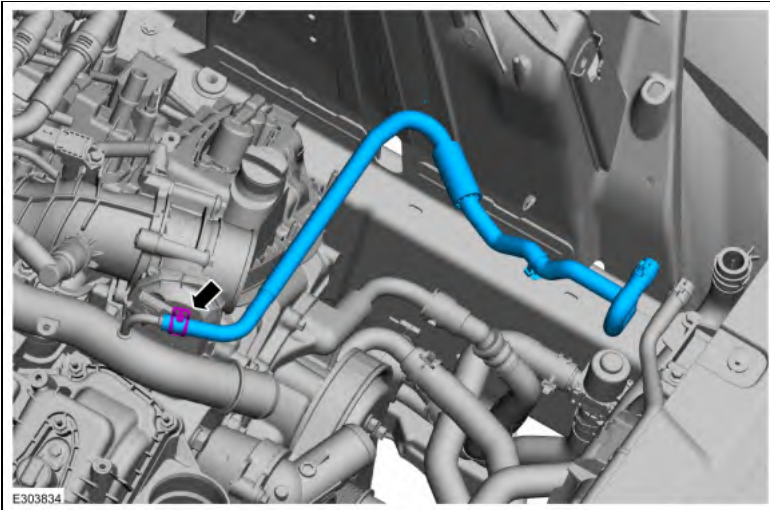
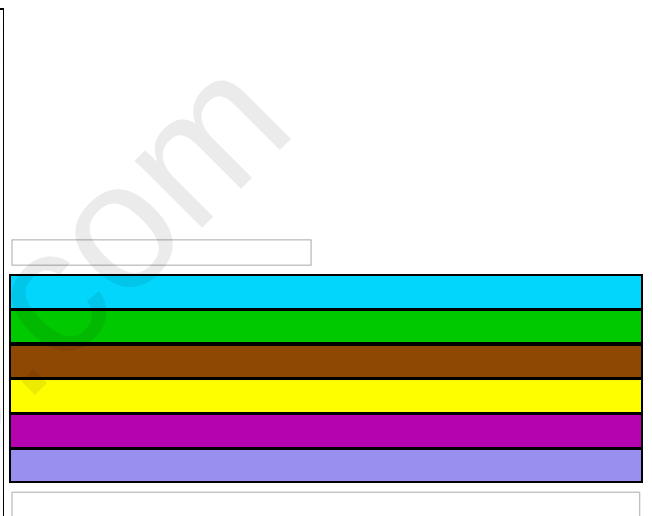
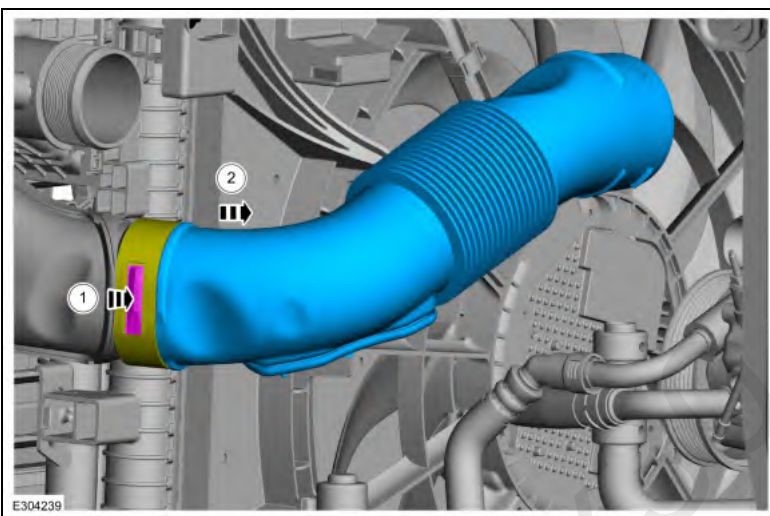
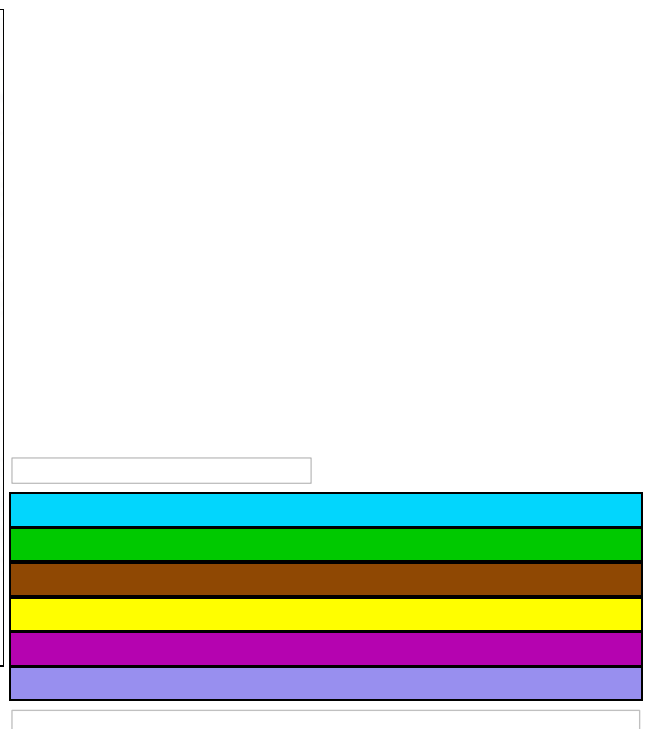
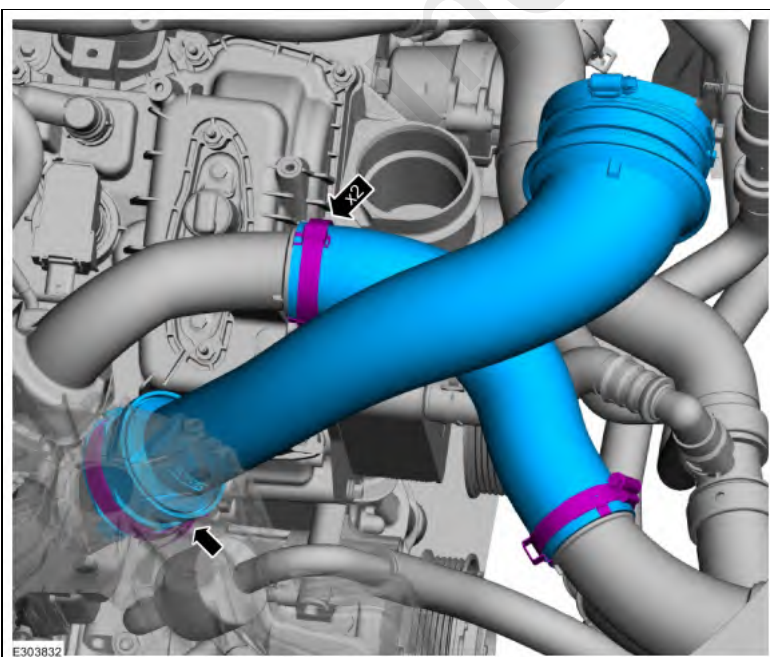




- 11.
1. Depress the raised area of the pipe.
 2. Remove the air cleaner inlet pipe.

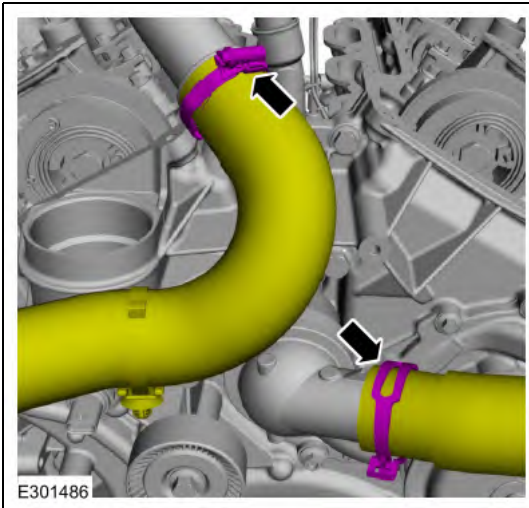


- 12.
1. Loosen the clamp and remove the air cleaner outlet pipe.
 2. Loosen the clamps and remove the CAC inlet pipe.

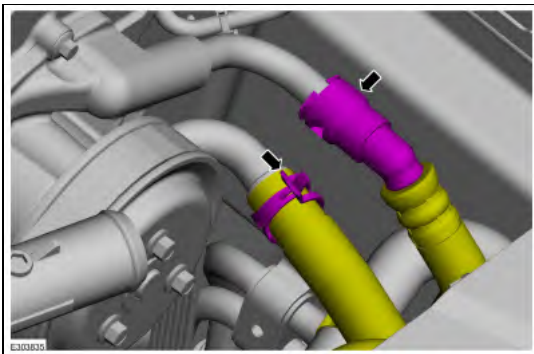


- 13.
1. Release the clamp and disconnect the lower radiator hose.

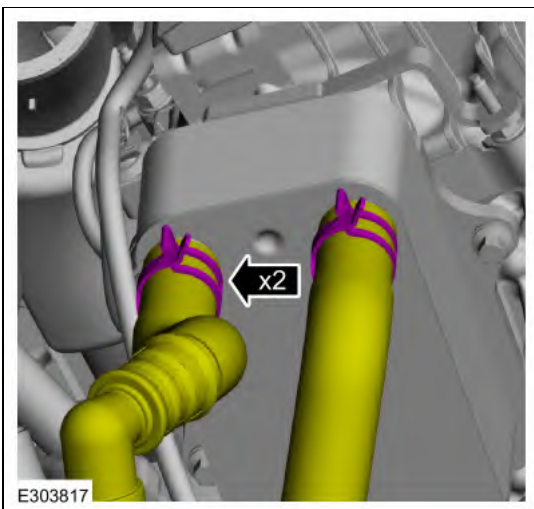
- Loosen the clamp and disconnect the upper radiator hose.
- Position the hoses aside.



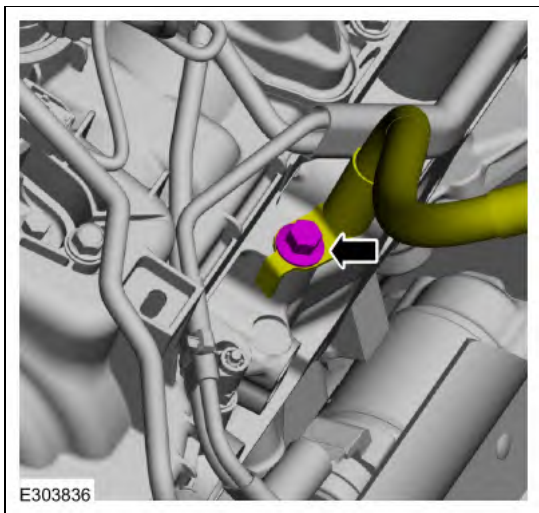
14. Release the clamp and disconnect the coolant hose.
- Disconnect the coolant hose quick release coupling.
 - Position the hoses aside.



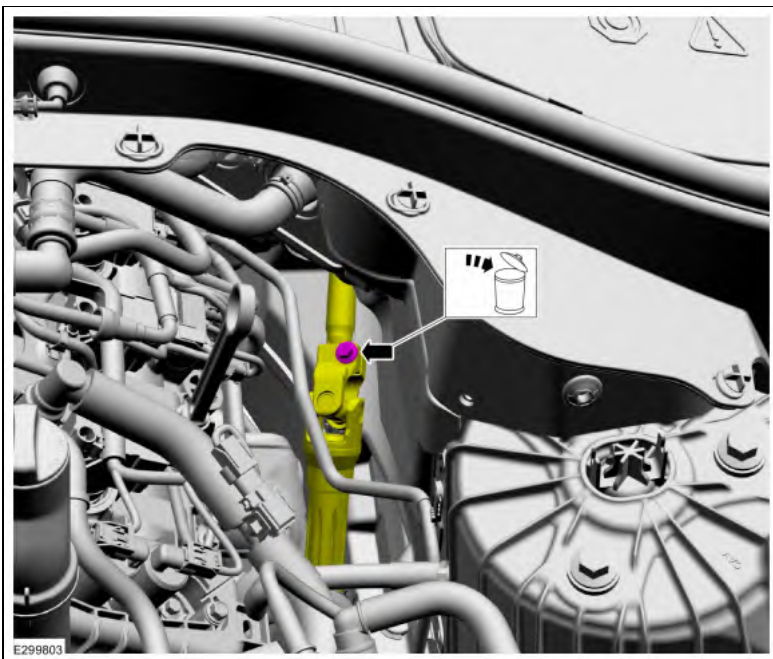
15. Release the clamps and disconnect the oil cooler hoses.
- Position the hoses aside.



16. Remove the bolt and position the ground cable aside.

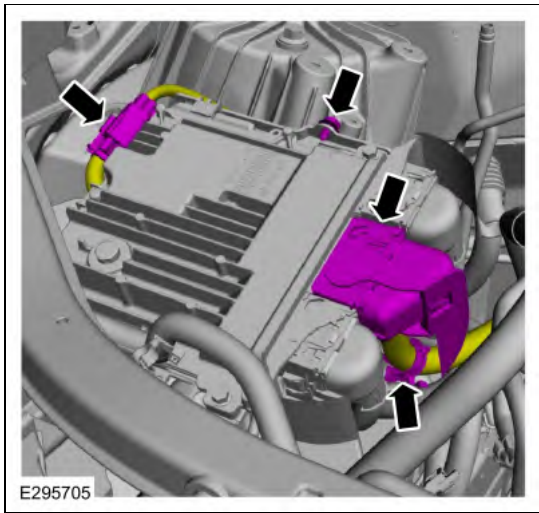


17. Remove the generator.
Refer to: Generator - 3.0L EcoBoost (414-02 Generator and Regulator, Removal and Installation).
18.
 - Remove the bolt and disconnect the steering shaft.
 - Discard the bolt.



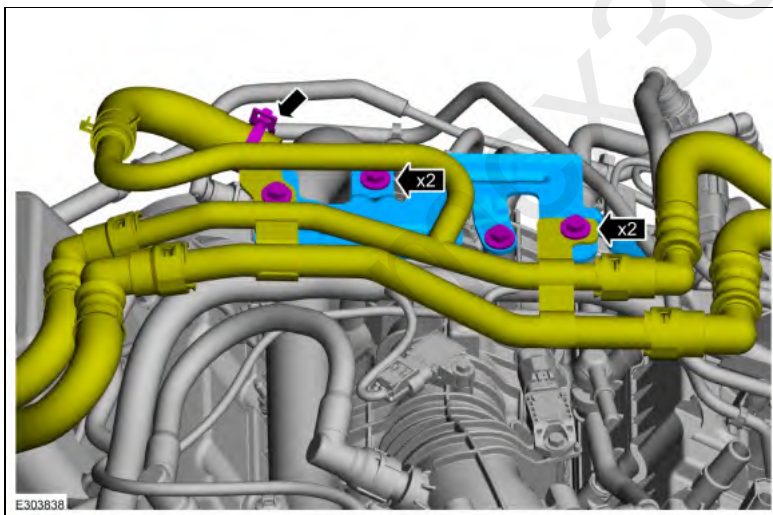
19.

- Disconnect the center PCM electrical connector and wiring harness retainer.
- Disconnect the engine harness electrical connector, retainer and position the engine wiring harness on the engine.



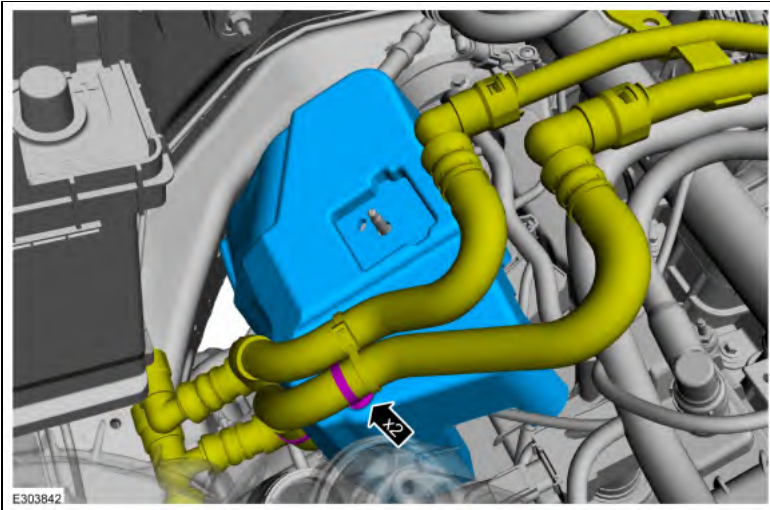
20.

- Release the clamp and disconnect the heater hose.
- Remove the bolts and position the heater hose brackets aside.
- Remove the bolts and the intake manifold bracket.

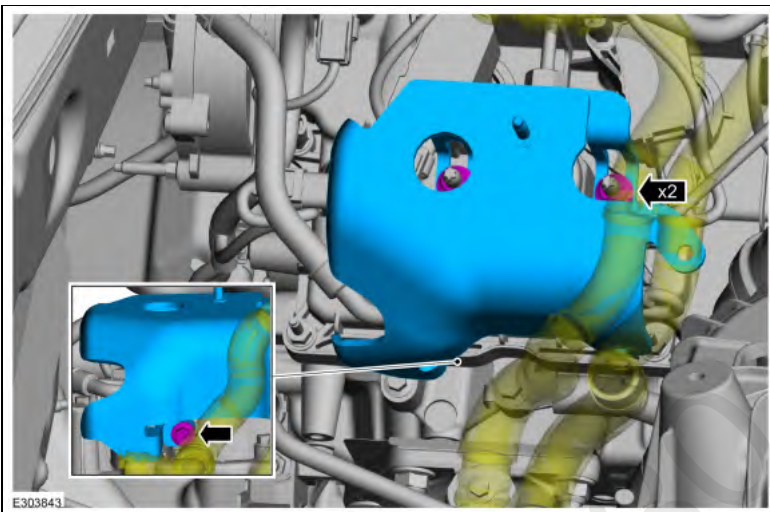


21. **NOTE:** When removing or installing the fuel injection pump noise insulator, spreading the openings will reduce the risk of damage.

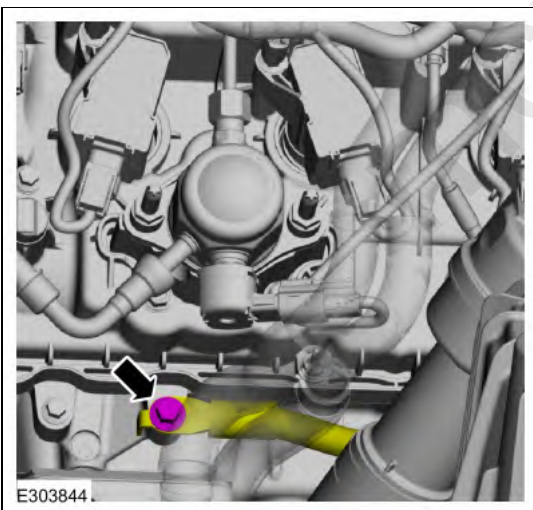
1. Detach the coolant hose retainers.
2. Remove the fuel injection pump noise insulator.



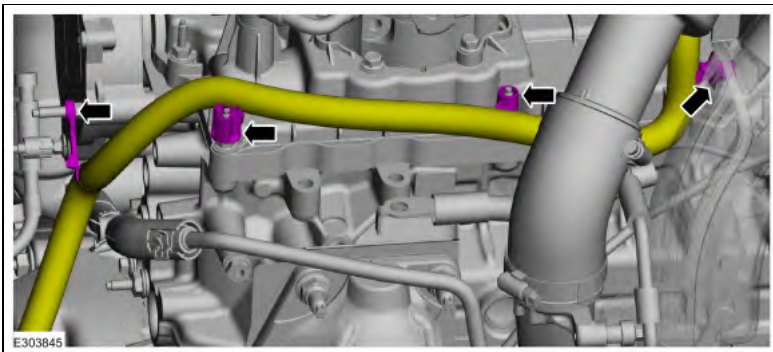
22. Remove the nuts, the bolt and the high-pressure fuel pump shield.



23. Remove the bolt and position the ground cable aside.

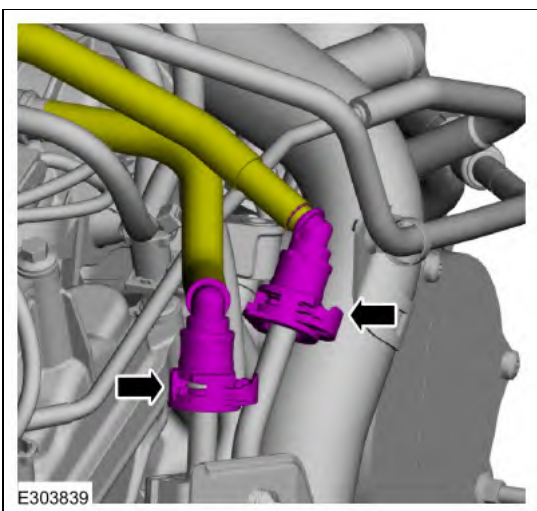


24. Detach the wiring harness retainers.



25.

- Disconnect the fuel supply tube quick release coupling.
Refer to: Quick Release Coupling (310-00 Fuel System - General Information) .
- Disconnect the EVAP supply tube quick release coupling.
Refer to: Quick Release Coupling (310-00 Fuel System - General Information) .

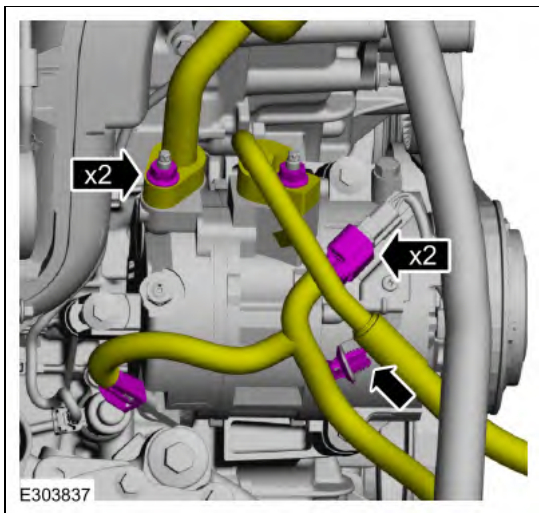


26. Remove the front wheels and tires.

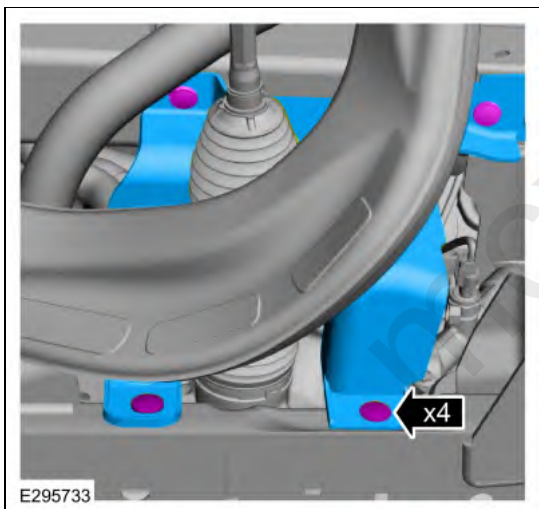
Refer to: Wheel and Tire (204-04A Wheels and Tires, Removal and Installation).

27.

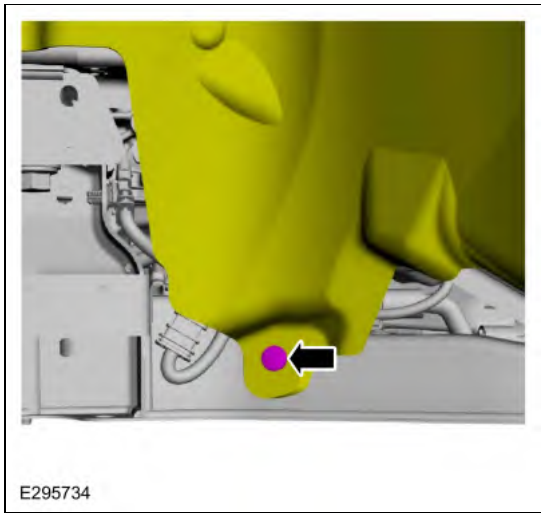
- Disconnect the A/C wiring harness electrical connectors.
- Detach the wiring harness retainer.
- Remove the nuts and disconnect the A/C lines from A/C compressor.
- Discard the O-ring seal.
- Make sure that all openings are sealed.



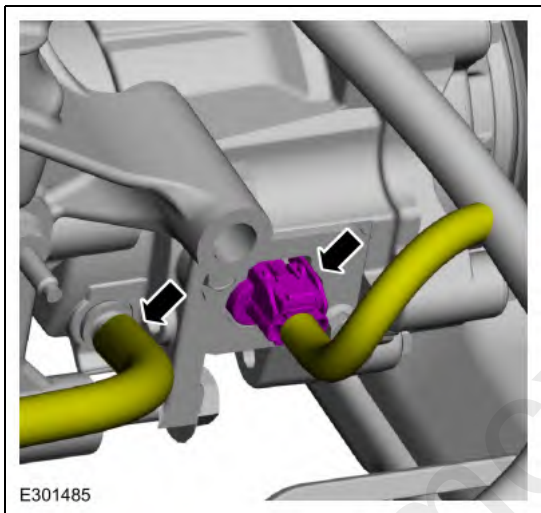
28. Remove the pin-type retainers and the steering shield from the LH subframe.



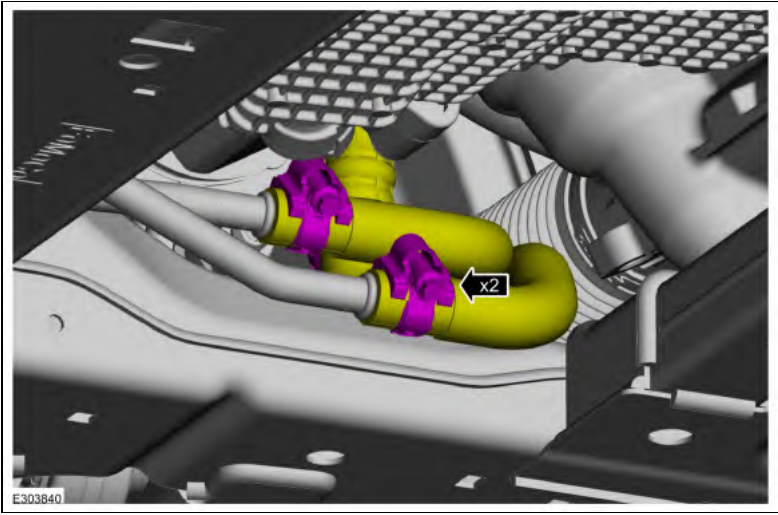
29. Remove the splash shield pin-type retainer from the LH subframe and position aside.



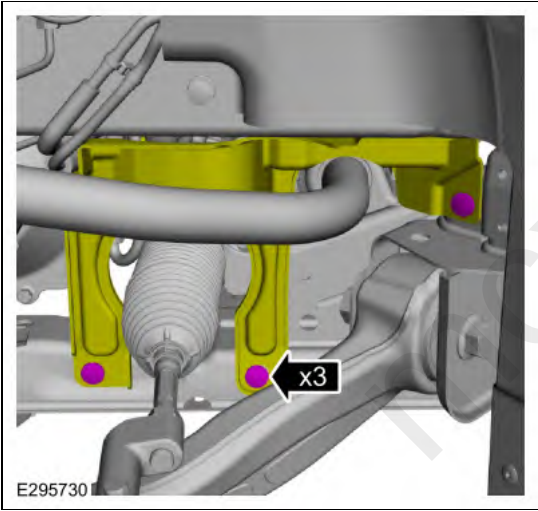
- 30.
- Disconnect the vent hose.
 - Disconnect the wiring harness electrical connector.



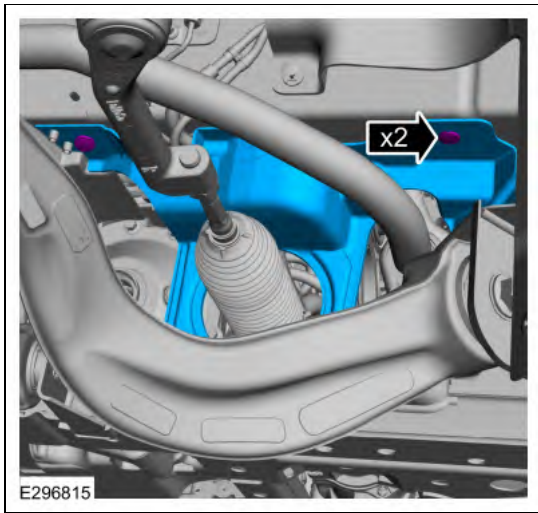
31. Loosen the clamps and disconnect the coolant hoses.



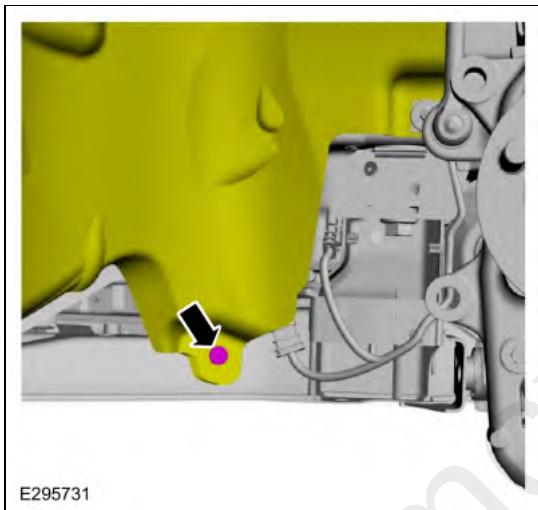
32. Remove the steering shield pin-type retainers from the RH subframe.



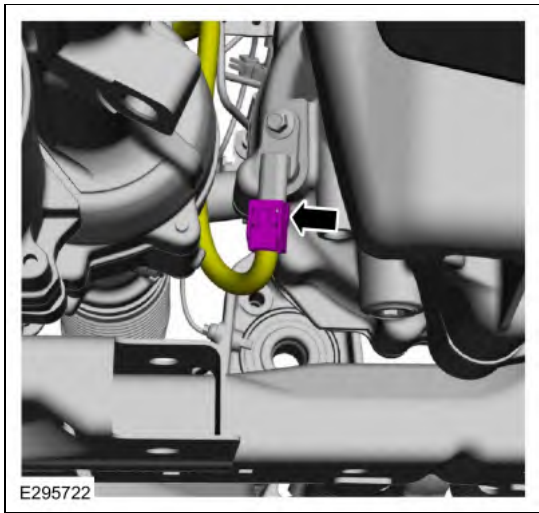
33. Remove the pin-type retainers and the steering shield from the RH subframe.



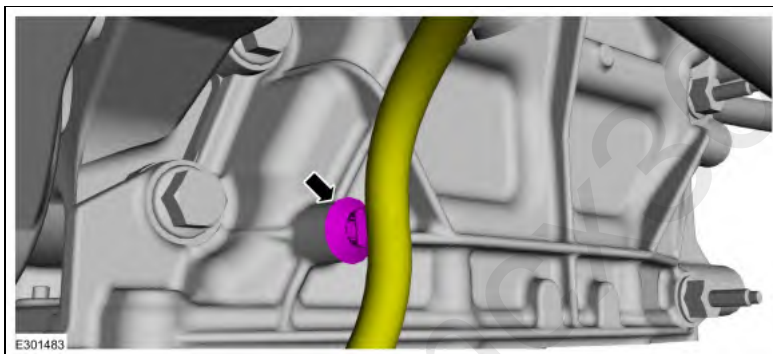
34. Remove the splash shield pin-type retainer from the RH subframe.



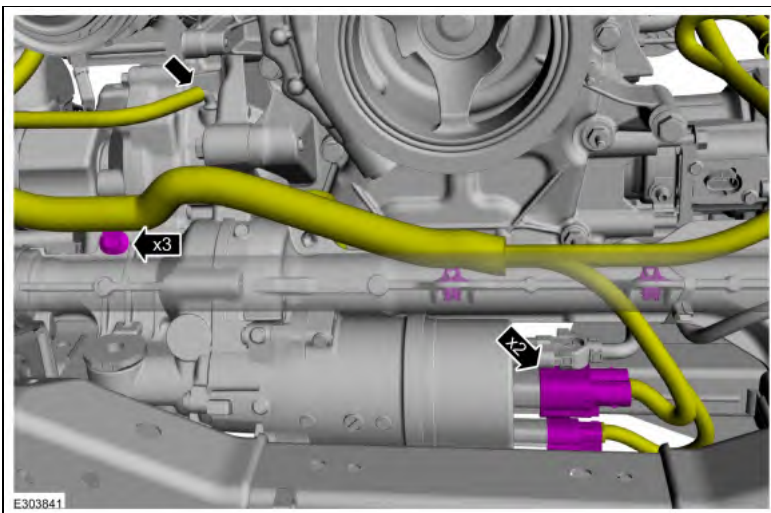
35. Disconnect the wiring harness electrical connector from the RH transfer case.



36. Detach the wiring harness retainer.



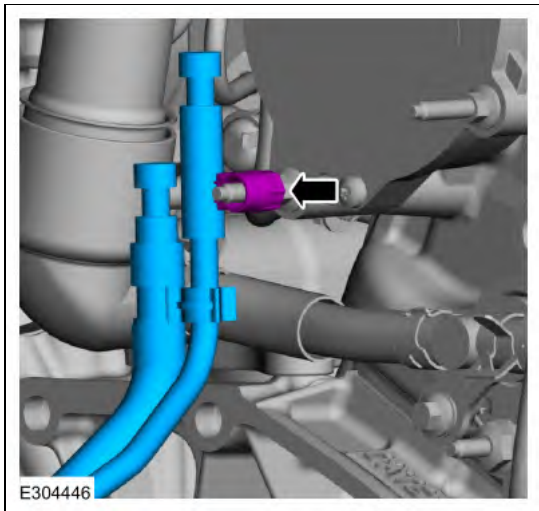
- 37.
- Disconnect the RH transfer case vent hose.
 - Disconnect the steering gear wiring harness electrical connectors, wiring harness retainers and position the harness to the RH side of vehicle.



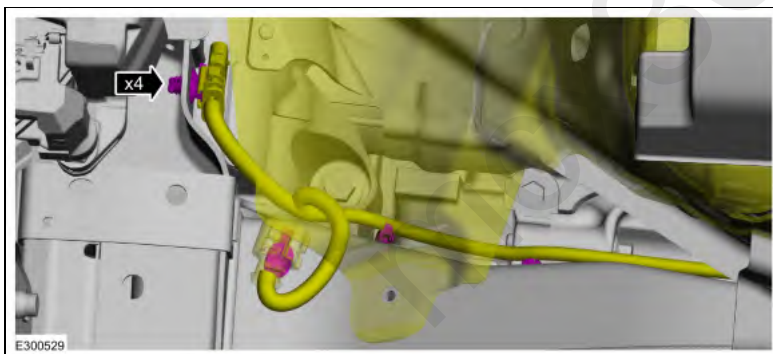
38. Remove the following items:

1. RH and LH side.
Refer to: Brake Disc (206-03 Front Disc Brake, Removal and Installation).
2. RH and LH side.
Refer to: Halfshaft (205-04 Front Drive Halfshafts, Removal and Installation).
3. If equipped with 10R60 transmission.
Refer to: Transmission - 3.0L EcoBoost (307-01A Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€” 10R60, Removal and Installation).
4. If equipped with 10R80 transmission.
Refer to: Transmission - 3.0L EcoBoost (307-01B Automatic Transmission, Transfer Case and Power Transfer Unit - 10-Speed Automatic Transmission â€” 10R80, Removal and Installation).
5. RH side.
Refer to: Exhaust Flexible Pipe (309-00B Exhaust System - 3.0L EcoBoost, Removal and Installation).

39. Detach the retainer and remove the vent hose(s).

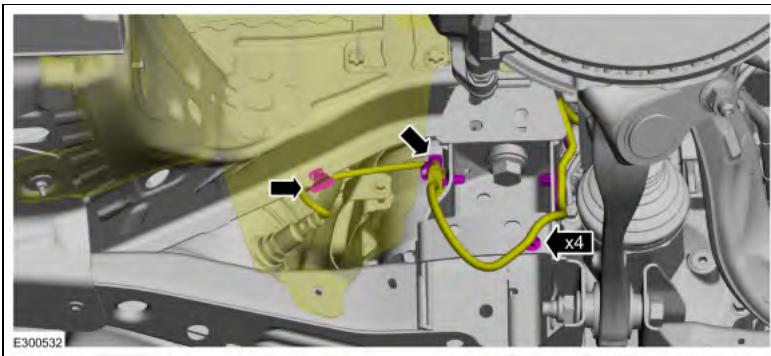


40. Detach the wiring harness retainers from the LH subframe.

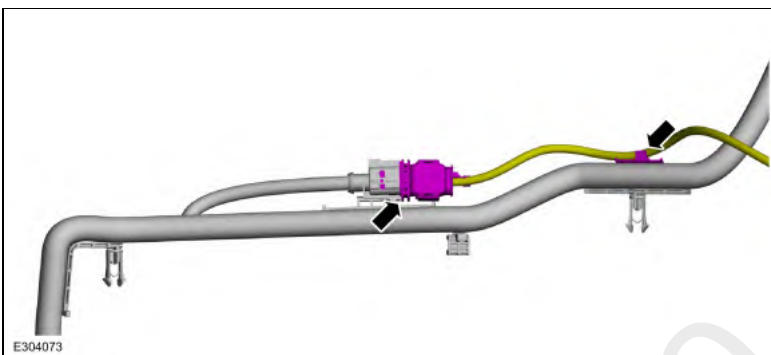


41.

- Disconnect the catalyst monitor sensor electrical connector.
- Detach the wiring harness retainers from the RH subframe.

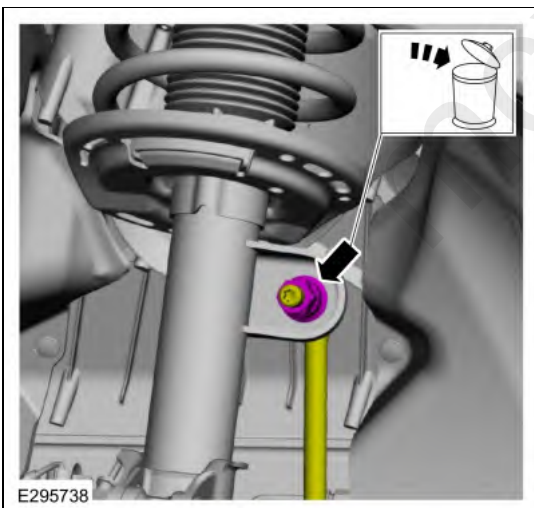


- 42.
- Disconnect the RH heated oxygen sensor electrical connector.
 - Detach the wiring harness retainer.



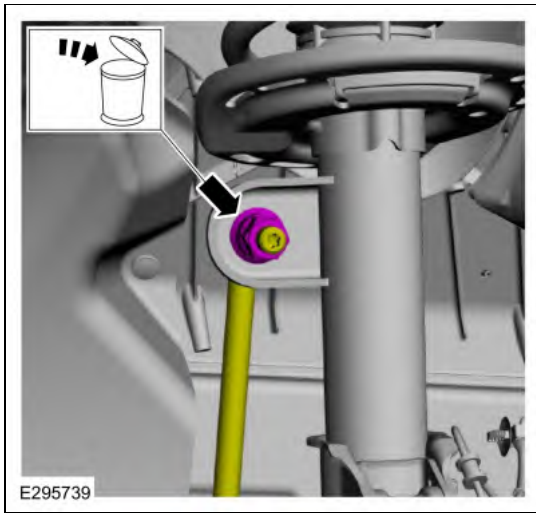
43. **NOTICE:** Use the internal or external hex-holding feature to prevent the ball and stud from turning while removing or installing the stabilizer bar link nuts. The link boot seal must not be allowed to twist while tightening the link nuts or damage to the boot seal will occur.

Remove the nut and position the LH sway bar link aside.



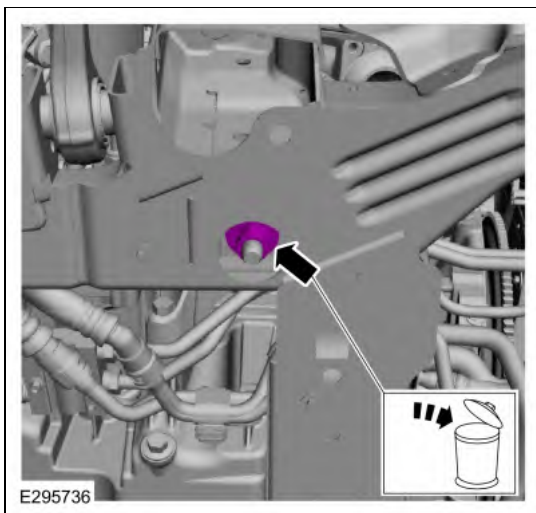
44. **NOTICE:** Use the internal or external hex-holding feature to prevent the ball and stud from turning while removing or installing the stabilizer bar link nuts. The link boot seal must not be allowed to twist while tightening the link nuts or damage to the boot seal will occur.

Remove the nut and position the RH sway bar link aside.



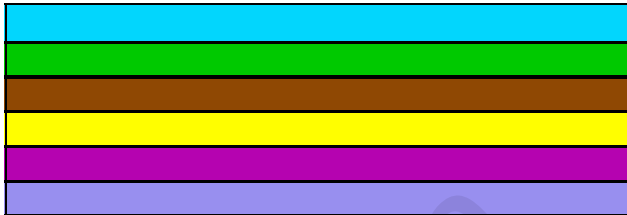
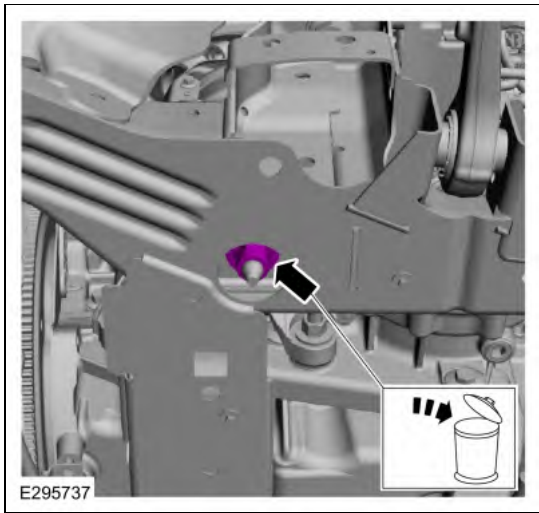
45. **NOTICE:** Only use hand tools when removing the engine mount nuts or damage to the engine mount can occur.

- Remove the LH engine mount nut.
- Discard the engine mount nut.

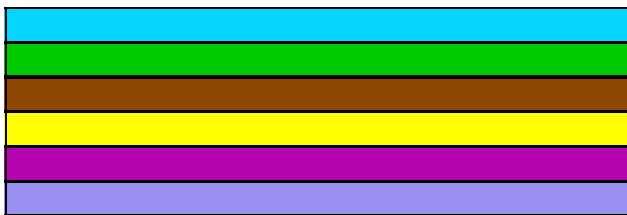
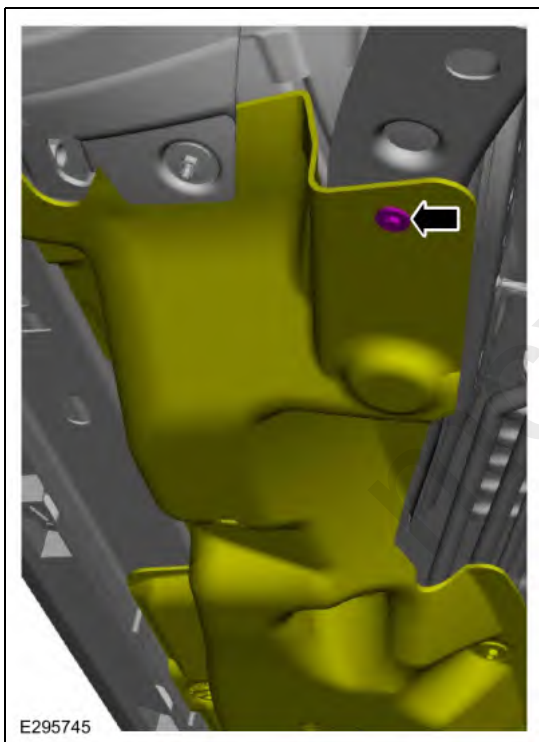


46. **NOTICE:** Only use hand tools when removing the engine mount nuts or damage to the engine mount can occur.

- Remove the RH engine mount nut.
- Discard the engine mount nut.



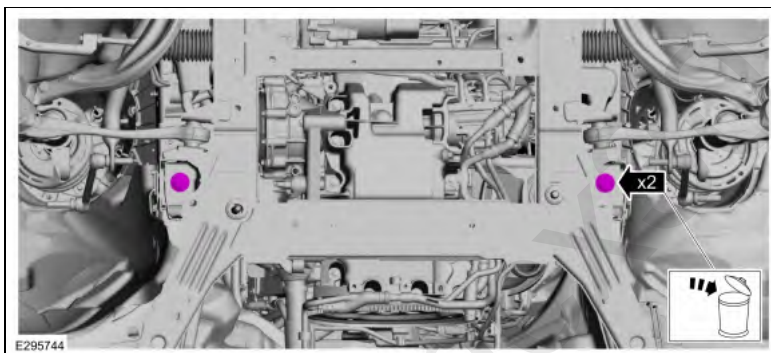
47. Remove the bolt and position the RH underbody shield aside.



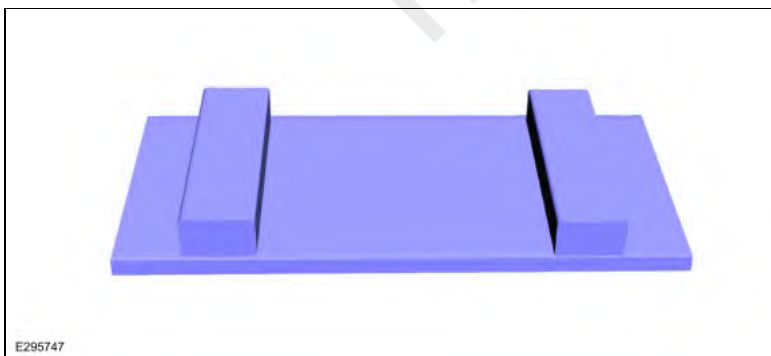
48. Remove the bolt and position the LH underbody shield aside.



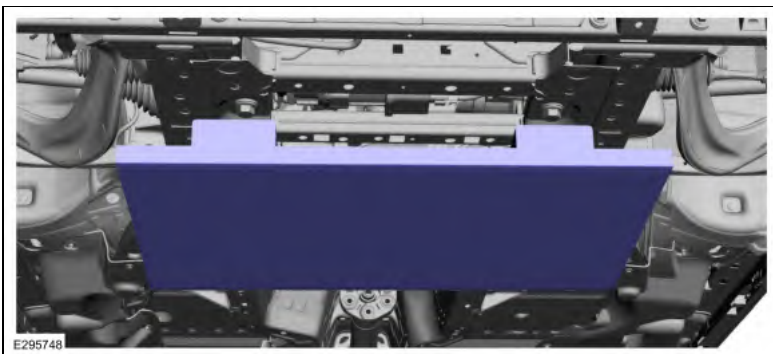
- 49.
- Remove the middle subframe bolts.
 - Discard the bolts.



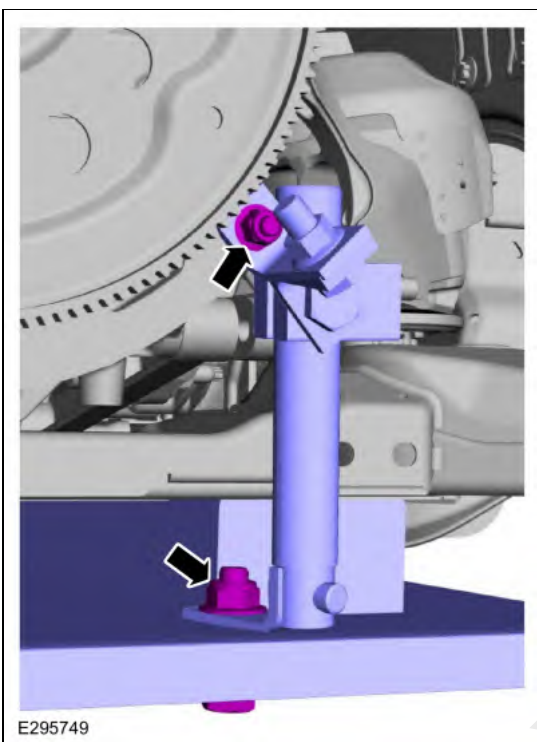
50. Position two boards onto the powertrain jack as shown.



51. Position the powertrain jack and blocks of wood under the powertrain and subframe .
 Use the General Equipment: Powertrain Jack
 Use the General Equipment: Wooden Block

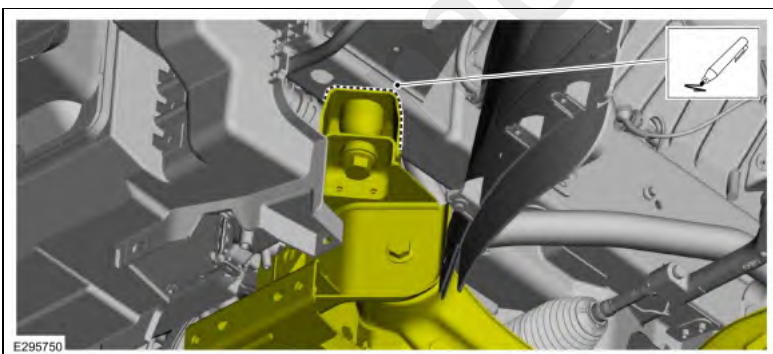


52. Install, adjust and tighten the adjustable mounting arm.
Use the General Equipment: Adjustable Mounting Arm



A horizontal bar chart with six bars of equal length, each a different color. From top to bottom, the colors are cyan, green, brown, yellow, purple, and light blue. The bars are separated by thin black lines. Above the top bar is a small white rectangular box with a black border.

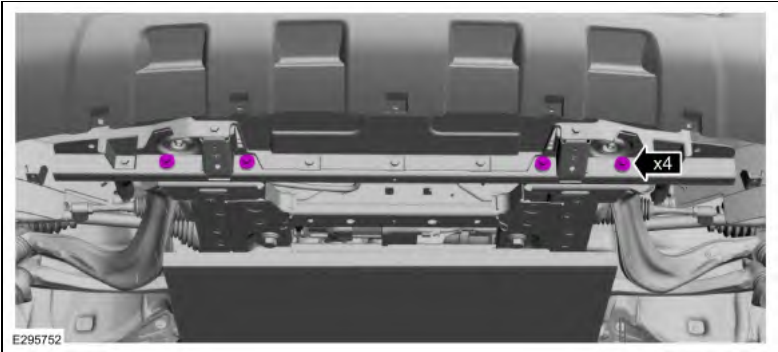
53. Mark the front subframe location.



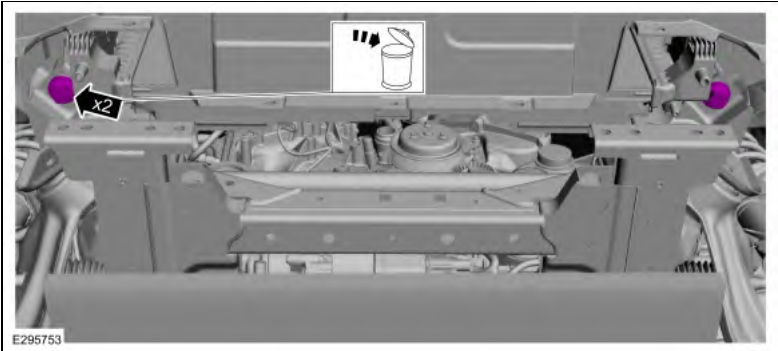
54. Mark the rear subframe location.



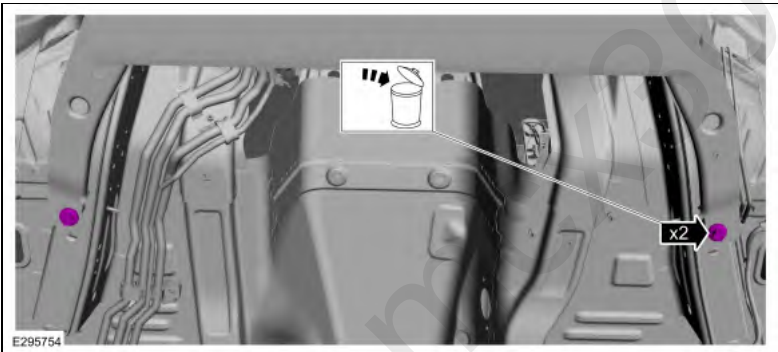
55. Remove the front radiator support bar bolts.



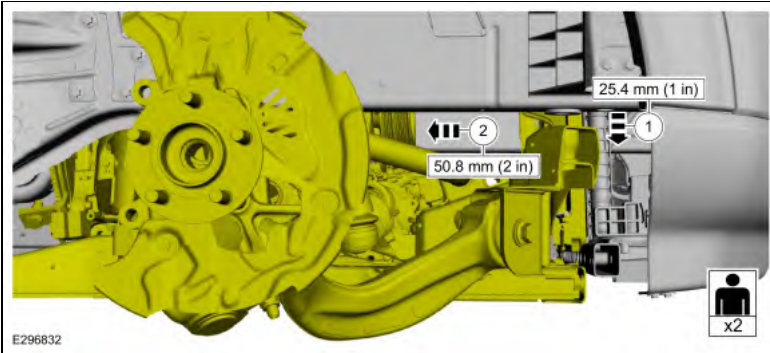
- 56.
- Remove the front subframe bolts.
 - Discard the bolts.



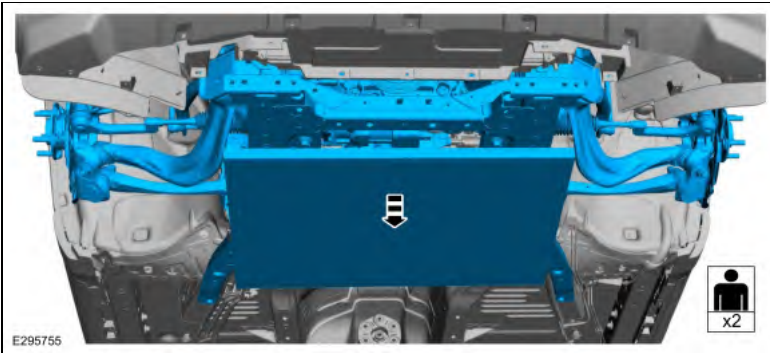
- 57.
- Remove the rear subframe bolts.
 - Discard the bolts.



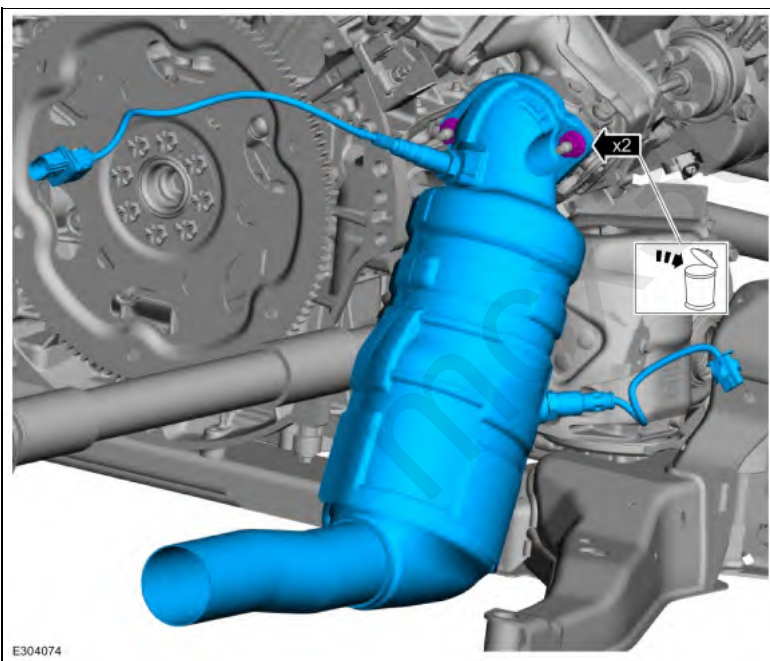
- 58.
1. With the aid of an assistant and using the powertrain jack, lower the powertrain and subframe 25.4 mm (1 in).
 2. With the aid of an assistant and using the powertrain jack, position the powertrain and subframe rearwards 50.8 mm (2 in).



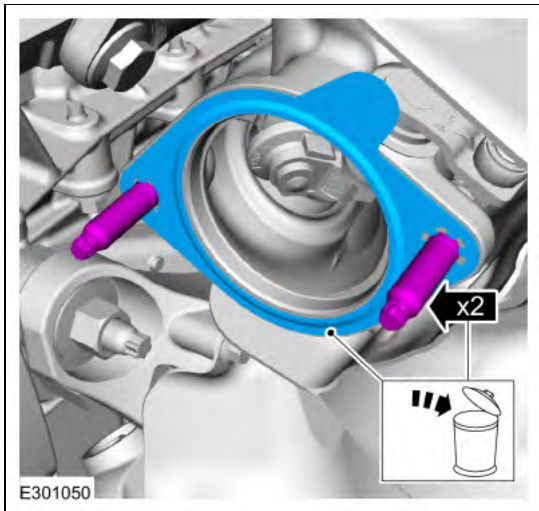
59. With the aid of an assistant and using the powertrain jack, lower the powertrain and subframe as an assembly.



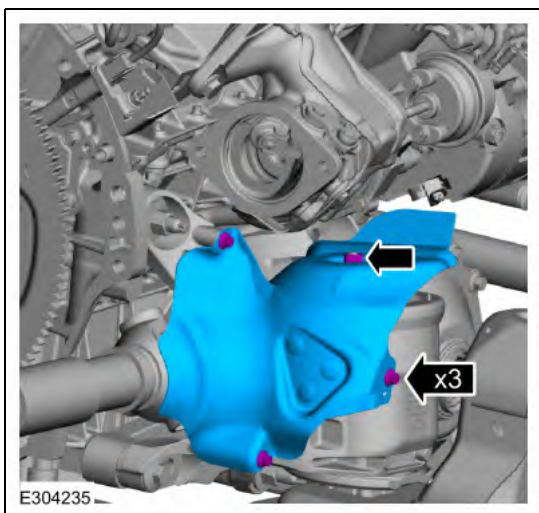
- 60.
- Remove the nuts and the RH catalytic converter.
 - Discard the nuts.



- 61.
- Remove and discard the gasket.
 - If damaged, remove and discard the studs.

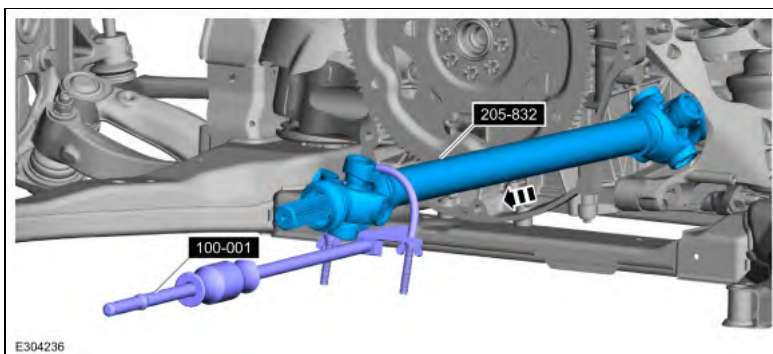


62. Remove the fasteners and the heat shield.

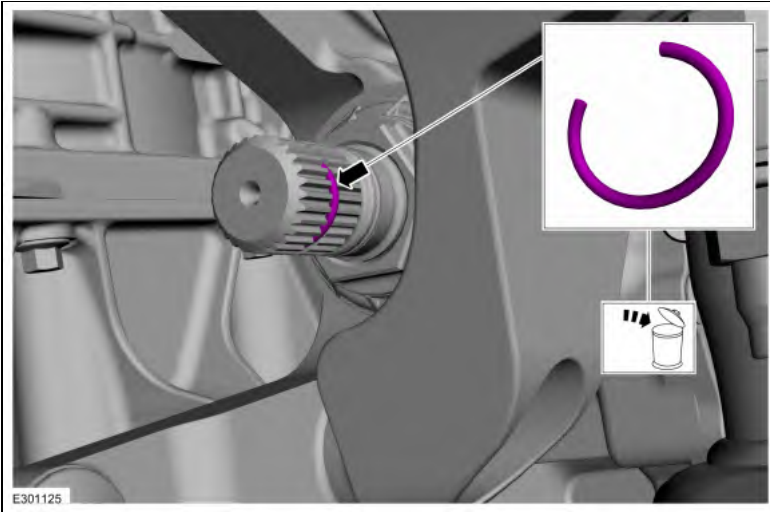


63. Using the special tools, remove the front drive shaft.

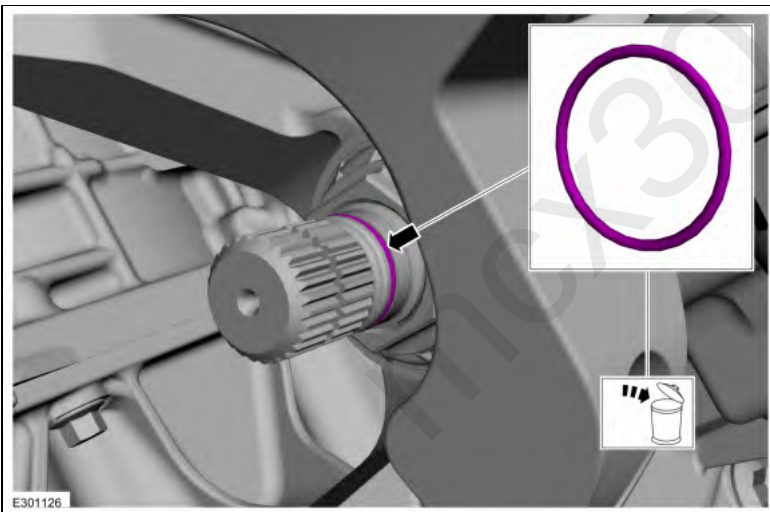
Use Special Service Tool: 100-001 (T50T-100-A) Slide Hammer. , 205-832 Remover, Halfshaft.



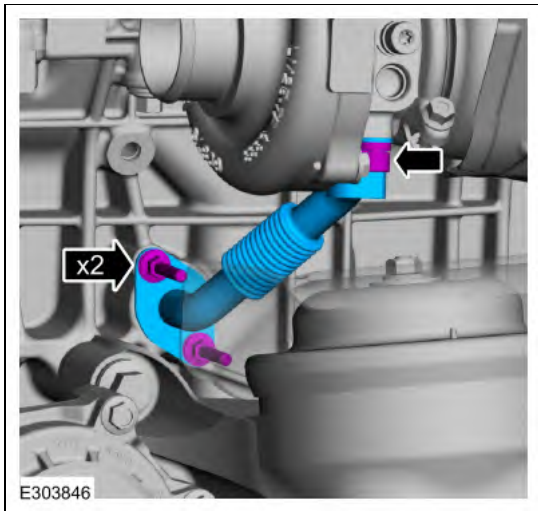
64. Remove and discard the front axle pinion stem circlip.



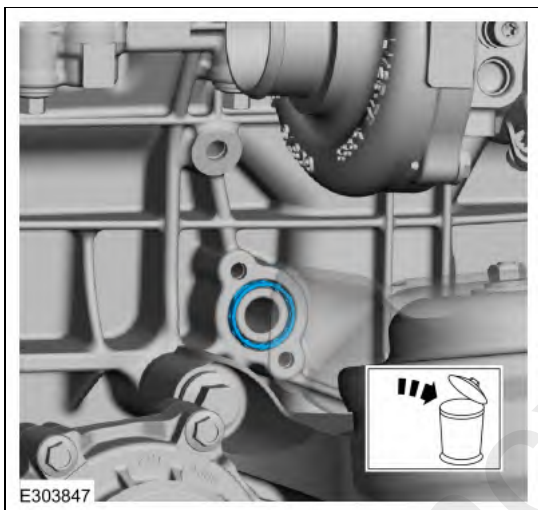
65. Remove and discard the front axle pinion stem O-ring.



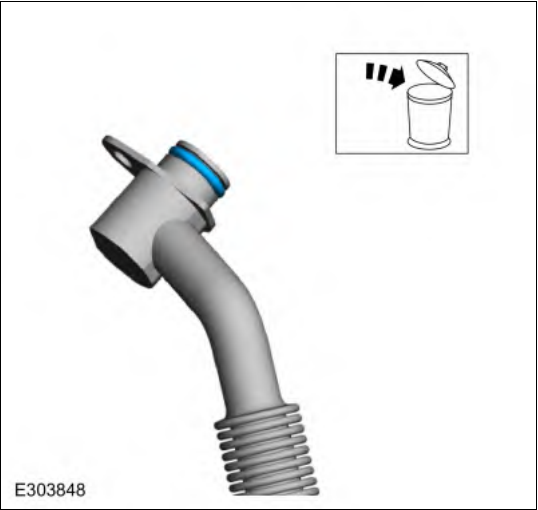
66. Remove the fasteners and the TC oil return tube.



67. Remove and discard the TC oil return tube tube-to-engine block gasket.

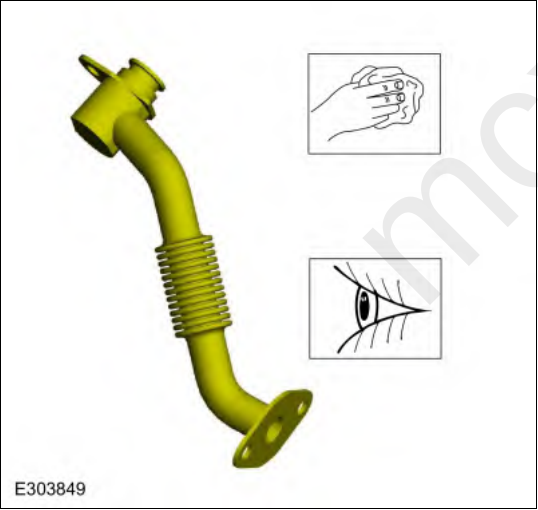


68. Remove and discard the TC oil return tube O-ring seal.

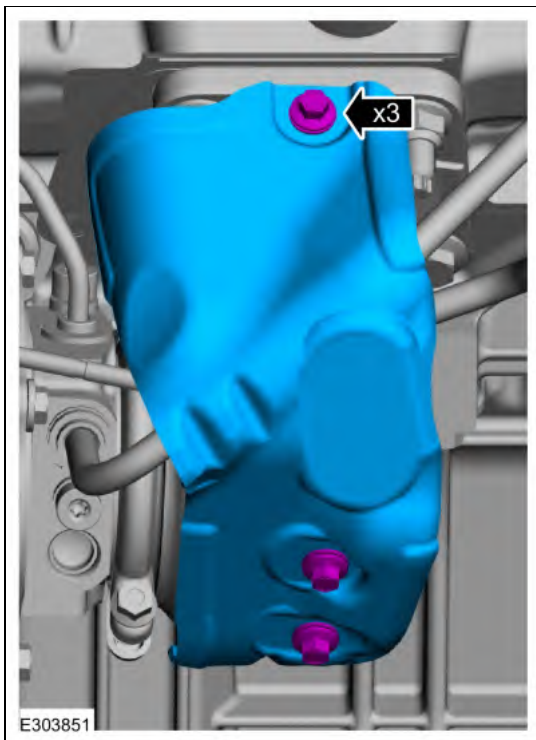


69. **NOTICE:** Inspect for blockage in the turbocharger tube. Check the tube, the sealing surfaces and the flange for flatness and damage. Ensure that the retaining bracket is not bent, check for square-ness of the retaining bracket to the O-ring area. Use brake cleaner and a NYLON brush to clean. **DO NOT USE A METAL BRUSH; DAMAGE TO SEALING AREA WILL RESULT IN LEAKS.**

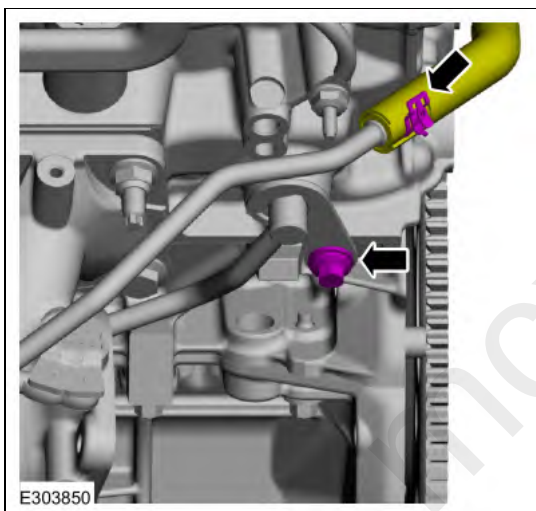
Clean and inspect the TC oil return tube.
Material: Motorcraft® Metal Brake Parts Cleaner / PM-4-A, PM-4-B



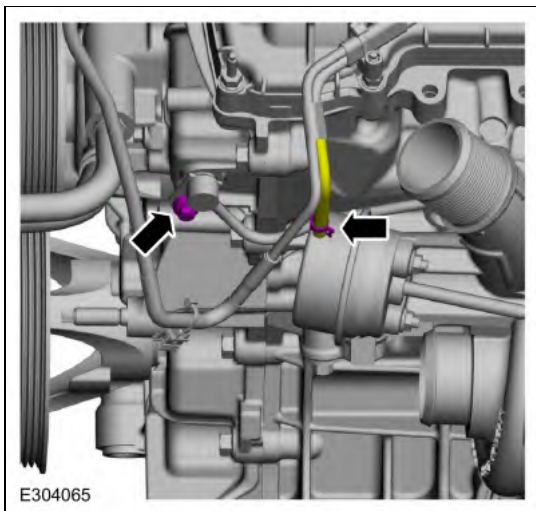
70. Remove the bolts and the heat shield.



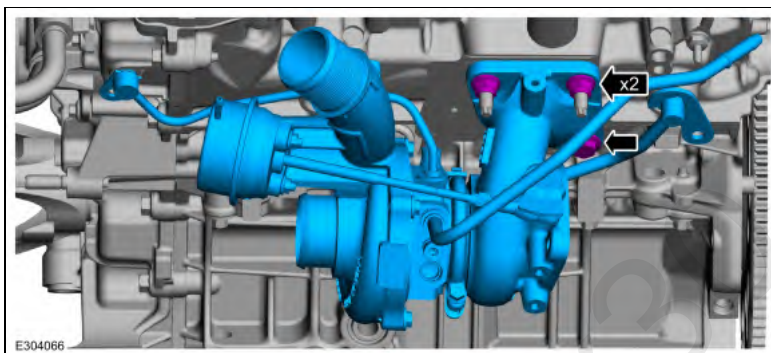
- 71.
- Remove the TC coolant supply tube bolt.
 - Release the clamp and disconnect the TC coolant return hose.



- 72.
- Remove the TC oil supply tube bolt.
 - Release the clamp and disconnect the vacuum hose.

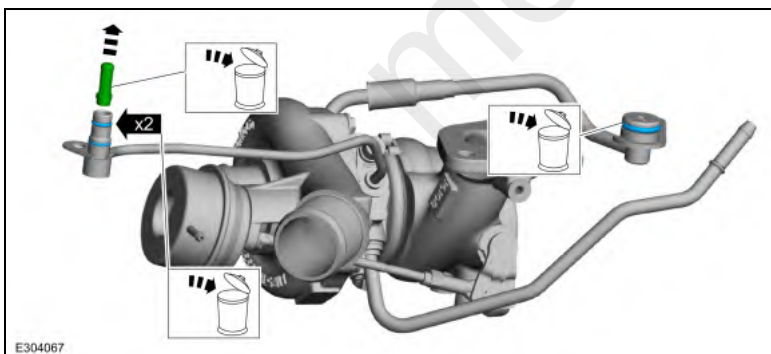


73. Remove the fasteners and the TC.



74.

- Remove and discard the TC oil supply tube filter and O-ring seals.
- Remove and discard the TC coolant supply tube O-ring seal.



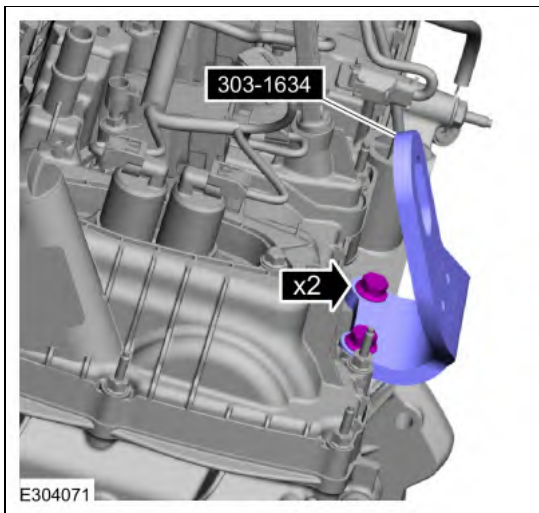
75. **NOTICE:** Inspect the turbocharger tubes and the sealing surfaces. Ensure that the retaining brackets are not bent, check for square-ness of the retaining brackets to the O-ring areas. Use brake cleaner and a NYLON brush to clean. **DO NOT USE A METAL BRUSH; DAMAGE TO SEALING AREA WILL RESULT IN LEAKS.**

- Clean and inspect the TC oil supply tube.
Material: Motorcraft® Metal Brake Parts Cleaner / PM-4-A, PM-4-B
- Clean and inspect the TC coolant supply tube.
Material: Motorcraft® Metal Brake Parts Cleaner / PM-4-A, PM-4-B

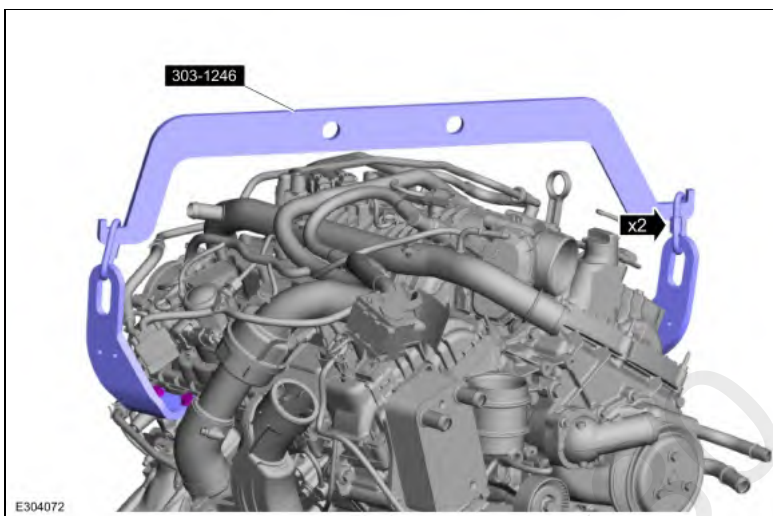


- Remove and discard the TC gasket.
- If damaged, remove and discard the TC stud(s).

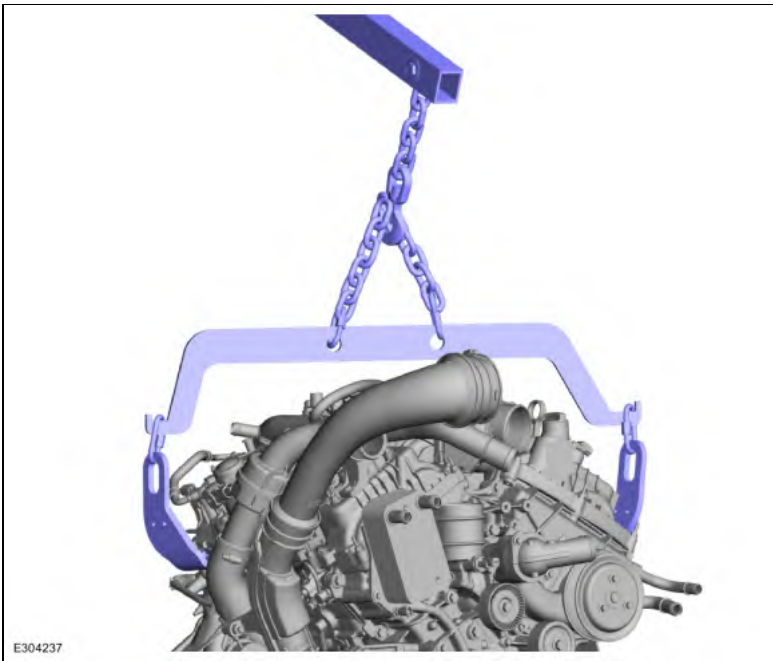




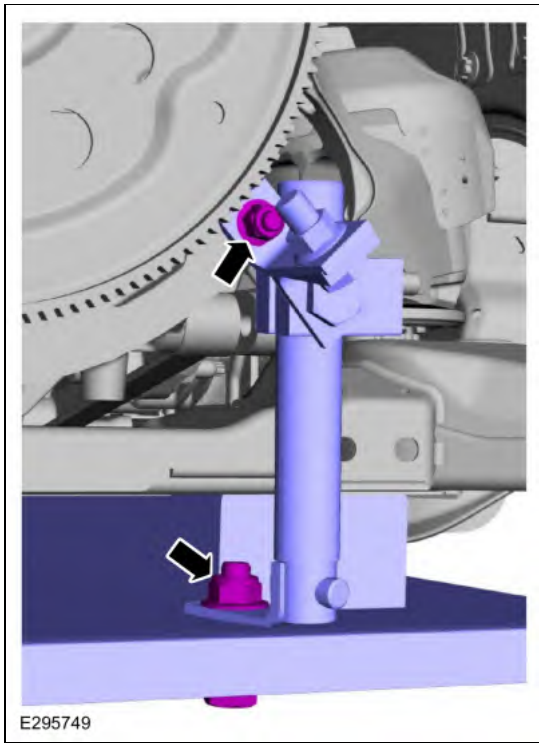
79. Install commercially available quick links to the spreader bar and lift eyes.
Install Special Service Tool: 303-1246 Engine Spreader Bar.



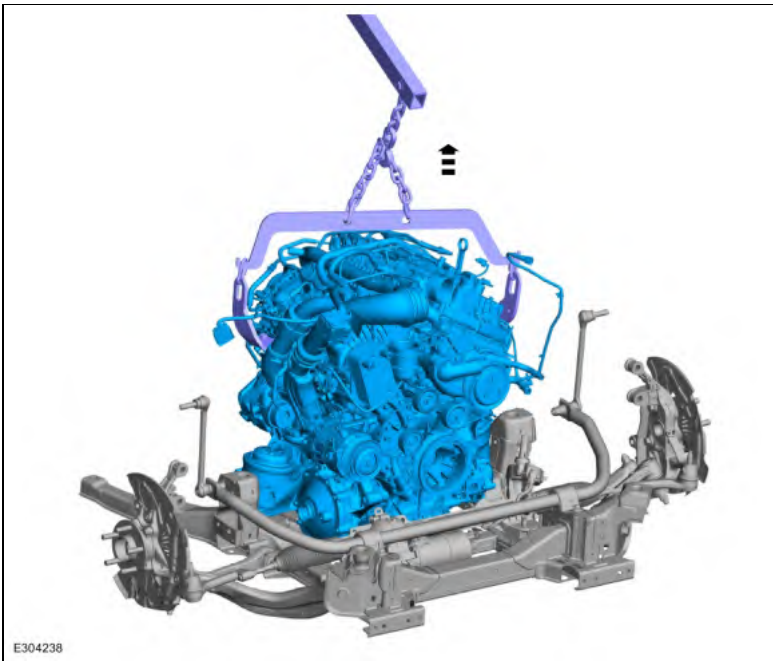
80. Install the floor crane and chain.



81. Remove.
Use the General Equipment: Adjustable Mounting Arm



82. Using the floor crane, remove the engine from subframe.



Engine Block Skirt Stiffener

Special Tool(s) / General Equipment

 E133913	205-153 (T80T-4000-W) Handle
 E175042	303-1246 Engine Spreader Bar TKIT-2006UF-FLM TKIT-2006UF-ROW
 E188625	303-1247 VCT Spark Plug Tube Seal Remover and Installer TKIT-2006UF-FLM TKIT-2006UF-ROW
 E134603	303-1634 Lift Eyes (2) TKIT-2014D-ROW3 TKIT-2014D-FL_ROW
 E134603	303-409 (T92C-6700-CH) Remover, Crankshaft Seal TKIT-1992-FH/FMH/FLMH TKIT-1993-LMH/MH
Floor Crane	
Mounting Stand	
Plastic Scraper	
Flat-Bladed Screwdriver	

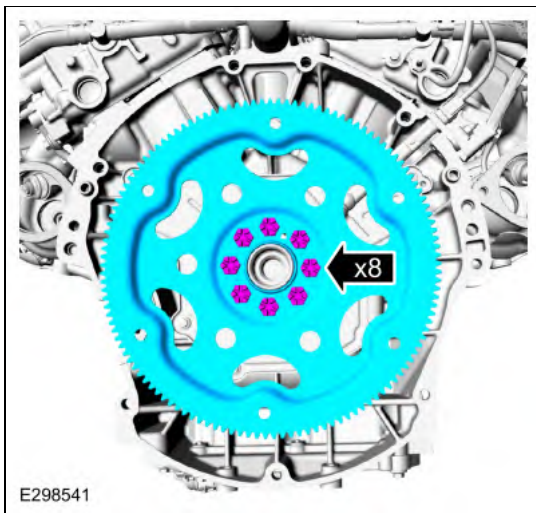
Materials

Name	Specification
Motorcraft® Silicone Gasket Remover ZC-30-A	-
Motorcraft® Metal Surface Prep Wipes ZC-31-B	-
Motorcraft® Metal Brake Parts Cleaner PM-4-A, PM-4-B	-

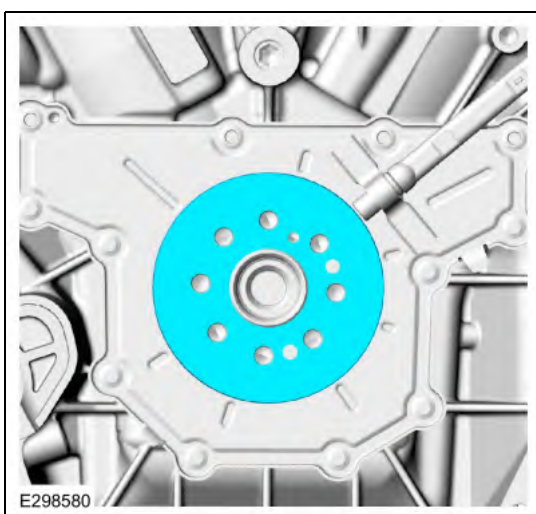
NOTICE: During engine repair procedures, cleanliness is extremely important. Any foreign material, including any material created while cleaning gasket surfaces, that enters the oil passages, coolant passages or the oil pan, can cause engine failure.

NOTICE: The turbocharger compressor vanes can be damaged by even the smallest particles. When removing any turbocharger or engine air intake system component, ensure that no debris enters the system. Failure to do so may result in damage to the turbocharger.

1. Remove the engine from the vehicle.
Refer to: Engine (303-01B Engine - 3.0L EcoBoost, Installation).
2. Remove the bolts and the flexplate.



3. Remove the crankshaft sensor ring.



4. Inspect the crankshaft sensor ring for damage. If the crankshaft sensor ring has been dropped or has any visual damage, it must be discarded.