

Coolant Crossover Manifold

Materials

Name	Specification
Motorcraft® Metal Brake Parts Cleaner - PM-4-A, PM-4-B	-

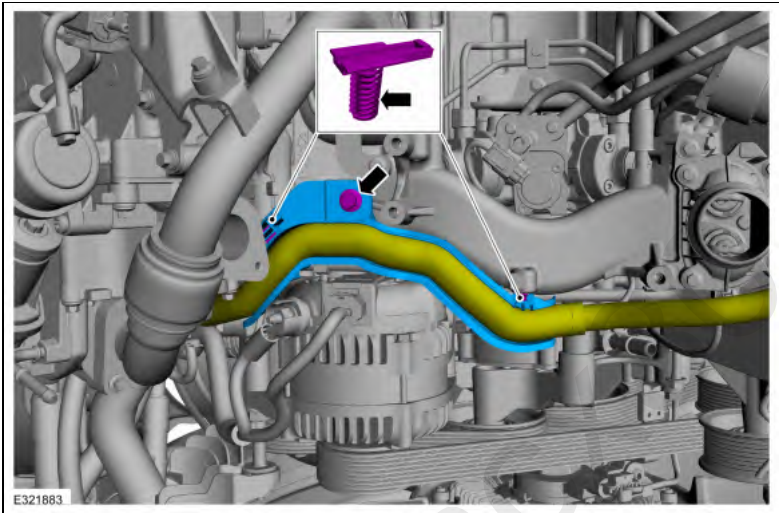
Removal

NOTE: Removal steps in this procedure may contain installation details.

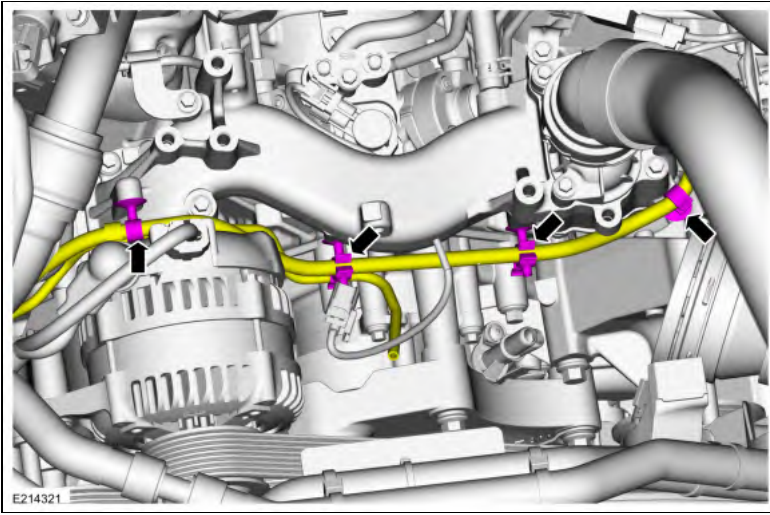
1. Drain the cooling system.
Refer to: Engine Cooling System Draining, Vacuum Filling and Bleeding (303-03B Engine Cooling - 6.7L Power Stroke Diesel, General Procedures).
2. Remove the lower intake manifold.
Refer to: Lower Intake Manifold (303-01B Engine - 6.7L Power Stroke Diesel, Removal and Installation).

NOTICE: Do not remove the retainers from the coolant crossover. The retainers are inserted into threaded holes. If it is necessary to remove the retainers, first detach the hoses, then unscrew the retainers. Failure to follow these instructions may damage the retainers.

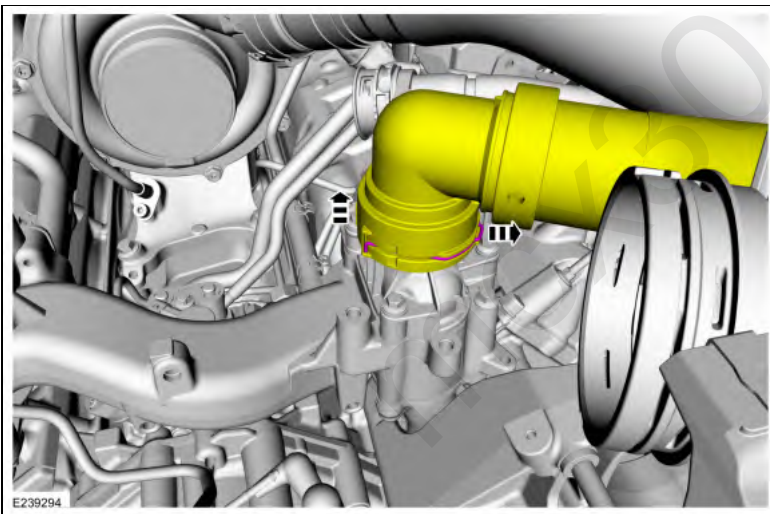
3. Remove the bolt. Disconnect the engine wire harness bracket retainers and position the engine wiring harness aside.
Torque: 106 lb.in (12 Nm)



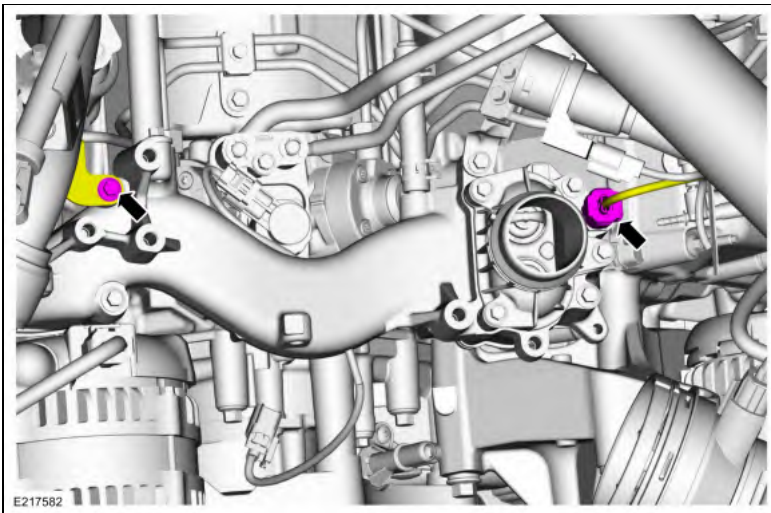
4. Detach the fuel return hose and the vacuum hose assembly from the retainers.



5. Pull the upper radiator hose spring clip up until the end of the clip is in the detent on the quick connect coupling and disconnect the upper radiator hose from the coolant crossover.

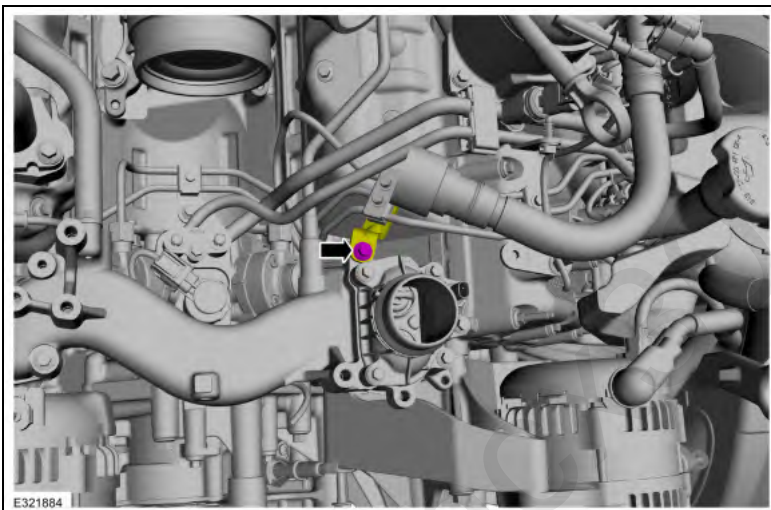


6. Disconnect the ECT sensor electrical connector and remove the RH fuel tube bracket bolt.
Torque: 89 lb.in (10 Nm)



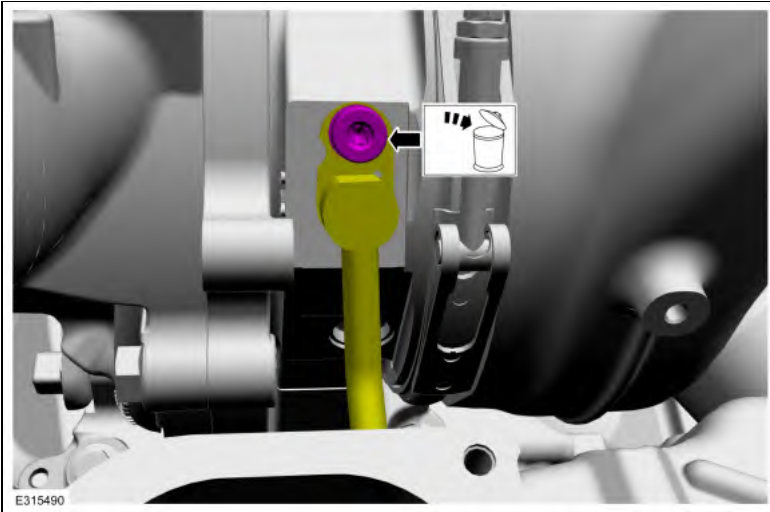


7. Remove the LH fuel tube bracket bolt.
Torque: 89 lb.in (10 Nm)

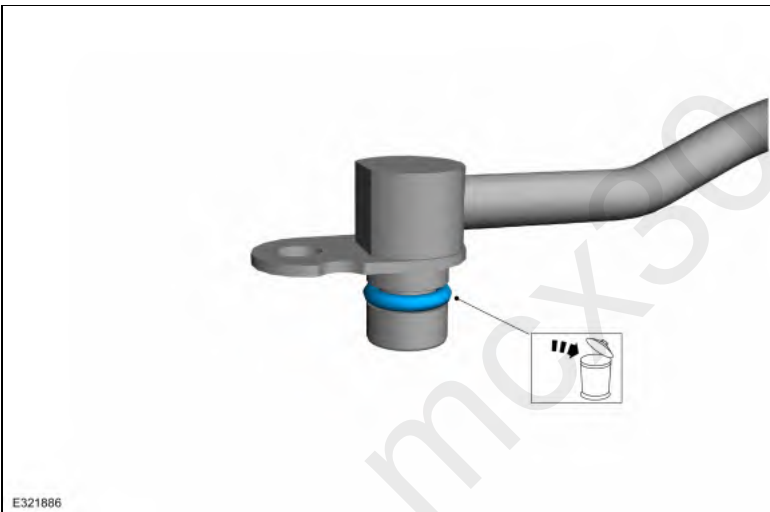




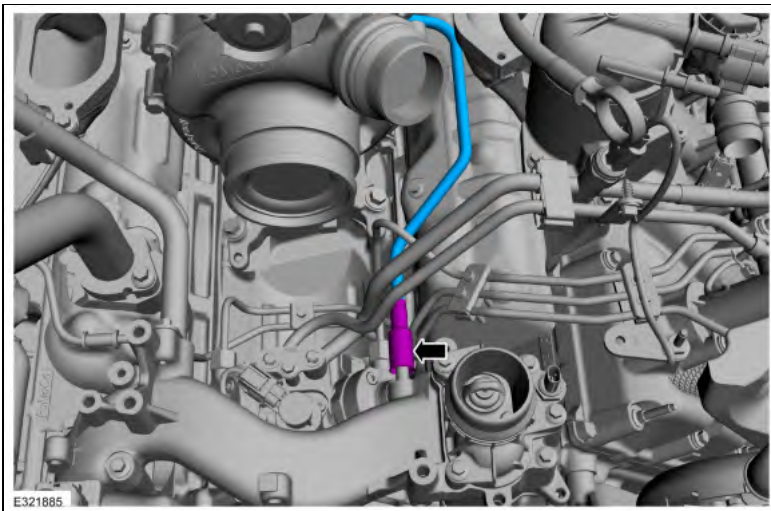
8. Remove and discard the turbocharger coolant return tube bolt, then disconnect the turbocharger coolant return tube.
Torque:
Stage 1: 106 lb.in (12 Nm)
Stage 2: 30°



9. Remove and discard the turbocharger coolant return tube O-ring seal.



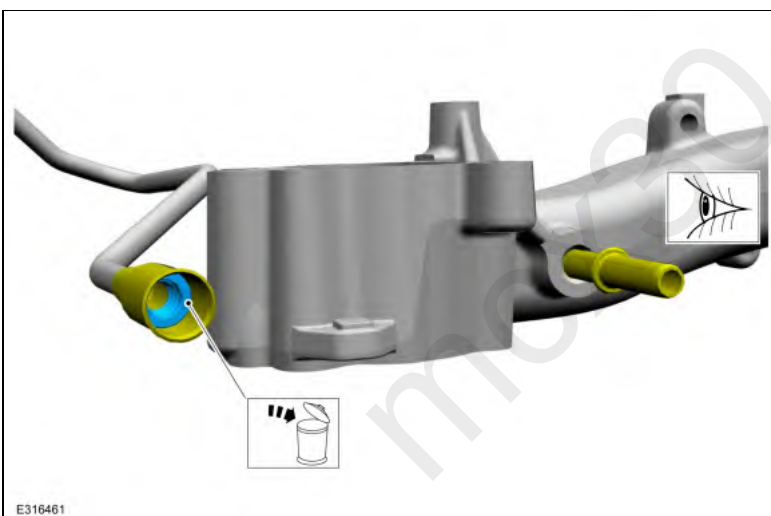
10. Disconnect and remove the turbocharger coolant return tube.



11. **NOTICE:** Use brake cleaner and a nylon brush to clean. Do not use a metal brush, damage to sealing area will result in leaks.

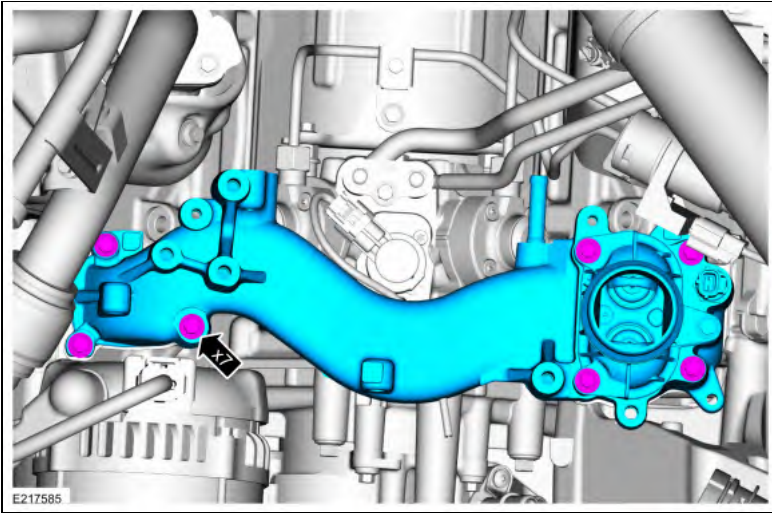
Remove and discard the rubber gasket. Inspect and clean the turbocharger cooling tube sealing surfaces, install new components if necessary.

Material: Motorcraft® Metal Brake Parts Cleaner / PM-4-A, PM-4-B

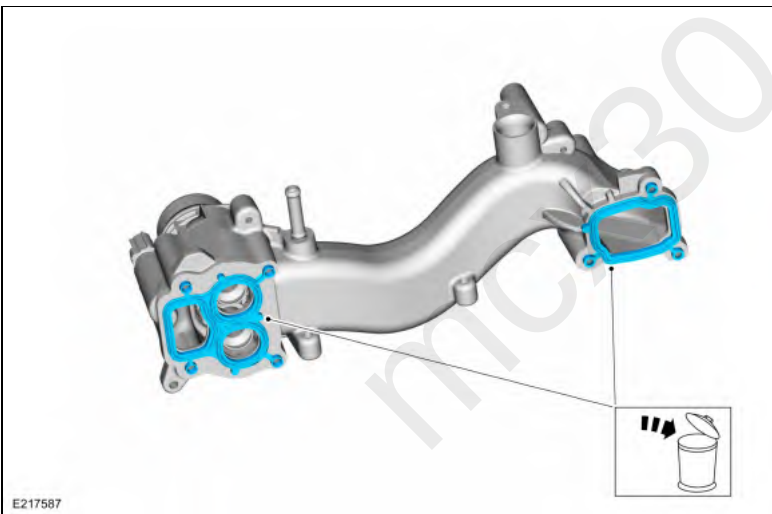


12. Remove the coolant crossover-to-EGR cooler pipe bolts and then remove the coolant crossover-to- EGR cooler pipe.
Torque: 89 lb.in (10 Nm)





15. Remove and discard the gaskets.



Installation

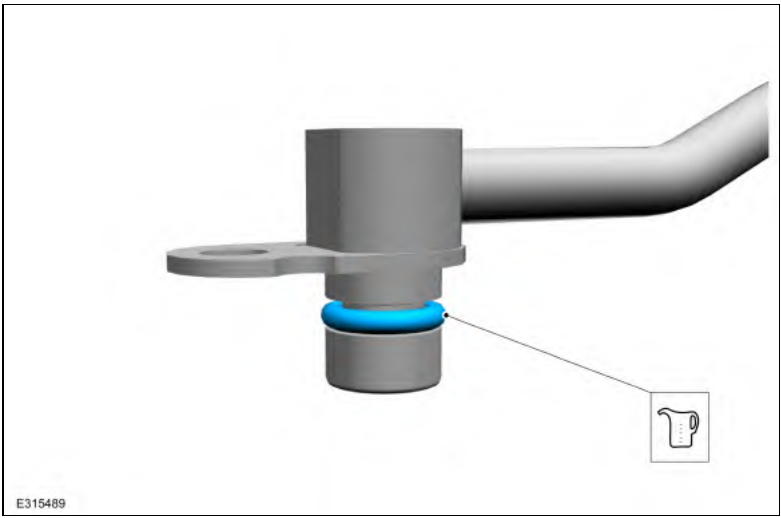
1. Install a new O-ring seal and lubricate it with clean engine coolant.
Refer to: Specifications (303-03B Engine Cooling - 6.7L Power Stroke Diesel, Specifications).



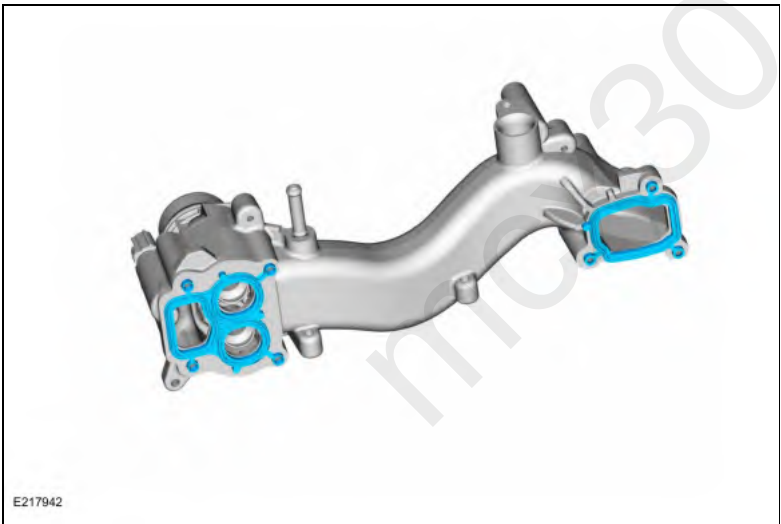
2. Install the new turbocharger cooling tube rubber gasket, then lubricate with clean engine coolant.
Refer to: Specifications (303-03B Engine Cooling - 6.7L Power Stroke Diesel, Specifications).



3. Install a new turbocharger coolant return tube O-ring seal, lubricate the O-ring seal with clean engine coolant.
Refer to: Specifications (303-03B Engine Cooling - 6.7L Power Stroke Diesel, Specifications).



4. Install new gaskets.



5. To install, reverse the removal procedure.

NOTICE: Evaluate the cooling system condition before filling the cooling system. Failure to follow these instructions can damage the engine.

6. Evaluate the cooling system condition.

Refer to: Engine Cooling System Condition Evaluation (303-03B Engine Cooling - 6.7L Power Stroke Diesel, General Procedures).

