

303-03 Engine Cooling - 2.3L EcoBoost (201kW/273PS)
Removal and Installation

2019 Ranger
Procedure revision date: 01/7/2019

Coolant Outlet Connector


Special Tool(s) / General Equipment

Hose Clamp Remover/Installer

Materials

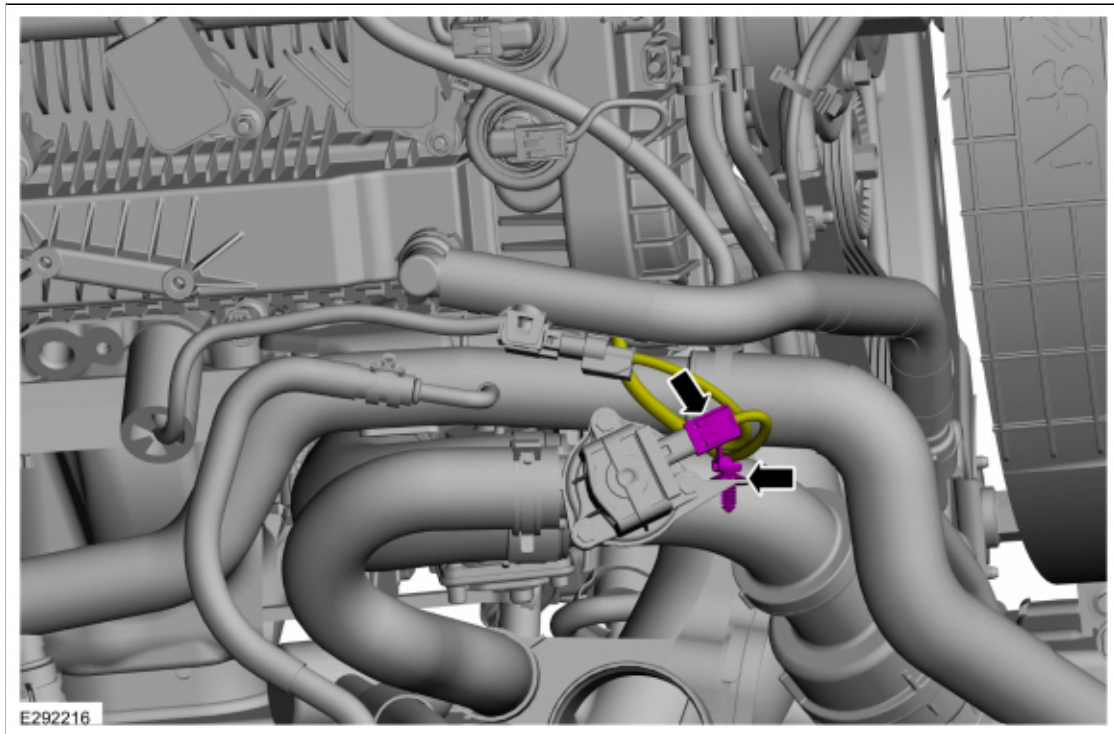
Name	Specification
Motorcraft® Orange Prediluted Antifreeze/Coolant VC-3DIL-B	WSS-M97B44-D2
Motorcraft® Yellow Concentrated Antifreeze/Coolant VC-13-G	WSS-M97B57-A1
Motorcraft® Yellow Prediluted Antifreeze/Coolant VC-13DL-G	WSS-M97B57-A2
Motorcraft® Orange Concentrated Antifreeze/Coolant VC-3-B	WSS-M97B44-D

Removal

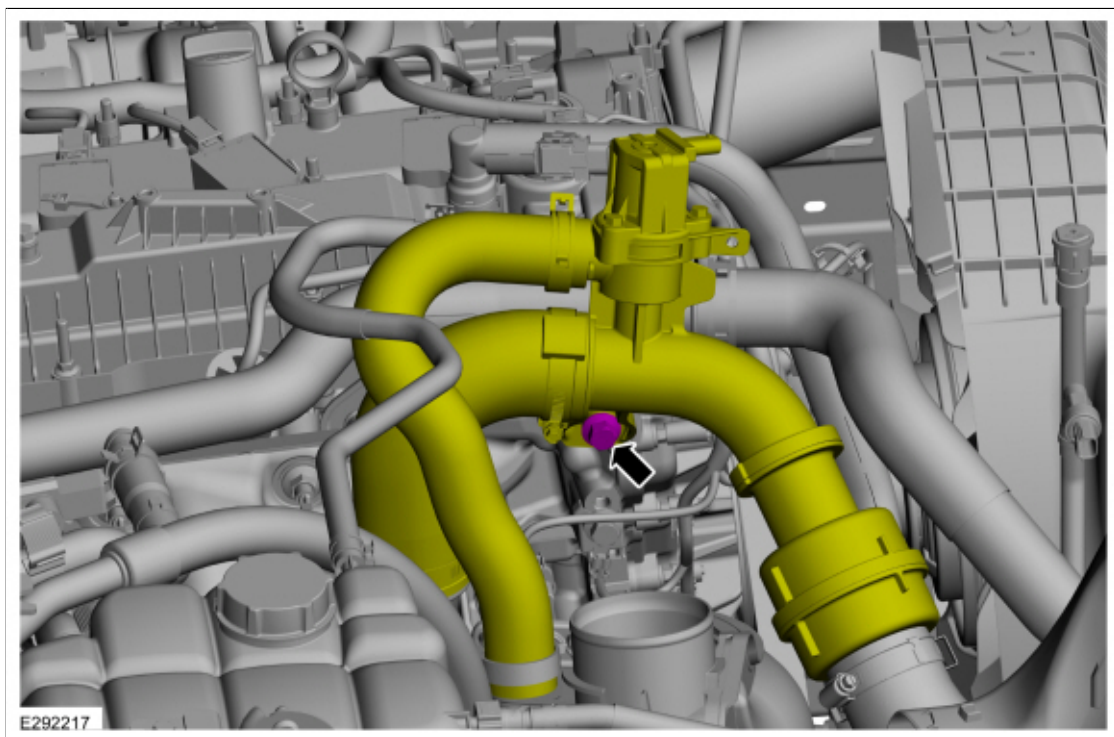
 **WARNING:** Always allow the engine to cool before opening the cooling system. Do not unscrew the coolant pressure relief cap when the engine is operating or the cooling system is hot. The cooling system is under pressure; steam and hot liquid can come out forcefully when the cap is loosened slightly. Failure to follow these instructions may result in serious personal injury.

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

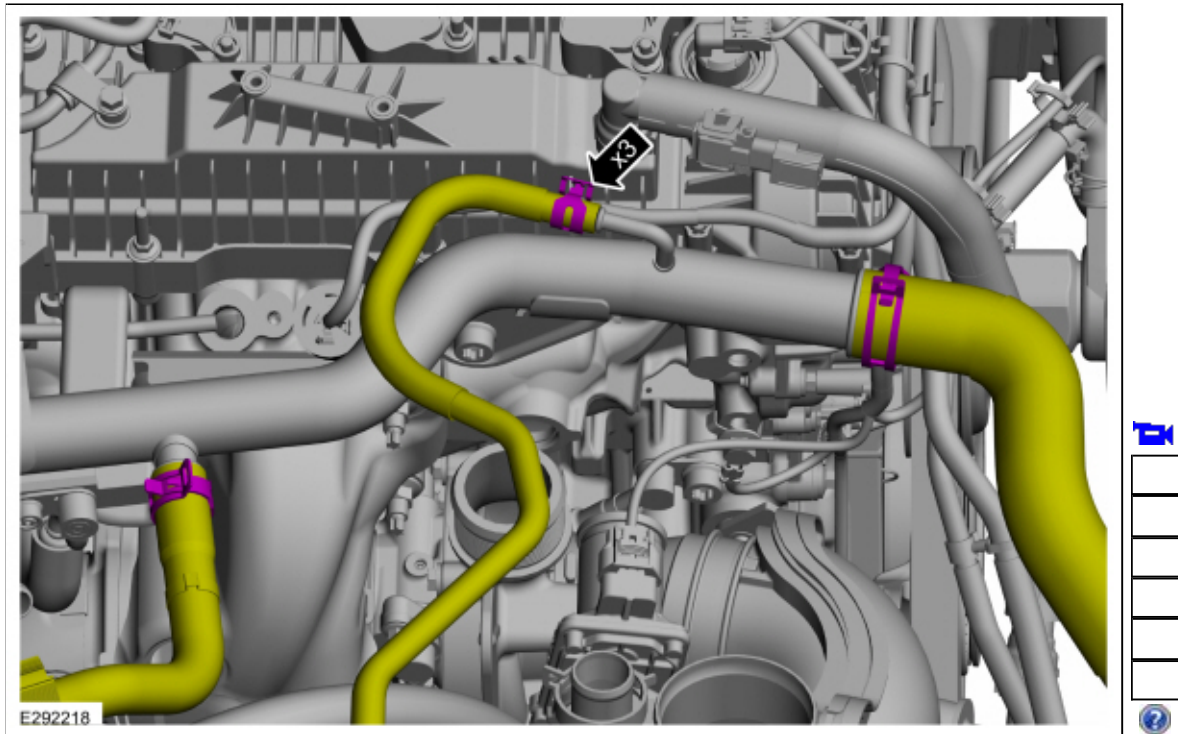
1. Drain the cooling system.
Refer to: [Cooling System Draining, Vacuum Filling and Bleeding](#) (303-03 Engine Cooling - 2.3L EcoBoost (201kW/273PS), General Procedures).
2. Remove the EGR cooler.
Refer to: [Exhaust Gas Recirculation \(EGR\) Cooler](#) (303-08 Engine Emission Control - 2.3L EcoBoost (201kW/273PS), Removal and Installation).
3.
 - Detach the electrical wiring harness retainer.
 - Disconnect the electrical connector.



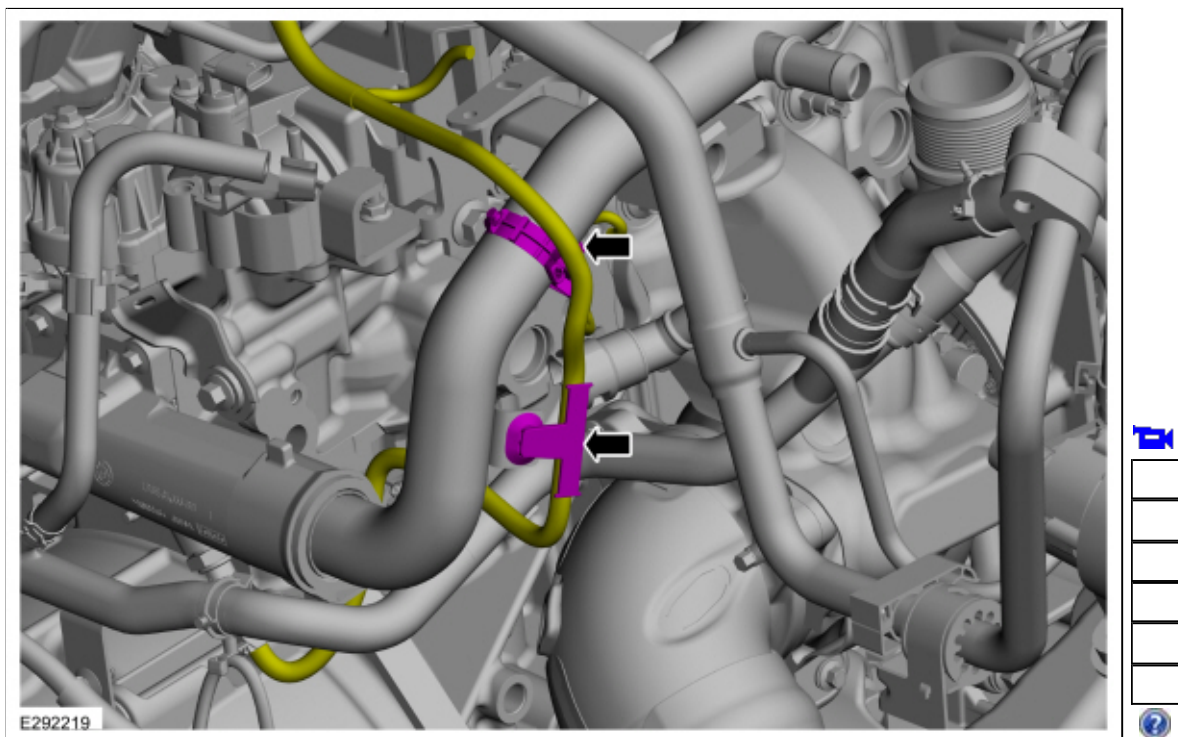
4. Remove the bolt and position the CAC tube aside.



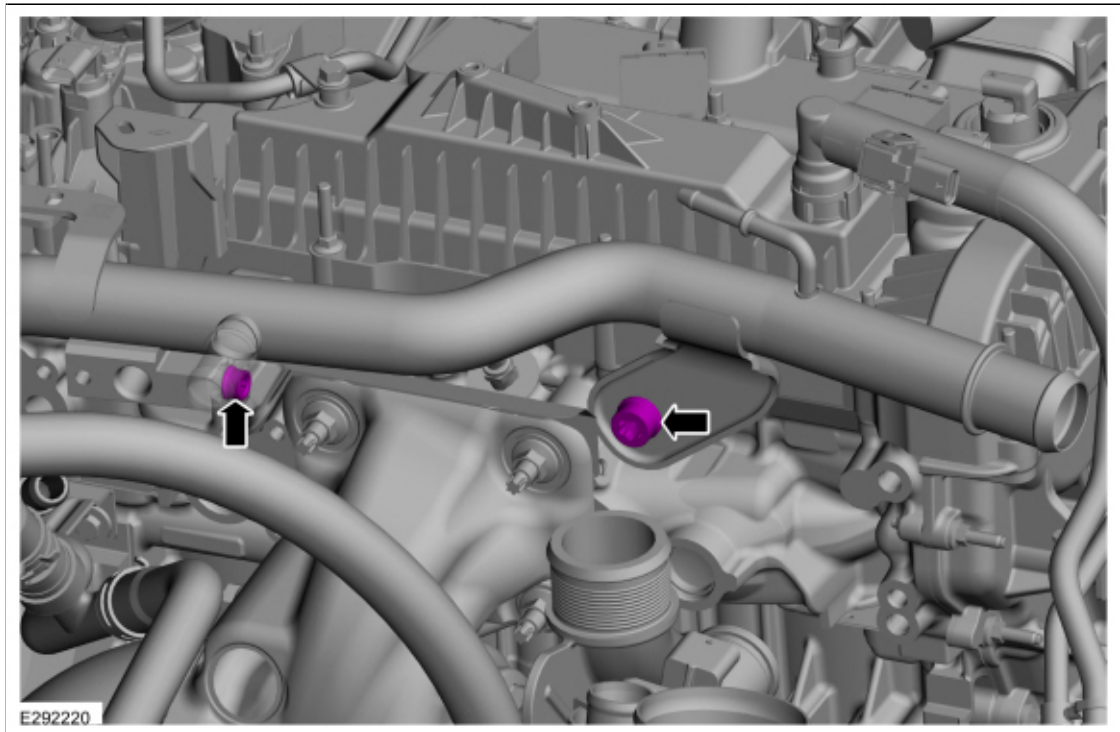
5. Release the clamps and disconnect the coolant hoses.
Use the General Equipment: Hose Clamp Remover/Installer



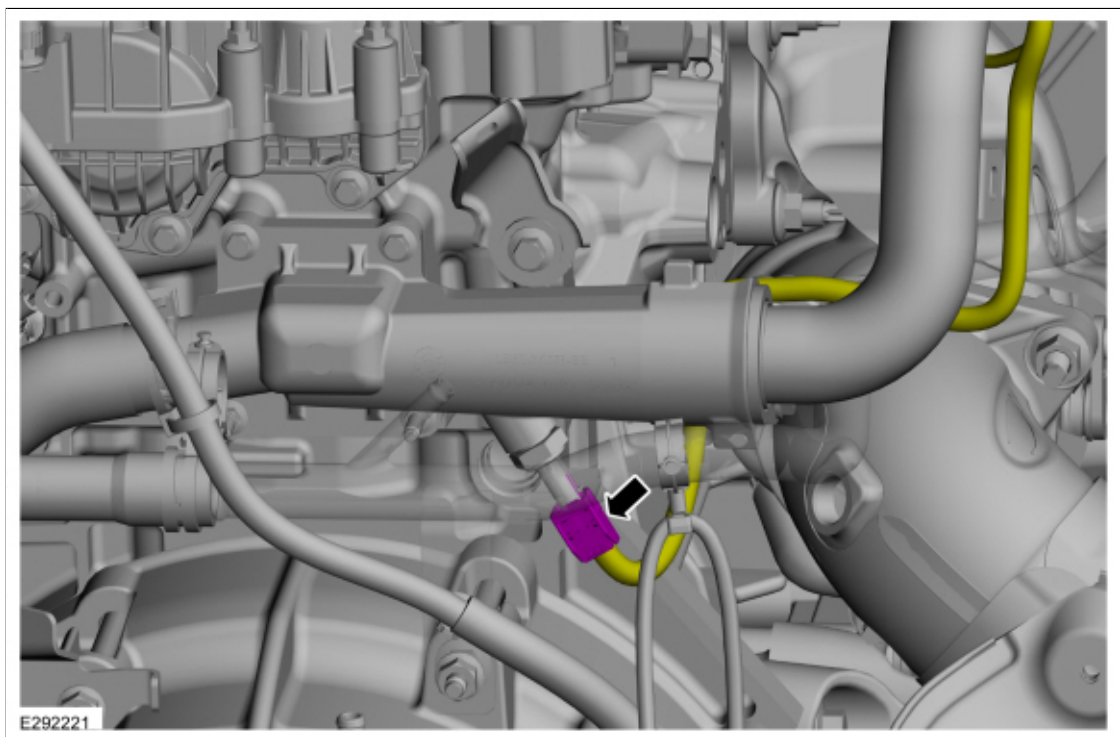
6. Detach the electrical wiring harness retainers.



7. Remove the bolts.

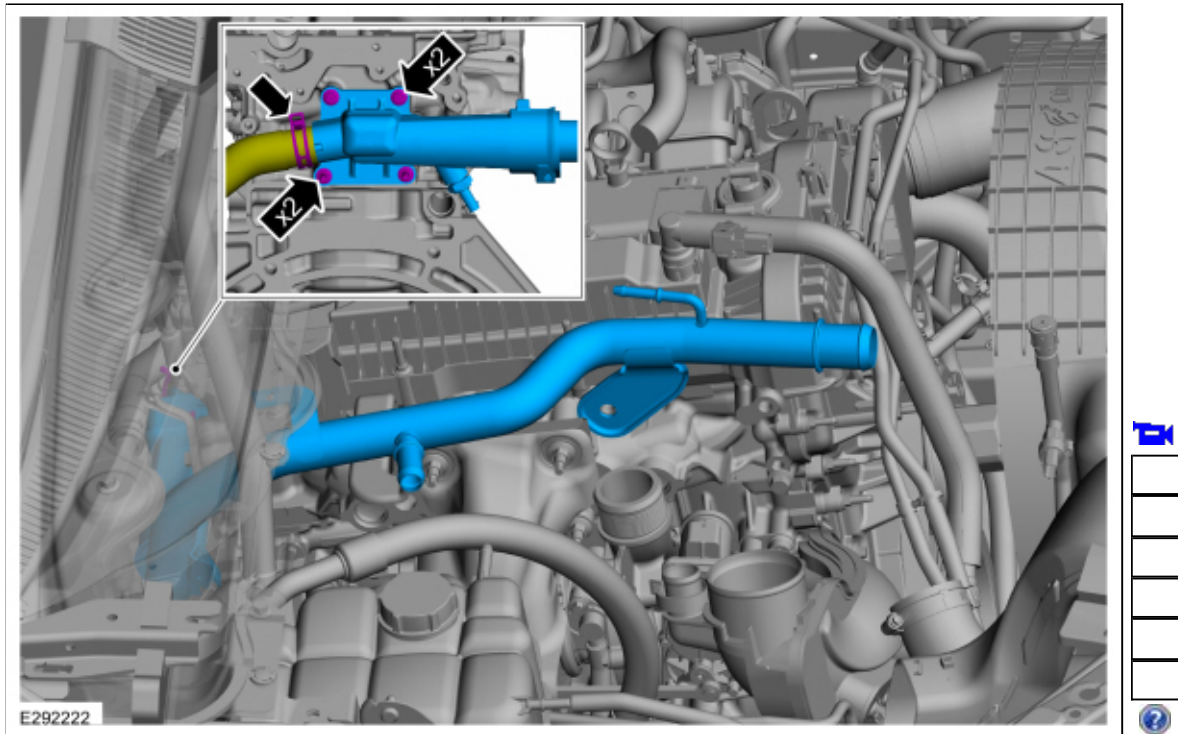


8. Disconnect the electrical connector.

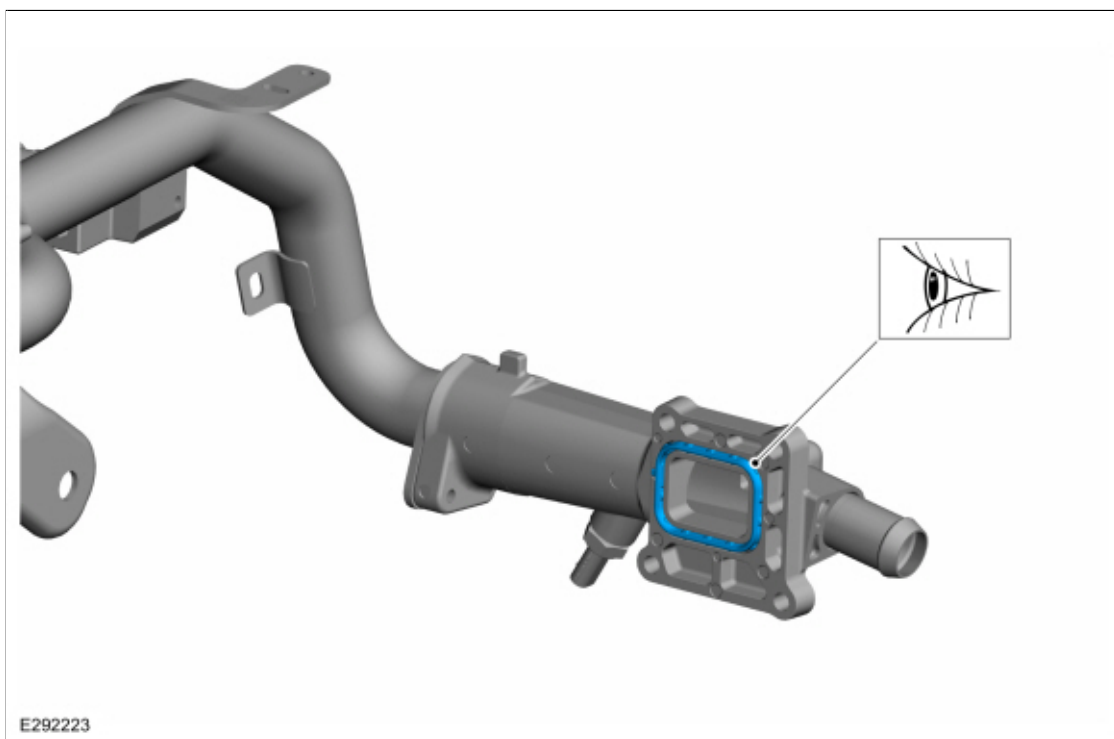


9.

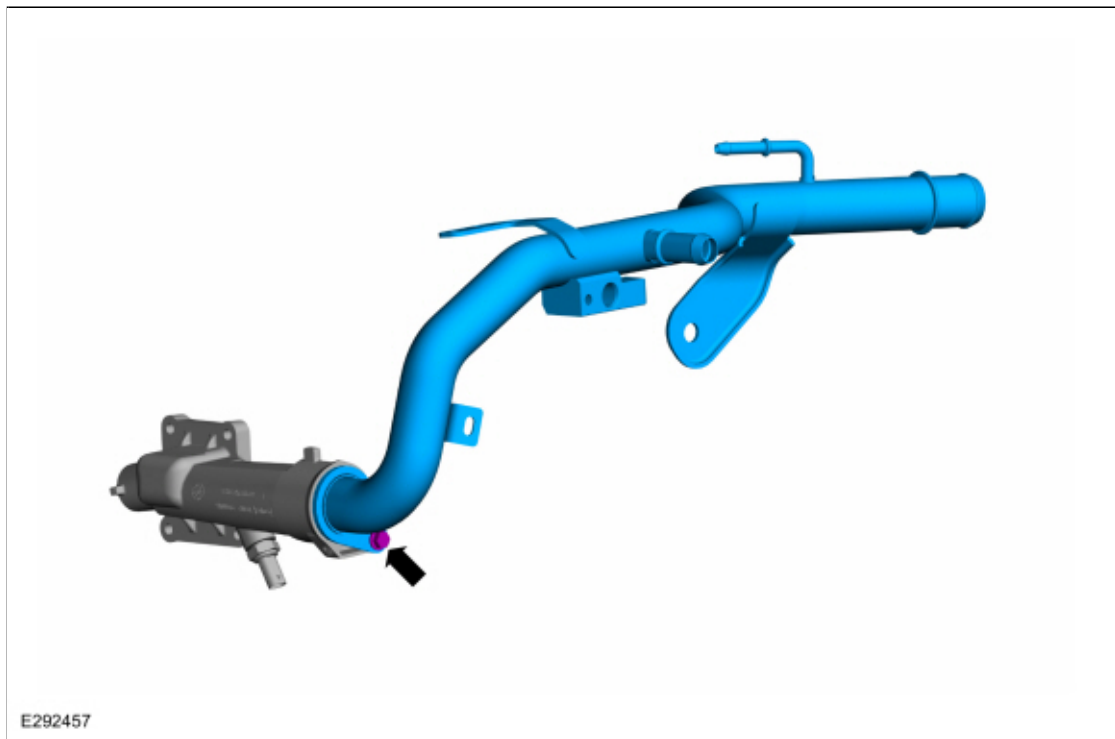
- Release the clamp and disconnect the coolant hose.
Use the General Equipment: Hose Clamp Remover/Installer
- Remove the bolts, studbolts and the coolant outlet connector and outlet pipe assembly.



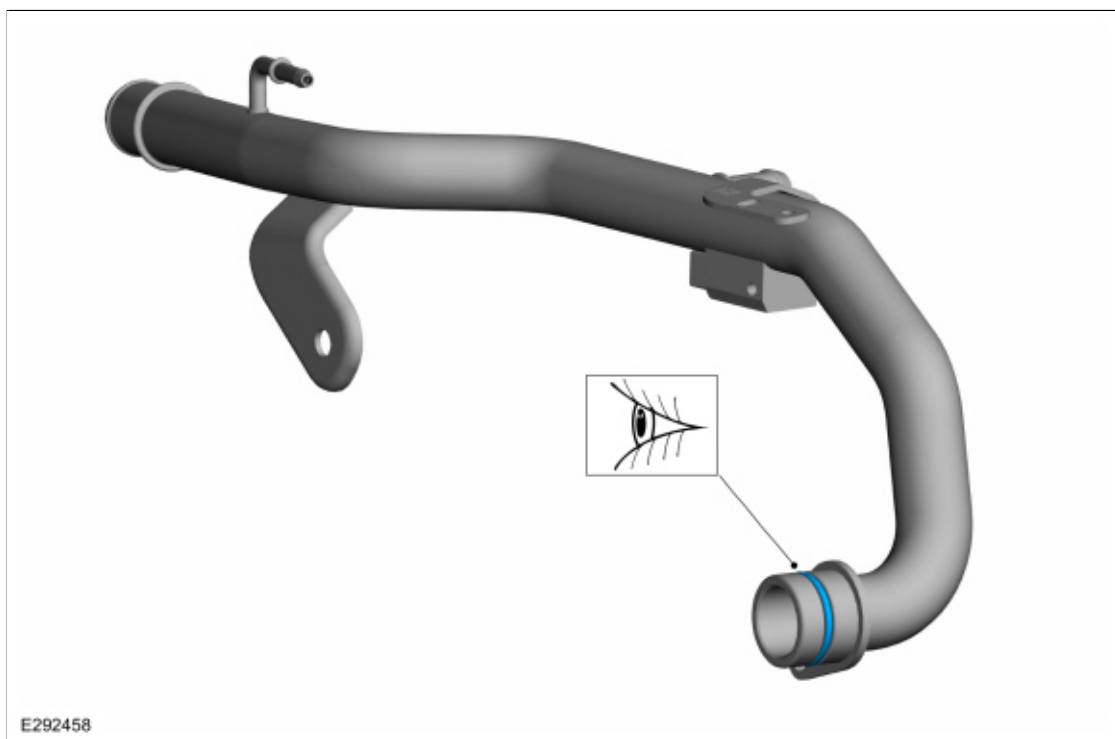
10. Inspect the gasket and replace it if necessary.



11. Remove the bolt and separate the coolant outlet pipe from the coolant outlet connector.



12. Inspect the O-ring seal and replace it if necessary.



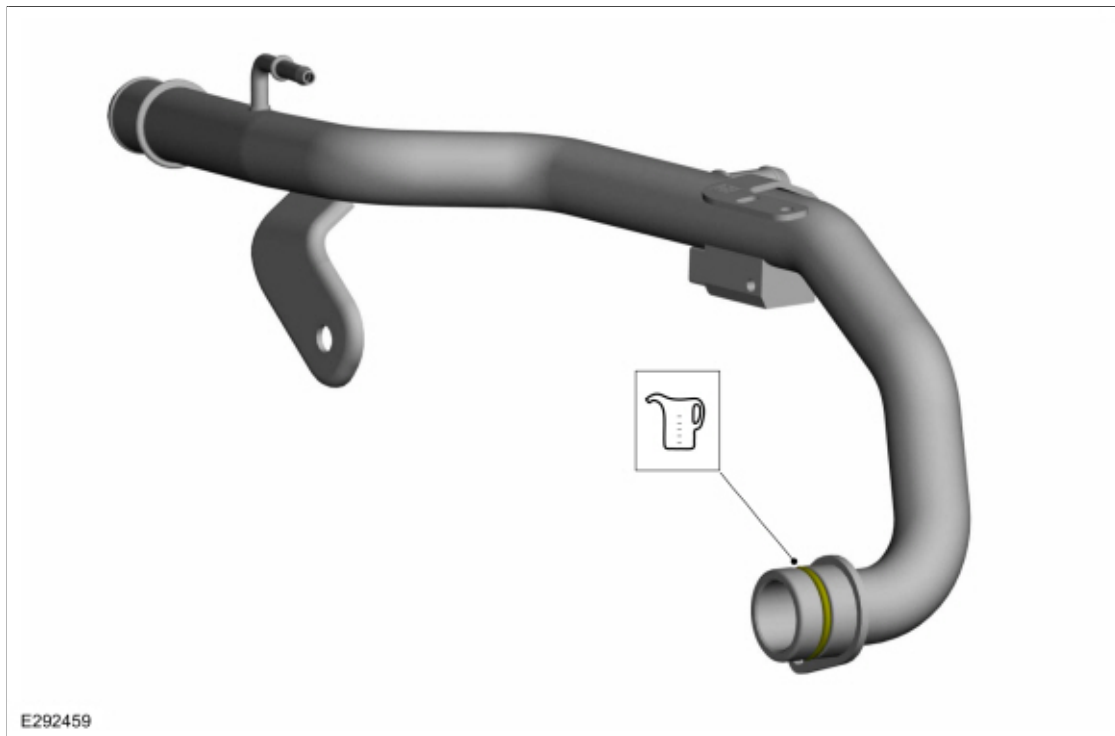
Installation

1. Lubricate the O-ring seal with clean engine coolant.
Material: Motorcraft® Orange Concentrated Antifreeze/Coolant / VC-3-B (WSS-M97B44-D)

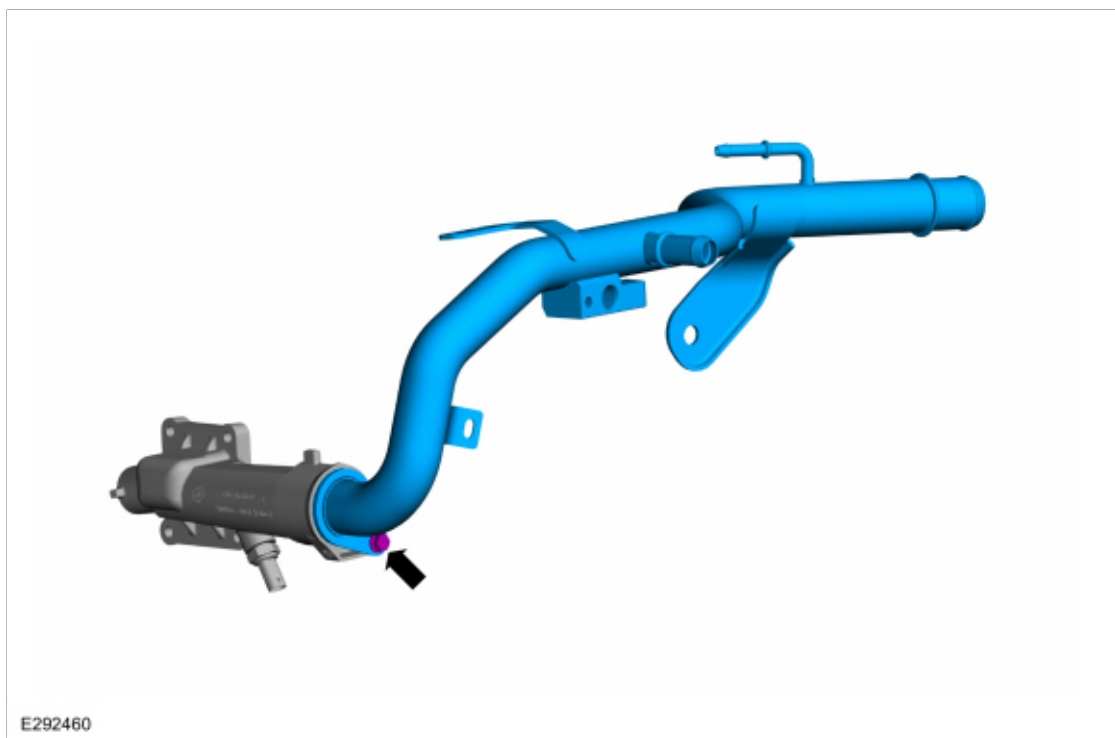
Material: Motorcraft® Orange Prediluted Antifreeze/Coolant / VC-3DIL-B (WSS-M97B44-D2)

Material: Motorcraft® Yellow Concentrated Antifreeze/Coolant / VC-13-G (WSS-M97B57-A1)

Material: Motorcraft® Yellow Prediluted Antifreeze/Coolant / VC-13DL-G (WSS-M97B57-A2)

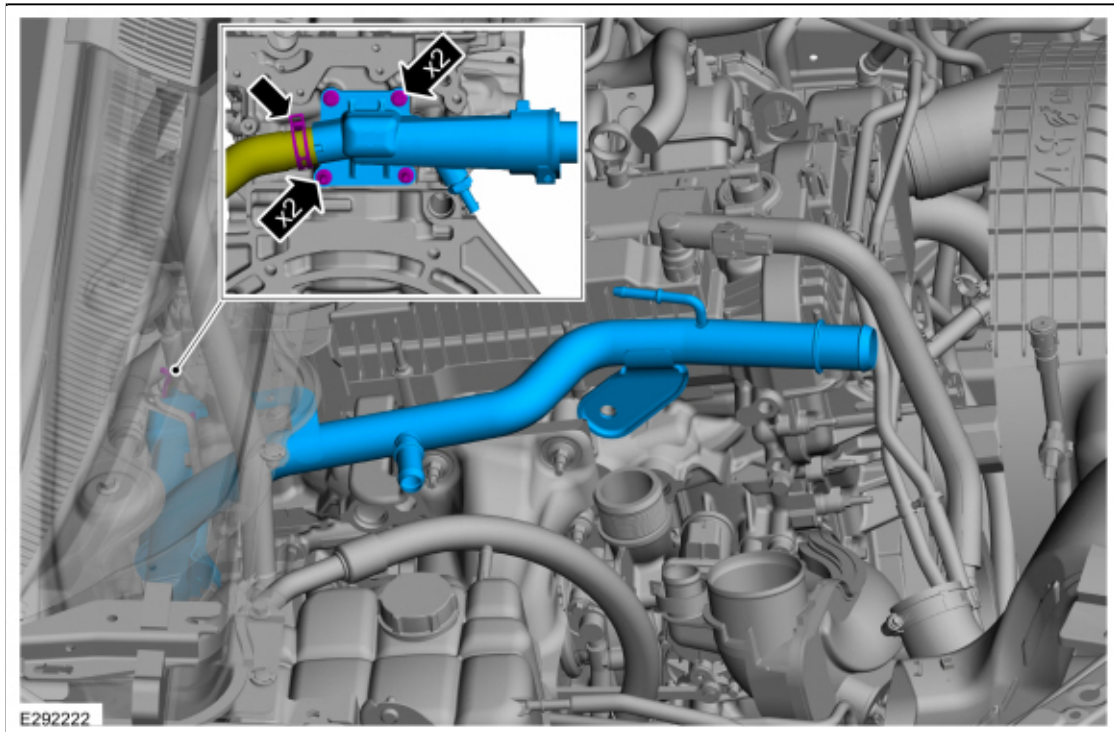


2. Install the coolant outlet pipe and the bolt.



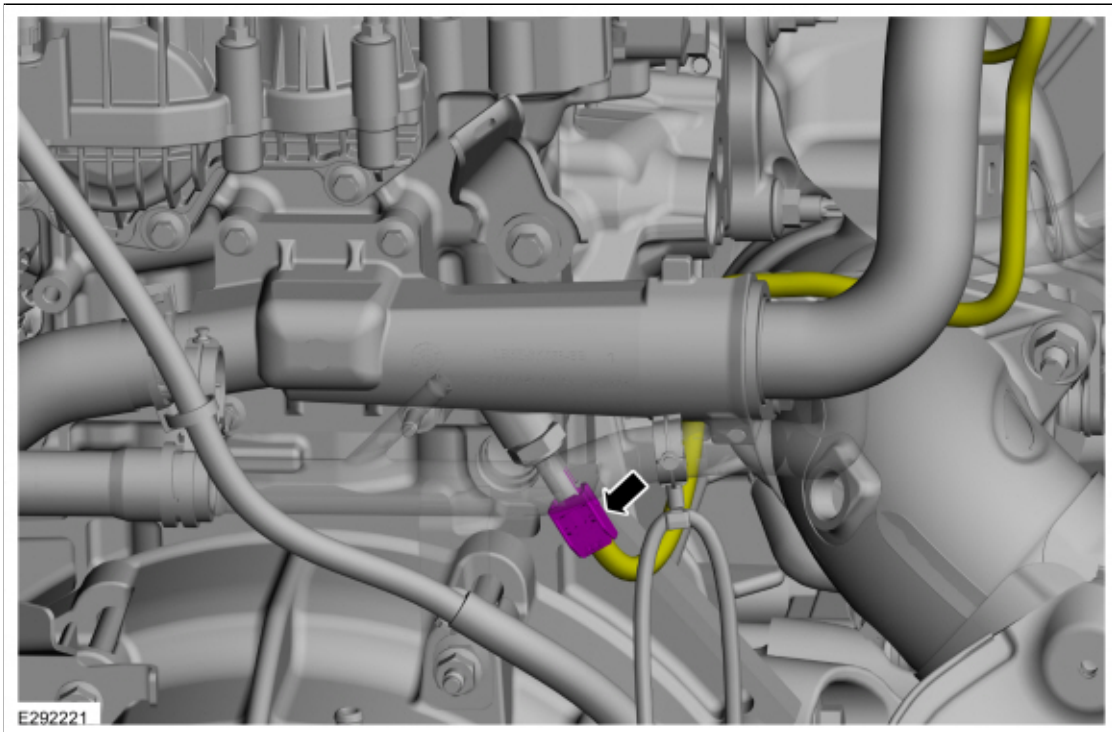
3.

- Install the coolant outlet connector and outlet pipe assembly and the bolts, studbolts.
Torque: 93 lb.in (10.5 Nm)
- Connect the coolant hose.
Use the General Equipment: Hose Clamp Remover/Installer

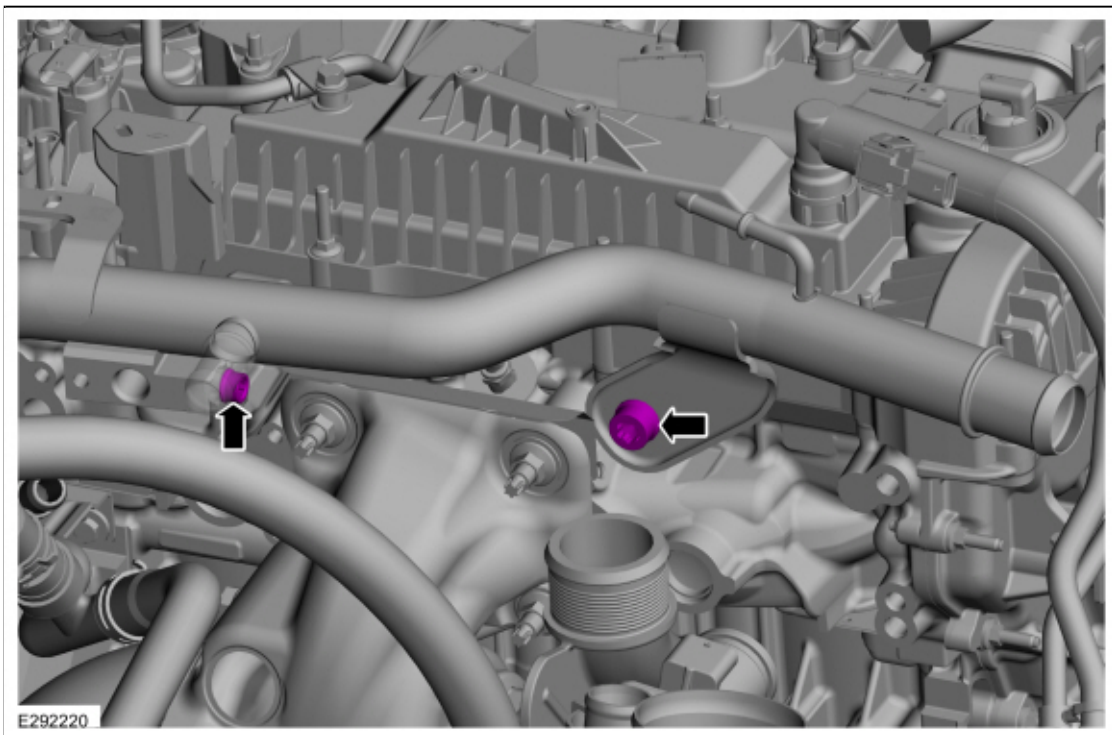


4. Connect the electrical connector.

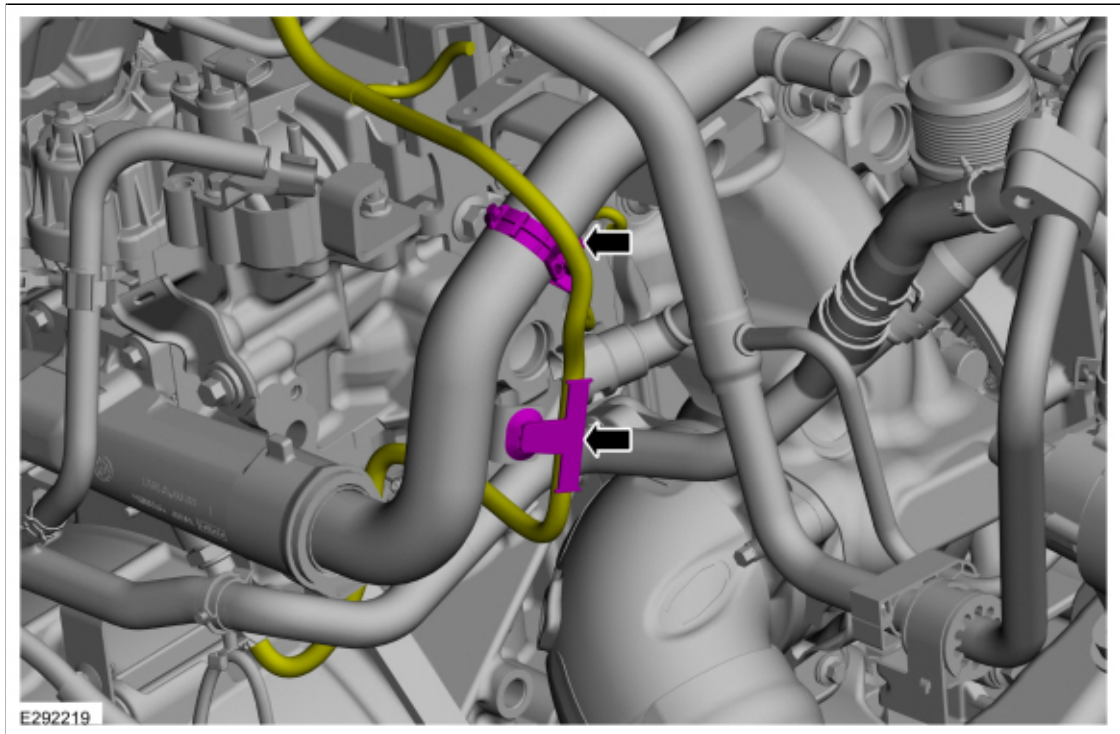




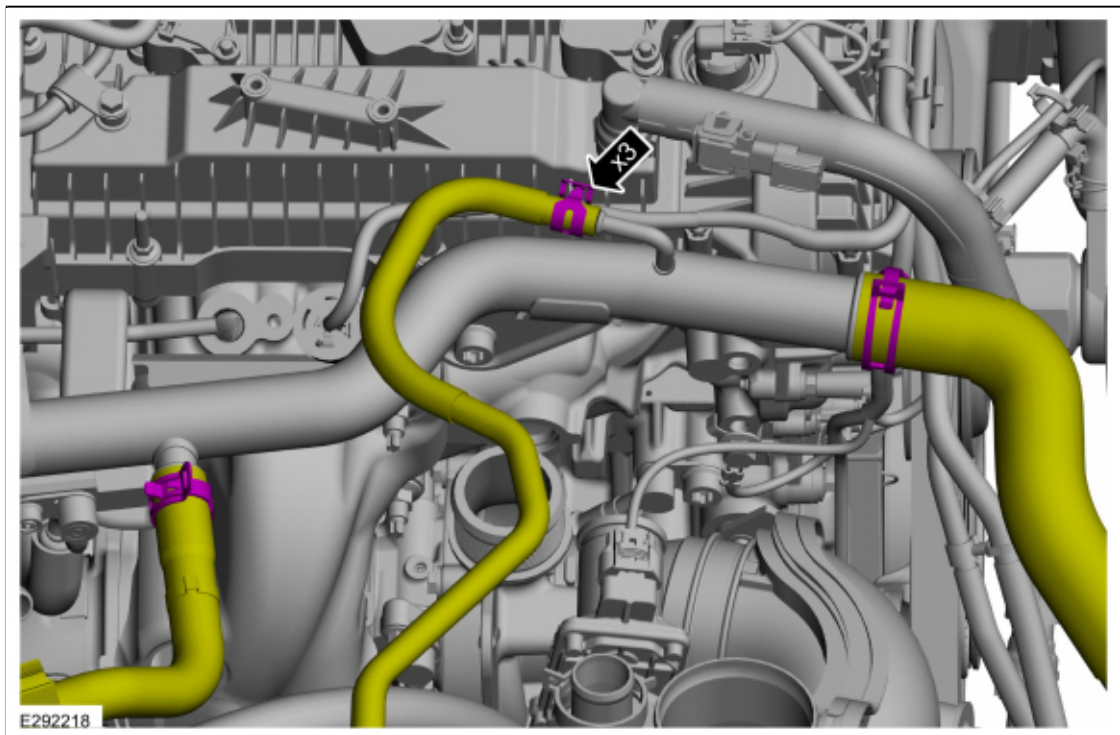
5. Install the bolts.
Torque: 35 lb.ft (47.5 Nm)



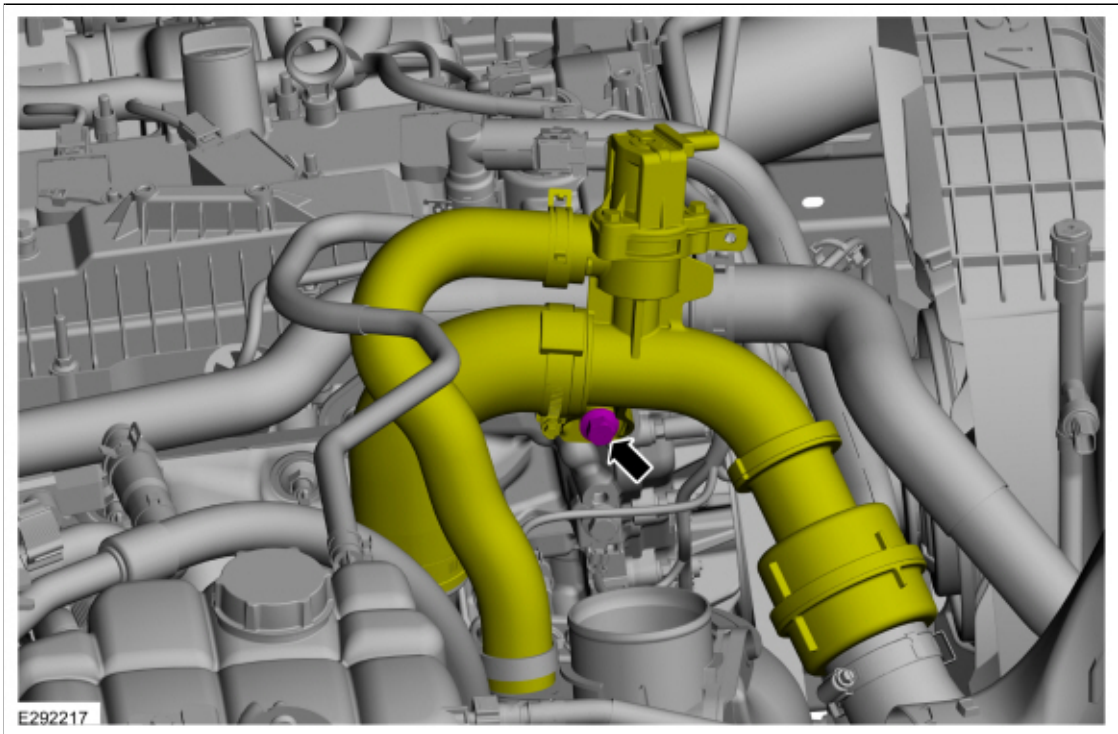
6. Attach the electrical wiring harness retainers.



7. Connect the coolant hoses.
Use the General Equipment: Hose Clamp Remover/Installer

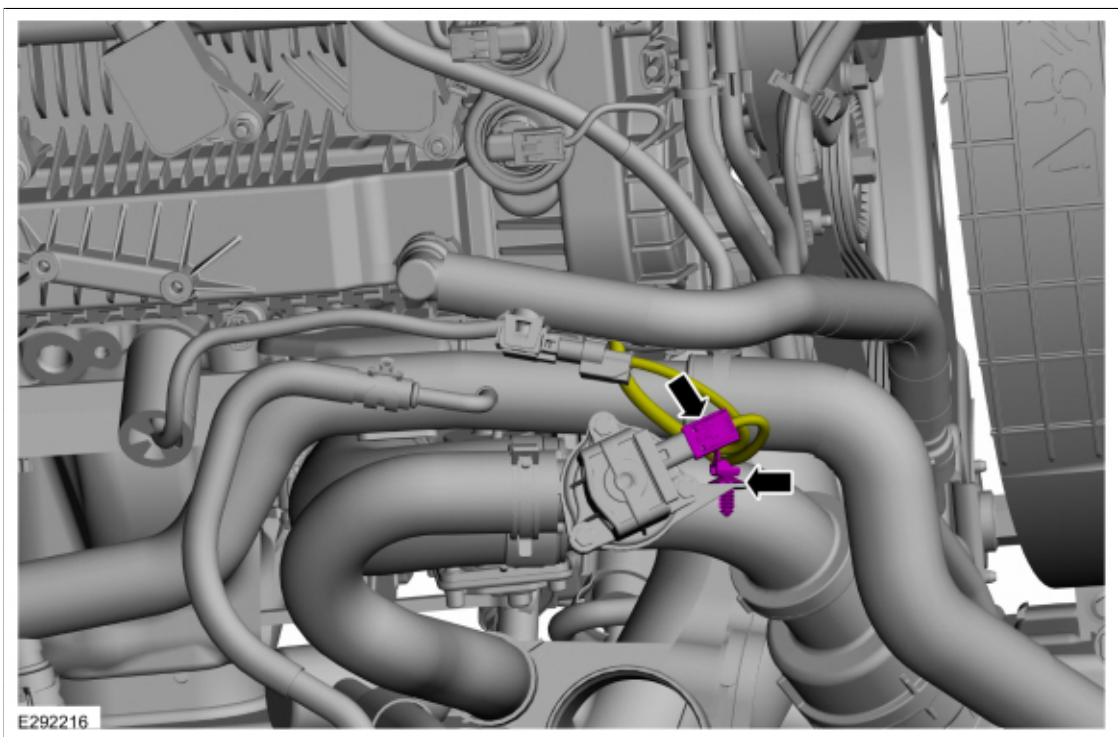


8. Position the CAC tube and install the bolt.
Torque: 177 lb.in (20 Nm)



9.

- Connect the electrical connector.
- Attach the electrical wiring harness retainer.

10. Install the EGR cooler.Refer to: [Exhaust Gas Recirculation \(EGR\) Cooler](#) (303-08 Engine Emission Control - 2.3L EcoBoost)

(201kW/273PS), Removal and Installation).

11. Fill and bleed the cooling system.

Refer to: [Cooling System Draining, Vacuum Filling and Bleeding](#) (303-03 Engine Cooling - 2.3L EcoBoost (201kW/273PS), General Procedures).

Copyright © 2019 Ford Motor Company
