High Pressure Fuel Lines And Transfer Tubes removal and installation procedure has been updated.

REMOVAL OF HIGH PRESSURE FUEL LINES AND TRANSFER TUBES
Remove as follows:

<table>
<thead>
<tr>
<th>WARNING: PERSONAL INJURY</th>
</tr>
</thead>
<tbody>
<tr>
<td>To prevent the escape of high pressure fuel that can penetrate skin, ensure the engine has been shut down for a minimum of 10 minutes before servicing any component within the high pressure circuit. Residual high fuel pressure may be present within the circuit.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WARNING: FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>To avoid injury from fire, keep all potential ignition sources away from diesel fuel, including open flames, sparks, and electrical resistance heating elements. Do not smoke when refueling.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WARNING: FIRE</th>
</tr>
</thead>
<tbody>
<tr>
<td>To avoid injury from fire caused by heated diesel-fuel vapors:</td>
</tr>
<tr>
<td>□ Keep those people who are not directly involved in servicing away from the engine.</td>
</tr>
<tr>
<td>□ Stop the engine immediately if a fuel leak is detected.</td>
</tr>
<tr>
<td>□ Do not smoke or allow open flames when working on an operating engine.</td>
</tr>
<tr>
<td>□ Wear adequate protective clothing (face shield, insulated gloves and apron, etc.).</td>
</tr>
<tr>
<td>□ To prevent a buildup of potentially volatile vapors, keep the engine area well ventilated during operation.</td>
</tr>
</tbody>
</table>

1. Remove the cylinder head cover to improve access to the fuel lines.
2. Remove the engine lifting bracket to improve access to the fuel lines.
   [a] Remove the left front lifting bracket by removing the three bolts securing the bracket to the cylinder head.
   [b] If the application has a high mount fan, remove the three secondary mount bracket retention bolts on the cylinder head and the two bolts on the high mount fan bracket.
3. To prevent the transfer tube from rotating during the high pressure fuel line disassembly, secure the transfer tube thrust nut using a 24 mm fuel line wrench (J-47484 or J-45063) and loosen the high pressure fuel line nut at the transfer tube using a 17 mm fuel line wrench (J-47483) or a 17 mm open end wrench. See Figure 1.

![Figure 1 High Pressure Fuel Line](image)

1. Transfer-Tube Nut  
2. High Pressure Fuel Line  
3. Isolator Clip  
4. Fuel Lines Nuts  
5. Electronic Unit Pump

**WARNING:**  
PERSONAL INJURY  
To avoid injury from the sudden release of a high-pressure hose connection, wear a face shield or goggles.

**NOTICE:**  
The high pressure fuel injector line and transfer tube are one-time use items. Failure to install a new high pressure fuel injector line and transfer tube will cause fuel leaks and high pressure fuel injector line failures.

4. Using a 17 mm fuel line wrench (J-47483) or a 17 mm open end wrench, loosen the high pressure fuel injector line nut at the electronic unit pump. Discard the high pressure fuel injector line. See Figure 1.
5. Using a 24 mm fuel line wrench (J-45063 or J-47484) or a 24 mm socket, loosen the thrust nut on the transfer tube. Remove and discard the transfer tube and the O-ring. See Figure 1.
INSTALLATION OF HIGH PRESSURE FUEL LINES AND TRANSFER TUBES

Installation steps are as follows:

**NOTICE:**
New high pressure fuel injector lines are supplied ready for installation. Never use pliers or sharp-edged tools to bend injector lines. Doing so could damage them. High pressure fuel injector lines should fit without tension over the transfer tube and unit pump fittings.

**NOTICE:**
Discard the old high pressure fuel line and transfer tube. Do not re-use them!

1. The new high pressure fuel line comes assembled with the damper clamp. Ensure that the damper clamp is aligned correctly on the high pressure fuel line and is not in contact with surrounding engine components. See Figure 2.

![Figure 2 Damper Clamp Alignment](image)

1. High Pressure Fuel Line
2. Damper Clamp
2. Apply a light coat of clean engine oil to the transfer tube O-ring and install the transfer tube into the cylinder head.

3. Using a 24 mm socket, torque the thrust nut to 45 N·m (33 lb·ft).

4. Align the new high pressure fuel injector line fittings to the transfer tube and unit pump. Ensure the fuel line is not installed backwards, and that the end of the high pressure fuel line is properly seated in the transfer tube and unit pump fitting.

5. Hand-tighten the high pressure fuel injector line nut first at the unit pump, and then at the transfer tube. While hand tightening the nuts, gently move the high pressure fuel line back and forth to ensure the end of the line is properly seated in the transfer tube and unit pump fitting. If the high pressure fuel injector line has been installed incorrectly and torqued, remove the high pressure fuel injector line and transfer tube and replace with new parts. Ensure that the damper clamp is not touching any other fuel lines or other engine or vehicle components. See Figure 3.

![Figure 3 High Pressure Fuel Line](image-url)
6. Once the high pressure fuel injector line nuts are hand tight, draw a vertical line with a highly visible marker along the front edge of both of the nuts and up the fuel line. The line drawn along the edge of the nuts and the fuel line should be aligned.

Figure 4  Marking of High Pressure Fuel Injector Line and Nuts
7. Using a 17 mm fuel line wrench (J-47483) or a 17 mm open end wrench, tighten the high pressure fuel line nut at the unit pump end by turning the nut through 120 degrees. 120 degrees can be measured by turning the nut so that the nut edge which had been marked has been turned through 1/3 of a full turn, or through two nut flats. Lack of space in some engine configurations may mean that the 120 degree turn will have to be completed in two turns of 60 degrees, or one nut flat each. See Figure 5.

![Fuel Line Nut](image)

**Figure 5** Turning Fuel Line Nut 120 Degrees

8. Using a 24 mm fuel line wrench (J-45063 or J-47484), hold the transfer tube thrust nut. Using a 17 mm fuel line wrench (J-47483) or a 17 mm open end wrench, tighten the high pressure fuel injector line nut at the transfer tube end by turning the nut through 120 degrees. 120 degrees can be measured by turning the nut so that the nut edge which had been marked has been turned through 1/3 of a full turn, or through two nut flats. Lack of space in some engine configurations may mean that the 120 degree turn will have to be completed in two turns of 60 degrees, or one nut flat each. See Figure 5.
9. Ensure that all six damper clamps on the high pressure fuel injector lines are installed correctly.

10. Install the engine lifting bracket.

   [a] Install the left front lifting bracket and secure lifting bracket to cylinder head using original three bolts. Torque bolts to 50 N·m (37 lb·ft).

   [b] On engine applications with a high mount fan, assemble the secondary mounting bracket using original three bolts on the side of the cylinder head and two bolts on the high mount fan bracket. Torque bolts to 50 N·m (37 lb·ft).

11. Install the cylinder head cover and any other remaining parts.

12. Prime the fuel system. Refer to section "Priming the Fuel System".

13. Run the engine and check for leaks.

14. Shut down the engine.
ADDITIONAL SERVICE INFORMATION

Additional service information is available in the Detroit Diesel *EPA07 MBE 900 Workshop Manual* (DDC-SVC-MAN-0034). The next revision to this manual will include the revised information.