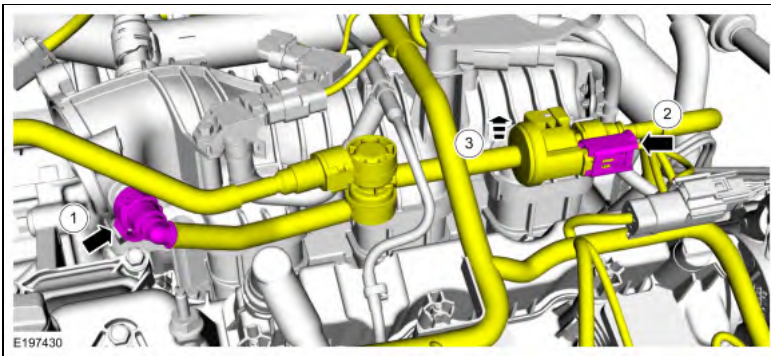
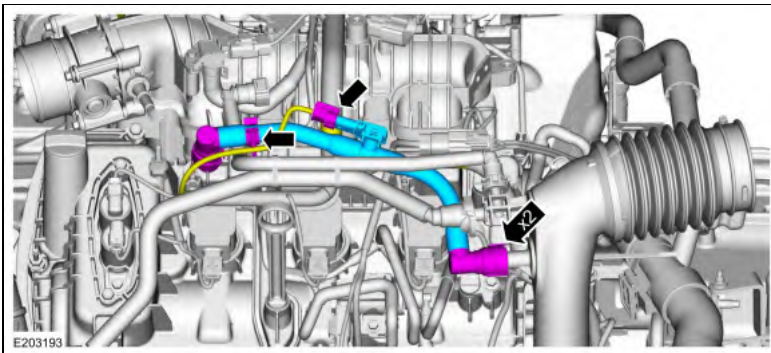




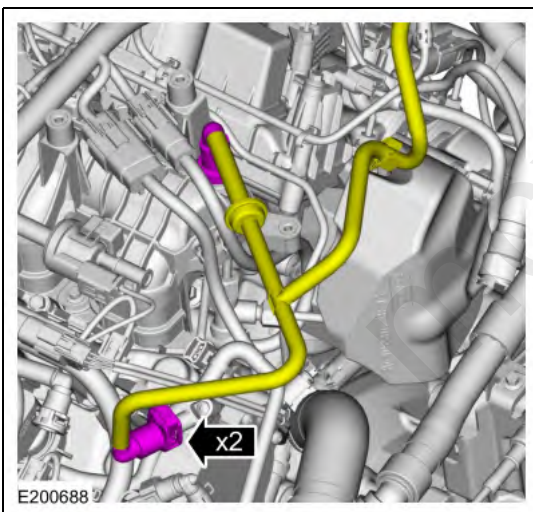
7.

- Disconnect the crankcase pressure sensor electrical connector.
- Detach the PCV tube retainer.
Refer to: Quick Release Coupling (310-00 Fuel System - General Information - 2.7L EcoBoost (238kW/324PS)) .
- Disconnect the PCV tube quick release couplings and remove the tube.
Refer to: Quick Release Coupling (310-00 Fuel System - General Information - 2.7L EcoBoost (238kW/324PS)) .

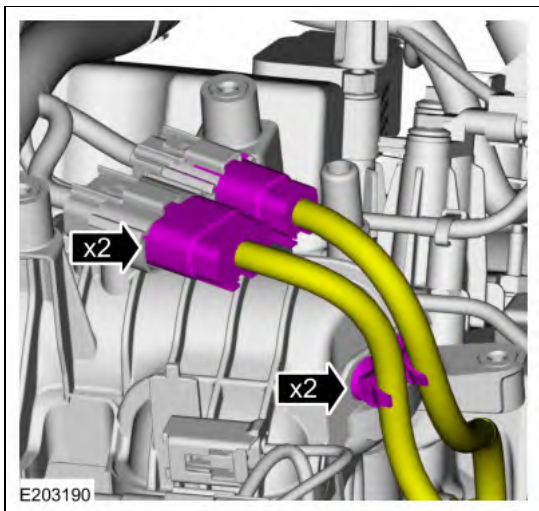


8. Disconnect the vacuum tube quick release couplings and position the tube aside.

Refer to: Quick Release Coupling (310-00 Fuel System - General Information - 2.7L EcoBoost (238kW/324PS)) .

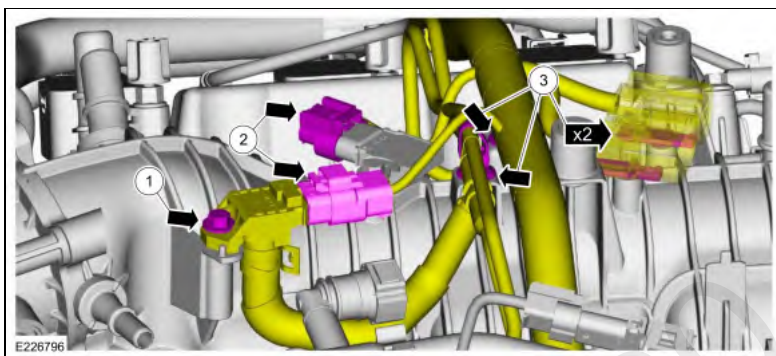


9. Disconnect the engine wiring harness electrical connectors and retainers.

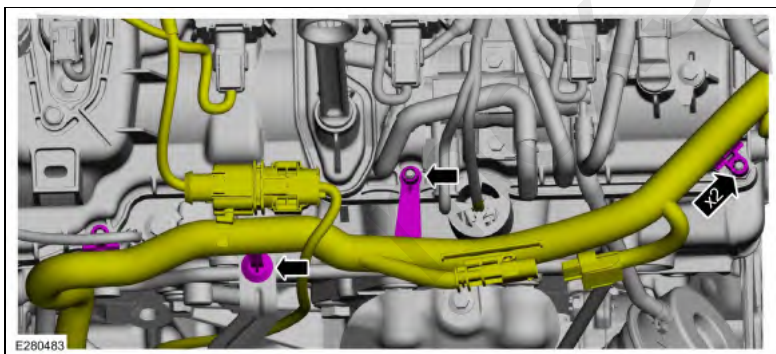


10.

1. Remove the vacuum harness pressure sensor bolt.
2. Disconnect the wiring harness electrical connectors.
3. Detach the wiring harness and vacuum harness retainers.

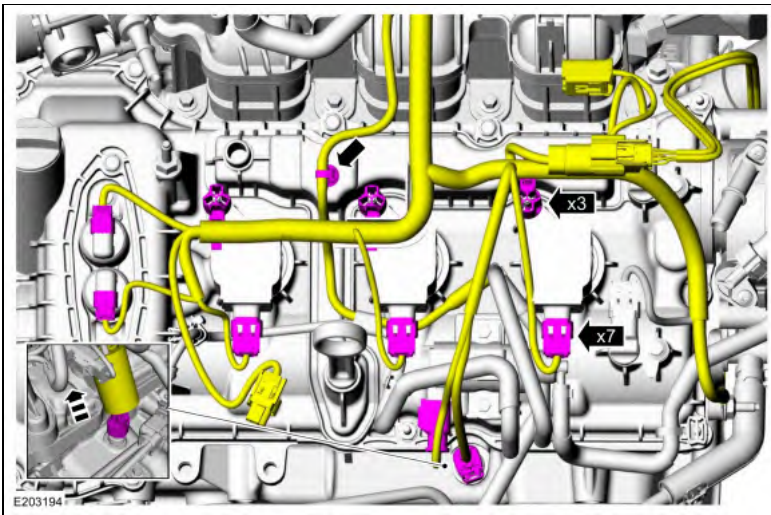


11. Detach the wiring harness retainers.

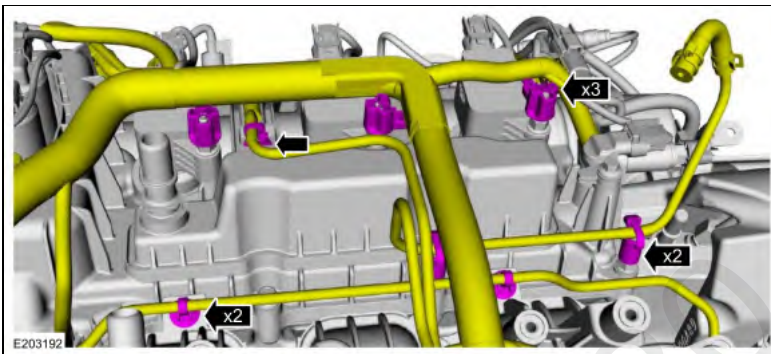


12.

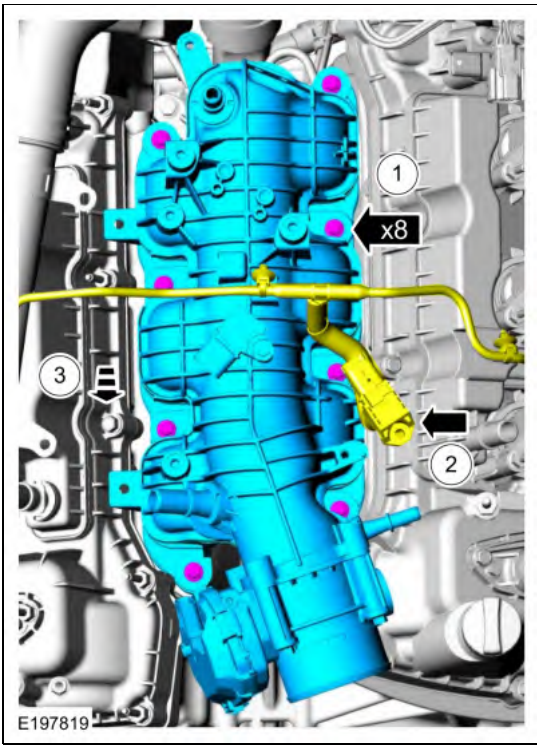
- Slide the insulator up to access the CHT electrical connector.
- Disconnect the engine wiring harness electrical connectors and detach the harness and vacuum hose retainers.



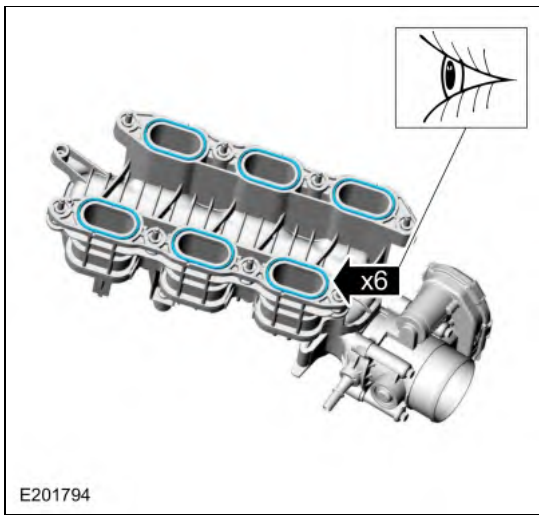
13. Detach the engine wiring harness and vacuum hose retainers.



- 14.
1. Loosen the bolts.
 2. Position the vacuum harness aside.
 3. Remove the intake manifold.



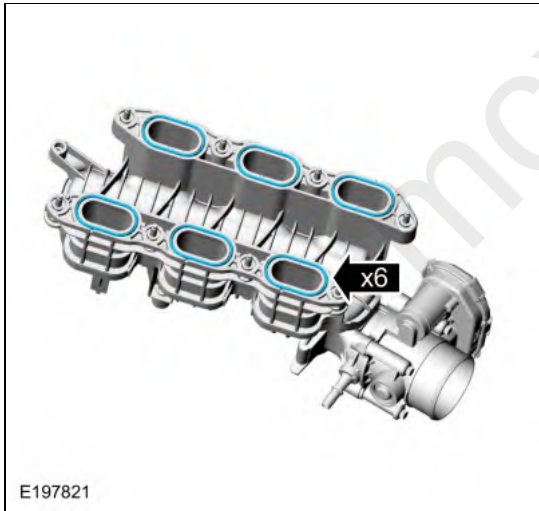
15. Inspect the gaskets and replace as necessary.



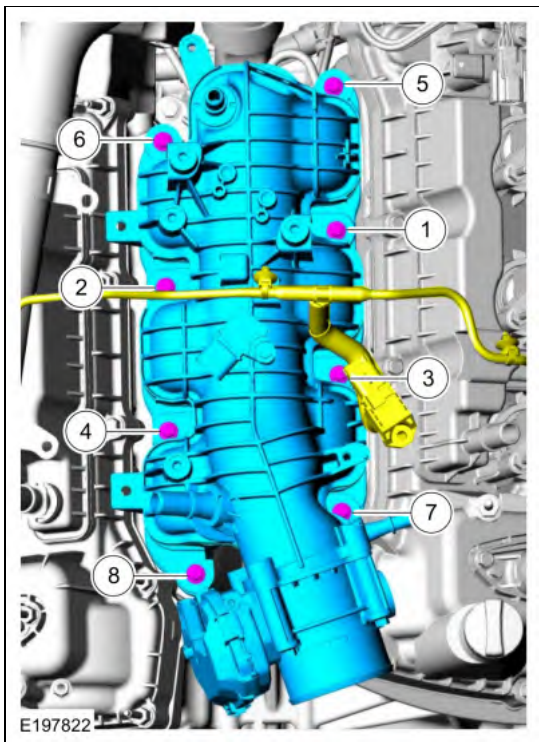
Installation

NOTICE: If the engine is repaired or replaced because of upper engine failure, typically including valve or piston damage, check the intake manifold for metal debris. If metal debris is found, install a new intake manifold. Failure to follow these instructions can result in engine damage.

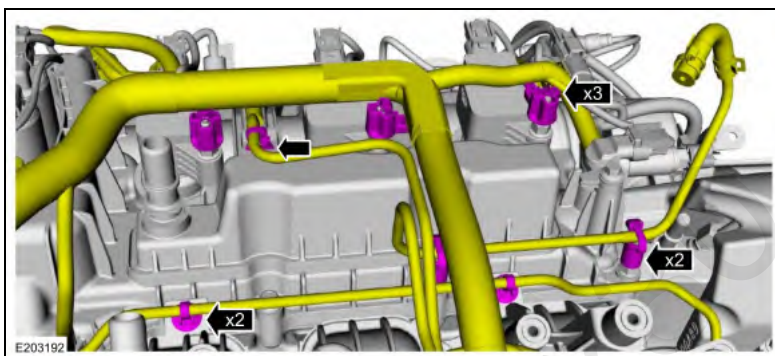
1. Install the gaskets.



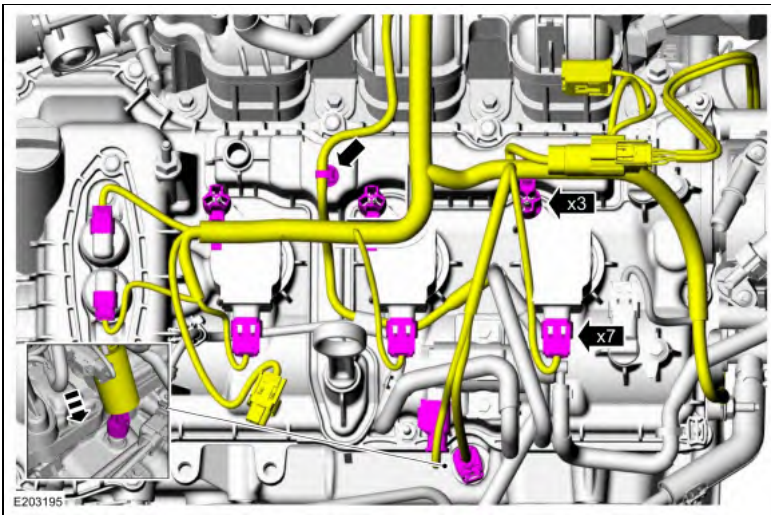
2. Install the intake manifold and tighten the bolts.
Torque: 89 lb.in (10 Nm)



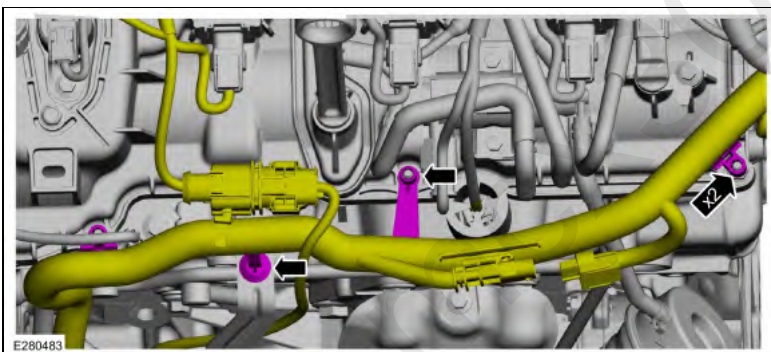
3. Attach the engine wiring harness and vacuum hose retainers.



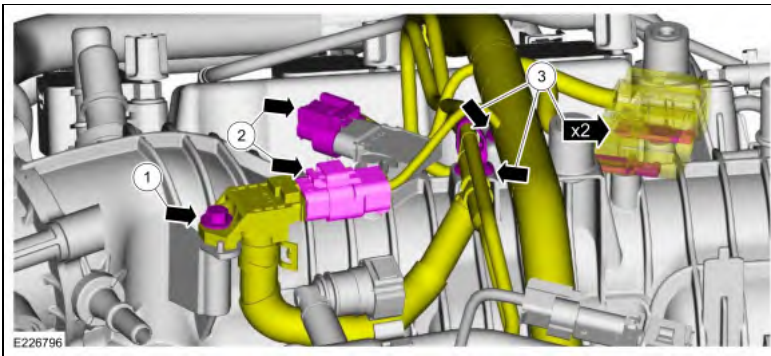
- 4.
- Connect the engine wiring harness electrical connectors and attach the harness and vacuum hose retainers.
 - Slide the insulator down to cover the CHT electrical connector.



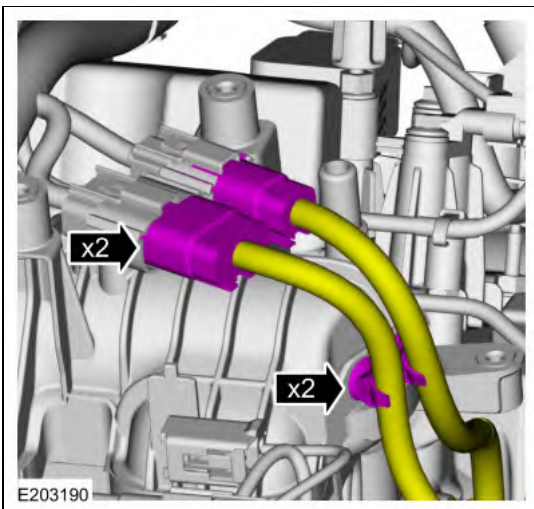
5. Attach the wiring harness retainers.



6.
 1. Position the vacuum harness pressure sensor and install the bolt.
Torque: 62 lb.in (7 Nm)
 2. Connect the wiring harness electrical connectors.
 3. Attach the wiring harness and vacuum harness retainers.

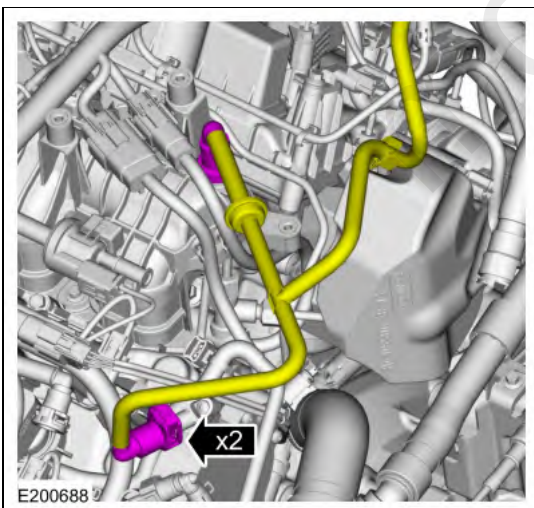


7. Connect the engine wiring harness electrical connectors and retainers.



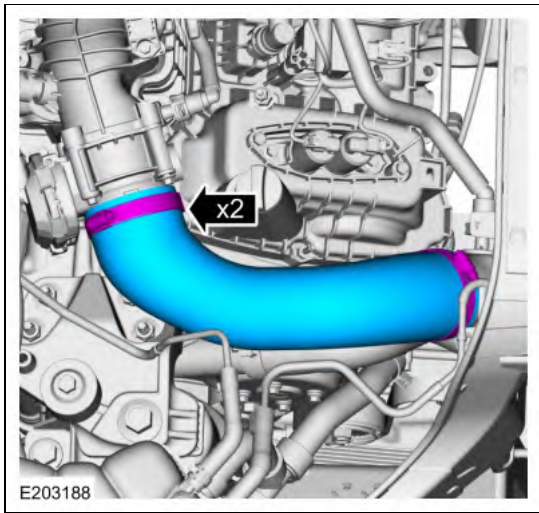
8. Connect the vacuum tube quick release couplings.

Refer to: Quick Release Coupling (310-00 Fuel System - General Information - 2.7L EcoBoost (238kW/324PS)) .

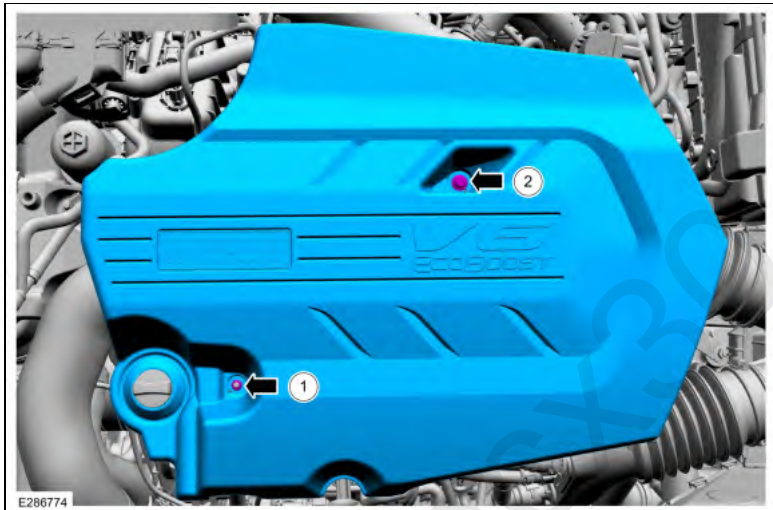


9.

- Position the PCV tube and connect the quick release couplings.
Refer to: Quick Release Coupling (310-00 Fuel System - General Information - 2.7L EcoBoost (238kW/324PS)) .
- Attach the PCV tube retainer.
Refer to: Quick Release Coupling (310-00 Fuel System - General Information - 2.7L EcoBoost (238kW/324PS)) .
- Connect the crankcase pressure sensor electrical connector.



13. Install the upper RH CAC intake pipe.
Refer to: Charge Air Cooler (CAC) Intake Pipe (303-12B Intake Air Distribution and Filtering - 2.7L EcoBoost (238kW/324PS), Removal and Installation).
14.
 1. Install the engine appearance cover and the nut.
Torque: 42 lb.in (4.8 Nm)
 2. Install the bolt.
Torque: 93 lb.in (10.5 Nm)



15. Connect the battery ground cable.
Refer to: Battery Disconnect and Connect (414-01 Battery, Mounting and Cables, General Procedures).

Oil Pan

Special Tool(s) / General Equipment

Plastic Scraper
Oil Drain Equipment
Vehicle/Axle Stands
Cable Ties
Flat-Bladed Screwdriver

Materials

Name	Specification
Motorcraft® High Performance Engine RTV Silicone TA-357	WSE-M4G323-A6

Removal

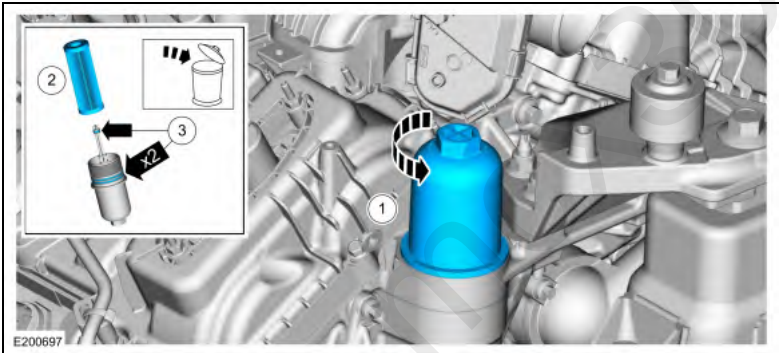
NOTICE: During engine repair procedures, cleanliness is extremely important. Any foreign material, including any material created while cleaning gasket surfaces, that enters the oil passages, coolant passages or the oil pan, can cause engine failure.

1. With the vehicle in NEUTRAL, position it on a hoist.
Refer to: Jacking and Lifting - Overview (100-02 Jacking and Lifting, Description and Operation).
2. Remove the accessory drive belt.
Refer to: Accessory Drive Belt (303-05B Accessory Drive - 2.7L EcoBoost (238kW/324PS), Removal and Installation).
3. **NOTE:** Use a shop towel when removing the oil filter housing to prevent oil from spilling on the engine or accessory components.

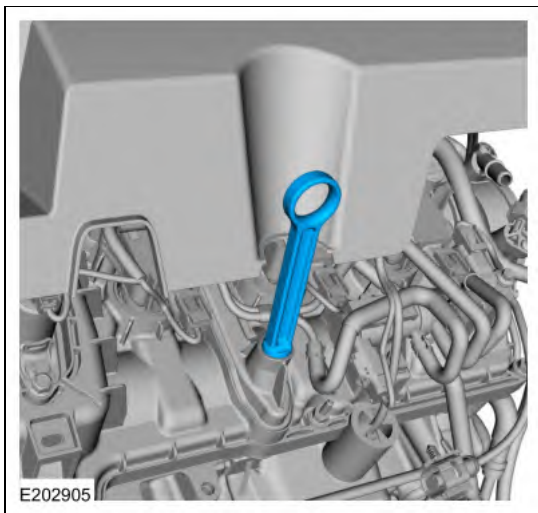
1. Loosen the oil filter housing and allow the oil to drain out of the housing and down into the engine.

2. Remove the oil filter housing and discard the oil filter element.

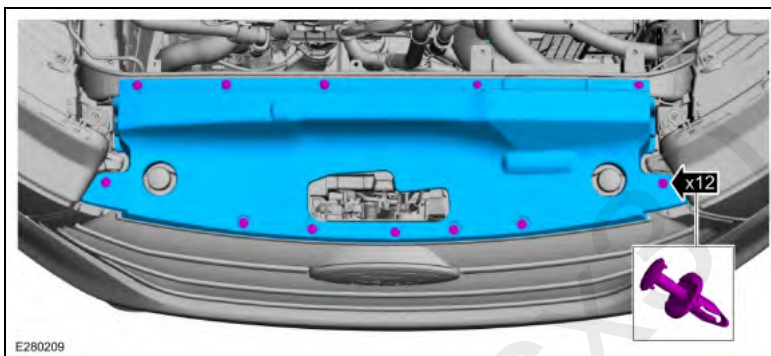
3. Remove and discard the O-ring seals.



4. Remove the oil level indicator.

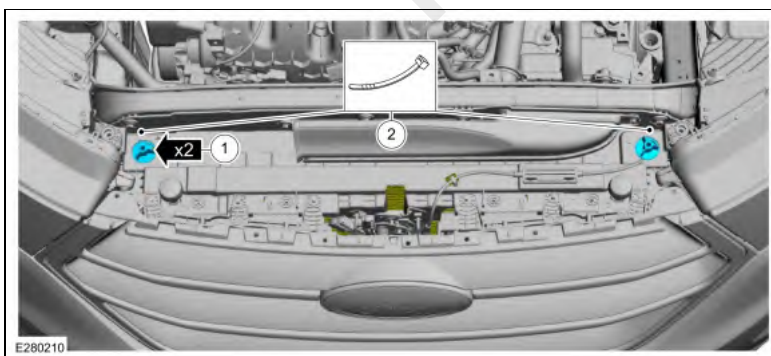


5. Remove the retainers and the upper air deflector.



6. **NOTICE: Make sure the cooling module is secure before removing the bottom cooling module support panel.**

1. Remove the upper cooling module support brackets.
2. Using cable ties or mechanics wire through the upper location holes, to support the cooling module.
Use the General Equipment: Cable Ties



7. Remove the following items:

1. RH splash shield
Refer to: Fender Splash Shield (501-02 Front End Body Panels, Removal and Installation).
2. Refer to: Roll Restrictor RH (307-01B Automatic Transmission - 8-Speed Automatic Transmission â€“ 8F57, Removal and Installation).

8. Remove the retainers and the underbody shield.