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Service Information Bulletin

SUBJECT	DATE
Water Manifold Assembly	August 2013

Additions, Revisions, or Updates

Publication Number / Title	Platform	Section Title	Change
DDC-SVC-MAN-0081	DD Platform	Installation of the DD13 EGR Cooler Water Manifold Assembly Installation of the DD15 and DD16 Water Manifold	Added torque specs for HC-Doser fitting.



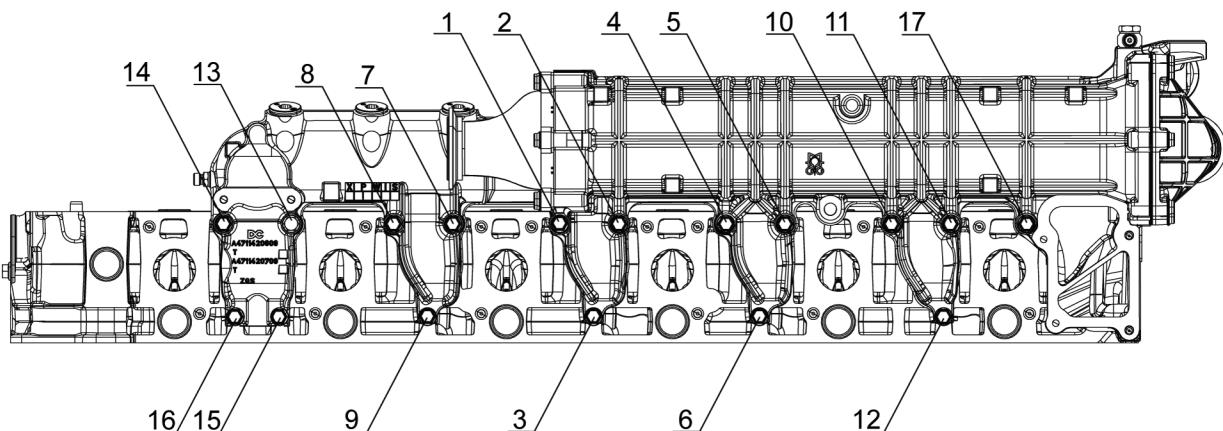
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2 Installation of the DD13 EGR Cooler Water Manifold Assembly

Install as follows:

NOTICE: Ensure the connecting tubes are lubricated with clean oil; if they are not lubricated, the tubes cannot be fully installed or the rubber can be cut.

1. Install two new EGR cooler water manifold assembly gaskets.
2. Install the EGR cooler water manifold assembly onto the cylinder head.
3. Install and hand tighten the 17 bolts into the EGR cooler water manifold assembly. Torque the bolts to 30 N·m (22 lb·ft) in the sequence shown.



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4. Install the following:
 - a. EGR crossover tube. Refer to section "Installation of the Exhaust Gas Recirculation Crossover Tube".
 - b. EGR venturi. Refer to section "Installation of the Exhaust Gas Recirculation Venturi".
 - c. Mixer pipe. Refer to section "Installation of the Mixer Pipe".
5. Install the coolant delivery pipe between the EGR cooler water manifold assembly and the oil coolant module; install two clamps onto the hose connecting the delivery pipe to the module. Torque to 3.0 to 3.5 N·m (26 to 26.5 lb·in.).
6. Install the retaining plate with two bolts to connect the coolant delivery pipe to the EGR cooler water manifold assembly. Torque bolts to 20 N·m (15 lb·in.).
7. Install the front and rear exhaust manifold heat shields.
8. Install the hot pipe onto the EGR cooler water manifold assembly and the EGR valve with two new spherical clamps and tighten clamp bolts to 12 N·m (9 lb·ft). Refer to section "Installation of the Exhaust Gas Recirculation Hot Pipe".
9. After installing the hot pipe from EGR cooler water manifold assembly to exhaust manifold, sweep the EGR actuator by hand to verify it does not make contact with the clamps. If contact is made, rotate the clamps as needed to gain clearance.
10. Install the doser injection valve coolant return line to the EGR cooler water manifold assembly.
 - a. For the 5mm long thread fitting, torque to 15 N·m (11 lb·ft).
 - b. For the 15mm long thread fitting, torque to 22 N·m (16 lb·ft).
11. Install the doser injection valve coolant supply line to the EGR cooler water manifold assembly.
 - a. For the 5mm long thread fitting, torque to 15 N·m (11 lb·ft).
 - b. For the 15mm long thread fitting, torque to 22 N·m (16 lb·ft).
12. Install the coolant outlet return to the EGR cooler water manifold assembly and to the EGR valve actuator.
13. Install the coolant deaeration line to the EGR cooler water manifold assembly.
14. Connect the electrical wiring harness coolant outlet temperature sensor connector.

15. Install the radiator support mount.
16. Fill the engine with coolant.

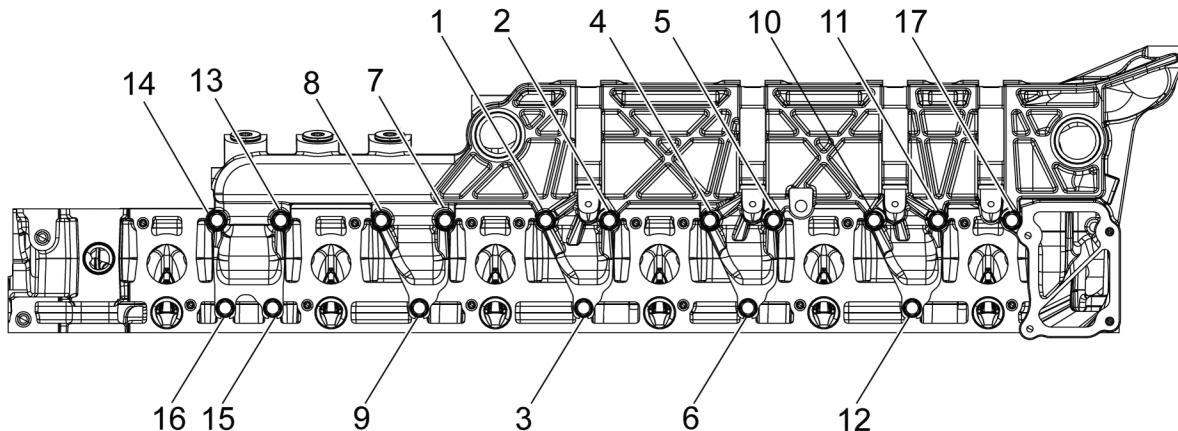
3 Installation of the DD15 and DD16 Water Manifold

Install as follows:

NOTICE: When installing the connecting pipe, ensure that the connecting pipe is lubricated with clean engine oil. If it is not lubricated, the connecting pipe cannot be fully installed and the rubber can tear.

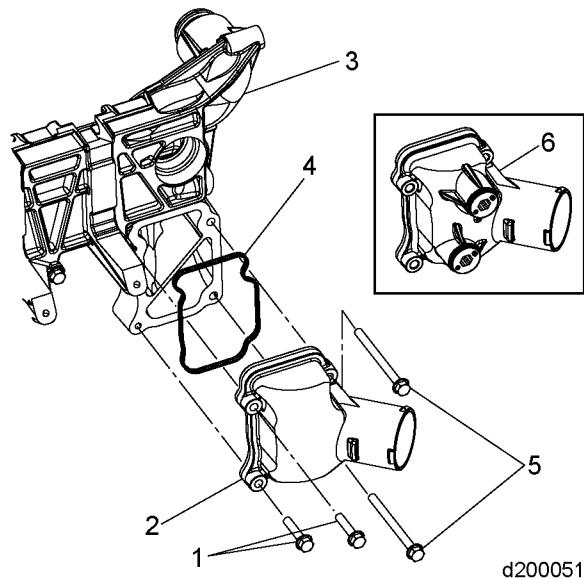
NOTICE: Do not use sealant when installing water manifold to the cylinder head.

1. Install the water manifold gaskets and the connecting pipe onto the water manifold.
2. Install the six lower water manifold bolts and start by a few threads.
3. Install the water manifold onto cylinder head.
4. Install the eleven upper water manifold bolts.
5. Torque the water manifolds bolts to 30 N·m (22 lb·ft), using the torque sequence illustrated below.



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6. Install EGR cooler to water manifold and torque to 20 N·m (15 lb·ft).
7. Install coolant outlet elbow (2) with four bolts (1, 5) and gasket (4) and torque to 30 N·m (22 lb·ft).



8. Install upper radiator hose.
9. Install EGR actuator coolant outlet line. Torque outlet line to 35 N·m (26 lb·ft).
10. Connect the outlet coolant temperature sensor.
11. Connect the EGR cooler vent line.
12. Install the doser injection valve coolant return line to the EGR cooler water manifold assembly.
 - a. For the 5mm long thread fitting, torque to 15 N·m (11 lb·ft).
 - b. For the 15mm long thread fitting, torque to 22 N·m (16 lb·ft).
13. Install the doser injection valve coolant supply line to the EGR cooler water manifold assembly.
 - a. For the 5mm long thread fitting, torque to 15 N·m (11 lb·ft).
 - b. For the 15mm long thread fitting, torque to 22 N·m (16 lb·ft).
14. Install the EGR hot pipe. Refer to section "Installation of the Exhaust Gas Recirculation Hot Pipe".
15. Install the exhaust manifold heat shields.
16. Install the air filter. Refer to OEM procedures.
17. Fill engine with coolant to the correct level.



WARNING: PERSONAL INJURY

To avoid injury before starting and running the engine, ensure the vehicle is parked on a level surface, parking brake is set, and the wheels are blocked.



WARNING: ENGINE EXHAUST

To avoid injury from inhaling engine exhaust, always operate the engine in a well-ventilated area. Engine exhaust is toxic.

18. Start the engine and check for leaks.