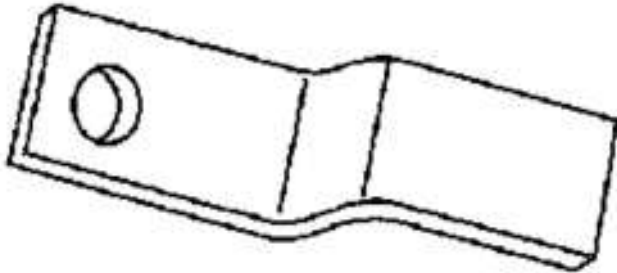


REMOVAL

TRANSMISSION - 4X4

Special Tool(s)

TRANSMISSION SPECIAL TOOL - 4x4



ST1636-A

Retainer, Torque Converter 307-346 (T97T-7902-A)

Removal

1. With the vehicle in NEUTRAL, position it on a hoist. For additional information, refer to **JACKING & LIFTING** .
2. Disconnect the battery ground cable. For additional information, refer to **BATTERY, MOUNTING AND CABLES** .
3. Remove the transfer case. For additional information, refer to **TRANSFER CASE - AUTOMATIC SHIFT** .

NOTE: If transmission disassembly or installation of a new transmission is necessary, the transmission fluid will need to be drained.

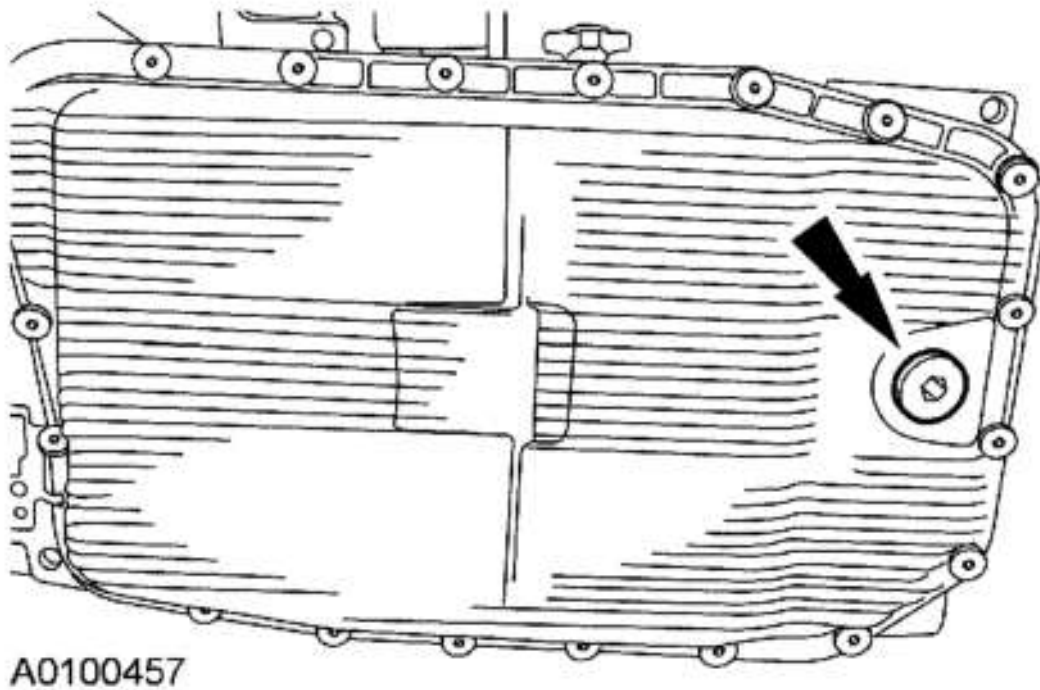
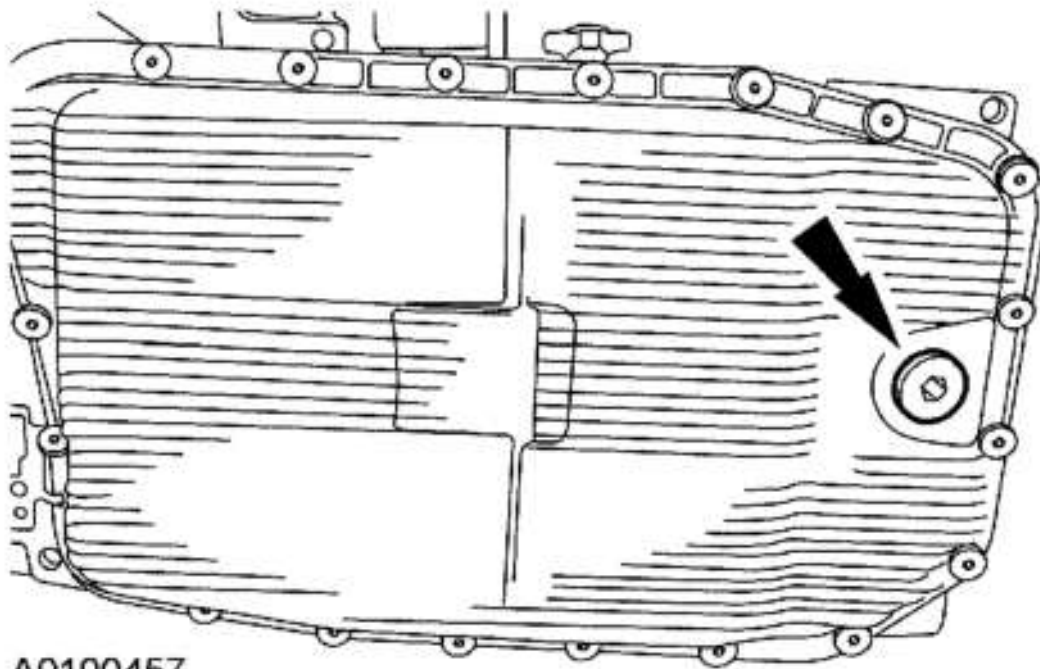


Fig. 78: Locating Fluid Pan Drain Plug
Courtesy of FORD MOTOR CO.

4. Remove and discard the transmission fluid pan drain plug and allow the fluid to drain.
5. Install a new transmission fluid pan drain plug.
 - Tighten to 8 Nm (71 lb-in).



A0100457

Fig. 79: Locating Fluid Pan Drain Plug
Courtesy of FORD MOTOR CO.

NOTE: 4x2 shown, 4x4 similar.

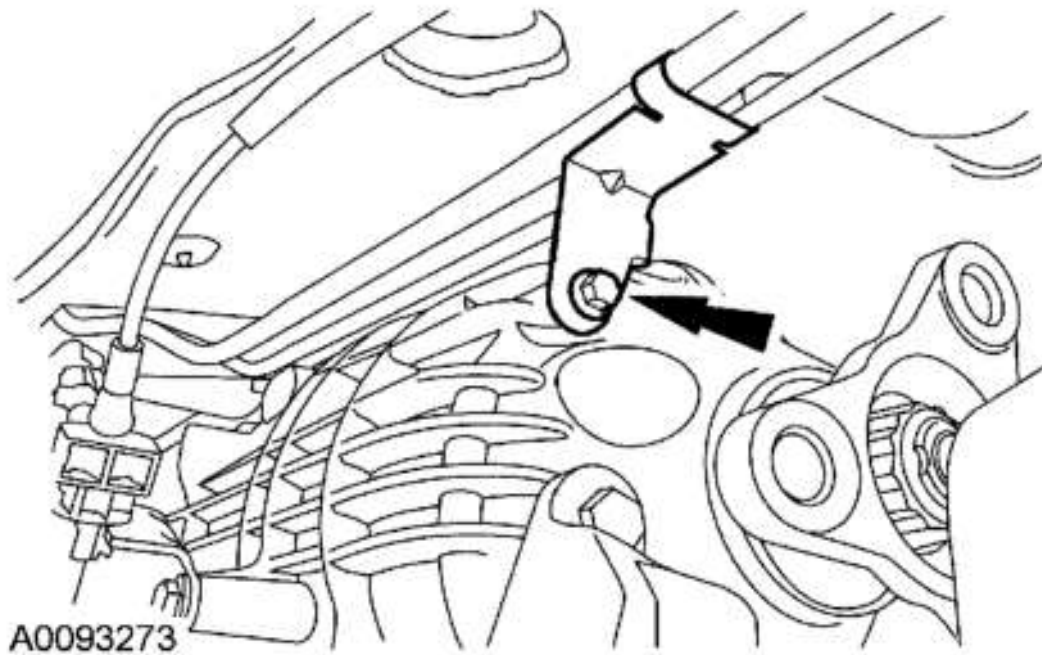


Fig. 80: Removing Fuel Line Bracket Bolt
Courtesy of FORD MOTOR CO.

6. Remove the fuel line bracket bolt from the bracket. Position the bracket and lines aside.
7. Disconnect the shift cable end and remove the shift cable bracket bolts. Position the cable and bracket aside.

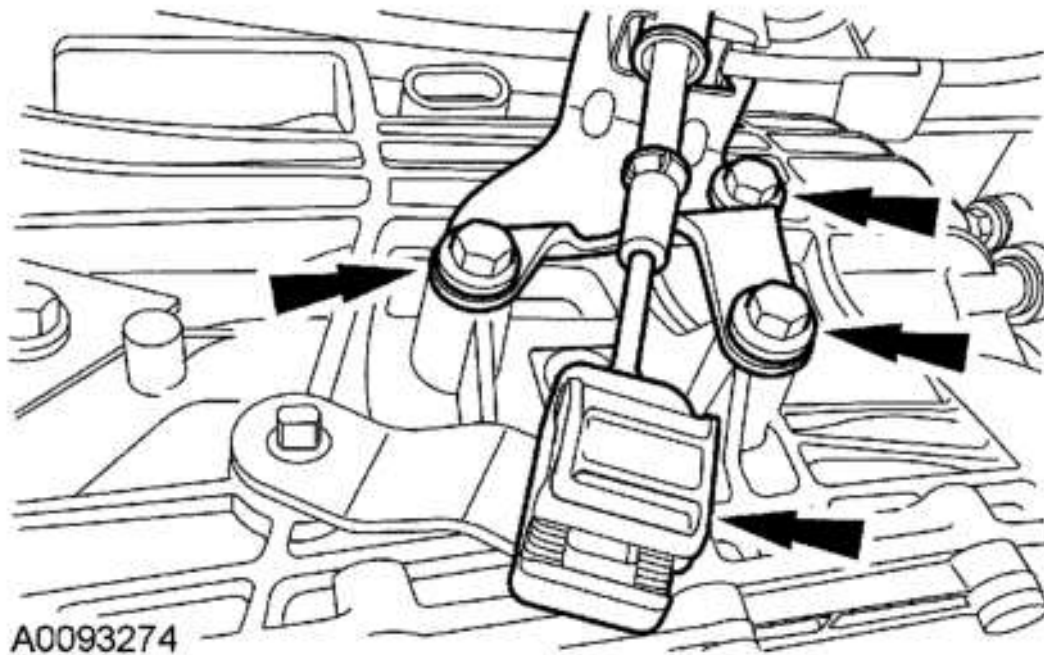


Fig. 81: Locating Shift Cable Bracket Bolts
Courtesy of FORD MOTOR CO.

8. Remove the flexplate inspection cover bolts and the inspection cover.

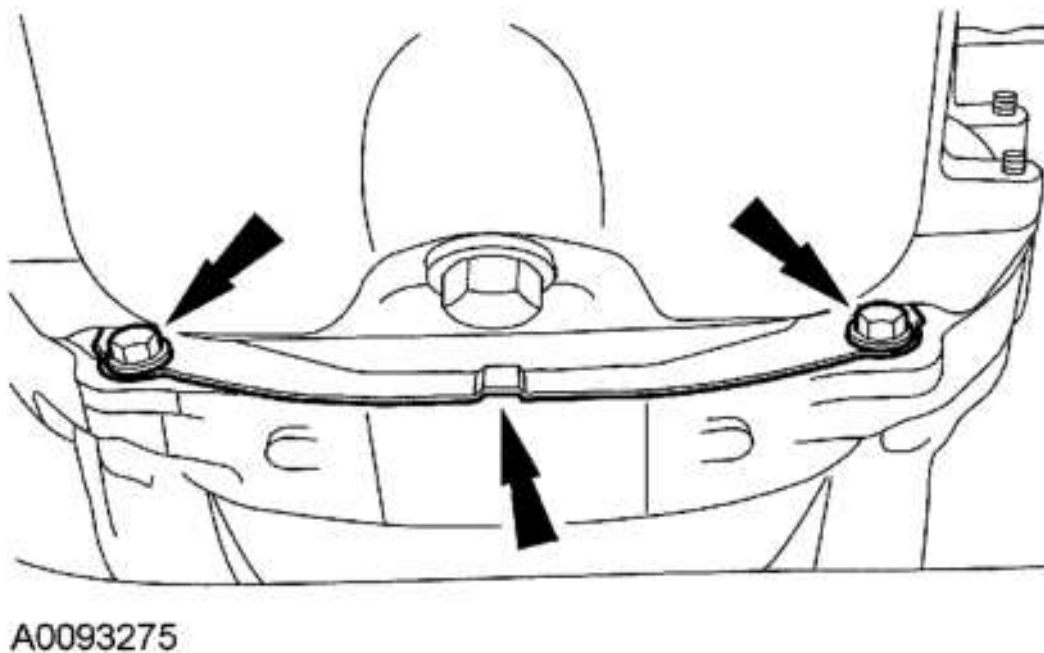


Fig. 82: Removing Flexplate Inspection Cover Bolts

Courtesy of FORD MOTOR CO.

9. Remove the bolts and the LH engine-to-transmission support bracket.

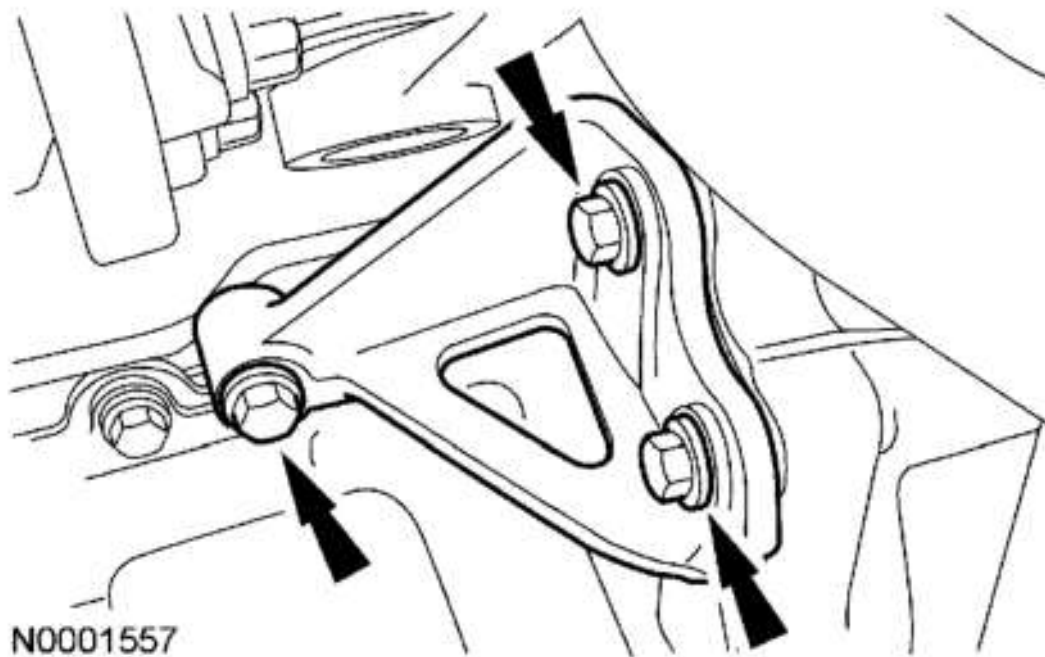


Fig. 83: Removing Engine-To-Transmission Support Bracket
Courtesy of FORD MOTOR CO.

10. Remove the rubber torque converter nut access plug.

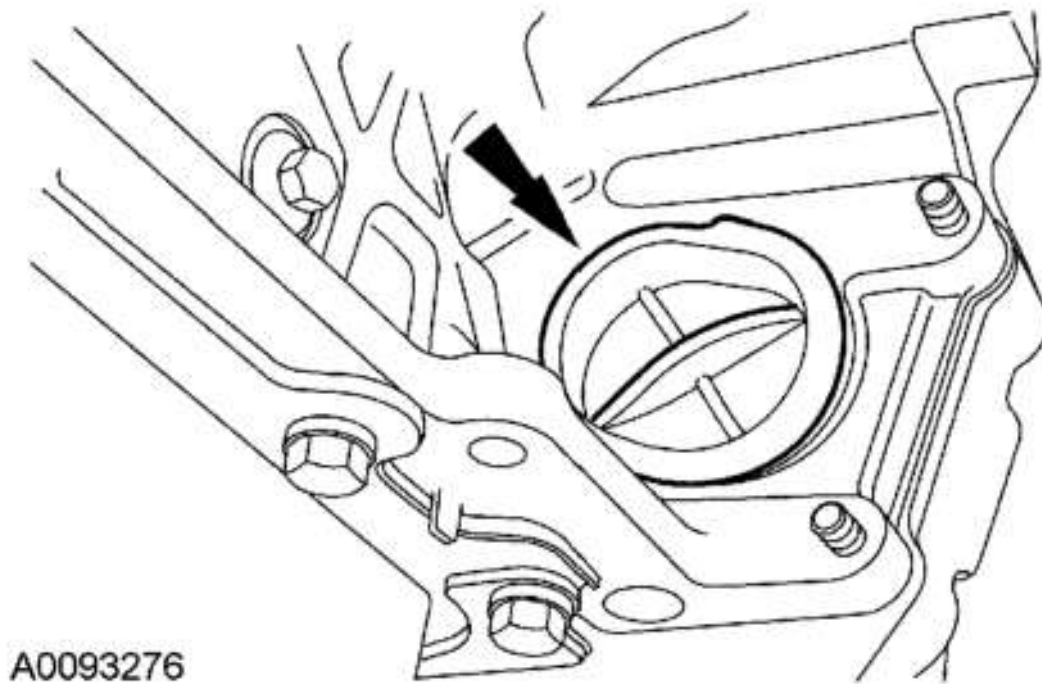


Fig. 84: Removing Rubber Torque Converter Nut Access Plug
Courtesy of FORD MOTOR CO.

11. Remove and discard the 4 flexplate-to-torque converter nuts.

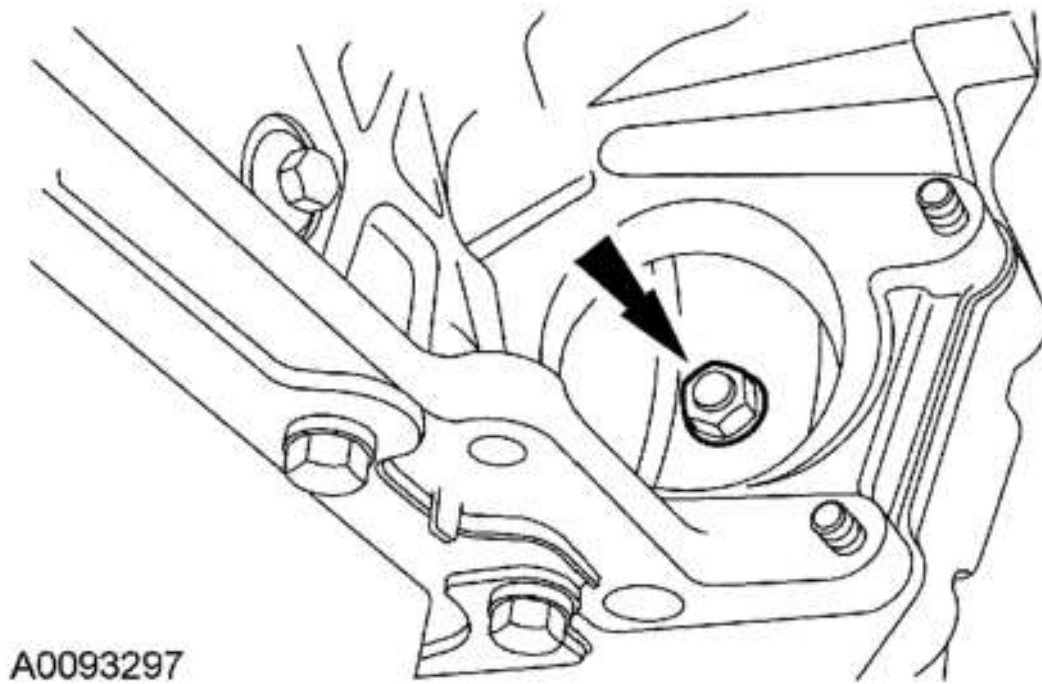


Fig. 85: Removing Flexplate-To-Torque Converter Nuts
Courtesy of FORD MOTOR CO.

12. Remove the bolts and the RH engine-to-transmission support bracket.

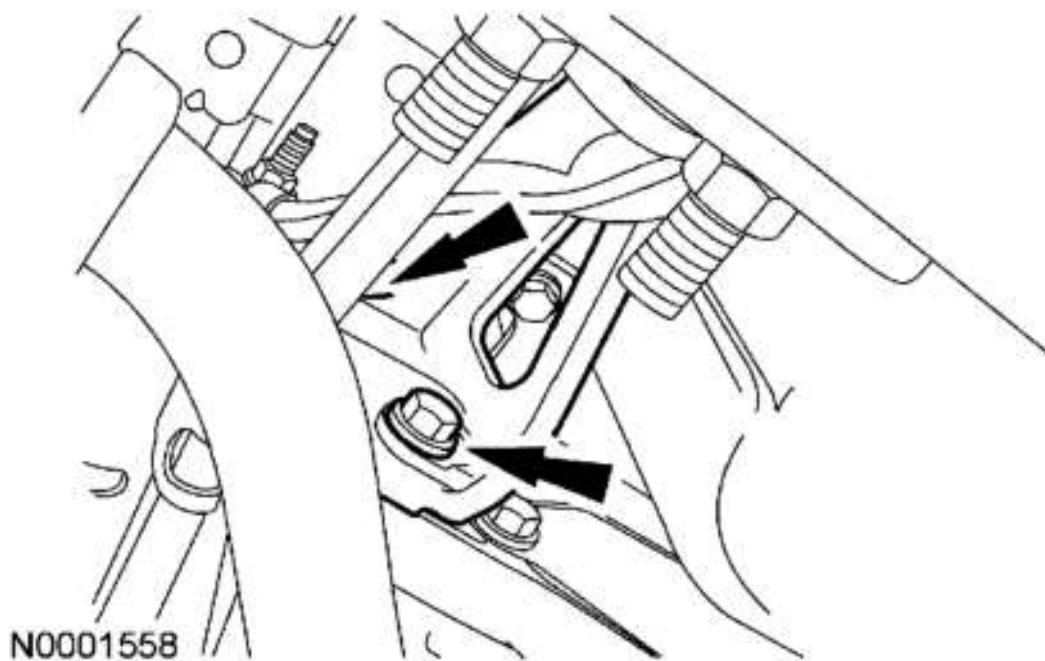


Fig. 86: Removing RH Engine-To-Transmission Support Bracket
Courtesy of FORD MOTOR CO.

13. Remove the plastic starter motor electrical connector cap.

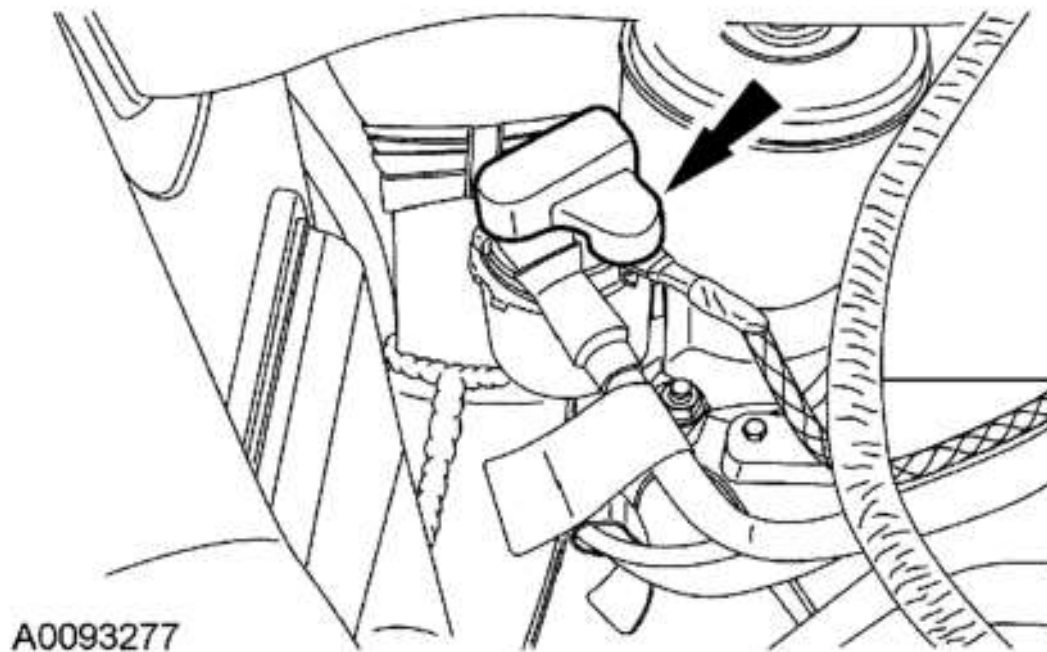


Fig. 87: Removing Plastic Starter Motor Electrical Connector Cap
Courtesy of FORD MOTOR CO.

14. Remove the starter motor electrical connectors.

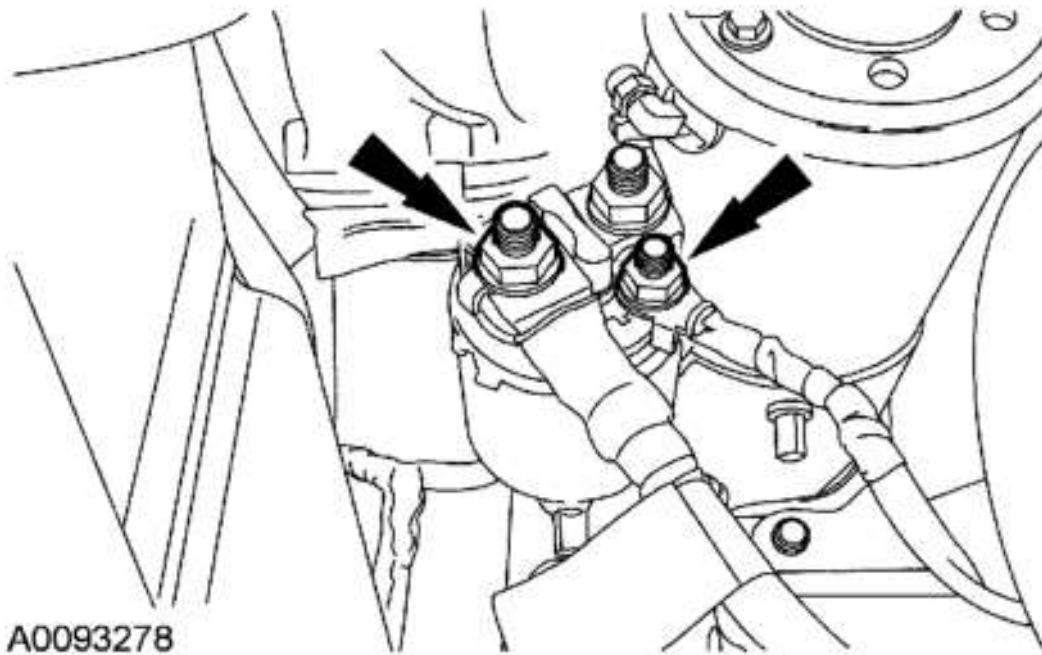


Fig. 88: Removing Starter Motor Electrical Connectors
Courtesy of FORD MOTOR CO.

15. Remove the ground wire from the stud.

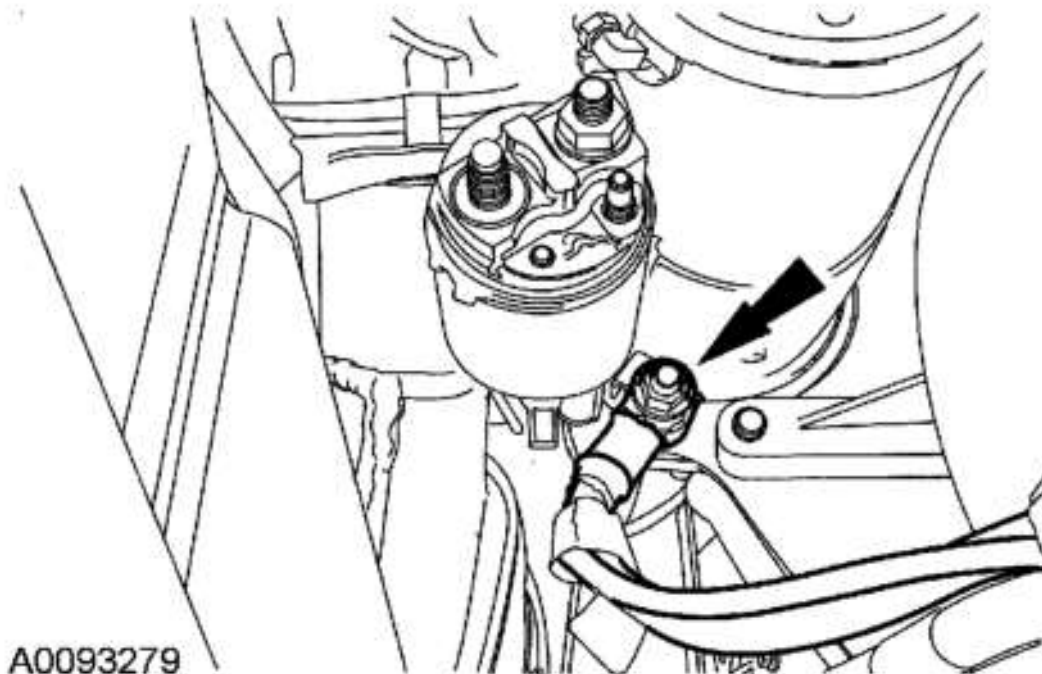


Fig. 89: Removing Ground Wire From Stud
Courtesy of FORD MOTOR CO.

16. Remove the 3 bolts and the starter motor.

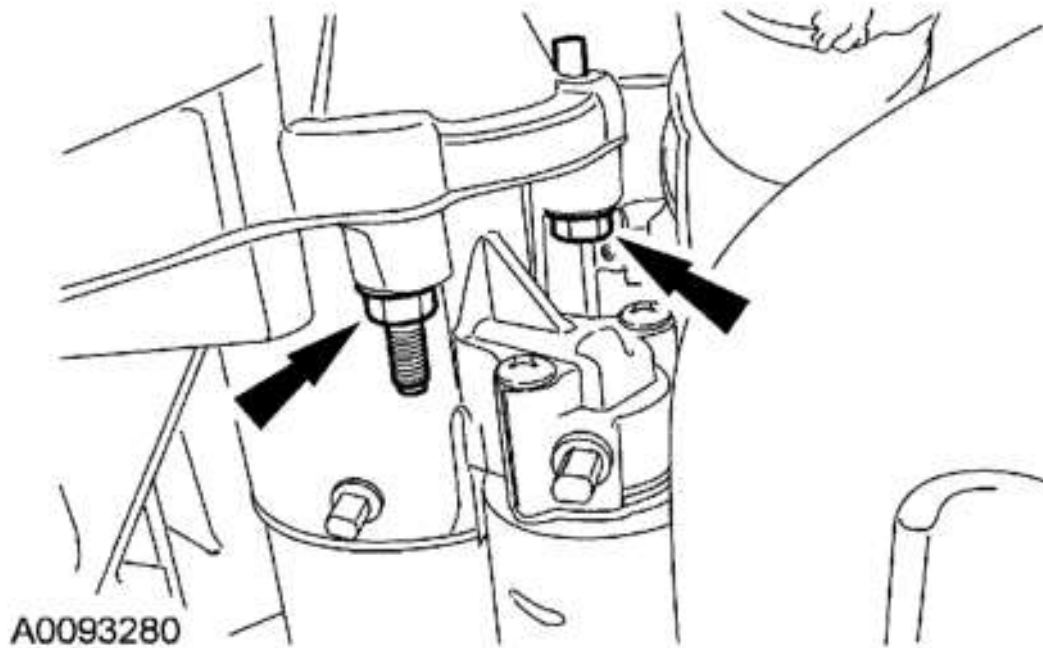


Fig. 90: Removing Bolts And Starter Motor
Courtesy of FORD MOTOR CO.

NOTE: Note the band seals and backer rings may stick into the case. Remove the band seals and backer rings if still in the case.

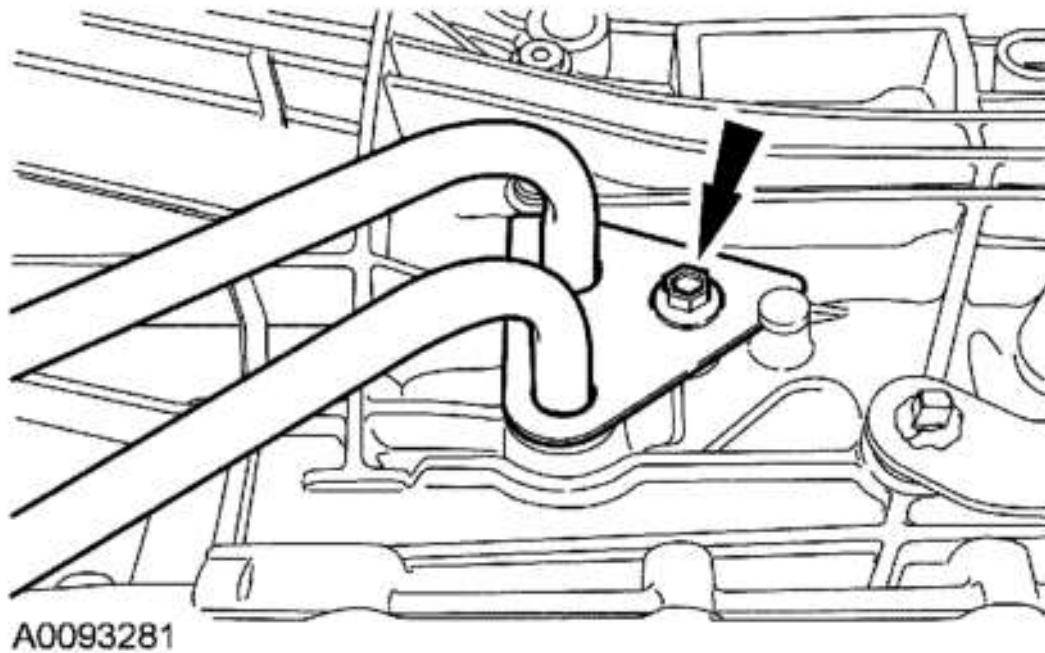


Fig. 91: Removing Transmission Cooler Tube Bracket Bolt
Courtesy of FORD MOTOR CO.

17. Remove the transmission cooler tube bracket bolt and the cooler tubes.
18. Remove the transmission bolt retaining the transmission fluid cooler tube retainer and position it aside.

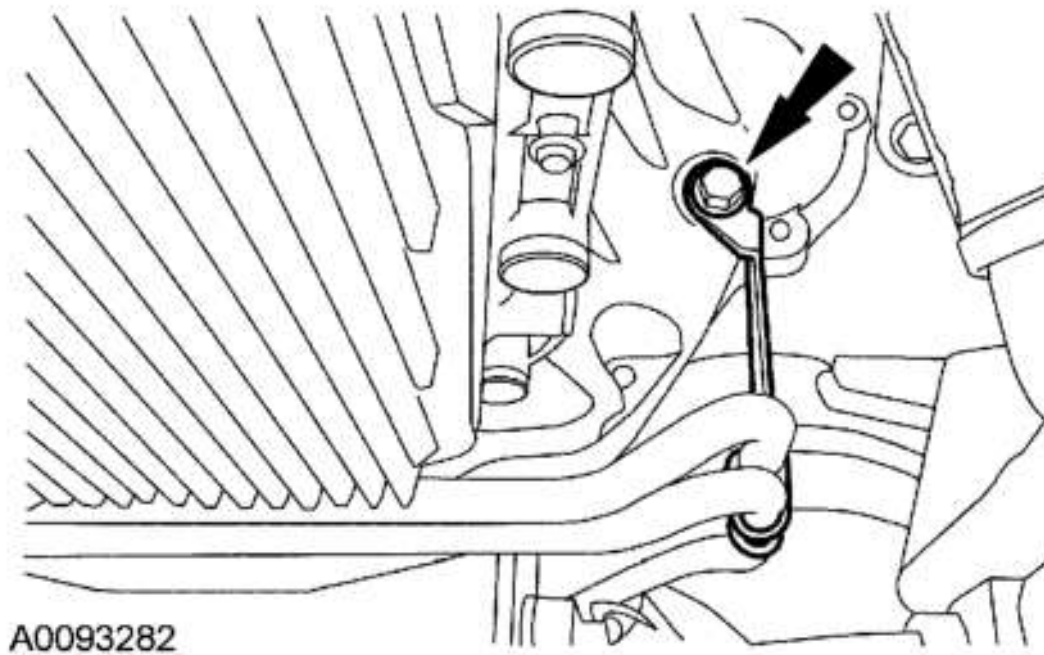


Fig. 92: Remove Transmission Bolt Retaining Transmission Fluid Cooler Tube
Courtesy of FORD MOTOR CO.

19. Disconnect the engine oil level sensor electrical connector.

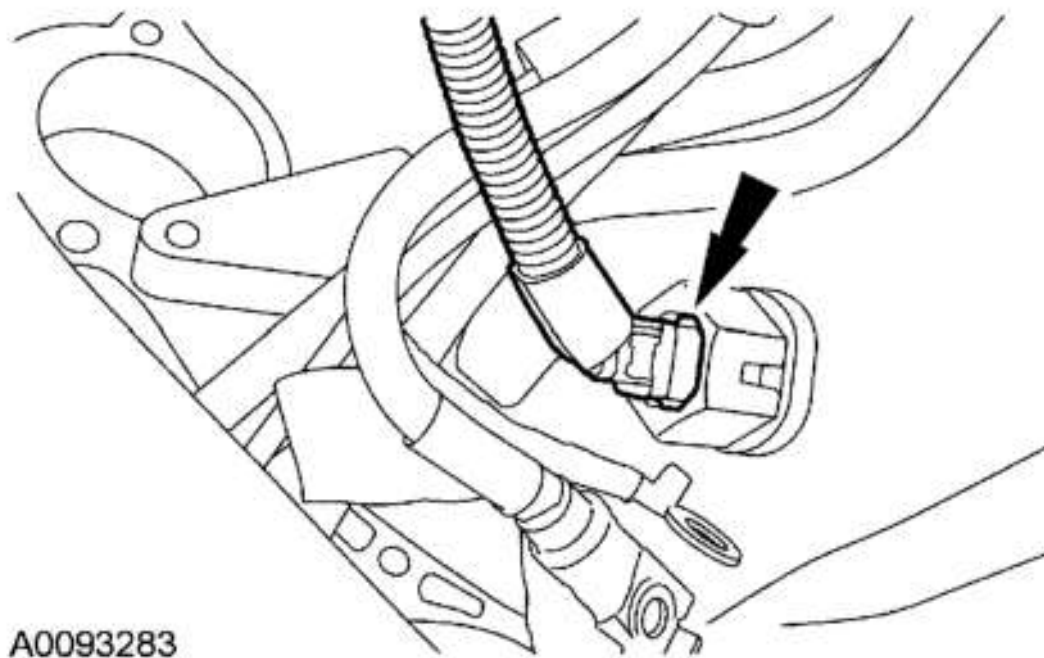


Fig. 93: Disconnecting Engine Oil Level Sensor
Courtesy of FORD MOTOR CO.

20. Disconnect the fluid cooler tube.

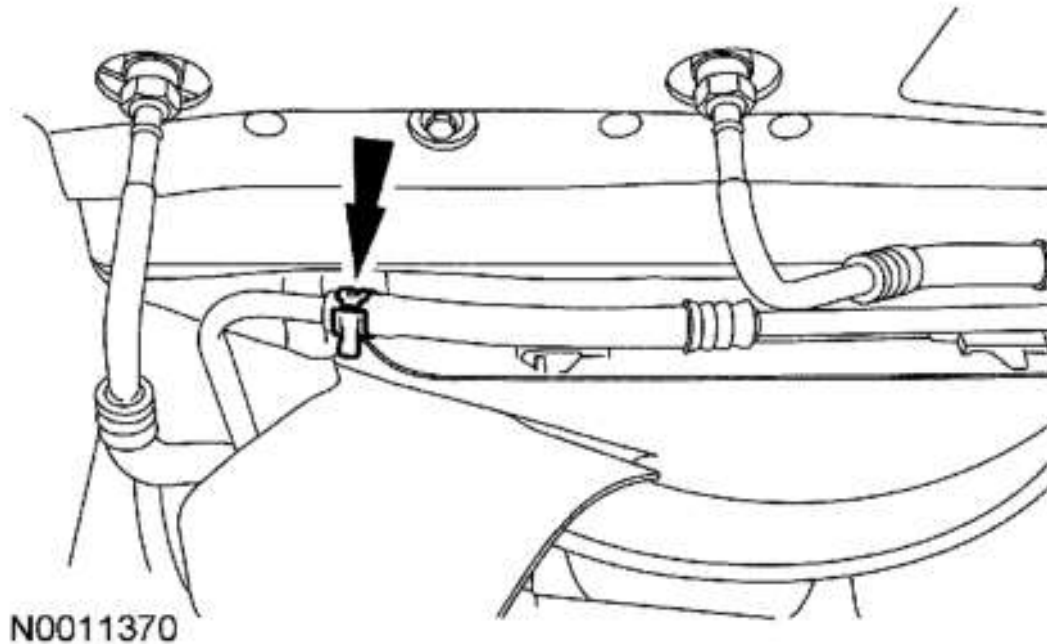


Fig. 94: Disconnecting Fluid Cooler Tube
Courtesy of FORD MOTOR CO.

21. Remove the transmission fluid cooler tube bracket nut and position the bracket and lines aside.

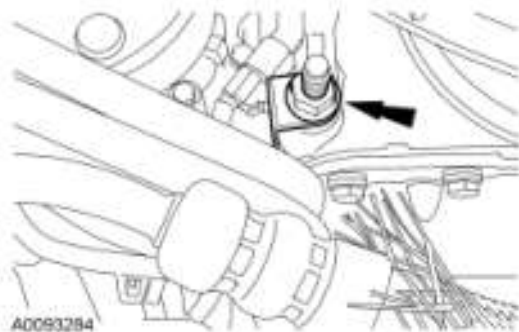


Fig. 95: Identifying Transmission Fluid Cooler Tube Bracket
Courtesy of FORD MOTOR CO.

22. Remove the RH exhaust shield bolt.

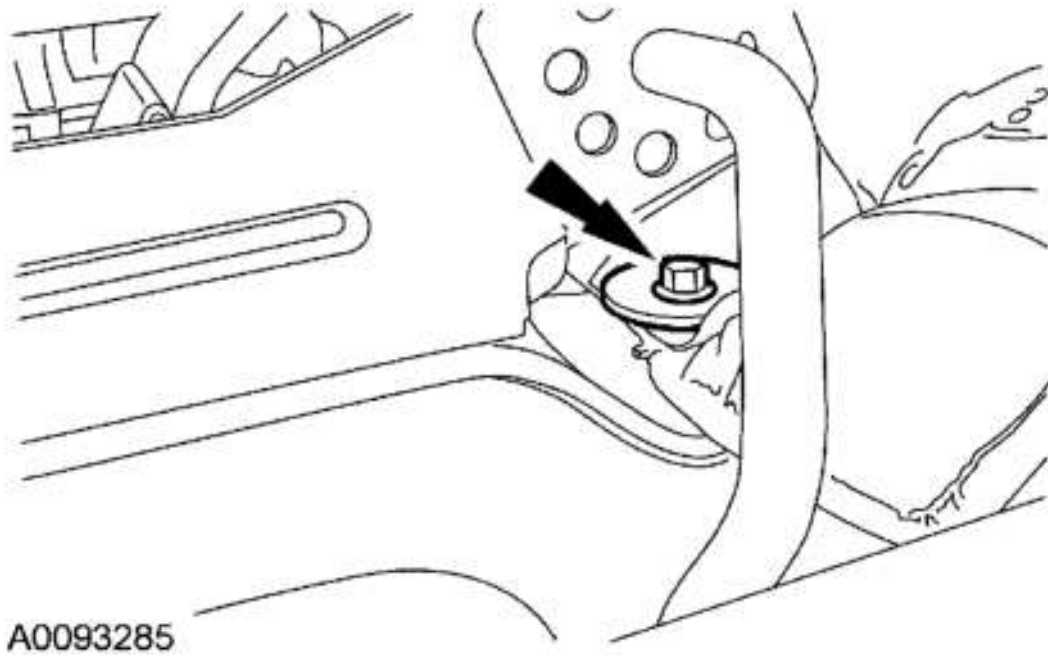


Fig. 96: Removing RH Exhaust Shield Bolt
Courtesy of FORD MOTOR CO.

23. Remove the LH exhaust shield bolt.

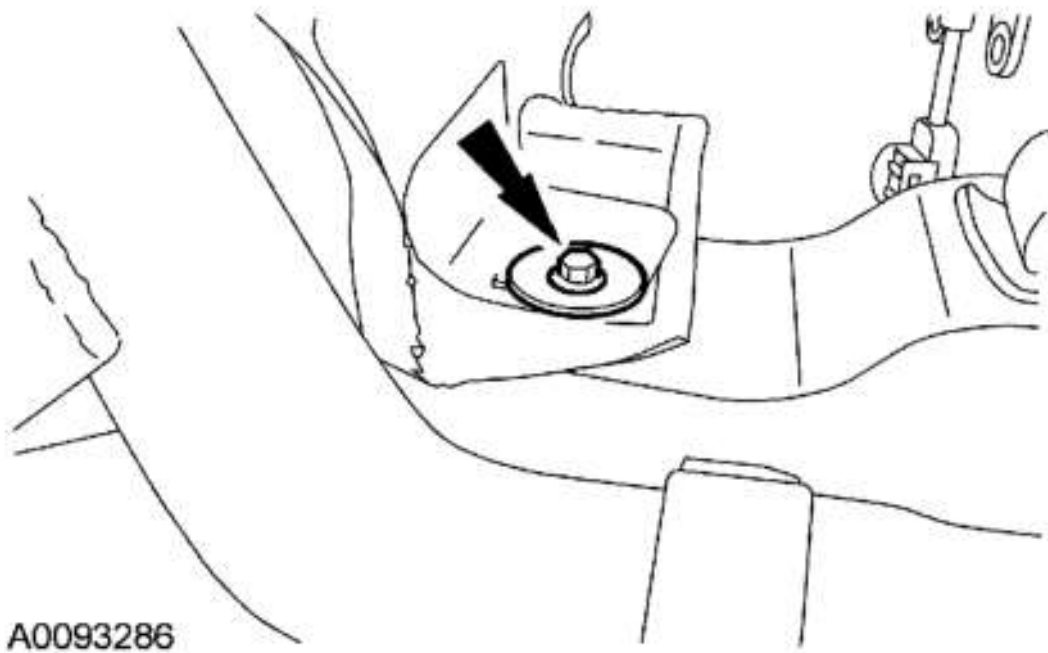


Fig. 97: Removing LH Exhaust Shield Bolt

Courtesy of FORD MOTOR CO.

CAUTION: This new style pan is designed with the 2 outside ribs of the pan taller than the rest for side-to-side support. The transmission can be supported on the fluid pan as long as it is resting on the 2 outer ribs, if not, damage to the fluid pan will occur.

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

NOTE: Make sure that the transmission is securely fastened to the transmission jack.

24. Position a suitable high-lift transmission jack under the transmission.
25. Remove the 4 rear crossmember bolts.

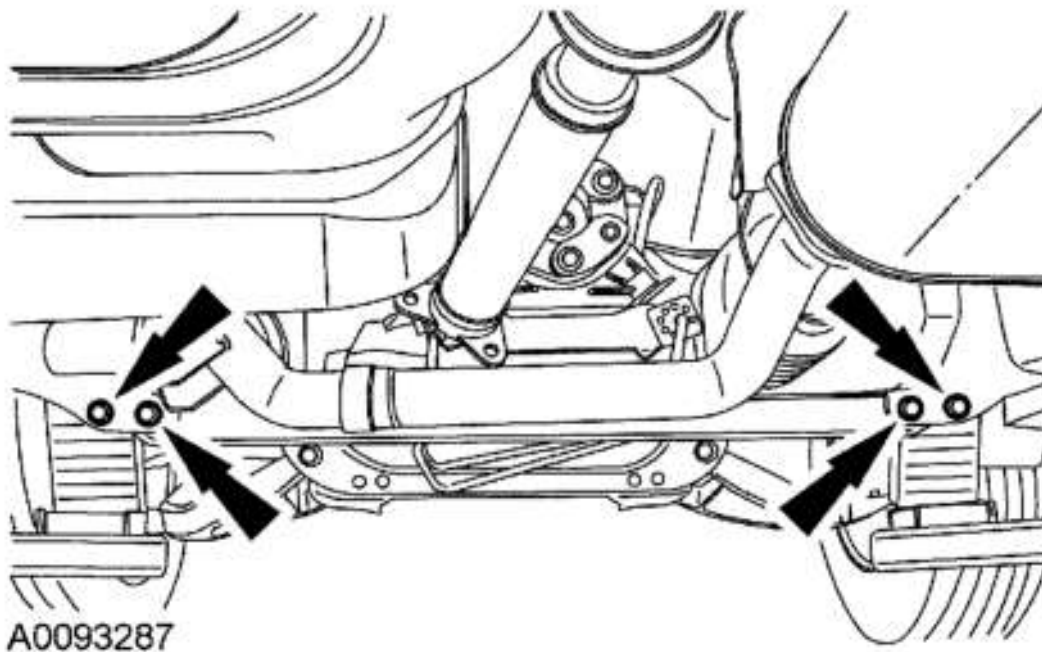


Fig. 98: Removing Crossmember Bolts
Courtesy of FORD MOTOR CO.

26. Remove the 2 rear transmission nuts and the crossmember.

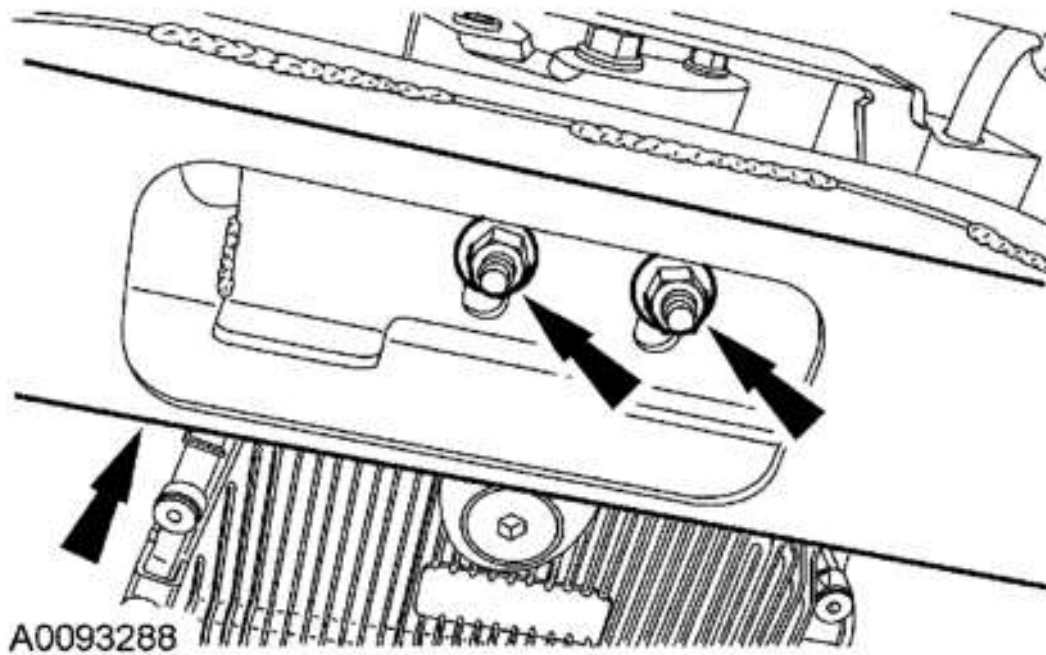


Fig. 99: Removing Rear Transmission Nuts And Crossmember
Courtesy of FORD MOTOR CO.

27. Remove the LH exhaust hanger bolt.

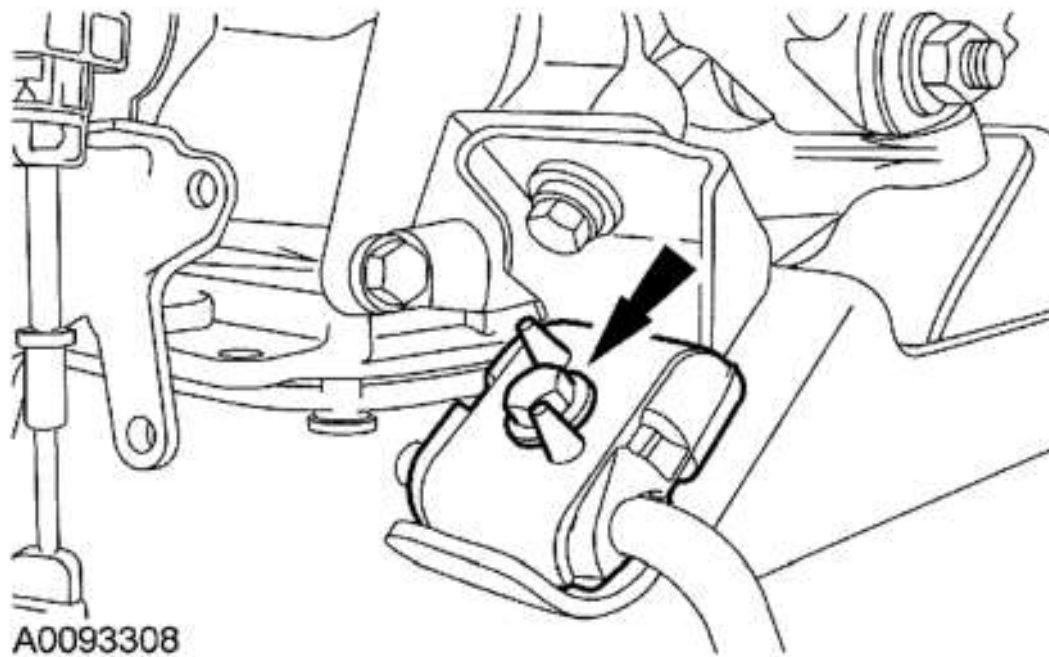


Fig. 100: Removing LH Exhaust Hanger Bolt

Courtesy of FORD MOTOR CO.

28. Remove the RH bolt for the rear transmission support.

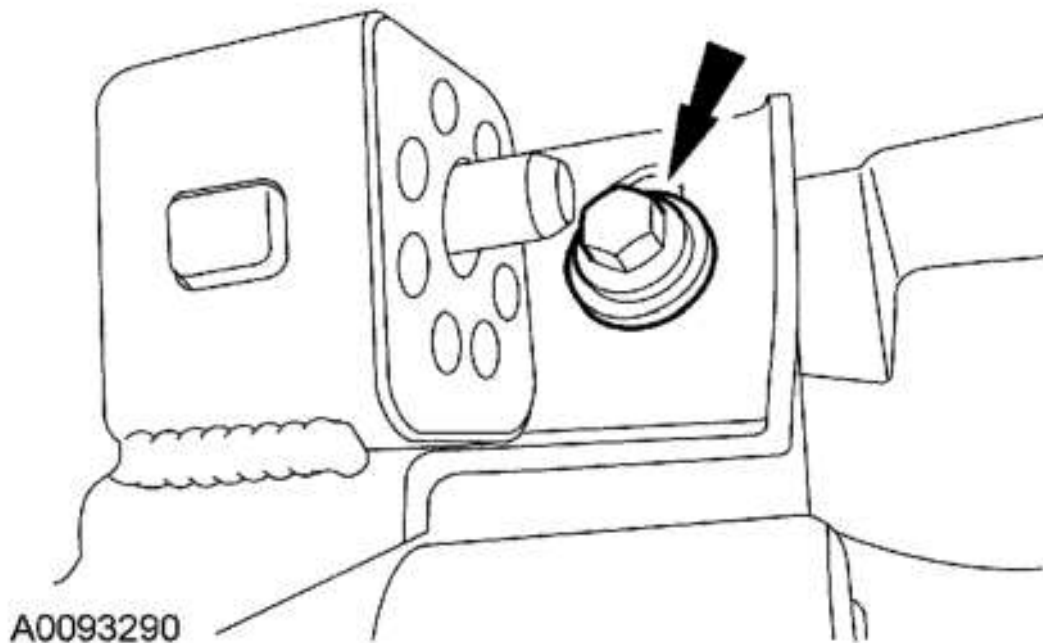


Fig. 101: Removing RH Bolt For Rear Transmission Support
Courtesy of FORD MOTOR CO.

29. Remove the LH bolt for the rear transmission support.
 - Remove the rear transmission support.

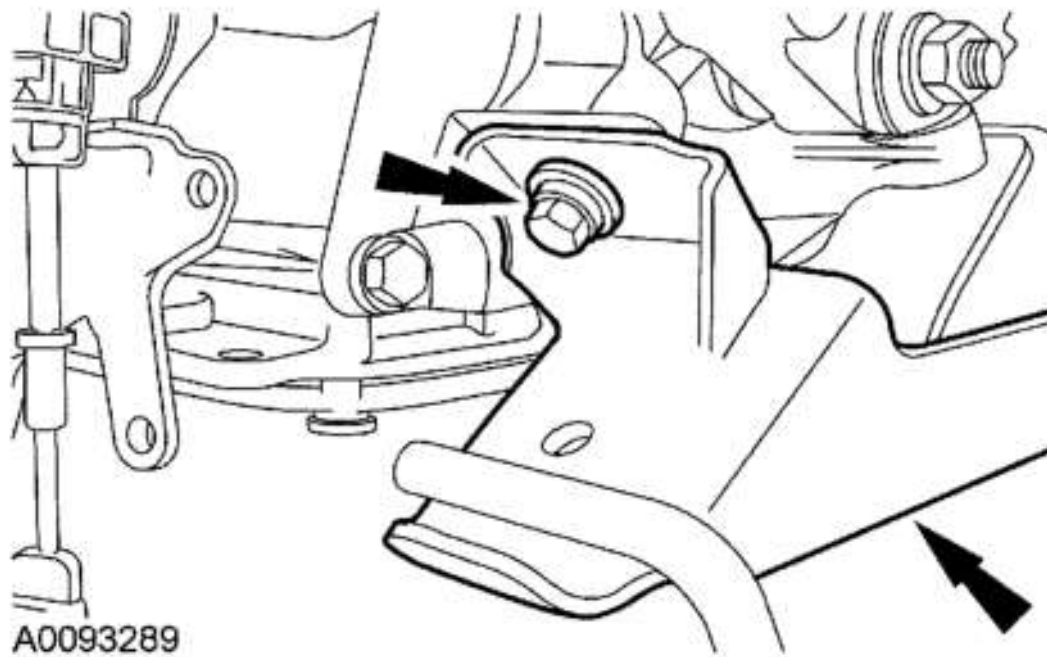


Fig. 102: Removing Rear Transmission Support
Courtesy of FORD MOTOR CO.

30. Disconnect the LH heated oxygen sensor (HO2S) electrical connector from the side of the transmission.

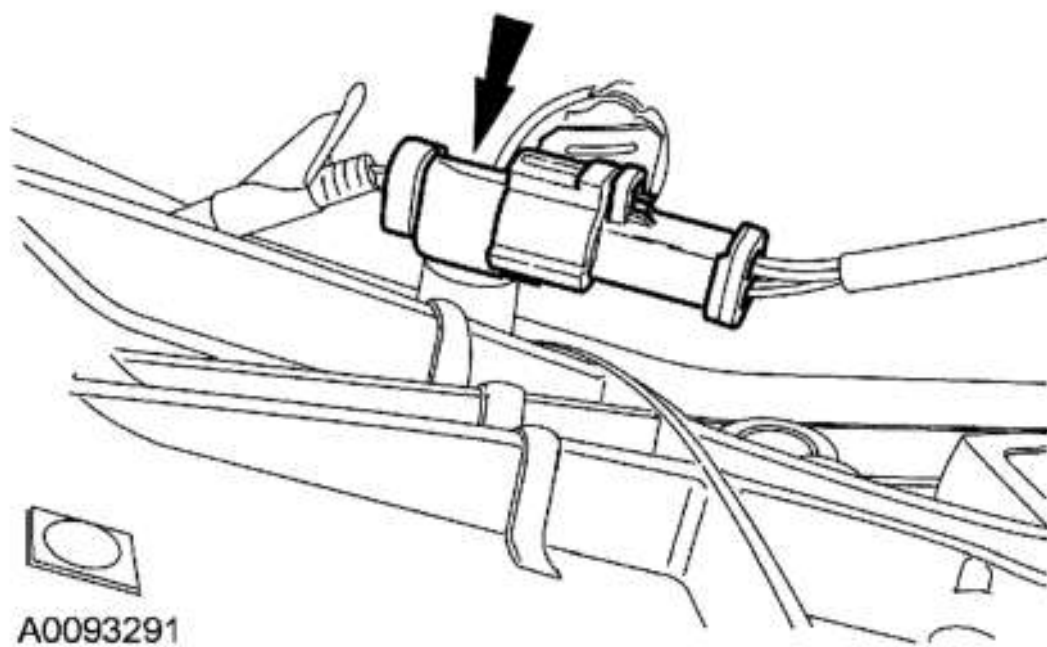


Fig. 103: Disconnecting LH Heated Oxygen Sensor (HO2S) Electrical Connector
Courtesy of FORD MOTOR CO.

31. Disconnect the RH HO2S electrical connector from the side of the transmission.

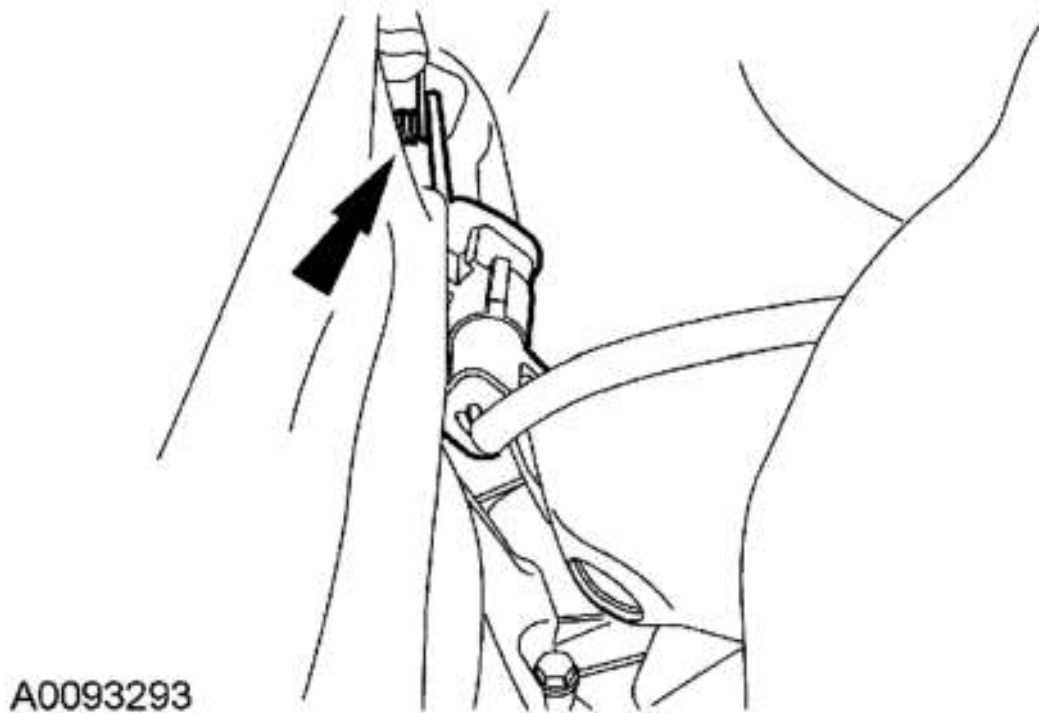
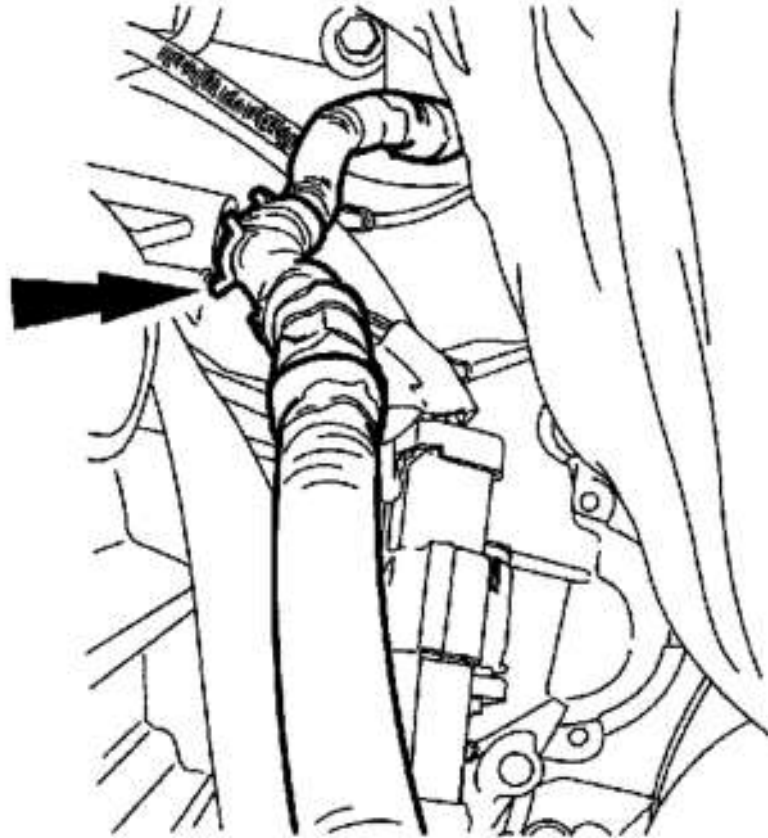


Fig. 104: Disconnecting RH HO2S Electrical Connector From Side Of Transmission
Courtesy of FORD MOTOR CO.

32. Disconnect the wire harness from the top of the transmission.



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Fig. 105: Disconnecting Wire Harness From Top Of Transmission
Courtesy of FORD MOTOR CO.

CAUTION: Do not pull on the wire harness to disconnect the connector or damage to the connector will occur.

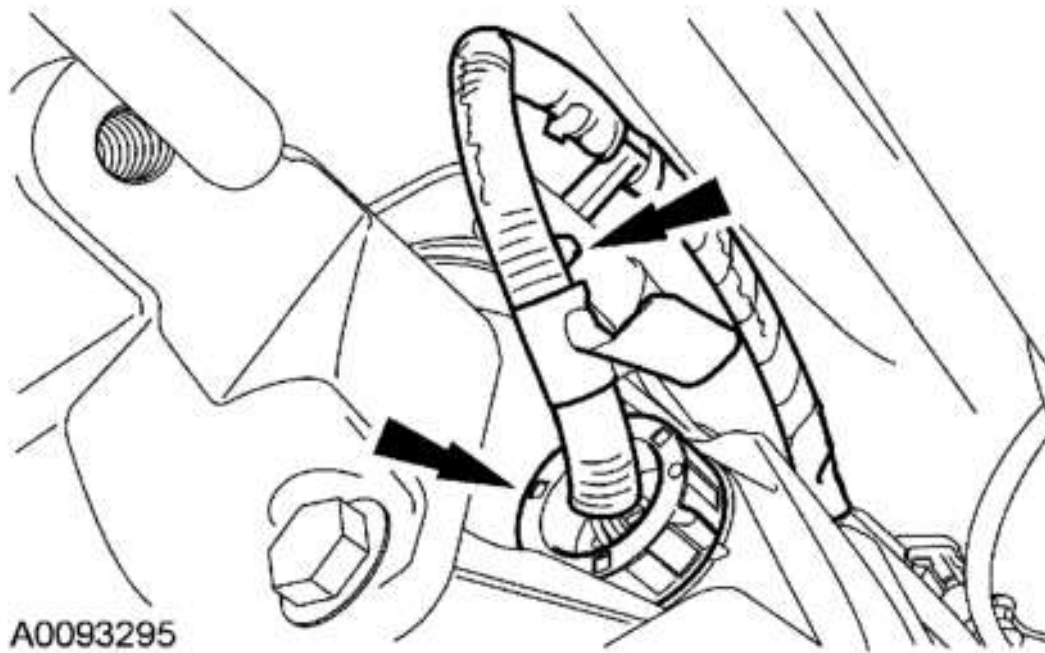
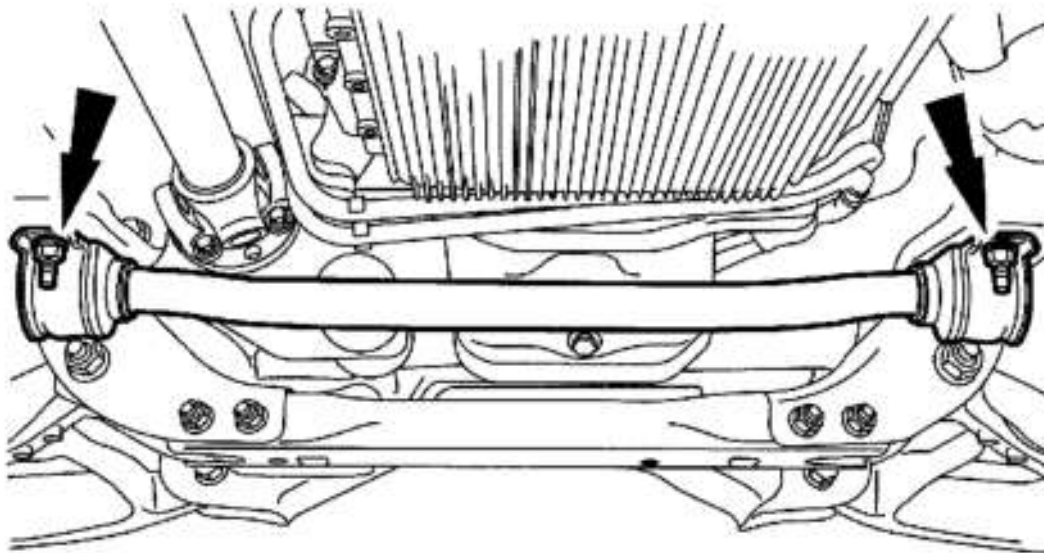


Fig. 106: Disconnecting Main Transmission Electrical Harness
Courtesy of FORD MOTOR CO.

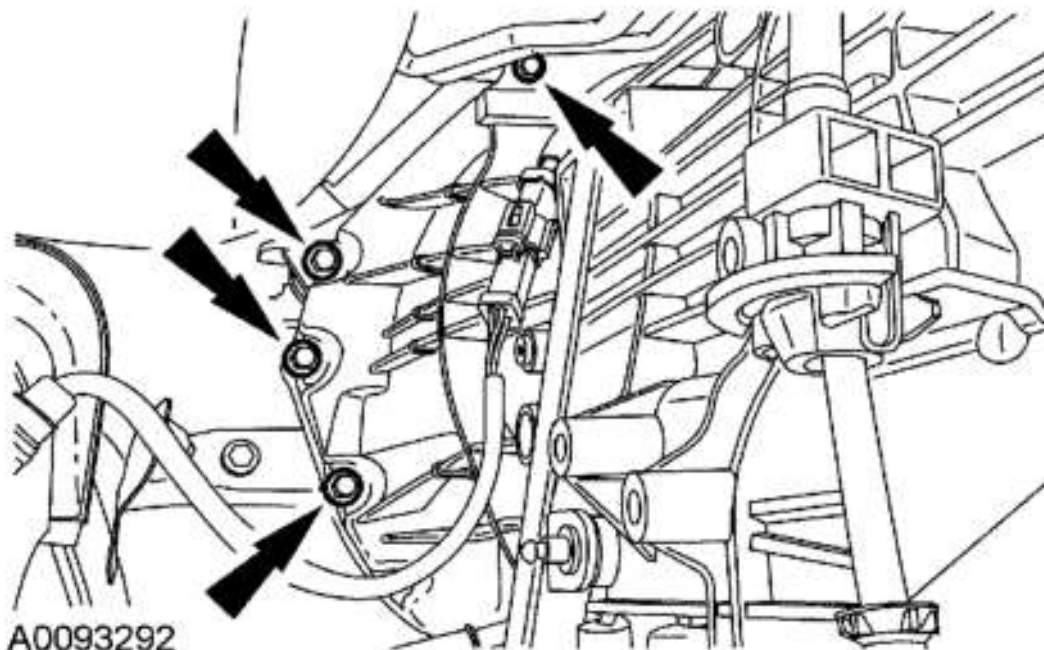
33. Disconnect the main transmission electrical harness by twisting the outer shell and pulling back on the connector. Disconnect the wire harness retainer from the top of the transmission.
34. Remove the 4 nuts for the front sway bar U-shaped brackets and position the sway bar aside.



N0011369

Fig. 107: Removing Nuts For Front Sway Bar U-Shaped Brackets
Courtesy of FORD MOTOR CO.

NOTE: Note the length and the location of the bolts during removal.



A0093292

Fig. 108: Removing 7 Transmission-To-Engine Retaining Bolts
Courtesy of FORD MOTOR CO.

- 35. Remove the 7 transmission-to-engine retaining bolts.
- 36. Slide the transmission back enough to install the special tool.

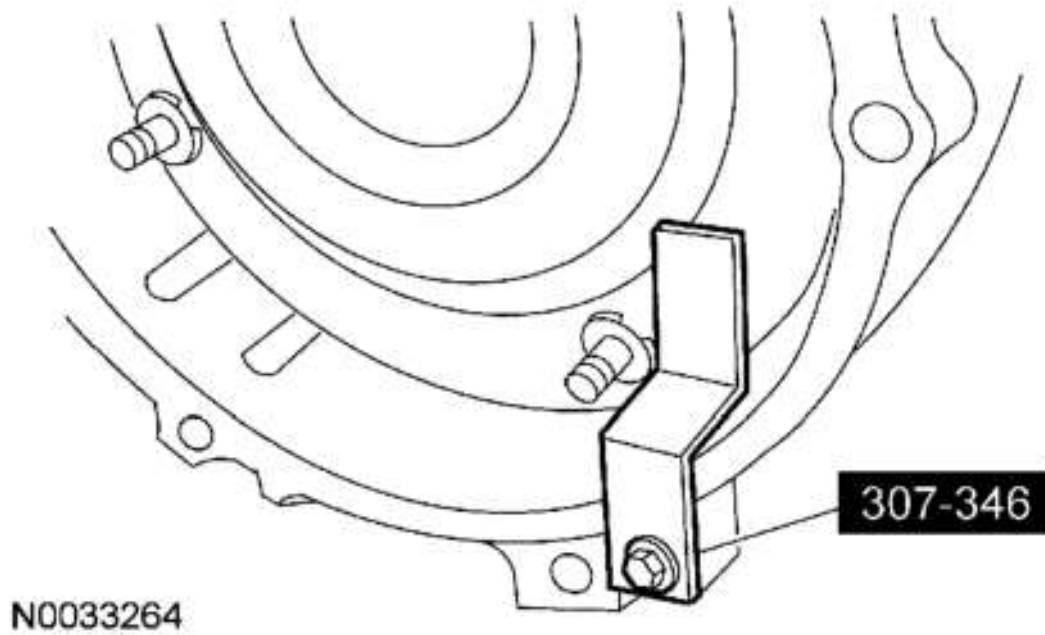


Fig. 109: Installing Special Tool
Courtesy of FORD MOTOR CO.

- 37. Remove the transmission from the vehicle.
- 38. If the transmission is to be overhauled or if installing a new transmission, carry out transmission fluid cooler backflushing and cleaning. For additional information, refer to **TRANSMISSION FLUID COOLER - BACKFLUSHING AND CLEANING**.

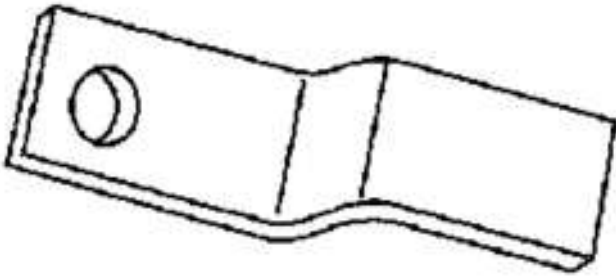
TRANSMISSION - 4X2

Special Tool(s)

TRANSMISSION SPECIAL TOOL - 4x2

	Retainer, Torque Converter 307-346 (T97T-
--	---

7902-A)



ST1636-A

Removal

1. With the vehicle in NEUTRAL, position it on a hoist. For additional information, refer to **JACKING & LIFTING** .
2. Disconnect the battery ground cable. For additional information, refer to **BATTERY, MOUNTING AND CABLES** .

NOTE: **If transmission disassembly or installation of a new transmission is necessary, the transmission fluid will need to be drained.**

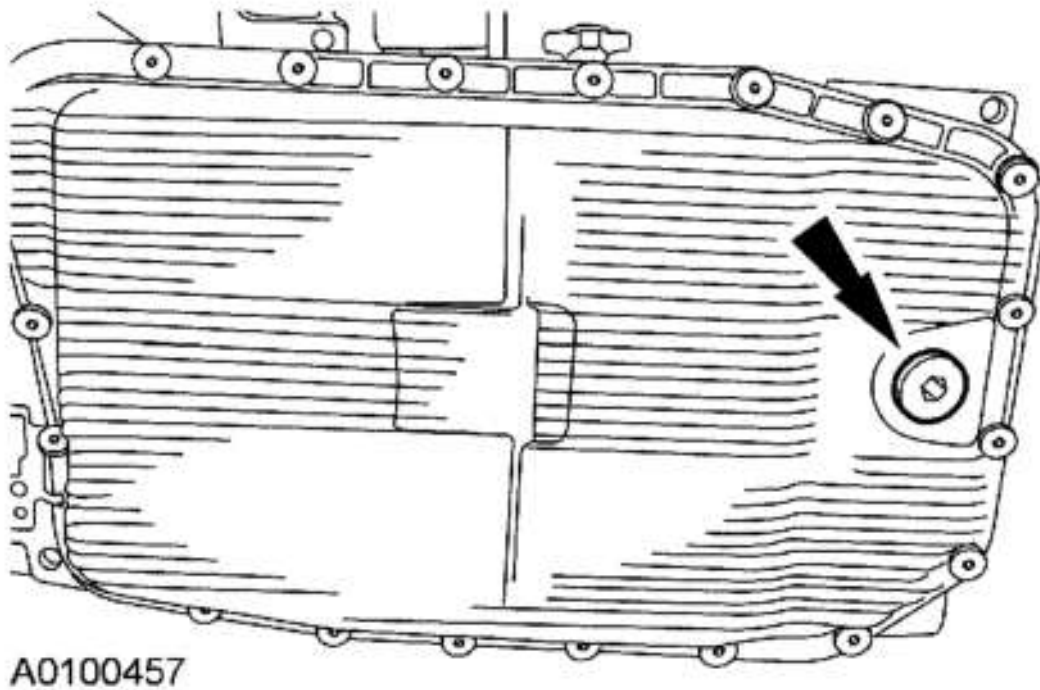


Fig. 110: Identifying Fluid Pan Drain Plug
Courtesy of FORD MOTOR CO.

3. Remove and discard the transmission fluid pan drain plug and allow the fluid to drain.
4. Install the transmission fluid pan drain plug
 - Tighten to 8 Nm (71 lb-in).

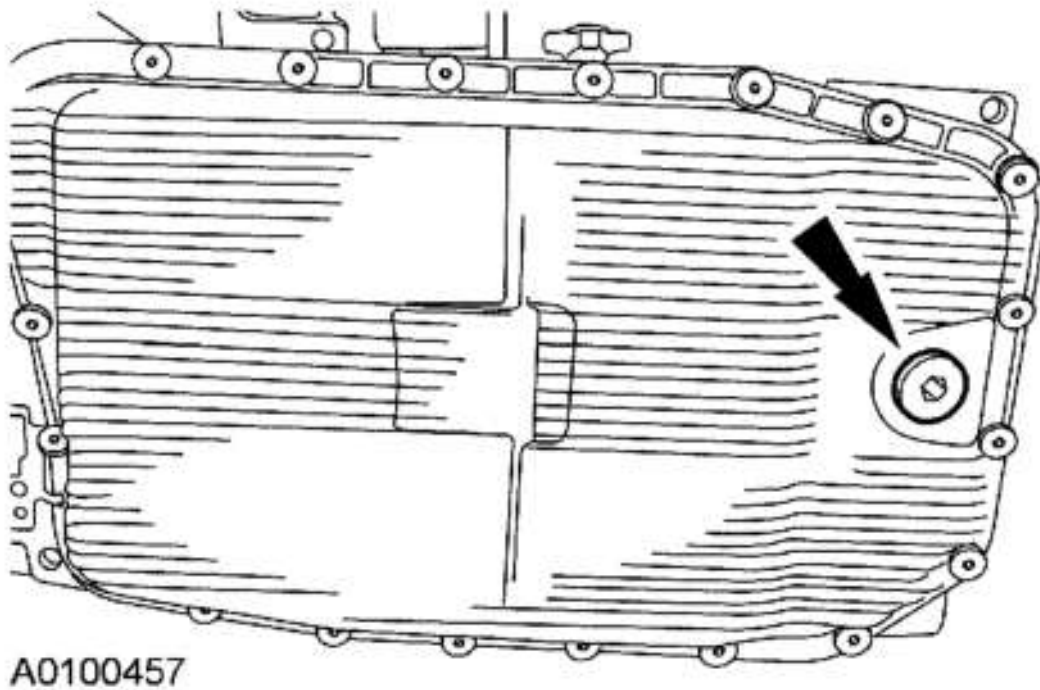


Fig. 111: Identifying Fluid Pan Drain Plug
Courtesy of FORD MOTOR CO.

5. Mark the driveshaft flange with the insulator flange and the output shaft flange for correct alignment during installation.
 - Remove the 3 bolts and nuts and position the driveshaft aside.

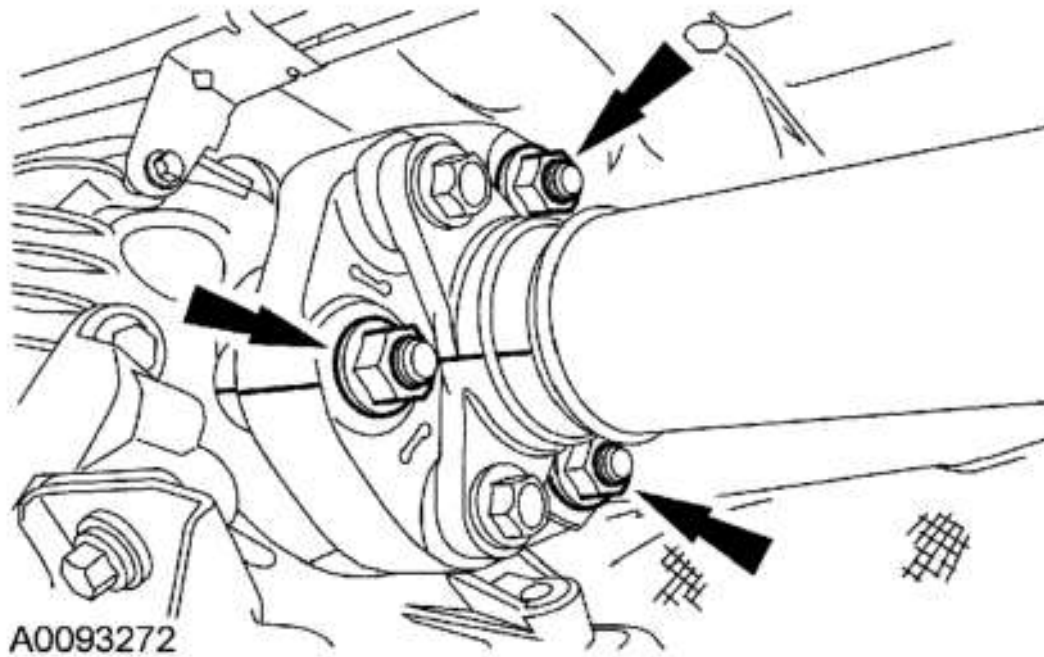


Fig. 112: Removing Bolts
Courtesy of FORD MOTOR CO.

6. Remove the fuel line bracket bolt from the bracket.
 - Position the bracket and lines aside.

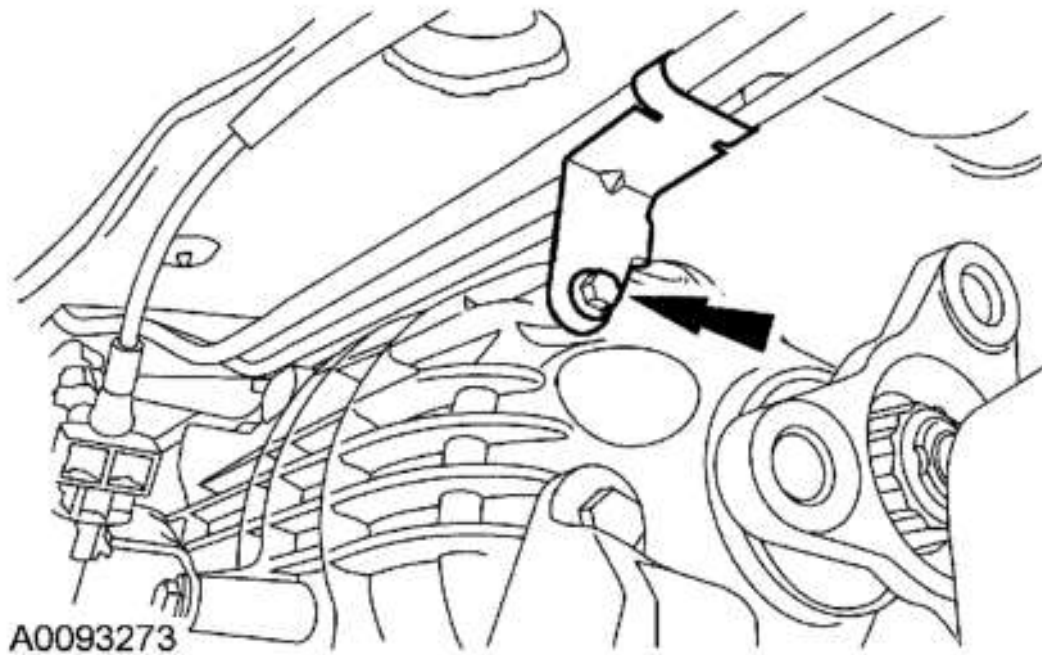


Fig. 113: Removing Fuel Line Bracket Bolt
Courtesy of FORD MOTOR CO.

7. Disconnect the shift cable end and remove the shift cable bracket bolts.
 - Position the cable and bracket aside.

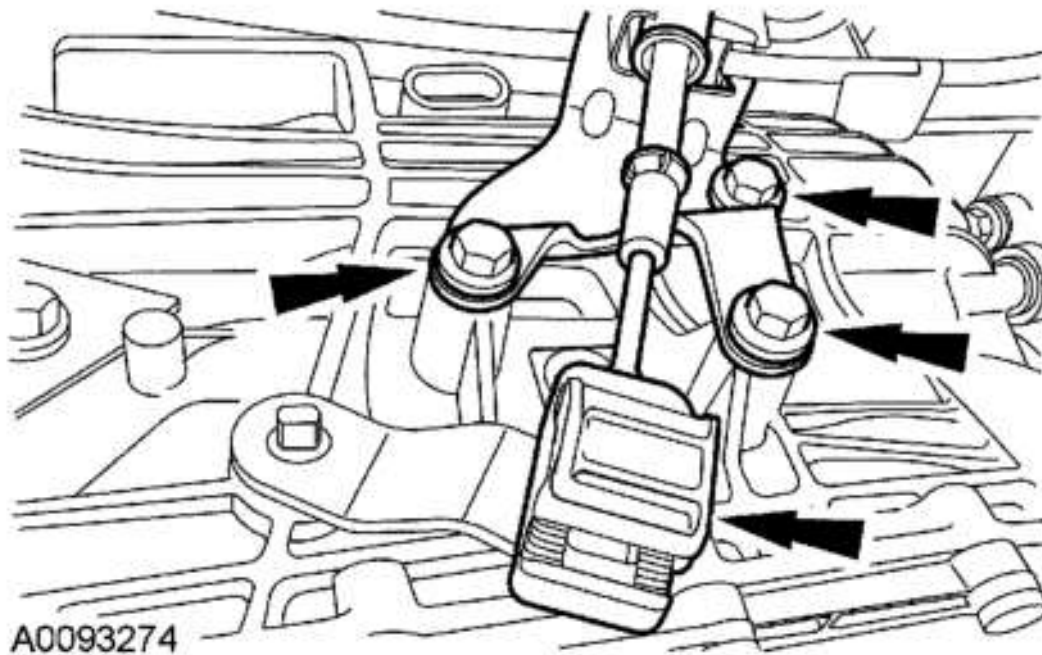


Fig. 114: Locating Shift Cable Bracket Bolts
Courtesy of FORD MOTOR CO.

8. Remove the flexplate inspection cover bolts and remove the inspection cover.

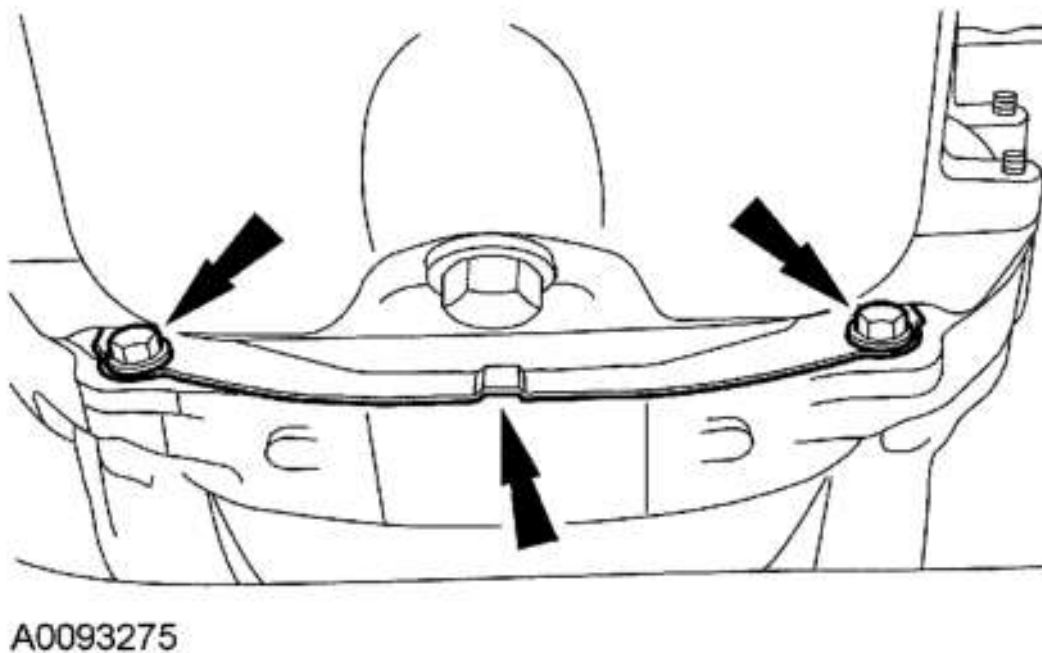


Fig. 115: Removing Flexplate Inspection Cover Bolts

Courtesy of FORD MOTOR CO.

9. Remove the rubber torque converter nut access plug.

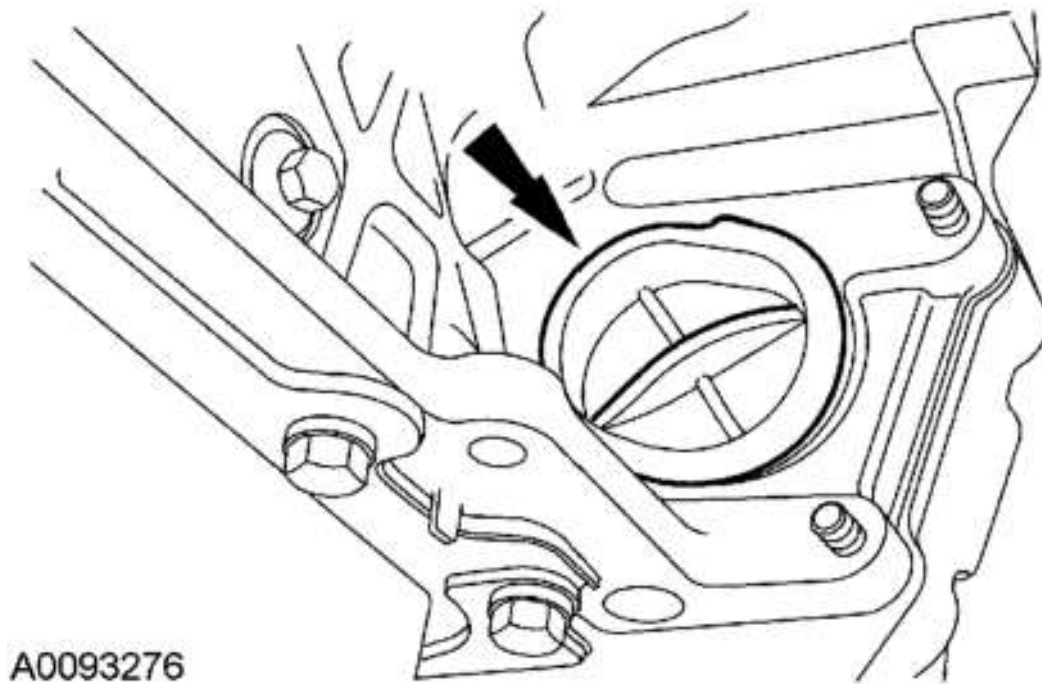


Fig. 116: Removing Rubber Torque Converter Access Plug
Courtesy of FORD MOTOR CO.

10. Remove and discard the 4 flexplate-to-torque converter nuts.

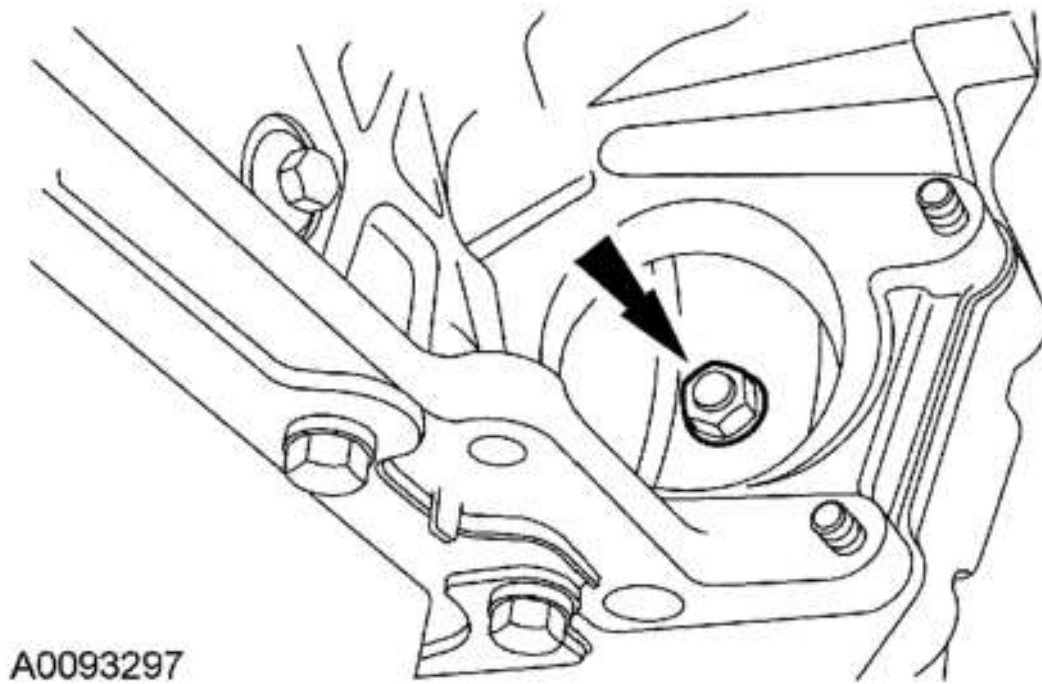


Fig. 117: Discarding Flexplate-To-Torque Converter Nuts
Courtesy of FORD MOTOR CO.

11. Remove the plastic starter motor electrical connector cap.

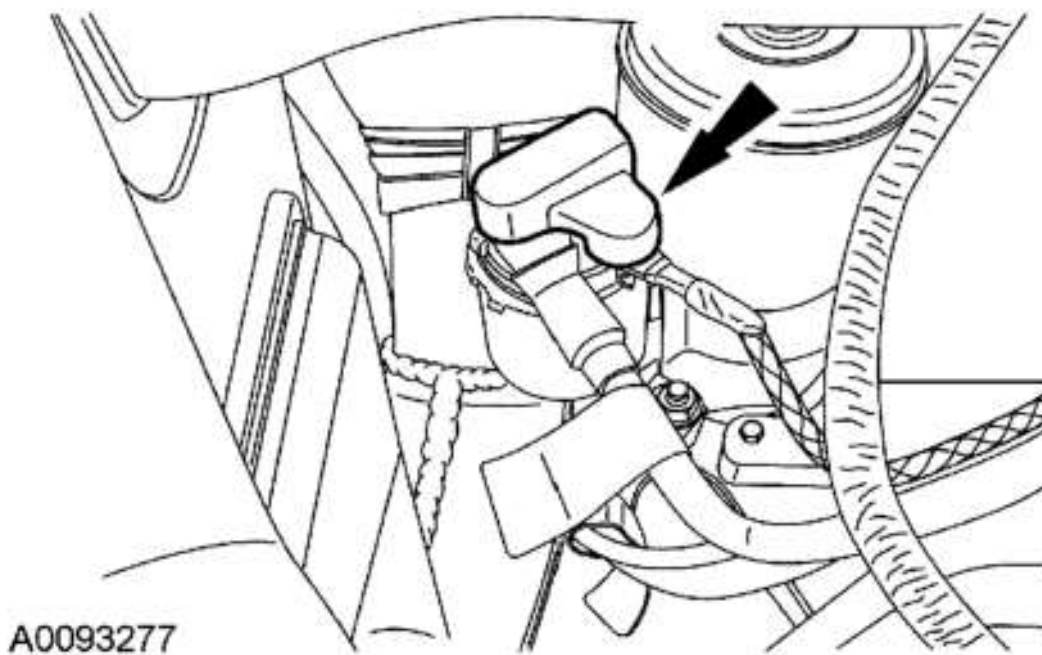


Fig. 118: Removing Plastic Starter Motor Electrical Connector
Courtesy of FORD MOTOR CO.

12. Remove the starter motor electrical connectors.

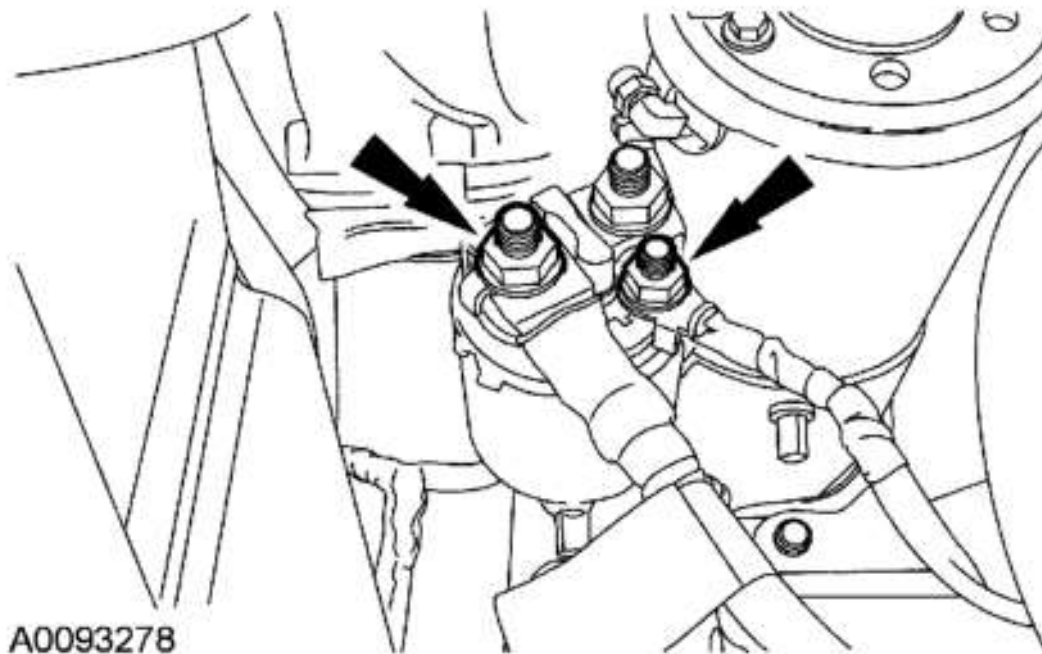


Fig. 119: Removing Starter Motor Electrical Connectors
Courtesy of FORD MOTOR CO.

13. Remove the ground wire from the stud.

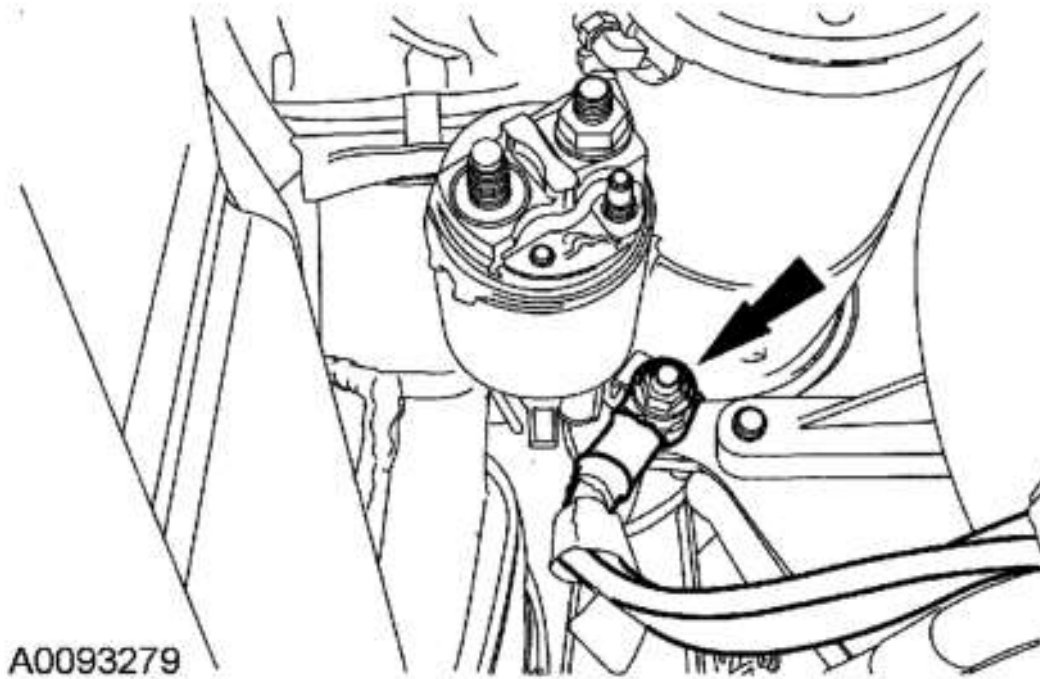


Fig. 120: Removing Ground Wire From Stud
Courtesy of FORD MOTOR CO.

14. Remove the 3 bolts and the starter motor.

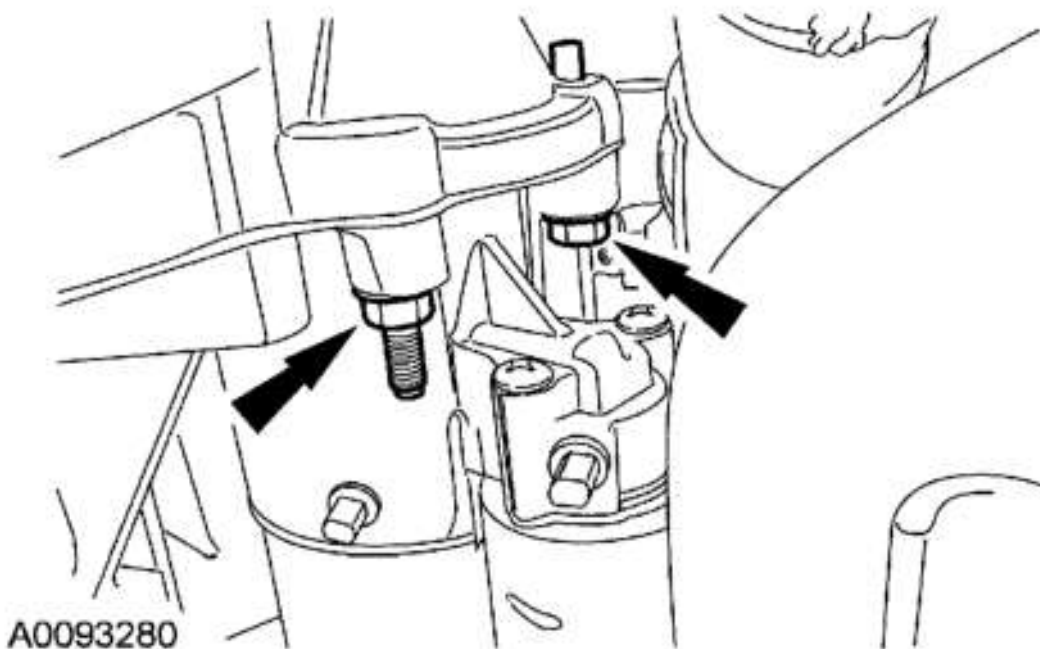


Fig. 121: Removing Bolts And Starter Motor
Courtesy of FORD MOTOR CO.

NOTE: Note the band seals and backer rings may stick into the case. Remove the band seals and backer rings if still in the case.

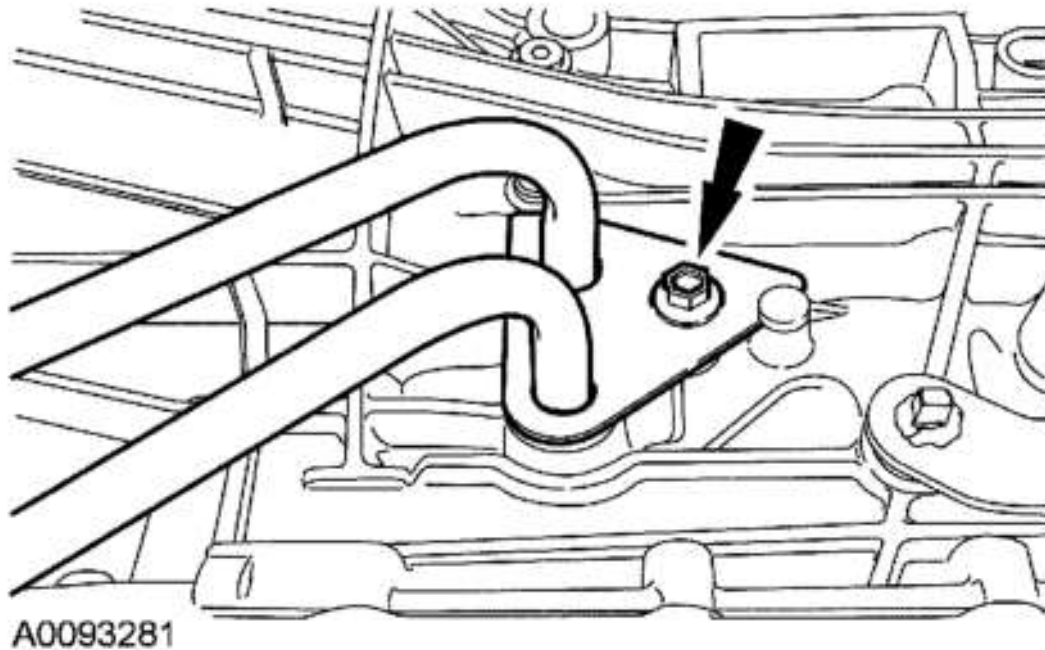


Fig. 122: Removing Transmission Cooler Tube Bracket Bolt
Courtesy of FORD MOTOR CO.

15. Remove the transmission cooler tube bracket bolt and the cooler tubes.
16. Remove the transmission bolt retaining the transmission fluid cooler tube retainer and position it aside.

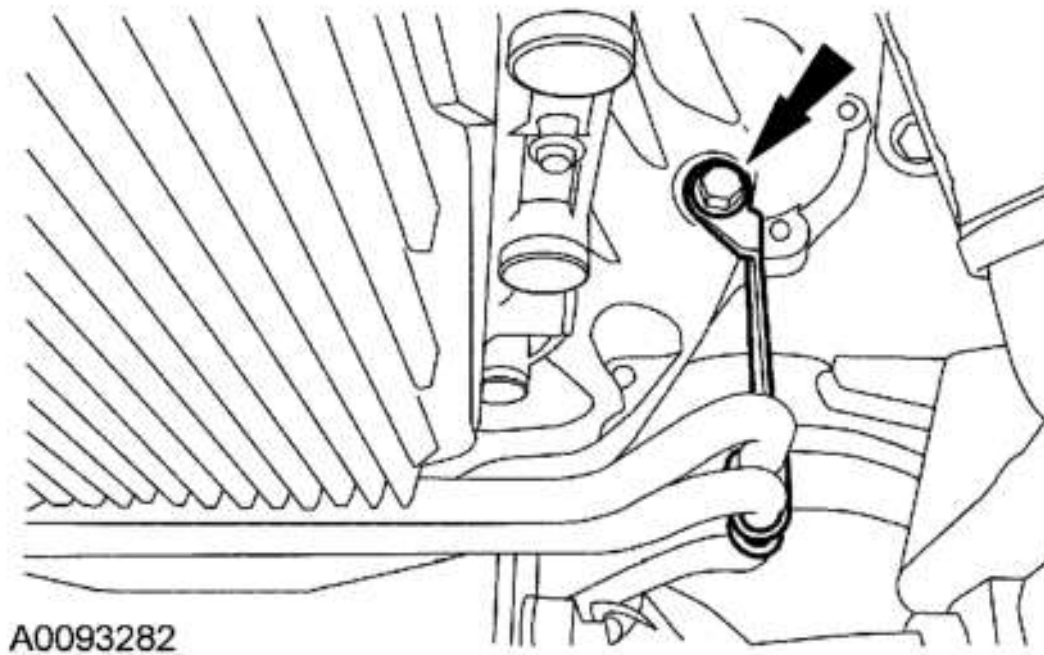


Fig. 123: Removing Transmission Bolt Retaining Transmission Fluid Cooler Tube
Courtesy of FORD MOTOR CO.

17. Disconnect the engine oil level sensor electrical connector.

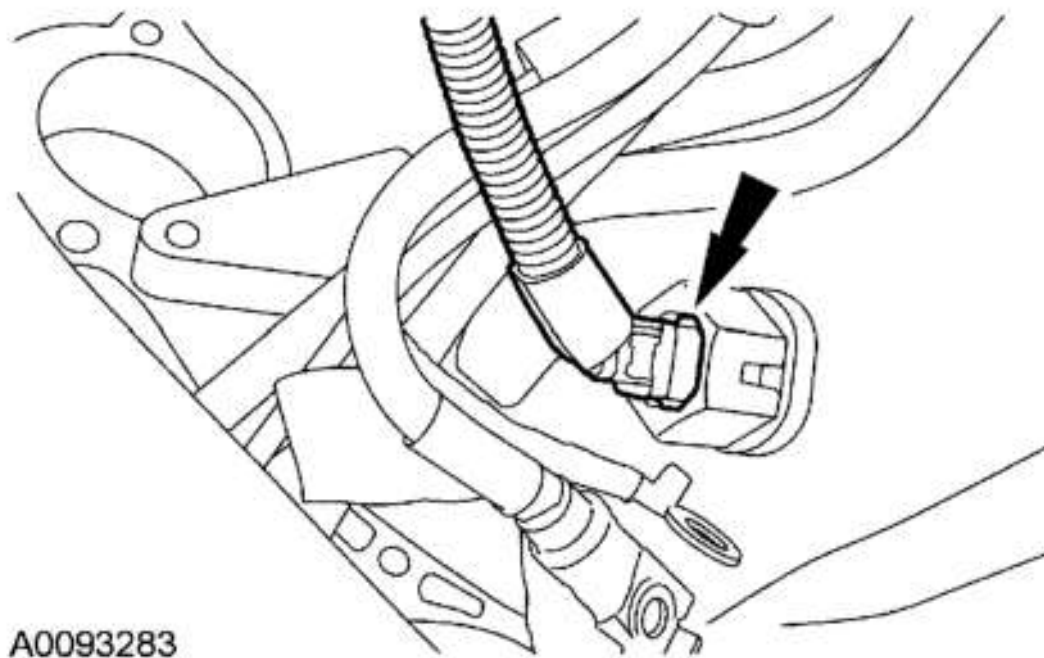


Fig. 124: Disconnecting Engine Oil Level Sensor Electrical Connector
Courtesy of FORD MOTOR CO.

18. Disconnect the fluid cooler tube.

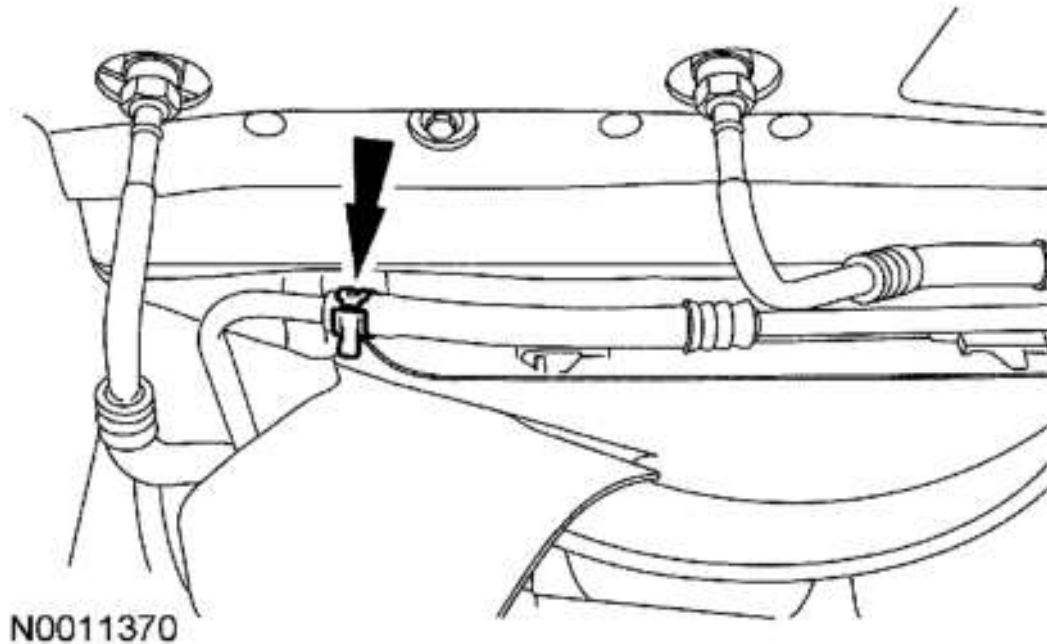


Fig. 125: Disconnecting Fluid Cooler Tube
Courtesy of FORD MOTOR CO.

19. Remove the transmission fluid cooler tube bracket nut and position the bracket and lines aside.

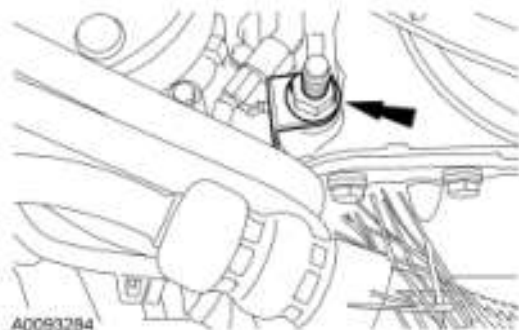


Fig. 126: Identifying Transmission Fluid Cooler Tube Bracket
Courtesy of FORD MOTOR CO.

20. Remove the RH exhaust shield bolt.

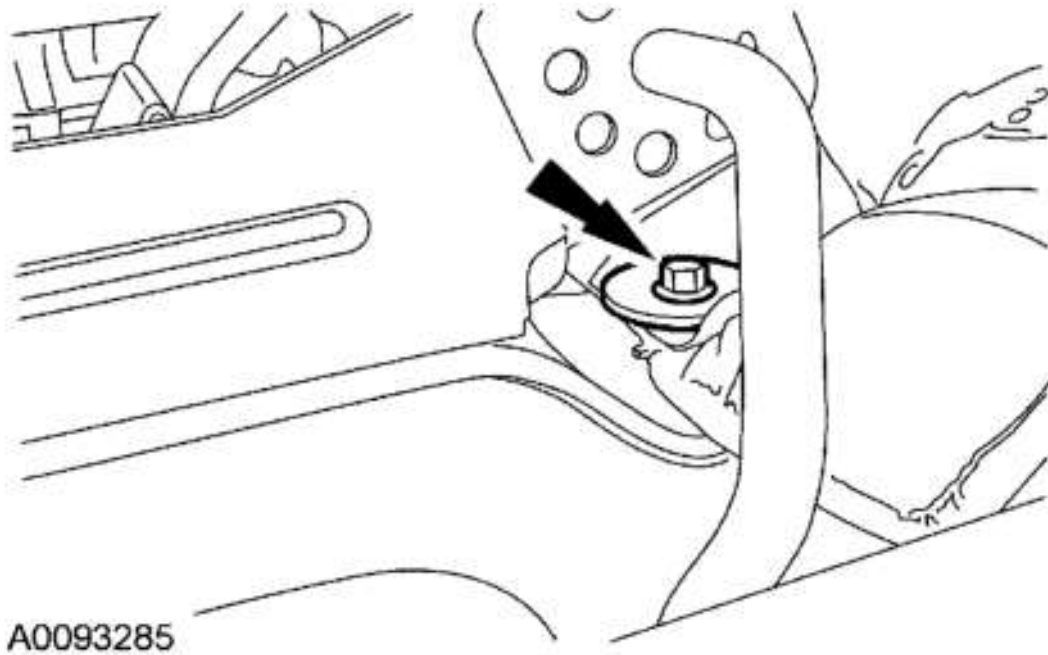


Fig. 127: Removing RH Exhaust Shield Bolt
Courtesy of FORD MOTOR CO.

21. Remove the LH exhaust shield bolt.

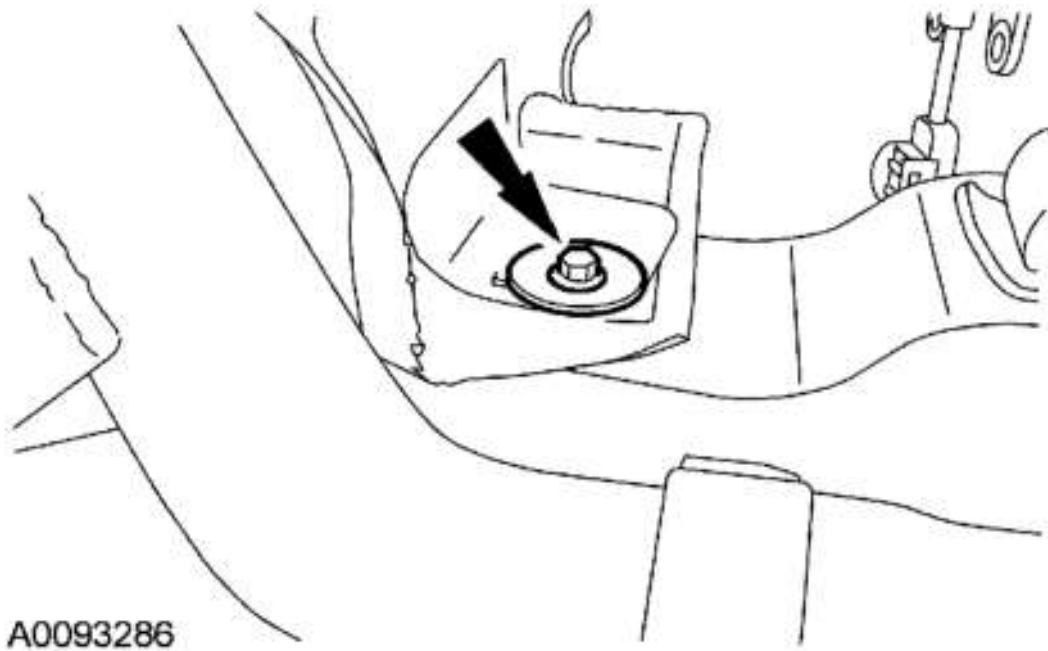


Fig. 128: Removing LH Exhaust Shield Bolt

Courtesy of FORD MOTOR CO.

CAUTION: This new style pan is designed with the 2 outside ribs of the pan taller than the rest for side-to-side support. The transmission can be supported on the fluid pan as long as it is resting on the 2 outer ribs, if not, damage to the fluid pan will occur.

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

NOTE: Make sure that the transmission is securely fastened to the transmission jack.

22. Position a suitable high-lift transmission jack under the transmission.
23. Remove the 4 rear crossmember bolts.

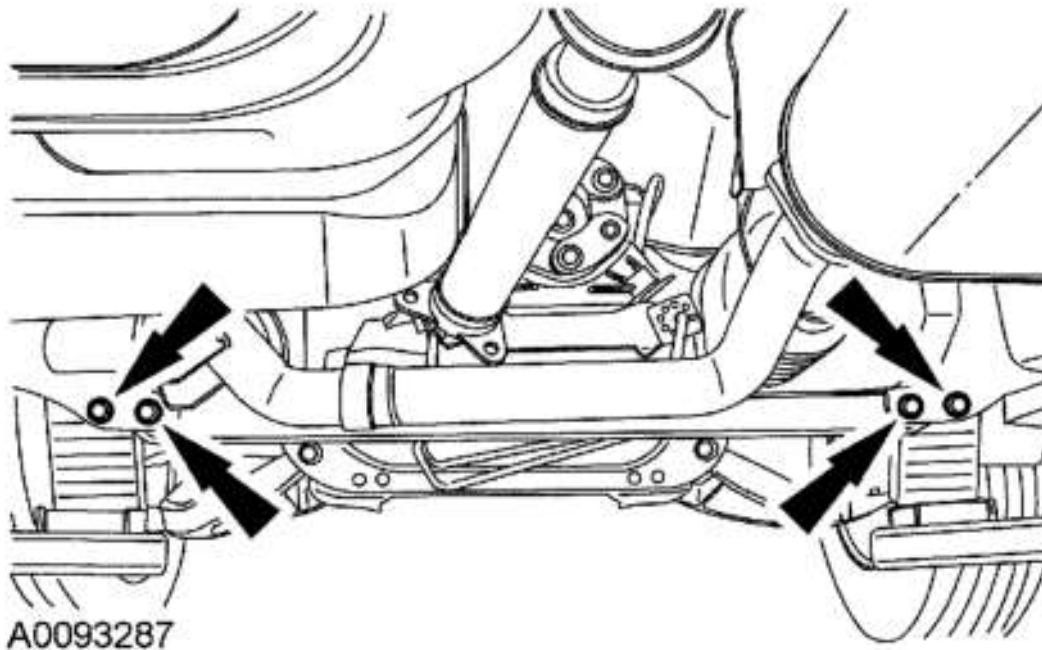


Fig. 129: Removing Rear Crossmember Bolts
Courtesy of FORD MOTOR CO.

24. Remove the 2 rear transmission nuts and the crossmember.

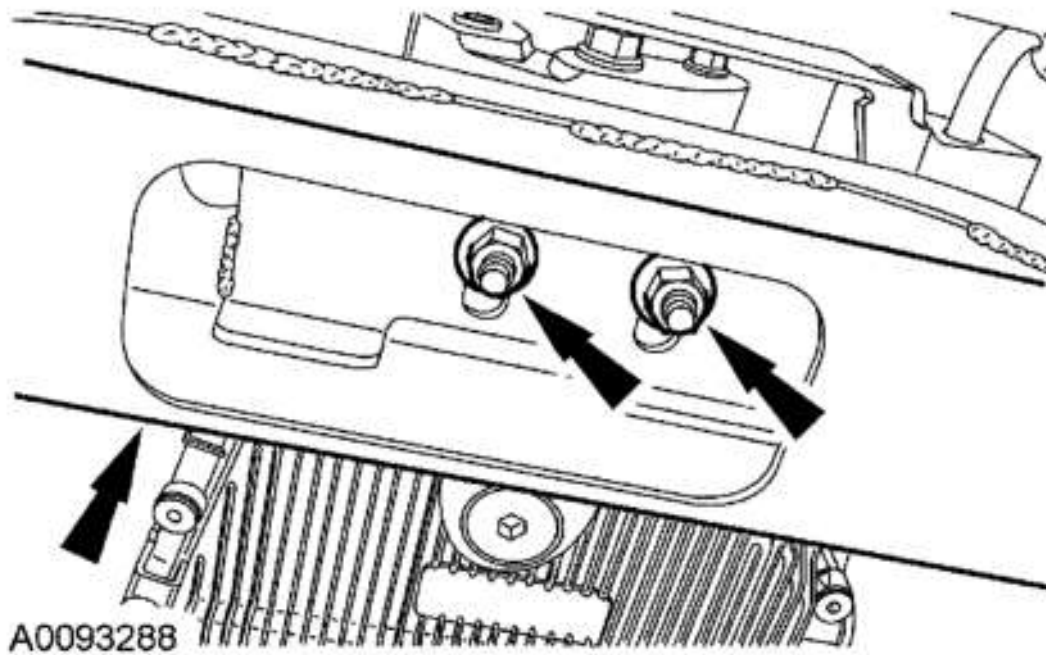


Fig. 130: Removing Rear Transmission Nuts And Crossmember
Courtesy of FORD MOTOR CO.

25. Remove the LH exhaust hanger bolt.

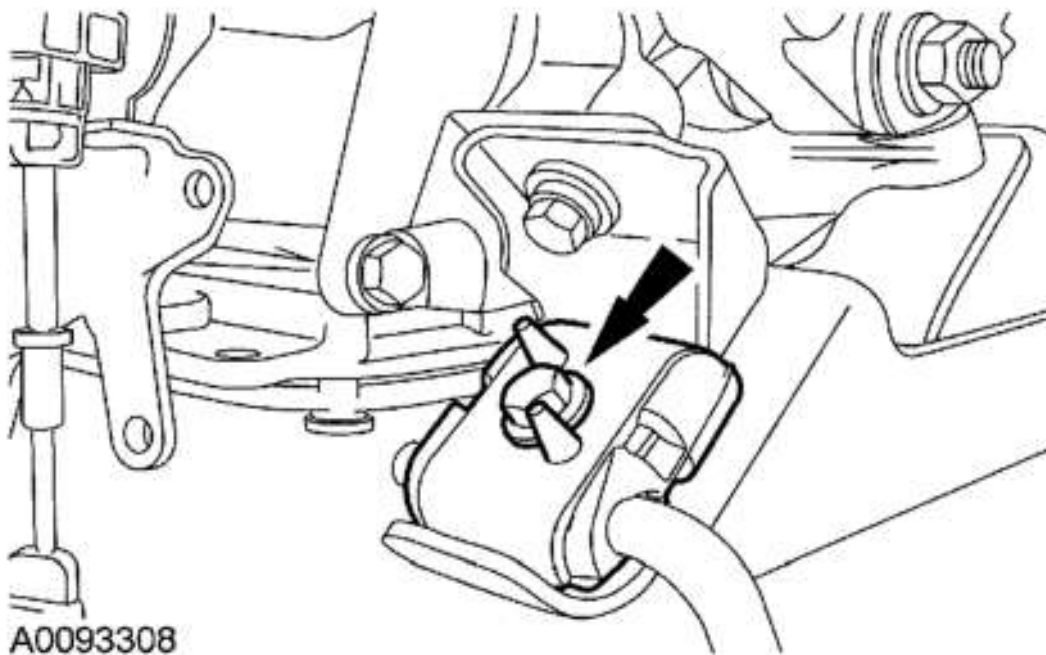


Fig. 131: Removing LH Exhaust Hanger Bolt

Courtesy of FORD MOTOR CO.

26. Remove the RH bolt for the rear transmission support.

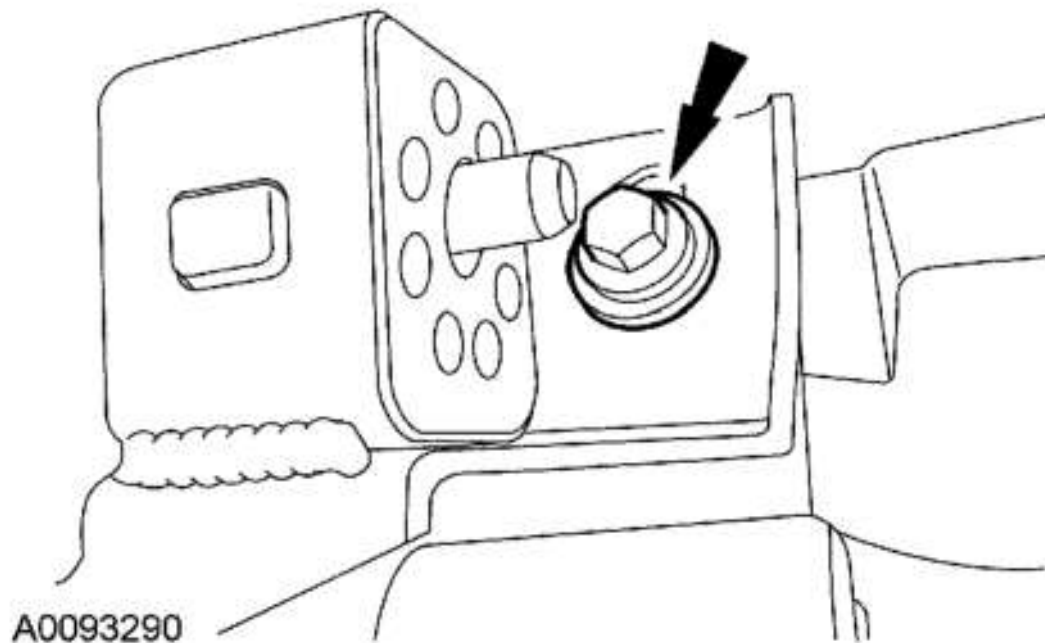


Fig. 132: Removing RH Bolt For Rear Transmission Support
Courtesy of FORD MOTOR CO.

27. Remove the LH bolt for the rear transmission support. Remove the rear transmission support.

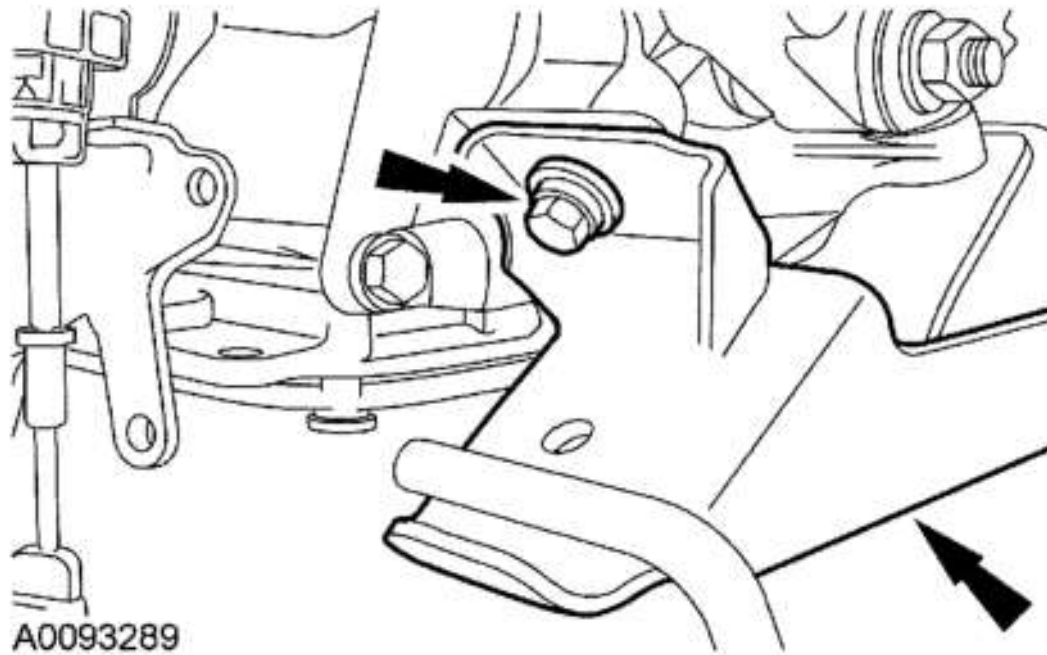


Fig. 133: Removing Rear Transmission Support
Courtesy of FORD MOTOR CO.

28. Disconnect the LH heated oxygen sensor (HO2S) electrical connector from the side of the transmission.

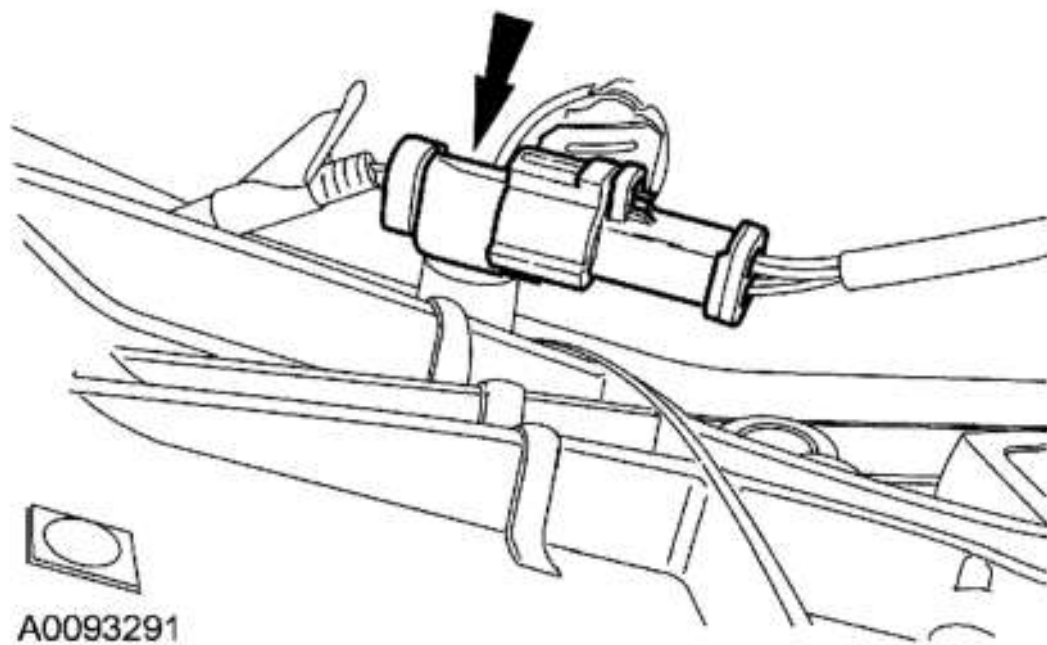


Fig. 134: Disconnecting LH Heated Oxygen Sensor (HO2S) Electrical Connector
Courtesy of FORD MOTOR CO.

29. Disconnect the RH HO2S electrical connector from the side of the transmission.

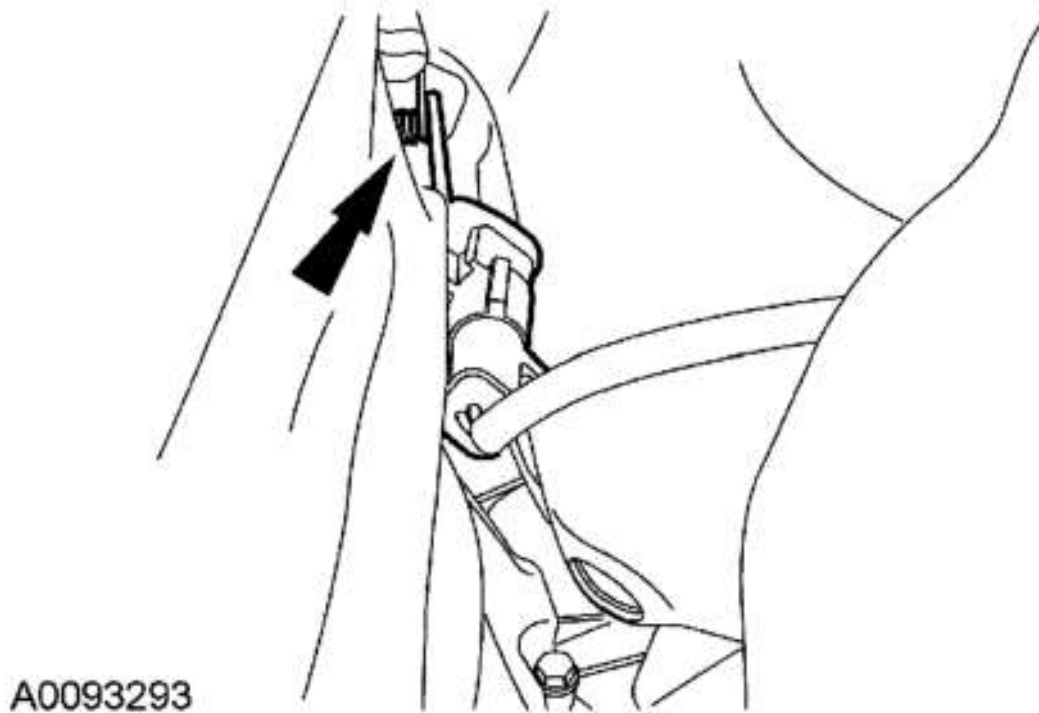
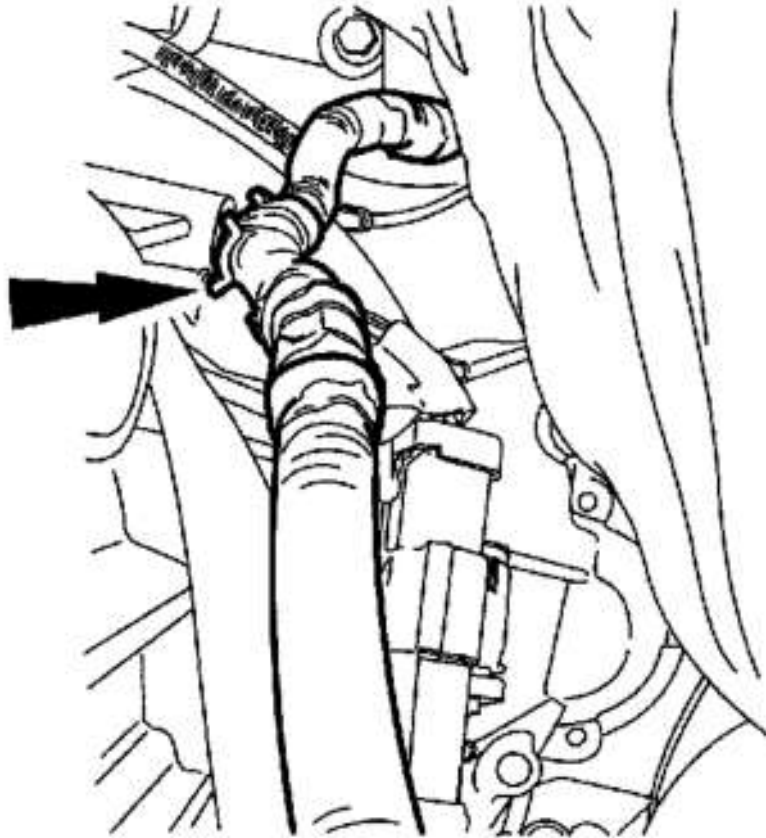


Fig. 135: Disconnecting RH HO2S Electrical Connector
Courtesy of FORD MOTOR CO.

30. Disconnect the wire harness from the top of the transmission.



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Fig. 136: Disconnecting Wire Harness From Top Of Transmission
Courtesy of FORD MOTOR CO.

CAUTION: Do not pull on the wire harness to disconnect the connector or damage to the connector will occur.

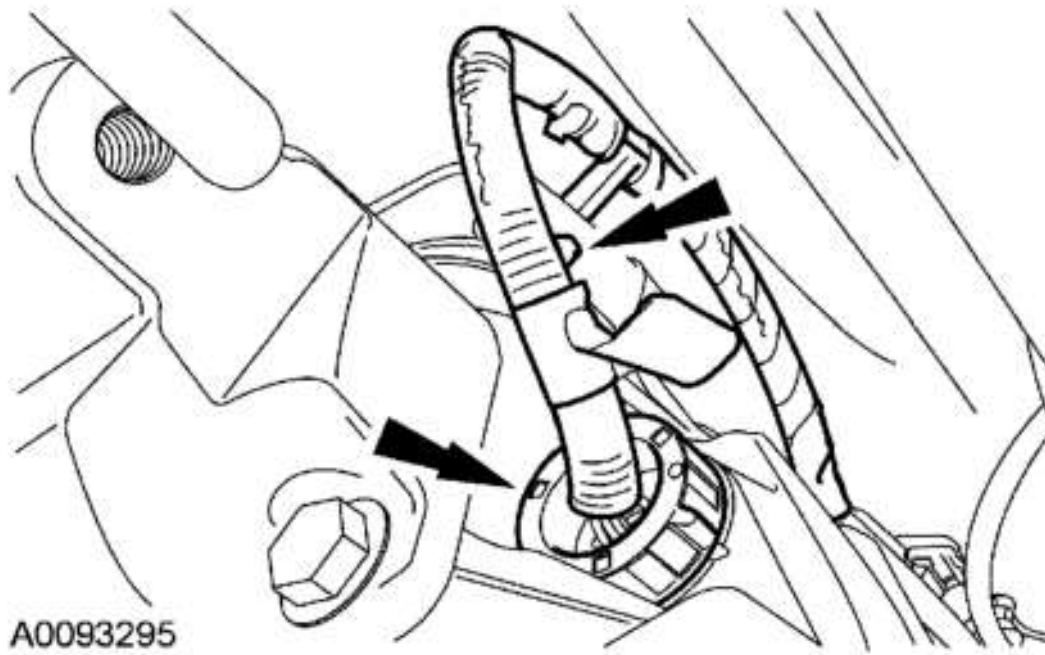
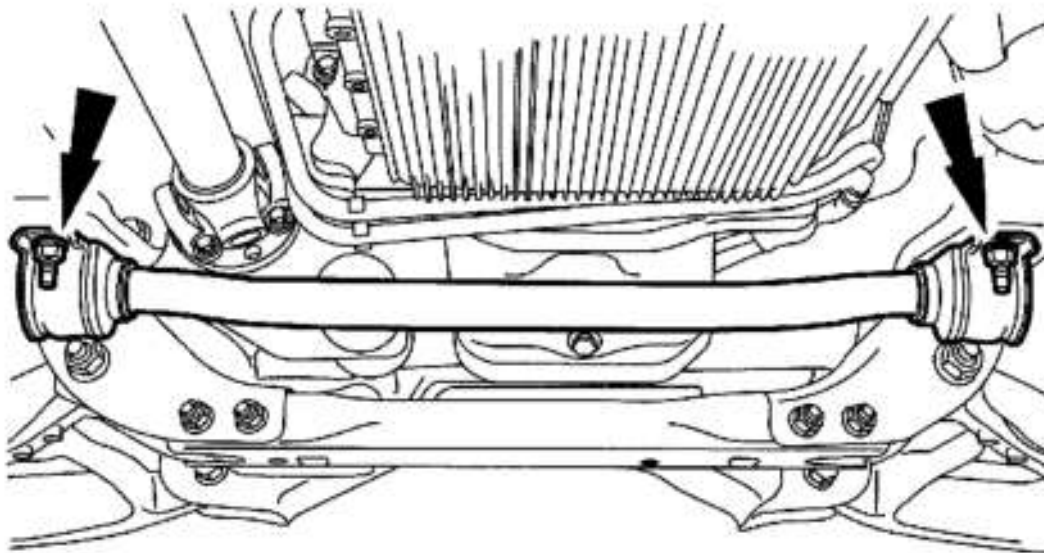


Fig. 137: Disconnecting Wire Harness Retainer
Courtesy of FORD MOTOR CO.

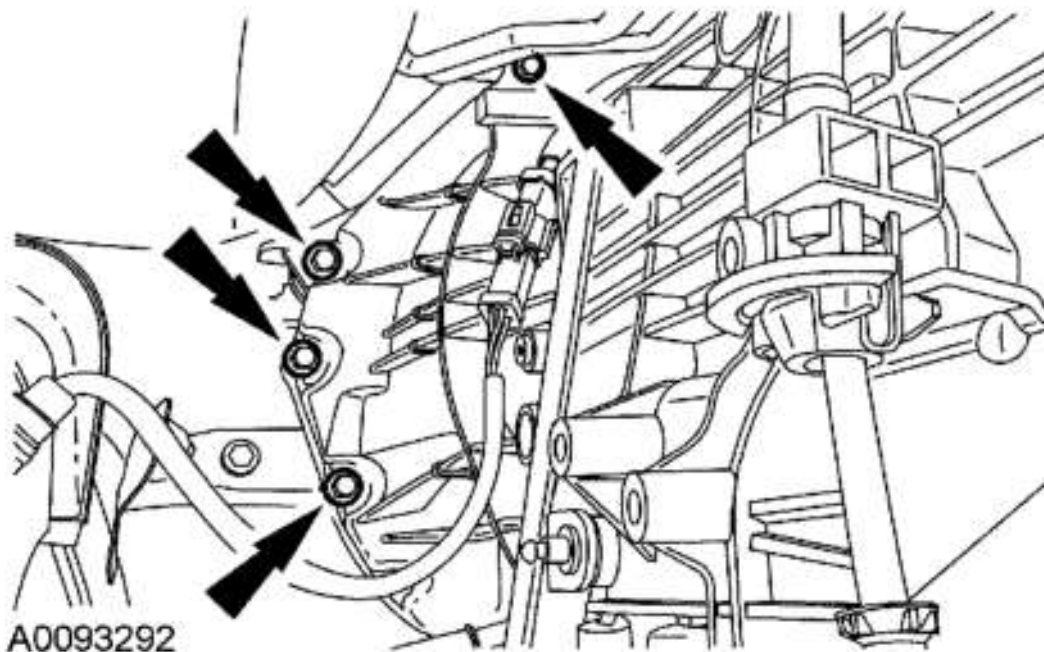
31. Disconnect the main transmission electrical harness by twisting the outer shell and pulling back on the connector. Disconnect the wire harness retainer from the top of the transmission.
32. Remove the 4 nuts for the front sway bar U-shaped brackets. Position the sway bar aside.



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Fig. 138: Removing Nuts From Front Sway Bar U-Shaped Brackets
Courtesy of FORD MOTOR CO.

NOTE: Note the length and the location of the bolts during removal.



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Fig. 139: Removing Transmission-To-Engine Retaining Bolts
Courtesy of FORD MOTOR CO.

33. Remove the 7 transmission-to-engine retaining bolts.
34. Slide the transmission back enough to install the special tool.

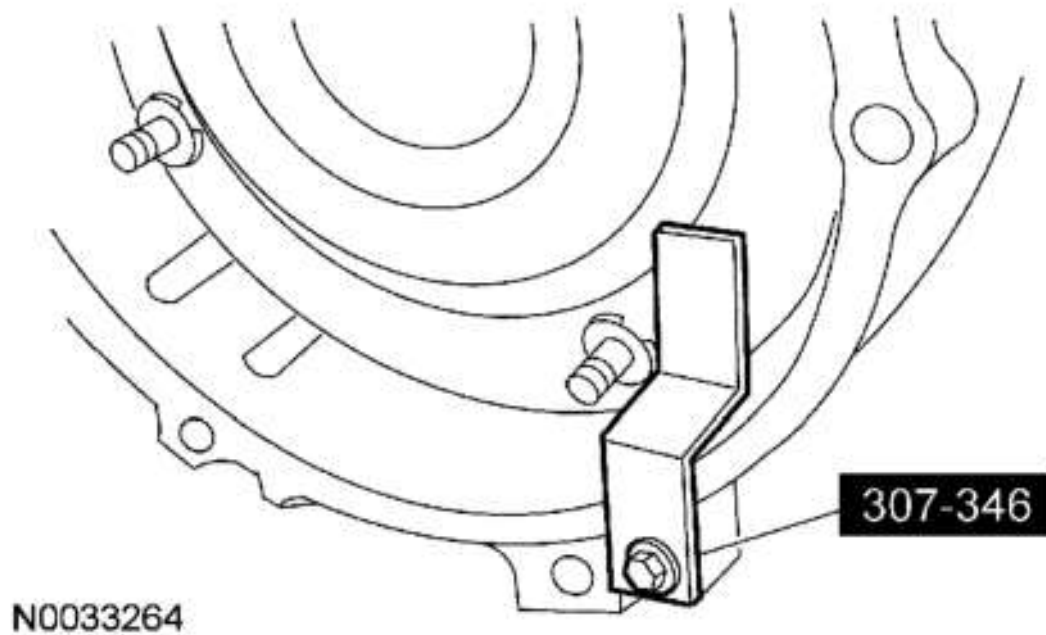


Fig. 140: Installing Special Tool
Courtesy of FORD MOTOR CO.

35. Remove the transmission from the vehicle.
36. If the transmission is to be overhauled or if installing a new transmission, carry out transmission fluid cooler backflushing and cleaning. For additional information, refer to **TRANSMISSION FLUID COOLER - BACKFLUSHING AND CLEANING.**