## SUBJECT
Cylinder Block

## DATE
April, 2015

### Additions, Revisions, or Updates

<table>
<thead>
<tr>
<th>Publication Number / Title</th>
<th>Platform</th>
<th>Section Title</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>DDC-SVC-MAN-0081</td>
<td>DD Platform</td>
<td>Cylinder Block Oil Gallery Cup Plug Replacement</td>
<td>This is a new procedure.</td>
</tr>
<tr>
<td>DDC-SVC-MAN-S181</td>
<td>EuroIV DD Platform</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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2 Cylinder Block Oil Gallery Cup Plug Replacement

NOTICE: Cleanliness of this repair is very important. Serious engine damage could occur if debris is allowed to enter the clean side of the engine lubrication system.

WARNING: PERSONAL INJURY
Diesel engine exhaust and some of its constituents are known to the State of California to cause cancer, birth defects, and other reproductive harm.
• Always start and operate an engine in a well ventilated area.
• If operating an engine in an enclosed area, vent the exhaust to the outside.
• Do not modify or tamper with the exhaust system or emission control system.

CAUTION: ELECTRICAL SHOCK
To avoid injury from electrical shock, use care when connecting battery cables. The magnetic switch studs are at battery voltage.

Replace as follows:
1. Shut off the engine, apply the parking brake, chock the wheels, and perform any other applicable safety steps.
2. Disconnect the batteries. Refer to the OEM procedure.
3. Open the hood.
4. Remove any necessary components to gain access to the cup plug requiring replacement.
5. Carefully clean the area around the cup plug. Remove any oil, rust or loose debris.
6. Remove the cup plug using a punch. It is best to strike the plug in the cupped area at the 6 o'clock position. The cup plug can then be removed using pliers. See illustrations below.
7. Clean cup plug sealing area using a brush and suitable cleaner.
8. Use a vacuum to remove any loose debris created by cup plug removal and cleaning of the sealing area.
9. Apply Loctite 540 sealant to the sides of the new cup plug. Follow instructions supplied with the sealant. Loctite 7471 activator, if available, should also be used to strengthen the curing process.

**NOTICE:** New cup plug must be installed into the cylinder block at the correct depth. Serious engine damage could occur if plug is installed too deep, as it may block another oil gallery.

10. Carefully install new cup plug into the cylinder block using a suitable cup plug driver. Plug should be driven from the inside center of the plug, not from the rim of the cup and should be driven squarely into the hole. New cup plug should be installed so the outside rim of the cup is just past the lead in chamfer in the cylinder block. See illustration below.
11. Allow the sealant to cure for a minimum of one hour, although 24 hours is recommended per the Loctite instructions.
12. Install components removed to gain access to cup plug.
13. Reconnect the batteries. Refer to the OEM procedure.
15. Close the hood.