

303-01 Engine - 2.3L EcoBoost (201kW/273PS)
Installation

2019 Ranger
Procedure revision date: 01/4/2019

Engine

Base Part Number: 6L084

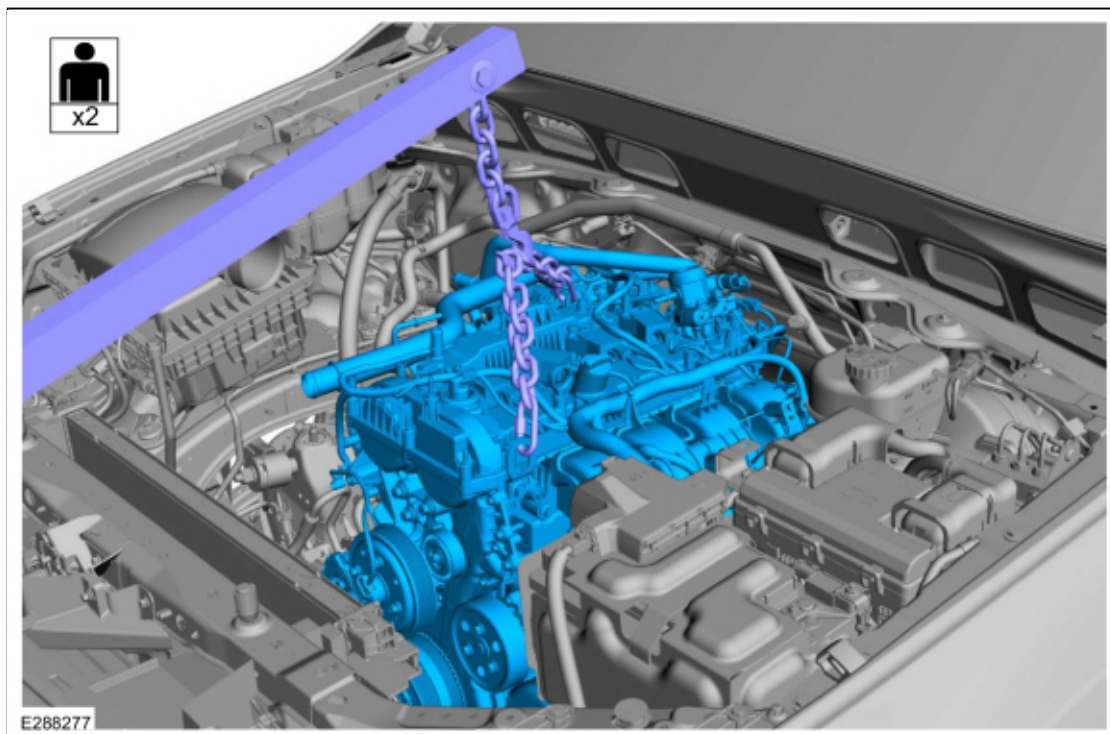
Special Tool(s) / General Equipment

Floor Crane
Hose Clamp Remover/Installer

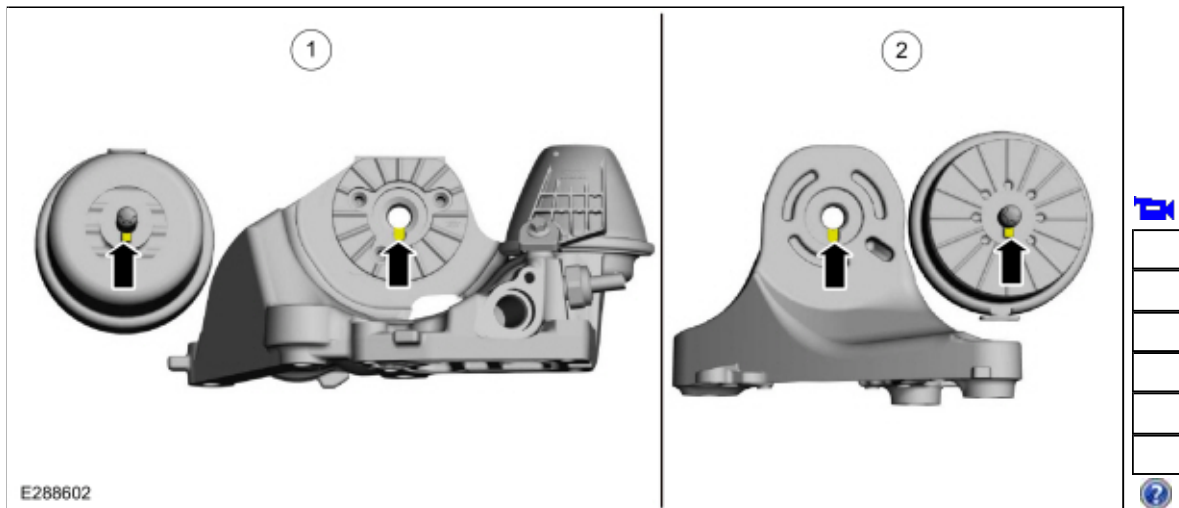
Materials

Name	Specification
Motorcraft® Silicone Brake Caliper Grease and Dielectric Compound XG-3-A	ESE-M1C171-A

1. With the aid of an assistant and using the floor crane, install the engine.
Use the General Equipment: Floor Crane

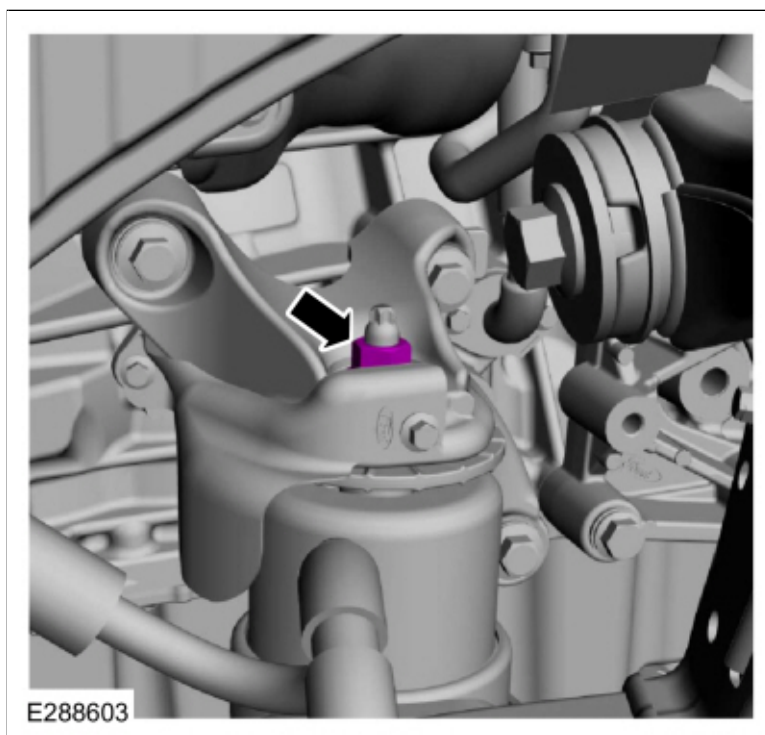


2.
 1. Make sure the engine mount tab is aligned with the slot on the LH engine mount bracket/oil filter adapter.
 2. Make sure the engine mount tab is aligned with the slot on the RH engine mount bracket.



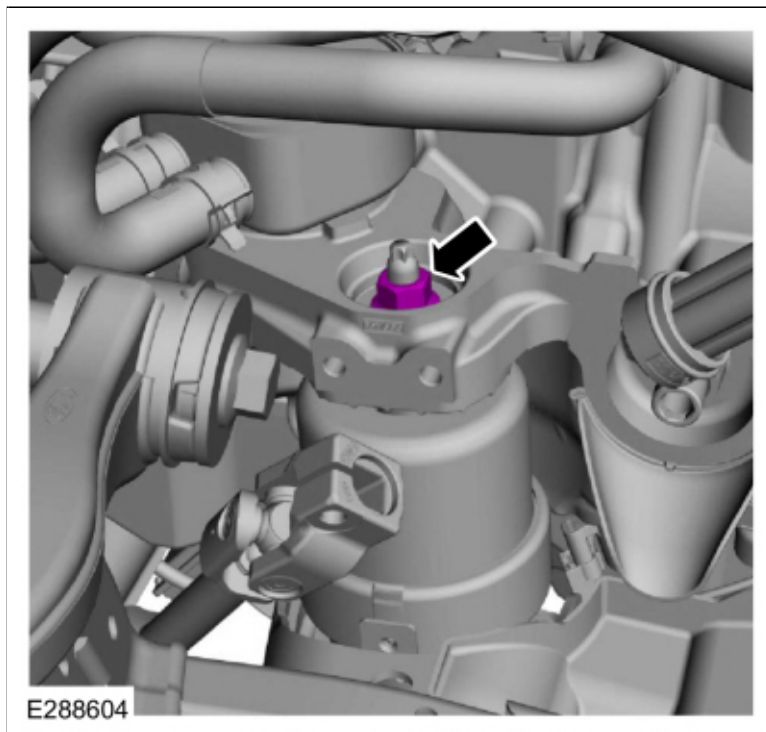
3. **NOTE:** Make sure the engine mount tabs are aligned with the slots on the engine mount bracket.

Install the RH engine mount nut finger tight.

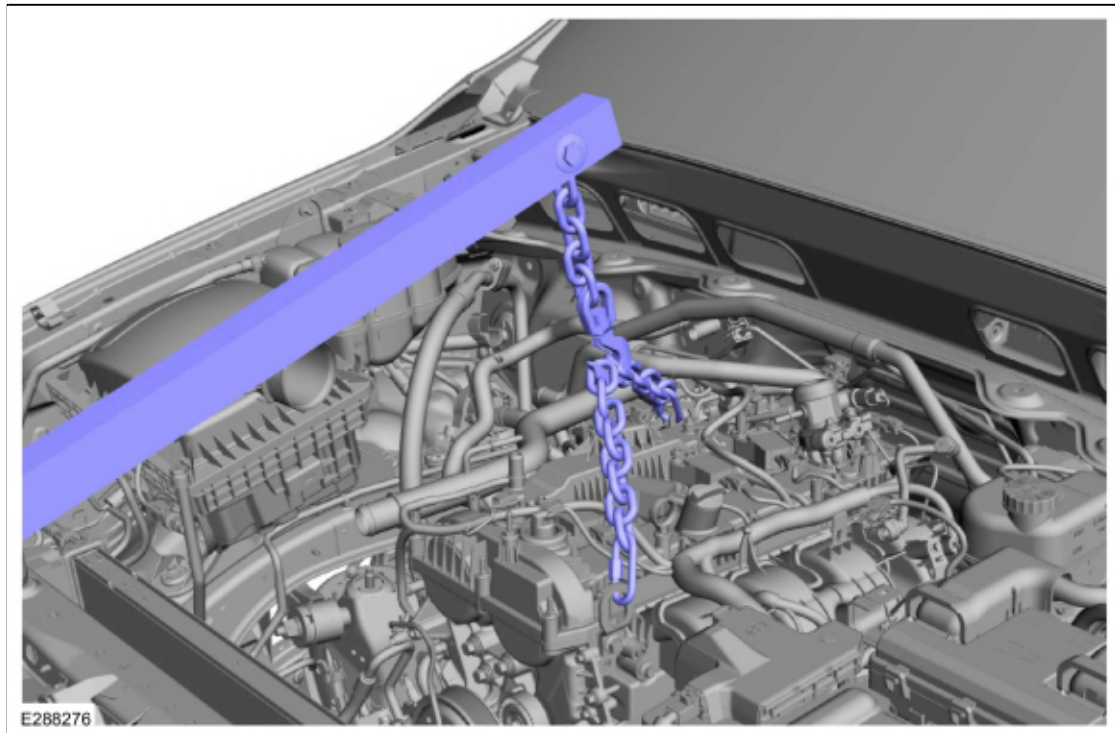


4. **NOTE:** Make sure the engine mount tabs are aligned with the slots on the engine mount bracket.

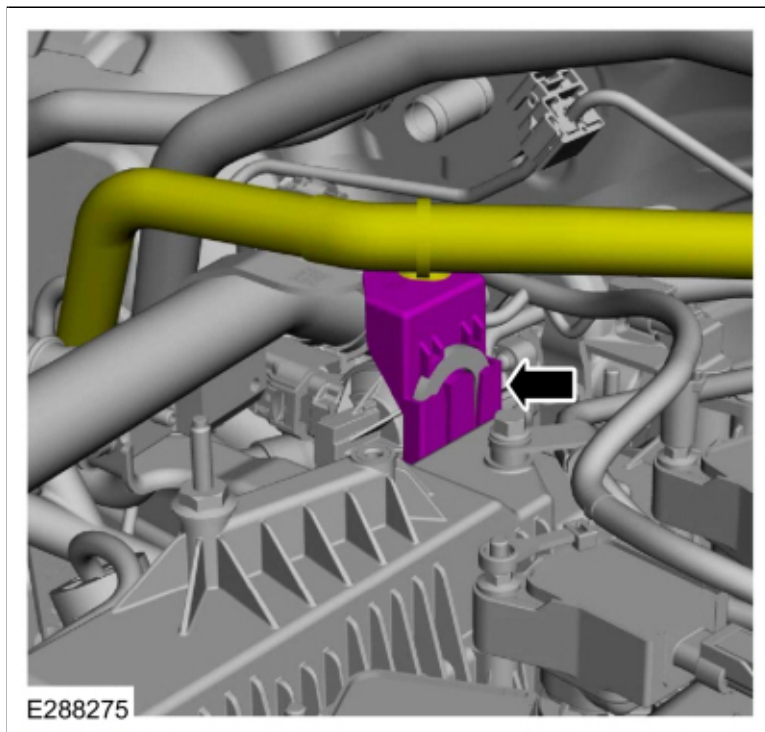
Install the LH engine mount nut finger tight.



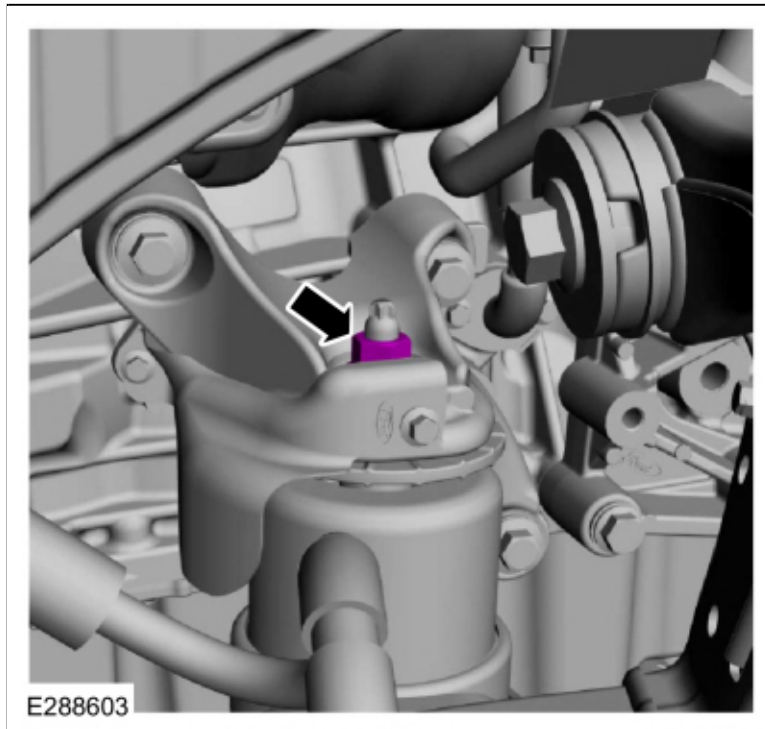
5. Remove the engine lift equipment.
Use the General Equipment: Floor Crane



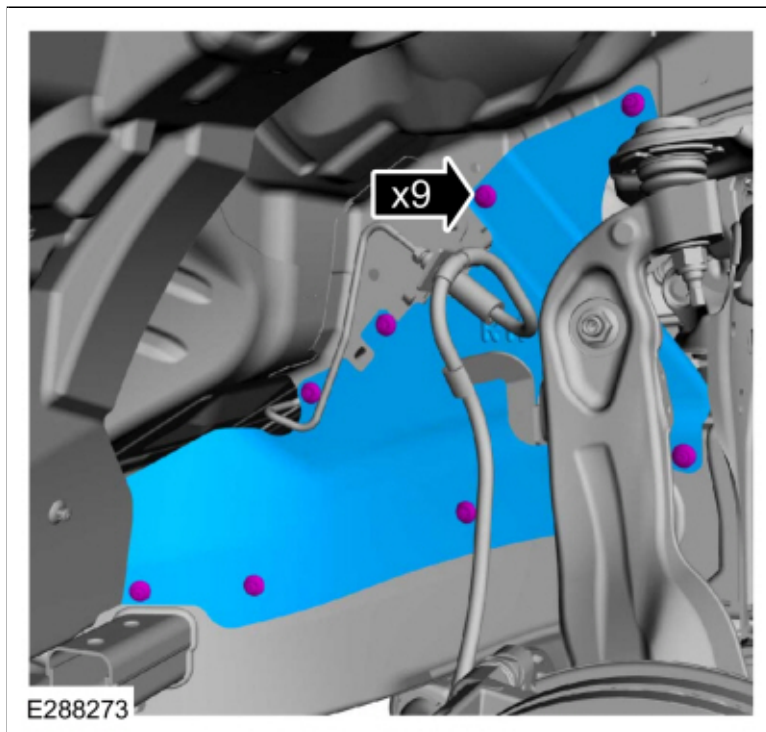
6. Position the wiring harness retainer from the rear engine lift eye.



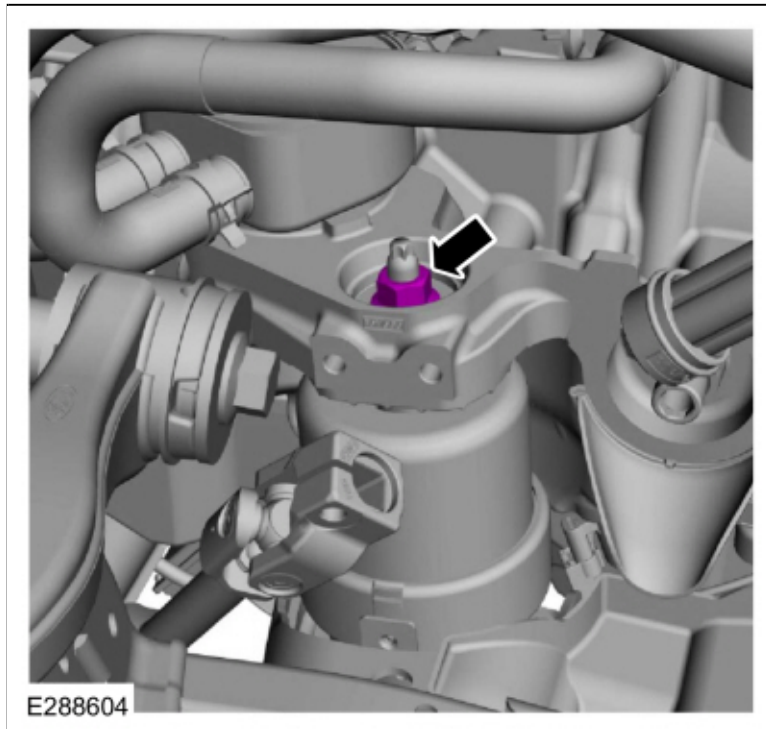
7. Tighten the RH engine mount nut.
Torque: 92 lb.ft (125 Nm)



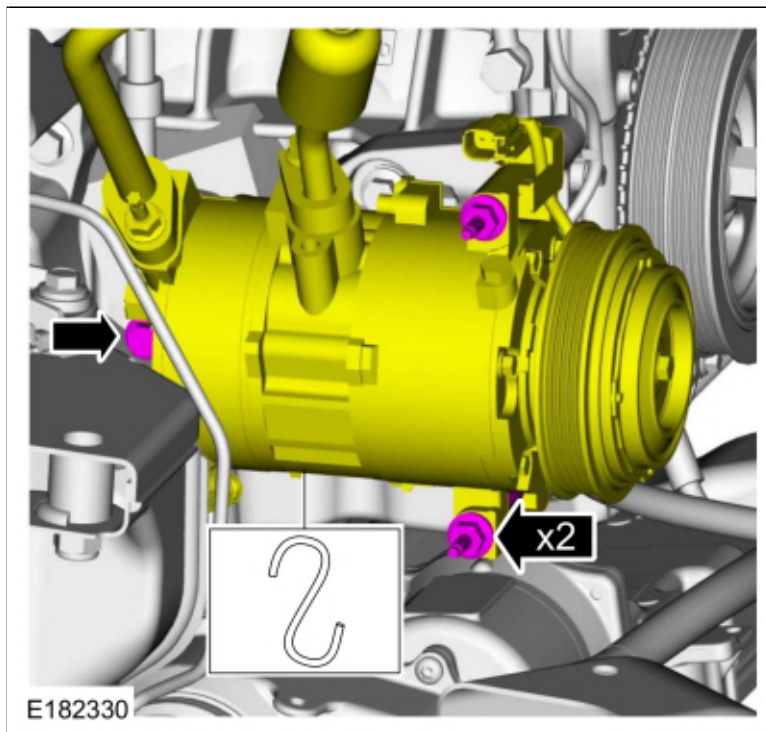
8. Install the RH rear side splash shield.



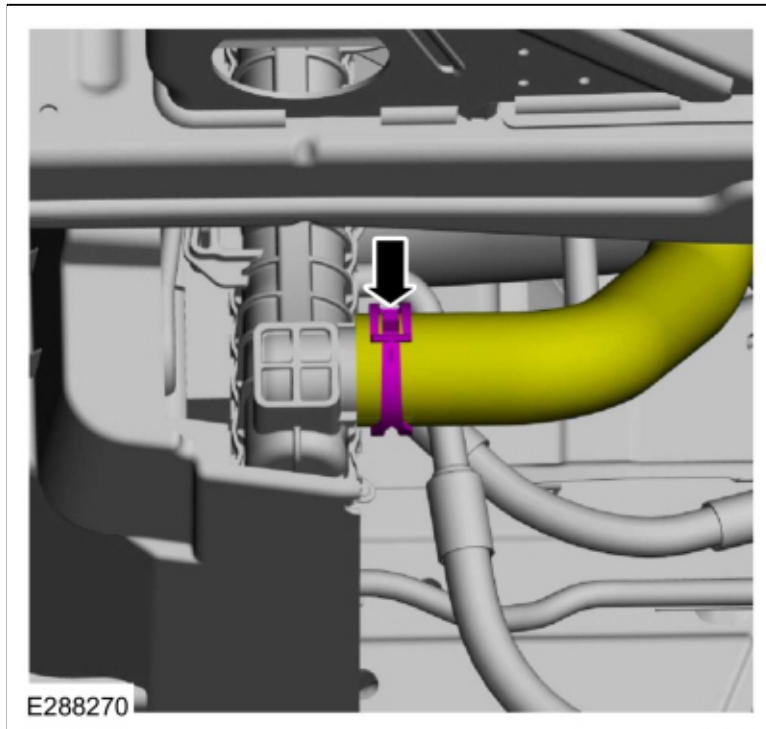
9. Tighten the LH engine mount nut.
Torque: 92 lb.ft (125 Nm)



10. Remove the support and position the A/C compressor and tighten the bolts.
Torque: 18 lb.ft (25 Nm)

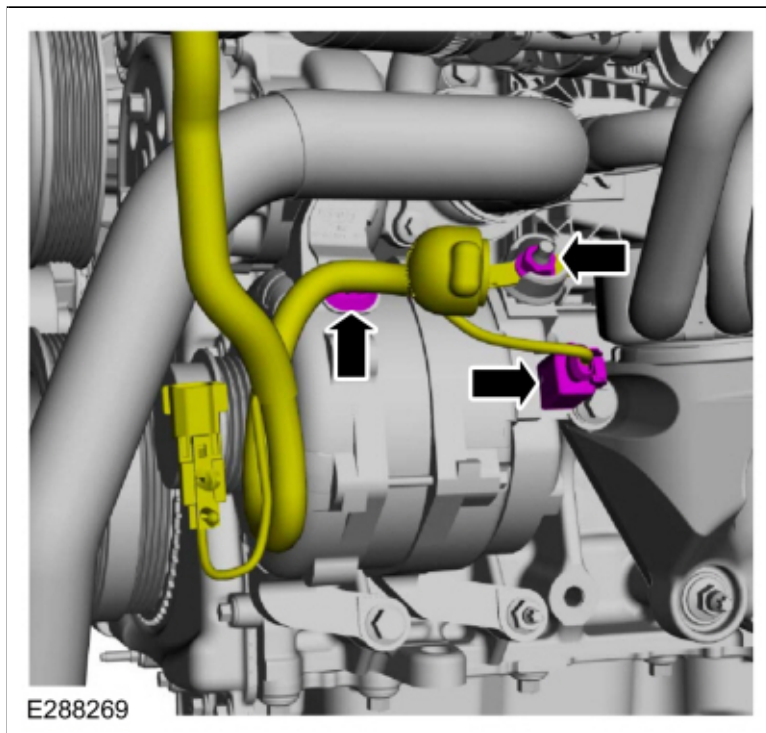


11. Connect the lower radiator hose to the radiator.
Use the General Equipment: Hose Clamp Remover/Installer



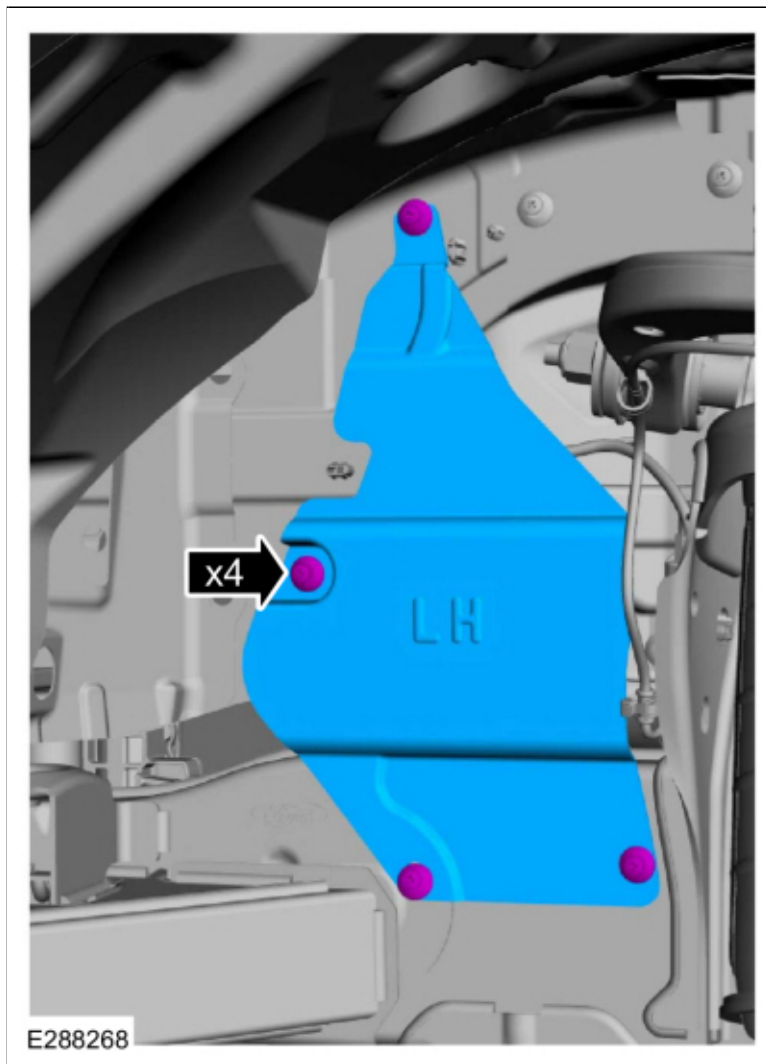
- 12.
- Attach the B+ cable retainer.
 - Connect the generator electrical connector.

- Install the B+ cable, nut and position the cover.
Torque: 150 lb.in (17 Nm)

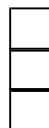


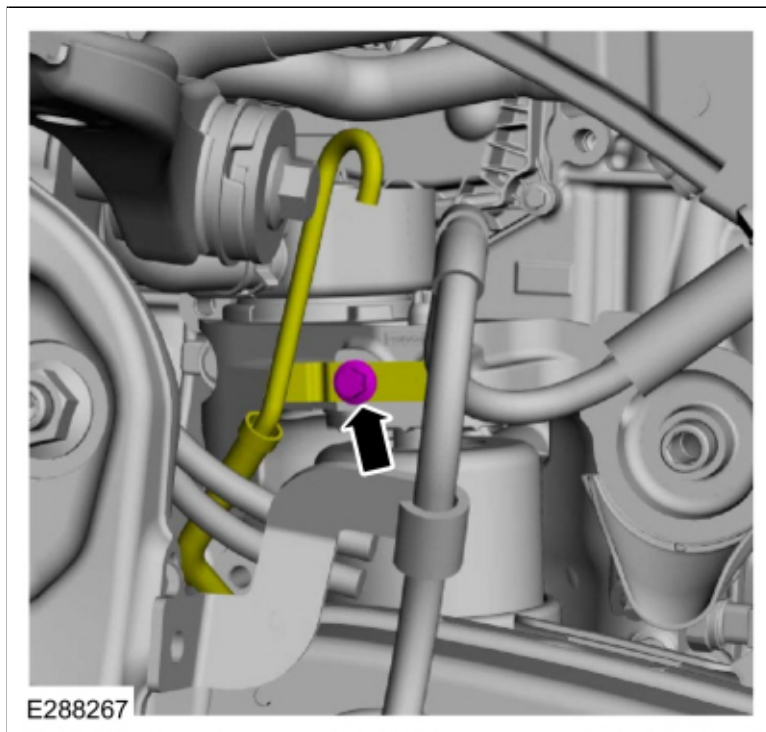
13. Install the LH front side splash shield and the retainers.





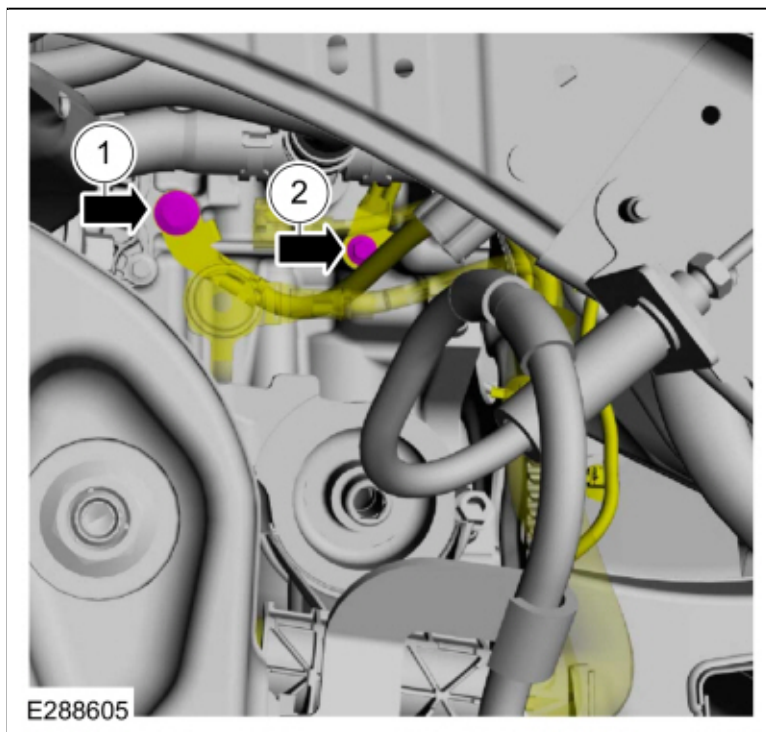
14. If equipped with 4X4, position the axle vent tube and install the bolt to the LH engine mount bracket.
Torque: 17 lb.ft (23 Nm)



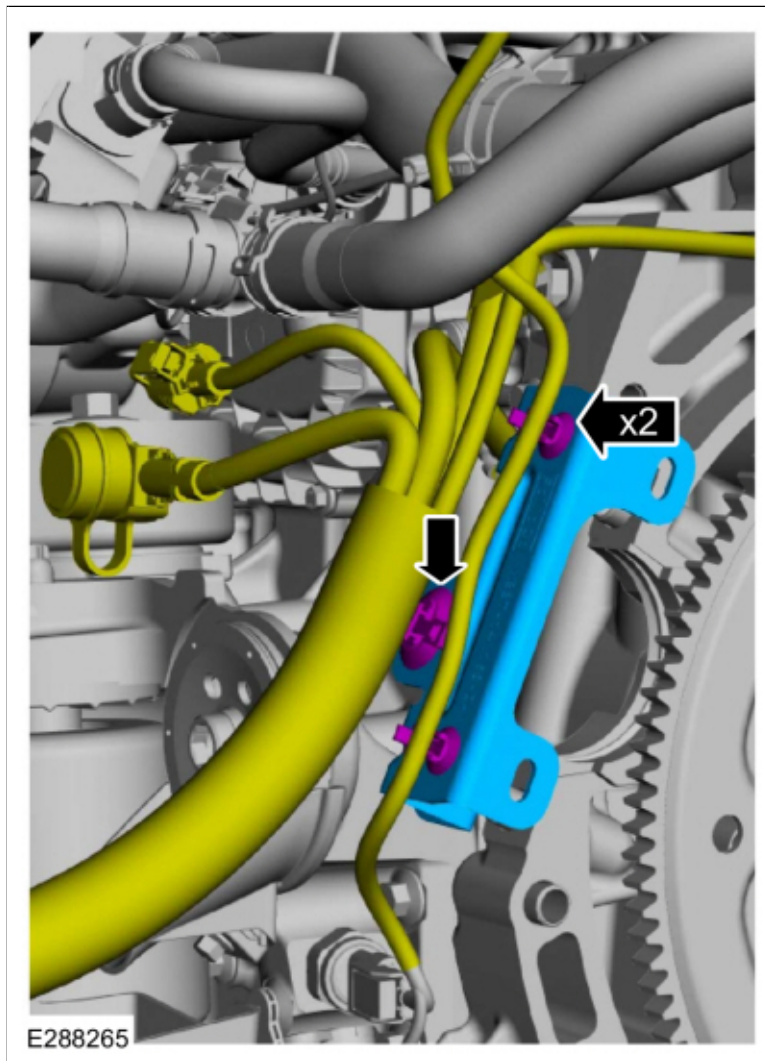


15.

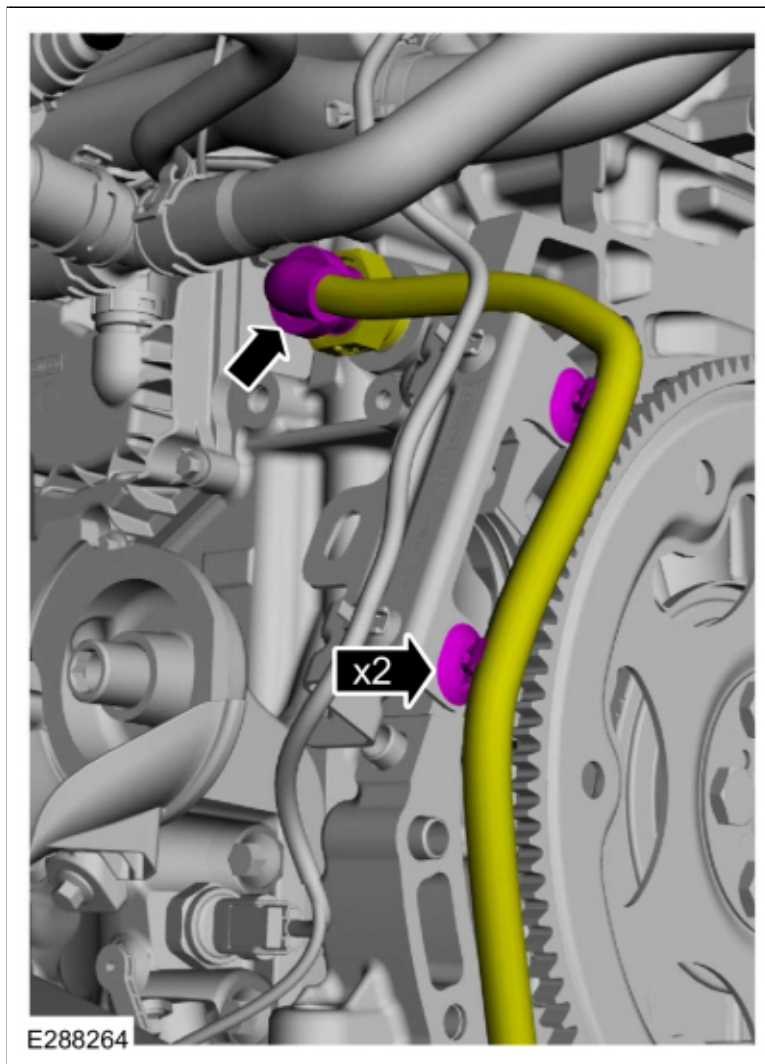
- Position the ground wiring harness and install the bolt to the LH side of block.
Torque: 177 lb.in (20 Nm)
- Install the ground bolt.
Torque: 97 lb.in (11 Nm)



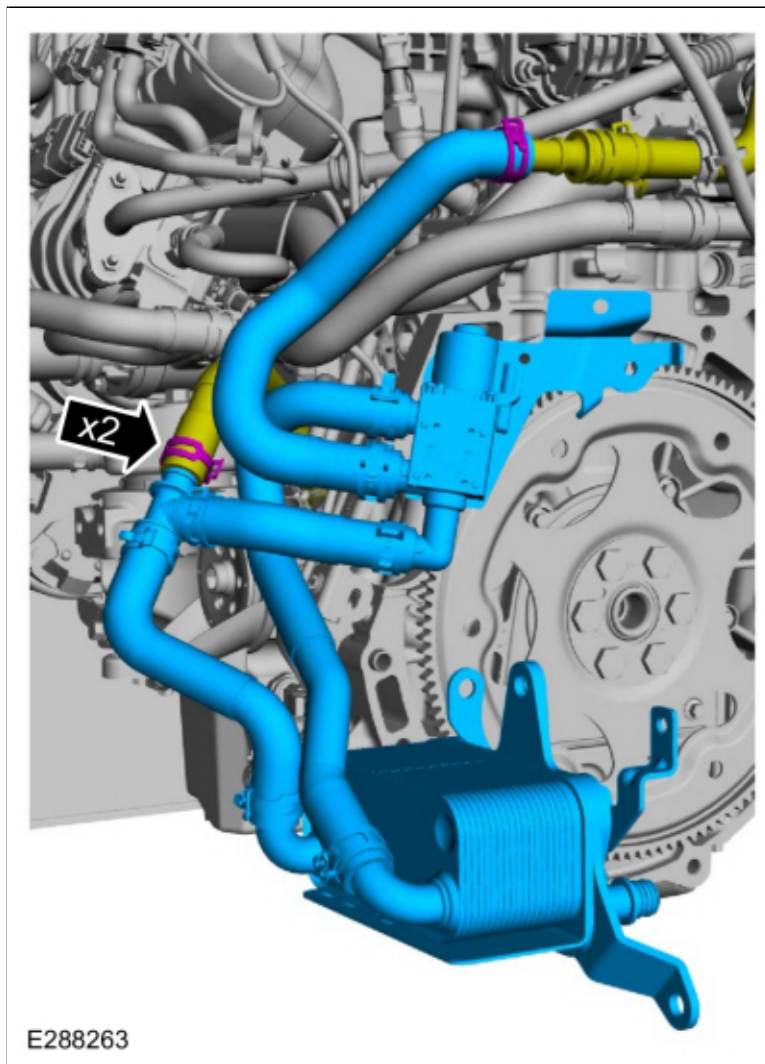
16. Connect the battery harness retainers to the starter motor bracket.



17. If equipped, connect the block heater wiring harness electrical connector and retainers.

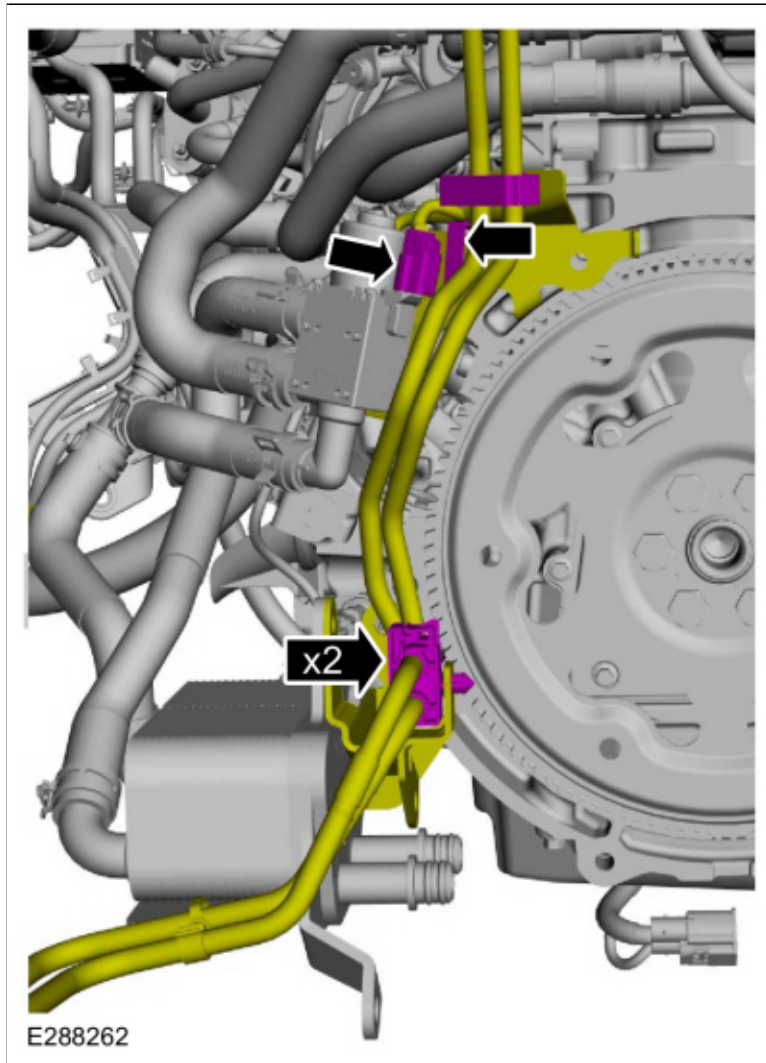


18. Install transmission cooler and hose assembly and connect the coolant hoses.
Use the General Equipment: Hose Clamp Remover/Installer

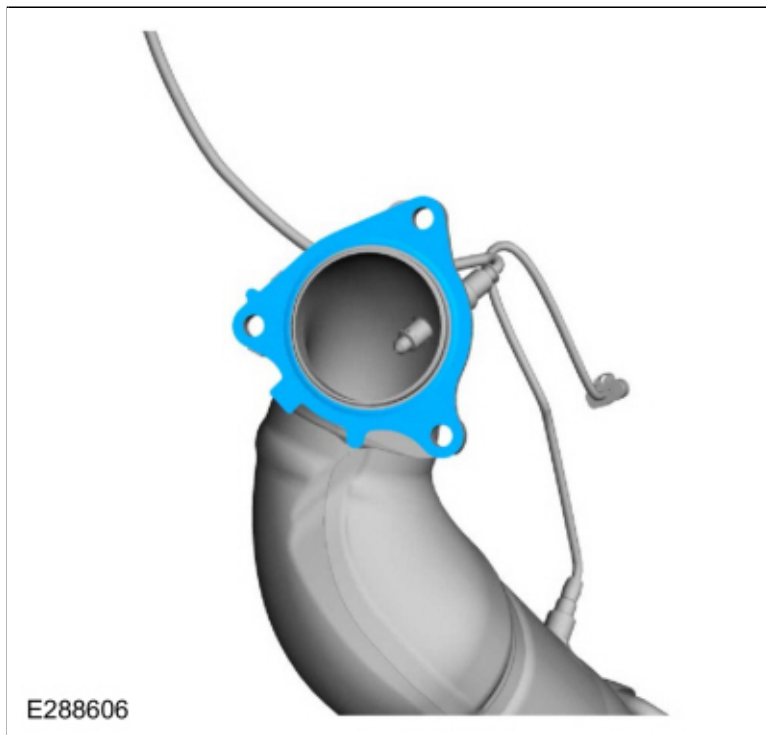


19.

- Position the fuel tubes and attach the fuel tubes clips to the bracket.
- Connect the wiring harness electrical connector and retainer.

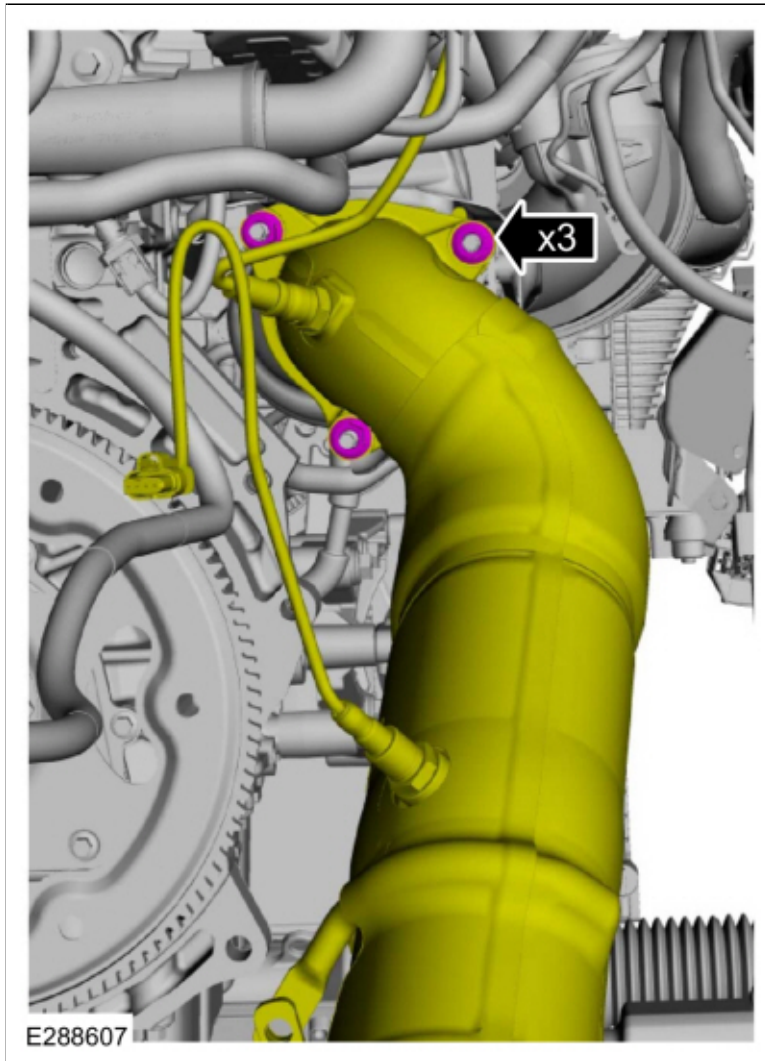


20. Install a new catalytic converter gasket.

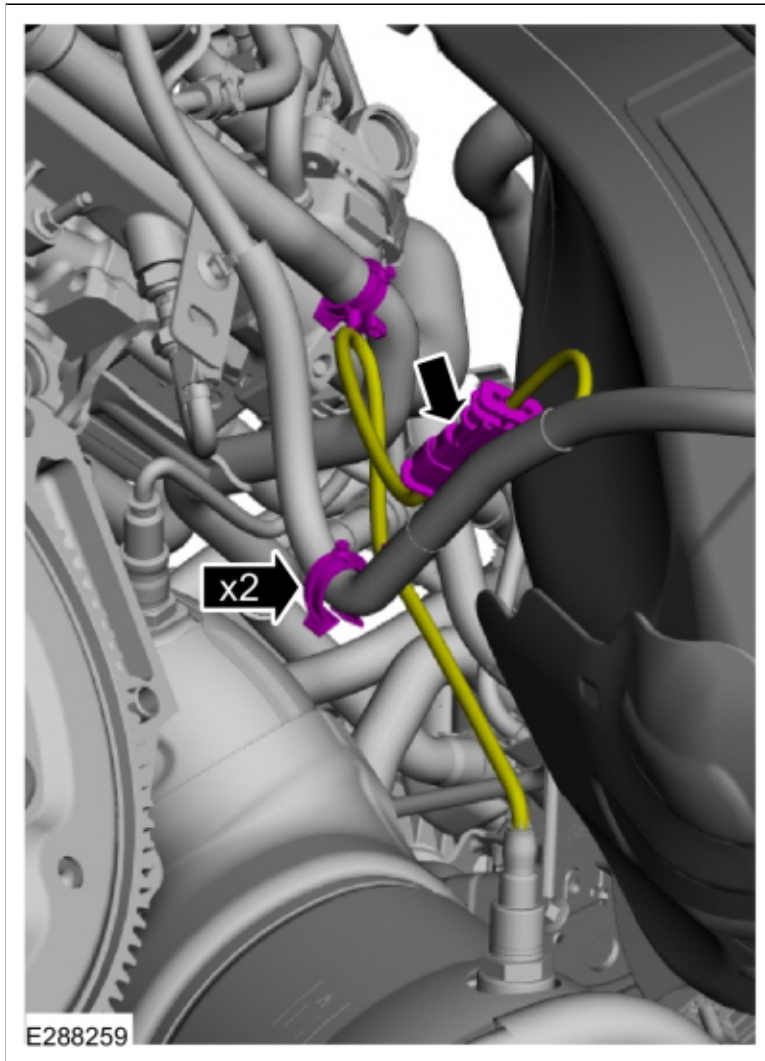


21. Position the catalytic converter and install the new nuts.
Torque: 30 lb.ft (40 Nm)

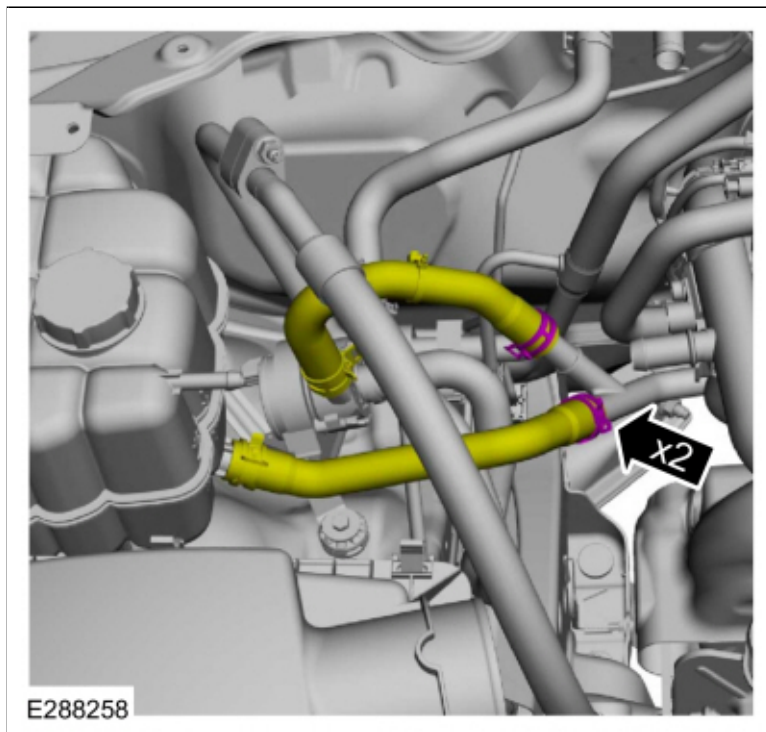




22. Connect the catalyst monitor sensors electrical connector and the wiring harness retainers.

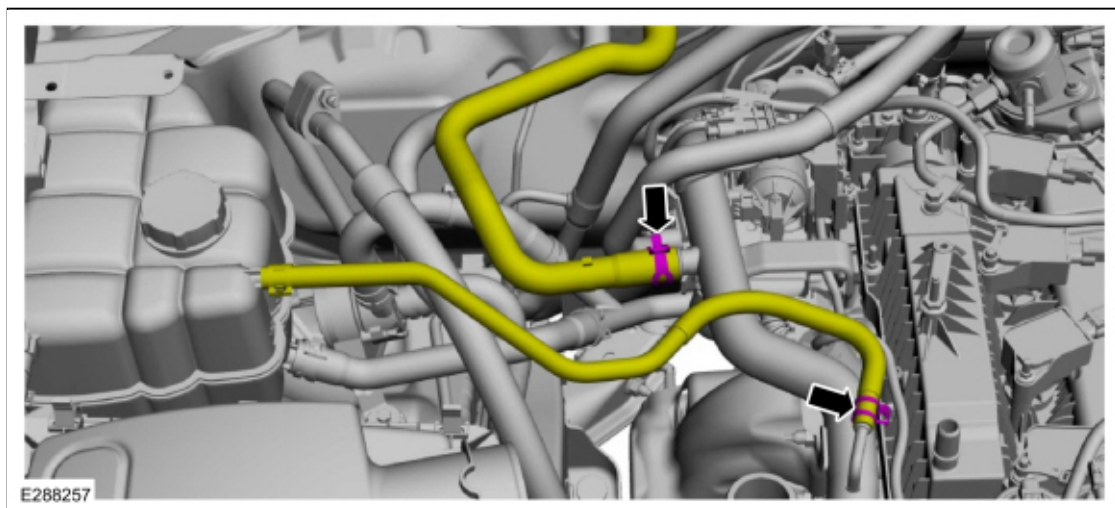


23. Install the transmission.
Refer to: [Transmission](#) (307-01 Automatic Transmission - 10-Speed Automatic Transmission - 10R80, Removal and Installation).
24.
 - Connect the start/stop pump hose to the coolant tube.
Use the General Equipment: Hose Clamp Remover/Installer
 - Connect the degas bottle hose to coolant tube.
Use the General Equipment: Hose Clamp Remover/Installer

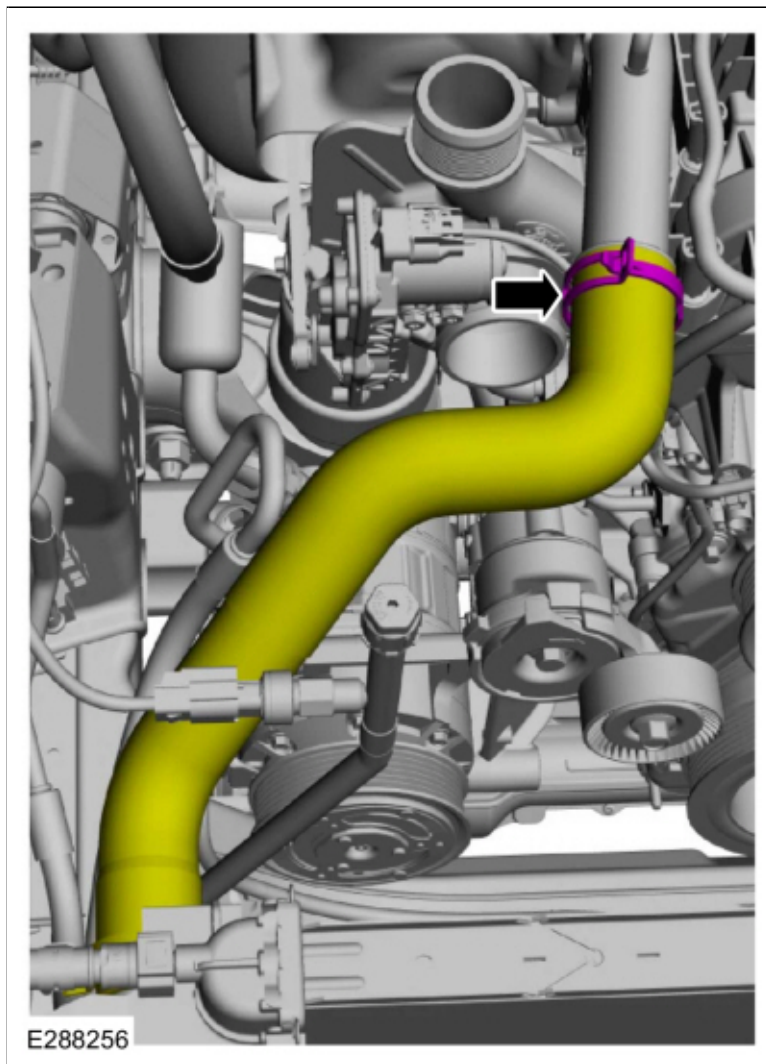


25.

- Connect the heater hose to the coolant tube.
Use the General Equipment: Hose Clamp Remover/Installer
- Connect the degas bottle hose to coolant tube.
Use the General Equipment: Hose Clamp Remover/Installer



26. Connect the upper radiator hose to coolant tube.
Use the General Equipment: Hose Clamp Remover/Installer



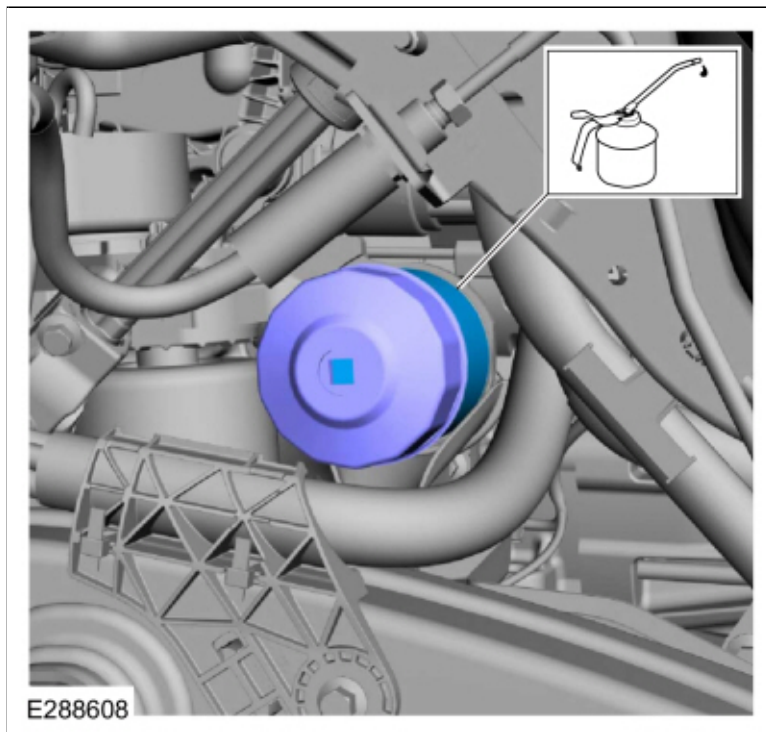
27. **NOTE:** Use a commercially available end cap oil filter wrench.

Lubricate the new engine oil filter sealing surface with clean engine oil and install.

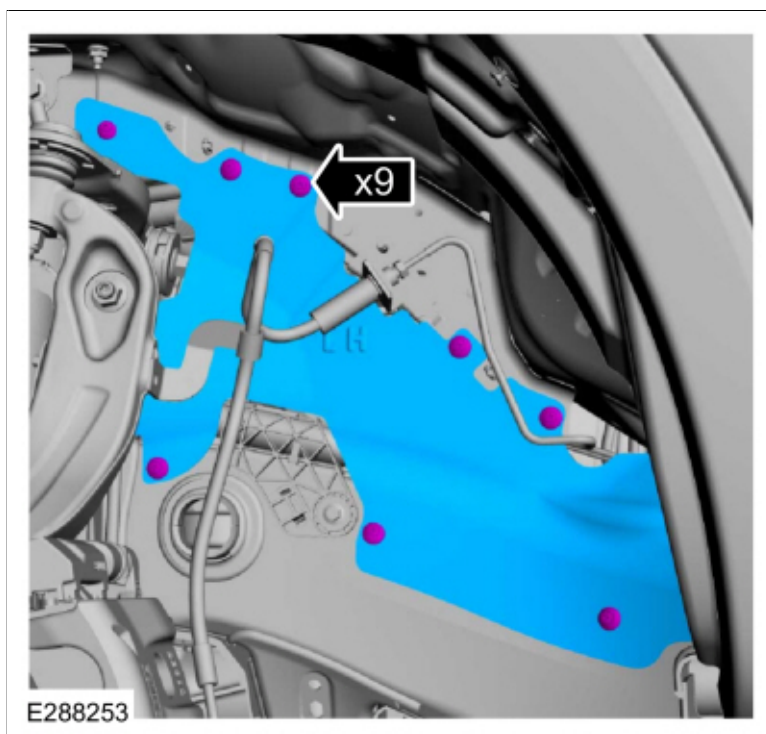
Torque:

Stage 1: 71 lb.in (8 Nm)

Stage 2: 180°



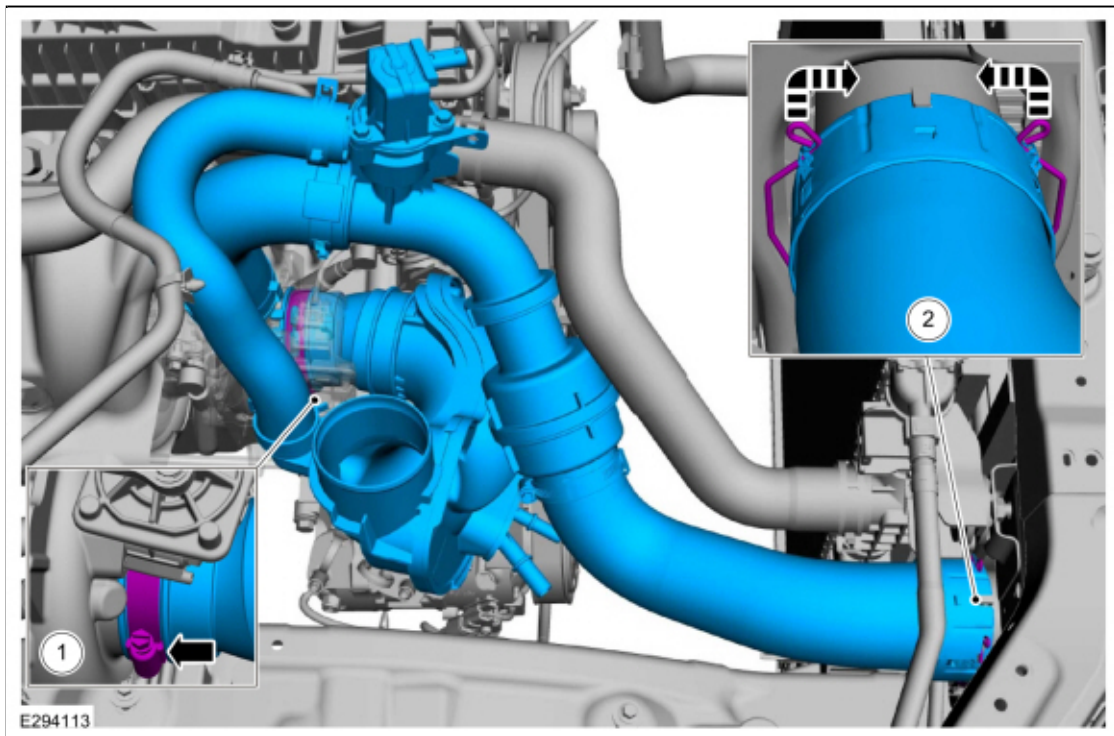
28. Install the LH side splash shield and the retainers.



29. Install the RH and LH front wheels and tires.
Refer to: [Wheel and Tire](#) (204-04A Wheels and Tires, Removal and Installation).
- 30.
1. Install the CAC inlet pipe assembly and tighten the clamp.

Torque: 44 lb.in (5 Nm)

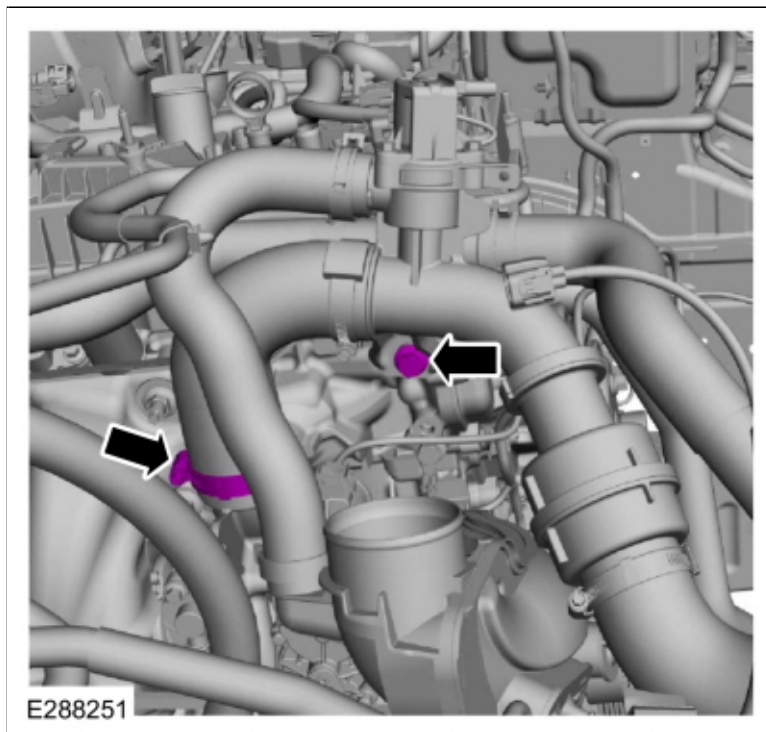
2. Install the CAC inlet pipe and release the retainers from the locking notches.



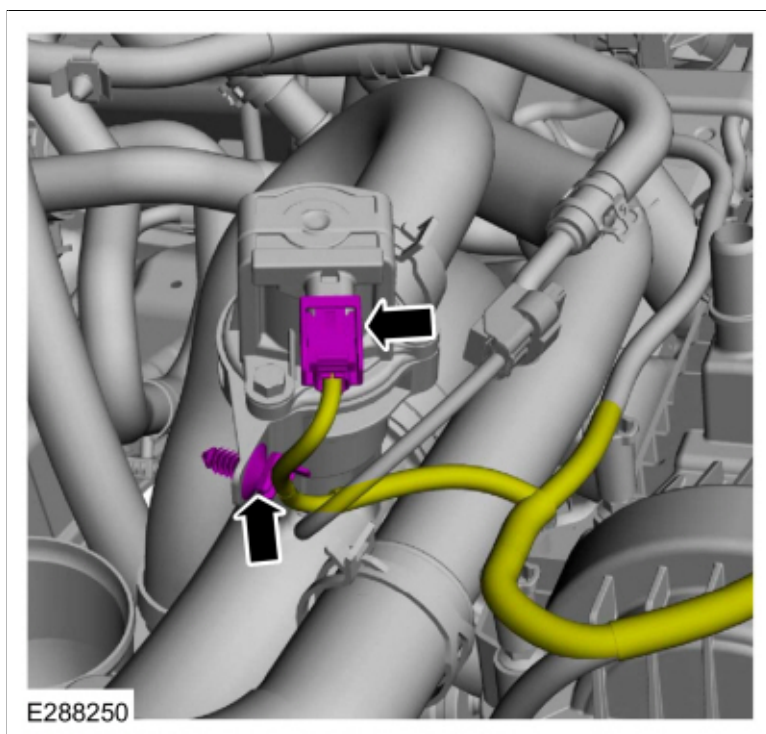
31.

- Install the CAC pipe assembly bolt.
Torque: 177 lb.in (20 Nm)
- Tighten the turbocharger clamp.
Torque: 44 lb.in (5 Nm)

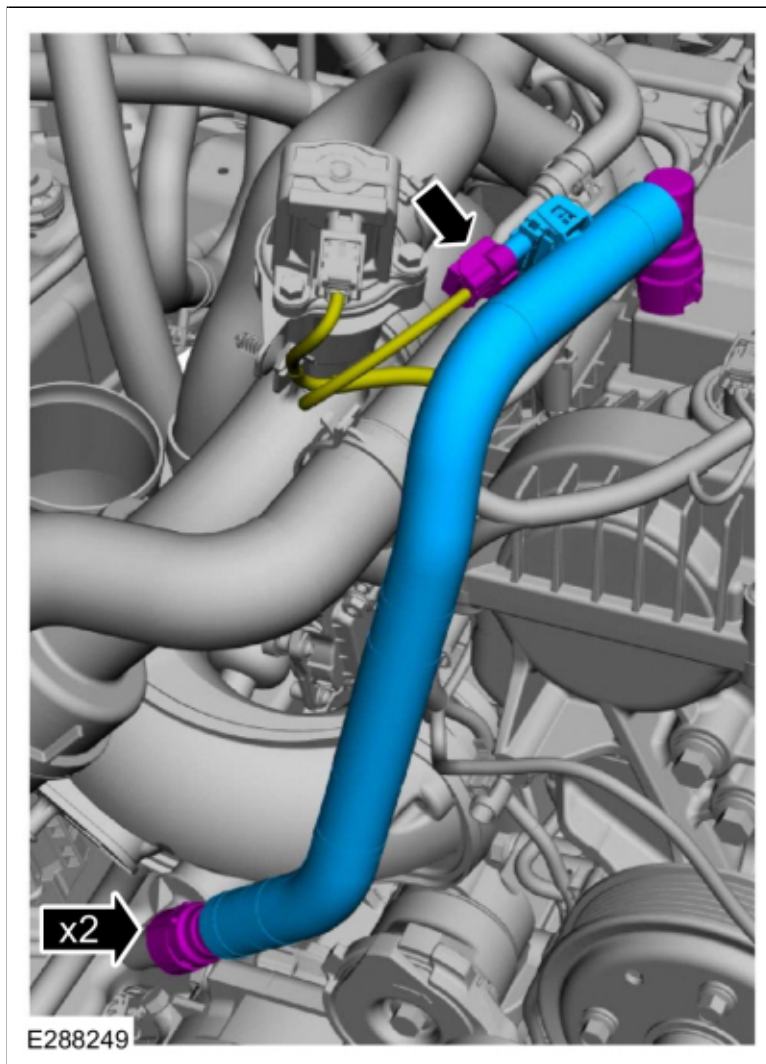




32. Connect the electrical connector and retainer for CAC diverter valve.

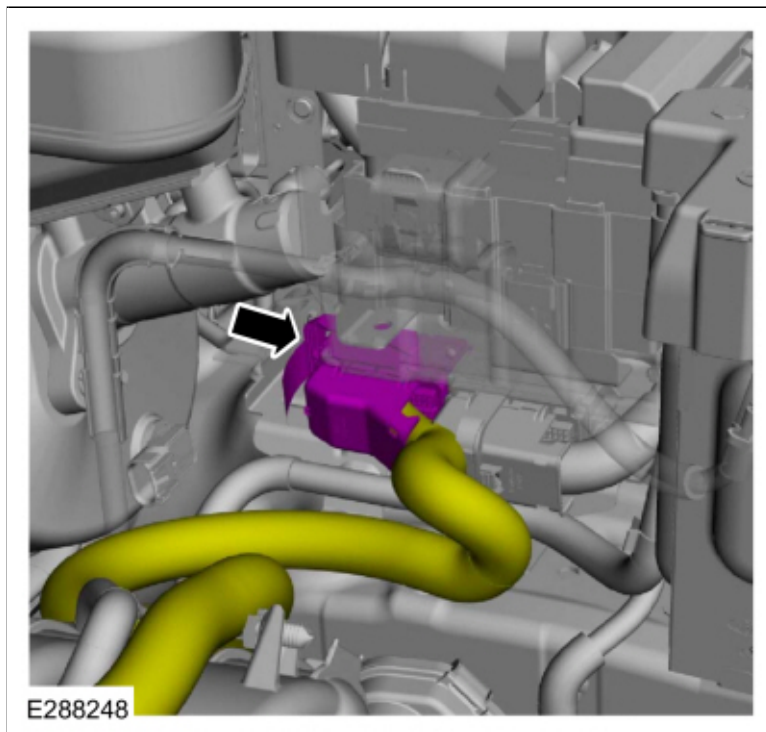


- 33.
- Install the new crankcase vent tube.
 - Connect the wiring harness electrical connector.

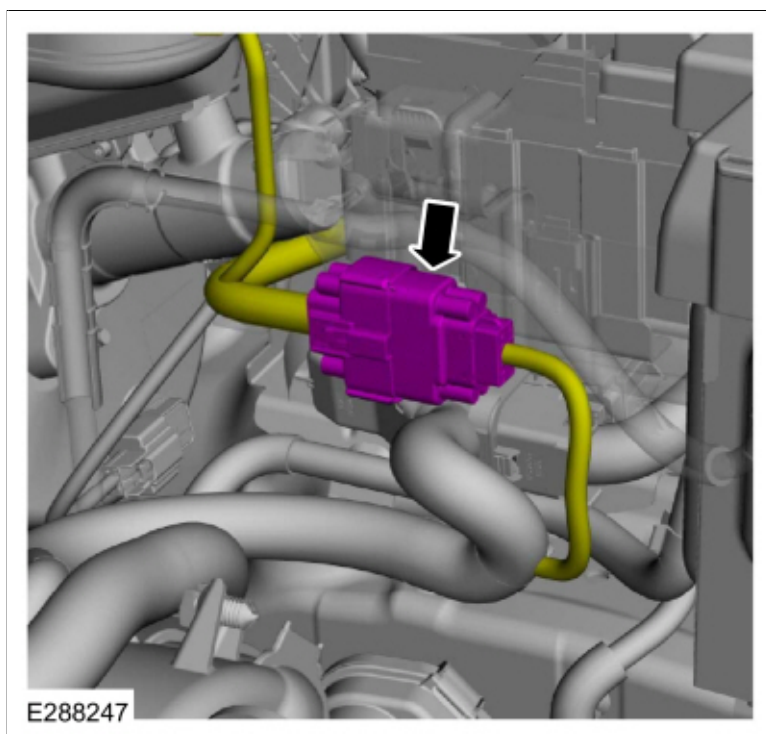


34. Connect the PCM electrical connector.

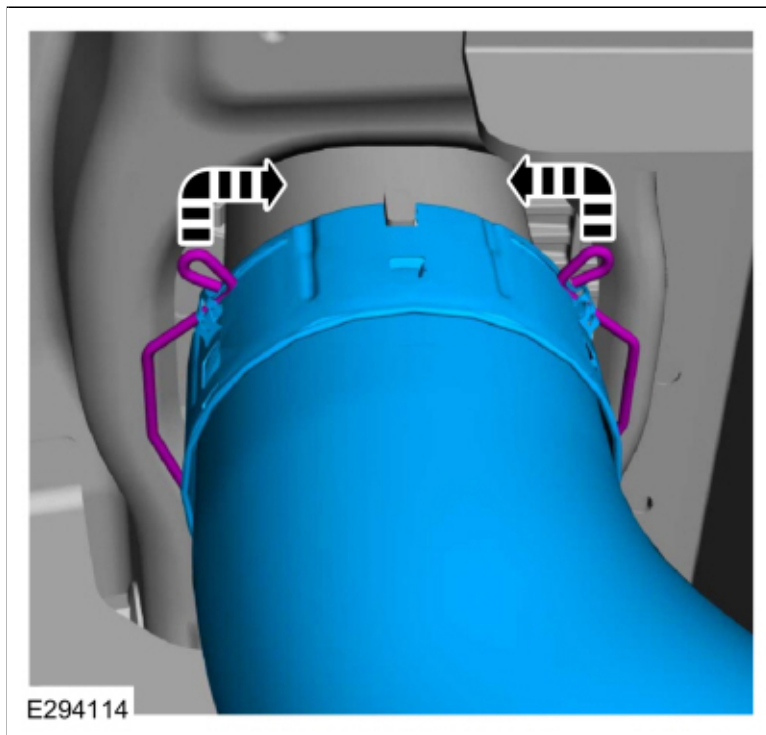




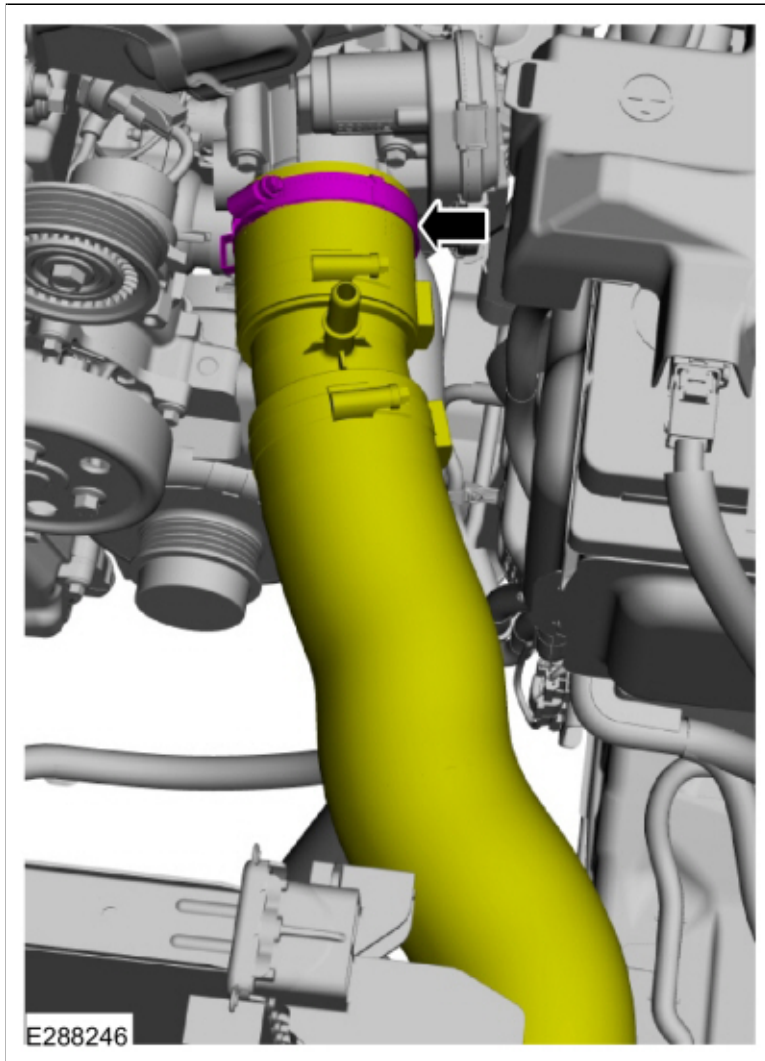
35. Connect the engine harness electrical connector.



36. Install the CAC outlet pipe and release the retainers from the locking notches.

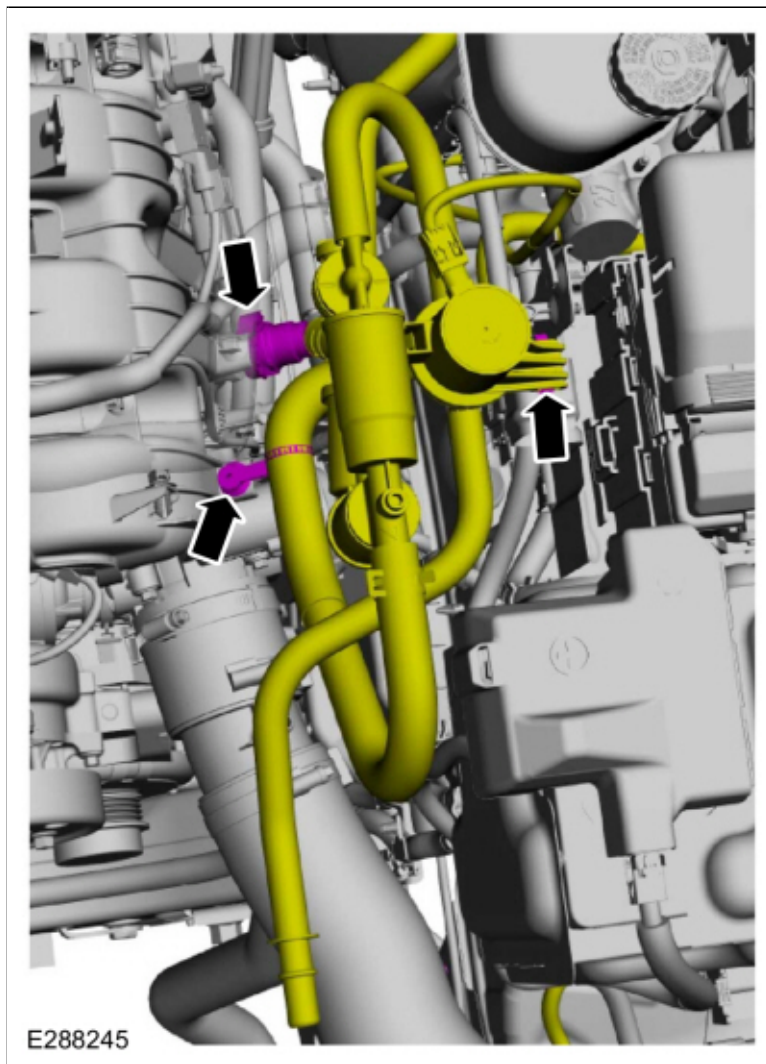


37. Position the CAC outlet pipe and tighten the clamp.
Torque: 44 lb.in (5 Nm)

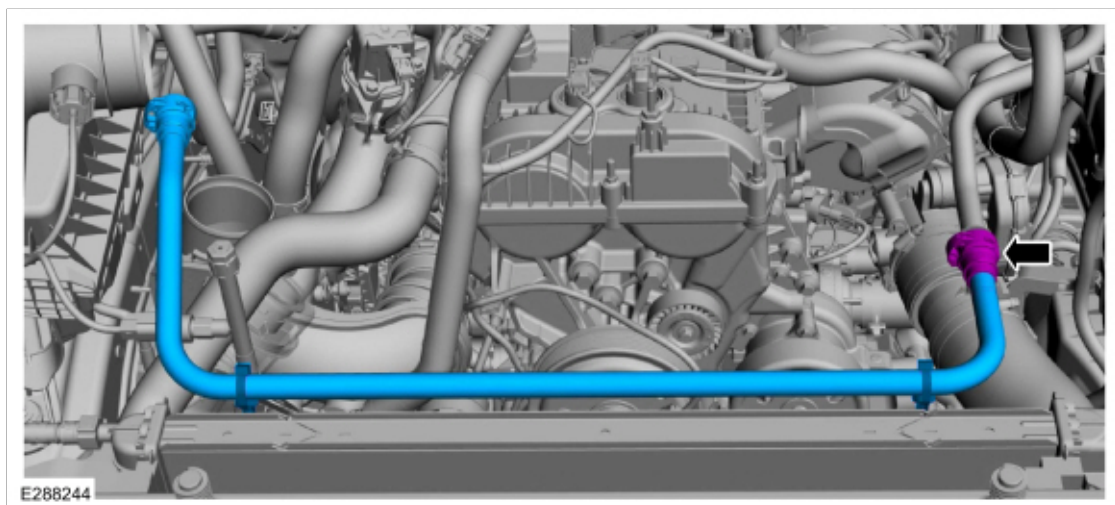


38. Position the brake vacuum tube assembly and connect the quick release coupling and retainer to the intake manifold.

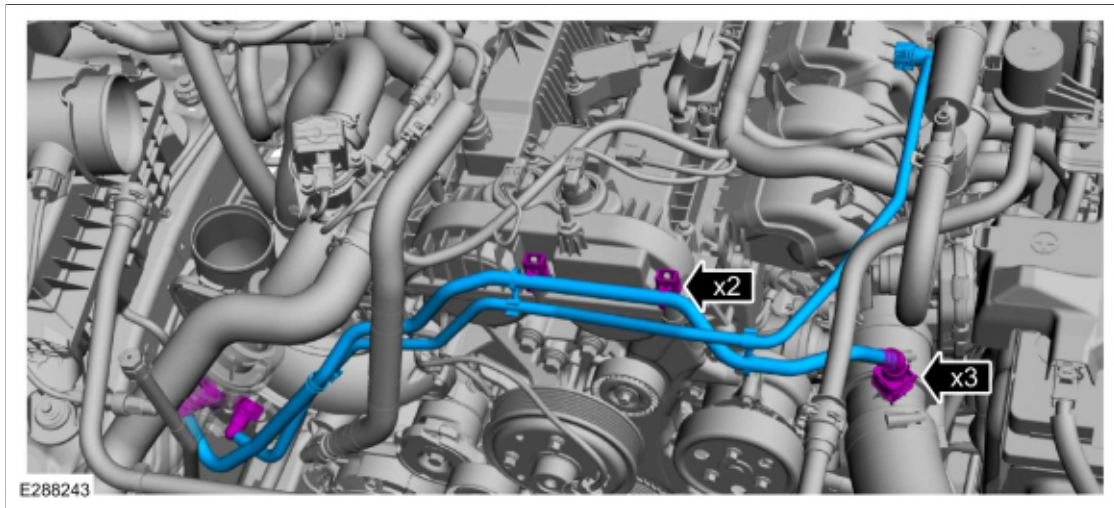
Refer to: [Quick Release Coupling](#) (310-00 Fuel System - General Information - 2.3L EcoBoost (201kW/273PS), General Procedures).



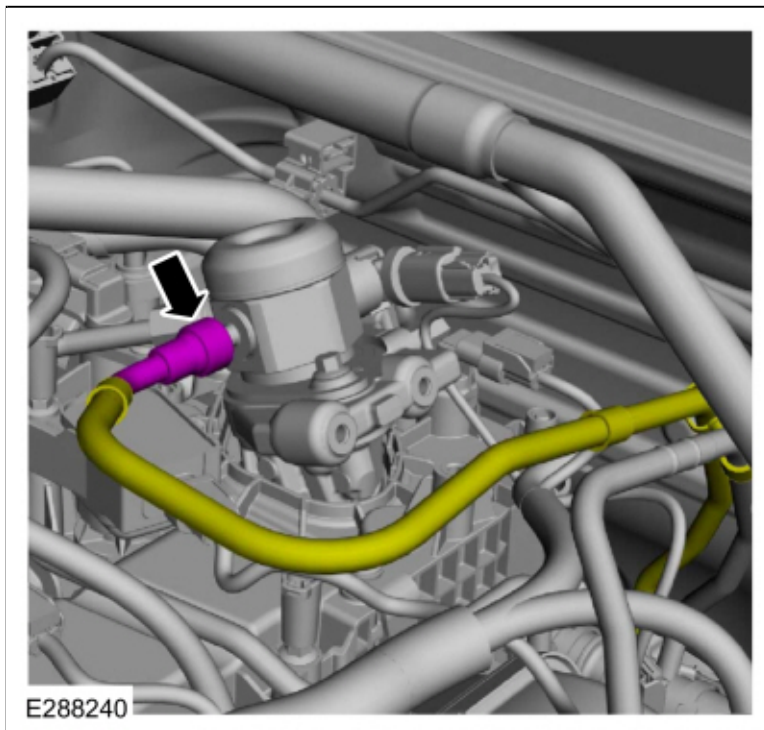
39. Install and connect the brake vacuum tube.
 Refer to: [Quick Release Coupling](#) (310-00 Fuel System - General Information - 2.3L EcoBoost (201kW/273PS), General Procedures).



40. Install and connect the EVAP tubes and retainers.
Refer to: [Quick Release Coupling](#) (310-00 Fuel System - General Information - 2.3L EcoBoost (201kW/273PS), General Procedures).

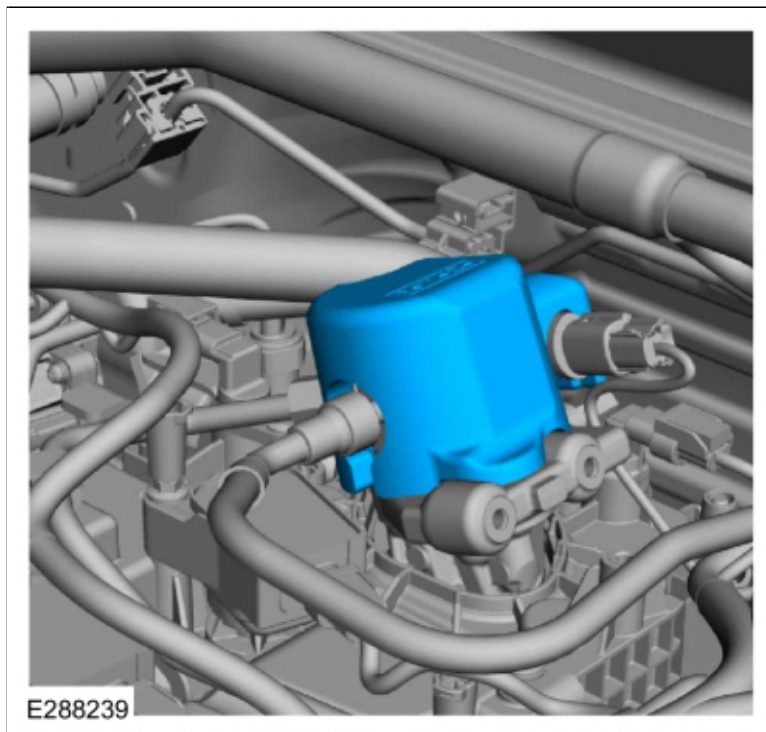


41. Position the fuel tube and connect the spring lock coupling.
Refer to: [Spring Lock Couplings](#) (310-00 Fuel System - General Information - 2.3L EcoBoost (201kW/273PS), General Procedures).

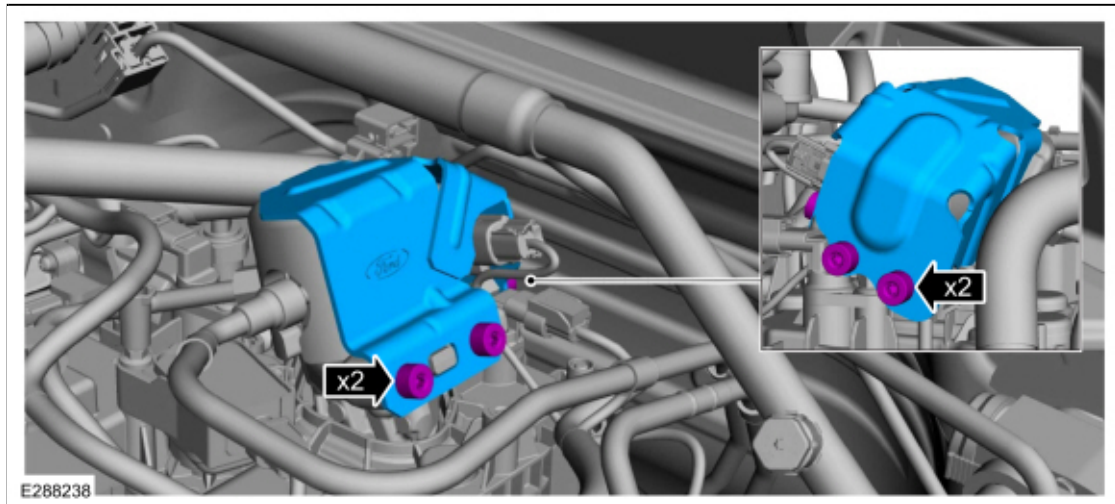


42. **NOTE:** When installing the high-pressure fuel pump noise insulator, spreading the openings will reduce the risk of damage.

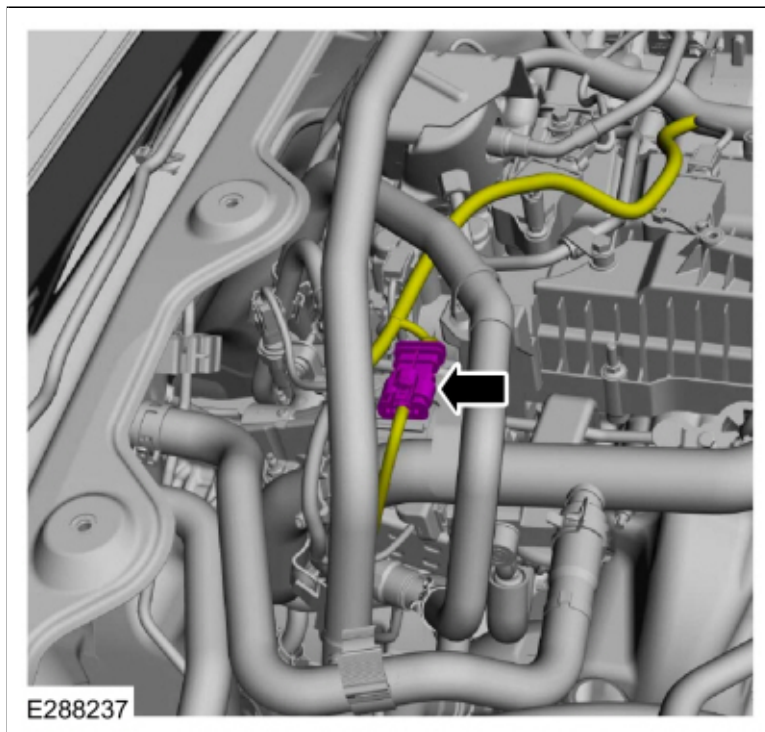
Install the high-pressure fuel pump noise insulator.



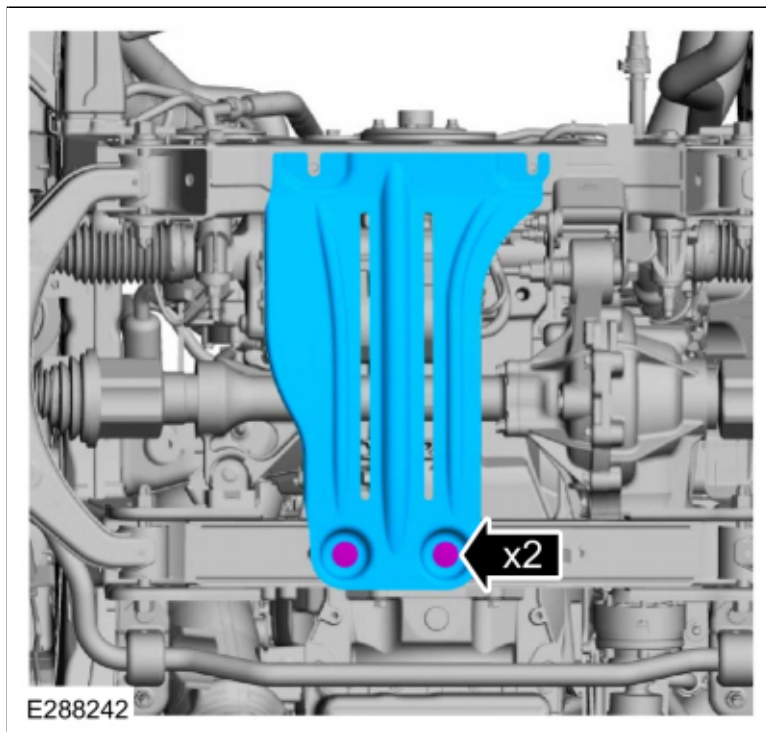
43. Install the high-pressure fuel pump crash bracket and the bolts.
Torque: 97 lb.in (11 Nm)



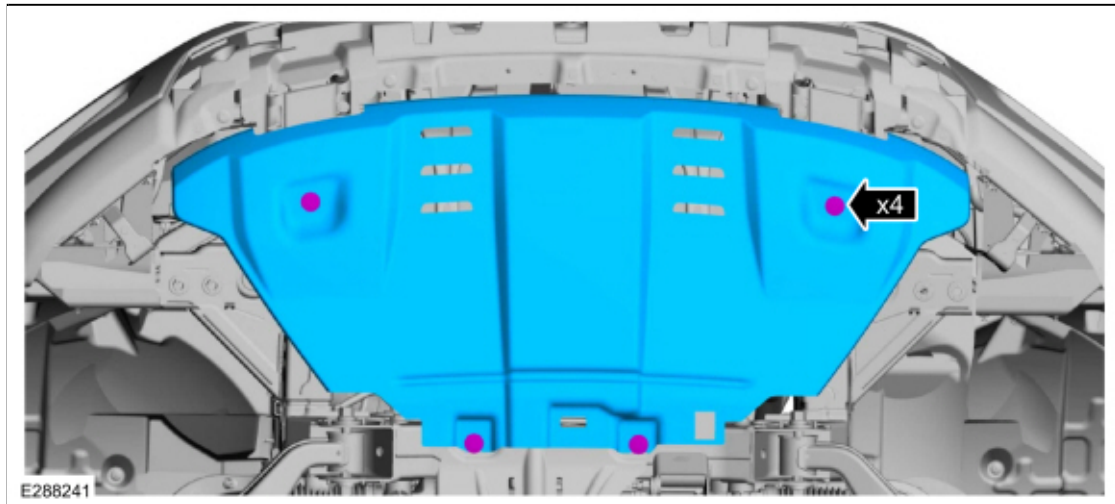
44. Connect the HO2S sensor electrical connector.



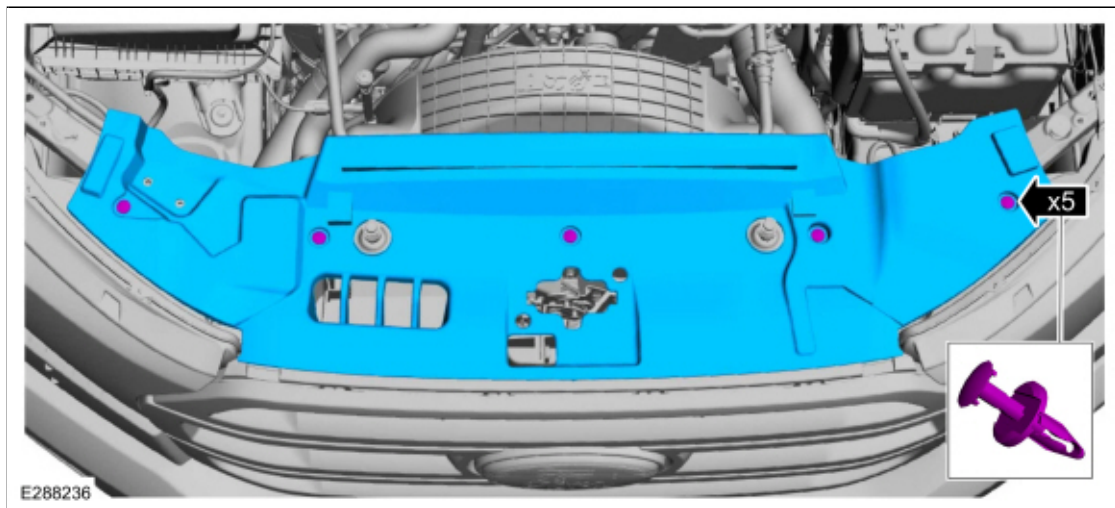
45. Install the following items:
 1. Install the EVAP canister purge valve.
Refer to: [Evaporative Emission Canister Purge Valve](#) (303-13 Evaporative Emissions - 2.3L EcoBoost (201kW/273PS), Removal and Installation).
 2. Install the accessory drive belt.
Refer to: [Accessory Drive Belt](#) (303-05 Accessory Drive - 2.3L EcoBoost (201kW/273PS), Removal and Installation).
 3. Install the cooling fan.
Refer to: [Cooling Fan](#) (303-03 Engine Cooling - 2.3L EcoBoost (201kW/273PS), Removal and Installation).
 4. Install the upper and lower cooling fan shrouds.
Refer to: [Cooling Fan Upper Shroud](#) (303-03 Engine Cooling - 2.3L EcoBoost (201kW/273PS), Removal and Installation).
Refer to: [Cooling Fan Lower Shroud](#) (303-03 Engine Cooling - 2.3L EcoBoost (201kW/273PS), Removal and Installation).
 5. Install the air cleaner outlet pipe.
Refer to: [Air Cleaner Outlet Pipe](#) (303-12 Intake Air Distribution and Filtering - 2.3L EcoBoost (201kW/273PS), Removal and Installation).
 6. Install the cowl panel grille.
Refer to: [Cowl Panel Grille](#) (501-02 Front End Body Panels, Removal and Installation).
 7. Install the hood.
Refer to: [Hood](#) (501-02 Front End Body Panels, Removal and Installation).
46. Install the rear skid plate and the bolts.
Torque: 22 lb.ft (30 Nm)



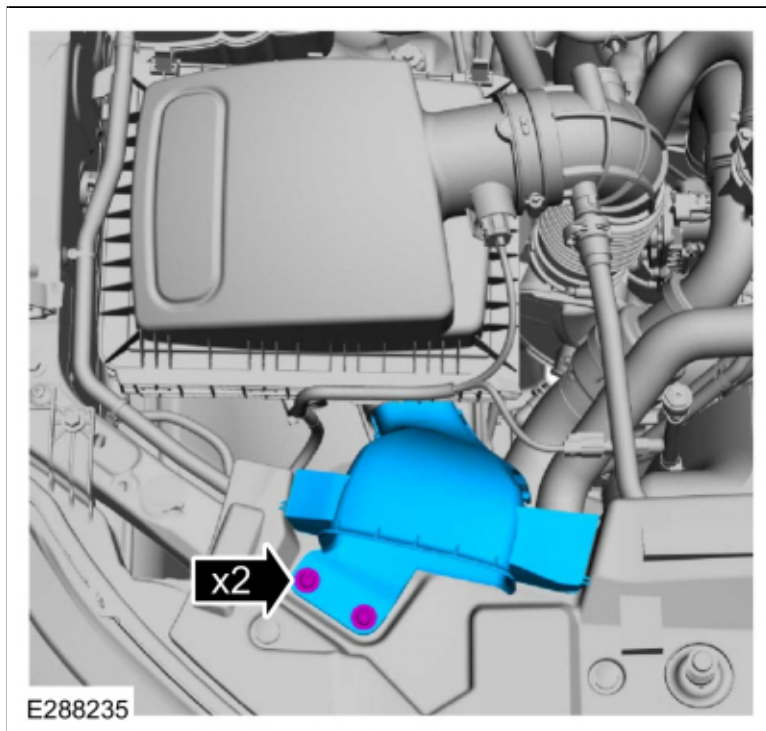
47. Install the front skid plate and the bolts.
Torque: 22 lb.ft (30 Nm)



48. Install and the upper air deflector and the retainers.

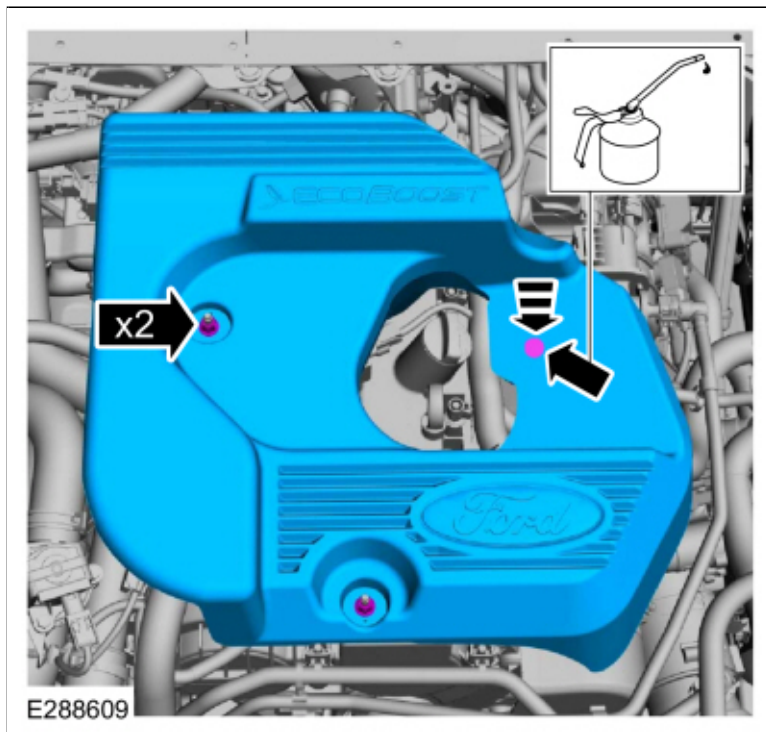


49. Install the air cleaner inlet pipe and the bolts.
Torque: 22 lb.in (2.5 Nm)

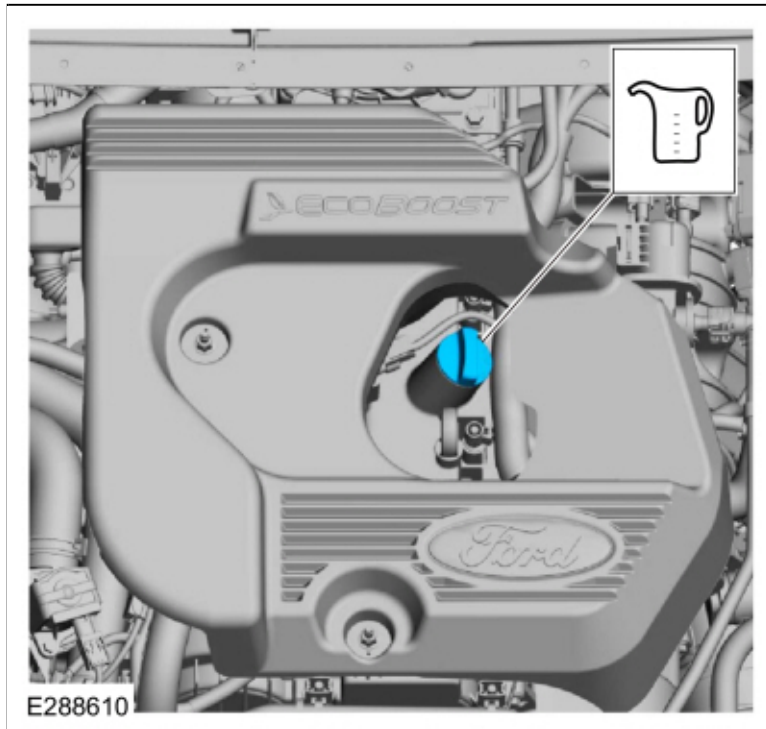


- 50.
- NOTE:** Lubricating the grommets with silicone grease will aid in the installation of the engine appearance cover, and any future removal and installation of the cover.

 Lubricate each grommet with silicone grease.
Material: Motorcraft® Silicone Brake Caliper Grease and Dielectric Compound / XG-3-A (ESE-M1C171-A)
 - Position the engine appearance cover onto engine with the grommet aligned with the studs.
 - Press down on the engine appearance cover at each grommet location to attach the grommets onto the studs and install the nuts.



51. Fill the engine with clean engine oil.
Refer to: [Specifications](#) (303-01 Engine - 2.3L EcoBoost (201kW/273PS), Specifications).



52. Pressurize the fuel system.
Refer to: [Fuel System Pressure Release](#) (310-00 Fuel System - General Information - 2.3L EcoBoost (201kW/273PS), General Procedures).

53. Fill the cooling system.
Refer to: [Cooling System Draining, Vacuum Filling and Bleeding](#) (303-03 Engine Cooling - 2.3L EcoBoost (201kW/273PS), General Procedures).
54. Start and check the exhaust system for leaks.
55. Use the Powertrain Control Module (PCM) Misfire Monitor Profile Correction routine in the diagnostic scan tool.

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