


307-01 Automatic Transmission - 10-Speed Automatic Transmission - 10R80
Removal and Installation

2019 Ranger
Procedure revision date: 12/11/2018

Transmission

Base Part Number: 7000

Special Tool(s) / General Equipment

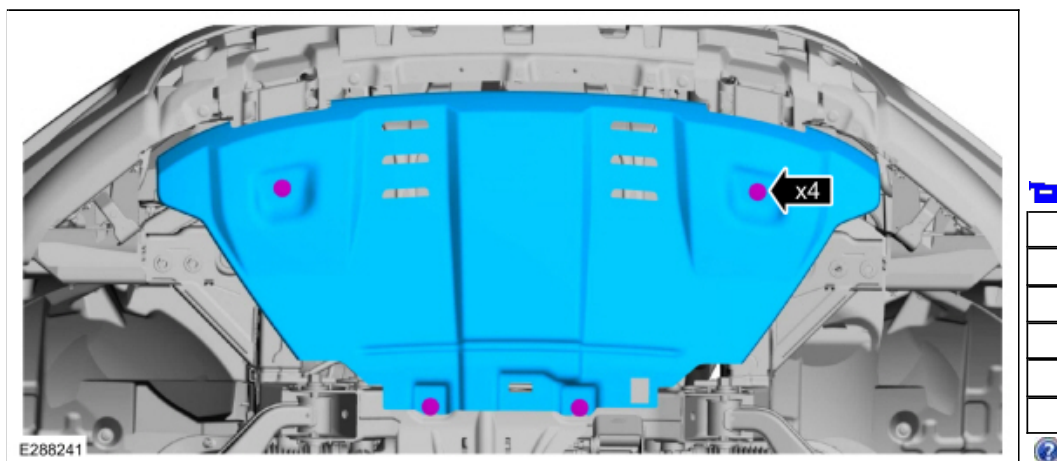
 <p>307-346</p>	<p>307-346 (T97T-7902-A) Retainer, Torque Converter TKIT-1998-LM (Navigator) TKIT-1997-F/FLM/LT</p>
Magnetic Socket	
Transmission Jack	
Retaining Strap	

Materials

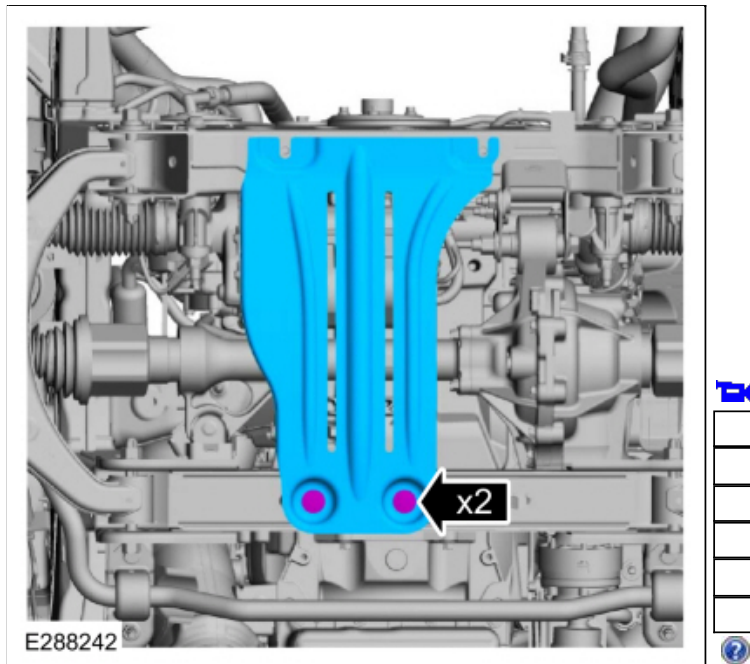
Name	Specification
Motorcraft® Multi-Purpose Grease Spray XL-5-A	ESB-M1C93-B
Motorcraft® MERCON® ULV Automatic Transmission Fluid XT-12-QULV	WSS-M2C949-A MERCON® ULV

Removal

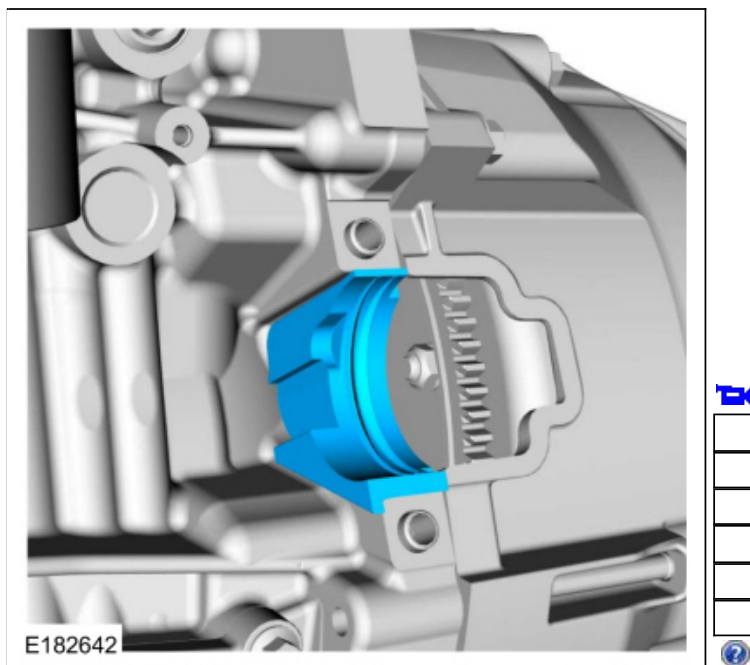
1. With the vehicle in NEUTRAL, position it on a hoist.
Refer to: [Jacking and Lifting](#) (100-02 Jacking and Lifting, Description and Operation).
2. Remove the bolts and the skid plate.



3. Remove the bolts and the rear skid plate.



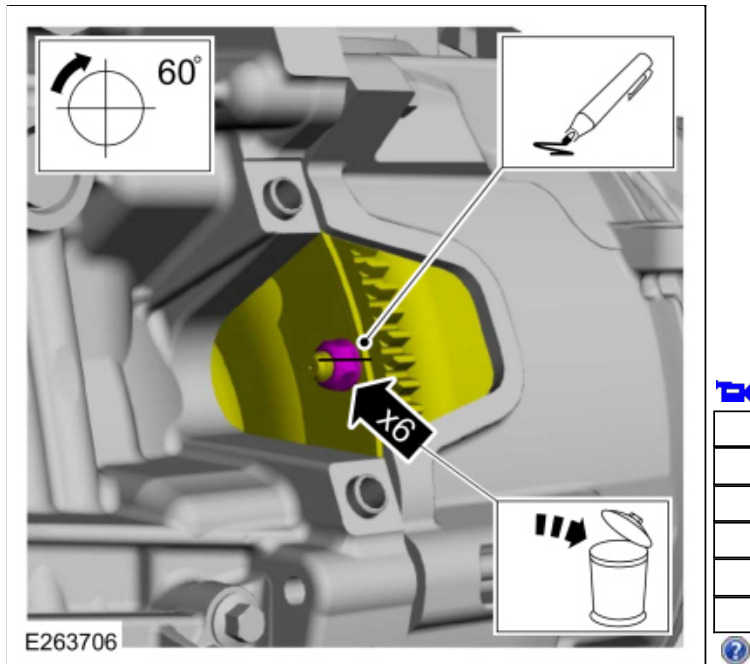
4. Remove the starter motor assembly.
Refer to: [Starter Motor](#) (303-06 Starting System - 2.3L EcoBoost (201kW/273PS), Removal and Installation).
5. Remove the starter motor insulator.



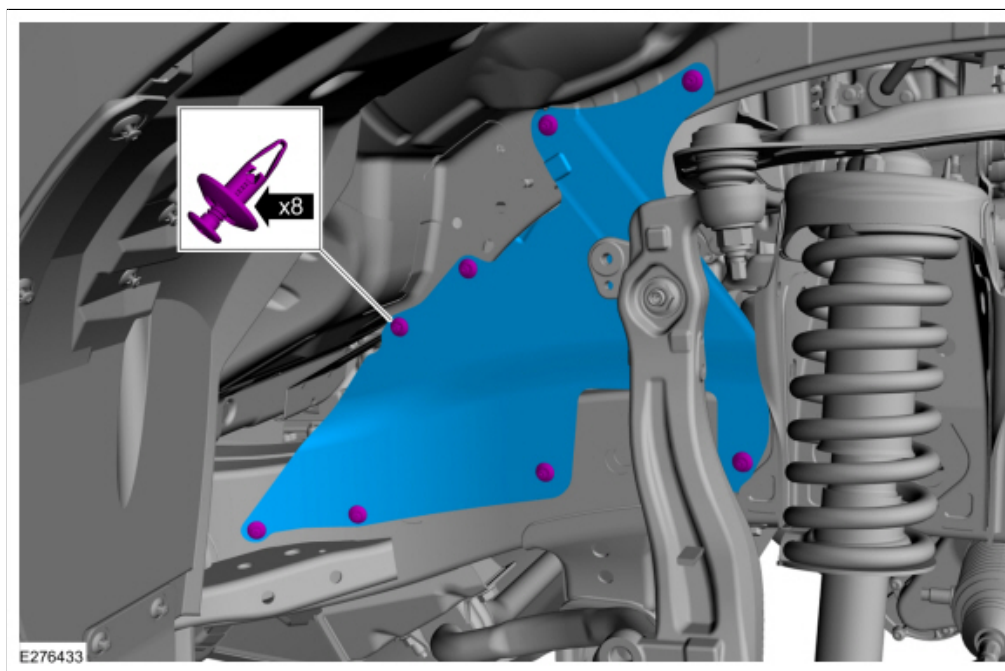
6. **NOTE:** Only rotate the crankshaft in a clockwise direction.

NOTE: Index mark one stud and the flexplate for assembly reference.

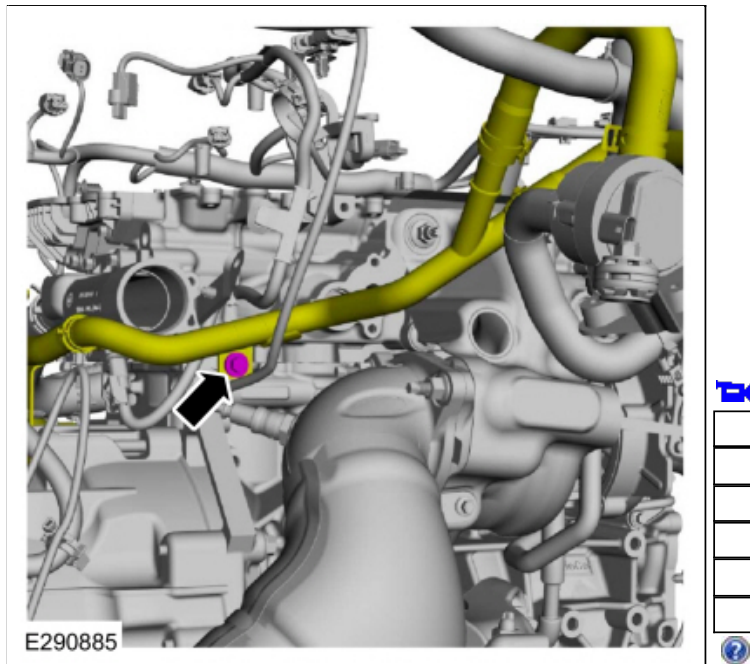
Using a magnetic socket, remove and discard the torque converter nuts.
Use the General Equipment: Magnetic Socket



7. Remove the retainers and the RH side splash shield.

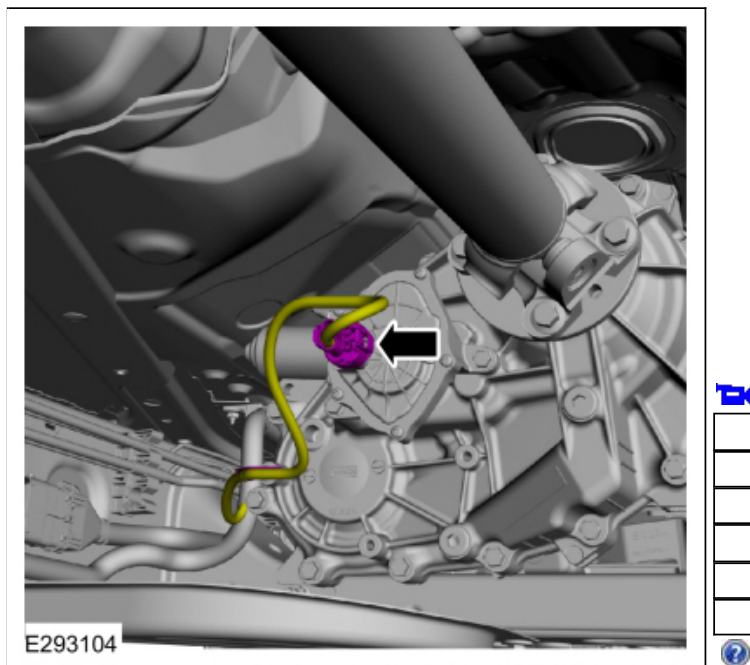


8. Remove the coolant tube bolt from the cylinder head.



Four-Wheel Drive (4WD) vehicles

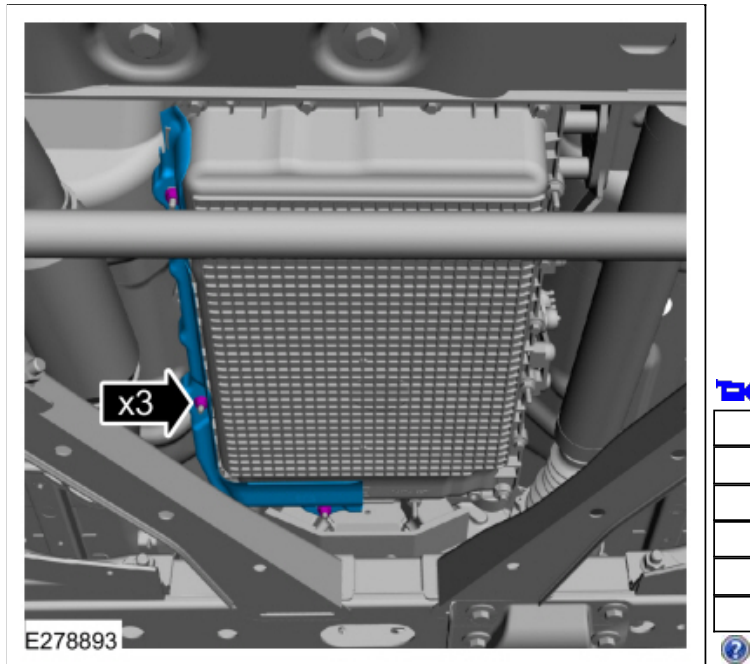
9. Remove the front driveshaft assembly.
Refer to: [Front Driveshaft](#) (205-01 Driveshaft, Removal and Installation).
10. Disconnect the transfer case electrical connector.



All vehicles

11. Remove the rear driveshaft assembly.
Refer to: [Rear Driveshaft](#) (205-01 Driveshaft, Removal and Installation).

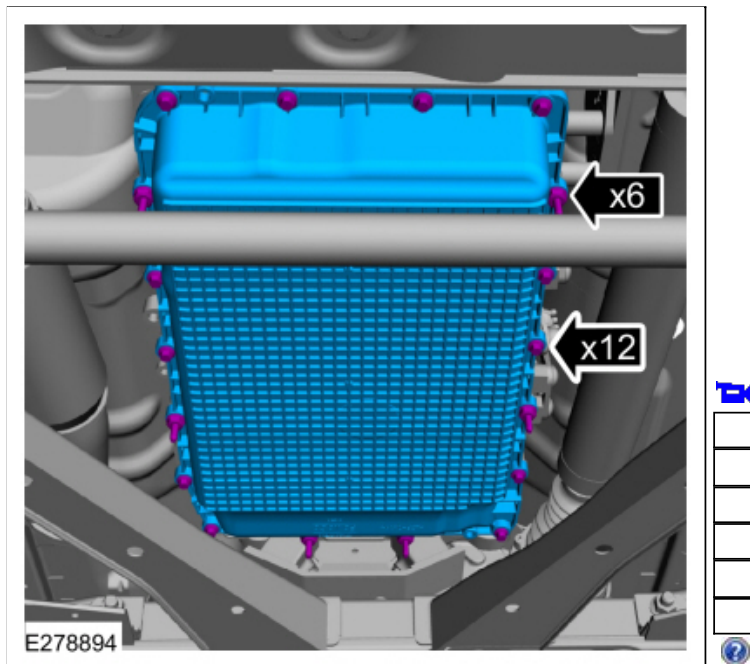
12. Remove the retainers and heatshield.



13. **NOTE:** If transmission disassembly or installation of a new transmission is necessary, drain the transmission fluid.

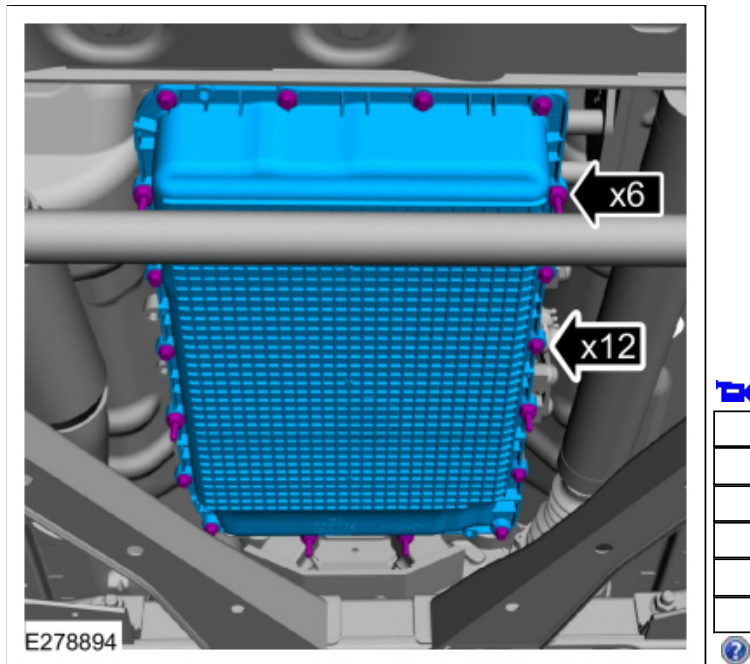
NOTE: Note the location of the bolts and studbolts for assembly.

Remove the bolts, studbolts and the transmission fluid pan.



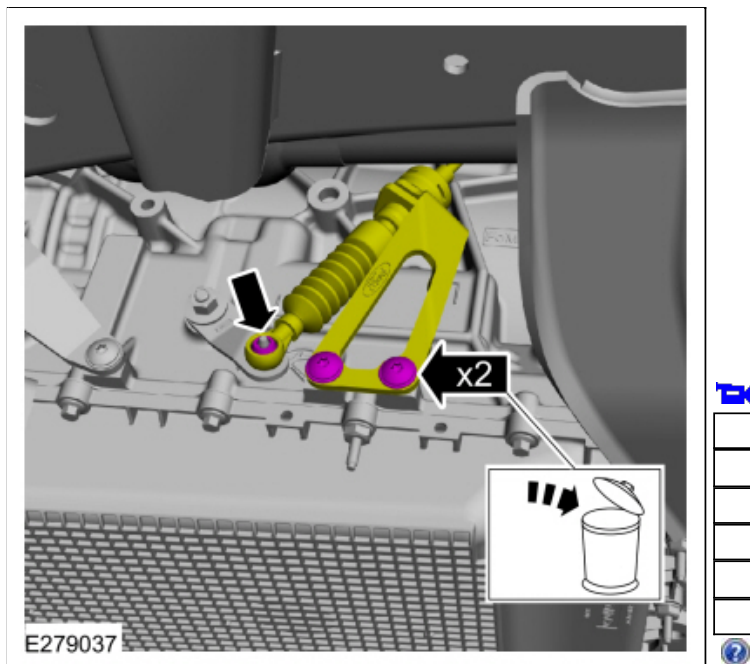
14. **NOTE:** It is not necessary to torque transmission fluid pan bolts at this time.

Install the transmission fluid pan and the bolts.

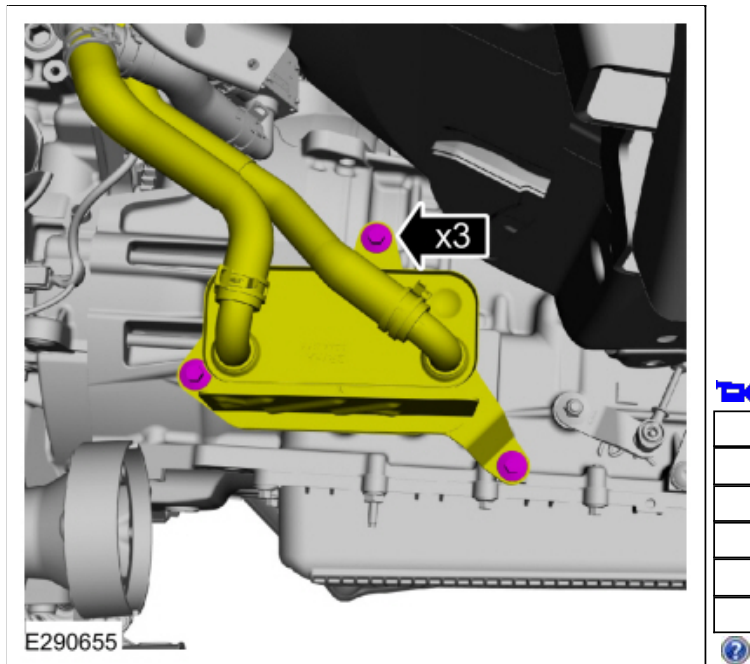


15. **NOTICE:** Take extra care when handling selector lever cable.

Remove and discard the bolts, disconnect the selector lever cable and position aside.

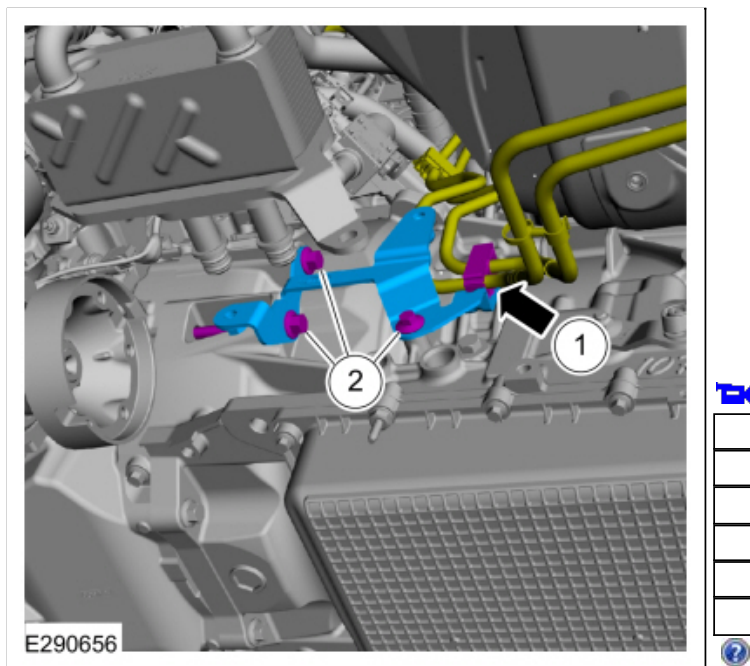


16. Remove the bolts and position aside the transmission fluid cooler.

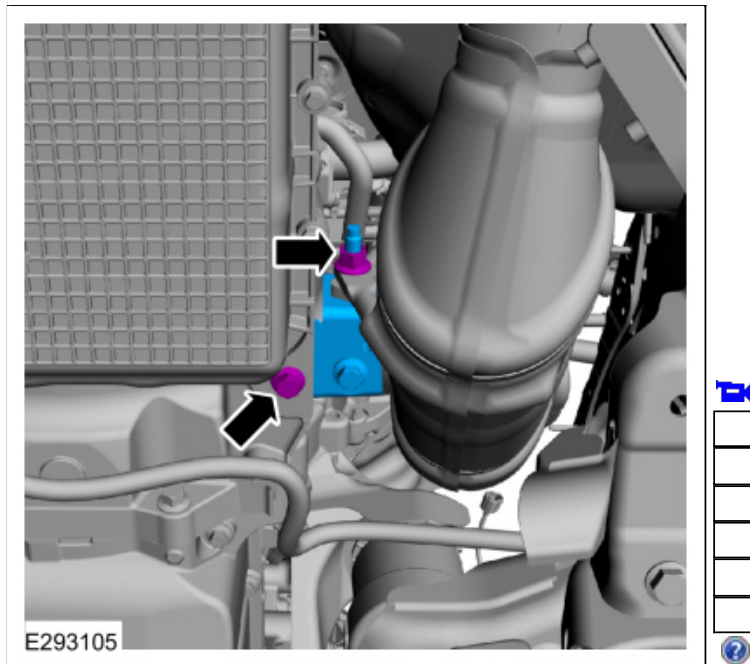


17.

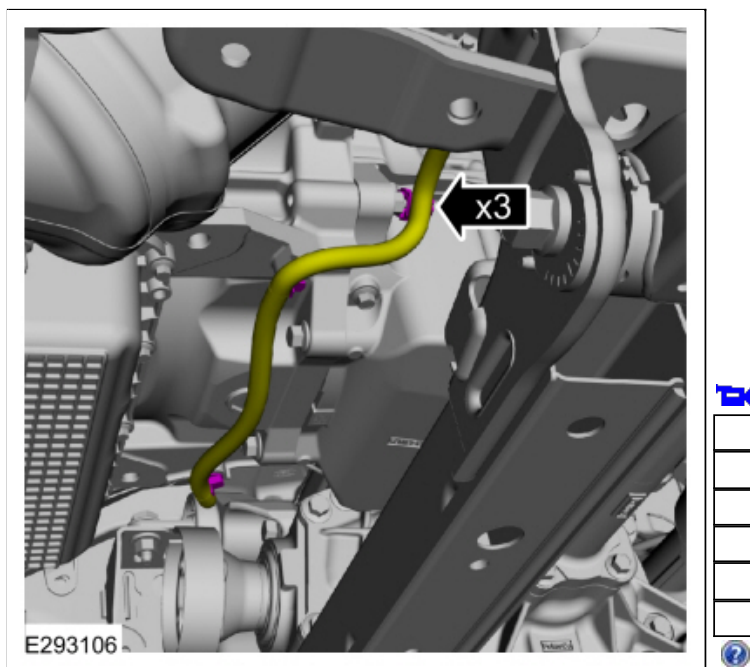
1. Disconnect the fuel line retainer.
2. Remove the bolts and the transmission fluid cooler bracket.



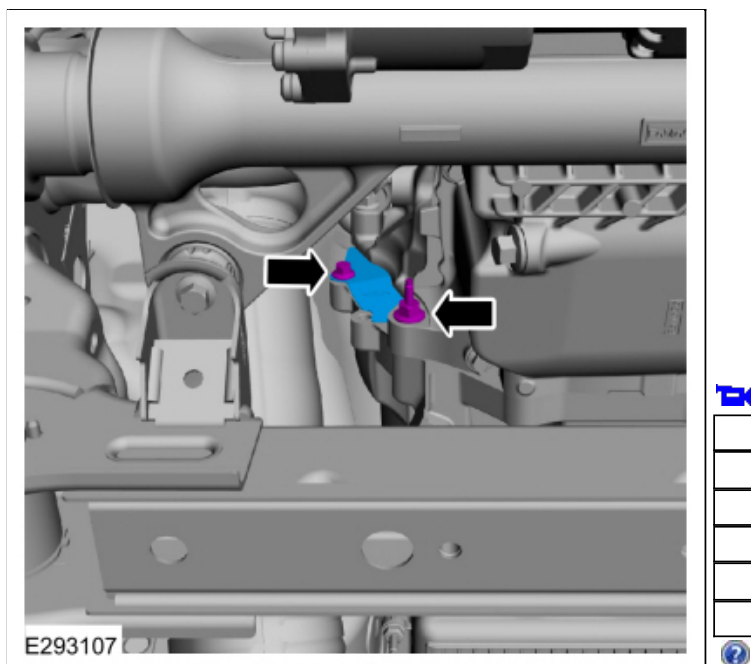
18. Remove the nut, bolt and the catalytic converter bracket.



19. If equipped , position aside the engine block heater cable.

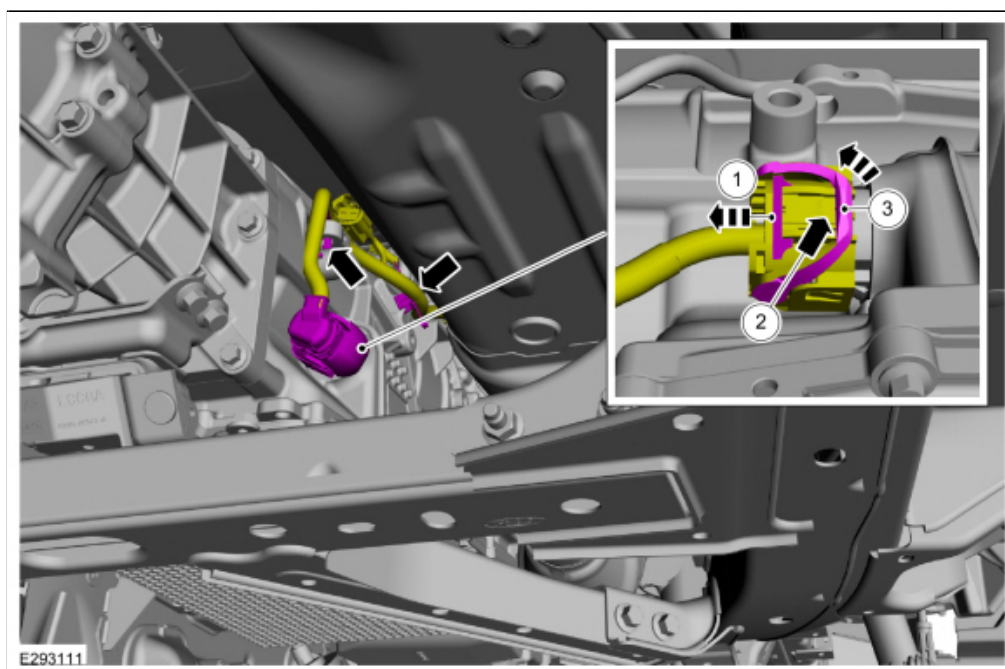


20. Remove the bolt, inspection shield and the oil pan bolt.



21. **NOTICE:** Do not pull on the wire harness to disconnect the electrical connector or damage to the electrical connector will occur.

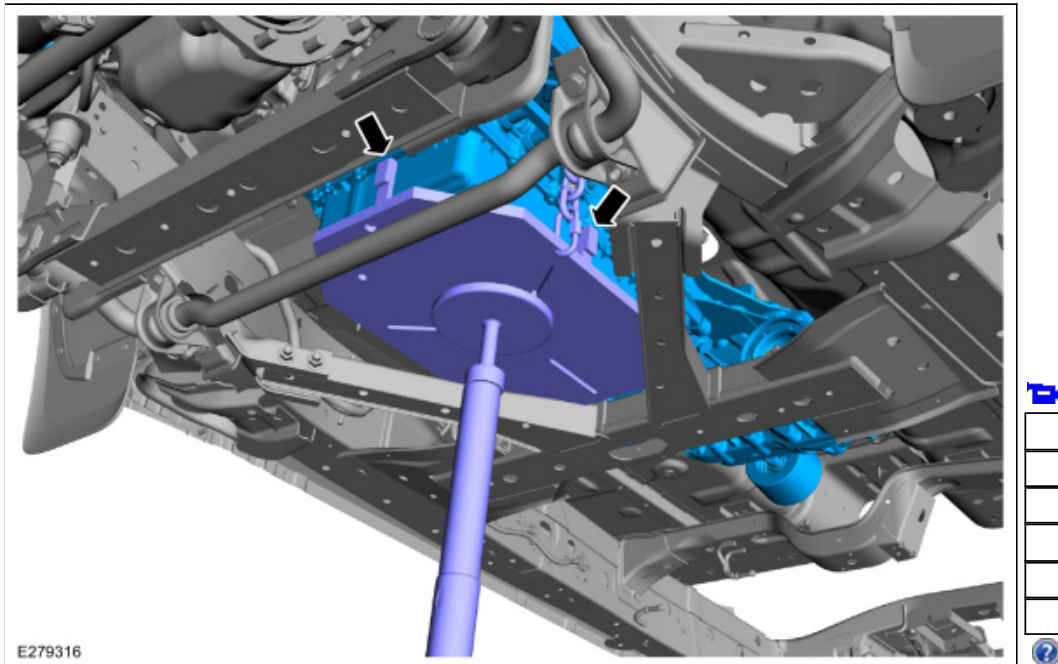
1. Slide the safety lock out.
2. Press the connector tab in.
3. Rotate the locking arm up and disconnect the transmission electrical connector.
 - Disconnect the wire harness retainer.



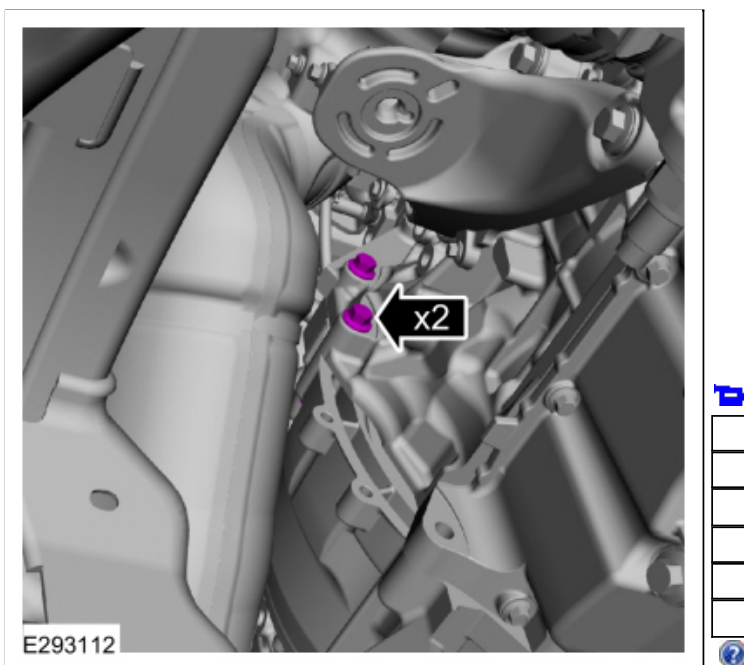
22. **NOTICE:** Secure the transmission to the transmission jack with a safety strap.

NOTICE: Make sure the transmission jack makes contact on the outer ribs of the transmission fluid pan.

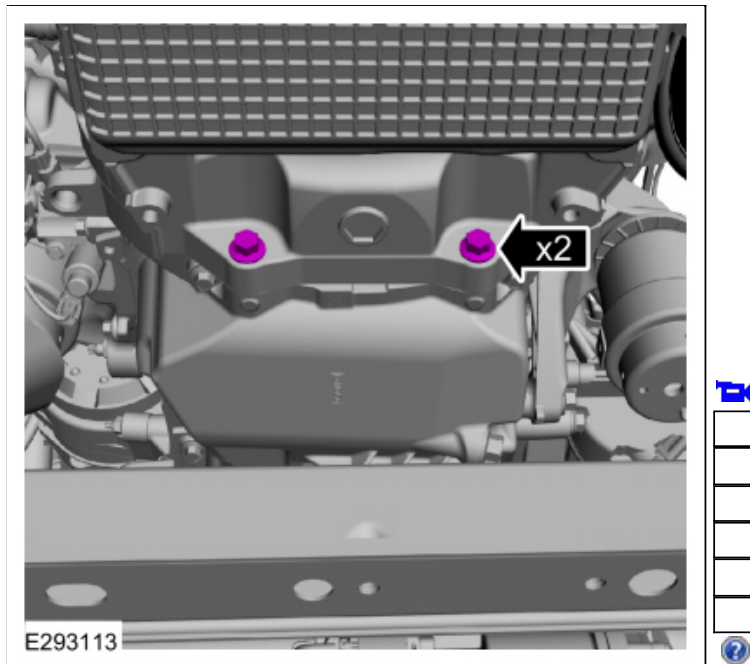
Using a high-lift transmission jack, support the transmission.
Use the General Equipment: Transmission Jack



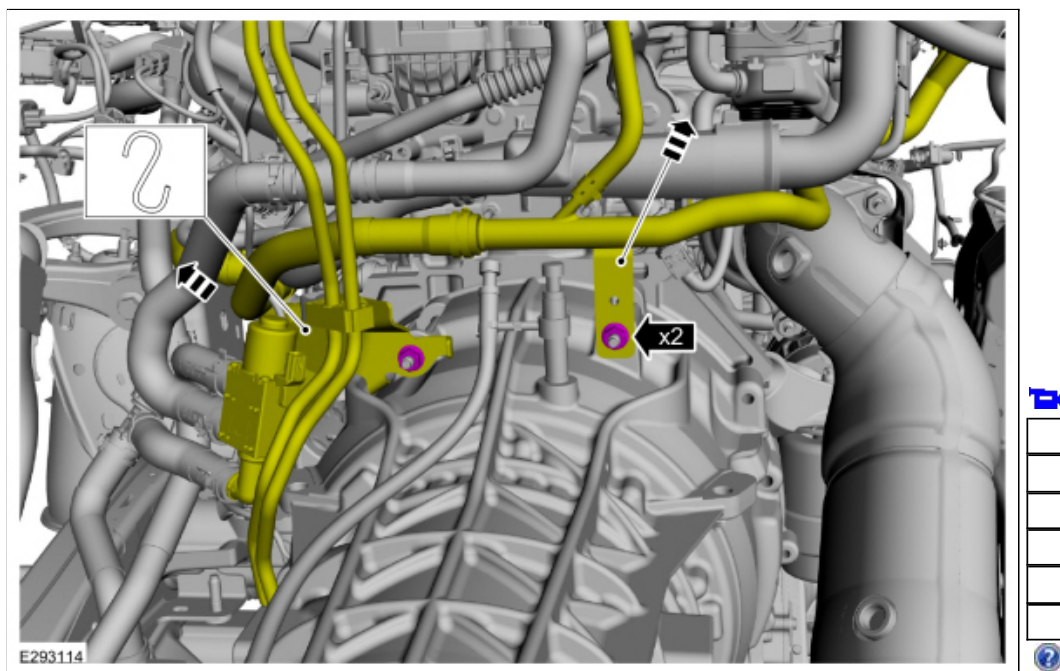
23. Remove the transmission support crossmember.
Refer to: [Transmission Support Crossmember](#) (502-02 Full Frame and Body Mounting, Removal and Installation).
24. Remove the RH bellhousing bolts.



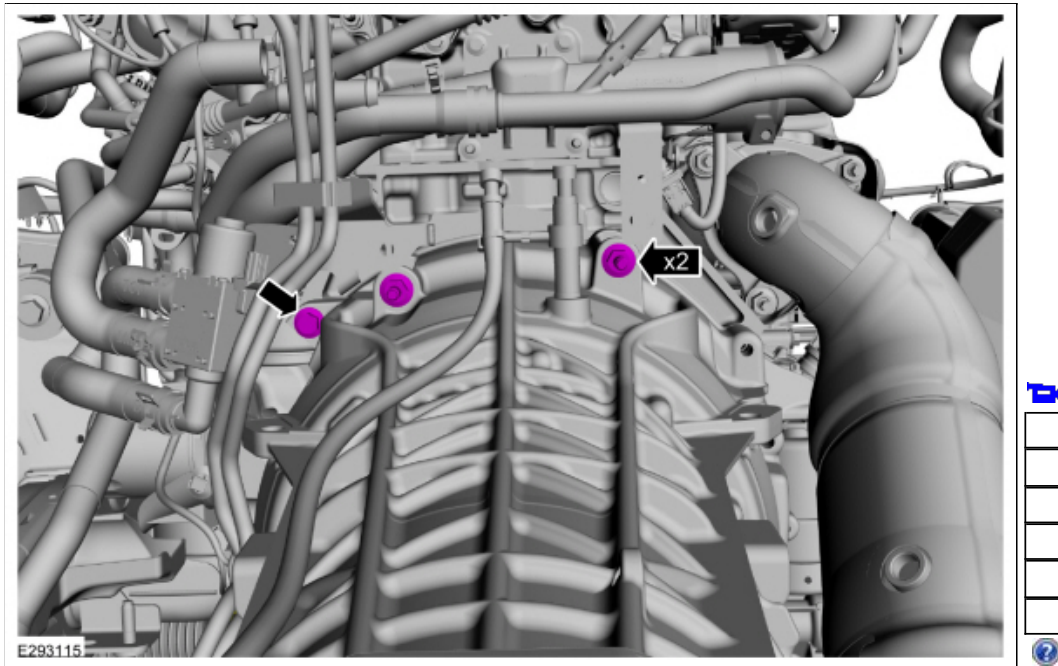
25. Remove the lower bellhousing bolts.



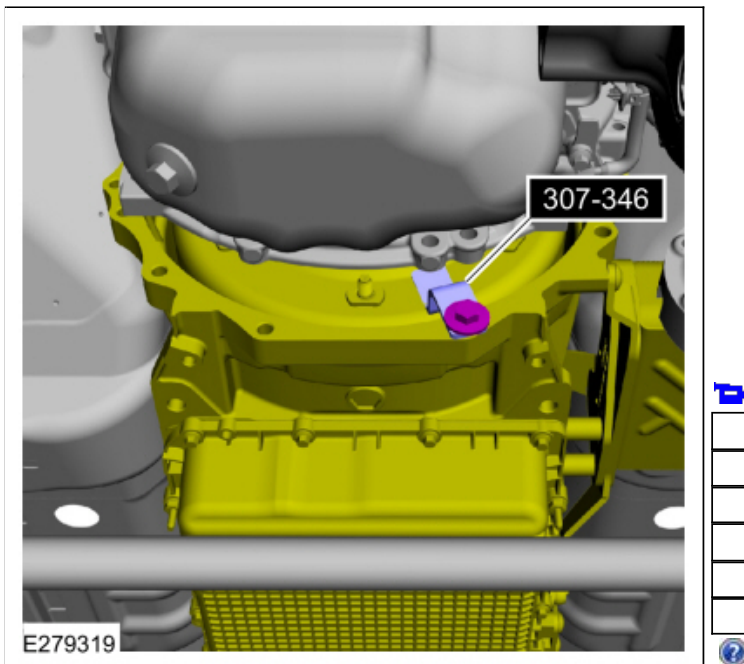
26. Remove the nuts and position aside the brackets.



27. Remove the upper bellhousing bolt and studbolts.



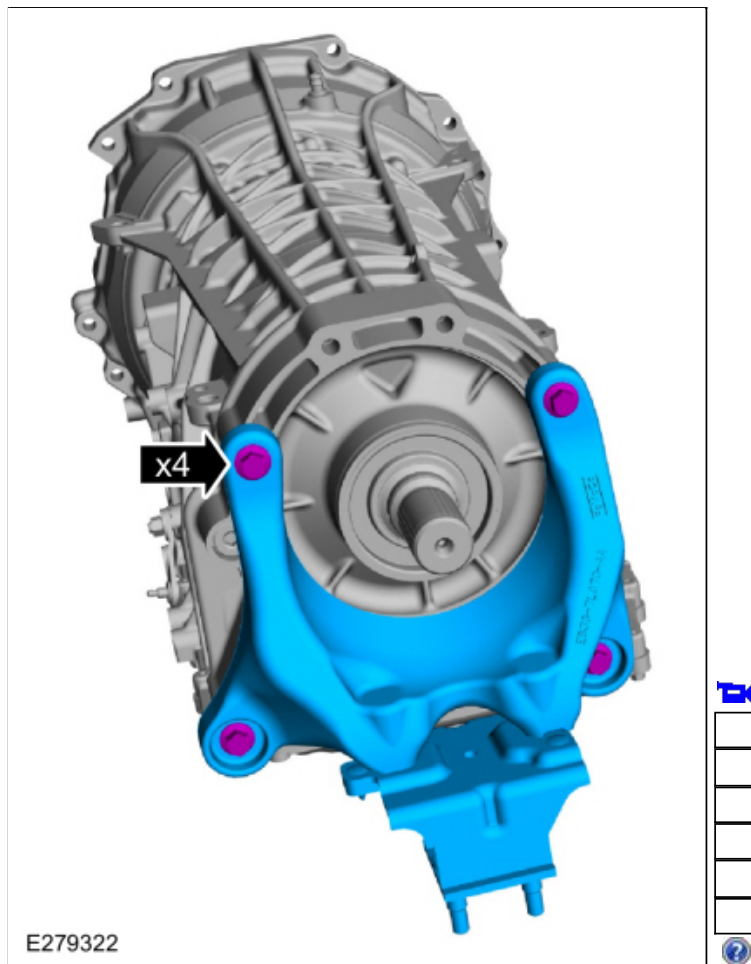
28. Slide the transmission back enough to install the special tool and remove the transmission from the vehicle. Use Special Service Tool: [307-346 \(T97T-7902-A\) Retainer, Torque Converter](#).



Rear Wheel Drive (RWD) vehicles

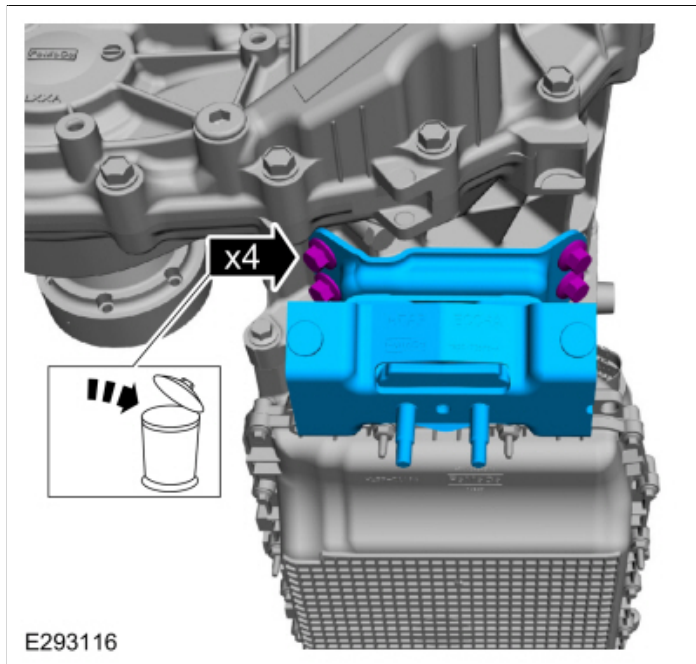
29. **NOTE:** If installing a new or re-manufactured transmission, remove the transmission support bracket.

If necessary, remove the bolts and the transmission support bracket.

**Four-Wheel Drive (4WD) vehicles**

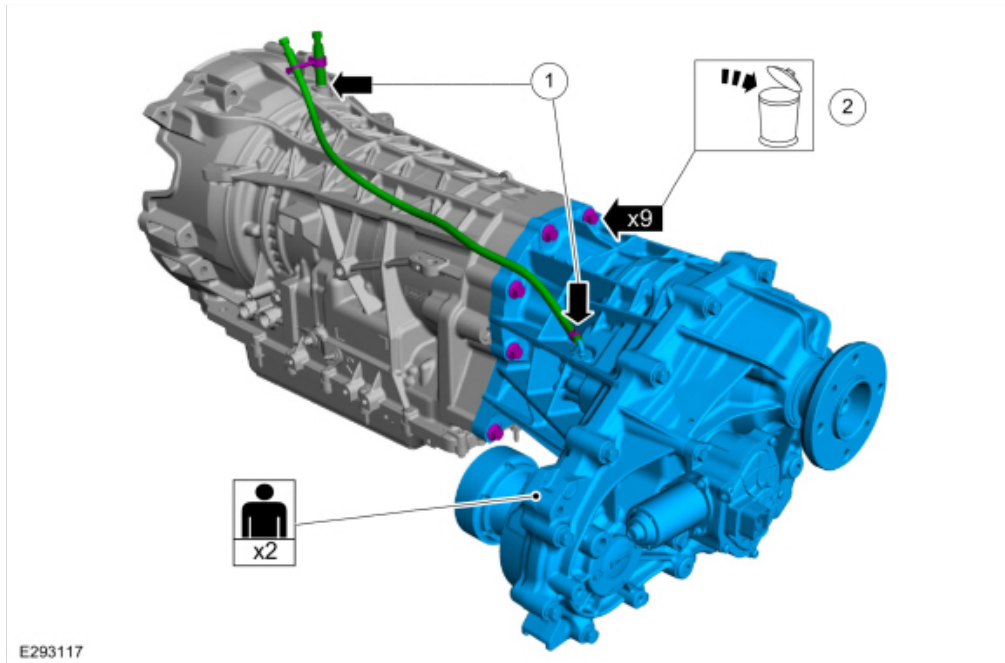
30. **NOTE:** *If installing a new or re-manufactured transmission, remove the transmission support insulator.*

If necessary, remove and discard the bolts and remove the transmission support insulator.



31. **NOTE:** If the transmission is to be overhauled or if installing a new or re-manufactured transmission, remove the transfer case.

1. Remove the vent tubes.
2. If necessary, remove and discard the bolts and separate the transfer case from the transmission.



All vehicles

32. **NOTICE:** Failure to clean the transmission fluid cooler tubes can result in transmission failure.

If the transmission is to be overhauled or if installing a new or re-manufactured transmission, carry out the transmission fluid cooler backflushing and cleaning procedure.

Refer to: [Transmission Fluid Cooler - Backflushing and Cleaning](#) (307-02 Transmission Cooling - 10-Speed Automatic Transmission - 10R80, General Procedures).

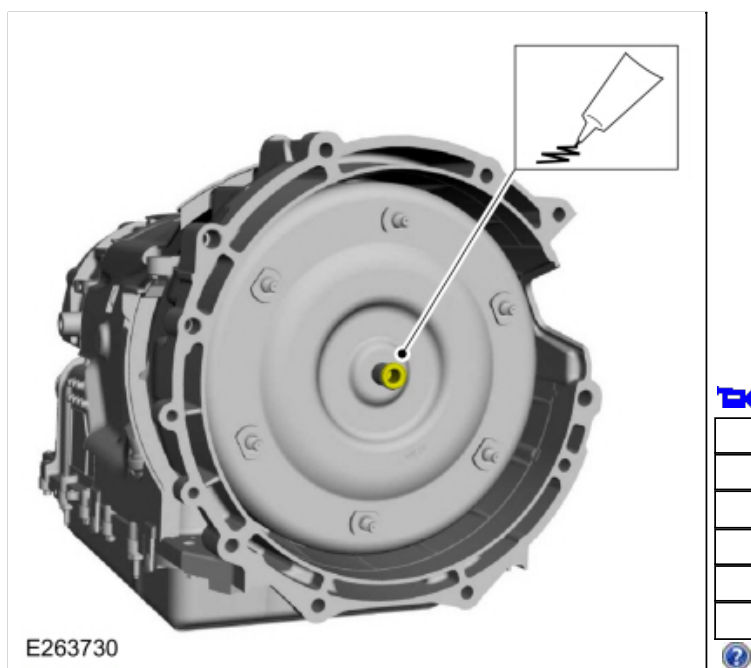
Installation

NOTE: Prior to installing a new transmission or an overhauled transmission with a new main control, record the solenoid strategy identification tag. If a new main control was installed, install the replacement solenoid body tag over the original identification tag.

1. **NOTICE:** Prior to installation of the transmission, lubricate the torque converter pilot hub or damage to the torque converter or the engine crankshaft can occur.

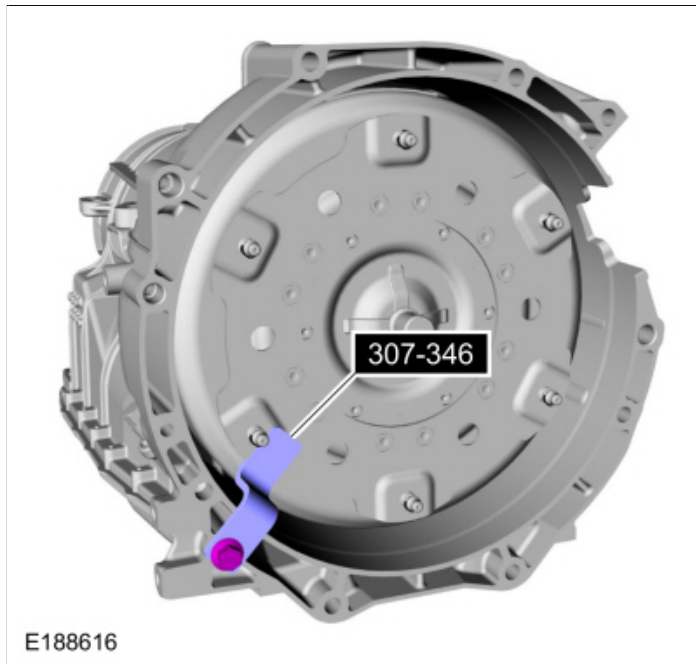
Lubricate the torque converter pilot hub with multi-purpose grease.

Material: Motorcraft® Multi-Purpose Grease Spray / XL-5-A (ESB-M1C93-B)



2. Install the special tool.
Use Special Service Tool: [307-346 \(T97T-7902-A\) Retainer, Torque Converter](#).





3. **NOTE:** If transmission is being replaced, remove the transmission fluid fill plug and verify that the transmission is filled with transmission fluid.

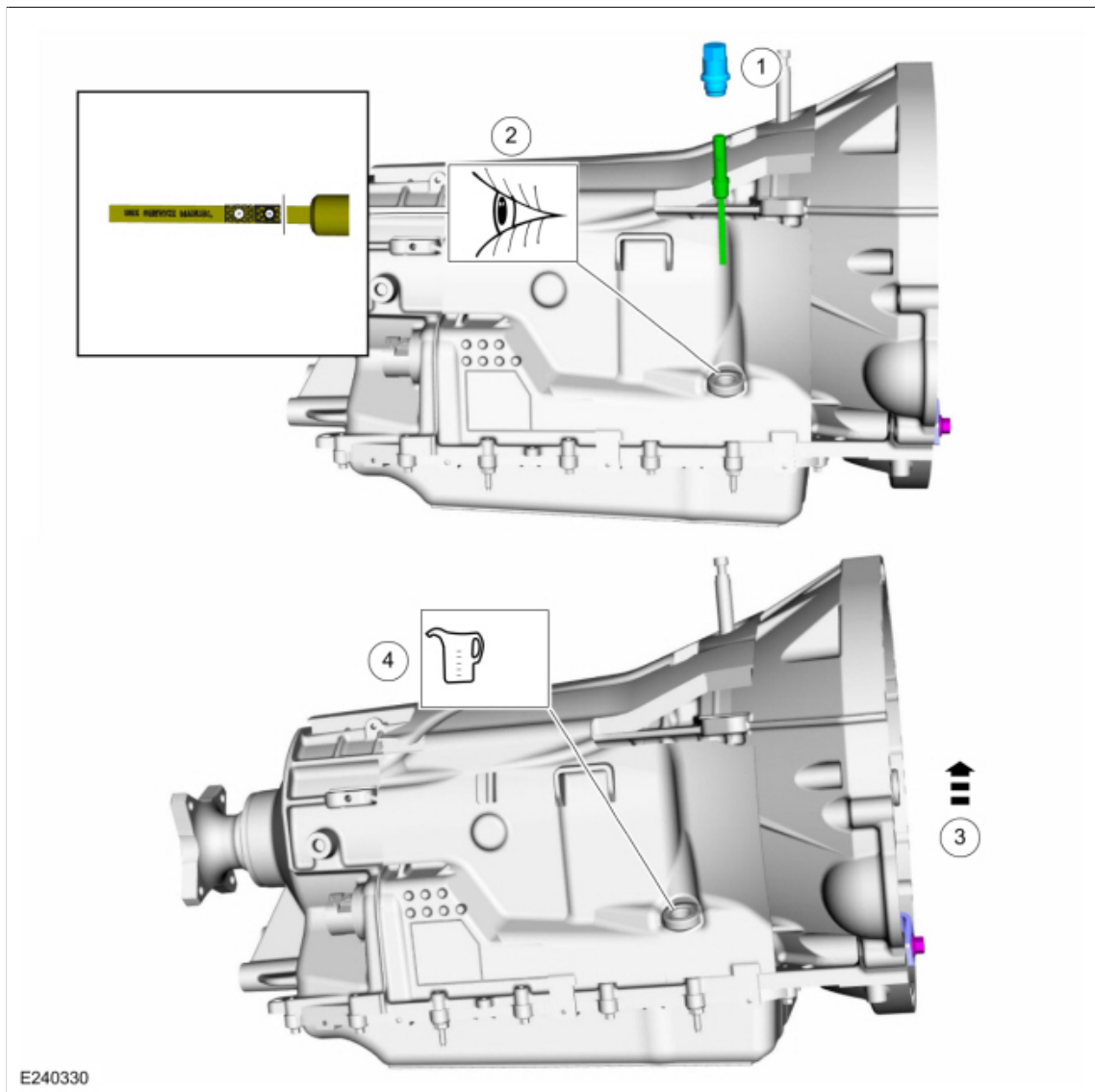
NOTE: If transmission was disassembled, add transmission fluid to the transmission.

NOTE: Rear Wheel Drive (RWD) shown, Four-Wheel Drive (4WD) similar.

1. Remove the transmission fluid fill plug transmission fluid level indicator assembly.
2. Verify transmission is filled with transmission fluid.
3. Slightly tilt the transmission rearward.
4. If the transmission was disassembled, add 11.8 L (12.5 qt) of transmission fluid to the transmission through the transmission fluid fill hole.

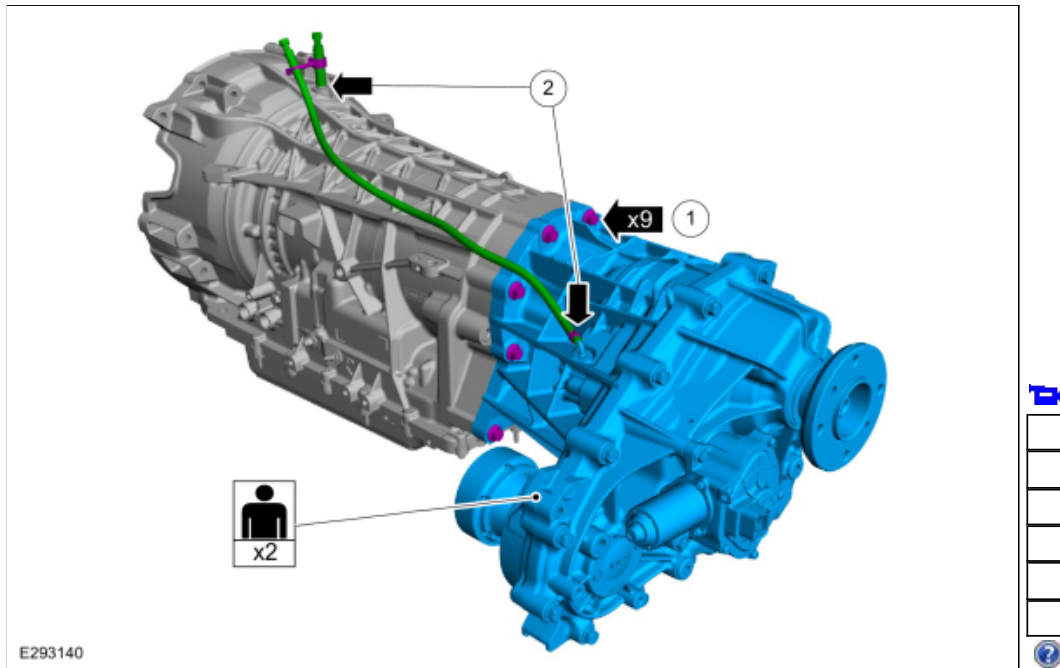
Material: Motorcraft® MERCON® ULV Automatic Transmission Fluid / XT-12-QULV (WSS-M2C949-A) (MERCON® ULV)

- Loosely install the transmission fluid fill plug when finished.

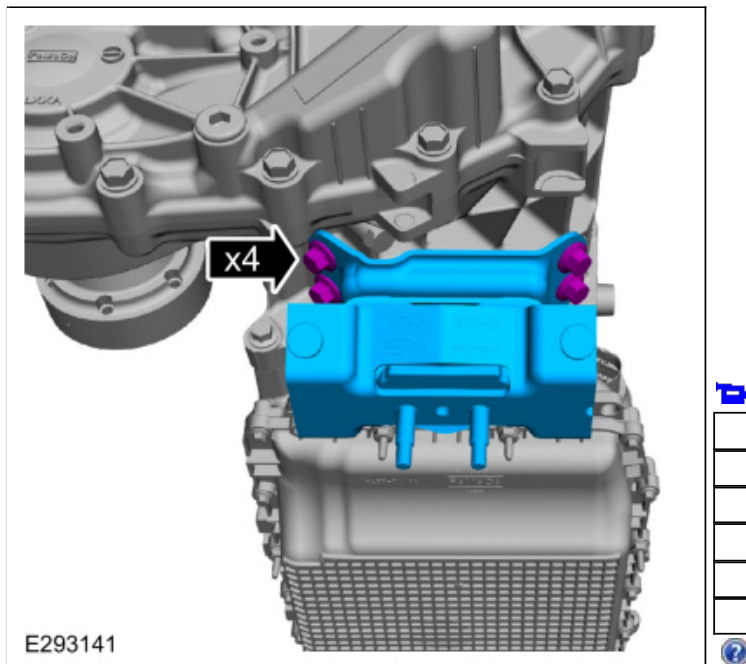


Four-Wheel Drive (4WD) vehicles

4.
 1. If removed, install the transfer case and the new bolts evenly in a star pattern..
Torque: 35 lb.ft (48 Nm)
 2. Install the vent tubes.

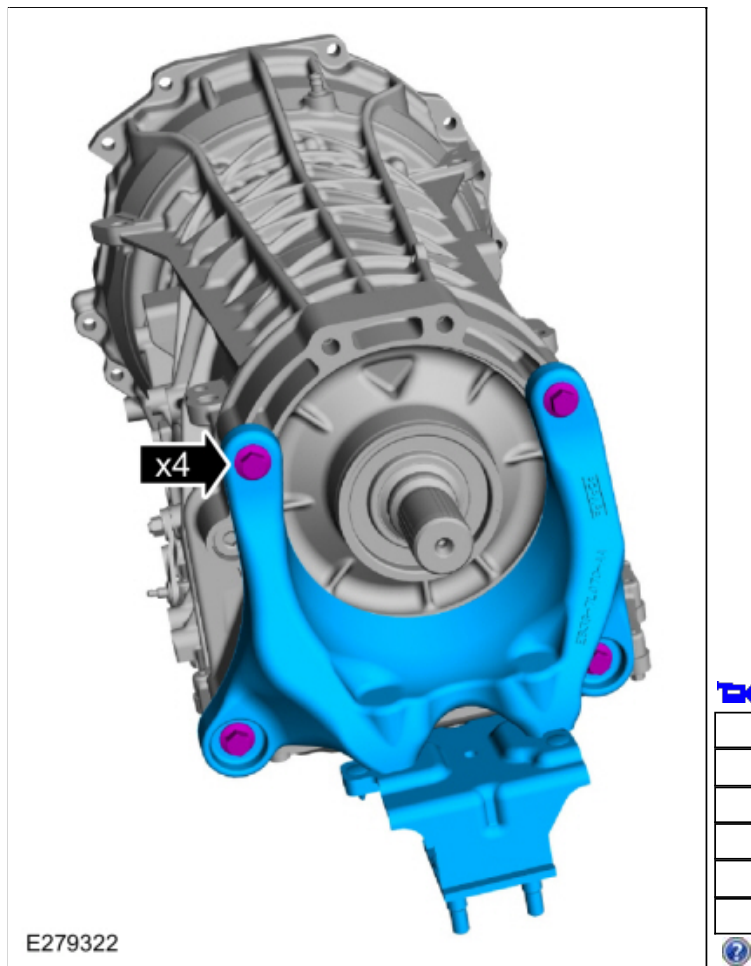


5. Install the transmission support insulator and the new bolts.
Torque: 41 lb.ft (55 Nm)



Rear Wheel Drive (RWD) vehicles

6. If removed, install the transmission support bracket and the bolts.
Torque: 52 lb.ft (70 Nm)



All vehicles

7. **NOTICE:** Secure the transmission to the transmission jack with a safety strap.

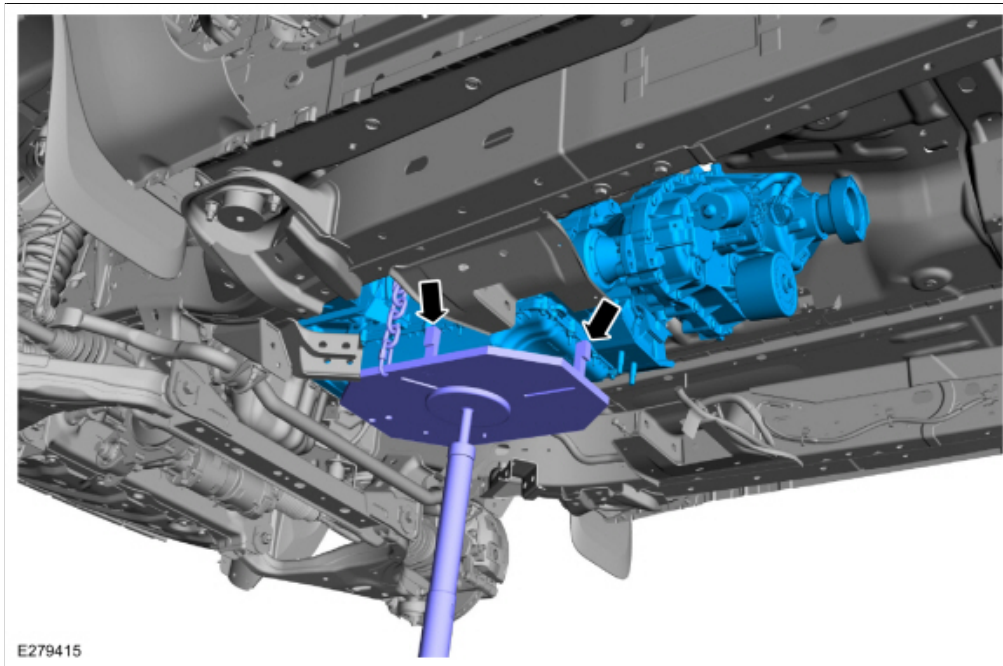
NOTICE: Make sure the transmission jack makes contact on the outer ribs of the transmission fluid pan.

Using a high-lift transmission jack, position the transmission in the vehicle.

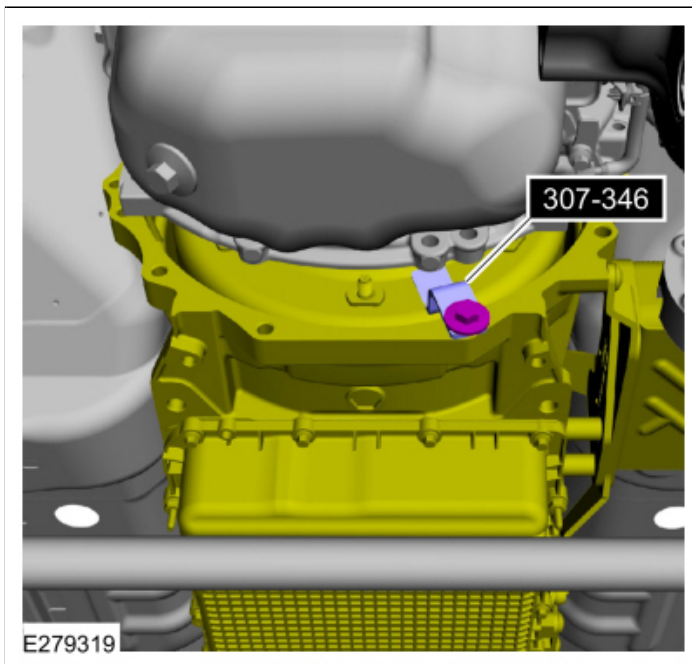
Use the General Equipment: Transmission Jack

Use the General Equipment: Retaining Strap

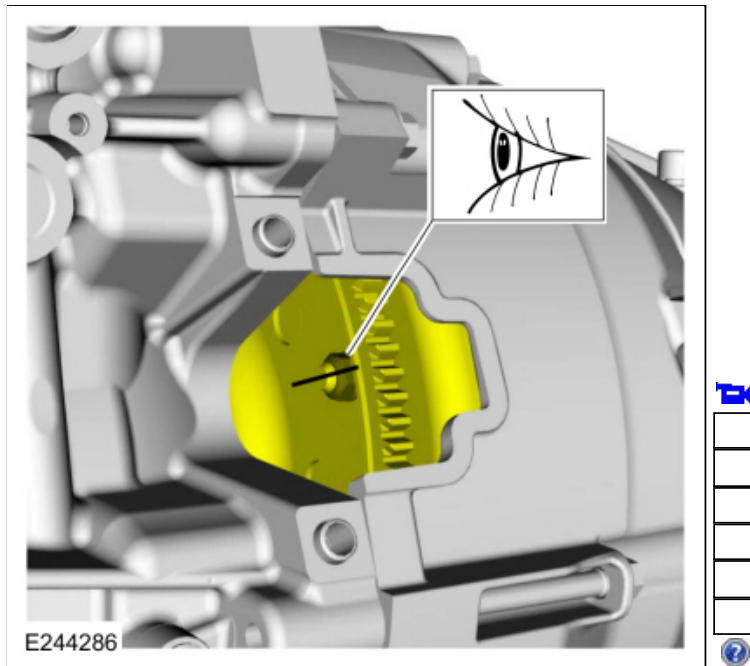




8. Remove the special tool.
Use Special Service Tool: [307-346 \(T97T-7902-A\) Retainer, Torque Converter.](#)



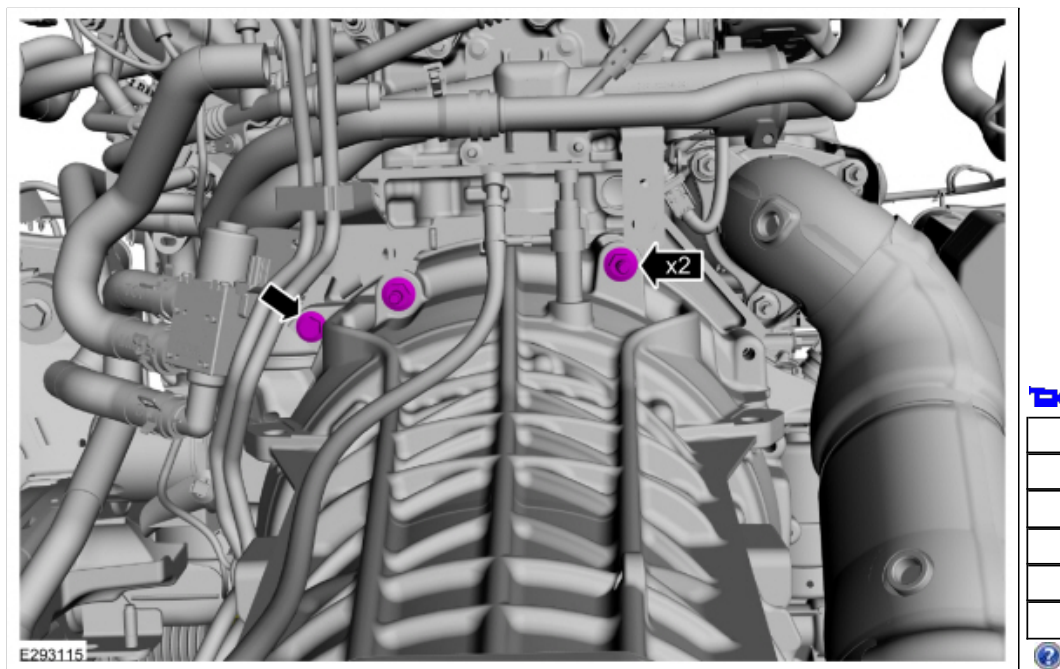
9. Align the index-mark made during removal.



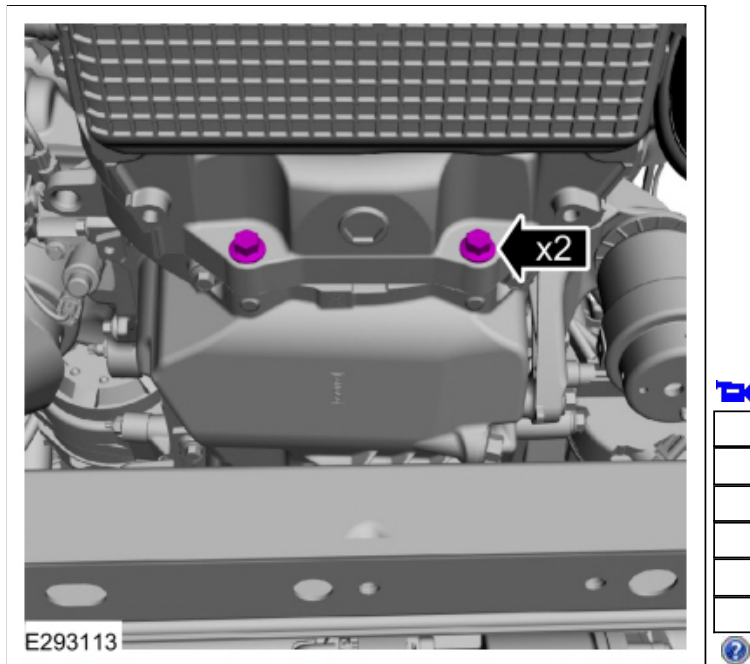
10. **NOTE:** Make sure the torque converter is fully seated in the transmission before aligning the transmission to the engine.

NOTE: With the transmission in a horizontal position, move it toward the engine and position it on the dowel pins.

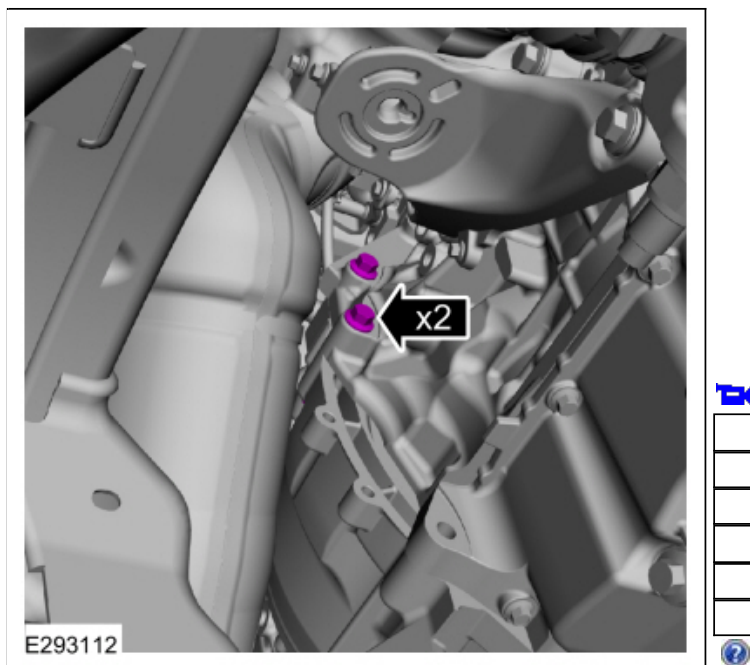
Install the upper bellhousing bolts.
Torque: 35 lb.ft (48 Nm)



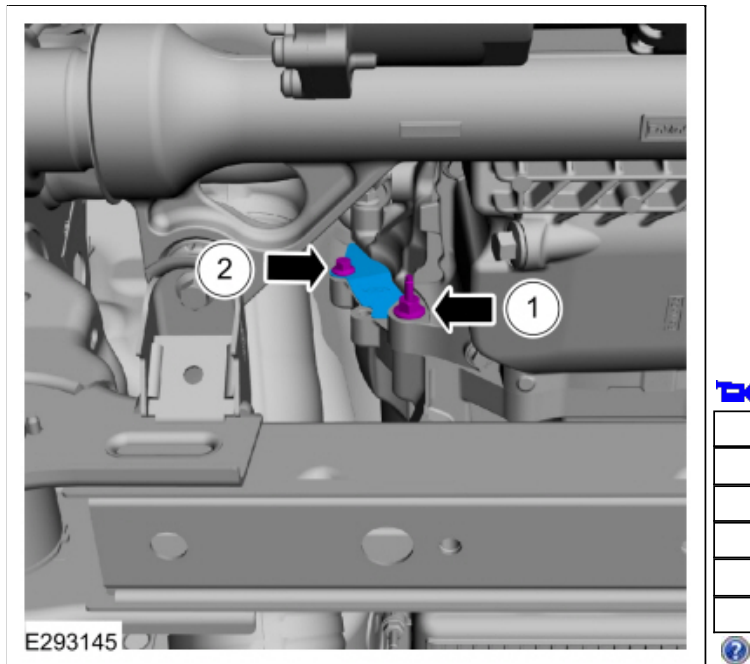
11. Install the lower bellhousing bolts.
Torque: 35 lb.ft (48 Nm)



12. Install the RH bellhousing bolts.
Torque: 35 lb.ft (48 Nm)



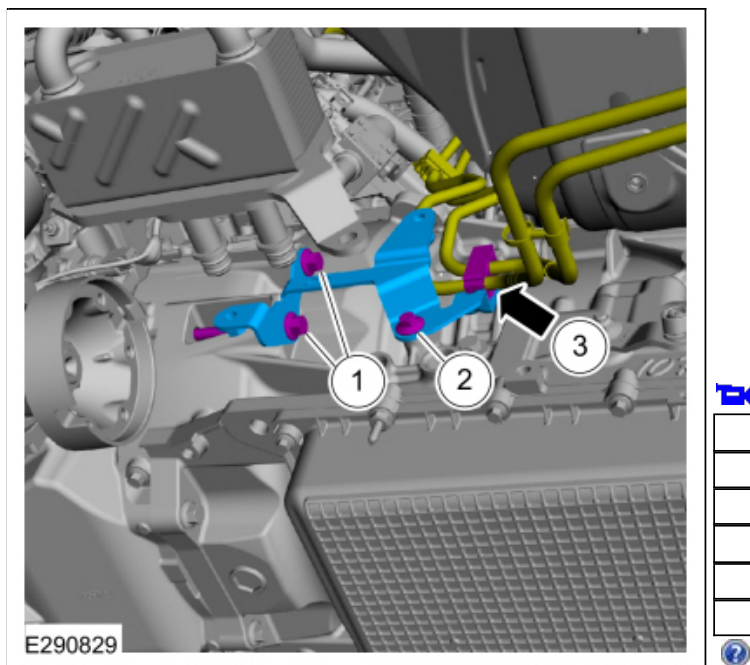
- 13.
1. Install the oil pan bolt.
Torque: 35 lb.ft (48 Nm)
 2. Install the inspection shield and bolt.
Torque: 18 lb.ft (25 Nm)



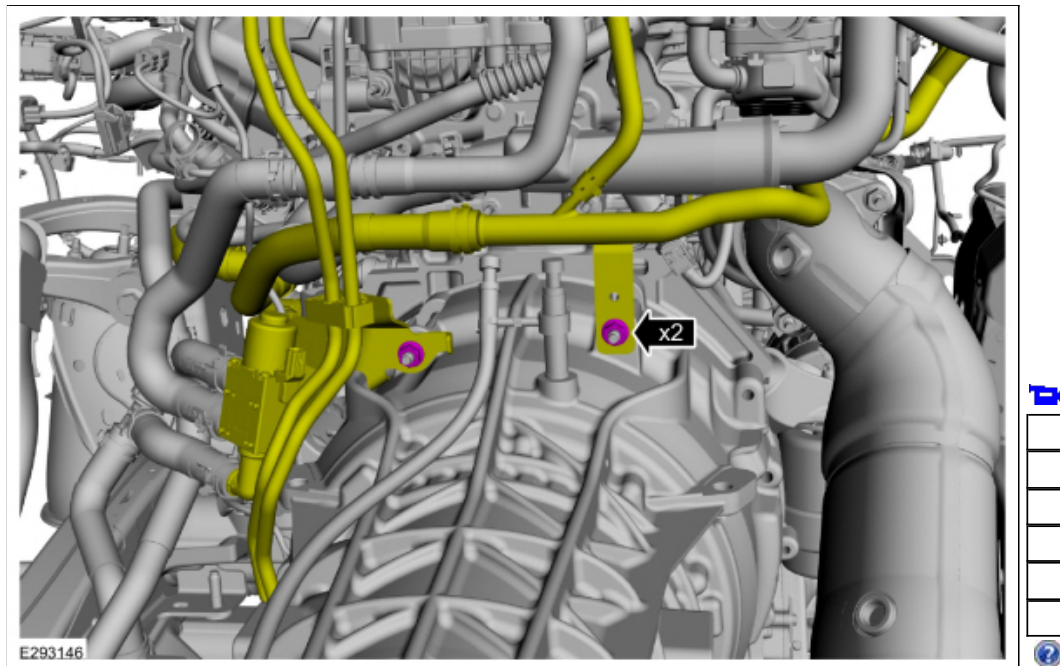
14.

Install the transmission fluid cooler bracket.

1. *Torque:* 35 lb.ft (48 Nm)
2. *Torque:* 177 lb.in (20 Nm)
3. Connect the fuel line retainer.



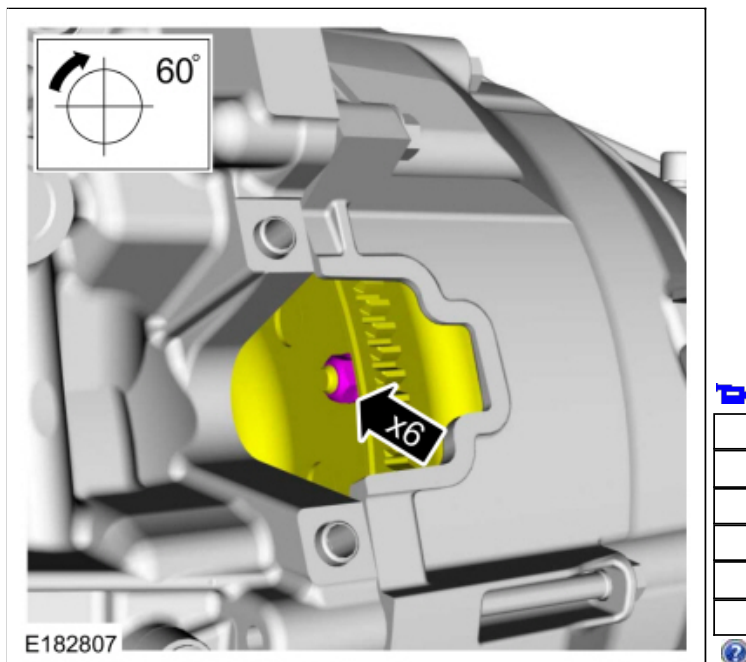
15. Install the upper bracket nuts.
Torque: 106 lb.in (12 Nm)



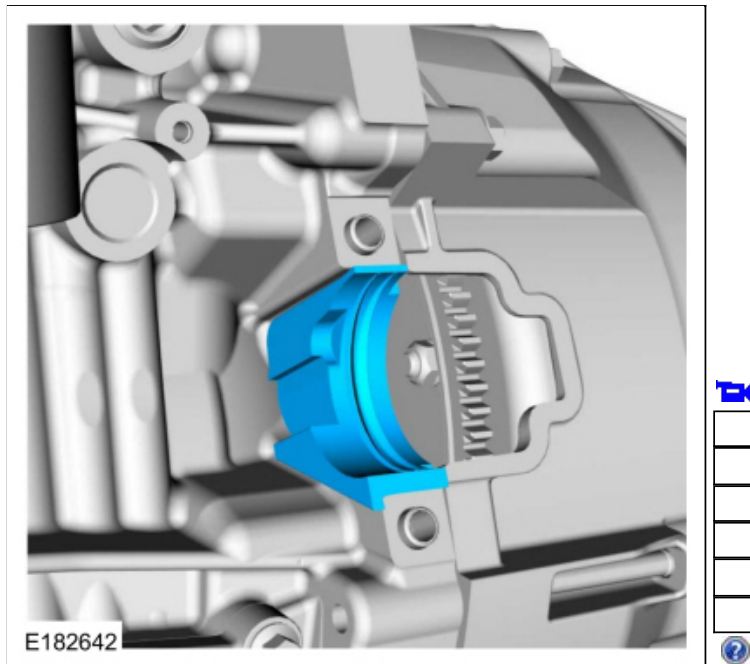
16. Install the transmission support crossmember.
Refer to: [Transmission Support Crossmember](#) (502-02 Full Frame and Body Mounting, Removal and Installation).

17. **NOTE:** Only rotate the crankshaft in a clockwise direction.

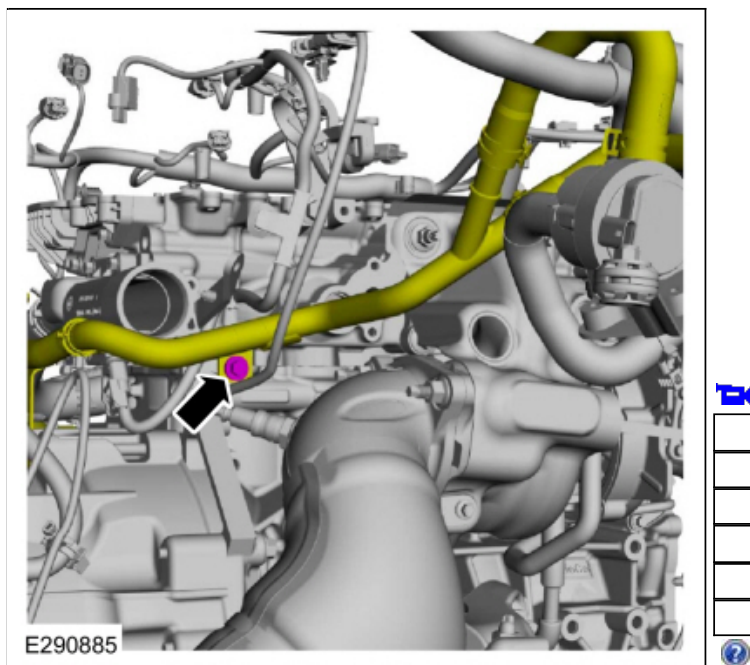
Using a magnetic socket , install the new torque converter nuts.
Use the General Equipment: Magnetic Socket
Torque: 35 lb.ft (48 Nm)



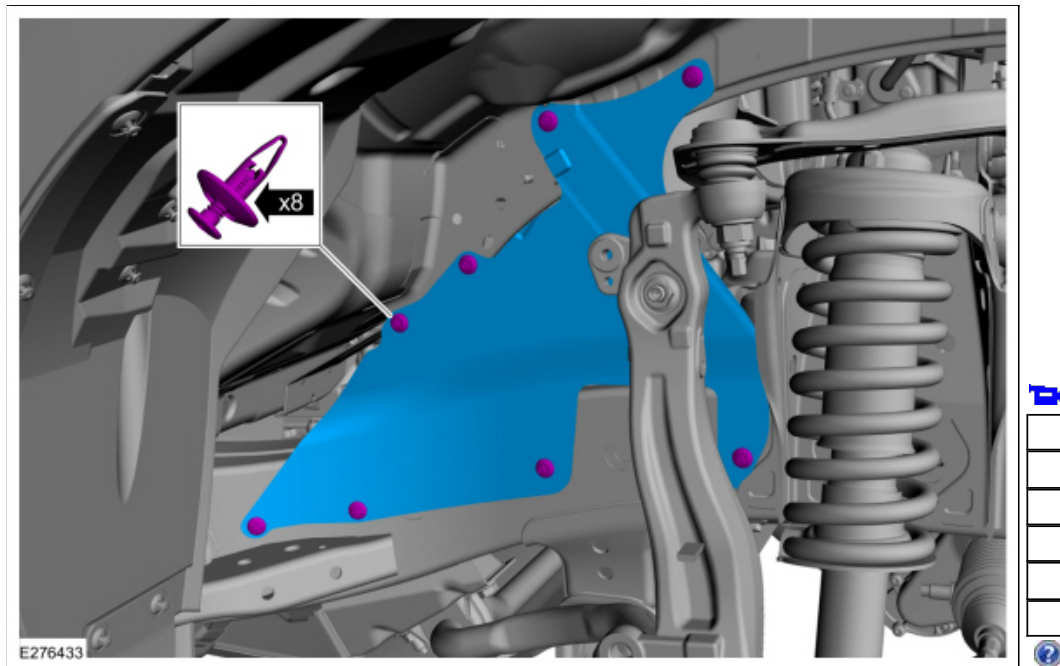
18. Install the starter motor insulator.



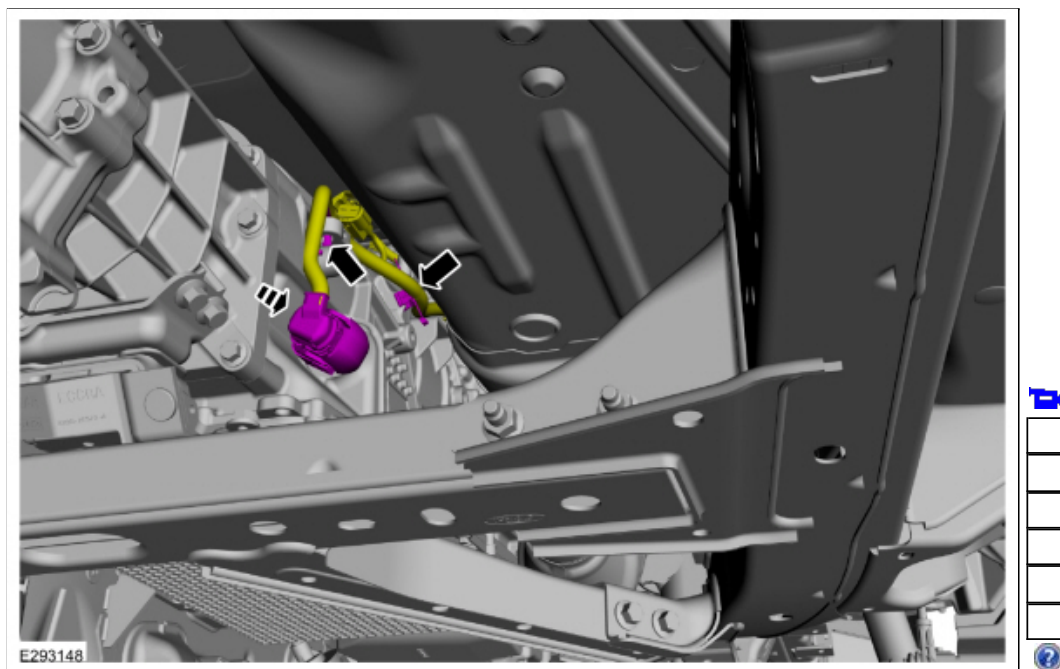
19. Install the coolant tube bolt.
Torque: 97 lb.in (11 Nm)



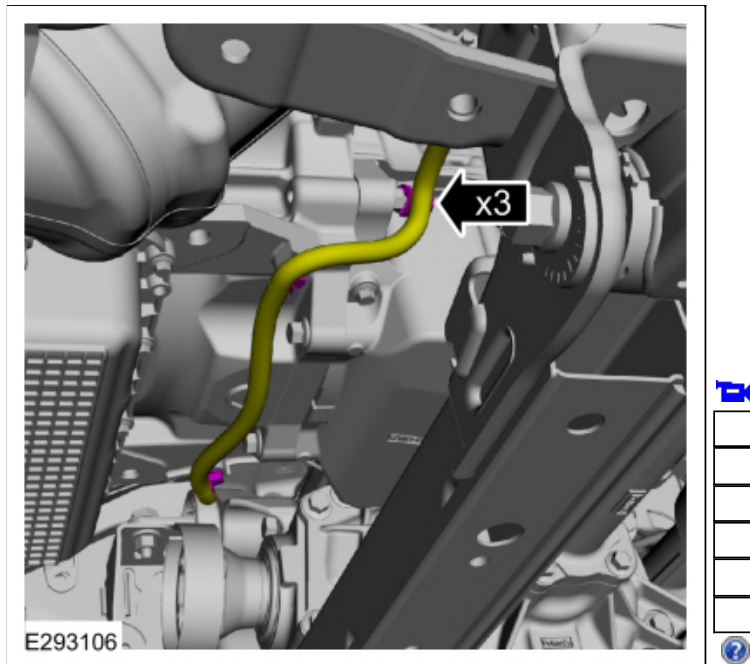
20. Install the RH side splash shield and retainers.



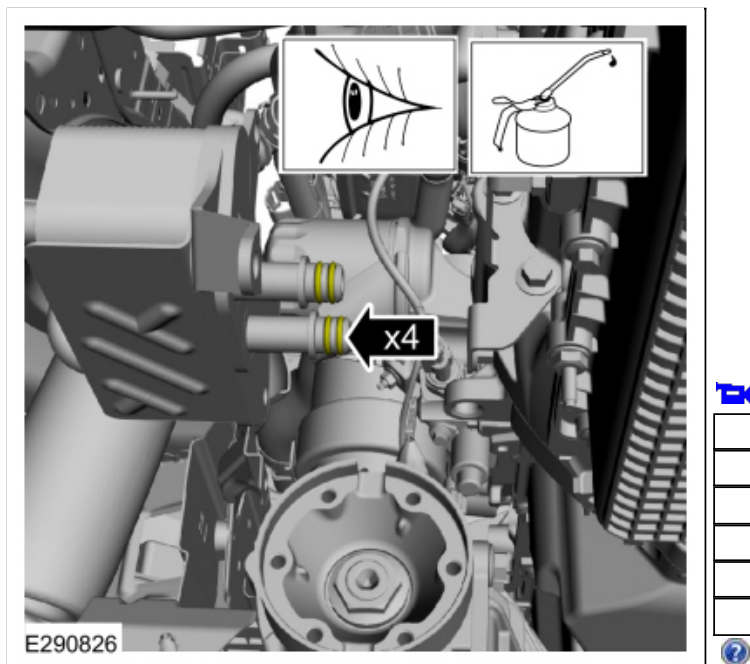
21. Connect the transmission electrical connector and attach the retainers.



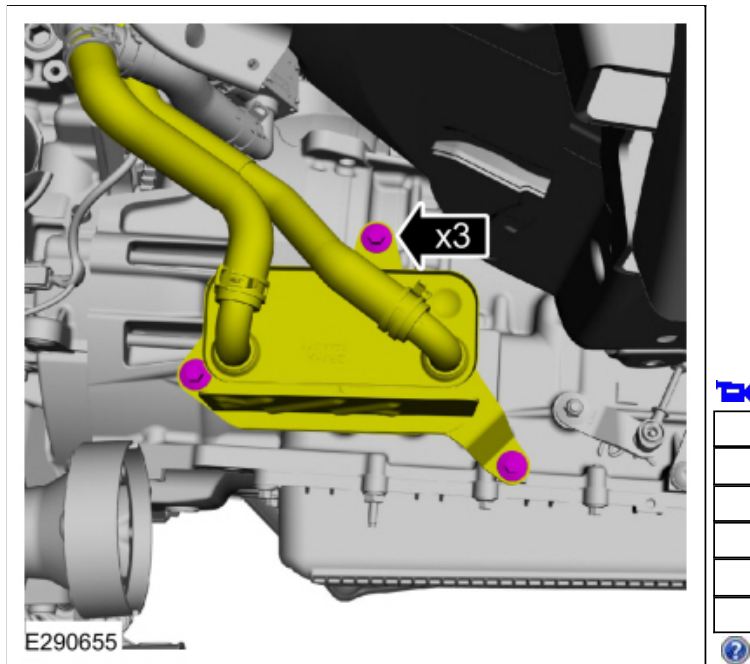
22. If equipped, attach the engine block heater cable.



23. Inspect the transmission fluid cooler O-ring seals and install new O-ring seals if necessary. Lubricate the O-ring seals.
Material: Motorcraft® MERCON® ULV Automatic Transmission Fluid / XT-12-QULV (WSS-M2C949-A) (MERCON® ULV)

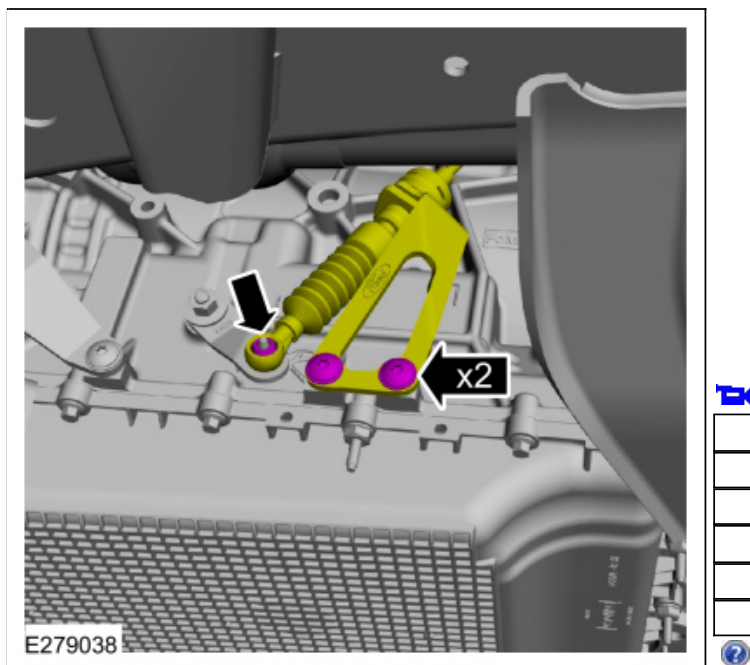


24. Install the transmission fluid cooler and the bolts.
Torque: 177 lb.in (20 Nm)

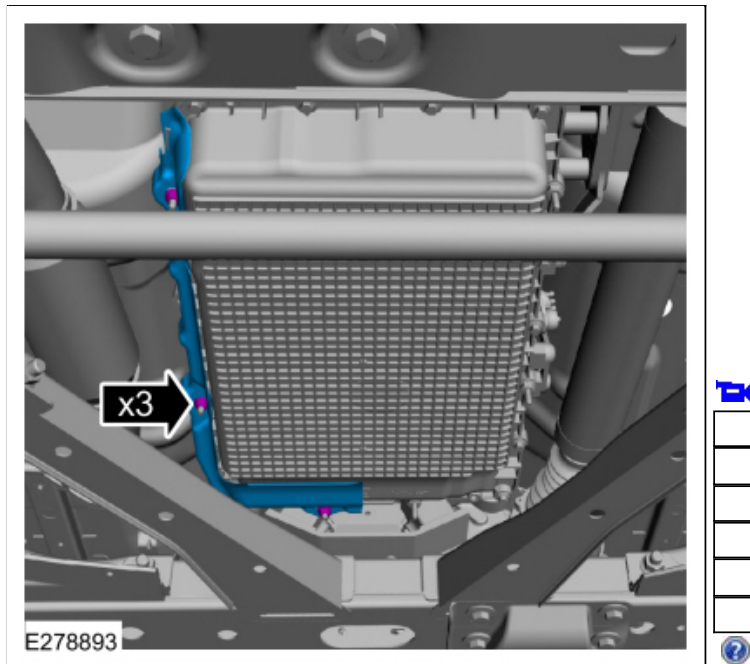


25. **NOTICE:** Take extra care when handling selector lever cable.

Install the new bolts and connect the selector lever cable to the manual control lever.
Torque: 18 lb.ft (25 Nm)



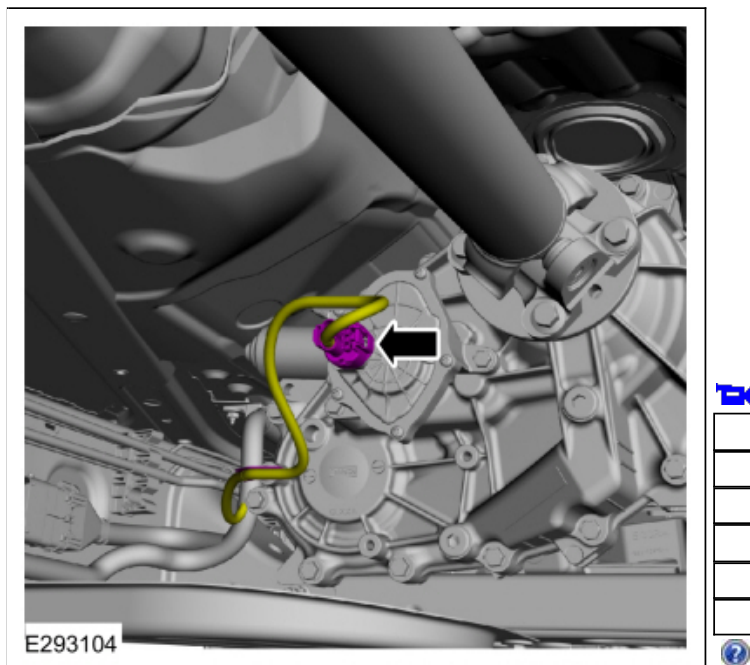
26. Install the heatshield and the retainers.
Torque: 80 lb.in (9 Nm)



27. Install the rear driveshaft assembly.
Refer to: [Rear Driveshaft](#) (205-01 Driveshaft, Removal and Installation).

Four-Wheel Drive (4WD) vehicles

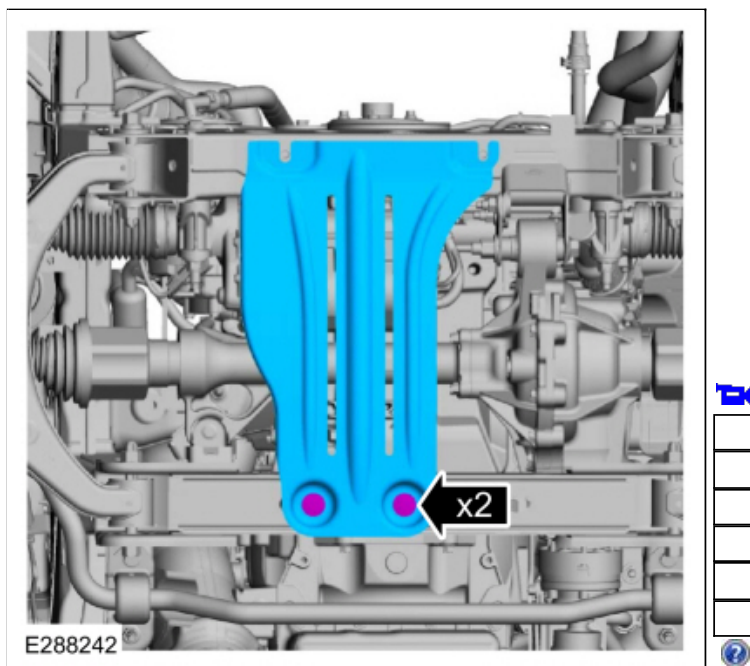
28. Connect the transfer case electrical connector.



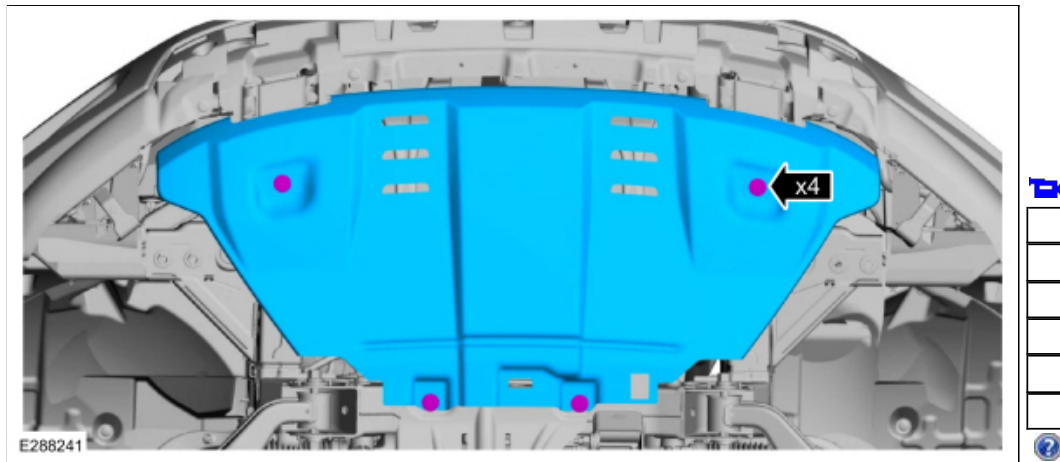
29. Install the front driveshaft assembly.
Refer to: [Front Driveshaft](#) (205-01 Driveshaft, Removal and Installation).
30. Check the transfer case fluid level.
Refer to: [Transfer Case Fluid Level Check](#) (308-07B Transfer Case - 10-Speed Automatic Transmission - 10R80, General Procedures).

All vehicles

31. Install the starter motor assembly.
Refer to: [Starter Motor](#) (303-06 Starting System - 2.3L EcoBoost (201kW/273PS), Removal and Installation).
32. Verify that the selector lever cable is correctly adjusted.
Refer to: [Selector Lever Cable Adjustment](#) (307-05 Automatic Transmission External Controls, General Procedures).
33. After completing the repairs, perform the Misfire Monitor Neutral Profile Correction procedure using a diagnostic scan tool.
34. If a new transmission or a new main control was installed, the solenoid body strategy must be updated.
Refer to: [Transmission Strategy Download](#) (307-01 Automatic Transmission - 10-Speed Automatic Transmission - 10R80, General Procedures).
35. If the transmission was overhauled, the adaptive drive cycle must be updated.
Refer to: [Adaptive Learning Drive Cycle](#) (307-01 Automatic Transmission - 10-Speed Automatic Transmission - 10R80, General Procedures).
36. While driving the vehicle, use the scan tool to verify that the TFT has reached a temperature of 96°-101°C (206°-215° F). This will circulate the transmission fluid through the torque converter and the transmission fluid cooling system, eliminating any trapped air in the transmission fluid cooling system.
37. Check the transmission fluid level
Refer to: [Transmission Fluid Level Check](#) (307-01 Automatic Transmission - 10-Speed Automatic Transmission - 10R80, General Procedures).
38. Install the rear skid plate and the bolts.
Torque: 22 lb.ft (30 Nm)



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



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