

307-01 Automatic Transaxle/Transmission —  
TorqShift®6  
REMOVAL AND INSTALLATION


2020 F-53 Motorhome, F-59 Commercial Stripped  
Chassis

Procedure revision date: 01/29/2020

## Transmission



### Special Tool(s)

 ST1636-A	Retainer, Torque Converter <a href="#">307-346</a> (T97T-7902-A)
---	---

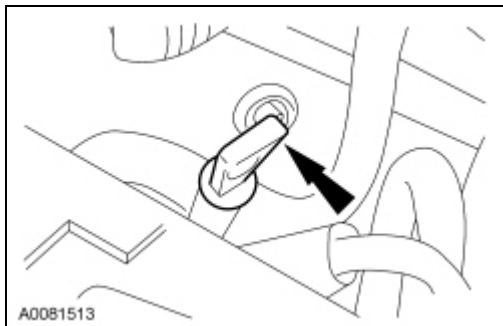
### Material

Item	Specification
Motorcraft® MERCON® LV Automatic Transmission Fluid XT-10-QLVC (US); CXT-10-LV12 (Canada)	MERCON® LV; WSS-M2C938-A
Motorcraft® Multi-Purpose Grease XL-5-A	ESB-M1C93-B

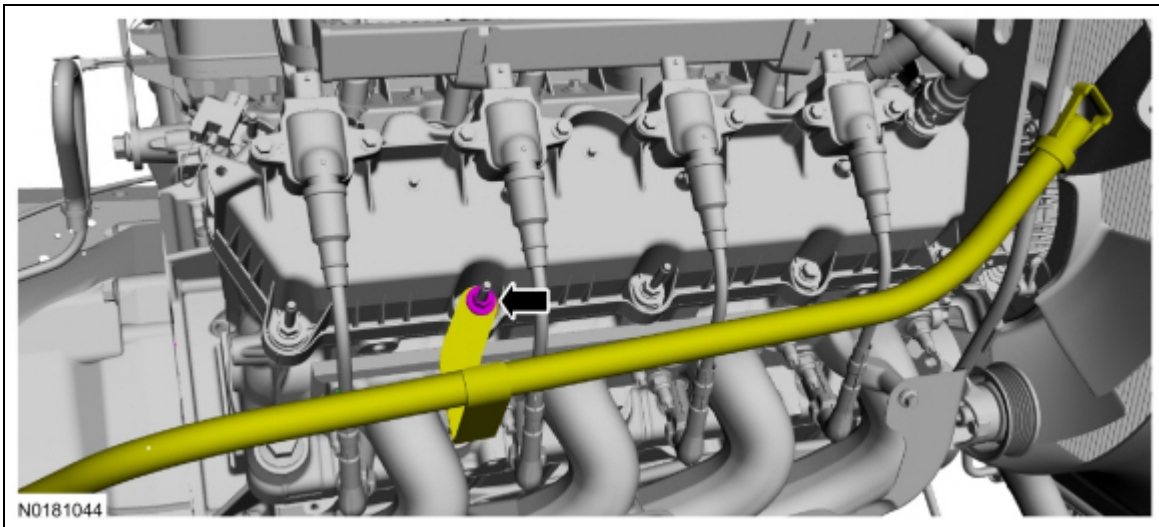
### Removal

**NOTE:** [Refer to the Transmission Cooler Flushing Job Aid on the FMCDealer website.](#)

1. With the vehicle in NEUTRAL, position it on a hoist. Refer to [Section 100-02](#).
2. Remove the transmission fluid level indicator.



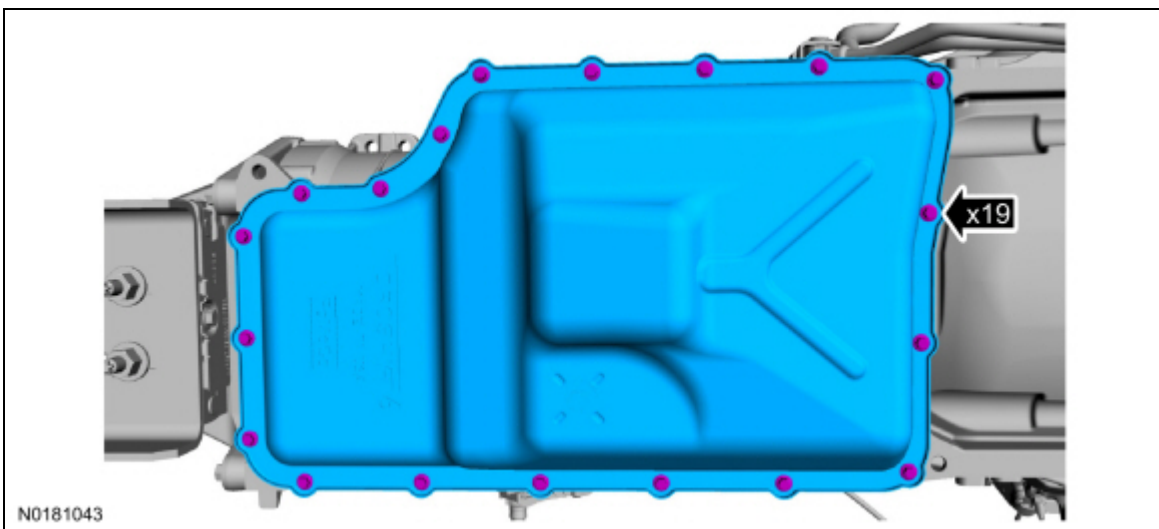
3. Remove the transmission fluid fill tube nut.



4. Remove the exhaust Y-Pipe. Refer to [Section 309-00](#).
5. Remove the starter motor. Refer to [Section 303-06](#).
6. **NOTE:** If transmission disassembly is required, drain the transmission fluid.

**NOTE:** The transmission fluid pan gasket is a reusable gasket. Do not discard the transmission fluid pan gasket.

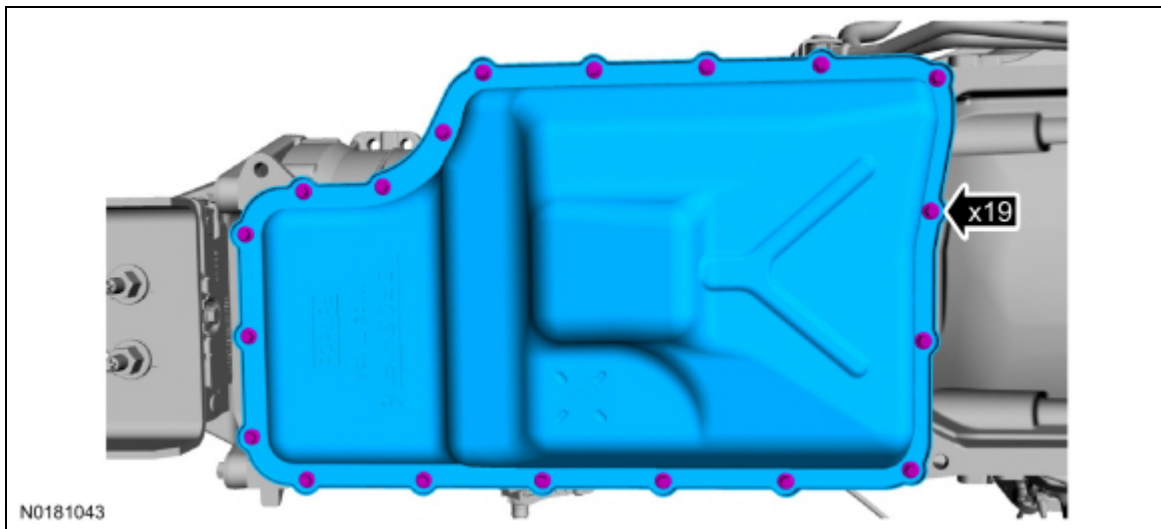
Remove the transmission fluid pan bolts, transmission fluid pan and gasket. Allow the transmission fluid to drain.



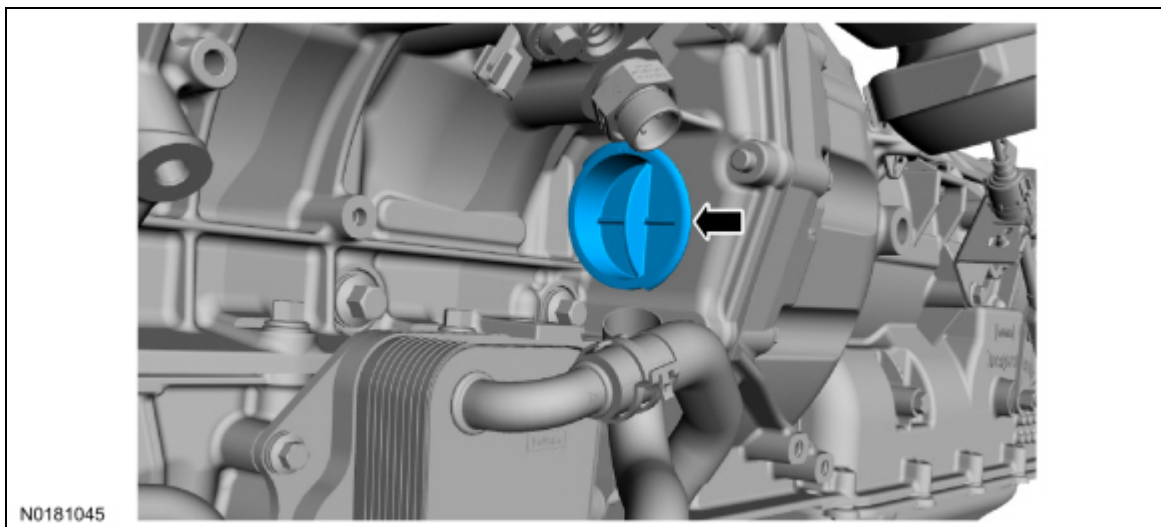
7. **NOTE:** The transmission fluid pan gasket is a reusable gasket.

Install the transmission fluid pan gasket, transmission fluid pan and install the bolts. Tighten the bolts in a crisscross pattern.

- Tighten to 9 Nm (80 lb-in).



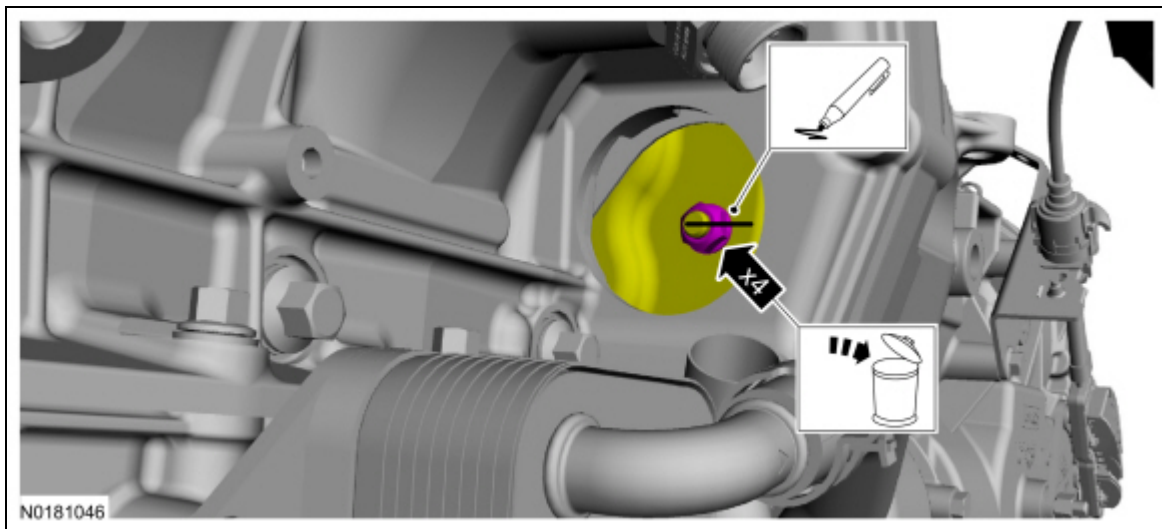
8. Remove the torque converter nut access cover.



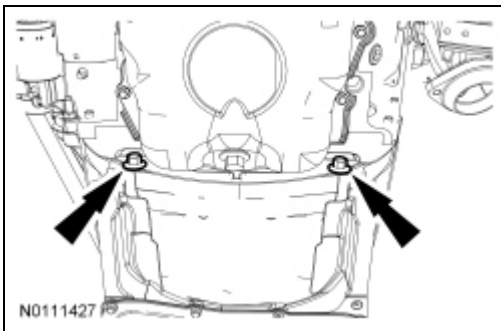
9. **NOTE:** Only rotate the crankshaft in a clockwise direction.

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

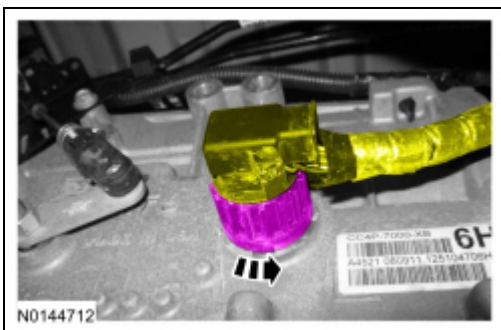
Using a magnetic socket, remove and discard the torque converter nuts.



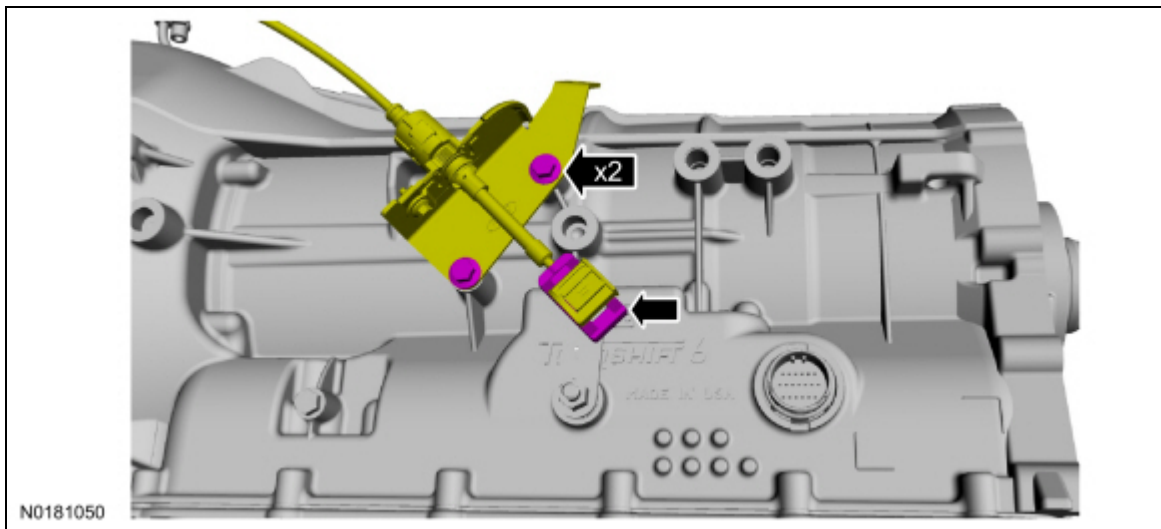
10. Remove the 2 bolts and the inspection cover.



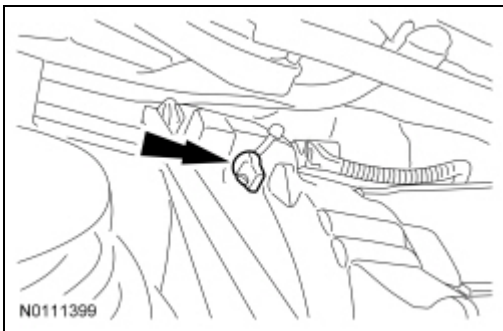
11. Rotate the shell of the transmission vehicle harness connector counterclockwise and disconnect the transmission vehicle harness connector.



12. Disconnect the selector lever cable end from the manual control lever, remove the bolts and position the selector lever cable and bracket aside.



13. Remove the wiring harness retainers from the transmission case and position the wiring harness aside.



14. **NOTICE:** When removing the crossmember, support the transmission using a heavy duty transmission jack.
- Place the jack so the fluid pan does not support the weight of the transmission.
  - Fasten a chain or ratchet strap over the top of the transmission and to both sides of the jack.

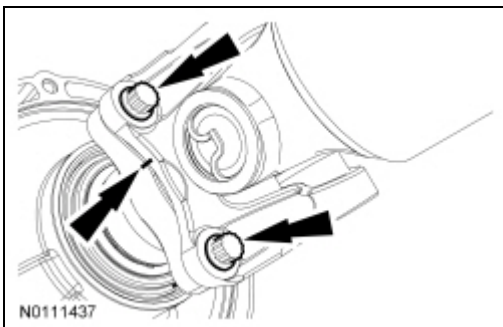
Failure to use a heavy duty transmission jack can result in damage to the transmission.

Remove the transmission support crossmember. Refer to [Section 502-02](#).

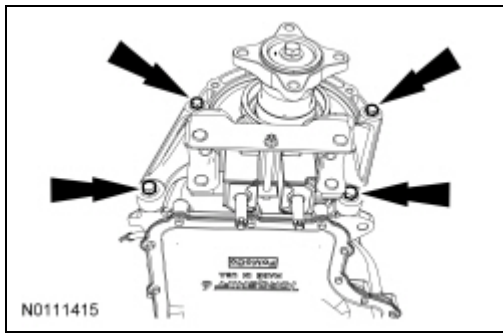
15. **NOTE:** It may be necessary to tap the driveshaft yoke with a plastic or rubber soft-faced hammer if a pry area is not present on the driveshaft side.

Index mark the rear driveshaft. Remove and discard the 4 bolts and position the rear driveshaft aside.

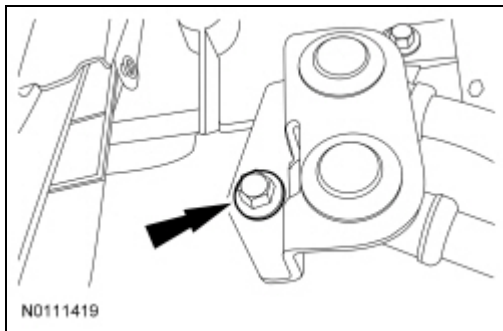
- Support the driveshaft using mechanics wire.



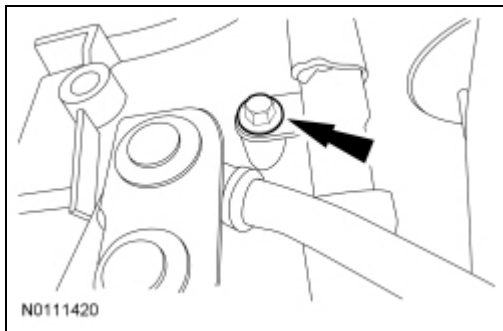
16. If installing a new, remanufactured or overhauled transmission, remove and discard the 4 transmission support insulator bracket bolts and remove the transmission support insulator and bracket.



17. Remove the bolt and position the transmission fluid cooler tubes aside.

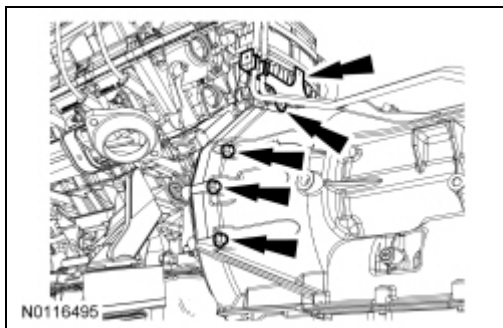


18. Remove the lower transmission fluid filler tube bolt and position the transmission fluid filler tube aside. Remove and discard the transmission fluid filler tube O-ring.



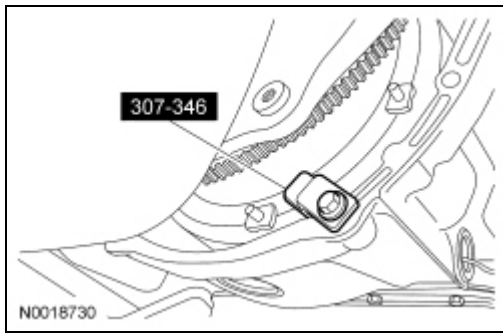
19. **NOTE:** Note the location of the 2 longer bolts for installation. The 2 longer bolts go to the bolt holes with the dowel pins.

Remove the 7 bolts, position aside the fuel line bracket and remove the transmission from the dowel pins.





20. Slide the transmission back enough to install the Torque Converter Retainer and remove the transmission.



### Installation

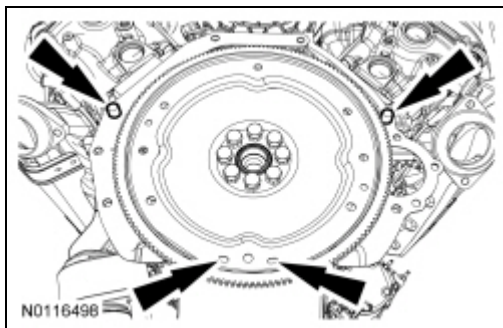
1. **NOTICE: Failure to flush the transmission fluid cooler and transmission fluid cooler tubes can result in metallic contamination of the transmission.**

If installing a new, remanufactured or overhauled transmission, clean and backflush the transmission fluid cooler tubes to prevent repeat repairs. Refer to [Section 307-02](#).

2. **NOTICE: Failure to install a new auxiliary transmission fluid cooler can result in metallic contamination of the transmission.**

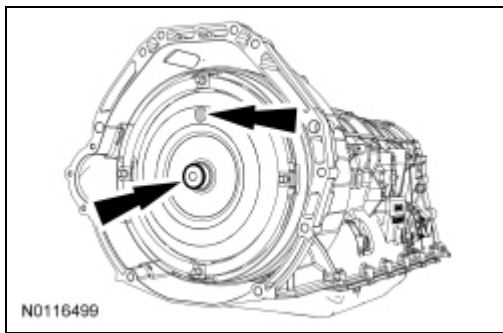
If installing a new, remanufactured or overhauled transmission install a new auxiliary transmission fluid cooler if equipped.

3. Inspect the back of the engine to be sure both dowel pins are in the engine. If the dowel pins are not in the engine, install new dowel pins as needed. If installing the same transmission that was removed, remove the dowel pins from the transmission and install them in the engine. Rotate the flexplate to align the 2 slots at the 6 o'clock position.



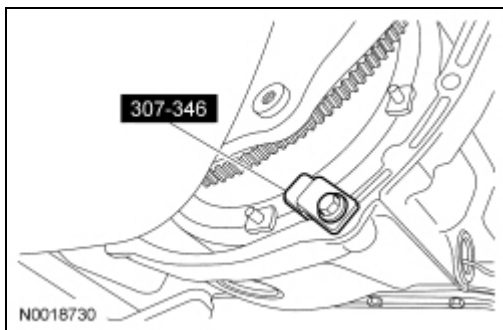
4. **NOTICE: Prior to installation of the transmission, lubricate the torque converter pilot hub or damage to the torque converter or the engine crankshaft can occur.**

Lubricate the torque converter pilot hub with multi-purpose grease and align the paint dot on the torque converter in the 12 o'clock position.

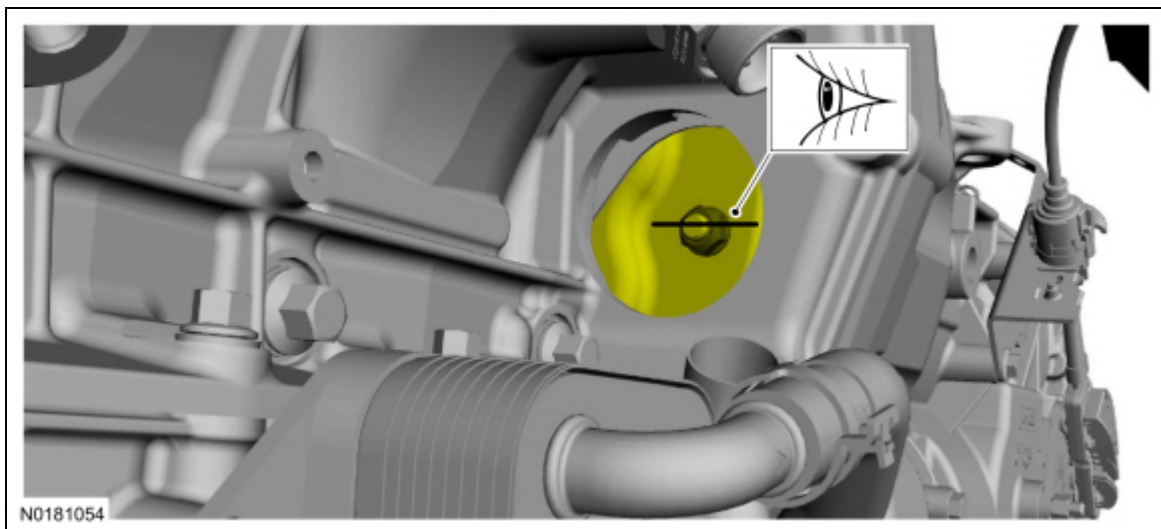


**NOTE:** Be sure to position the Torque Converter Retainer in the proper position to ensure the torque converter is held securely in place.

5. If the Torque Converter Retainer has not been installed during the assembly of the transmission, install the Torque Converter Retainer to hold the torque converter in place while moving and positioning the transmission in place. Once the transmission is in place, remove the Torque Converter Retainer.

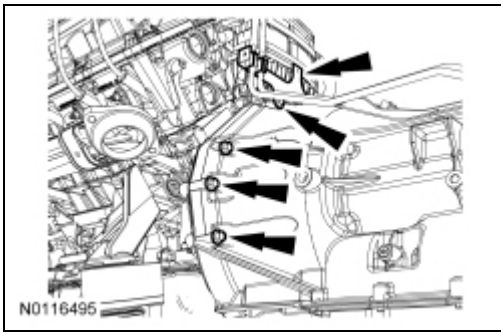


6. Align the index-mark made during removal.

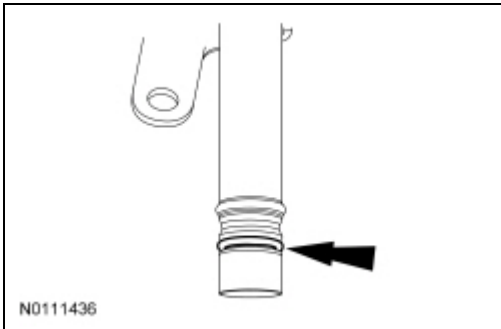


7. Position the fuel line bracket over the torque converter housing and install the transmission on the dowel pins on the back of the engine. Install the 7 bolts.
  - Tighten to 48 Nm (35 lb-ft).

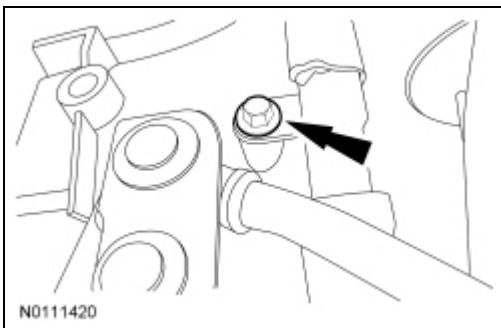




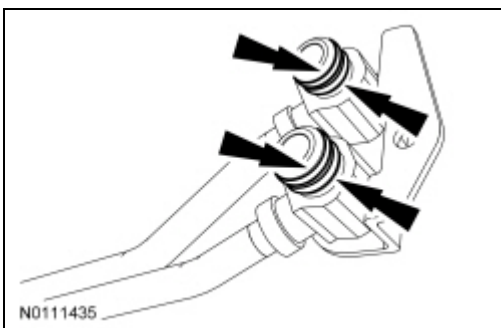
8. Install a new transmission fluid filler tube O-ring. Lubricate it with clean transmission fluid.



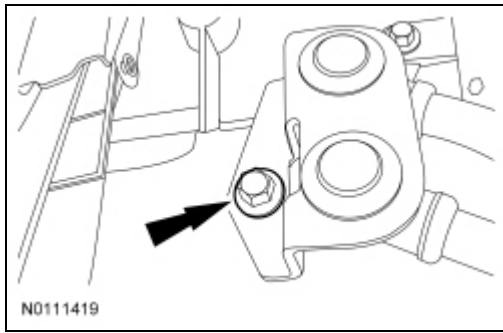
9. Install the transmission fluid filler tube in the transmission and install the lower transmission fluid filler tube bolt.
  - Tighten to 25 Nm (18 lb-ft).



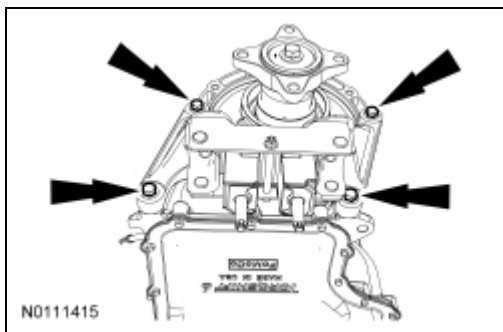
10. Inspect the transmission fluid cooler tube O-rings for damage and install new O-rings as necessary. Lubricate the O-rings with clean transmission fluid.



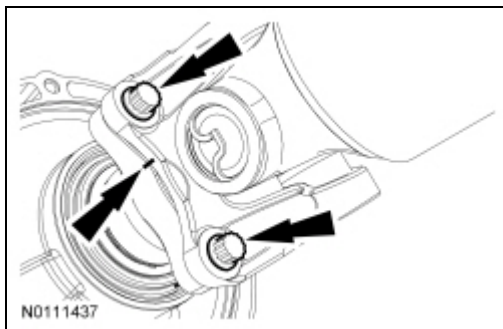
11. Position the transmission fluid cooler tubes in the transmission case and install the bolt.
  - Tighten to 25 Nm (18 lb-ft).



12. If required, install new transmission support insulator studs.
  - Tighten to 75 Nm (55 lb-ft).
13. If removed, install the transmission support insulator and bracket and 4 new bolts.
  - Tighten to 55 Nm (41 lb-ft).

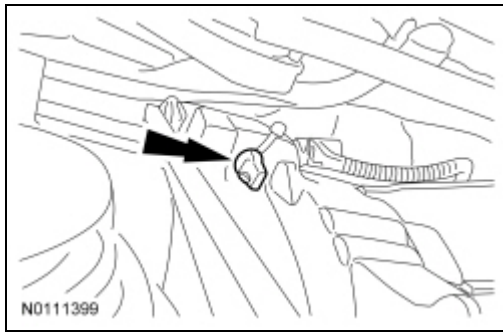


14. Position the driveshaft on the flange, align the marks made during removal on the driveshaft and install 4 new driveshaft-to-transmission flange bolts.
  - Tighten to 103 Nm (76 lb-ft).

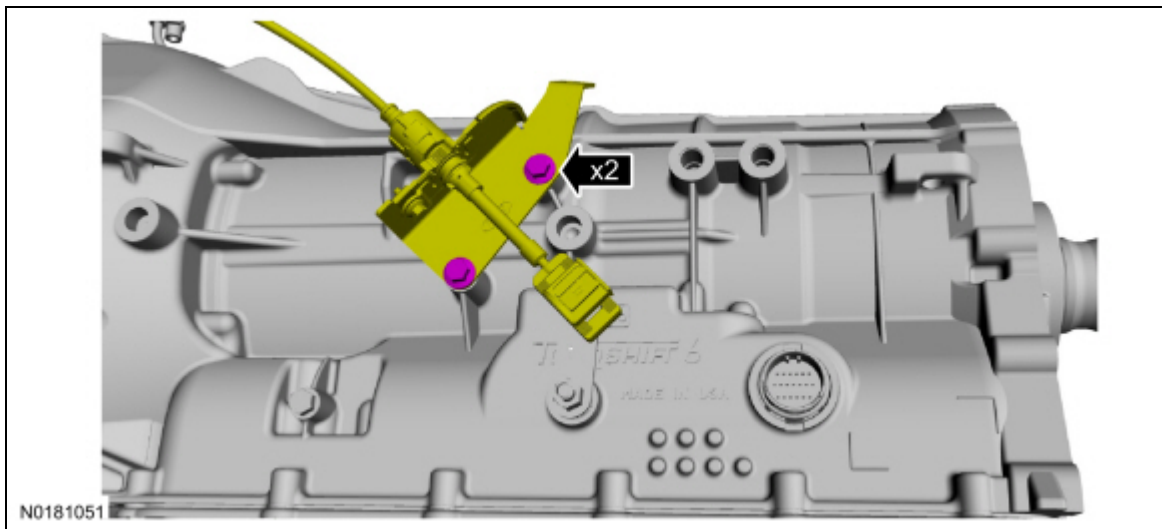


15. Install the crossmember. Refer to [Section 502-02](#).
16. **NOTE:** *The wiring harness has 4 retainers, one shown.*

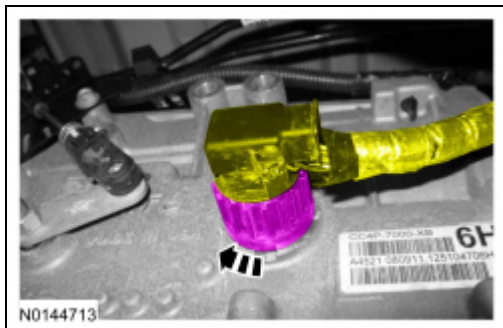
Position the wiring harness and install the 4 wiring harness retainers on the transmission case.



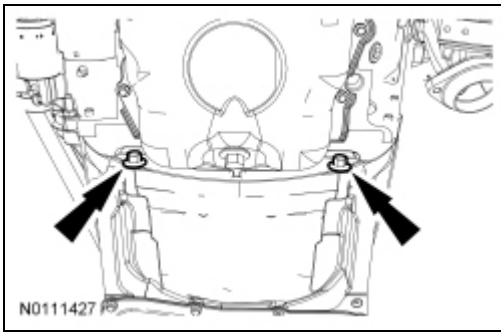
17. Position the selector lever cable bracket and install the bolts.
- Tighten to 48 Nm (35 lb-ft).



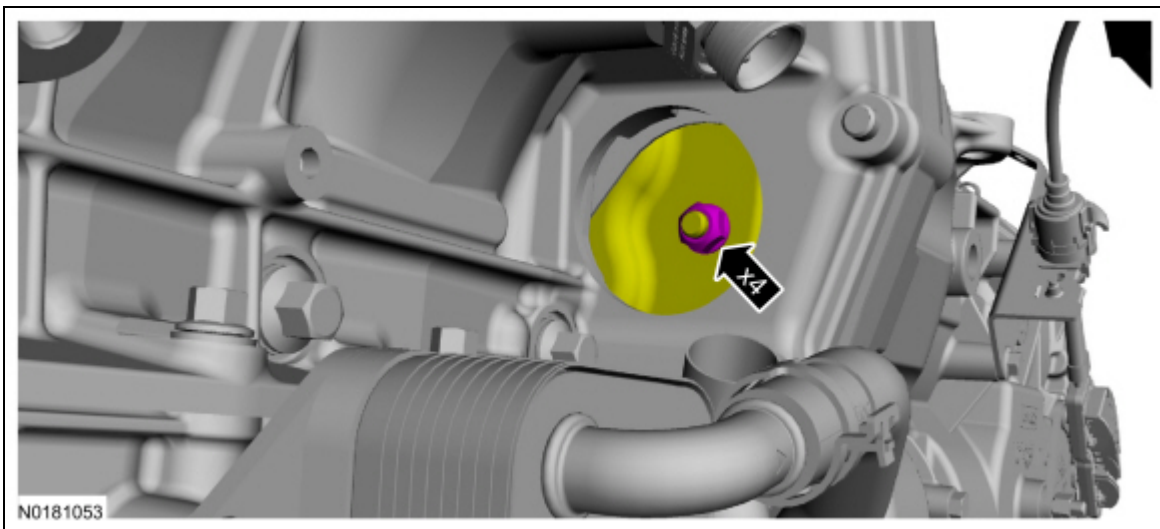
18. Install the transmission vehicle harness connector and lock the transmission vehicle harness connector by rotating the outer shell clockwise.



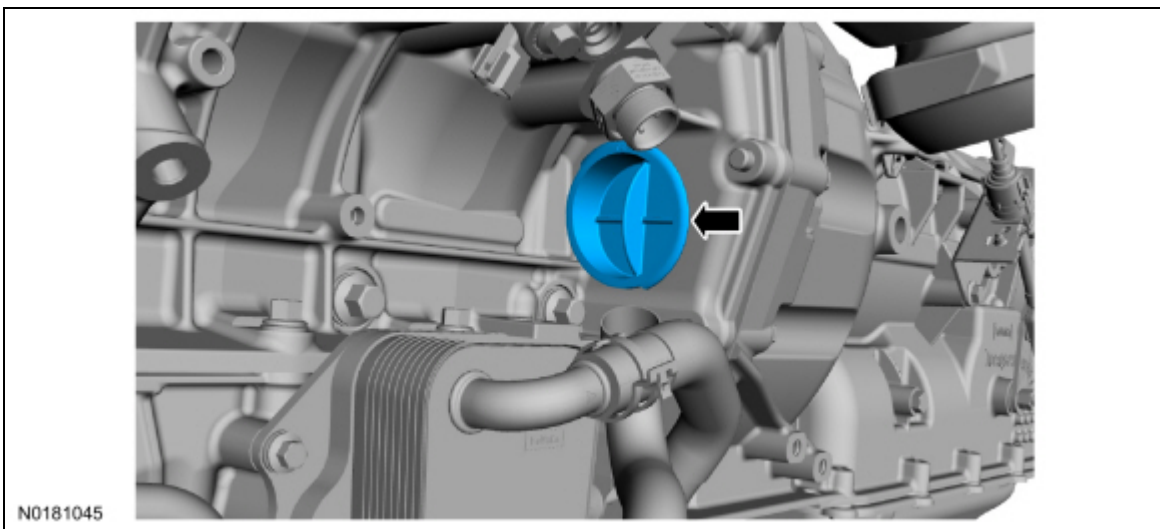
19. Install the inspection cover and the 2 bolts.
- Tighten to 35 Nm (26 lb-ft).



20. Install new torque converter nuts.
- Tighten to 48 Nm (35 lb-ft).

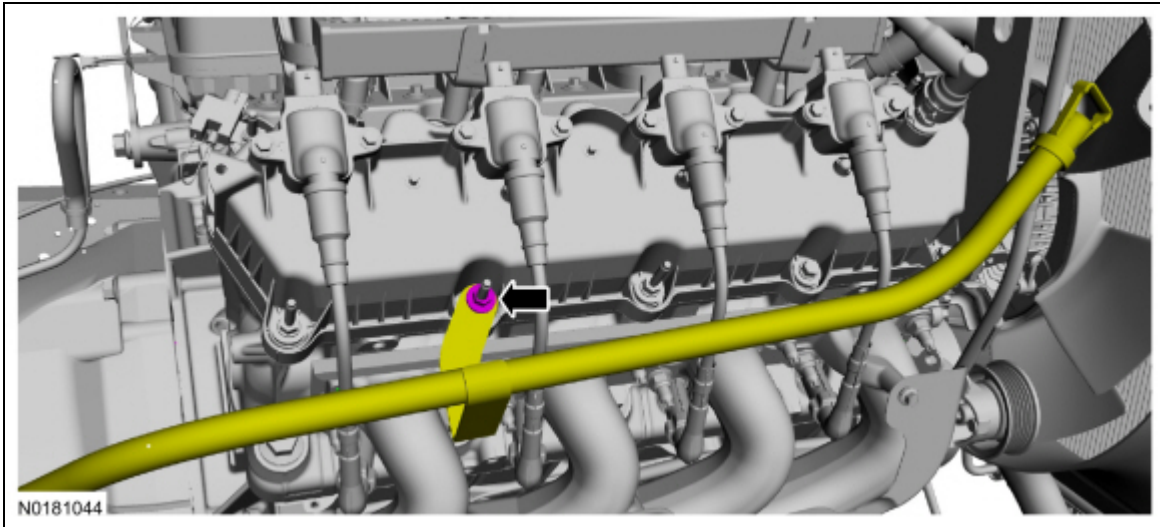


21. Install the torque converter access cover.

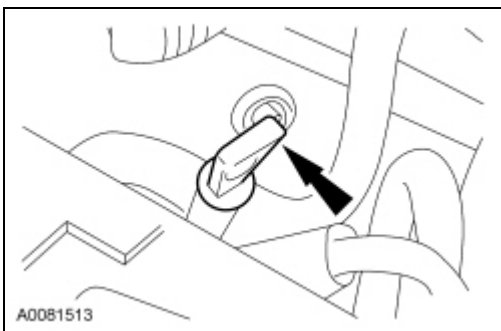


22. Install the starter motor. Refer to [Section 303-06](#).
23. Install the exhaust Y-Pipe. Refer to [Section 309-00](#).
24. Install and adjust the selector lever cable. Refer to [Section 307-05](#).
25. Install the transmission fluid filler tube nut.

- Tighten to 10 Nm (89 lb-in).



26. If transmission was drained, fill the transmission with clean transmission fluid. Refer to [Transmission Fluid Drain and Refill](#). If transmission was not drained, install the transmission fluid level indicator then check and adjust the transmission fluid level.



27. If a new main control was installed, the solenoid body strategy will need to be updated. Refer to [Solenoid Body Strategy](#).
28. After completing the repairs, use the scan tool to perform the Misfire Monitor Neutral Profile Correction procedure, following the on-screen instructions.

© Copyright 2022, Ford Motor Company.

