

303-01C Engine - 3.5L EcoBoost (272kW/370PS)
Removal and Installation

2017 F-150
Procedure revision date: 08/30/2016

Oil Pan

Base Part Number: 6675

Special Tool(s) / General Equipment

Plastic Scraper
Oil Drain Equipment
Vehicle/Axle Stands

Materials

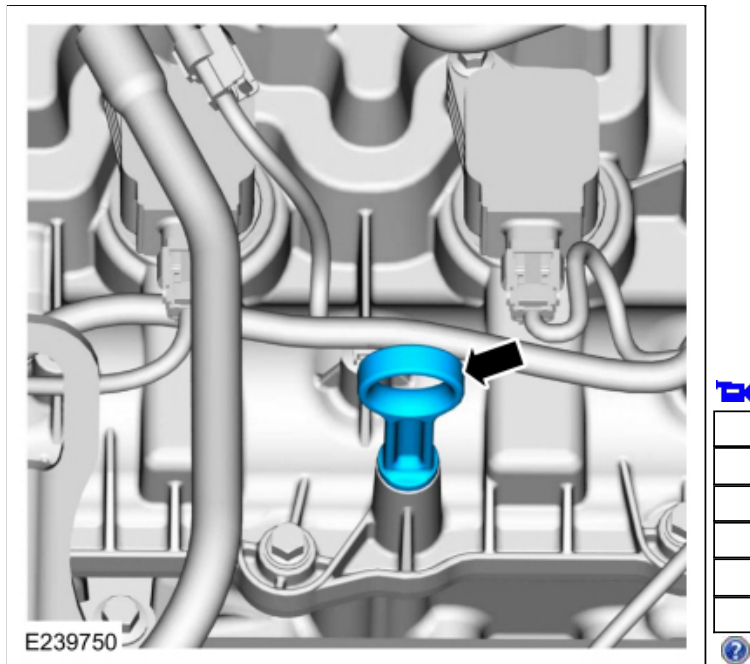
Name	Specification
Motorcraft® SAE 5W-30 Synthetic Blend Motor Oil XO-5W30-QSP	WSS-M2C946-A
Motorcraft® High Performance Engine RTV Silicone TA-357	WSE-M4G323-A6
Motorcraft® Silicone Gasket Remover ZC-30-A	-
Motorcraft® Metal Surface Prep Wipes ZC-31-B	-
Motorcraft® Metal Brake Parts Cleaner PM-4-A,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

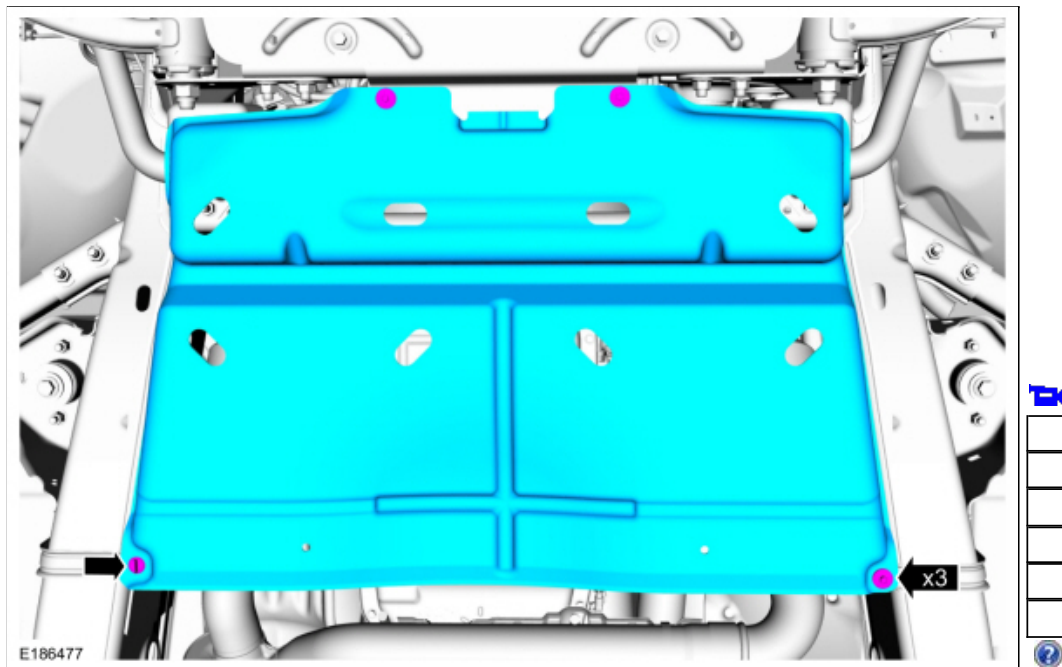
4x2/4x4

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, General Procedures).
3. Remove the oil level indicator.

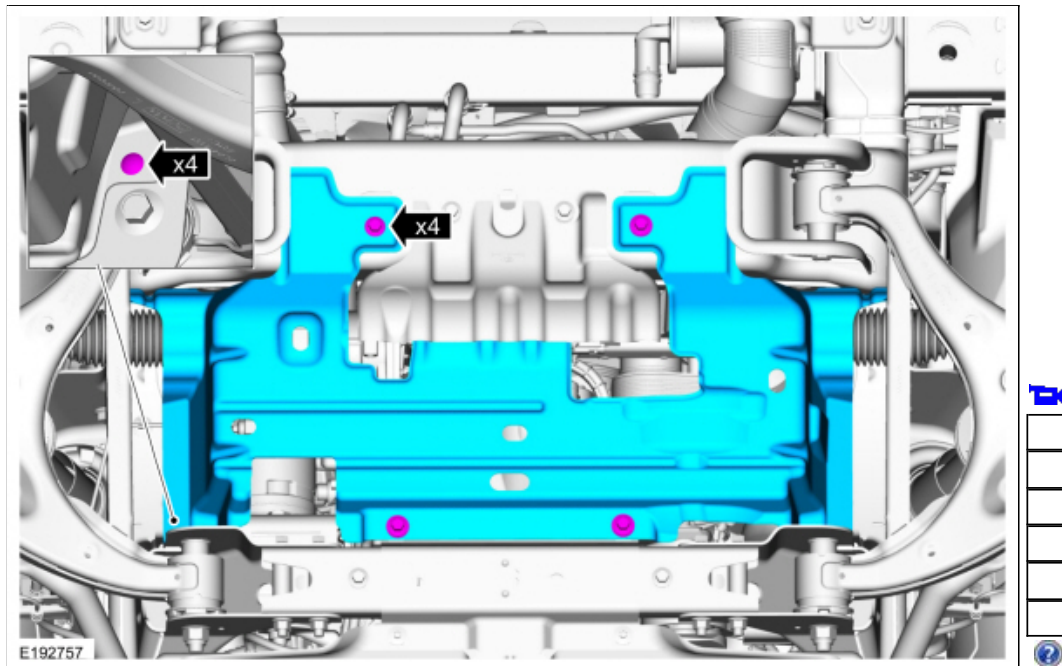


4.

- If equipped, remove the bolts.
- Release the retainer and remove the transmission housing cover.

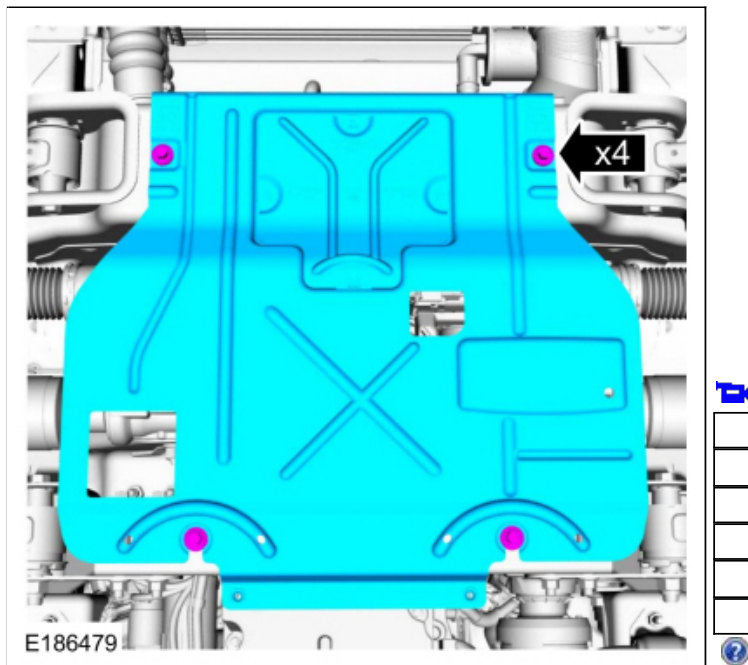
5. **NOTE:** Vehicles come with an underbody shield or a skid plate.

- If equipped, remove the pin-type retainers.
- Remove the bolts and the underbody shield.



6. **NOTE:** Vehicles come with an underbody shield or a skid plate.

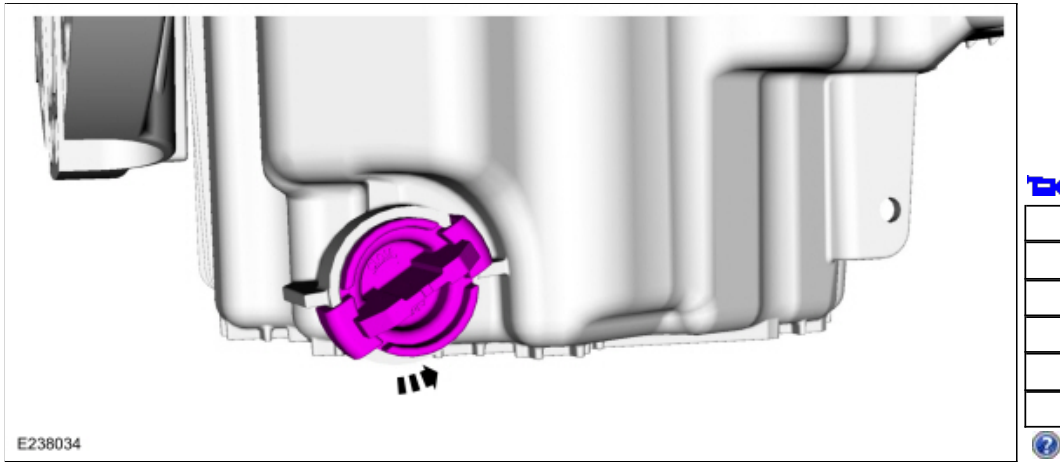
If equipped, remove the bolts and the skid plate.



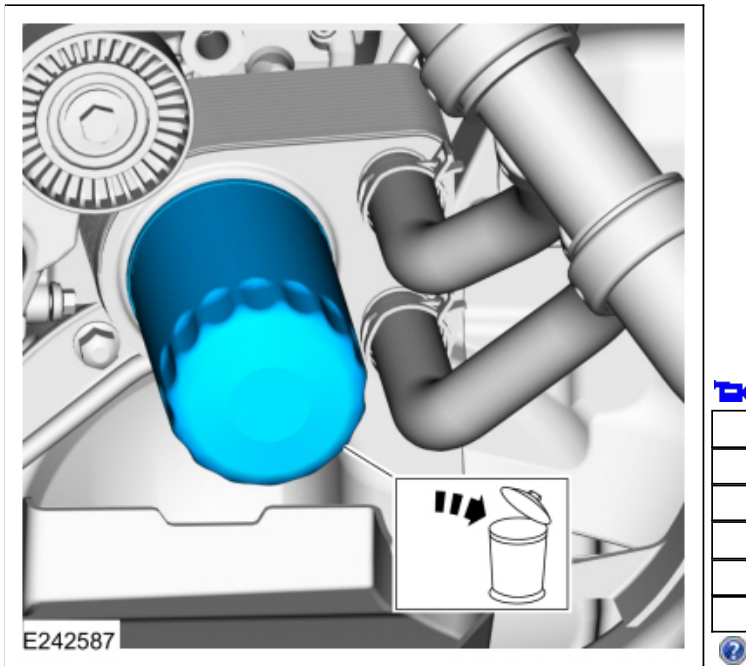
7. **NOTICE:** The oil drain plug should be removed and installed by hand, do not use hand tools.

NOTE: Overtightening will damage the oil drain plug and possibly the oil pan.

Remove the oil pan plug and drain the engine oil.
Use the General Equipment: Oil Drain Equipment

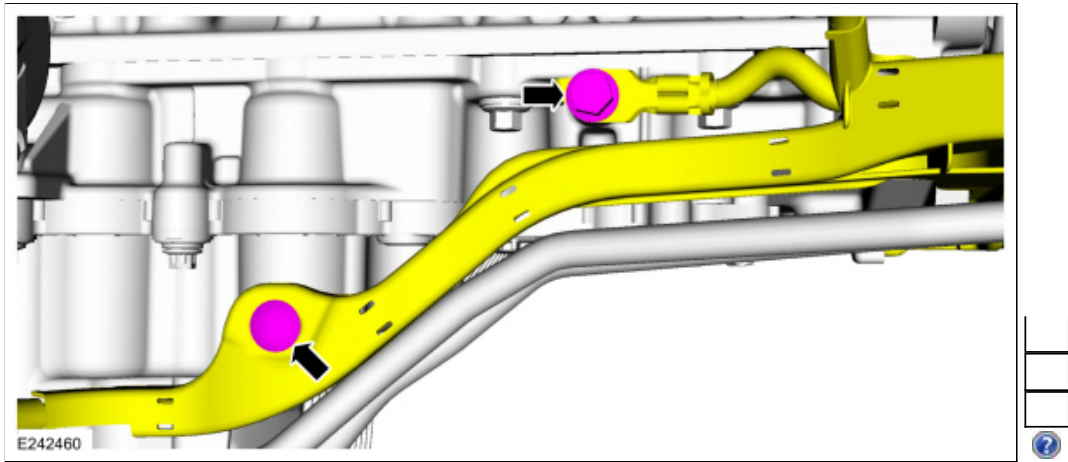


- 8. Remove and discard the oil filter.
Use the General Equipment: Oil Drain Equipment

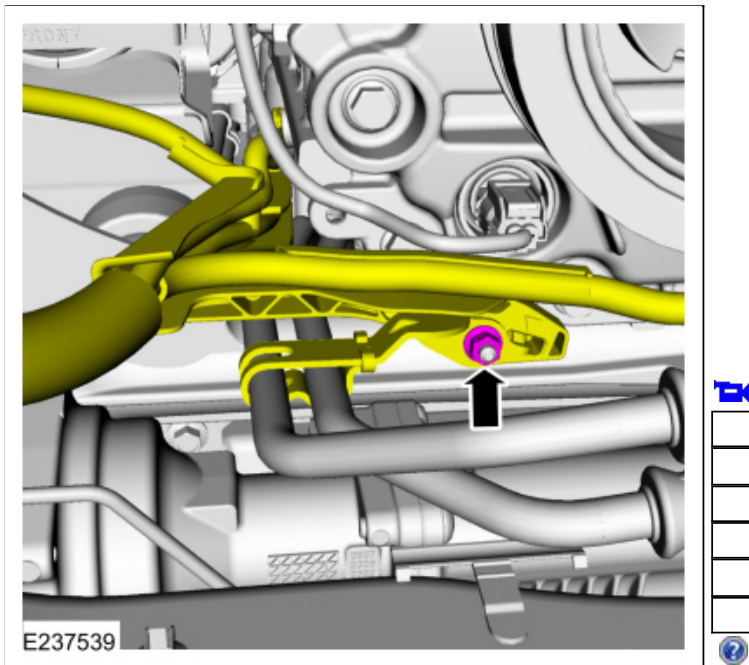


- 9. Remove the starter motor.
Refer to: [Starter Motor](#) (303-06C Starting System - 3.5L EcoBoost (272kW/370PS), Removal and Installation).
- 10. Detach the starter motor wiring harness retainer from the oil pan. Remove the bolt and the ground wire.

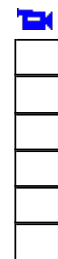


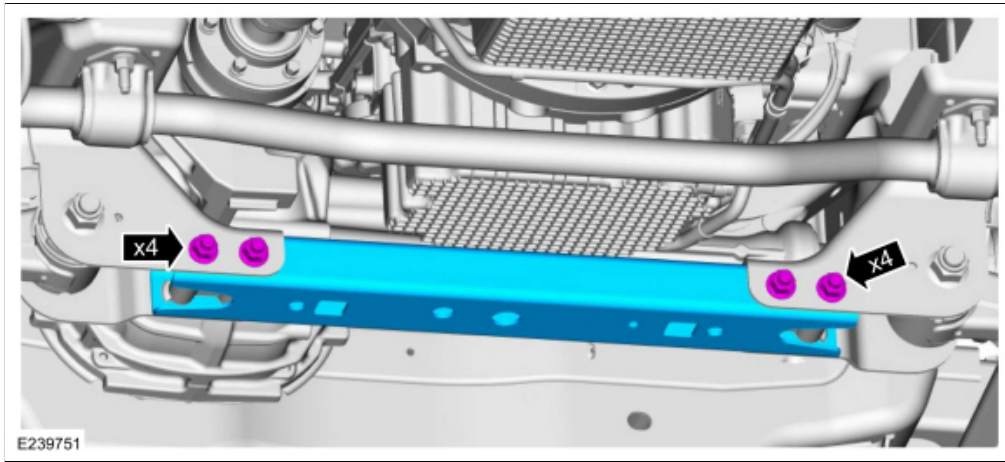


- 11. Remove the nut and position out the transmission cooler tube bracket. Position out the engine wiring harness.



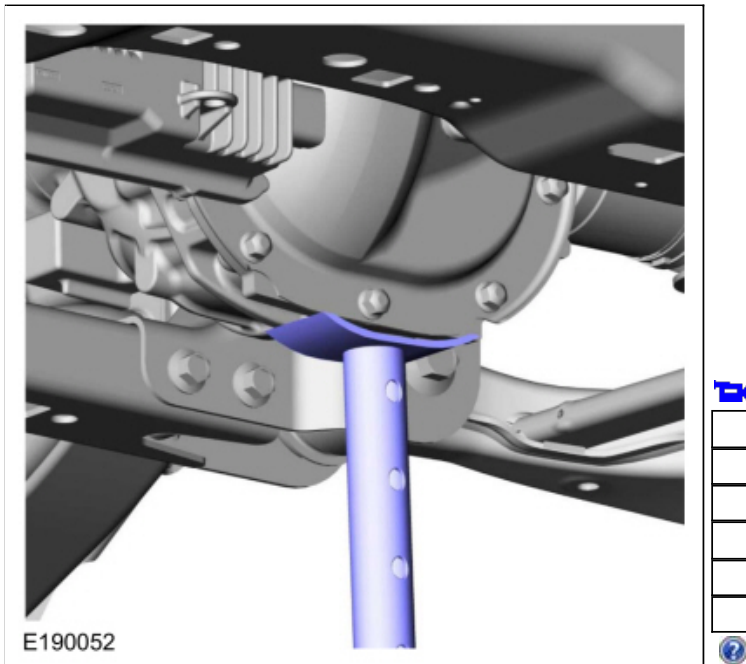
- 12. Remove the nuts, bolts and the crossmember.



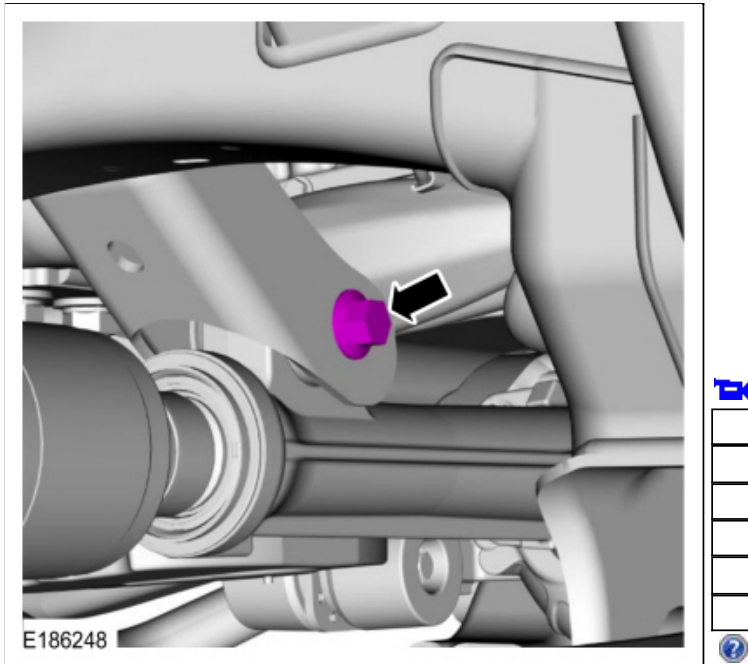


4x4

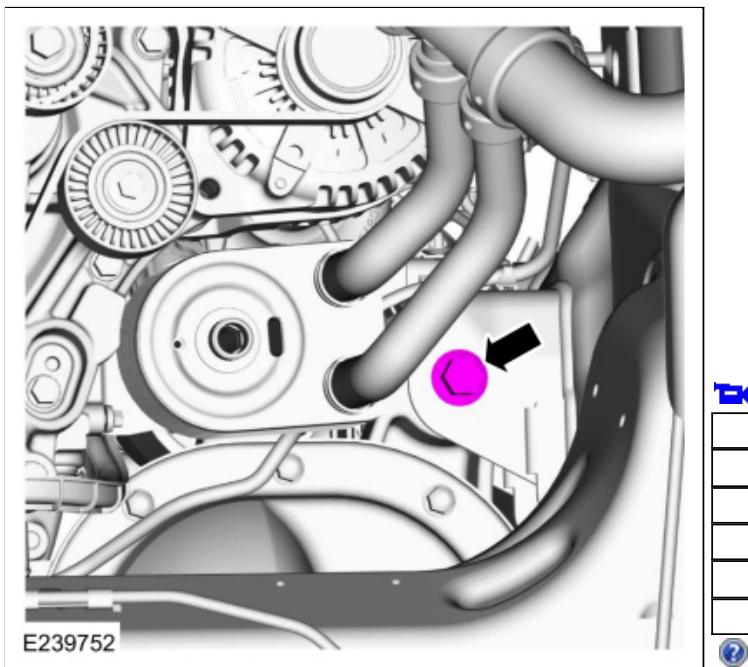
13. Using an adjustable stand, support the front axle. Use the General Equipment: Vehicle/Axle Stands



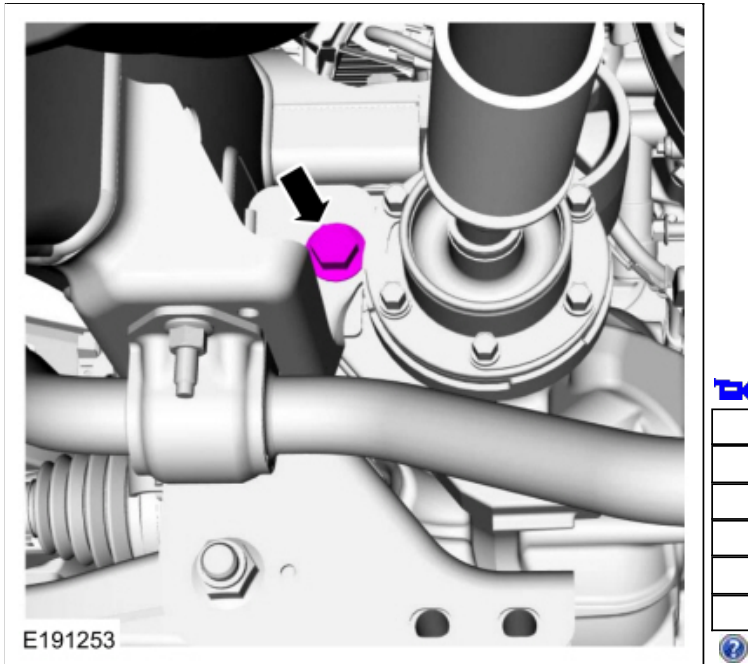
14. Remove the axle shaft housing carrier bushing bolt.



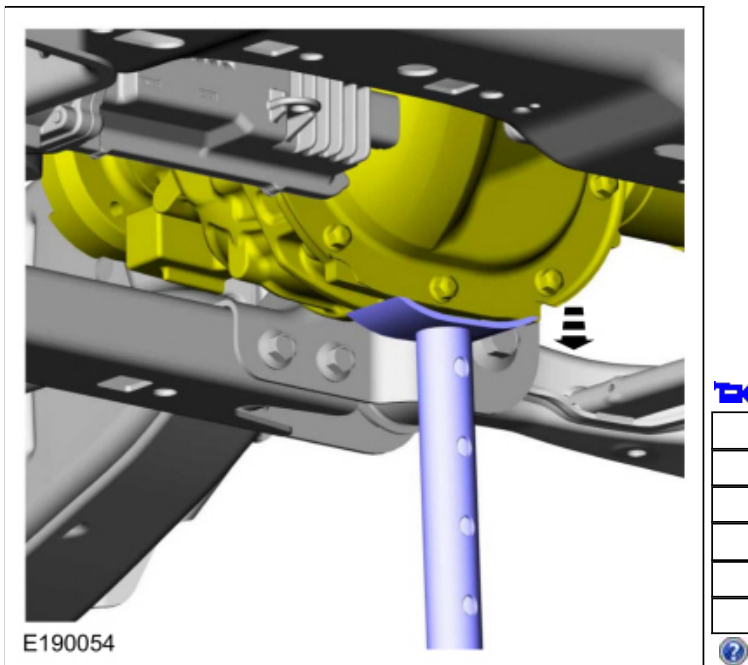
15. Remove the upper front axle carrier mounting bushing bolt.



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

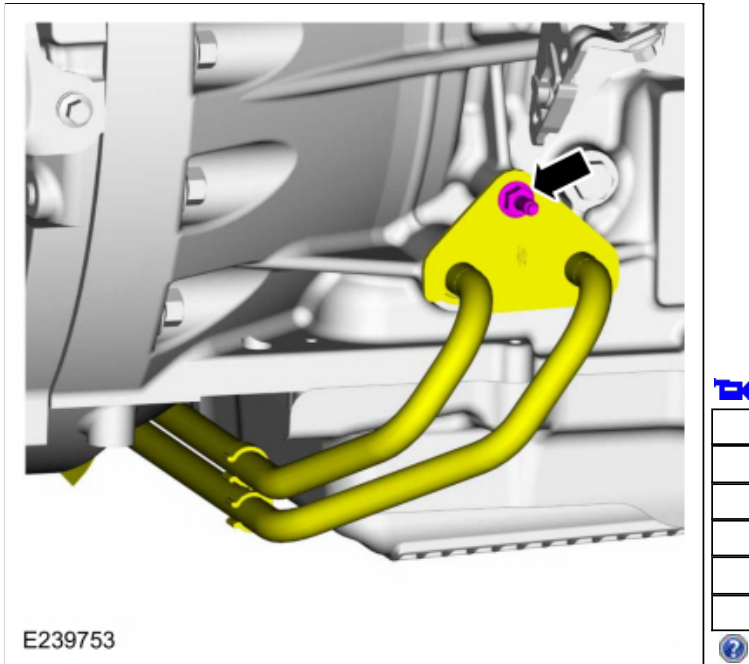


- 17. Using an adjustable stand, lower the axle to allow clearance for the oil pan to be removed. Use the General Equipment: Vehicle/Axle Stands

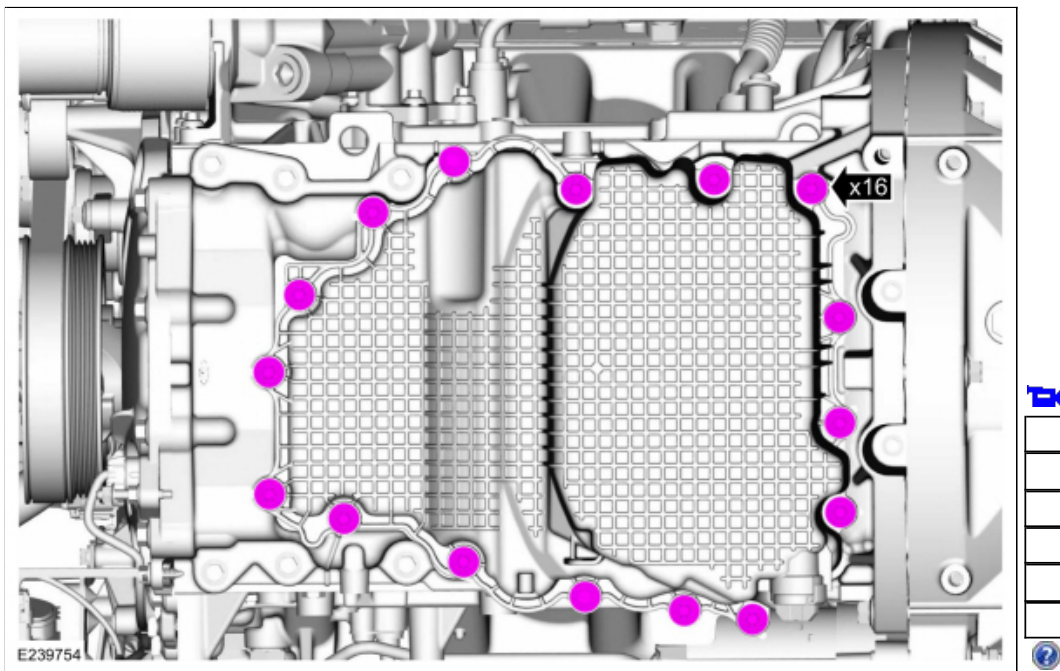


4x2/4x4

- 18. Remove the studbolt and position aside the transmission cooler tubes.

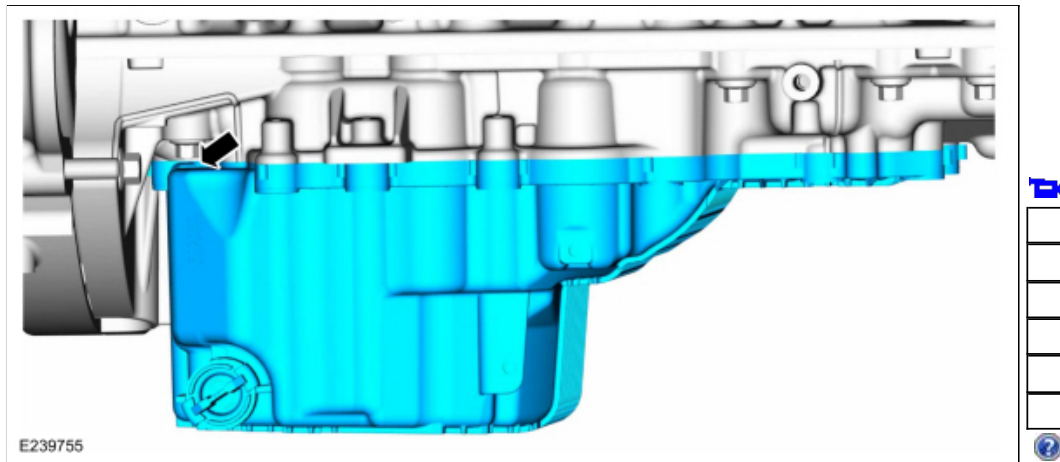


19. Remove the oil pan bolts.



20. **NOTE:** RH shown, LH similar.

Using a pry tool on the pry pads, remove the oil pan.



21. **NOTICE:** Do not use wire brushes, power abrasive discs or 3M™ Roloc® Bristle Disk (2-in white, part number 07528) to clean the sealing surfaces of the engine block. These tools cause scratches and gouges that make leak paths. They also cause contamination that causes premature engine failure. Remove all traces of the gasket.

Make sure that the mating faces of the oil pan are clean and free of foreign material.

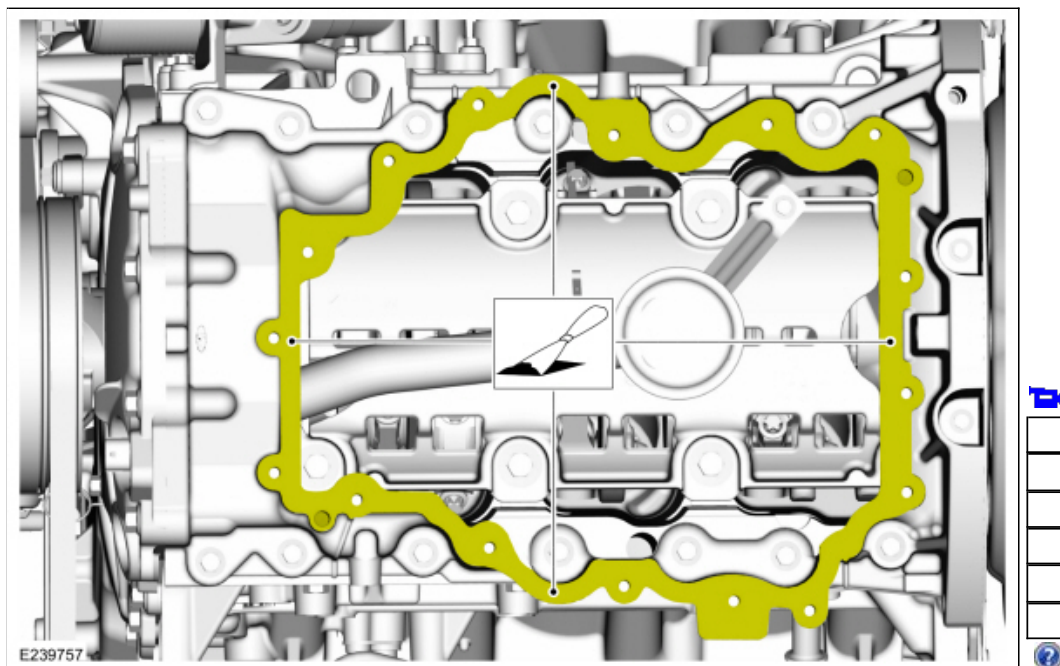
Refer to: [RTV Sealing Surface Cleaning and Preparation](#) (303-00 Engine System - General Information, General Procedures).

Use the General Equipment: Plastic Scraper

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

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

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



22. **NOTICE:** Do not use wire brushes, power abrasive discs or 3M™ Roloc® Bristle Disk (2-in white, part number 07528) to clean the sealing surfaces of the engine block. These tools cause scratches and gouges that make leak paths. They also cause contamination that causes premature engine failure. Remove all traces of the gasket.

Make sure that the mating faces of the oil pan are clean and free of foreign material.

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

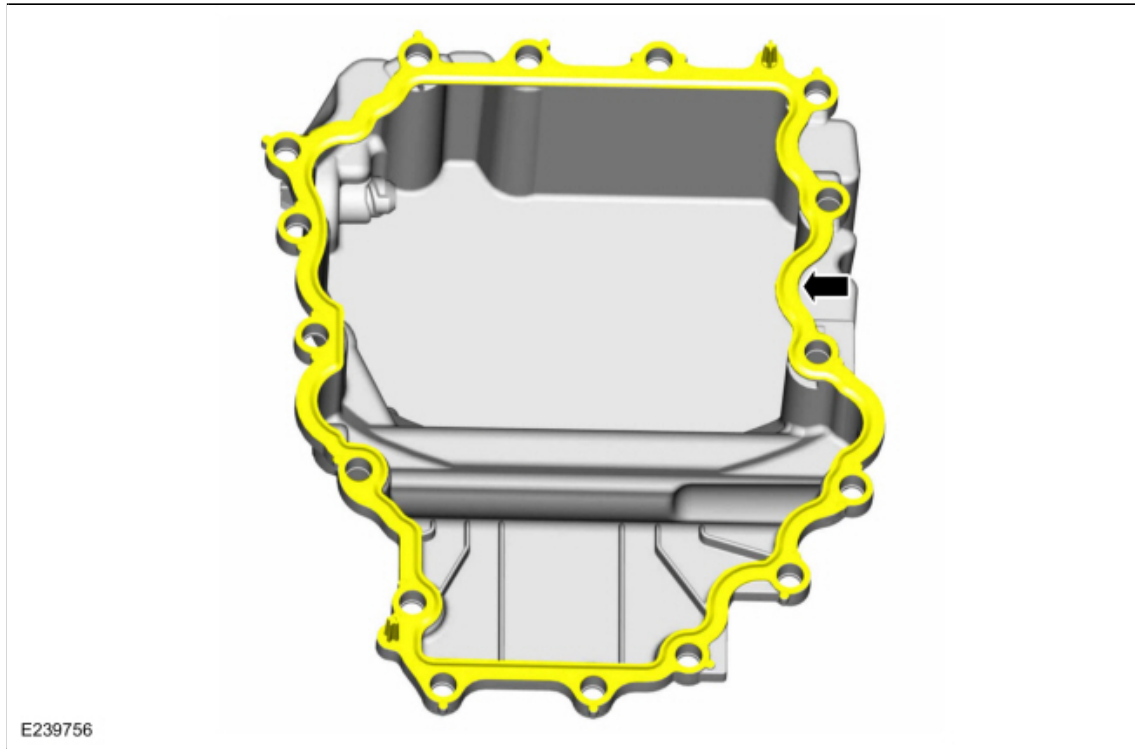
Procedures).

Use the General Equipment: Plastic Scraper

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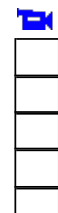


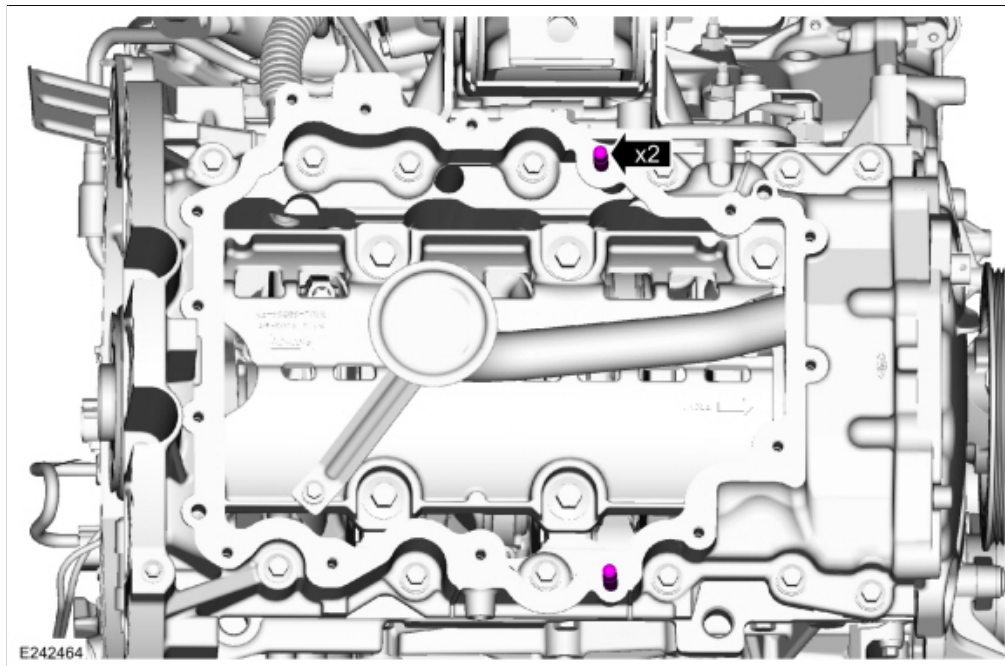
Installation

4x2/4x4

1. **NOTE:** Use guide studs to aid in installation. Studs must be fabricated locally.

Install guide studs.

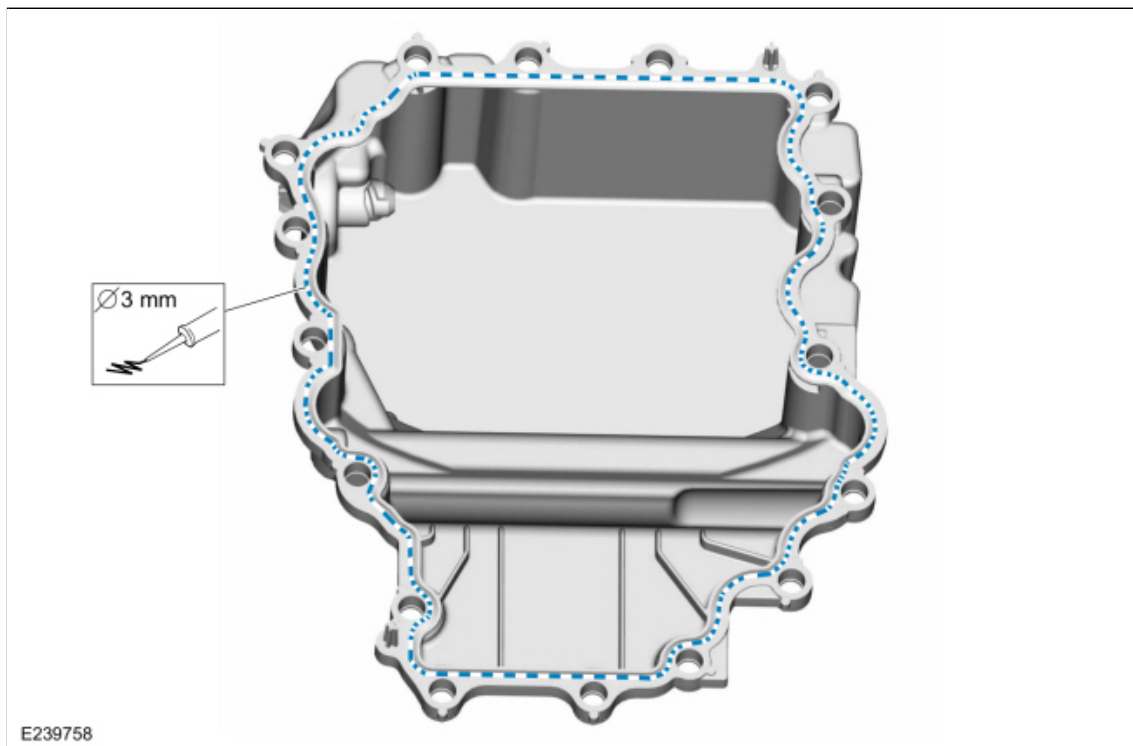




2. **NOTE:** The oil pan must be installed and the oil pan aligned to the cylinder block within 4 minutes of sealant application. Final tightening of the oil pan bolts must be carried out within 60 minutes of sealant application.

Apply a 3 mm (0.11 in) bead of Motorcraft® High Performance Engine RTV Silicone to the sealing surface of the oil pan.

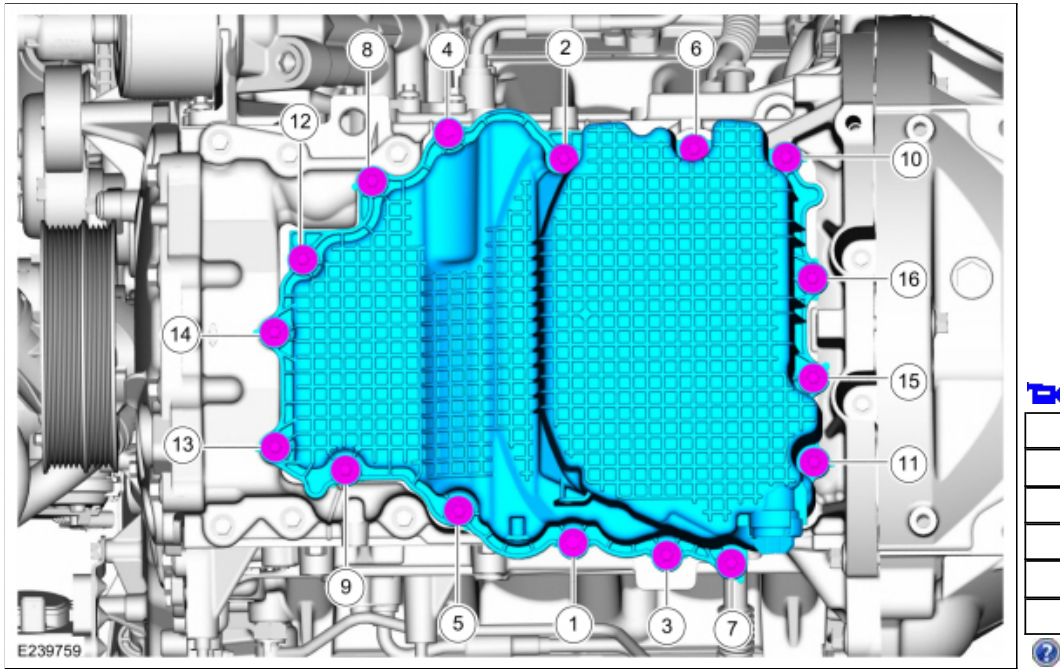
Material: Motorcraft® High Performance Engine RTV Silicone / TA-357 (WSE-M4G323-A6)



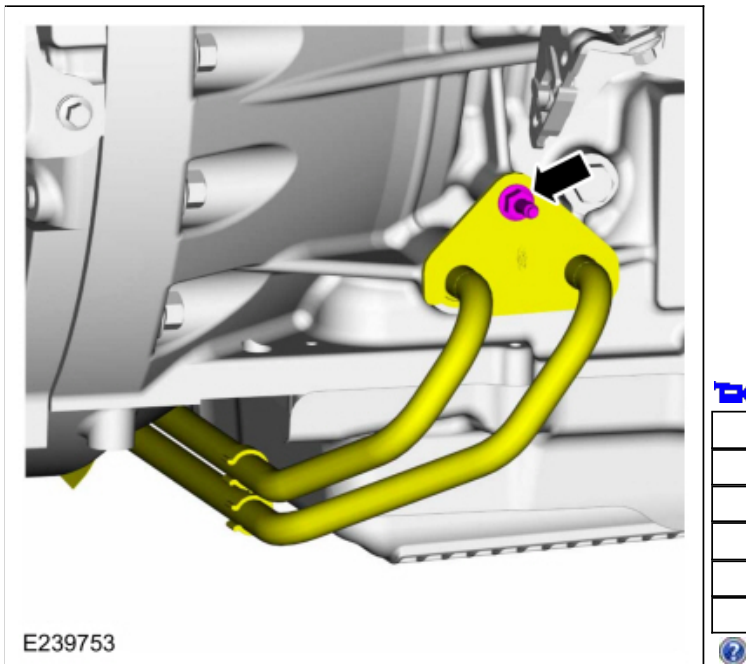
3. **NOTE:** It will be necessary to remove the guide studs before installing the remaining bolts.

Install the oil pan and the bolts. Tighten in the sequence shown.

Torque:
 :
 Stage 1: 89 lb.in (10 Nm)
 Stage 2: 45°



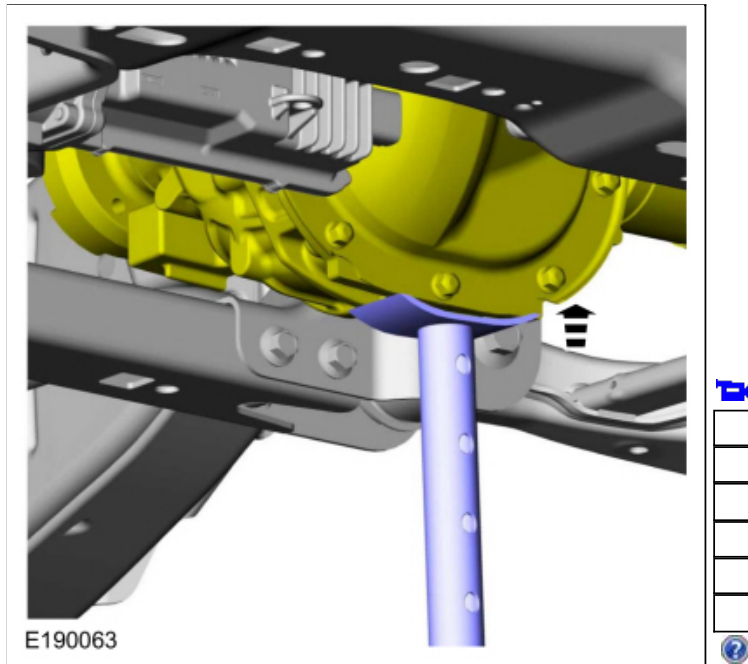
- 4.
- Inspect the transmission for seals in the housing.
 - Inspect the transmission cooler tube seals and replace if necessary.
 - Install the transmission cooler tubes and the studbolt.
Torque: 22 lb.ft (30 Nm)



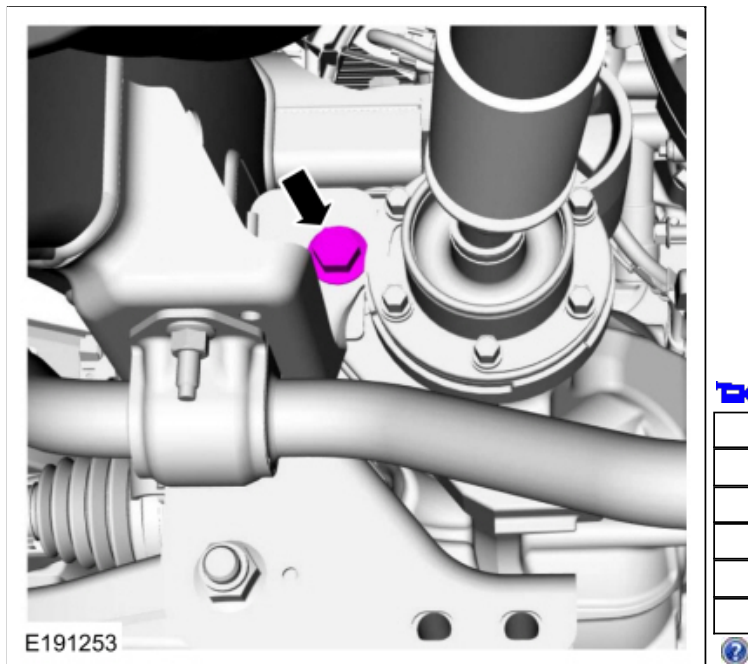
4x4

5. **NOTICE:** Use care when positioning the front axle housing or the vacuum lines to the axle solenoid may become disconnected or damaged.

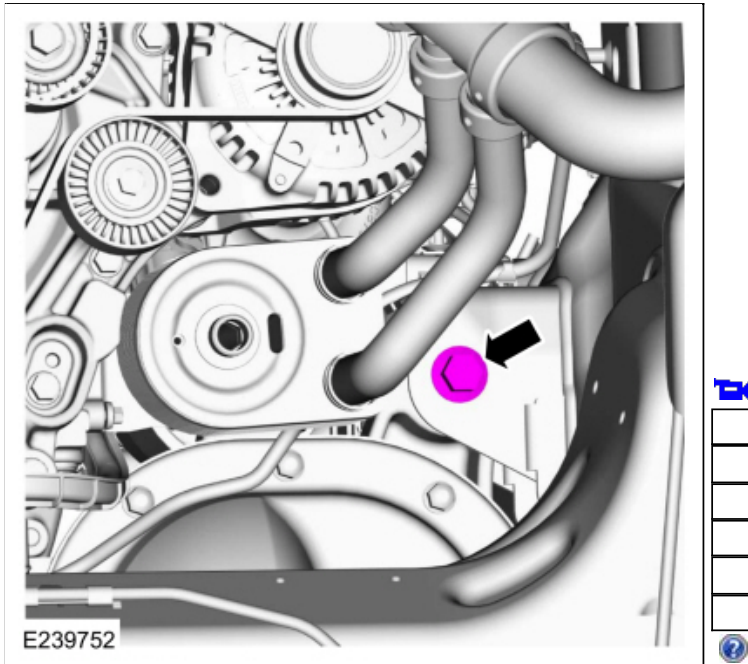
Using an adjustable stand, raise the front axle carrier into position.
Use the General Equipment: Vehicle/Axle Stands



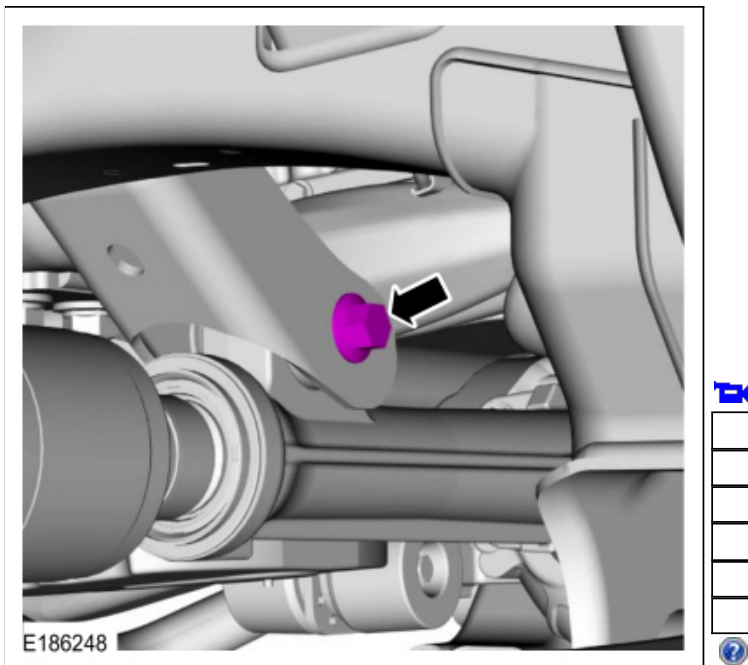
6. Install the lower front axle carrier mounting bushing bolt.
Torque: 129 lb.ft (175 Nm)



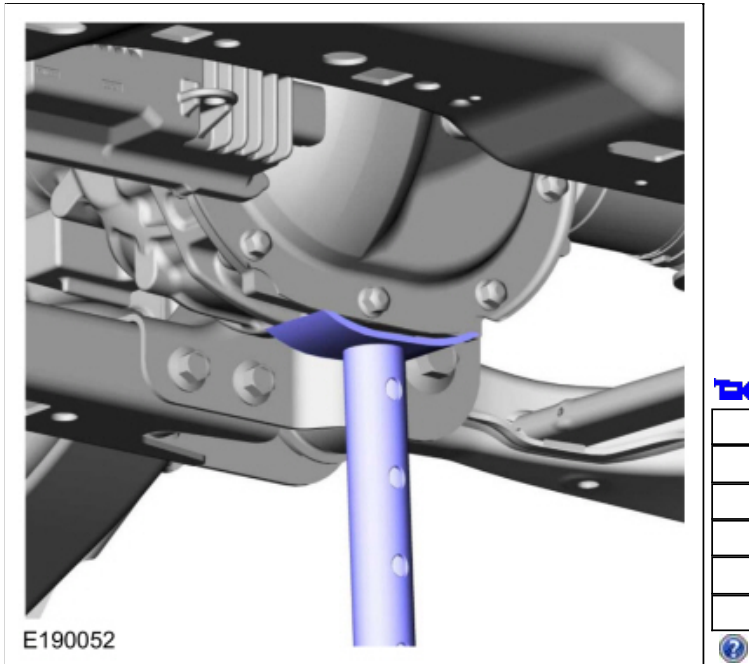
7. Install the upper front axle carrier mounting bushing bolt.
Torque: 129 lb.ft (175 Nm)



- 8. Install the axle shaft housing carrier bushing bolt.
Torque: 129 lb.ft (175 Nm)

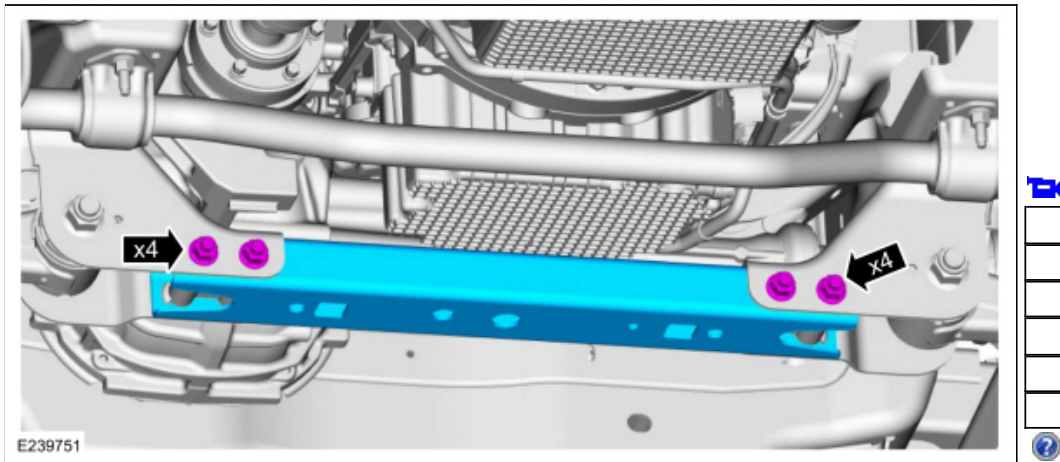


- 9. Remove the adjustable stand.
Use the General Equipment: Vehicle/Axle Stands

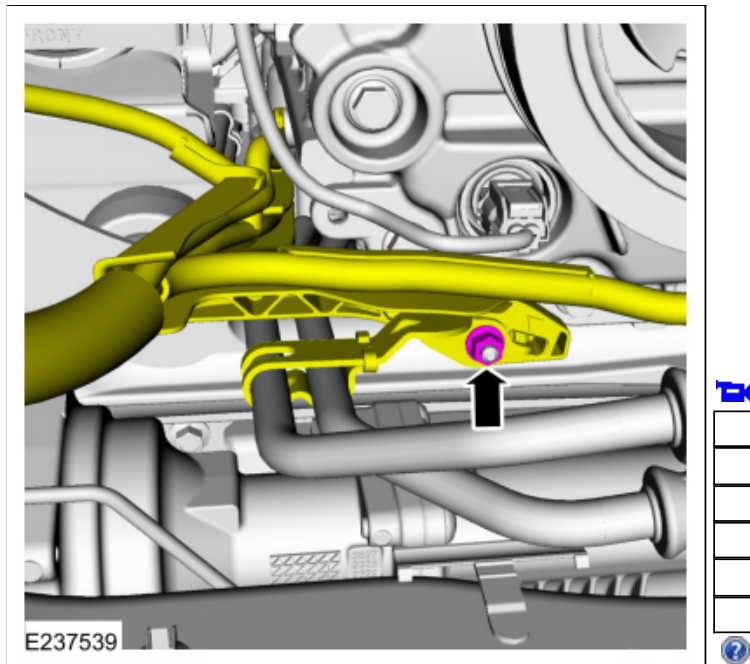


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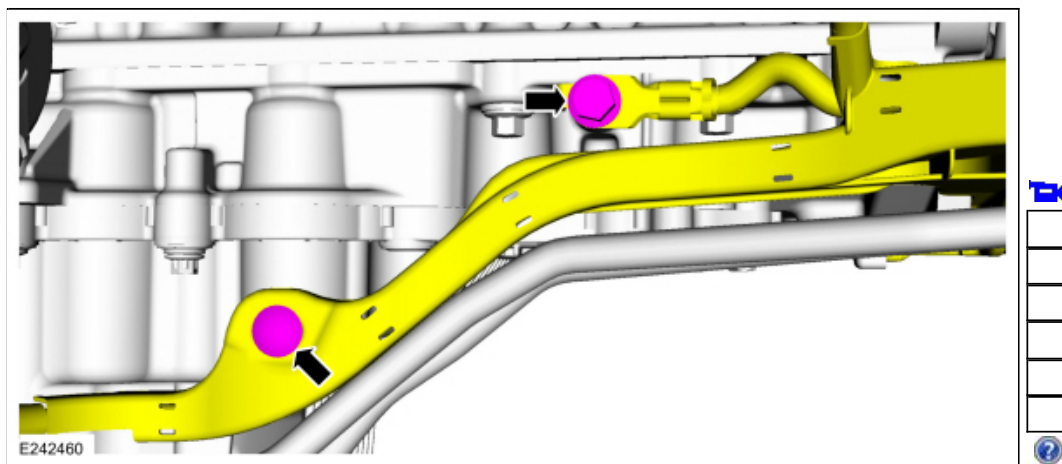
10. Position the crossmember, install the nuts and bolts.
Torque: 66 lb.ft (90 Nm)



11. Position back the engine wire harness. Position back the transmission cooler tube bracket and install the nut.
Torque: 106 lb.in (12 Nm)



12. Attach the starter motor wiring harness retainer to the oil pan. Position the ground wire and install the bolt.
Torque: 18 lb.ft (25 Nm)



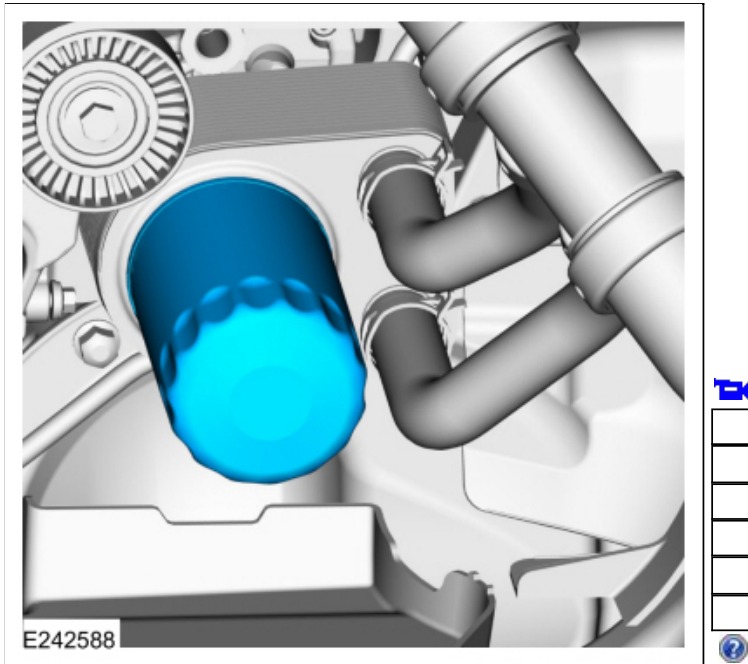
13. Install the starter motor.
 Refer to: [Starter Motor](#) (303-06C Starting System - 3.5L EcoBoost (272kW/370PS), Removal and Installation).
14. **NOTE:** Do not lubricate the engine oil filter gasket.

Install a new oil filter.

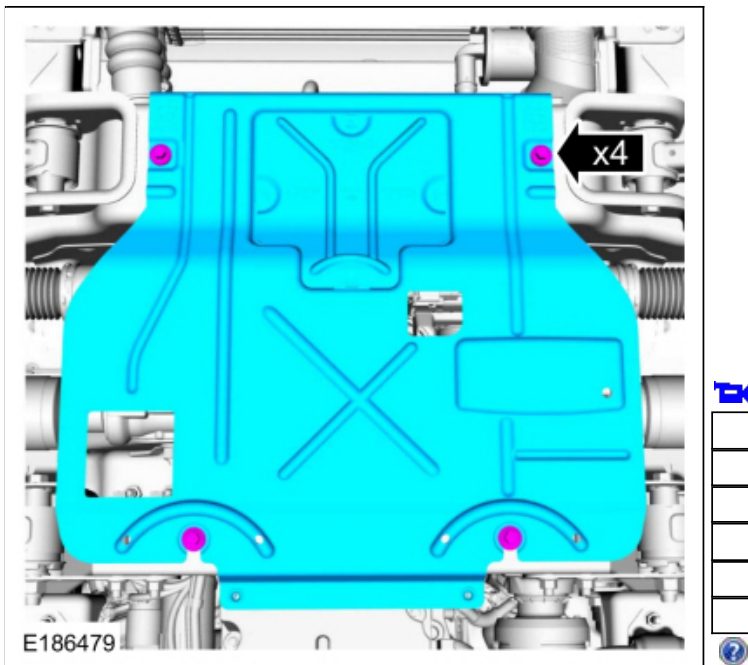
Torque:

Stage 1: 44 lb.in (5 Nm)

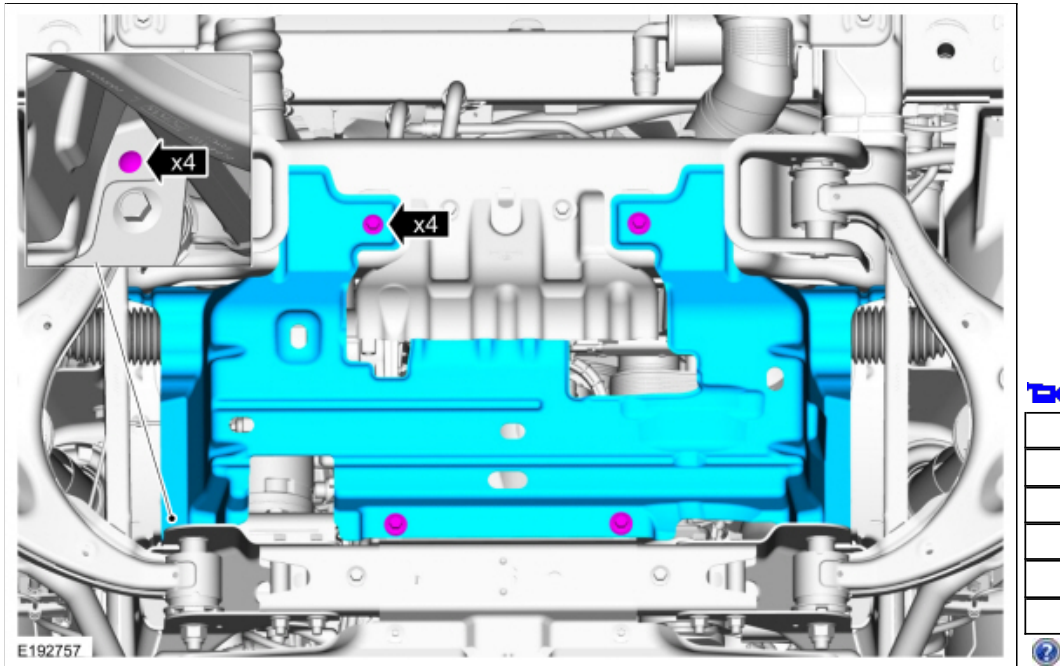
Stage 2: 180°



15. Install the skid plate and the bolts.
Torque: 30 lb.ft (40 Nm)

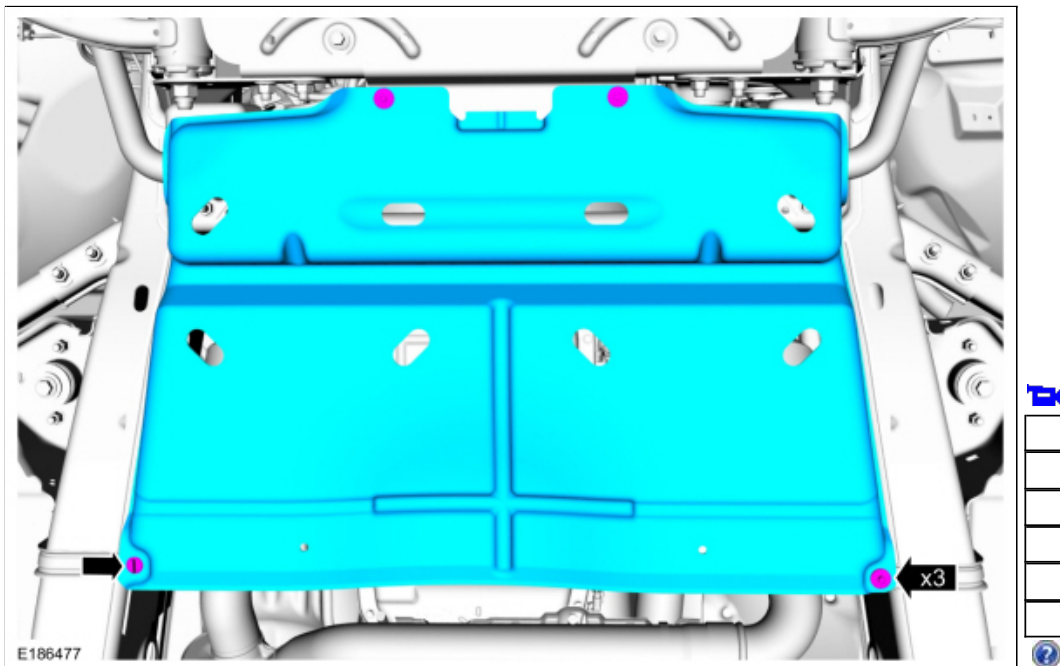


- 16.
- If equipped, install the underbody shield and the bolts.
Torque: 30 lb.ft (40 Nm)
 - Install the pin-type retainers.

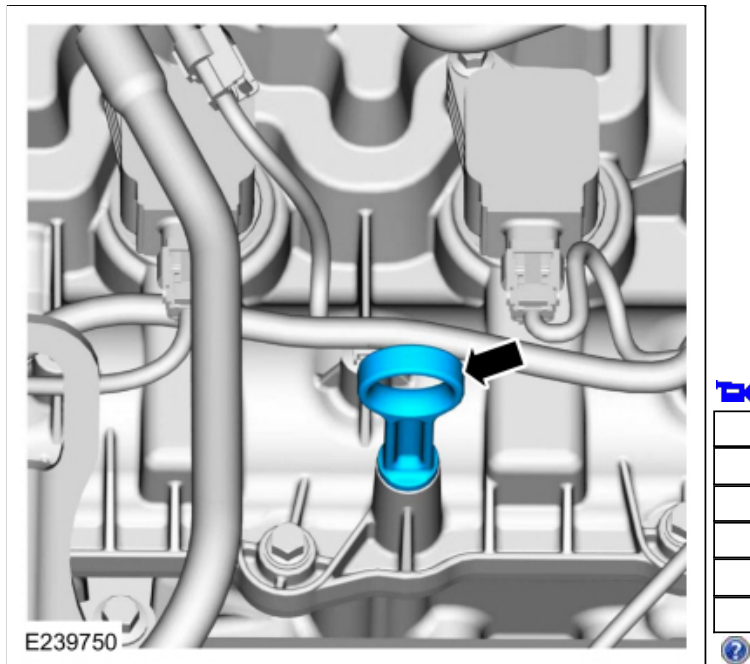


17.

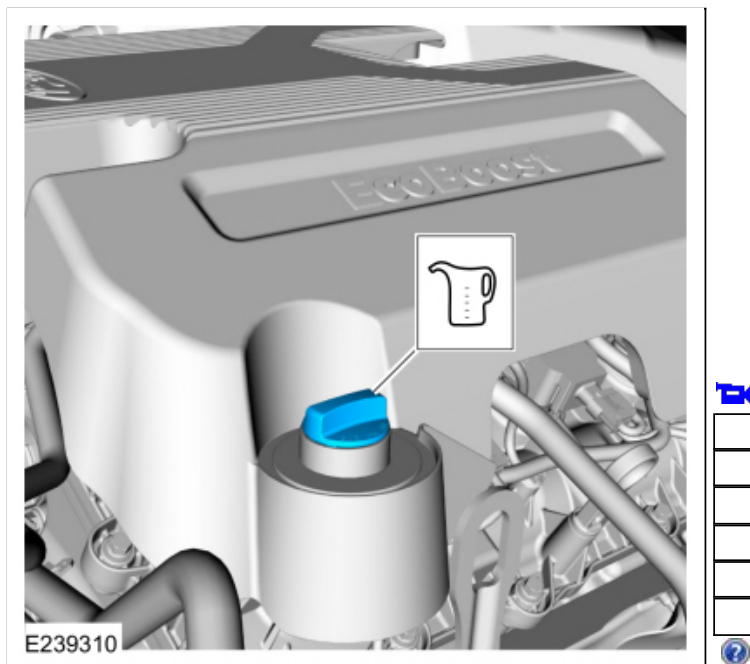
- If equipped, install the transmission housing cover and attach the retainer.
- Install the bolts.
Torque: 71 lb.in (8 Nm)



18. Install the oil level indicator.



19. Fill the engine with clean engine oil.
 Refer to: [Specifications](#) (303-01C Engine - 3.5L EcoBoost (272kW/370PS), Specifications).
 Material: Motorcraft® SAE 5W-30 Synthetic Blend Motor Oil / XO-5W30-QSP (WSS-M2C946-A)



20. Connect the battery ground cable.
 Refer to: [Battery Disconnect and Connect](#) (414-01 Battery, Mounting and Cables, General Procedures).
21. Check the transmission fluid level.
 Refer to: [Transmission Fluid Level Check](#) (307-01 Automatic Transmission - 10-Speed Automatic Transmission - 10R80).

