

Cylinder Head LH

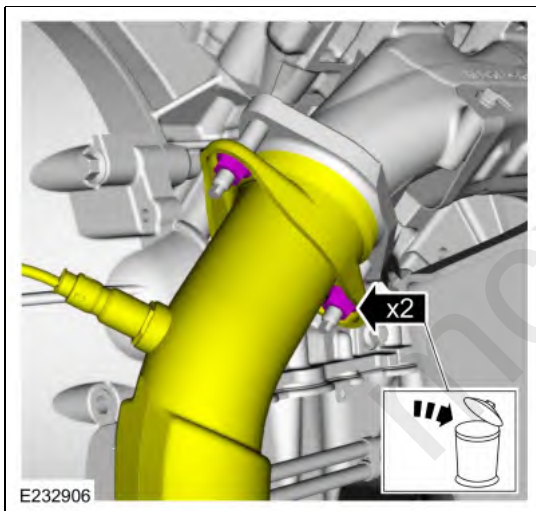
Special Tool(s) / General Equipment

Oil Drain Equipment

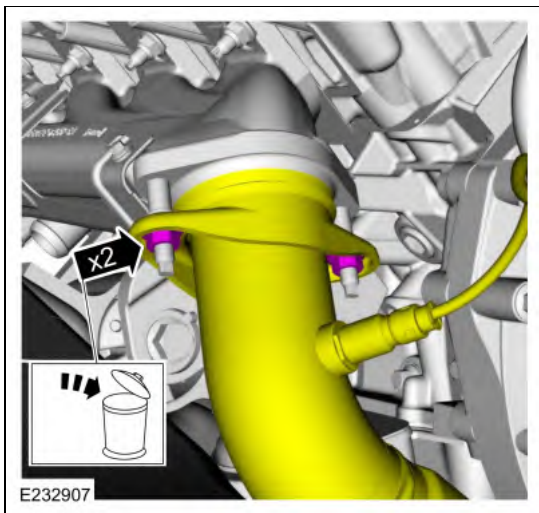
Removal

NOTICE: During engine repair procedures, cleanliness is extremely important. Any foreign material, including any material created while cleaning gasket surfaces, that enters the oil passages, coolant passages or the oil pan, can cause engine failure.

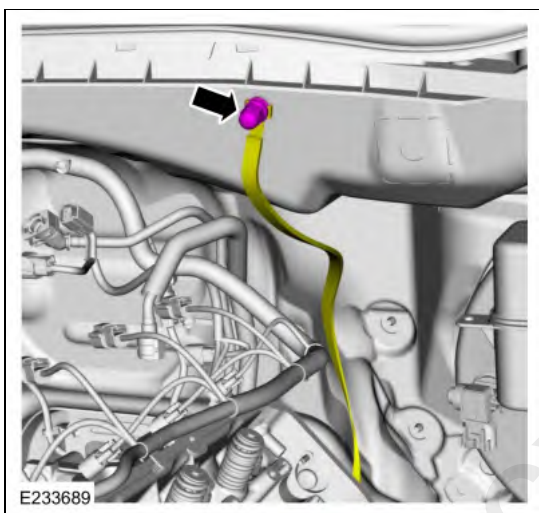
1. With the vehicle in NEUTRAL, position it on a hoist.
Refer to: Jacking and Lifting - Overview (100-02 Jacking and Lifting, Description and Operation).
2. Release the fuel system pressure.
Refer to: Fuel System Pressure Release (310-00A Fuel System - General Information - 6.2L V8, General Procedures).
3. Disconnect the battery ground cable.
Refer to: Battery Disconnect and Connect (414-01 Battery, Mounting and Cables, General Procedures).
4. Remove the following items:
 1. Remove the cooling module.
Refer to: Cooling Module (303-03A Engine Cooling - 6.2L V8, Removal and Installation).
 2. Remove the intake manifold.
Refer to: Intake Manifold (303-01A Engine - 6.2L V8, Removal and Installation).
 3. Remove the RH and LH timing chains.
Refer to: Timing Chain (303-01A Engine - 6.2L V8, Removal and Installation).
5.
 - Remove the RH catalytic converter pipe-to-manifold nuts and discard.
 - Make sure that the mating faces are clean and free of foreign material.



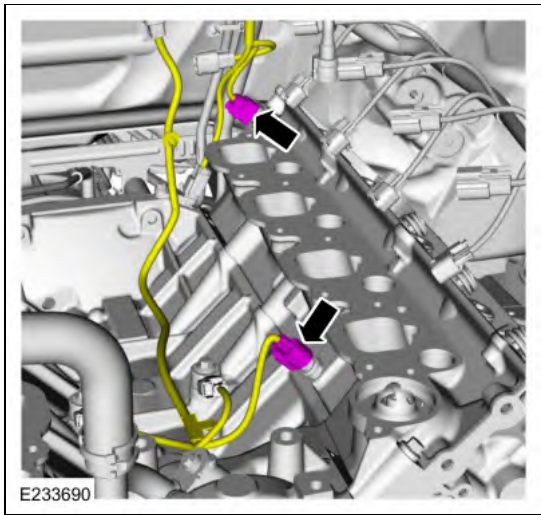
6.
 - Remove the LH catalytic converter pipe-to-manifold nuts and discard.
 - Make sure that the mating faces are clean and free of foreign material.



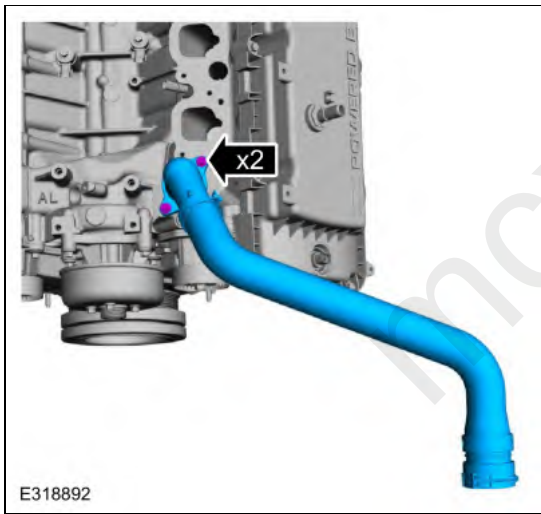
7. Remove the nut and position the engine ground strap aside.



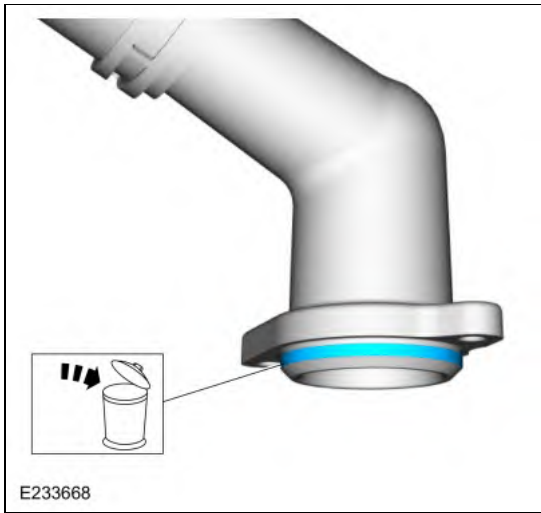
8. Disconnect the LH CMP sensor and the CHT sensor wiring harness electrical connectors.



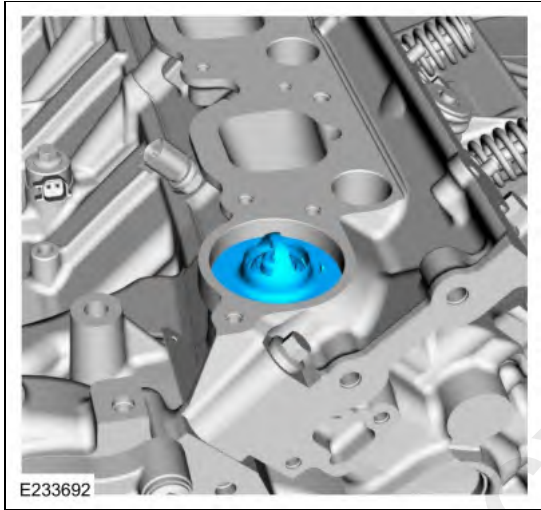
9. Remove the bolts and the thermostat housing and upper radiator hose assembly.



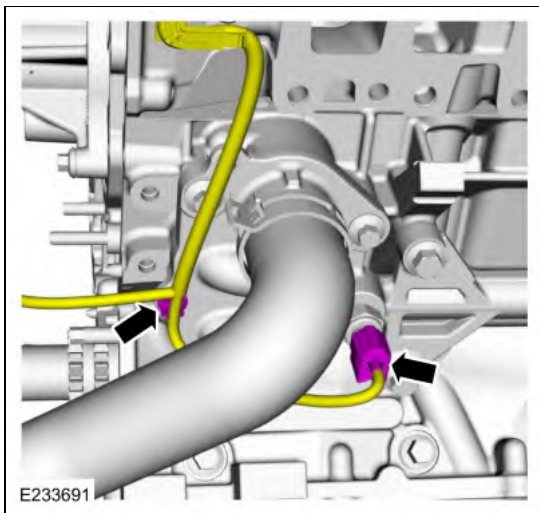
10. Remove and discard the thermostat housing O-ring seal.



11. Remove the thermostat.



12. Disconnect the oil pressure switch wiring harness electrical connector and retainer.

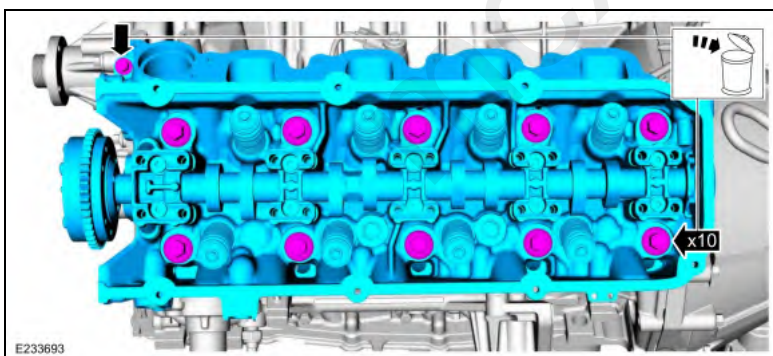


13. **NOTICE:** The cylinder head must be cool before removing it from the engine. Cylinder head warpage may result if a warm or hot cylinder head is removed.

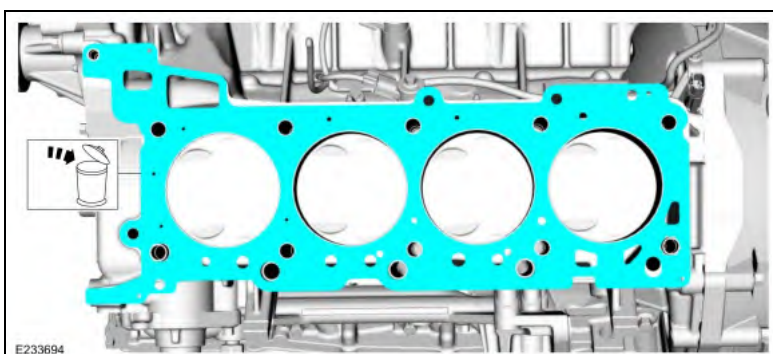
NOTICE: Place clean shop towels over exposed engine cavities. Carefully remove the towels so foreign material is not dropped into the engine. Failure to follow this instruction may cause engine damage.

NOTICE: The cylinder head bolts must be discarded and new bolts must be installed. They are a tighten-to-yield design and cannot be reused.

- Remove and discard the cylinder head bolts.
- Remove the cylinder head.



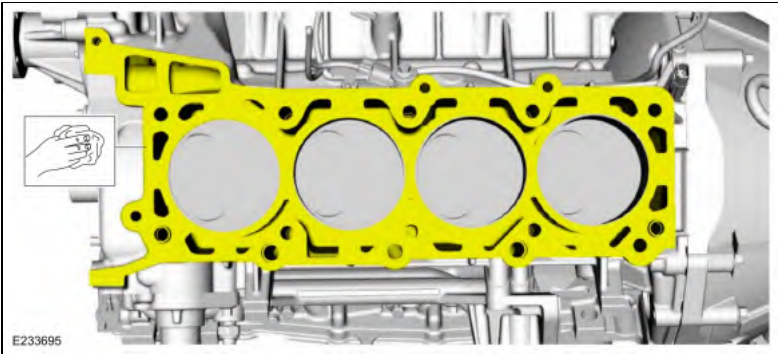
14. Remove and discard the cylinder head gasket.



15. **NOTICE:** Do not use metal scrapers, wire brushes, power abrasive discs or other abrasive means to clean the sealing surfaces. These tools cause scratches and gouges which make leak paths.

NOTE: Clean the cylinder block bolt holes using compressed air. Make sure all coolant, oil or other foreign material is removed.

- Clean and inspect the cylinder block mating surface.
- Check the cylinder block distortion.
Refer to: Cylinder Block Distortion (303-00 Engine System - General Information, General Procedures).

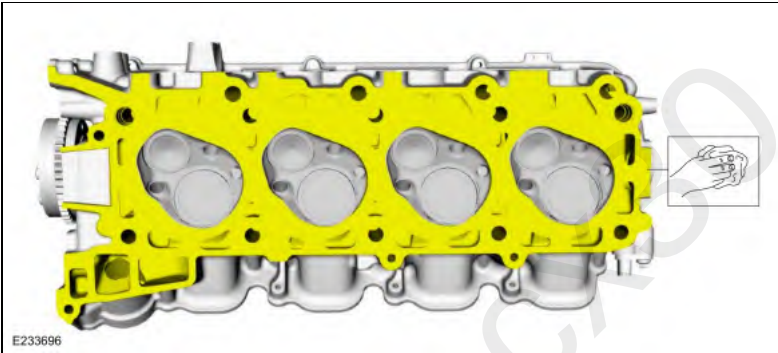


16. **NOTICE:** Do not use metal scrapers, wire brushes, power abrasive discs or other abrasive means to clean the sealing surfaces. These tools cause scratches and gouges which make leak paths.

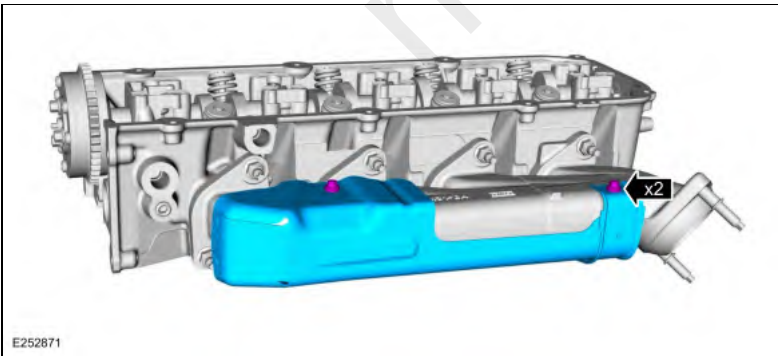
NOTICE: Aluminum surfaces are soft and can be scratched easily. Never place the cylinder head gasket surface, unprotected, on a bench surface. Failure to follow this instruction may cause engine damage.

NOTE: Clean the cylinder head bolt holes using compressed air. Make sure all coolant, oil or other foreign material is removed.

- Clean and inspect the cylinder head mating surface.
- Check the cylinder head distortion.
Refer to: Cylinder Head Distortion (303-00 Engine System - General Information, General Procedures).



17. If necessary, remove the bolts and the exhaust manifold heat shield.



- 18.
- If necessary, remove the nuts and the exhaust manifold.
 - Discard the nuts.



1. If necessary, install the exhaust manifold studs and gaskets.
Torque: 18 lb.ft (25 Nm)

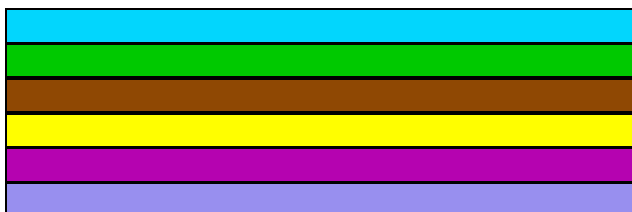
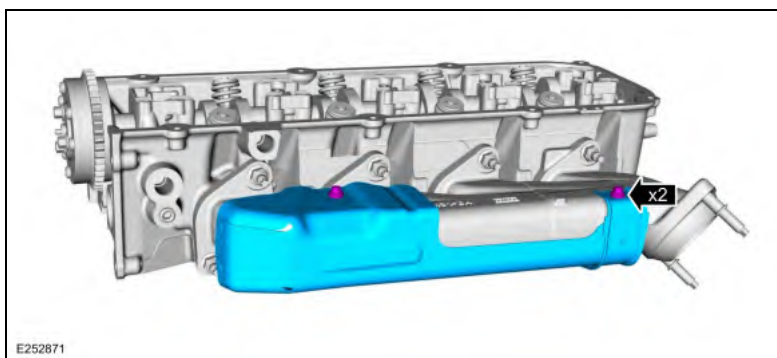


Torque:
 Stage 1: Stage 1: Tighten to: 18 lb.ft (24 Nm)
 Stage 2: Stage 2: Tighten to: 23 lb.ft (31 Nm)

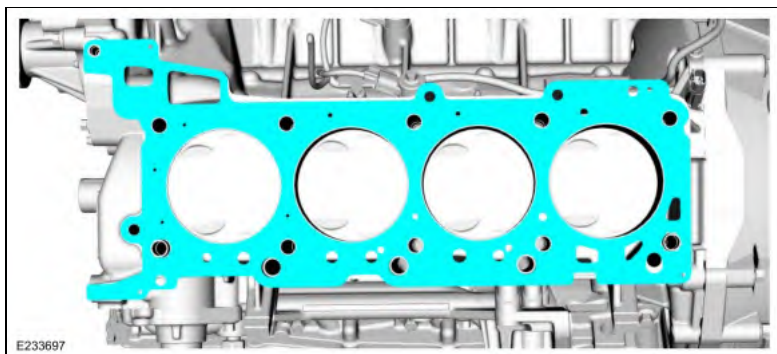


- If necessary, install the exhaust manifold heat shield and the bolts.

Torque: 106 lb.in (12 Nm)



- Install the new cylinder head gasket.



- NOTICE: Make sure all coolant residue and foreign material are cleaned from the block surface and cylinder bore.**

NOTE: The cylinder head bolts are torque-to-yield and must not be reused. New cylinder head bolts must be installed.

Install the cylinder head and the new bolts and tighten in 10 stages.

Torque:

Stage 1: Tighten bolts 1 through 10 to: 18 lb.ft (25 Nm)

Stage 2: Tighten bolts 1 through 10 to: 55 lb.ft (75 Nm)

Stage 3: Loosen: 180°

Stage 4: Tighten bolts 1 through 10 to: 18 lb.ft (25 Nm)

Stage 5: Tighten bolts 1 through 10 to: 37 lb.ft (50 Nm)

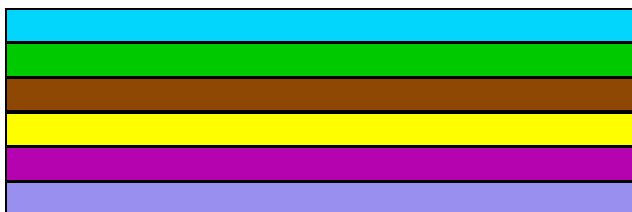
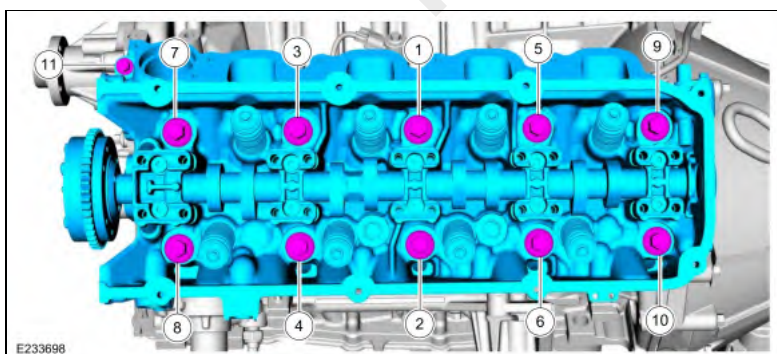
Stage 6: Tighten bolt 11 to: 89 lb.in (10 Nm)

Stage 7: Tighten bolts 1 through 10 an additional: 90°

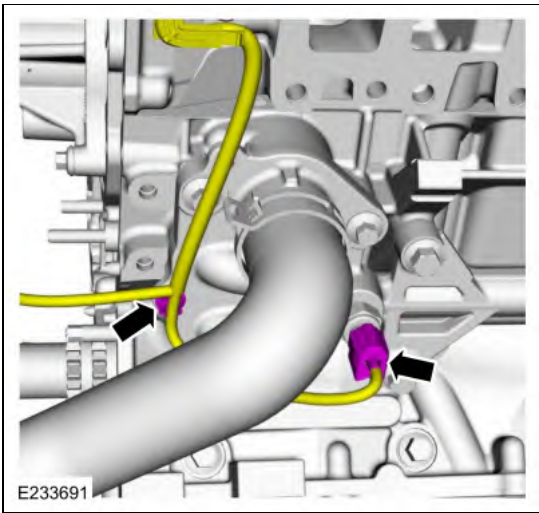
Stage 8: Tighten bolts 1 through 10 an additional: 90°

Stage 9: Tighten bolt 11 to: 177 lb.in (20 Nm)

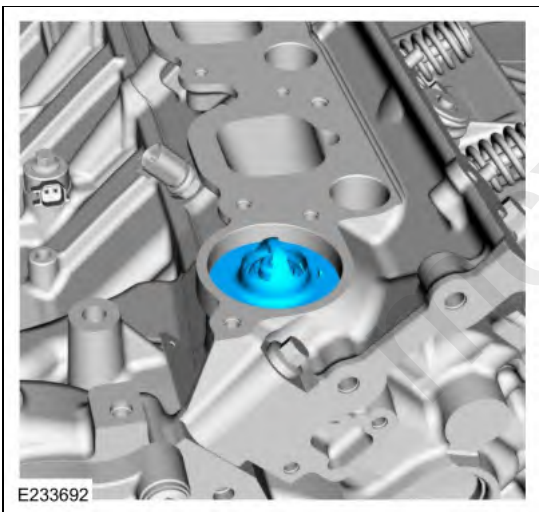
Stage 10: Tighten bolt 11 an additional: 45°



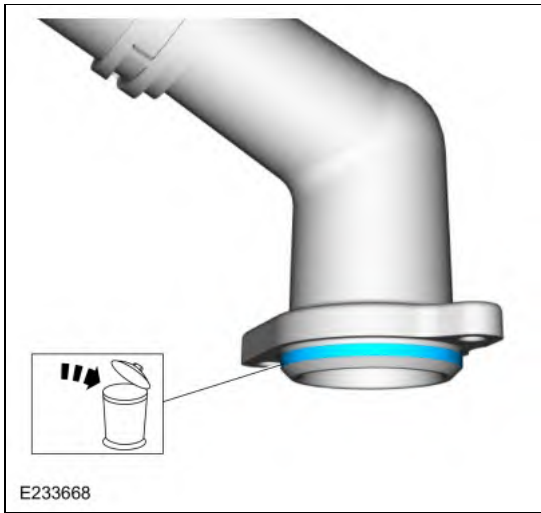
- Connect the oil pressure switch wiring harness electrical connector and retainer.



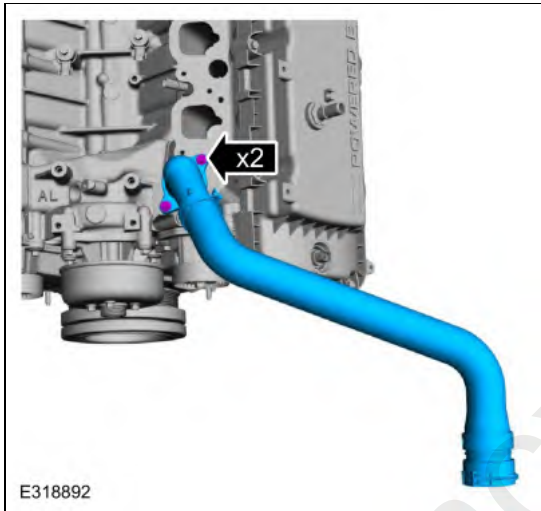
7. Install the thermostat.



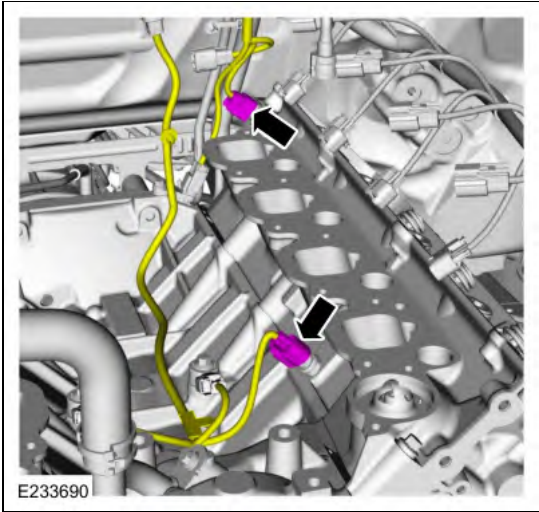
8. Install and lubricate the thermostat housing O-ring seal.



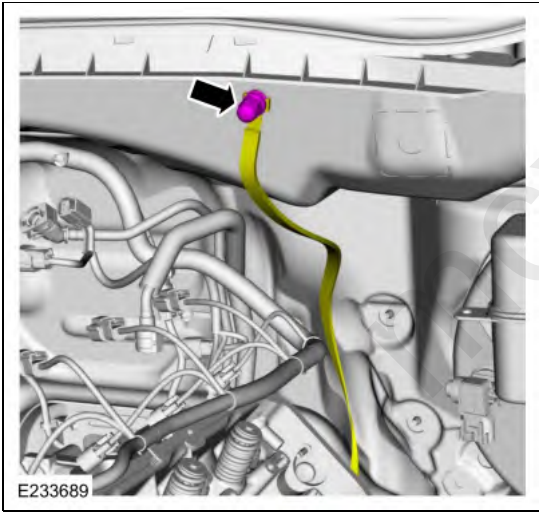
9. Install the thermostat housing and upper radiator hose assembly and the bolts.
Torque: 89 lb.in (10 Nm)



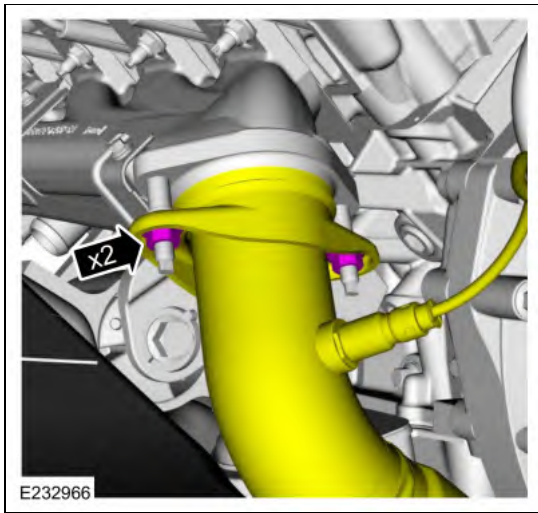
10. Connect the LH CMP sensor and the CHT sensor wiring harness electrical connectors.



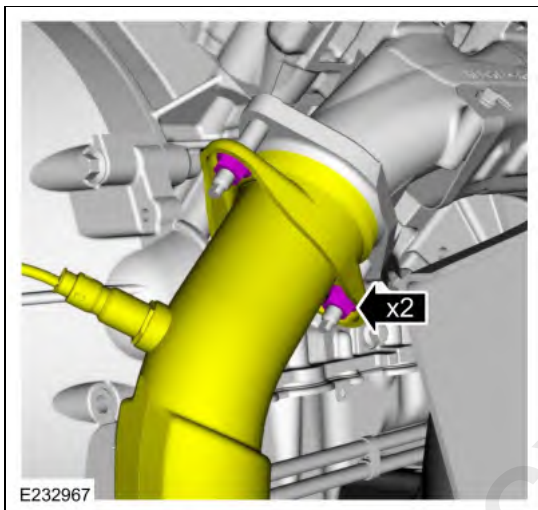
11. Position the engine ground strap and install the nut.
Torque: 89 lb.in (10 Nm)



12. Install the new LH catalytic converter pipe-to-manifold nuts.
Torque: 30 lb.ft (40 Nm)

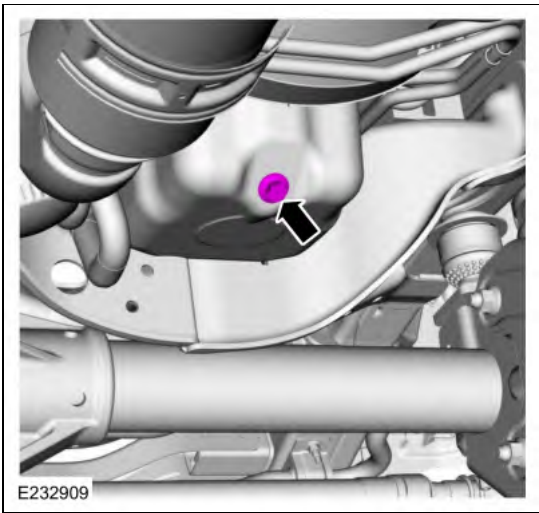


13. Install the new RH catalytic converter pipe-to-manifold nuts.
Torque: 30 lb.ft (40 Nm)

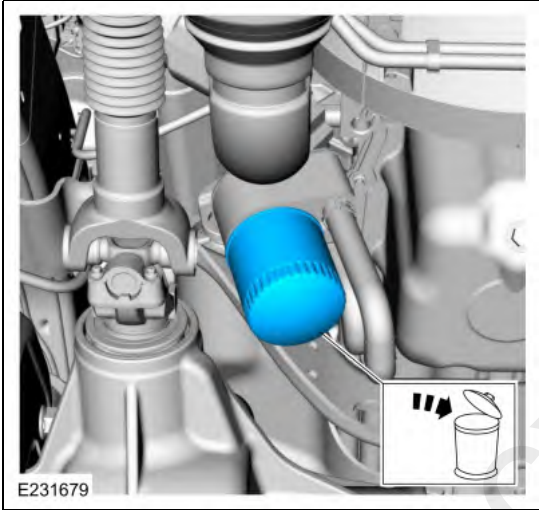


14. Install the following items:
1. Install the RH and LH timing chains.
Refer to: Timing Chain (303-01A Engine - 6.2L V8, Removal and Installation).
 2. Install the intake manifold.
Refer to: Intake Manifold (303-01A Engine - 6.2L V8, Removal and Installation).

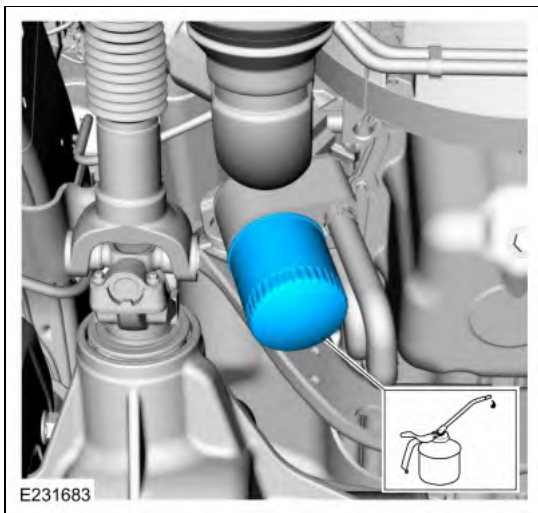
- 15.
- Remove the oil pan drain plug and drain the engine oil.
Use the General Equipment: Oil Drain Equipment
 - Install the oil pan drain plug.
Torque: 17 lb.ft (23 Nm)



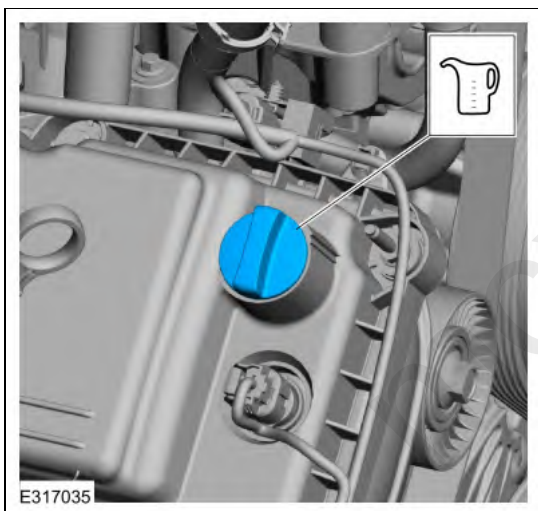
16. Remove and discard the engine oil filter.



17. Lubricate the oil filter gasket with clean engine oil and install a new engine oil filter.
Torque:
Stage 1: 44 lb.in (5 Nm)
Stage 2: 180°



18. Fill the engine with clean engine oil.
Refer to: Specifications (303-01A Engine - 6.2L V8, Specifications).



19. Connect the battery ground cable.
Refer to: Battery Disconnect and Connect (414-01 Battery, Mounting and Cables, General Procedures).
20. Install the cooling module.
Refer to: Cooling Module (303-03A Engine Cooling - 6.2L V8, Removal and Installation).
21. Pressurize the fuel system.
Refer to: Fuel System Pressure Release (310-00A Fuel System - General Information - 6.2L V8, General Procedures).