

303-01A Engine - 2.7L EcoBoost (238kW/324PS)
Removal and Installation

2017 F-150
Procedure revision date: 02/22/2018

Oil Pan

Base Part Number: 6675

Special Tool(s) / General Equipment

Plastic Scraper
Oil Drain Equipment
Vehicle/Axle Stands

Materials

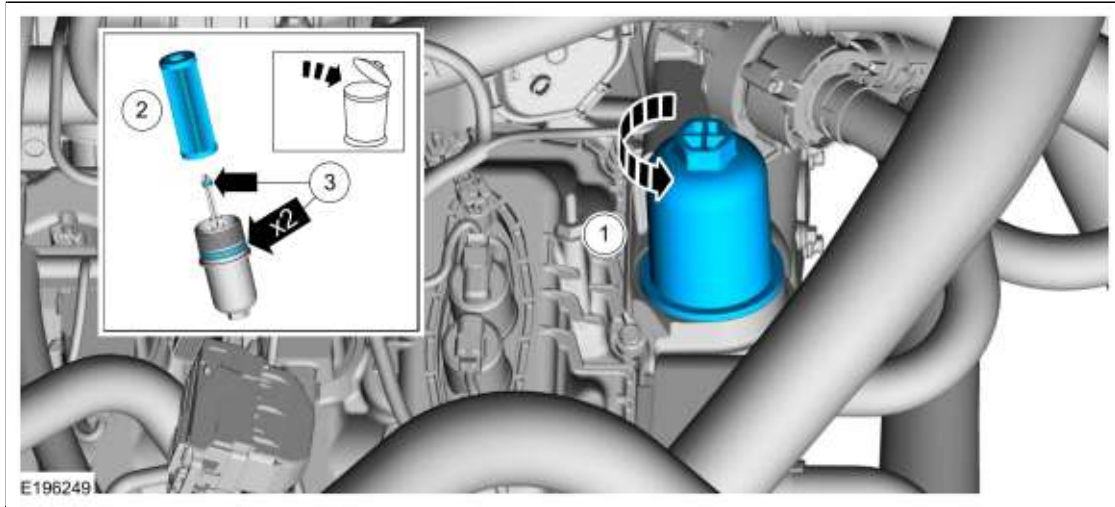
Name	Specification
Motorcraft® SAE 5W-30 Synthetic Blend Motor Oil XO-5W30-QSP	WSS-M2C946-A
Motorcraft® Threadlock 262 TA-26	WSK-M2G351-A6
Motorcraft® High Performance Engine RTV Silicone TA-357	WSE-M4G323-A6
Motorcraft® Silicone Gasket Remover ZC-30-A	-
Motorcraft® Metal Surface Prep Wipes ZC-31-B	-
Motorcraft® Metal Brake Parts Cleaner PM-4-A, PM-4-B	-

Removal

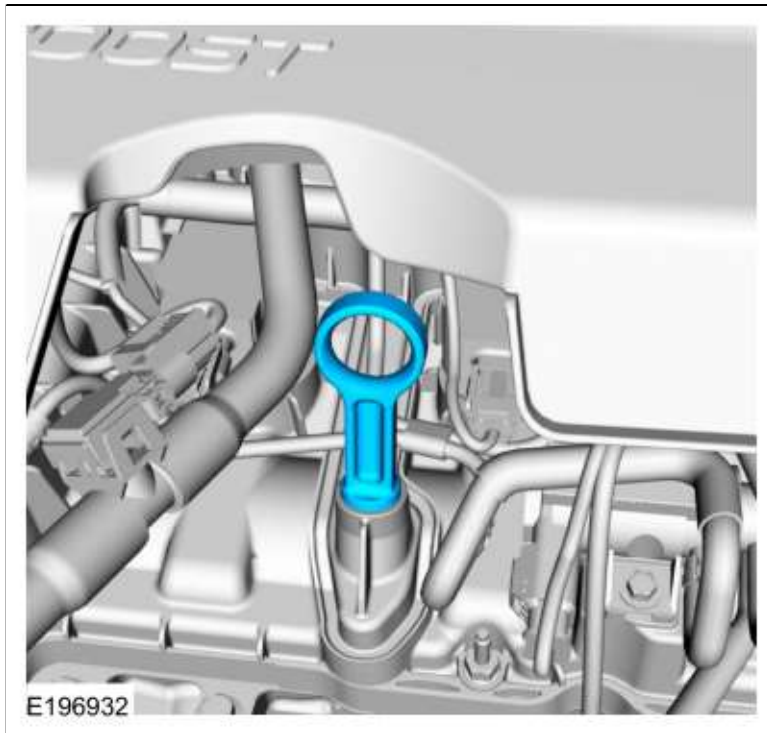
NOTICE: During engine repair procedures, cleanliness is extremely important. Any foreign material, including any material created while cleaning gasket surfaces, that enters the oil passages, coolant passages or the oil pan, can cause engine failure.

4x2/4x4

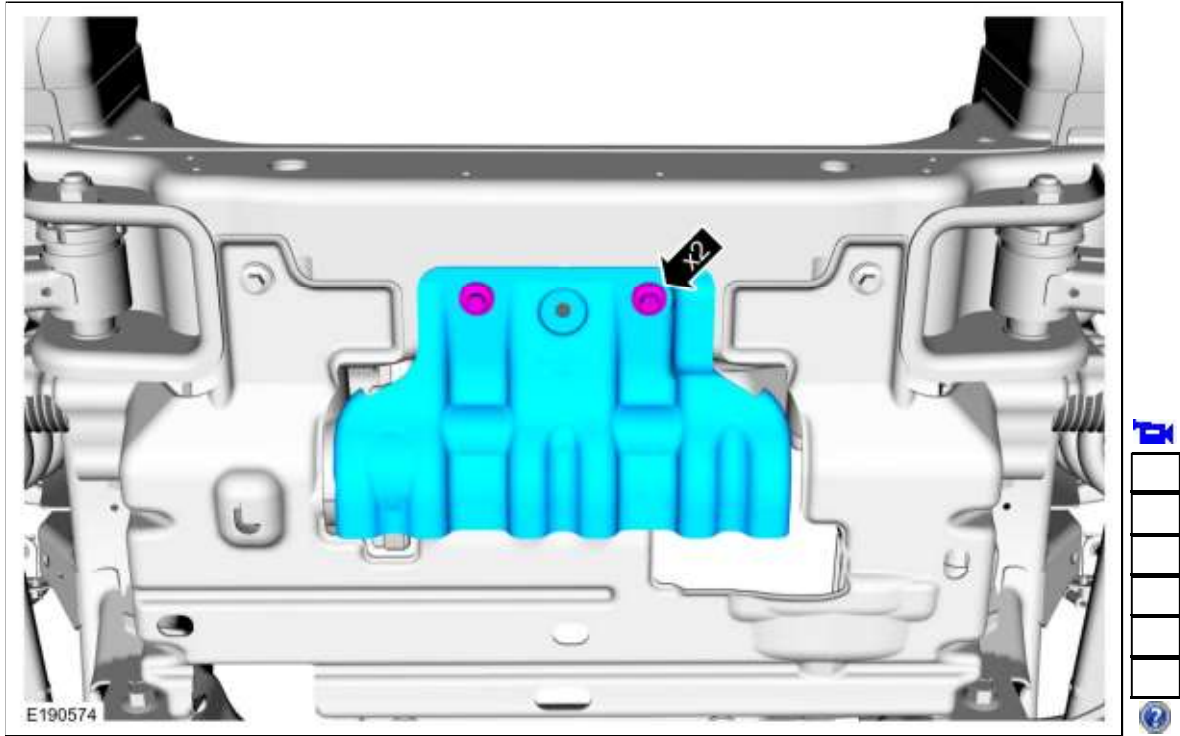
1. With the vehicle in NEUTRAL, position it on a hoist.
Refer to: [Jacking and Lifting - Overview](#) (100-02 Jacking and Lifting, Description and Operation).
2. Disconnect the battery ground cable.
Refer to: Battery Disconnect and Connect (414-01 Battery, Mounting and Cables) .
3. **NOTE:** Use a shop towel when removing the oil filter housing to prevent oil from spilling on the engine or accessory drive belt.
 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.



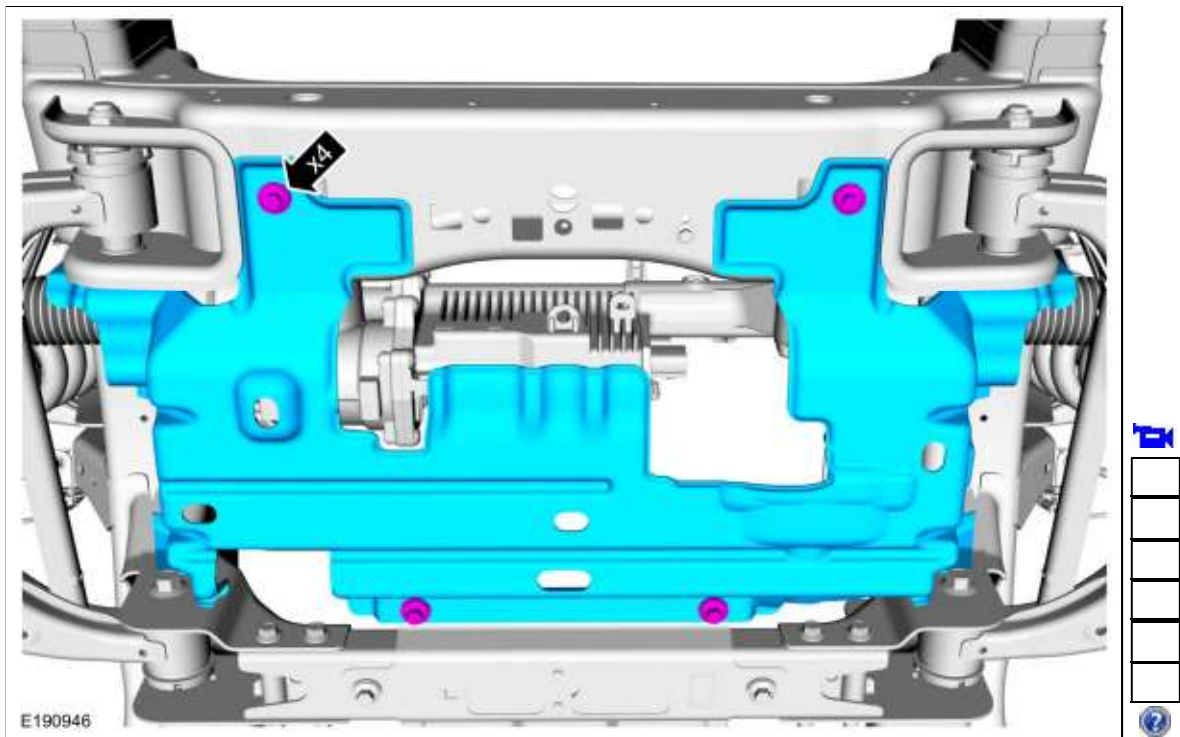
4. Remove the oil level indicator.



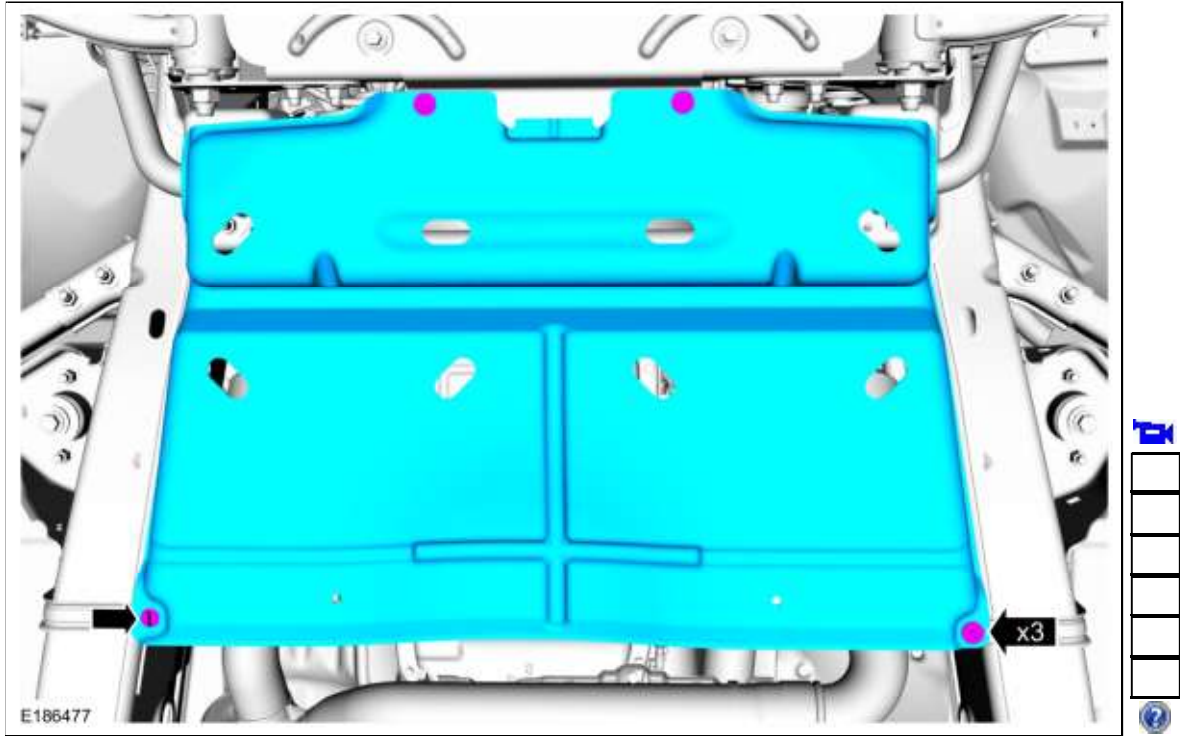
5. If equipped, remove the bolts and the skid plate.



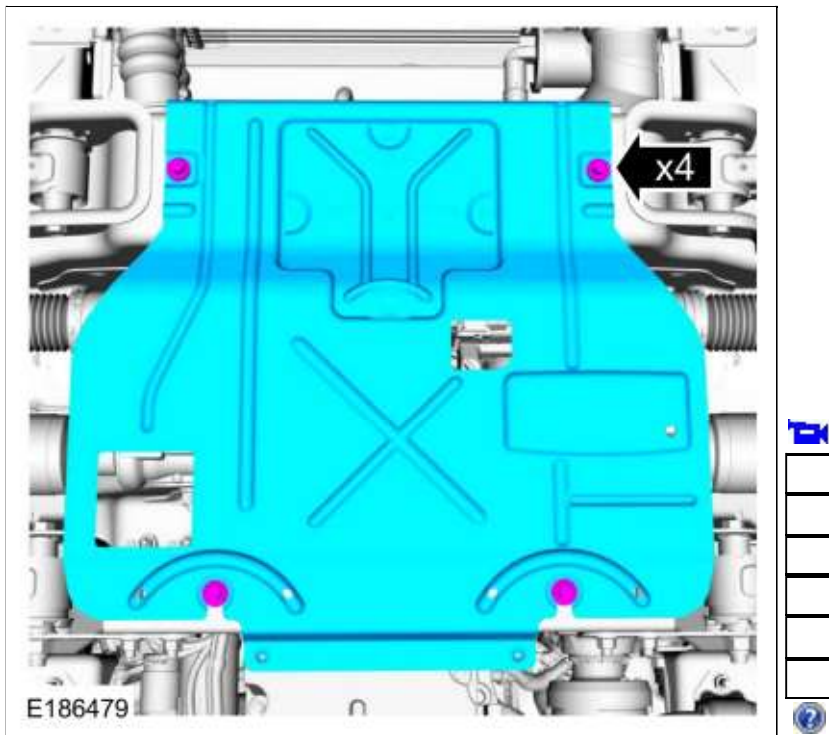
6. If equipped, remove the fasteners and the underbody shield.



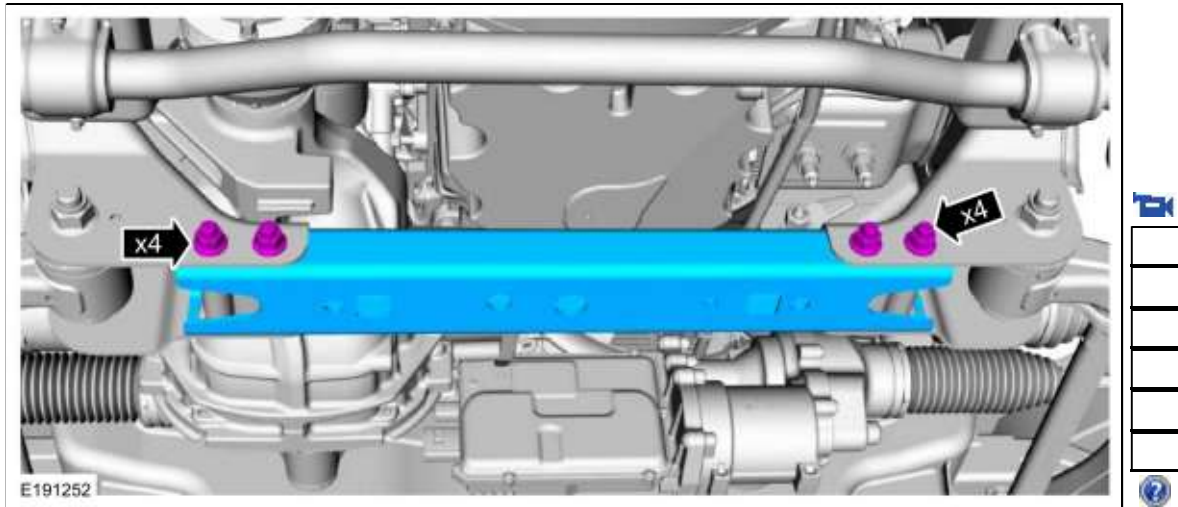
7. If equipped, remove the fasteners and the underbody shield.



8. If equipped, remove the bolts and the skid plate.



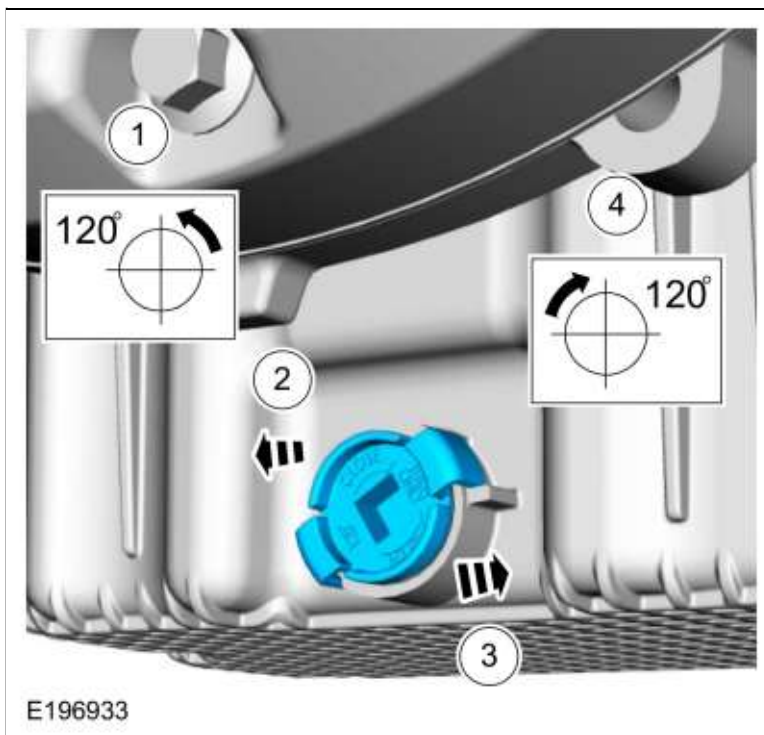
9. Remove the nuts, bolts and the crossmember.



10. **NOTE:** The drain plug should be removed and installed by hand, do not use tools.

1. Turn the oil drain plug by hand counterclockwise 120 degrees.
Use the General Equipment: Oil Drain Equipment
2. Pull the oil drain plug out of the oil pan.
3. After the oil has drained, push the oil drain plug into the oil pan.
4. **NOTICE:** Overtightening will damage the oil drain plug and possibly the oil pan.

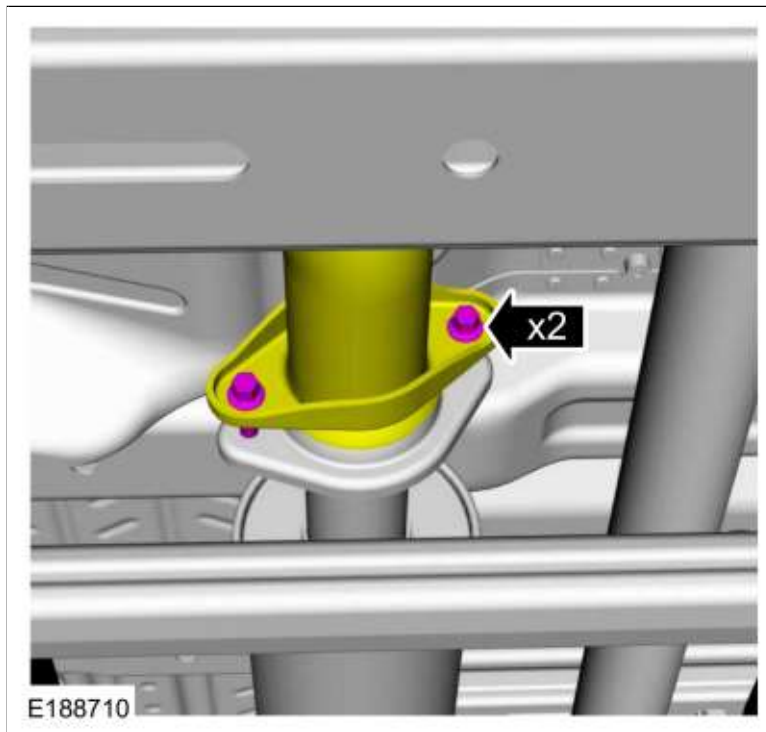
Turn the oil drain plug by hand clockwise 120 degrees.



4x4

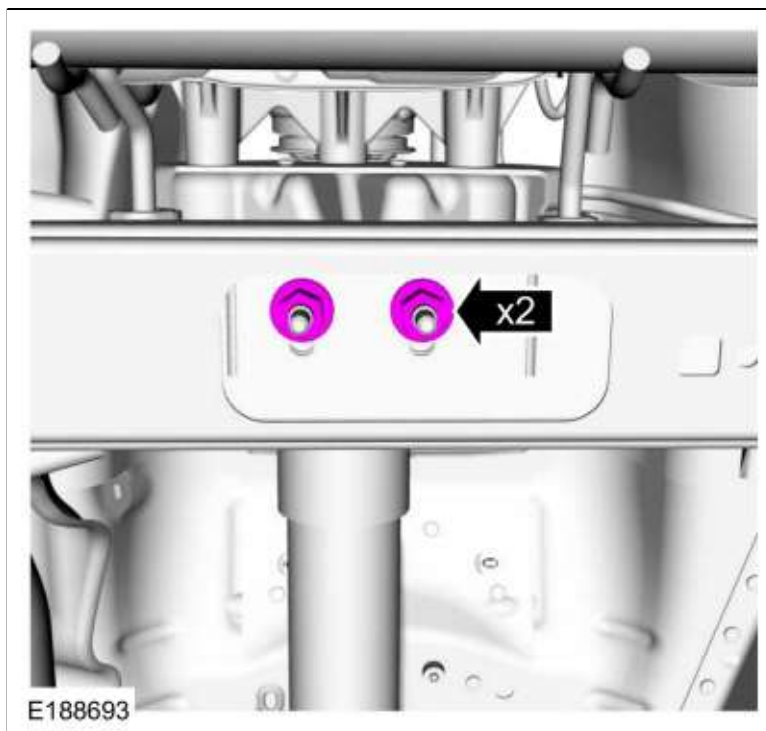
11. **NOTE:** Make sure that the mating faces are clean and free of foreign material.

Remove the exhaust Y-pipe dual catalytic converter-to-exhaust intermediate pipe bolts and separate.



12. **NOTICE:** Only use hand tools when removing the transmission mount-to-crossmember nuts or damage to the transmission mount can occur.

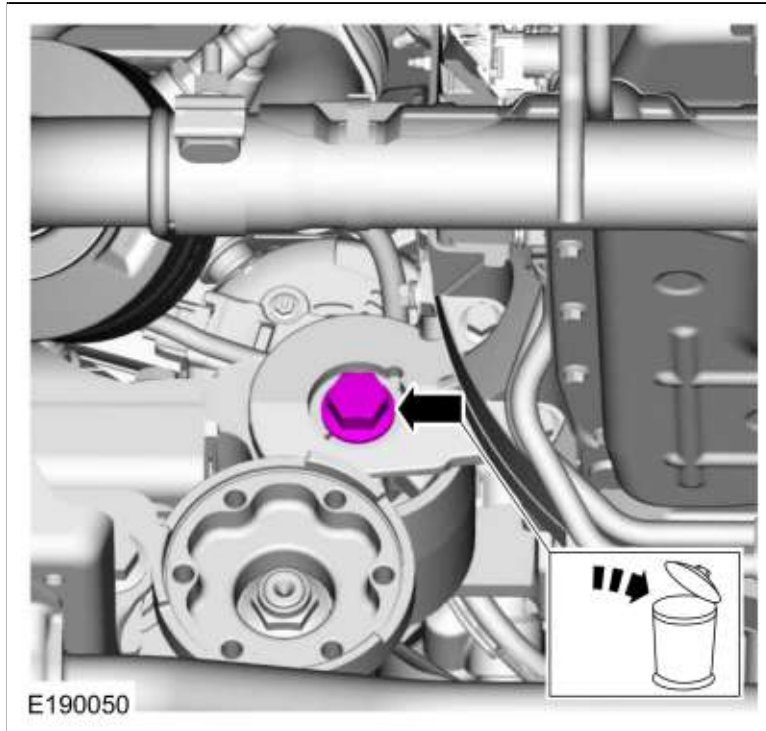
Loosen the transmission mount-to-crossmember nuts.



13. **NOTICE:** Only use hand tools when loosening the engine mount through bolts or damage to the engine mount-to-cylinder block bracket can occur.

NOTE: Front drive shaft removed from graphic for clarity.

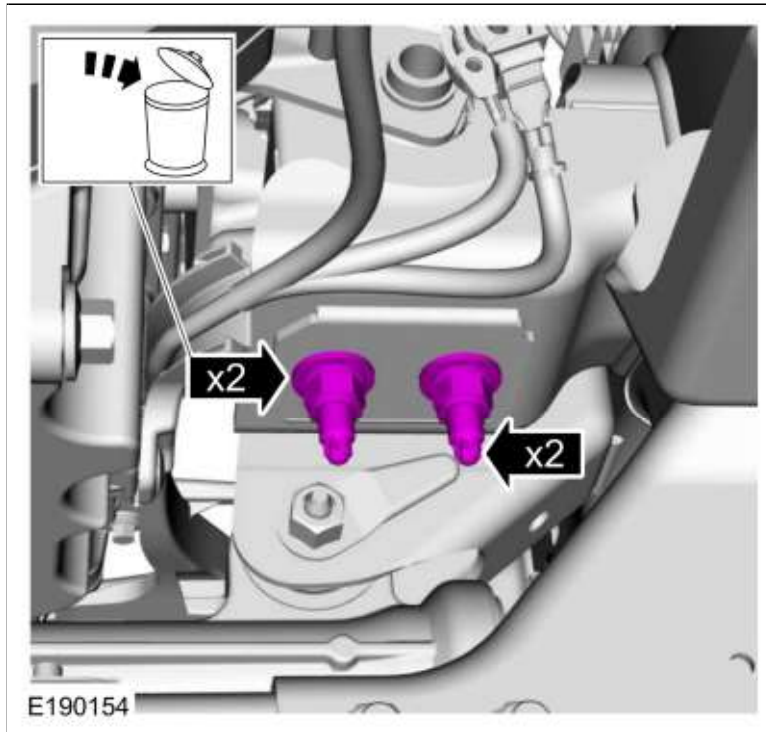
Remove and discard the LH engine mount through bolt.



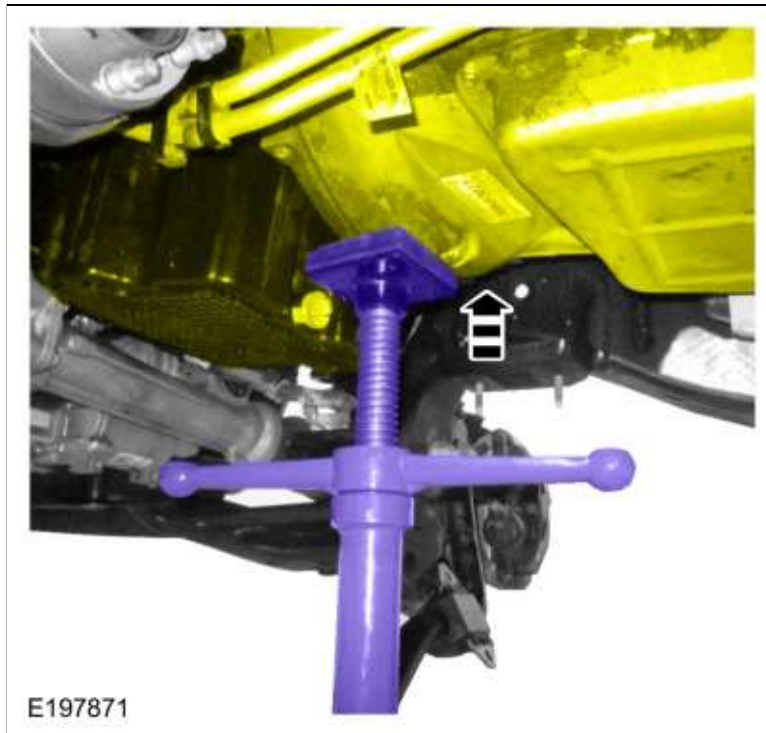
14. **NOTICE:** Only use hand tools when removing the engine mount nuts, stud bolts or damage to the engine mount can occur.

Remove and discard the RH engine mount nuts.

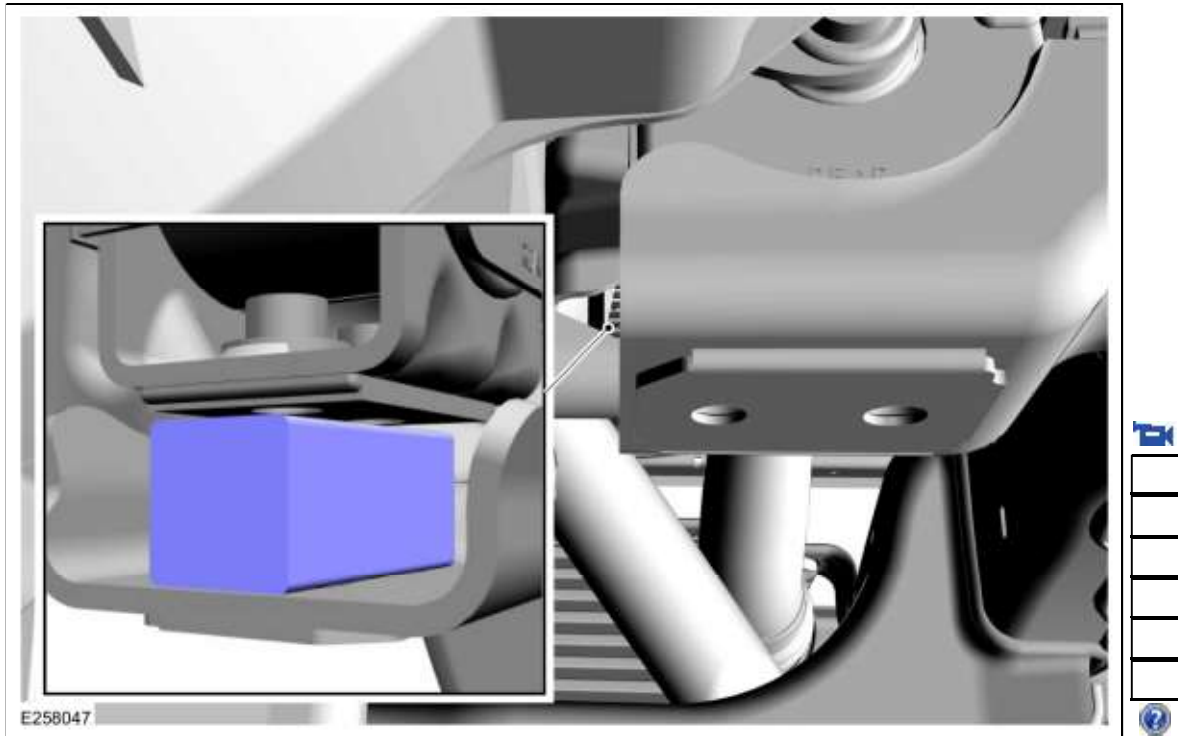
- Remove the studs.



15. Using an adjustable stand, raise the engine 50 mm (2 in).
Use the General Equipment: Vehicle/Axle Stands



16. Install a 38 mm (1.5 in) X 38 mm (1.5 in) X 76 mm (3 in) wood block between the RH engine mount and the frame perch.

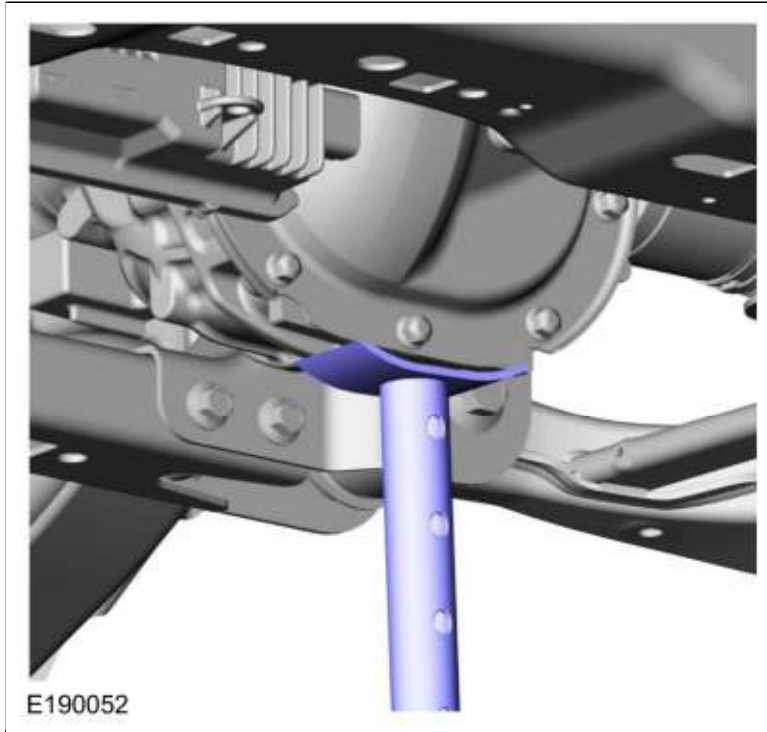


17.

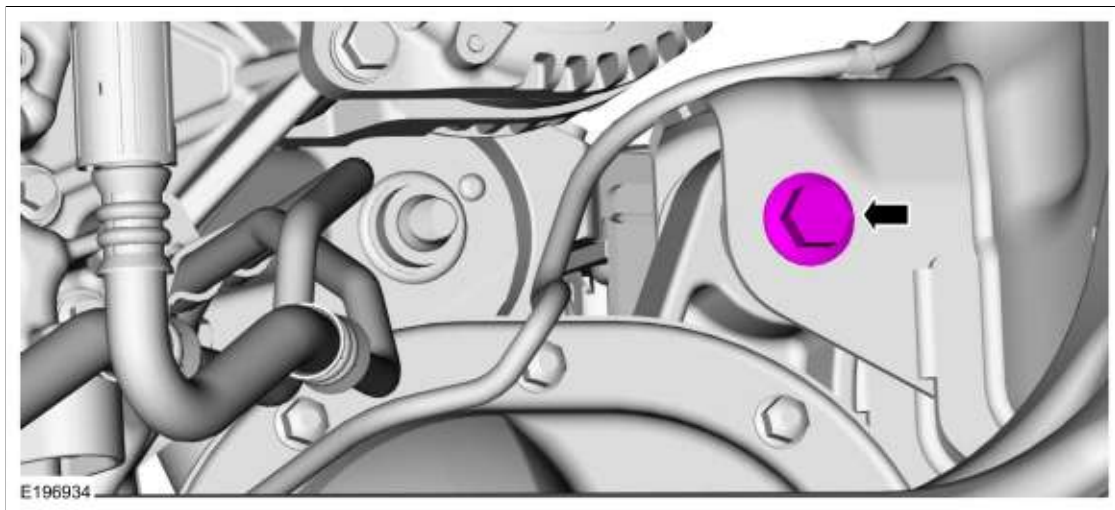
1. Using the adjustable stand, lower the engine onto the wood block.
Use the General Equipment: Vehicle/Axle Stands
2. Remove the stand.



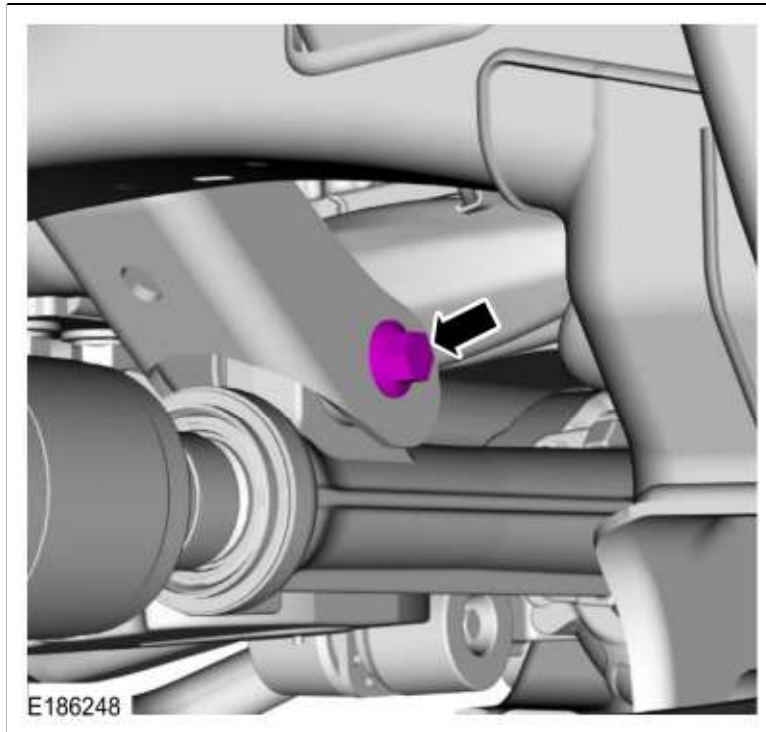
18. Using an adjustable stand, support the front axle.
Use the General Equipment: Vehicle/Axle Stands



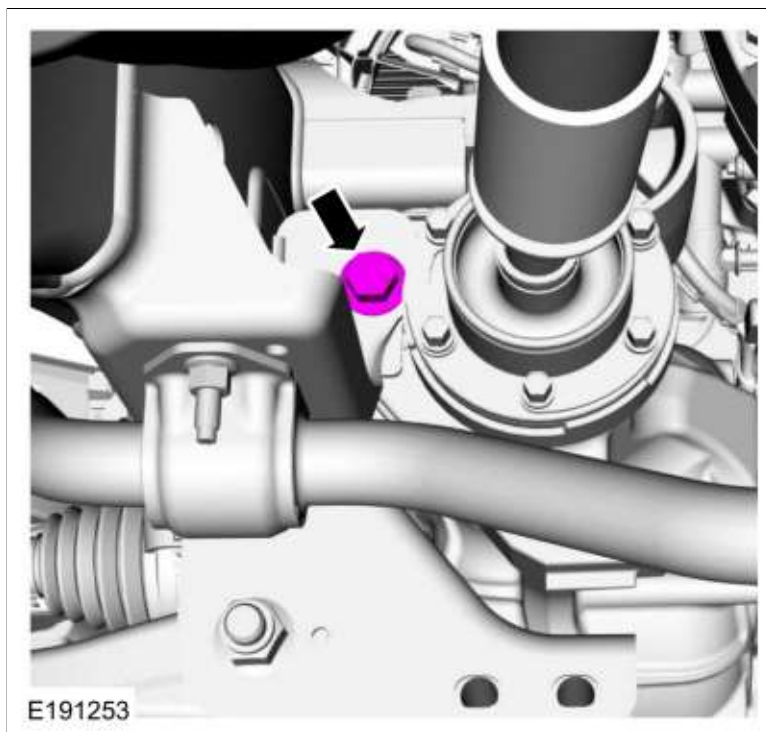
19. Remove the upper front axle carrier mounting bushing bolt.



20. Remove the axle shaft housing carrier bushing bolt.

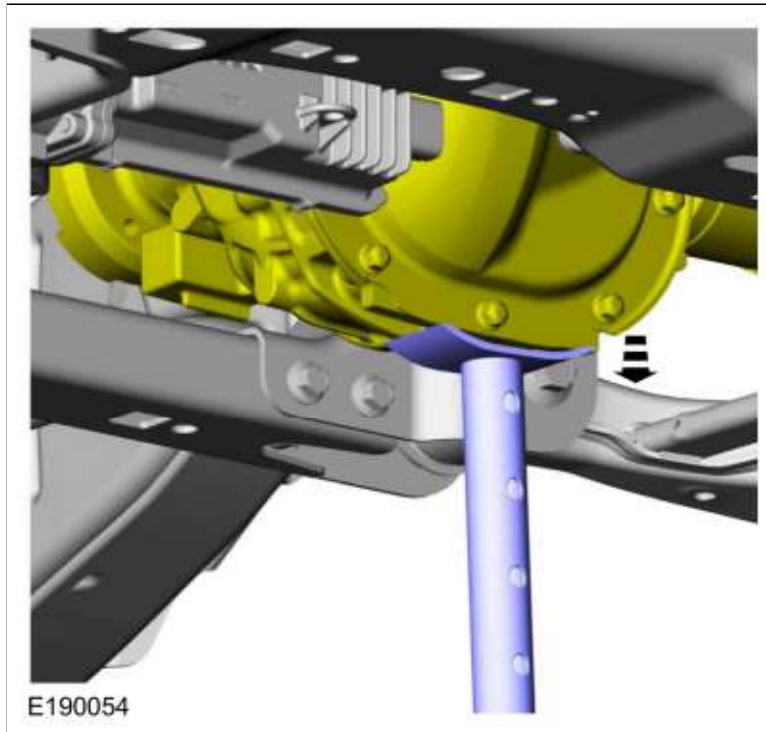


21. Remove the lower front axle carrier mounting bushing bolt.



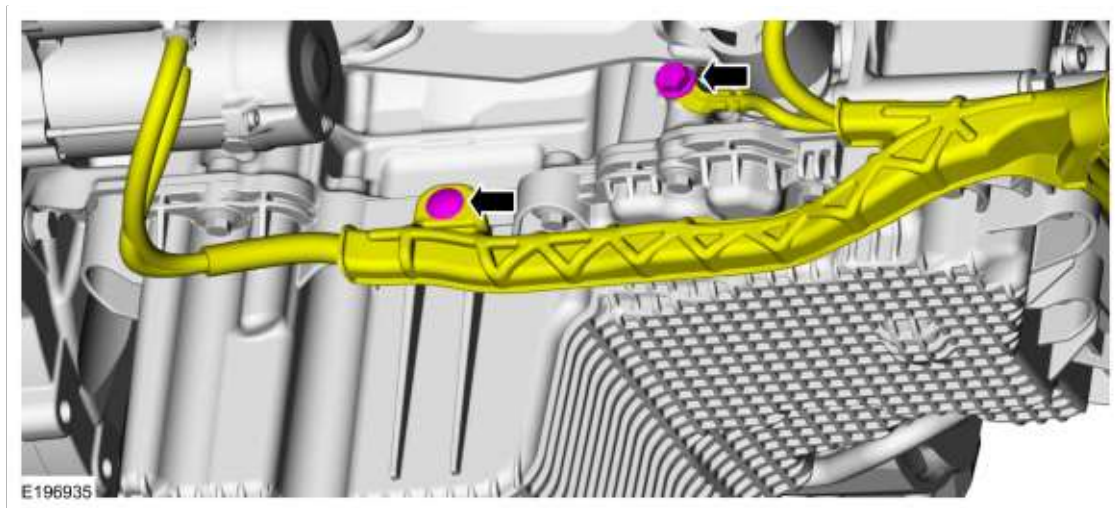
22. **NOTE:** *The axle can rest on the frame and the stand can be removed if necessary.*

Using an adjustable stand, lower the axle to allow clearance for the oil pan to be removed.
Use the General Equipment: Vehicle/Axle Stands

**4x2/4x4**

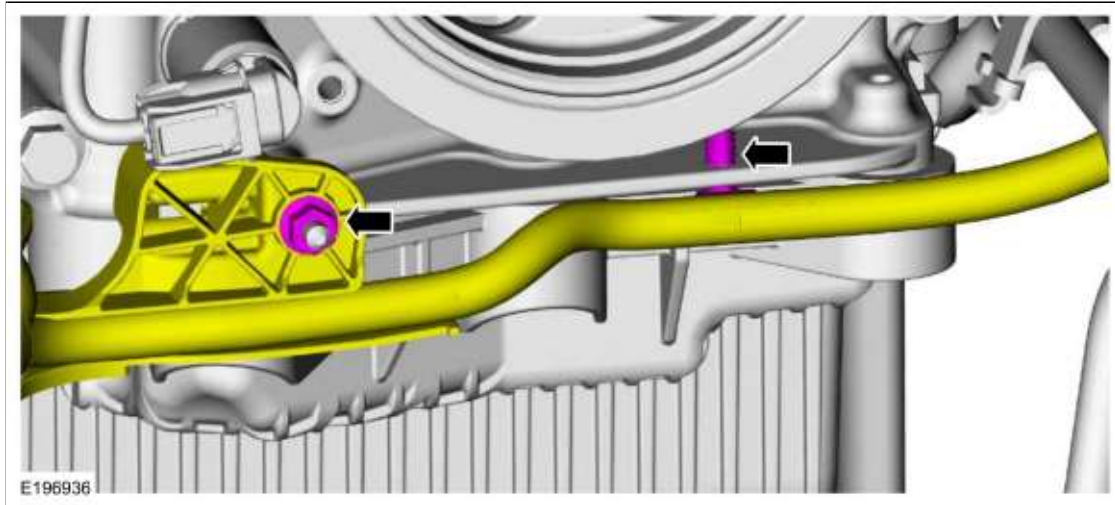
23.

1. Remove the pin-type retainer.
2. Remove the bolt and ground wire.

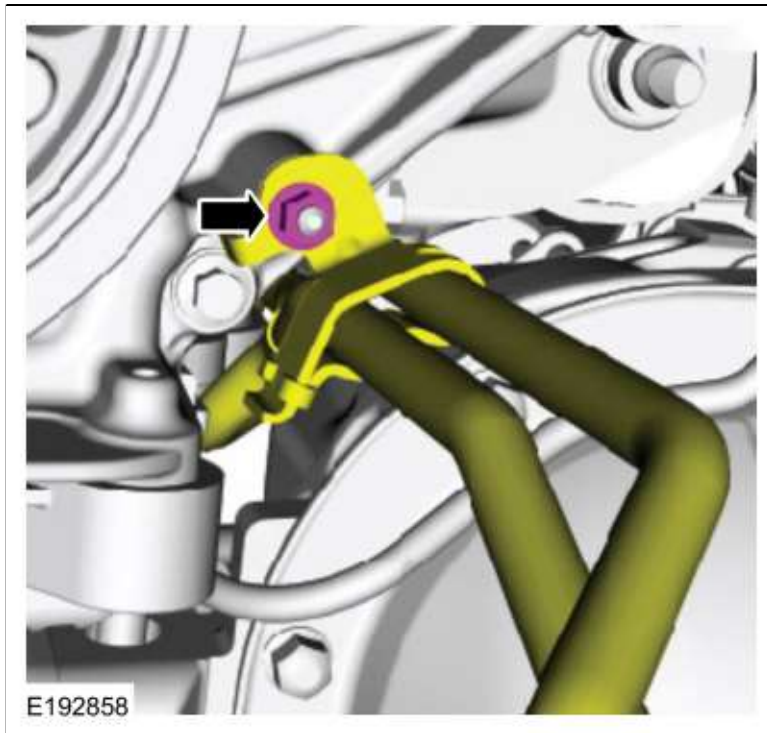


24.

1. Remove the wiring harness retainer nut.
2. Remove the pin-type retainer.



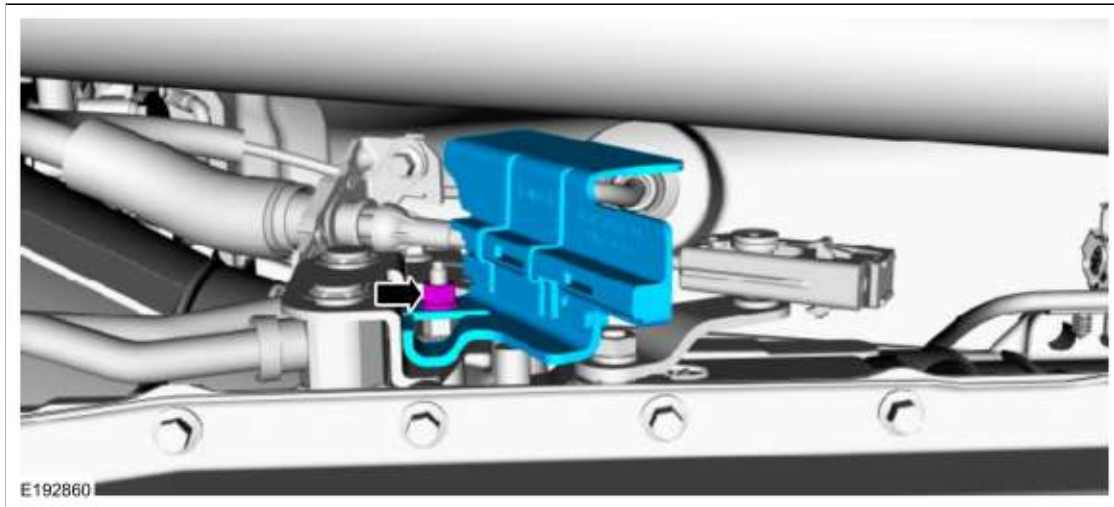
25. Remove the transmission fluid cooler tube bracket nut.



26. **NOTE:** 4WD shown, 2WD similar.

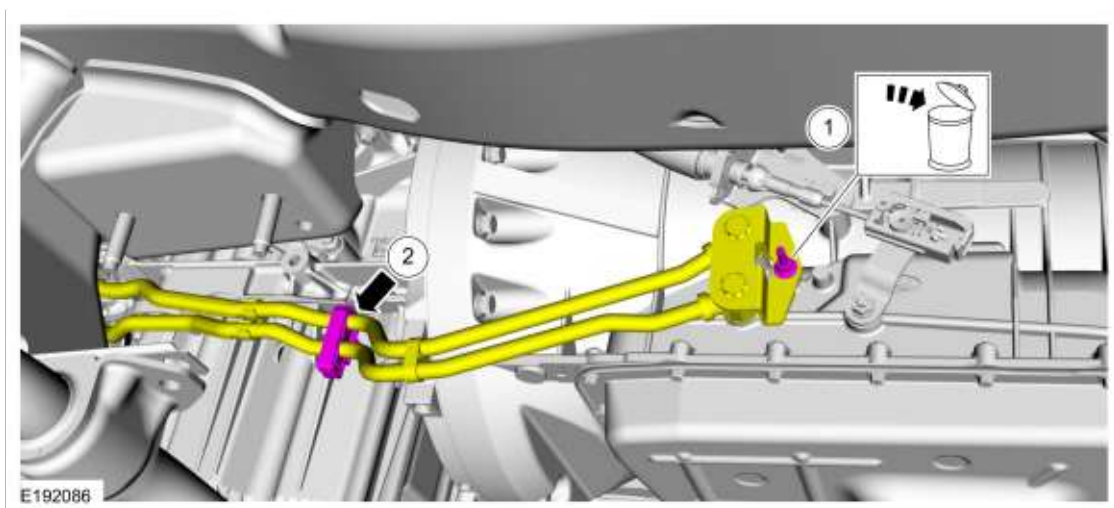
Remove the nut and the heat shield.



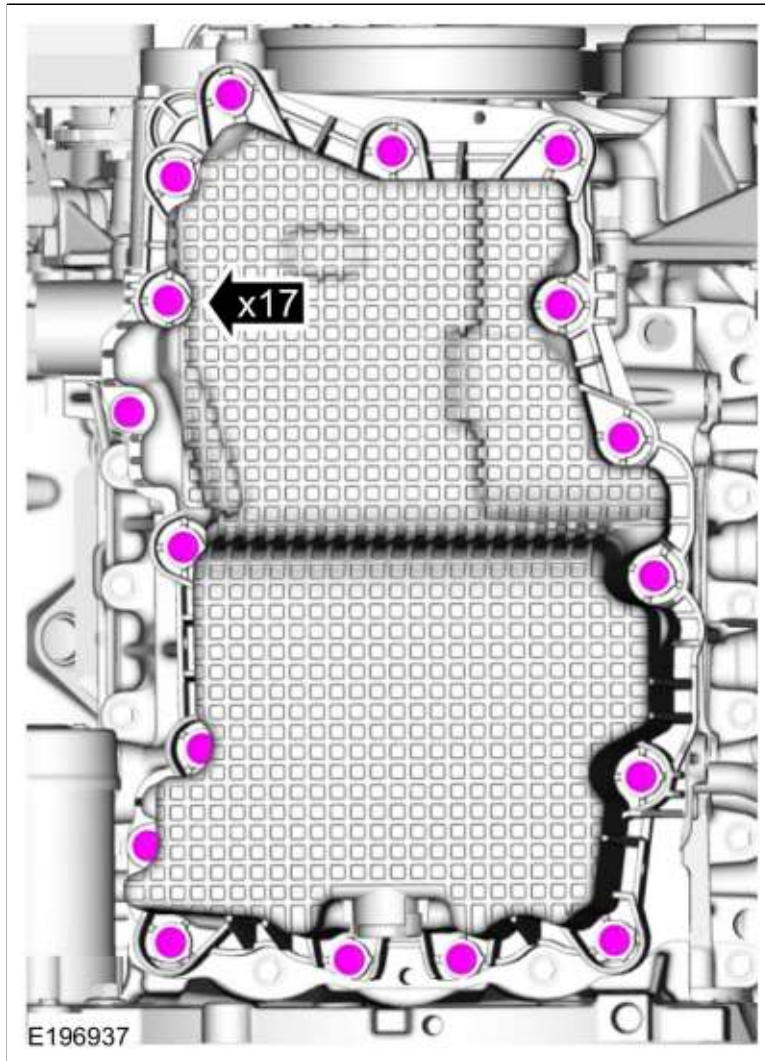


27.

1. Remove and discard the transmission fluid cooler tube bracket stud bolt.
2. Release the retainer and position aside the transmission cooler fluid cooler tubes.



28. Remove the oil pan bolts.

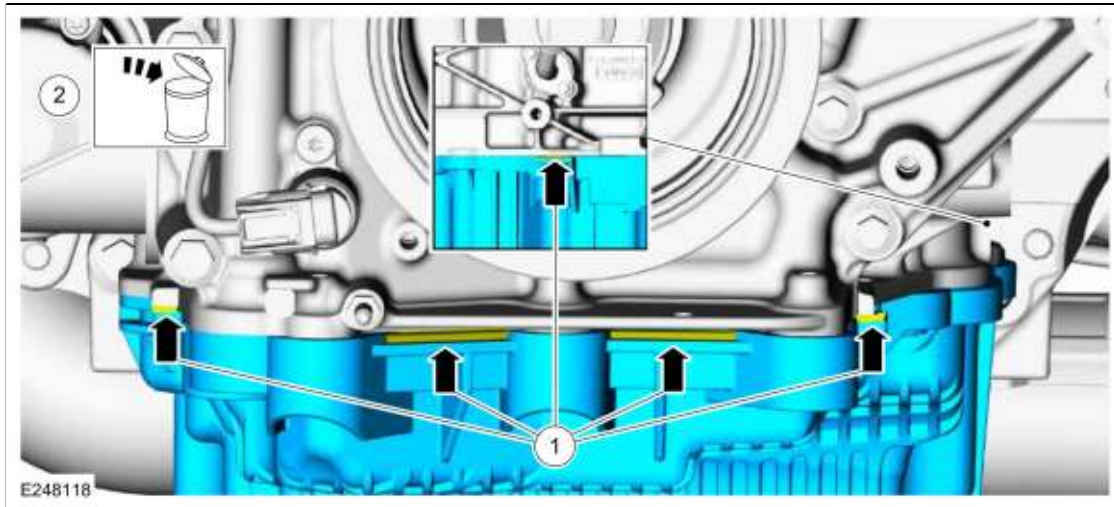


29.

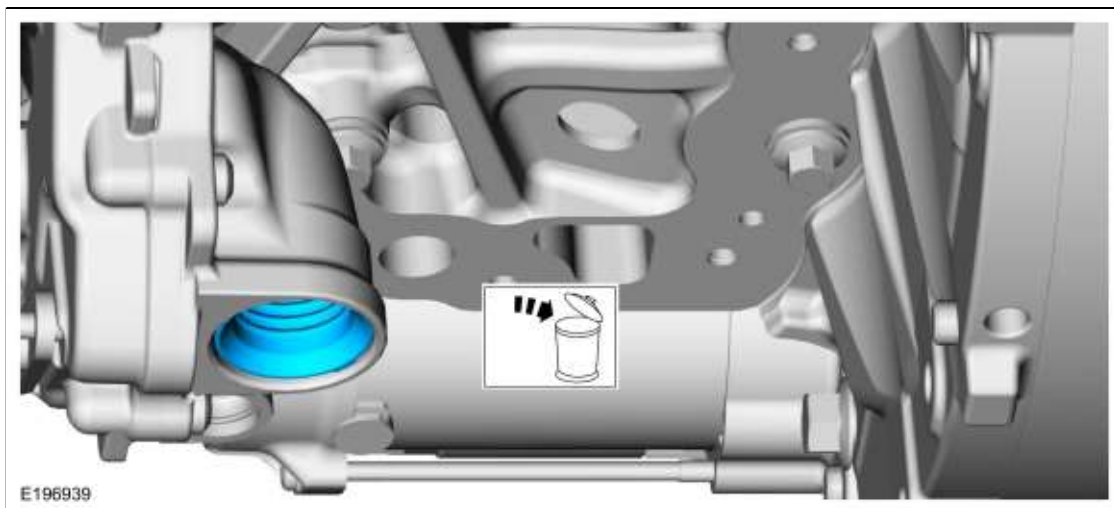
1. Using a large flat-bladed screwdriver and the indicated pry pads, release the sealer and separate the oil pan from the bottom of the engine.
2. **NOTE:** *Do not reuse the oil pan.*

Remove and discard the oil pan.





30. Remove and discard the oil pump seal.



31. **NOTICE:** Do not use metal scrapers, wire brushes, power abrasive discs or other abrasive means to clean the sealing surfaces. These tools cause scratches and gouges, which make leak paths. Use a plastic scraping tool to remove traces of sealant.

Make sure that the oil pan sealing surfaces of the cylinder block and engine front cover are free of foreign material.

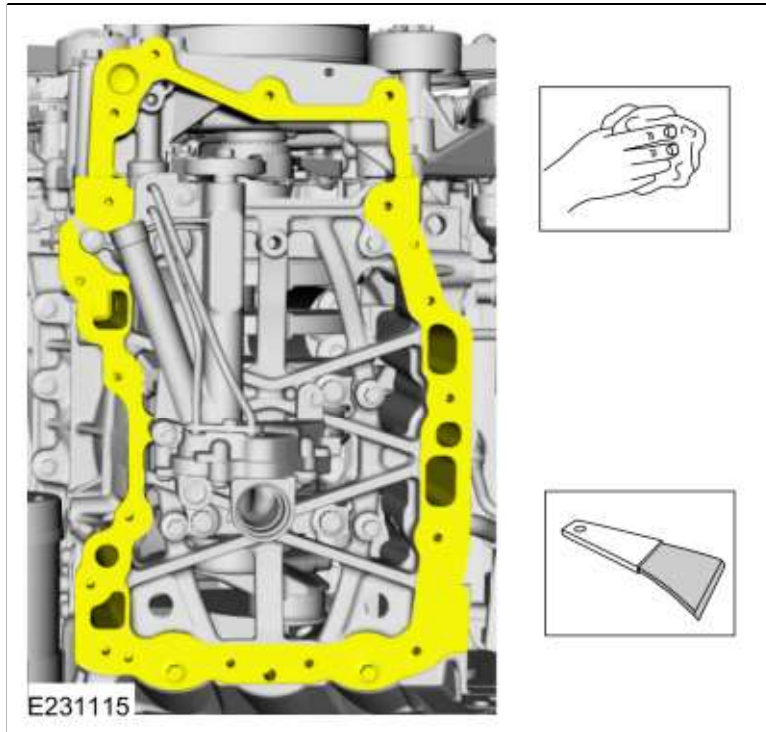
Refer to: [RTV Sealing Surface Cleaning and Preparation](#) (303-00 Engine System - General Information, General Procedures).

Use the General Equipment: Plastic Scraper

Material: Motorcraft® Silicone Gasket Remover / ZC-30-A

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

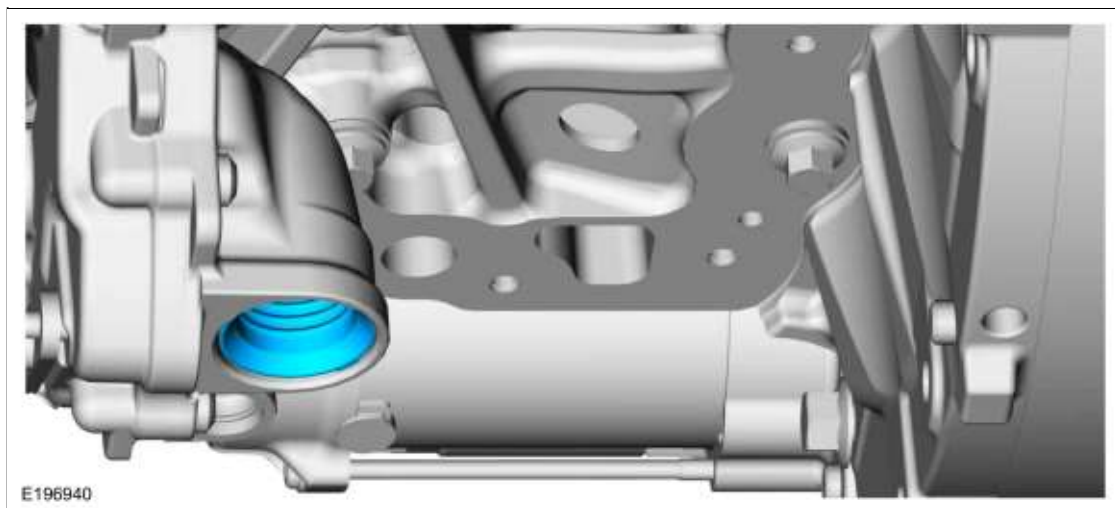
Material: Motorcraft® Metal Surface Prep Wipes / ZC-31-B



Installation

4x2/4x4

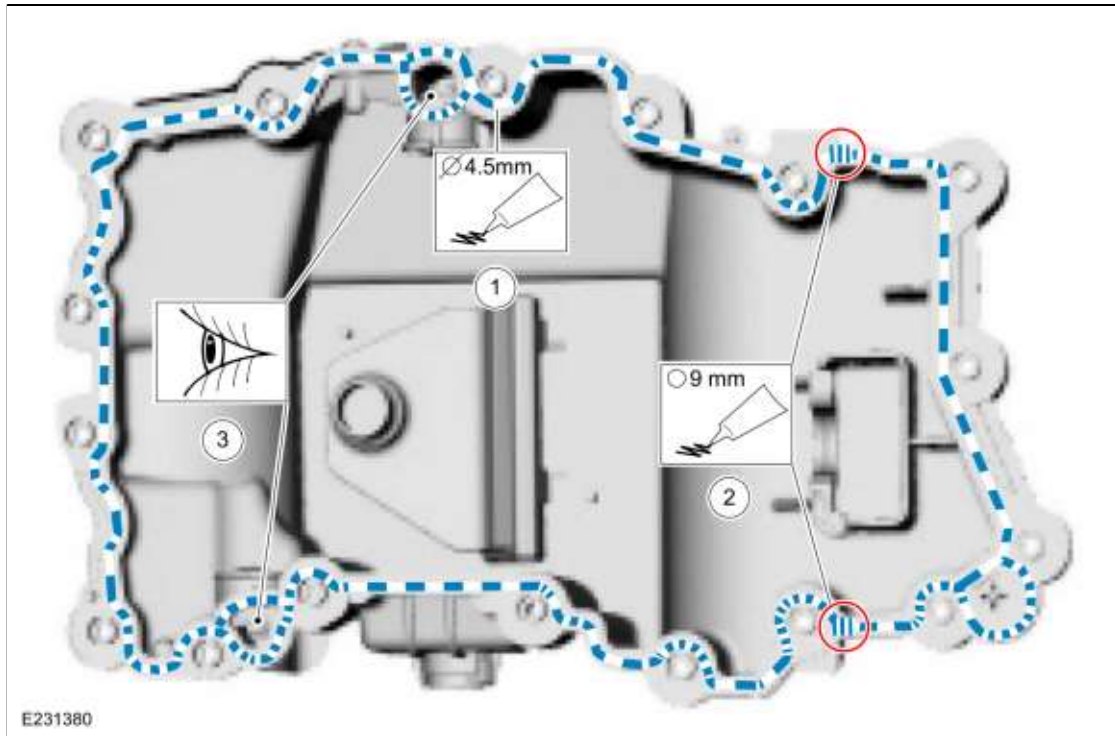
1. Install a new oil pump seal.



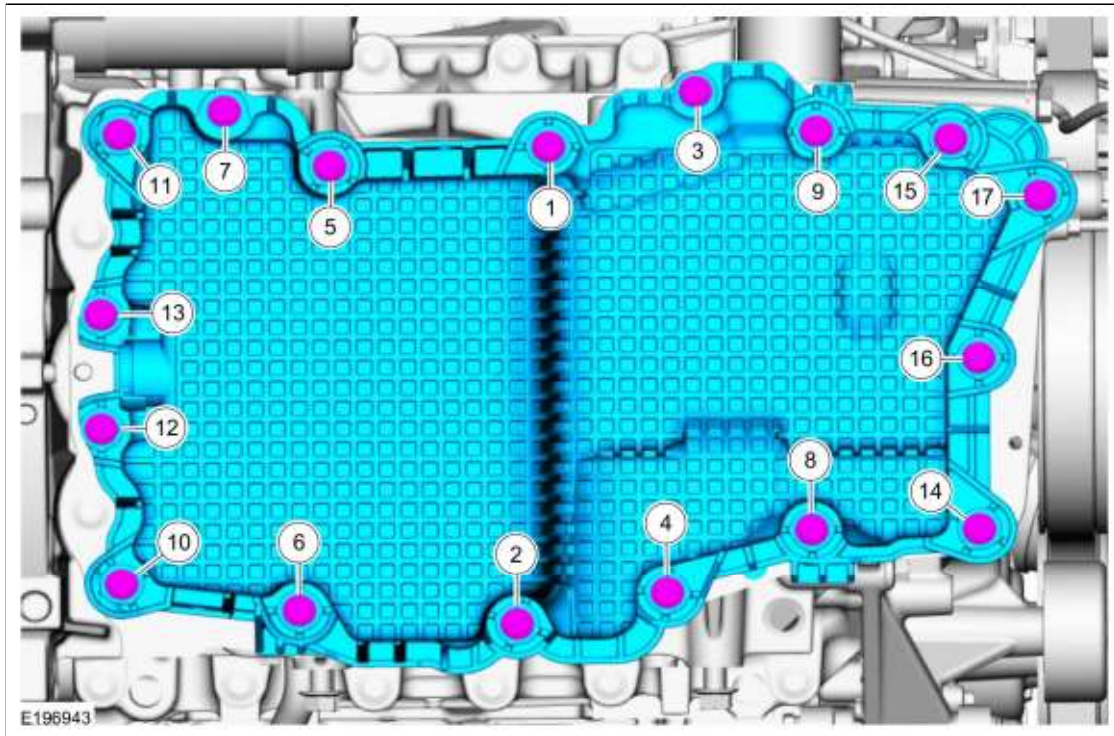
2. **NOTICE:** Failure to use Motorcraft® High Performance Engine RTV Silicone may cause the engine oil to foam excessively and result in serious engine damage.

NOTE: The oil pan must be installed within 10 minutes of applying the sealer and the bolts must be installed and tightened to 2-5 Nm (18-44 lb-in) within 15 of applying the sealer. Final tightening of the bolts must be completed within 60 minutes of applying the sealer. Failure to follow this procedure can cause future oil leakage.

1. Apply a 4.5 mm (0.18 in) bead of Motorcraft® High Performance Engine RTV Silicone to the sealing surface of the new oil pan.
Material: Motorcraft® High Performance Engine RTV Silicone / TA-357 (WSE-M4G323-A6)
2. Apply a 9 mm (0.35 in) bead of Motorcraft® High Performance Engine RTV Silicone to the engine front cover-to-cylinder block joint areas on the new oil pan.
Material: Motorcraft® High Performance Engine RTV Silicone / TA-357 (WSE-M4G323-A6)
3. Inspect the crankcase ventilation passages to make sure they are not blocked by any sealer applied.



3. Install the new oil pan and the bolts.
Torque:
Stage 1: 31 lb.in (3.5 Nm)
Stage 2: 89 lb.in (10 Nm)



4. **NOTE:** *Inspect the case and make sure the old transmission fluid cooler tube O-rings are not stuck in the case.*

Inspect the transmission fluid cooler O-ring seals. Install new O-ring seals if necessary.



5.
1. Position the transmission fluid cooler tubes and attach the retainer.