

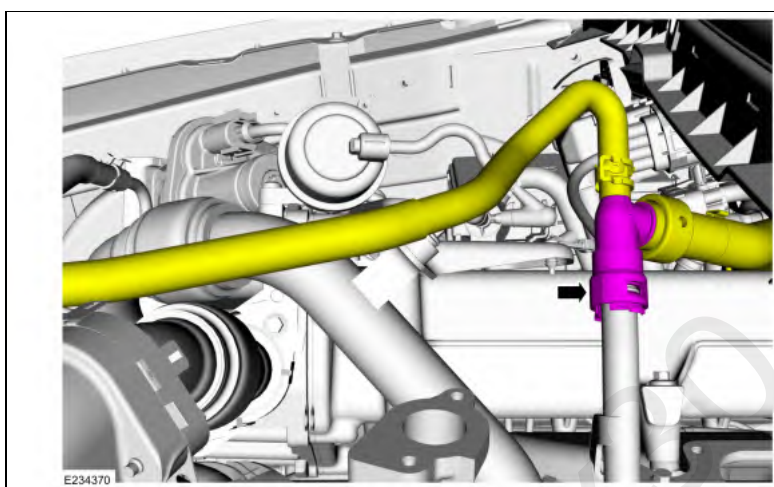
Exhaust Gas Recirculation (EGR) Cooler

Special Tool(s) / General Equipment

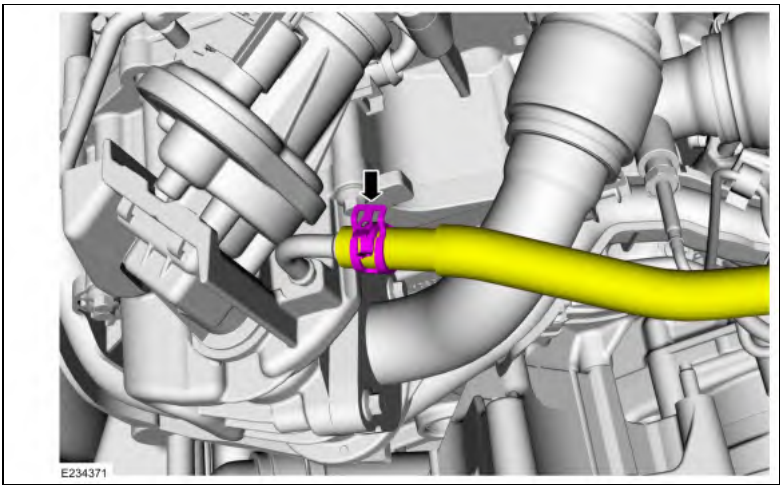
Hose Clamp Remover/Installer

Removal

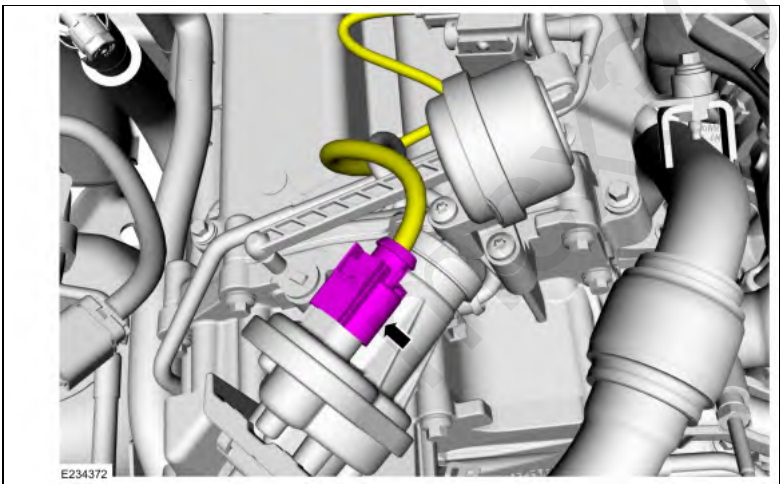
1. Drain the cooling system.
Refer to: Engine Cooling System Draining, Vacuum Filling and Bleeding (303-03B Engine Cooling - 6.7L Power Stroke Diesel, General Procedures).
2. Remove the air cleaner outlet pipe and the air cleaner.
Refer to: Air Cleaner Outlet Pipe (303-12B Intake Air Distribution and Filtering - 6.7L Power Stroke Diesel, Removal and Installation).
Refer to: Air Cleaner (303-12B Intake Air Distribution and Filtering - 6.7L Power Stroke Diesel, Removal and Installation).
3. Remove the upper intake manifold.
Refer to: Upper Oil Pan (303-01B Engine - 6.7L Power Stroke Diesel, Removal and Installation).
4. Disconnect the coolant hose.
Refer to: Quick Release Coupling (310-00 Fuel System - General Information - 6.7L Power Stroke Diesel).



5. Disconnect the EGR valve coolant vent hose from the EGR valve.
Use the General Equipment: Hose Clamp Remover/Installer



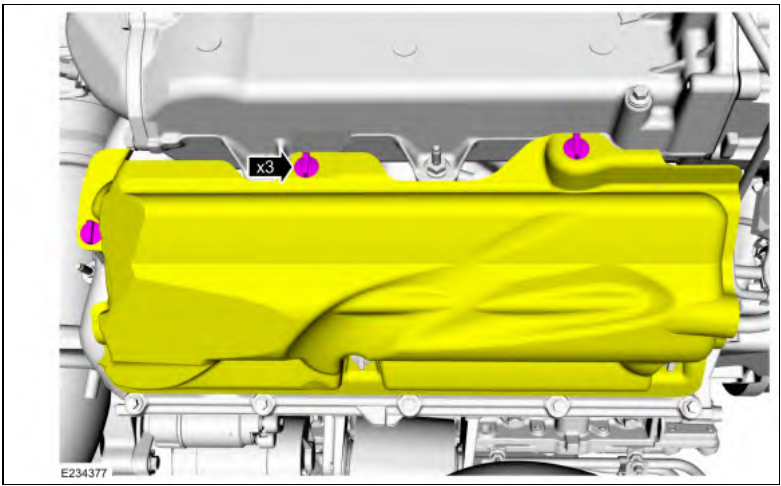
6. Disconnect the EGR valve electrical connector.



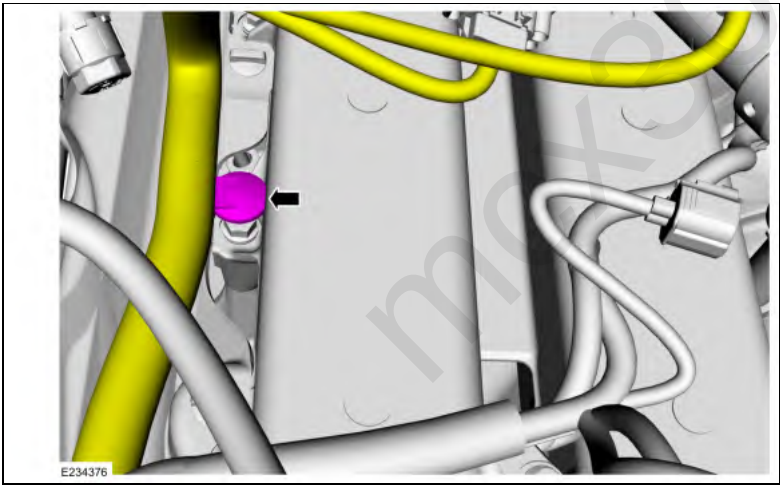
7. Disconnect the electrical connector and the vacuum hoses from the EGR bypass valve solenoid. Detach the wiring harness retainers.



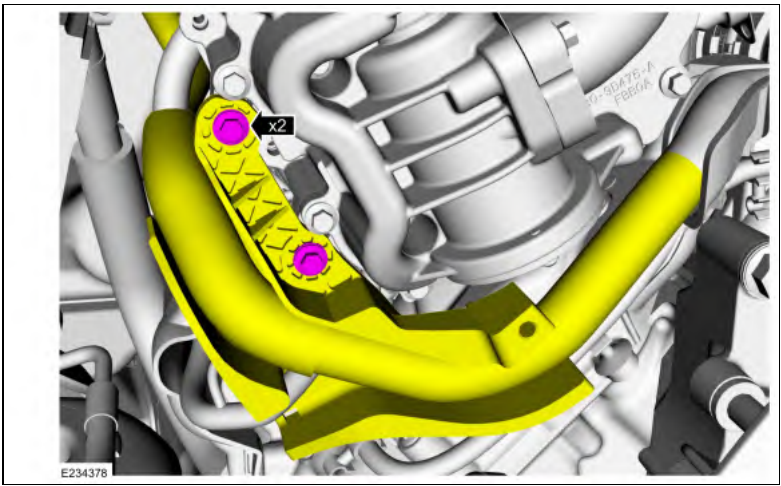
9. Remove the RH upper sound shield retainers and position the RH upper sound shield aside.



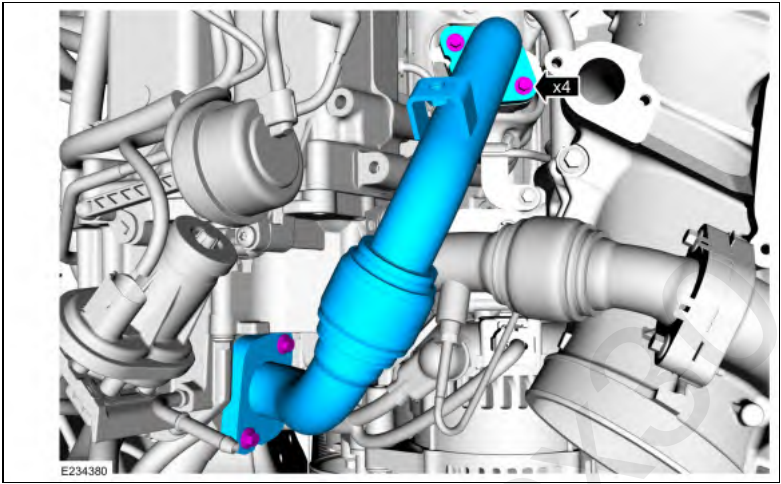
10. Detach the wire harness retainer and position the wire harness out of the way.



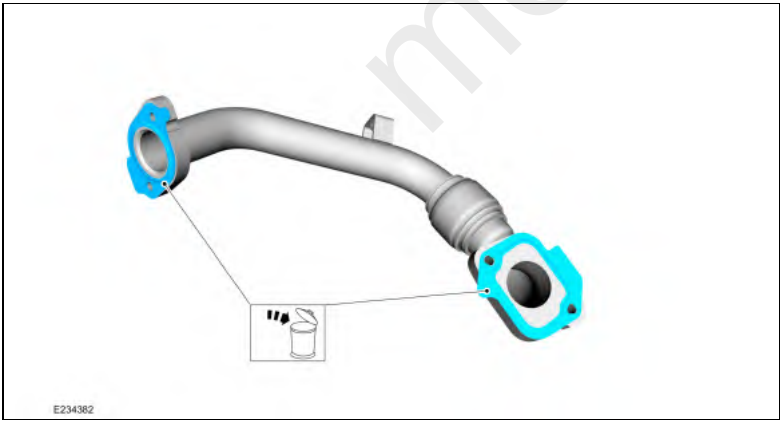
11. Remove the engine wire harness bolts and then position the engine wire harness out of the way.



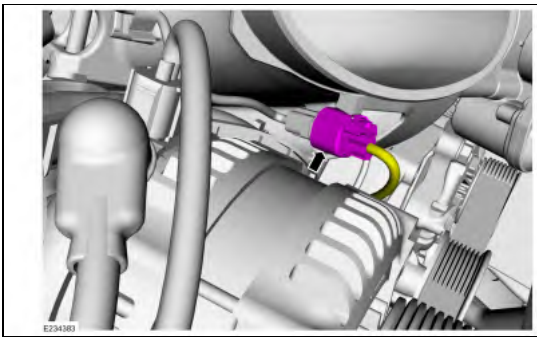
12. Remove the bolts and the EGR valve inlet tube.



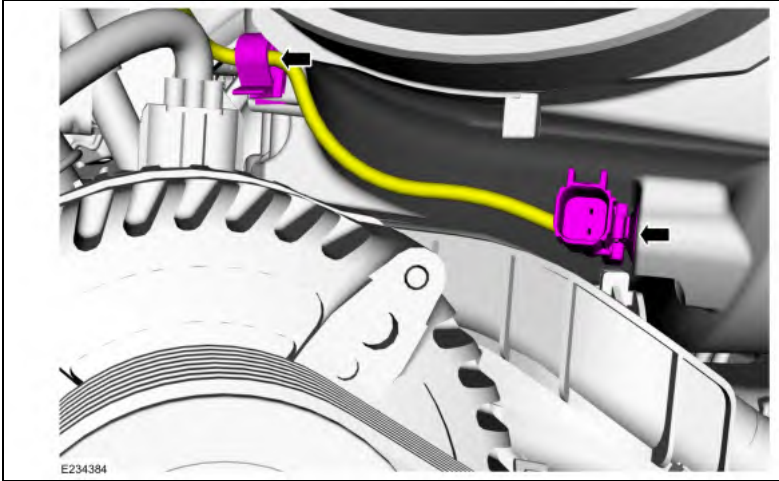
13. Remove and discard the EGR valve inlet tube gaskets.



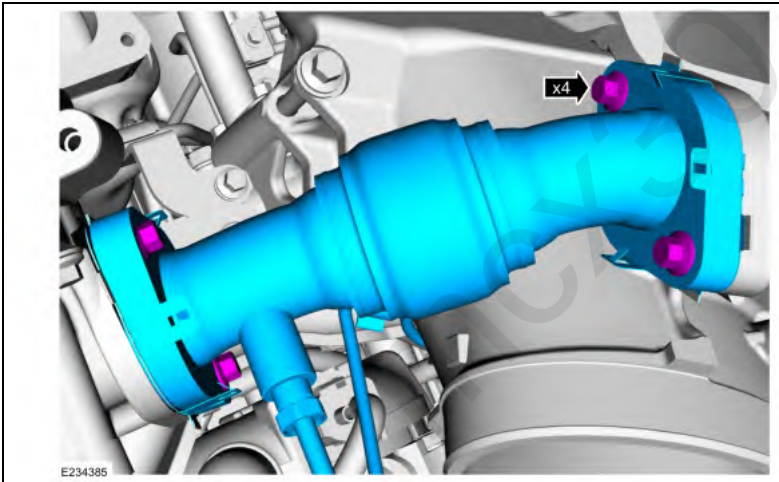
14. Disconnect the EGRT (exhaust gas recirculation temperature) sensor electrical connector.



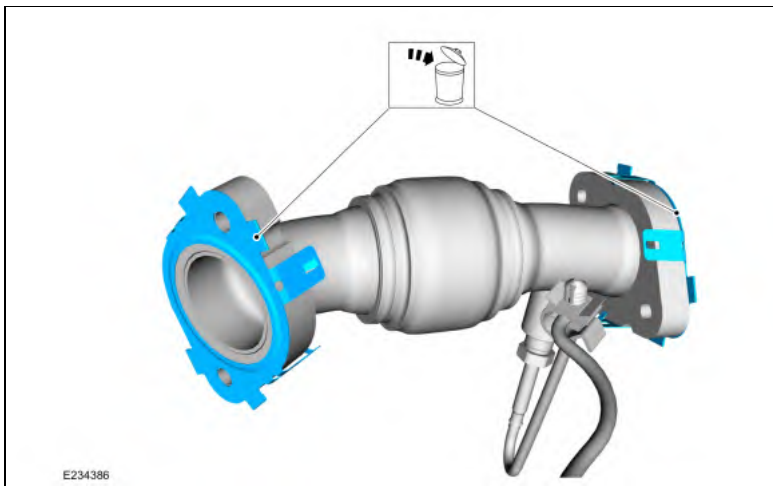
15. Detach the EGRT (exhaust gas recirculation temperature) sensor electrical connector retainer and the wire harness retainer.



16. Remove the EGR cooler outlet pipe bolts and the EGR cooler outlet pipe.

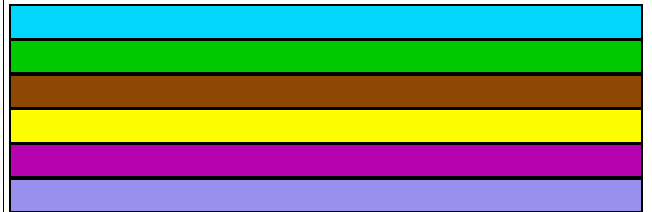
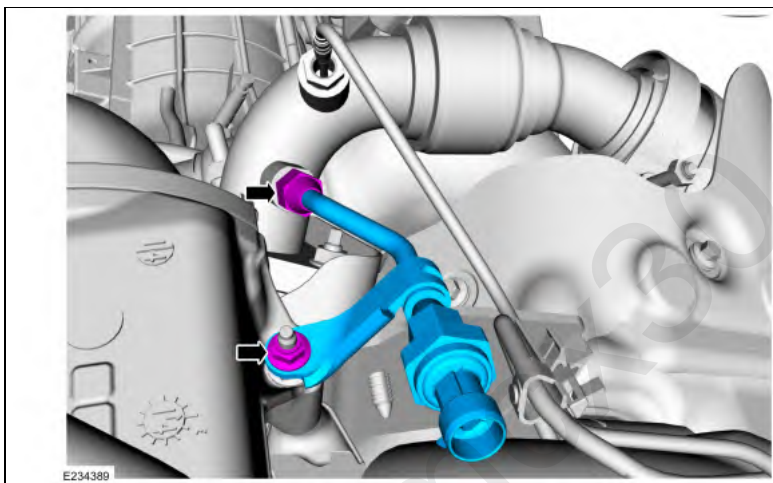


17. Remove and discard the EGR outlet pipe gaskets.

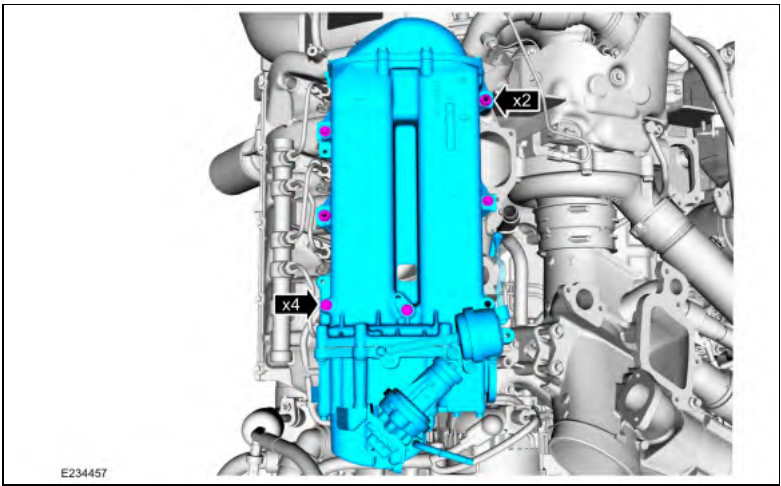


18.

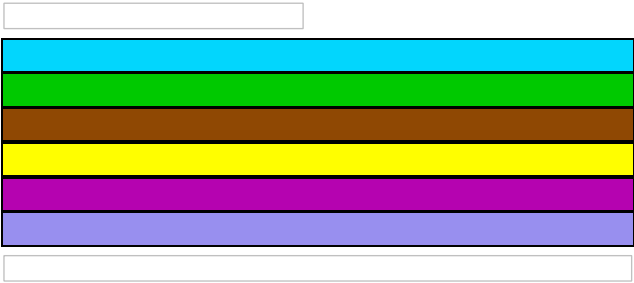
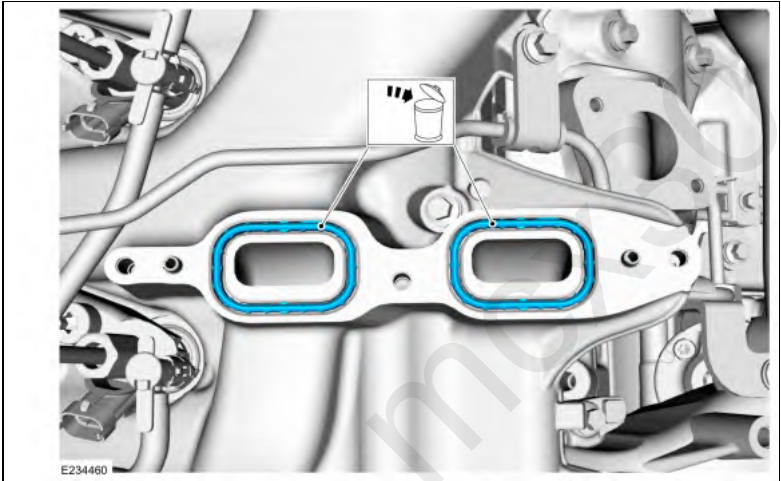
- Remove the exhaust pressure sensor assembly bracket nut.
- Loosen the exhaust pressure sensor tube assembly flare nut and remove the exhaust pressure sensor tube assembly.



19. Remove the bolts and then remove the EGR cooler assembly.



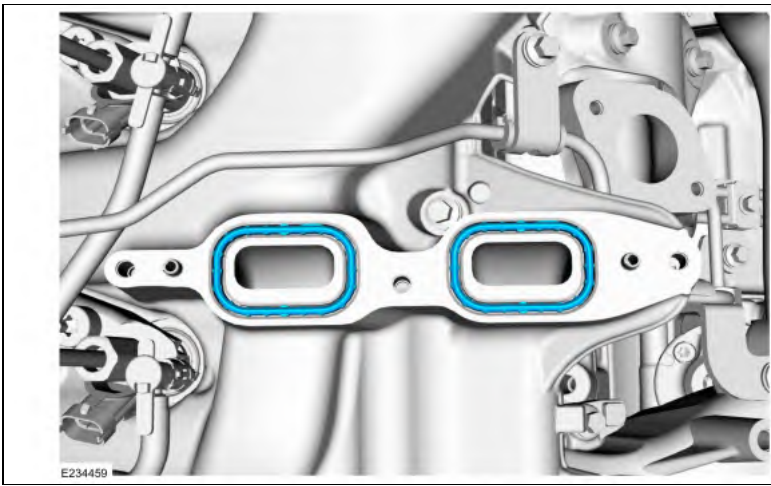
20. Remove and discard the EGR cooler gaskets.



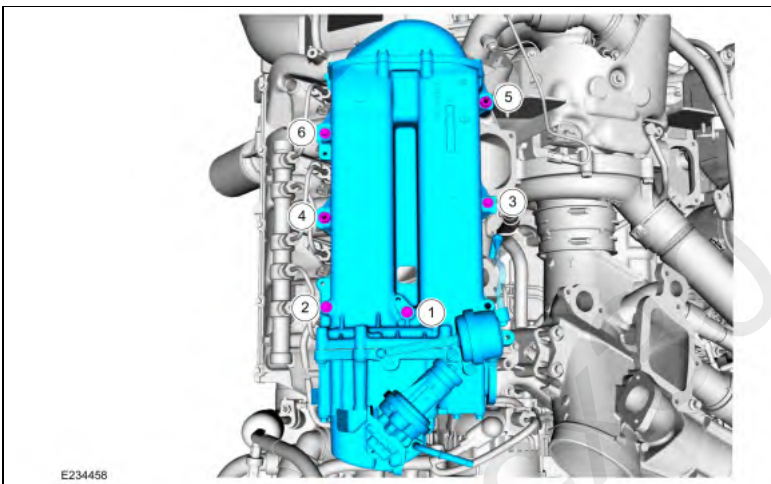
Installation

NOTICE: Make sure that the mating surfaces are clean and free of foreign material.

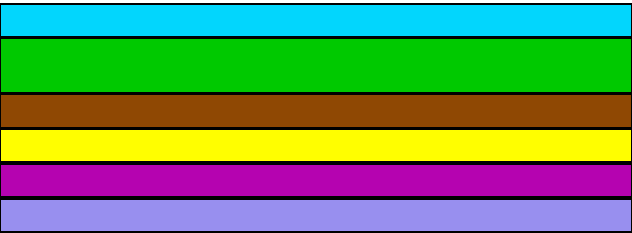
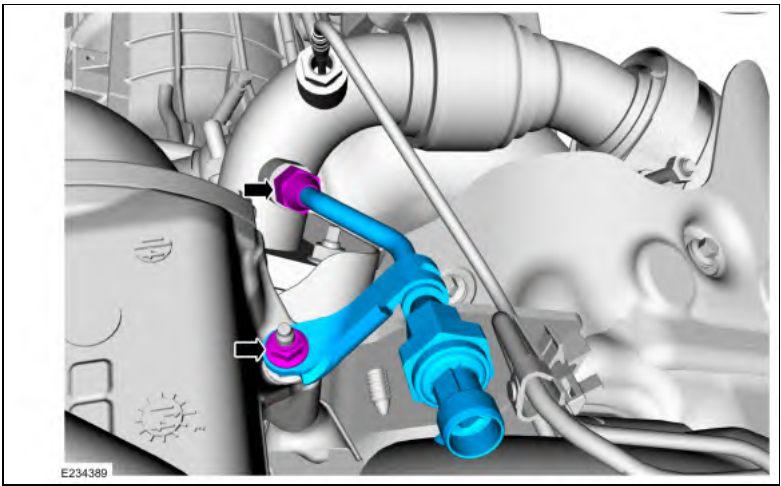
- 1. Clean the mating surfaces. Install the new EGR cooler gaskets.



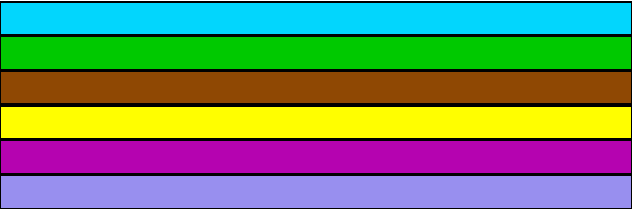
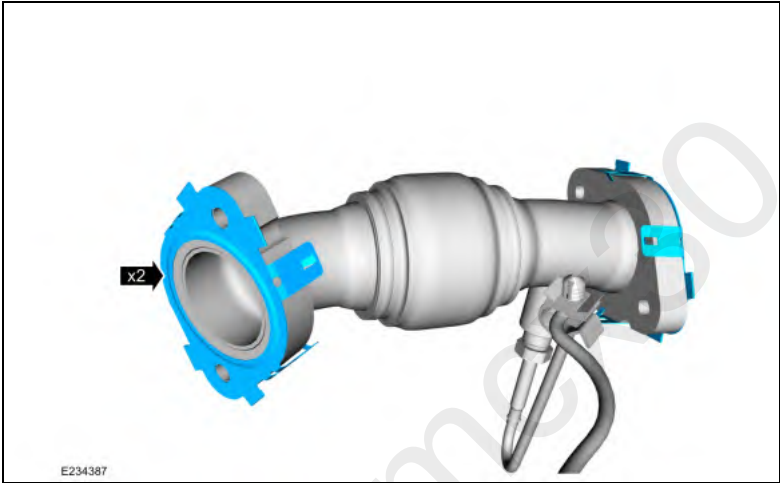
2. Install the EGR cooler assembly and then install and tighten the EGR cooler bolts in the sequence shown.
Torque: 89 lb.in (10 Nm)



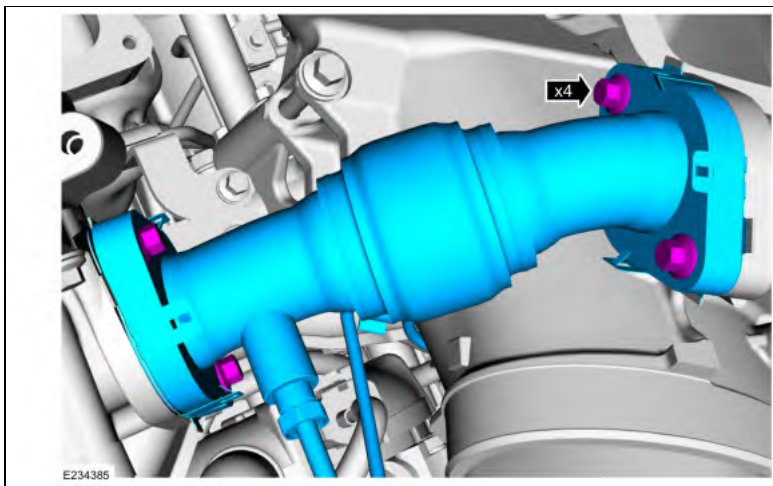
3. Install the exhaust pressure sensor tube assembly and exhaust pressure sensor assembly bracket nut. Hand tighten the exhaust pressure sensor tube assembly flare nut and bracket nut.
Torque:
Exhaust pressure sensor tube assembly flare nut : 133 lb.in (15 Nm)
Exhaust pressure sensor tube assembly bracket nut : 89 lb.in (10 Nm)
Exhaust pressure sensor tube assembly flare nut : 177 lb.in (20 Nm)



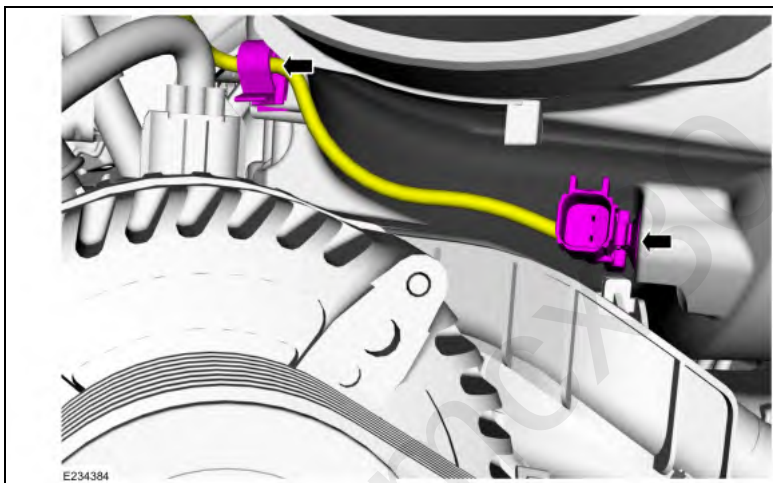
4. Install the new EGR outlet pipe gaskets.



5. Install the EGR cooler outlet pipe and the EGR cooler outlet pipe bolts.
Torque: 89 lb.in (10 Nm)

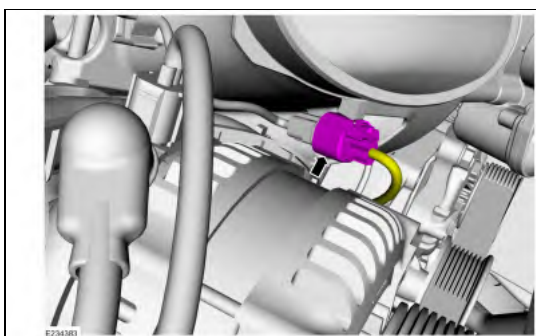


6. Attach the EGRT (exhaust gas recirculation temperature) electrical connector retainer and the wiring harness retainer.

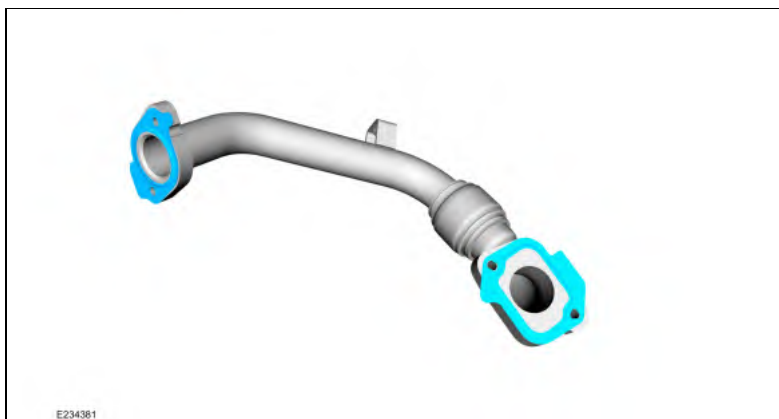


A horizontal bar chart consisting of six equally long bars stacked vertically. From top to bottom, the colors are cyan, green, brown, yellow, magenta, and light blue. Each bar has a thin black outline.

7. Connect the EGRT (exhaust gas recirculation temperature) sensor electrical connector.



8. Install the new EGR valve inlet tube gaskets.



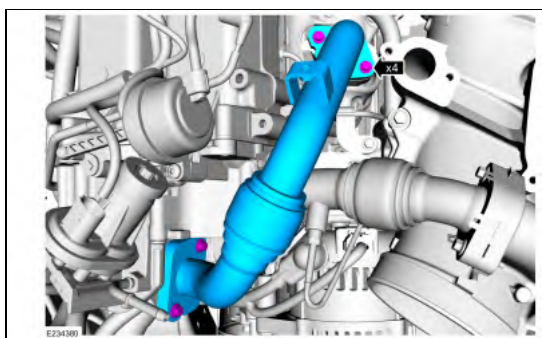
9.

- Install the EGR valve inlet tube and the bolts.

Torque:

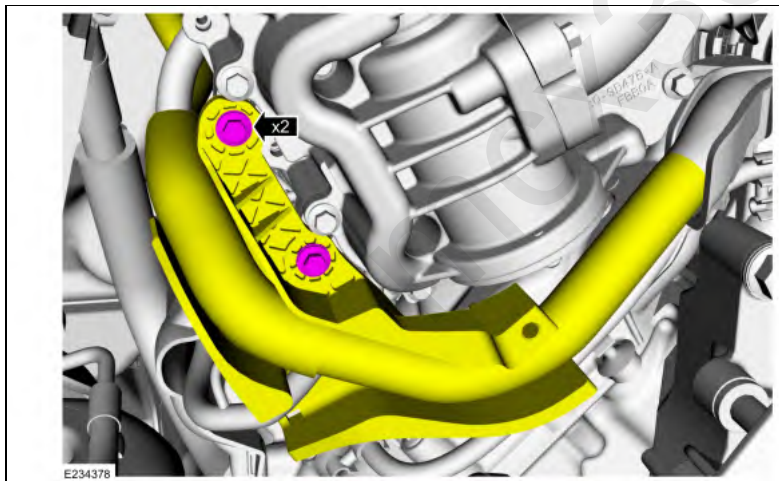
Tighten the bolts at the exhaust manifold. : 89 lb.in (10 Nm)

Tighten the bolts at the EGR cooler. : 89 lb.in (10 Nm)

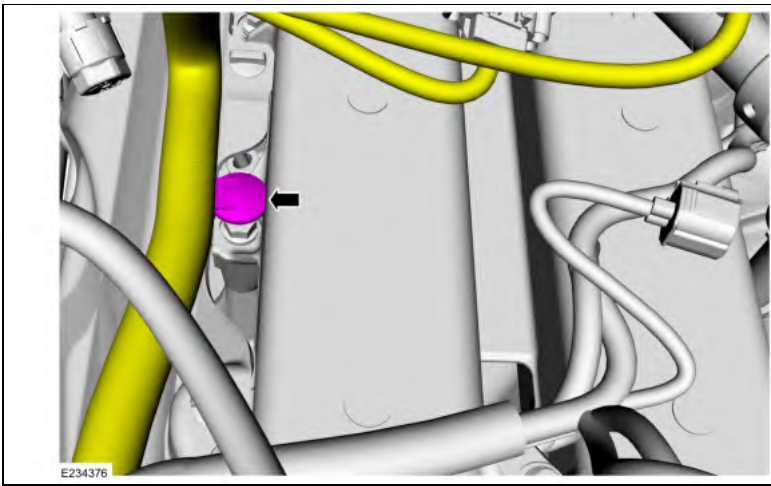


10. Install the engine wire harness, then install and tighten the engine wire harness bolts.

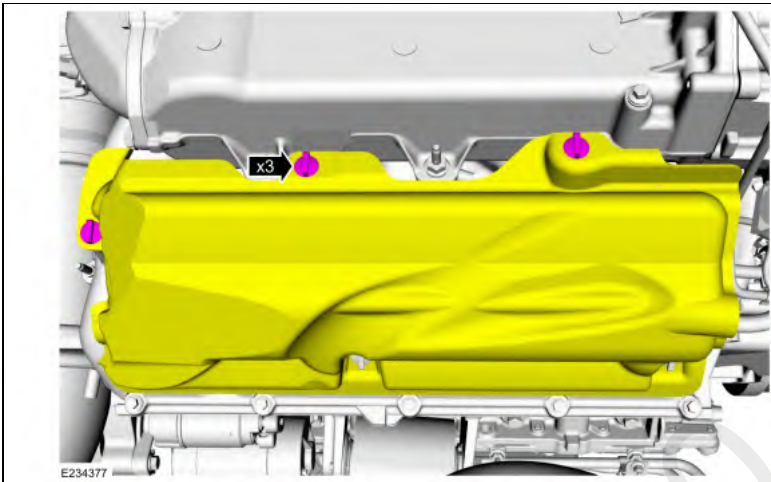
Torque: 80 lb.in (9 Nm)



11. Attach the wire harness retainer.



12. Install the RH upper sound shield and then install the RH upper sound shield retainers.



13. Install the EGR cooler inlet tube bracket and hand start the bolts.

Torque:

Bolt 1:

Stage 1: 89 lb.in (10 Nm)

Stage 2: 45Å°

Bolt 2:

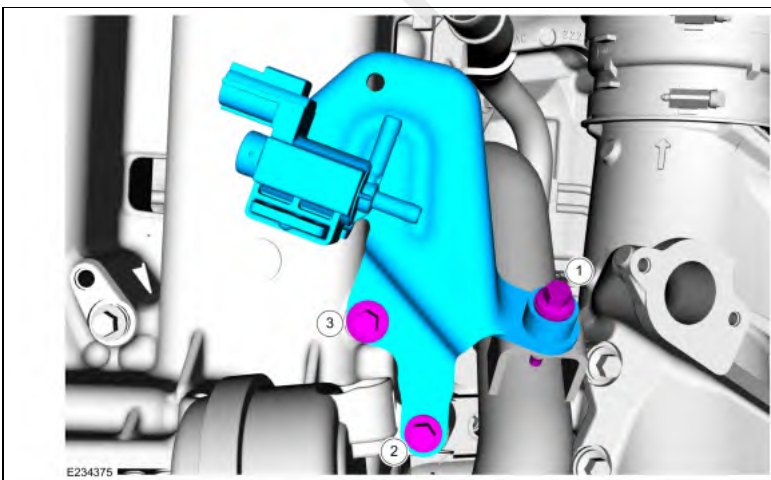
Stage 3: 89 lb.in (10 Nm)

Stage 4: 45Å°

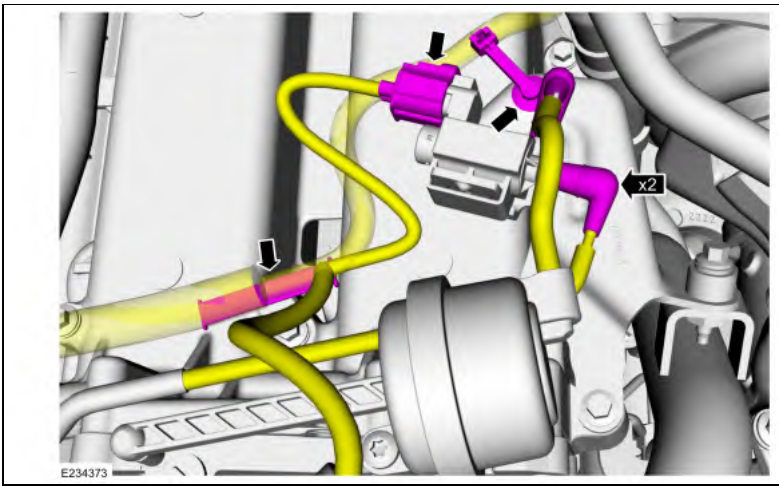
Bolt 3:

Stage 5: 89 lb.in (10 Nm)

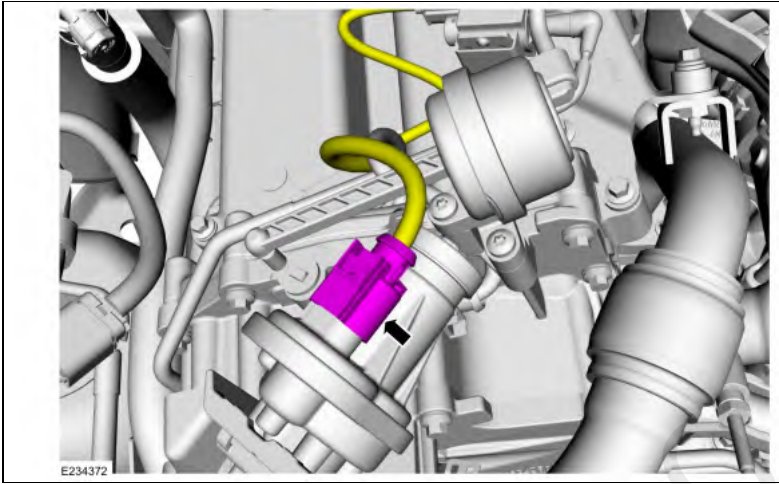
Stage 6: 45Å°



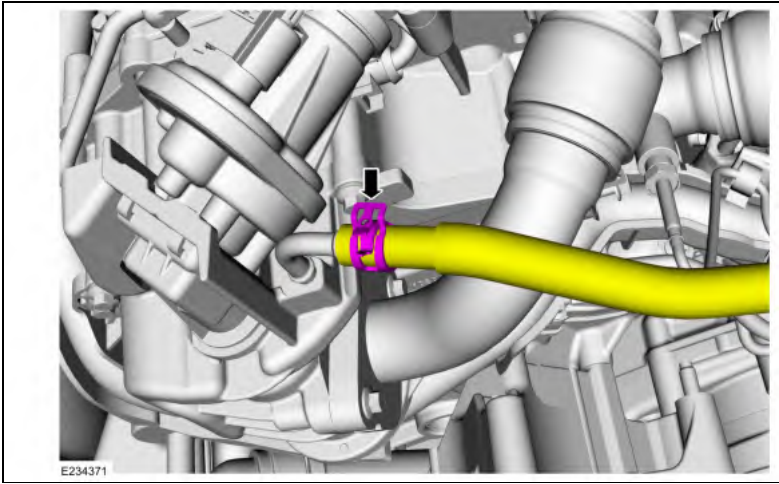
14. Connect the electrical connector and the vacuum tubes to the EGR bypass valve solenoid. Attach the wiring harness retainers.



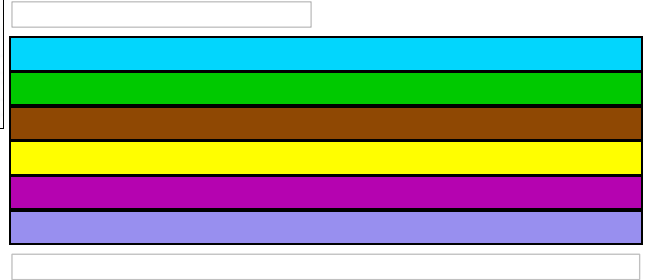
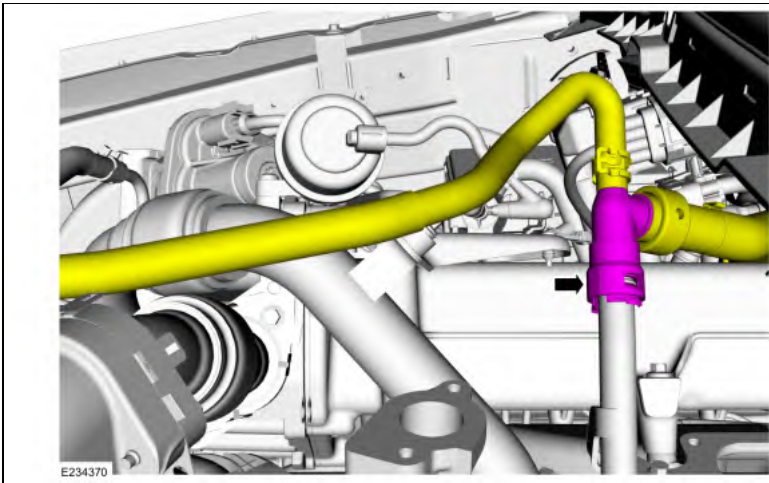
15. Connect the EGR valve electrical connector.



16. Connect the EGR valve coolant vent hose to the EGR valve.
Use the General Equipment: Hose Clamp Remover/Installer



17. Connect the coolant hose.
Refer to: Quick Release Coupling (310-00 Fuel System - General Information - 6.7L Power Stroke Diesel) .



18. Install the upper intake manifold.
Refer to: Upper Oil Pan (303-01B Engine - 6.7L Power Stroke Diesel, Removal and Installation).
19. Install the air cleaner outlet pipe and the air cleaner.
Refer to: Air Cleaner Outlet Pipe (303-12B Intake Air Distribution and Filtering - 6.7L Power Stroke Diesel, Removal and Installation).
Refer to: Air Cleaner (303-12B Intake Air Distribution and Filtering - 6.7L Power Stroke Diesel, Removal and Installation).
20. **NOTICE:** Evaluate the cooling system condition before filling the engine cooling system. Failure to follow these instructions can result in damage to the engine.
- Evaluate the cooling system condition.
Refer to: Engine Cooling System Condition Evaluation (303-03B Engine Cooling - 6.7L Power Stroke Diesel, General Procedures).