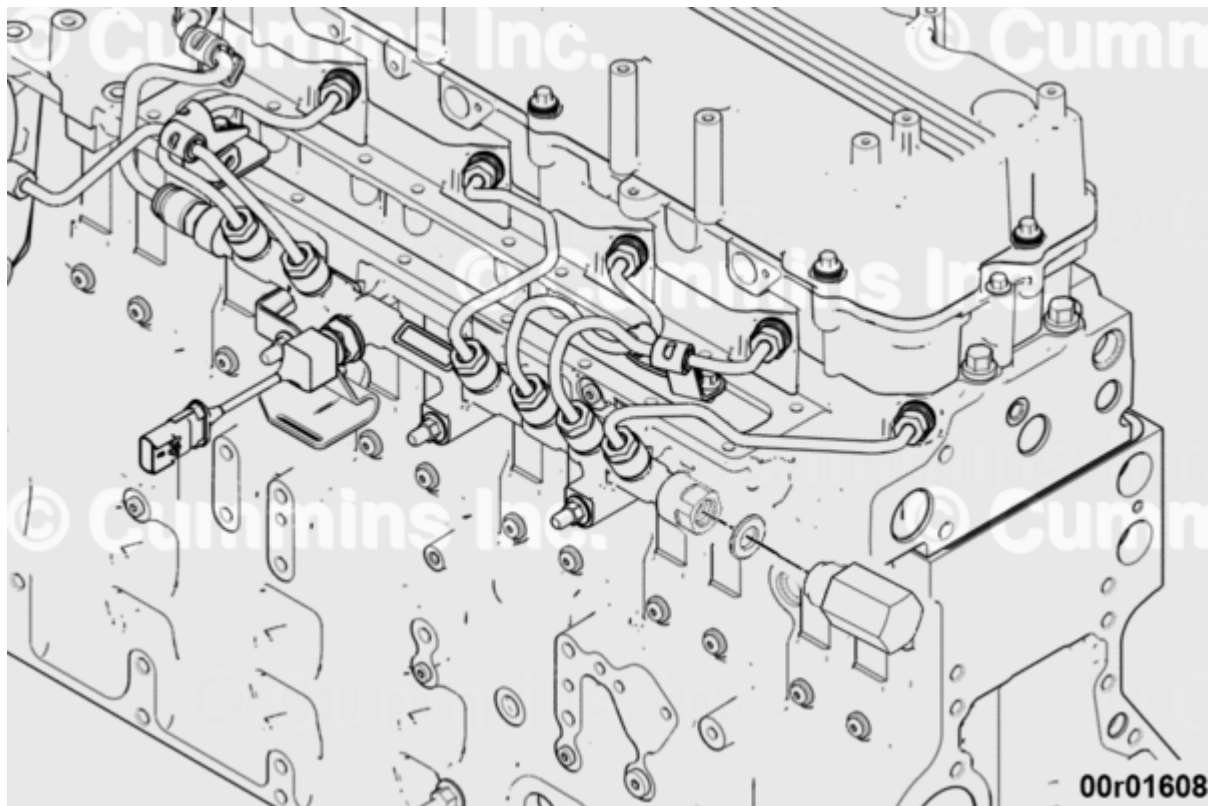


Figure 7, Installing Sealing Washer with The Seal Installer Tool.

4. Remove the seal installer tool after the sealing washer has been installed. Verify that the sealing washer remains seated inside the fuel rail after the seal installer tool is removed.

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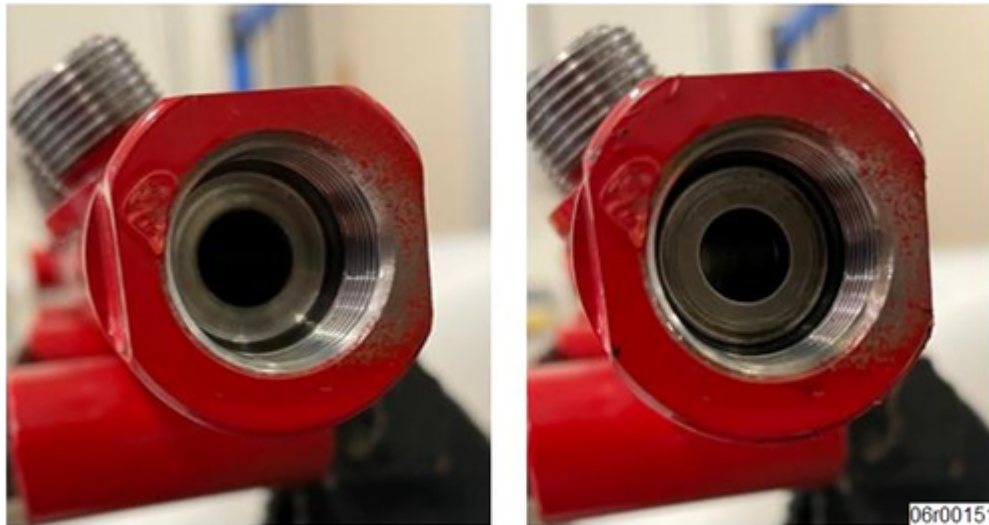


Figure 8, Left: Sealing Washer Not Installed, Right: Sealing Washer Installed Correctly.

5. Inspect the seal installer tool for damage on the threads or sealing surfaces. Do **not** use the seal installer tool if the threads or sealing surfaces are damaged.

6. Install a new sealing washer on the high-pressure fuel fitting bore in the fuel rail. Use assembly lubricant, Part Number 3163087, or equivalent, on the threads and the face of the seal installer tool. Use seal installer tool, Part Number 5573487, to seat the sealing washer fully in the fuel rail bore.

7. Torque the seal installer tool.

**Torque Value:** 81 n•m [ 60 ft-lb ]

8. Remove the seal installer tool after the sealing washer has been installed. Verify that the sealing washer remains seated inside the fuel rail after the seal installer tool is removed.

9. If either of the sealing washers do **not** remain seated inside the fuel rail after the seal installer tool has been removed, reinstall the sealing washer following the same procedure.

10. Install the pressure relief valve and the high-pressure fuel fitting. Use assembly lubricant, Part Number 3163087, or equivalent, on the threads. Tighten the pressure relief valve and the high-pressure fuel fitting with the torque plus angle method.

**Torque Value:** 27 n•m [ 239 in-lb ]

Rotate 90 degrees.

11. See corresponding Service Manual. Reference Procedure 006-061 in Section 6 for finishing steps.



## Service Parts Availability

Service parts are available. See Table 1 for part numbers.

<b>Table 1, Service Parts</b>				
<b>Part Description</b>	<b>Existing Part Number</b>	<b>Obsolete</b>	<b>Superseded</b>	<b>New Part Number</b>
Seal Installer Tool	-	No	No	5573487

## Publications Affected

<b>Table 2, Publications Affected</b>			
<b>Manual Type</b>	<b>Procedure Title</b>	<b>Procedure</b>	<b>Section</b>
Service Manual	Fuel Pressure Relief Valve	Procedure 006-061	6

## Document History

<b>Date</b>	<b>Details</b>
2021-5-27	Module Created

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**Last Modified: 27-May-2021**

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