

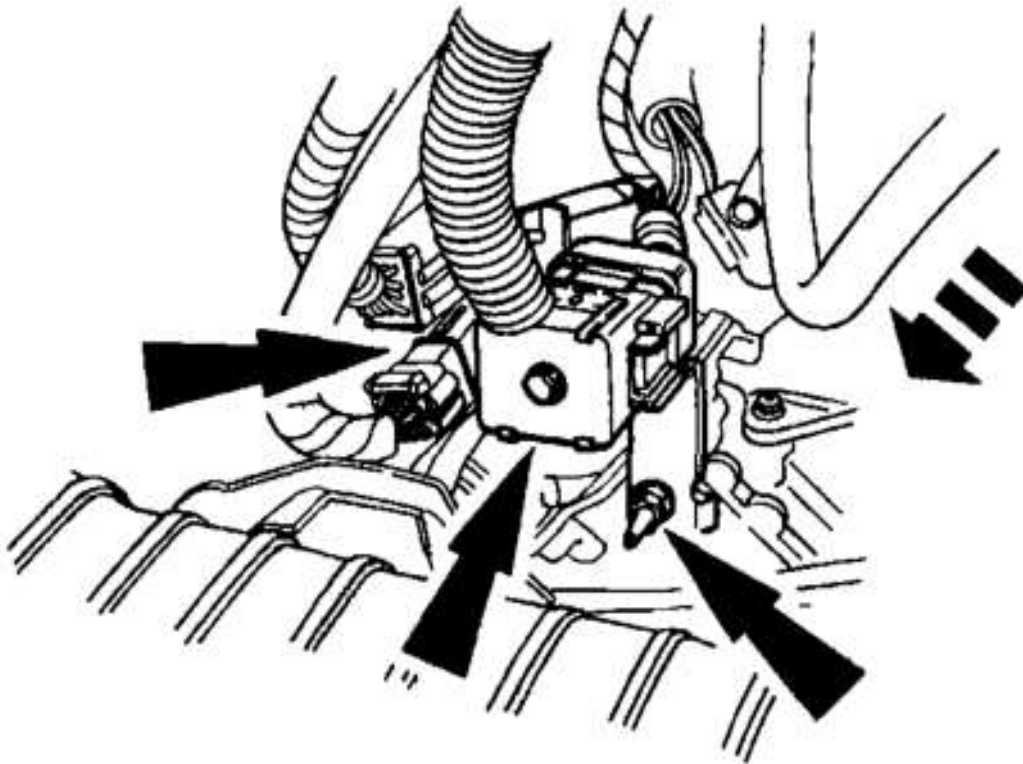
 A long, narrow metal bracket with a hook on the left end and a mounting point on the right end.	<p>Modular Engine Lift Bracket 303-F047 (014-00073) or equivalent</p>
 A circular metal ring with a central hole and a small protrusion on the right side.	<p>Remover, Crankshaft Rear Oil Slinger 303-514 (T95P-6701-AH)</p>
 A long, thin metal tool with a T-shaped handle at the top and a pointed end at the bottom.	<p>Impact Slide Hammer 100-001 (T50T-100-A)</p>
 A circular metal ring with a hexagonal nut in the center.	<p>Remover, Crankshaft Rear Oil Seal 303-519 (T95P-6701-EH)</p>

**Fig. 380: Identifying Special Tools**  
Courtesy of FORD MOTOR CO.

## Removal

### All vehicles

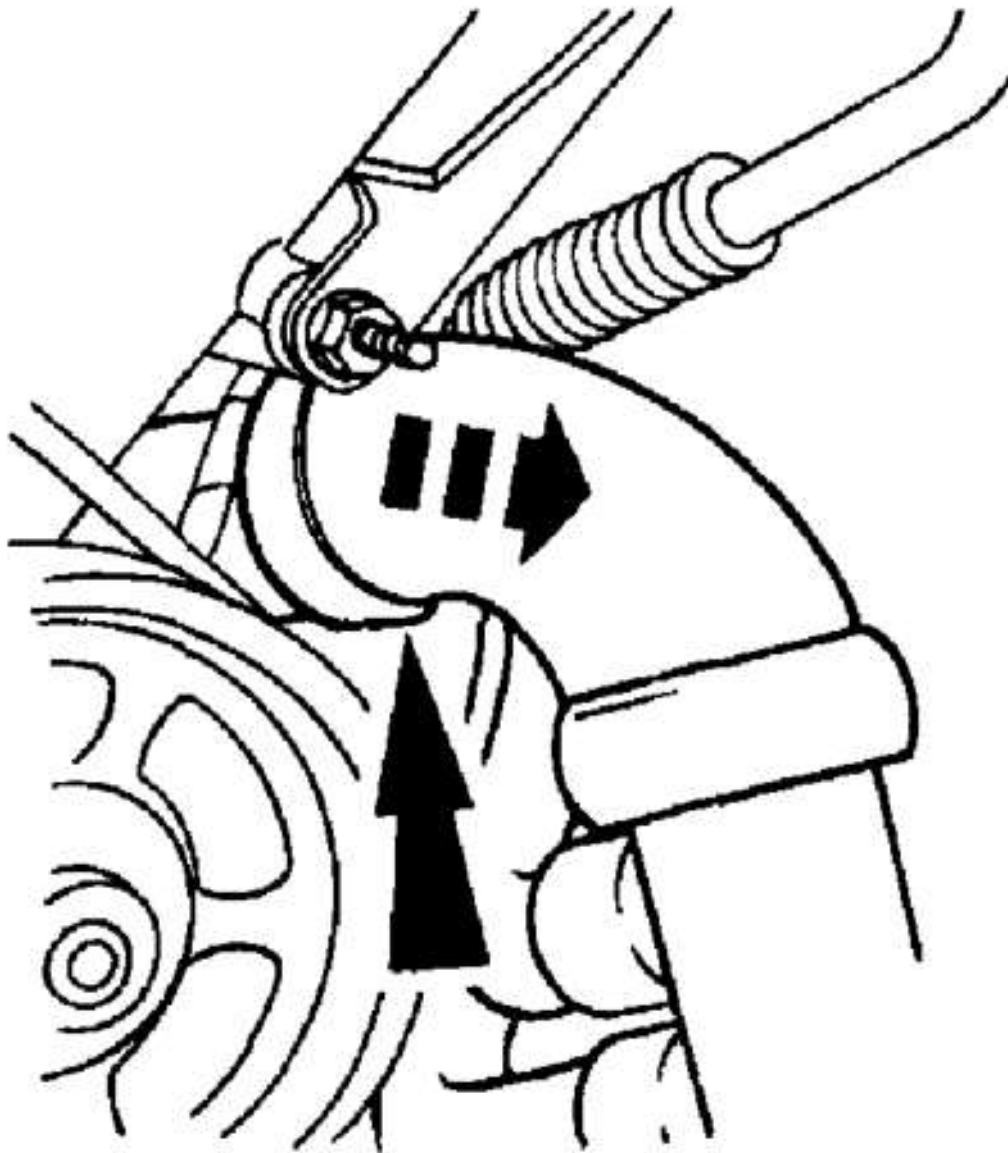
1. Disconnect the battery ground cable (14301). Refer to **BATTERY, MOUNTING AND CABLES** .
2. Discharge and recover the air conditioning system. Refer to **CLIMATE CONTROL SYSTEM - GENERAL INFORMATION** .
3. Remove the radiator grille support. Refer to **FRONT END BODY PANELS** .
4. Remove the A/C condenser core (19712). Refer to **AIR CONDITIONING** .
5. Remove the radiator, fan shroud and engine cooling fan. Refer to **ENGINE COOLING** .
6. Disconnect the 42-pin and the 16-pin connectors and remove the nut and the harness mounting bracket.



G01544905

**Fig. 381: Removing Nut And Harness Mounting Bracket**  
Courtesy of FORD MOTOR CO.

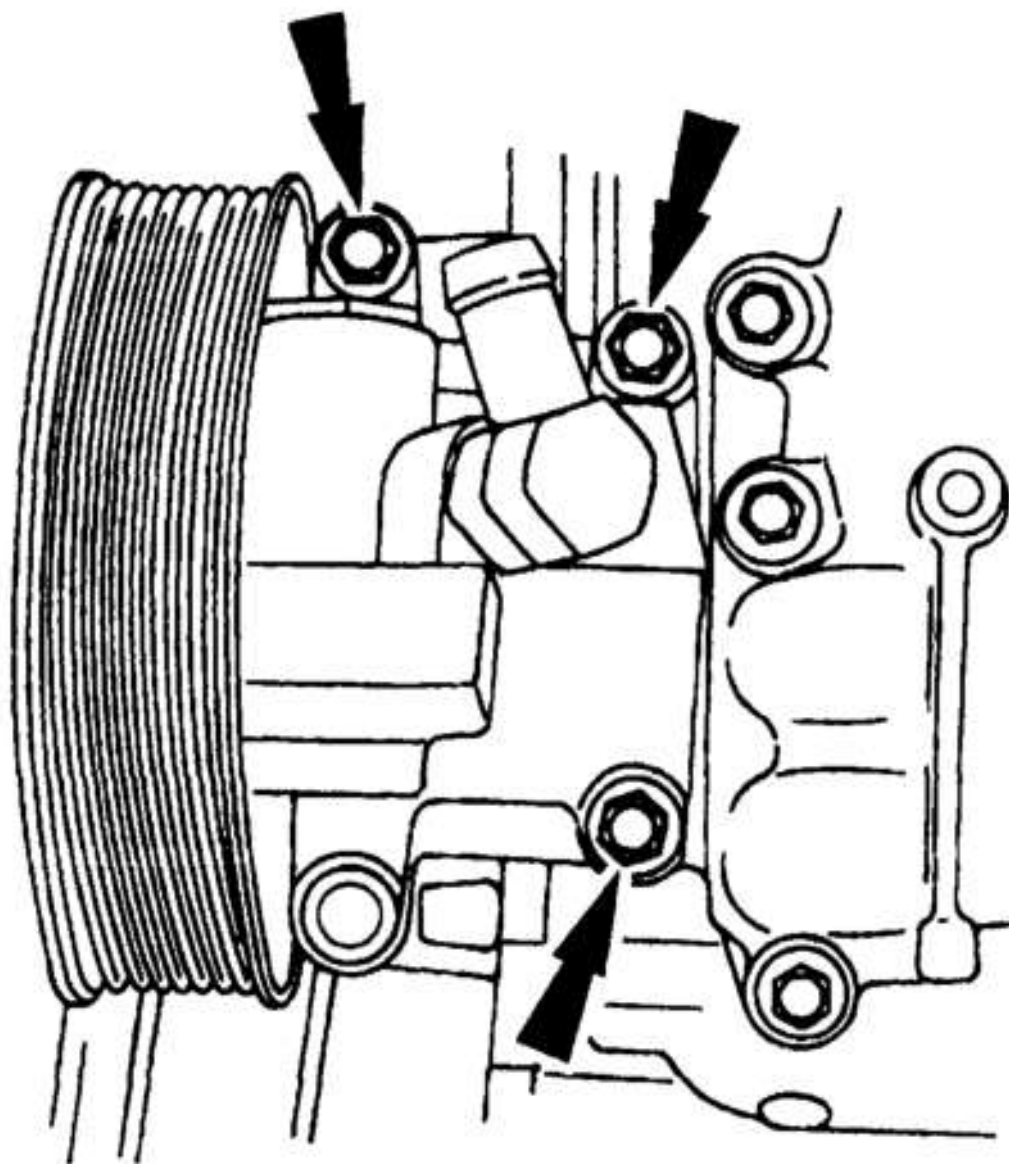
7. Remove the intake manifold. Refer to **Intake Manifold**.
8. At the oil cooler water inlet, disconnect and set aside the lower radiator hose.



G01544906

**Fig. 382: Disconnecting Oil Cooler Water Inlet**  
Courtesy of FORD MOTOR CO.

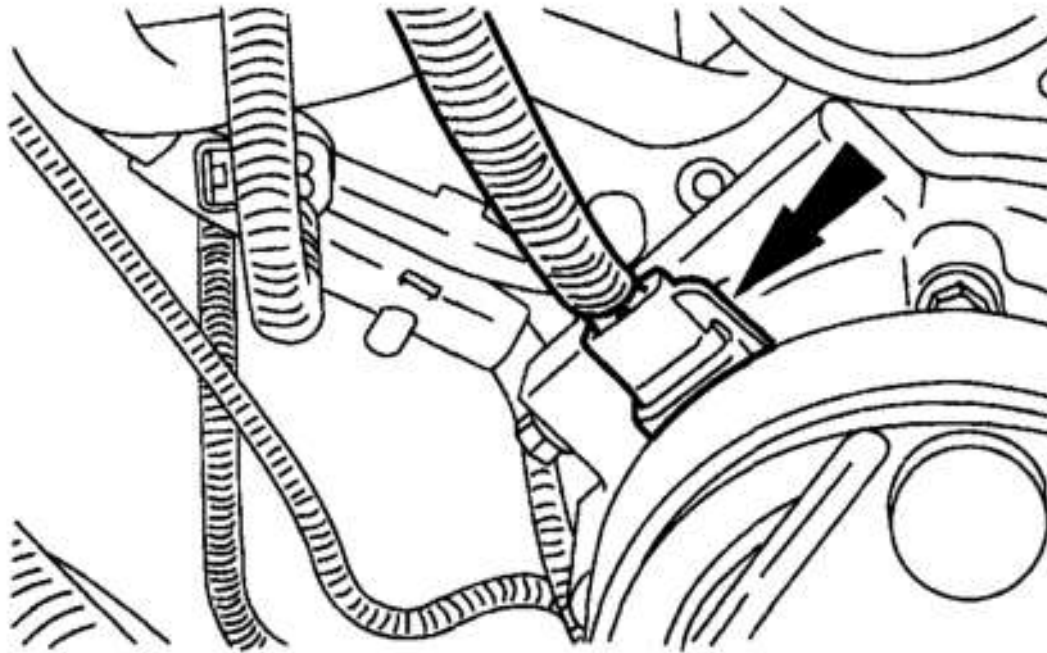
9. Remove the bolts and position the power steering pump aside.



G01544907

**Fig. 383: Removing Bolts And Positioning Power Steering Pump Aside**  
Courtesy of FORD MOTOR CO.

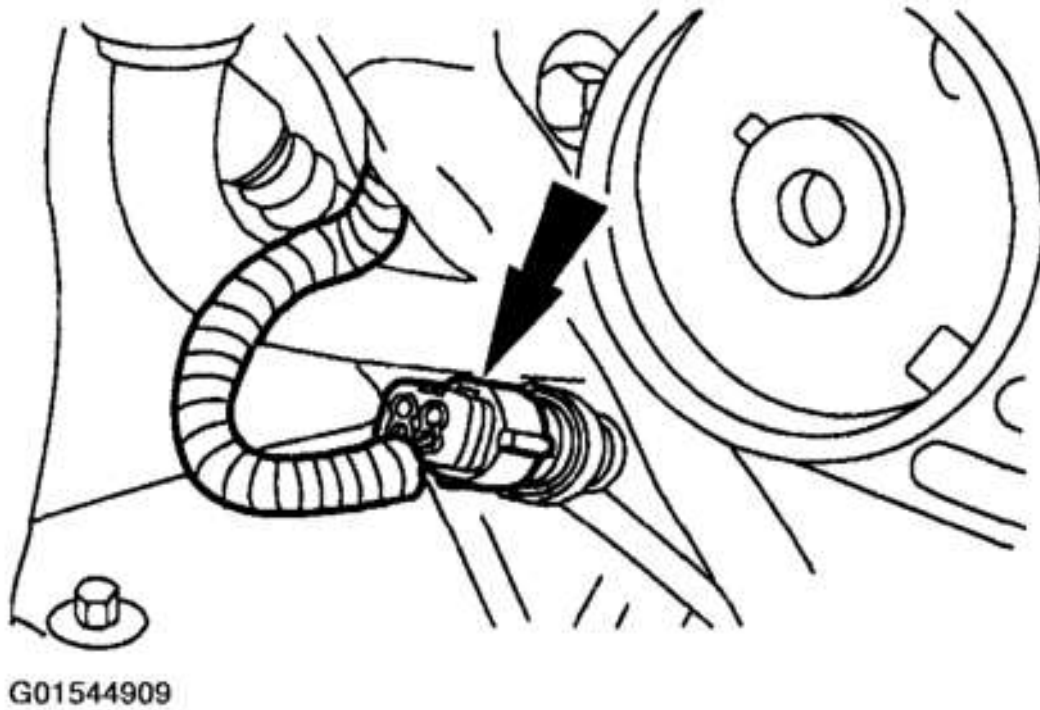
10. Disconnect the connector and position the harness aside.



G01544908

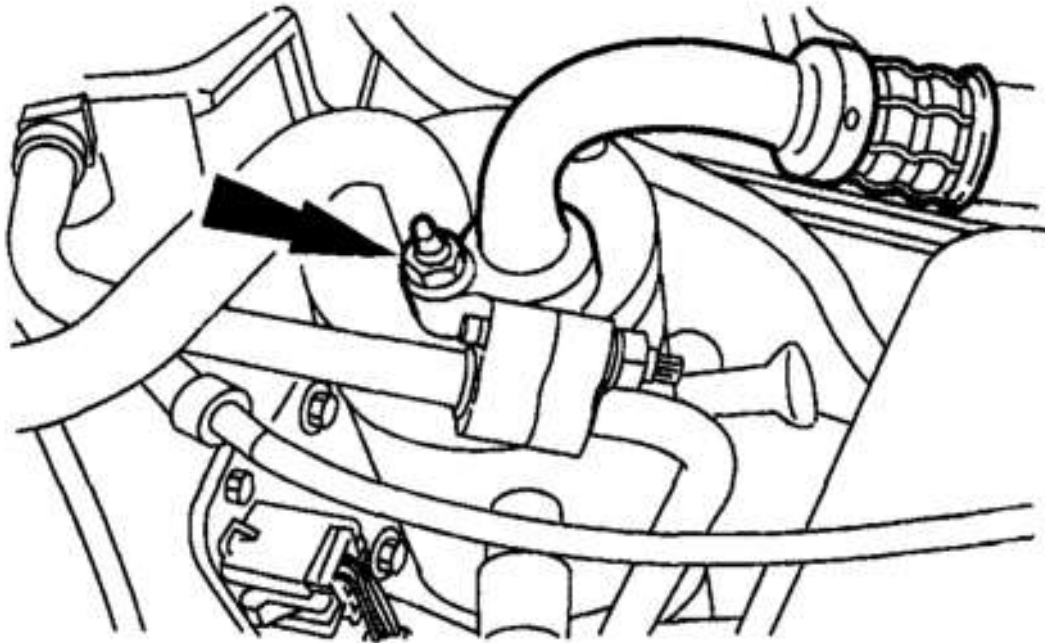
**Fig. 384: Disconnecting Connector And Positioning Harness Aside**  
Courtesy of FORD MOTOR CO.

11. Disconnect the A/C cycling switch.
  - Remove the harness from the studs and position aside.



**Fig. 385: Removing Harness From Studs And Positioning Aside**  
Courtesy of FORD MOTOR CO.

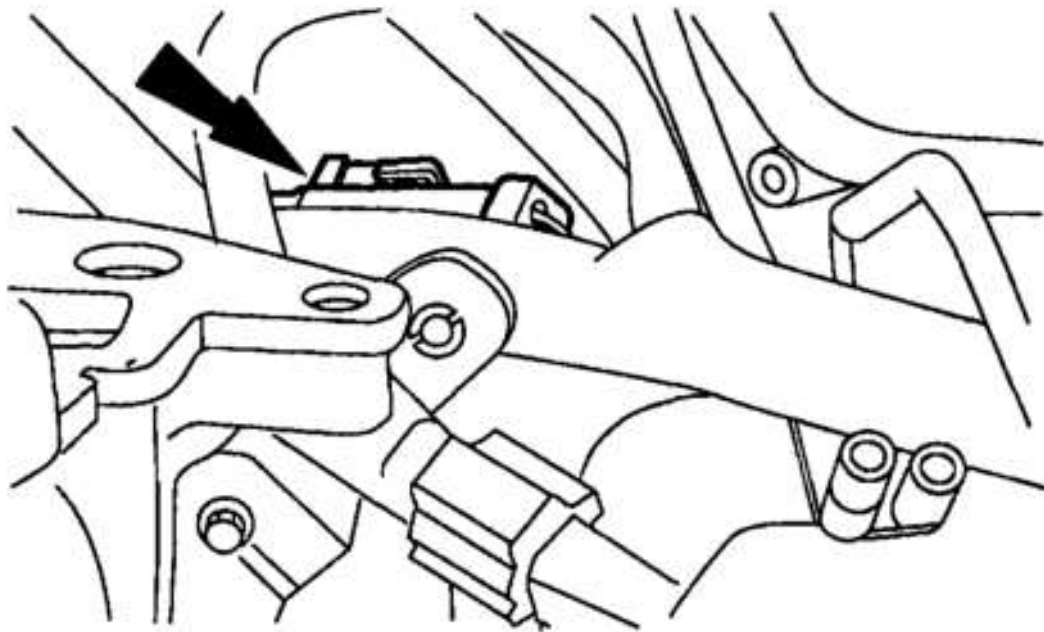
12. Disconnect the suction hose at the accumulator.



G01544910

**Fig. 386: Disconnecting Suction Hose At Accumulator**  
Courtesy of FORD MOTOR CO.

13. Disconnect the left and right heated exhaust gas oxygen sensor connectors.

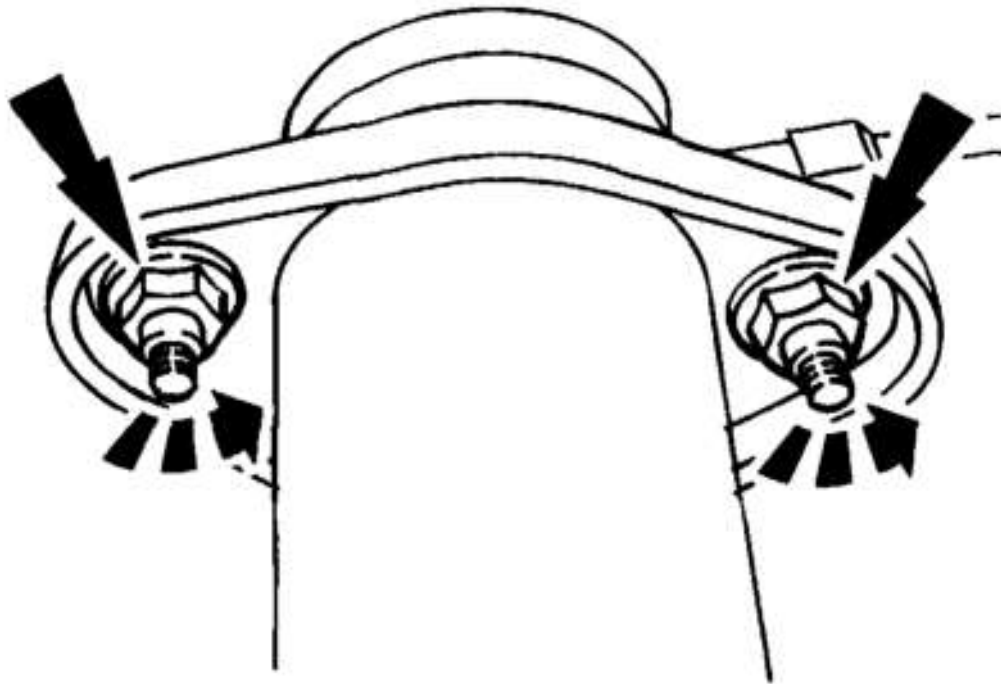


G01544911

**Fig. 387: Disconnecting Left And Right Heated Exhaust Gas Oxygen Sensor Connectors**  
Courtesy of FORD MOTOR CO.

14. Remove the A/C compressor. Refer to **AIR CONDITIONING** .
15. Remove the nuts.





G01544912

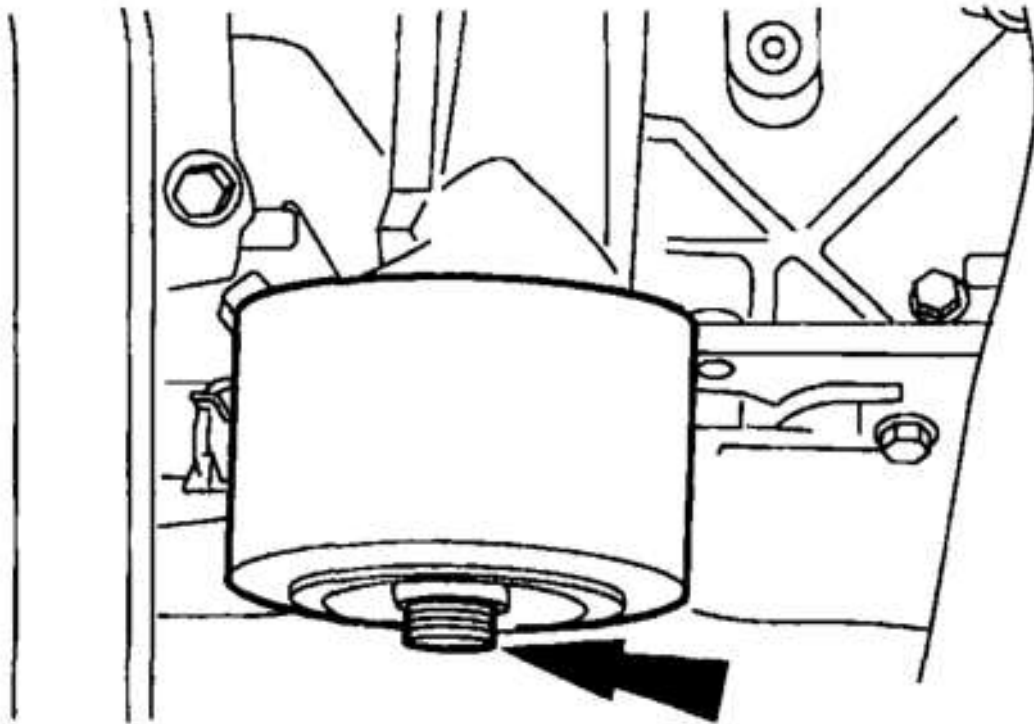
**Fig. 388: Removing Nuts**  
Courtesy of FORD MOTOR CO.

**Manual transmission vehicles**

16. Remove the transmission and clutch. Refer to CLUTCH .

**All vehicles**

17. Drain the engine oil and remove the oil bypass filter (6714).
18. Loosen the threaded shaft and position the oil cooler aside.

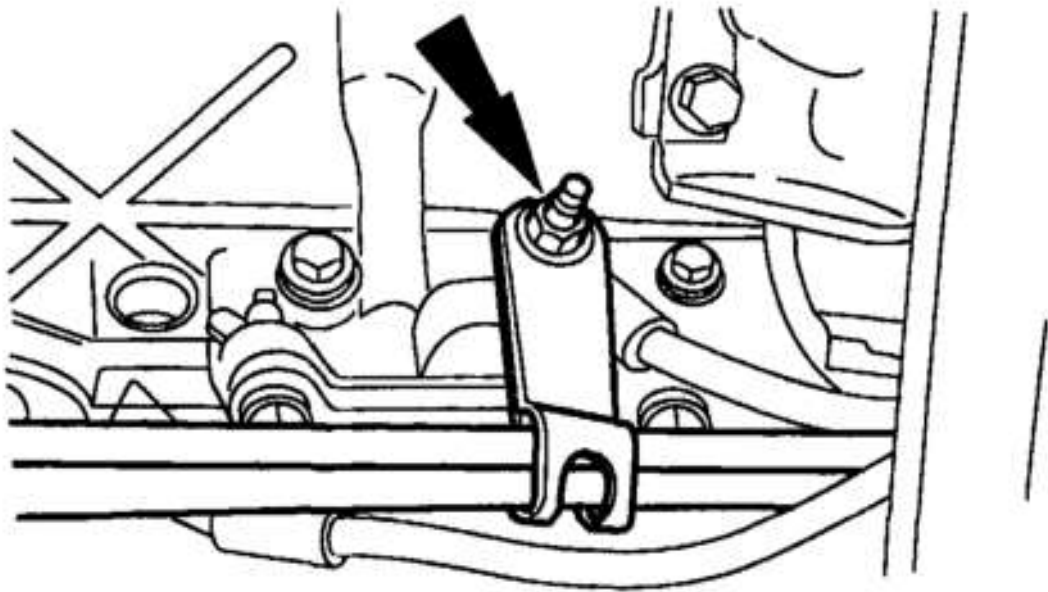


G01544913

**Fig. 389: Loosening Threaded Shaft And Positioning Oil Cooler Aside**  
Courtesy of FORD MOTOR CO.

**Automatic transmission vehicles**

19. Remove the starter motor. Refer to **STARTERS** .
20. Remove the bolts and position the transmission oil cooler lines and bracket aside.

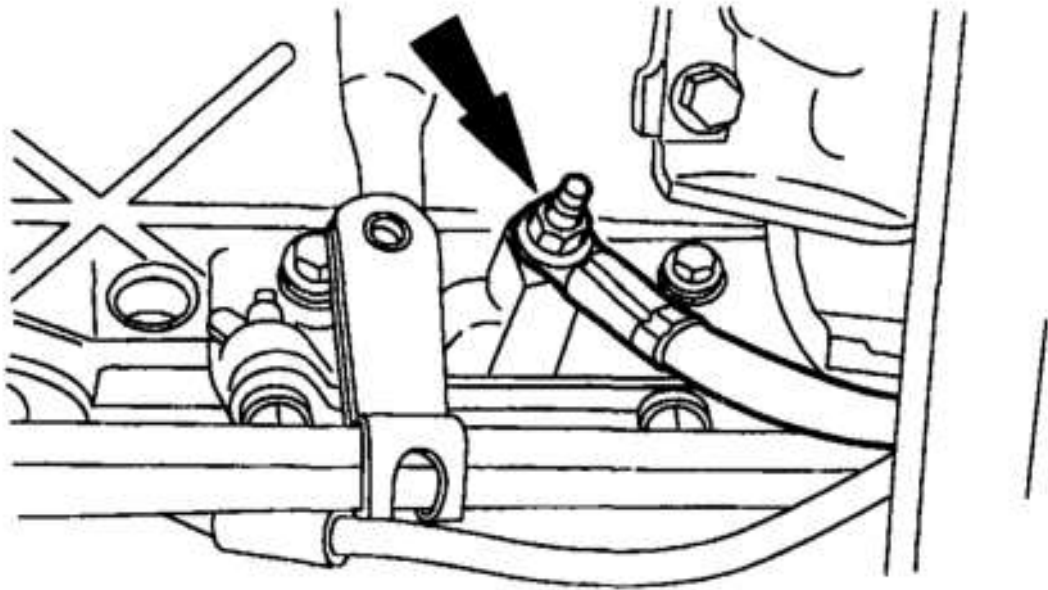


G01544914

**Fig. 390: Removing Bolts And Positioning Transmission Oil Cooler Lines And Bracket**  
Courtesy of FORD MOTOR CO.

All vehicles

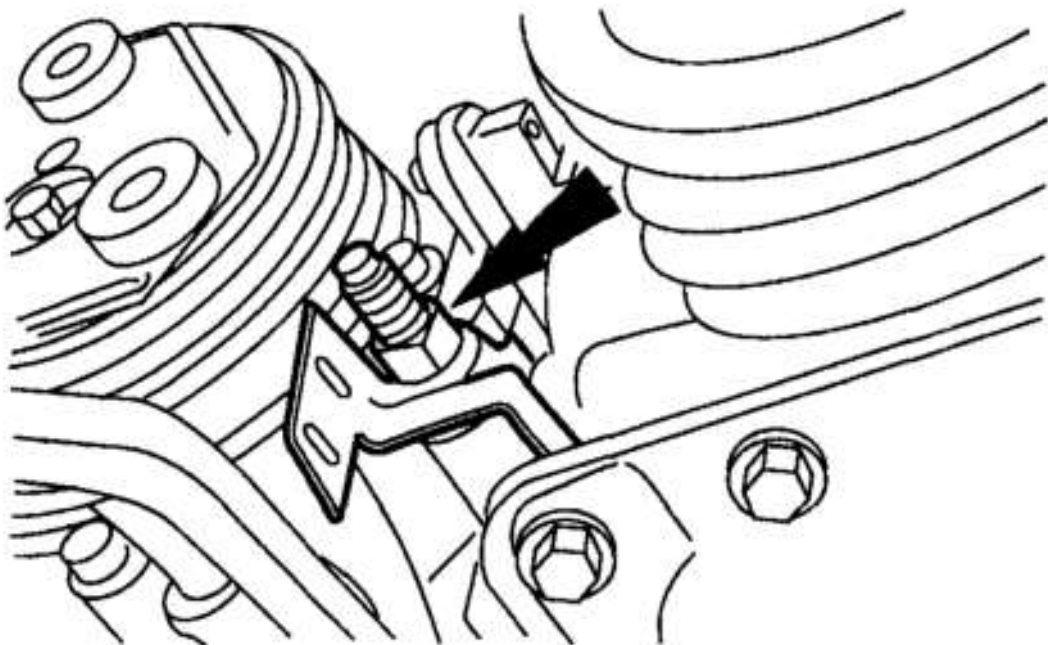
21. Remove the stud bolt and position the ground strap aside.



G01544915

**Fig. 391: Removing Stud Bolt And Positioning Ground Strap Aside**  
Courtesy of FORD MOTOR CO.

22. Remove the nut and position the wiring bracket aside.

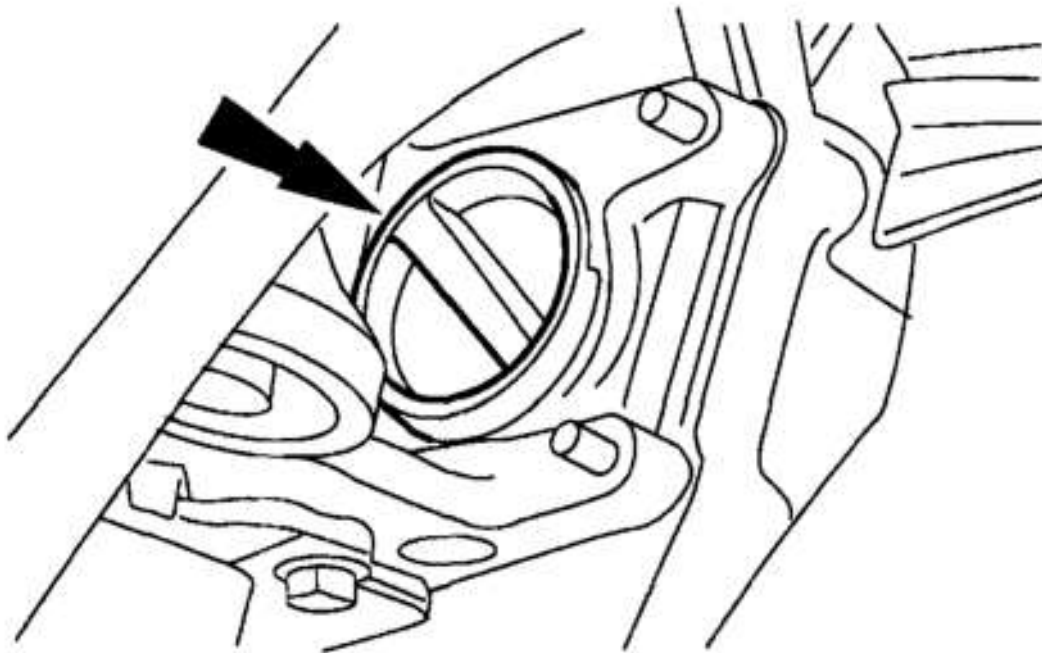


G01544916

**Fig. 392: Removing Nut And Positioning Wiring Bracket Aside**  
Courtesy of FORD MOTOR CO.

**Automatic transmission vehicles**

23. Remove the flywheel inspection cover.
24. Remove the access plug.



G01544917

**Fig. 393: Removing Access Plug**  
Courtesy of FORD MOTOR CO.

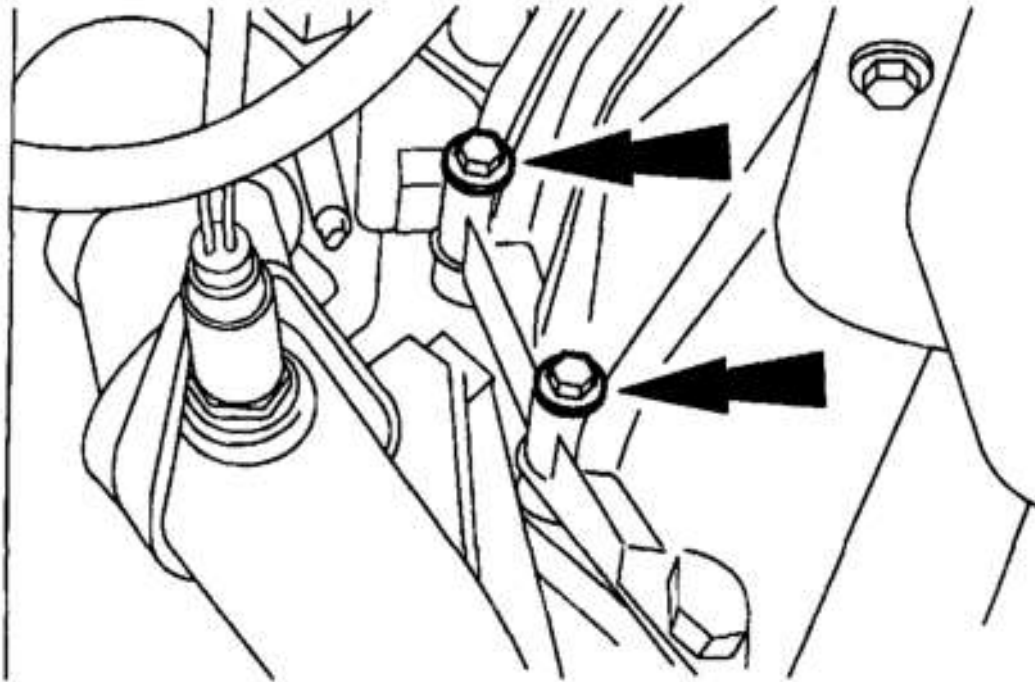
25. Remove and discard the four torque converter bolts.



G01544918

**Fig. 394: Removing Torque Converter Bolts**  
Courtesy of FORD MOTOR CO.

26. Remove the four lower transmission-to-engine bolts.

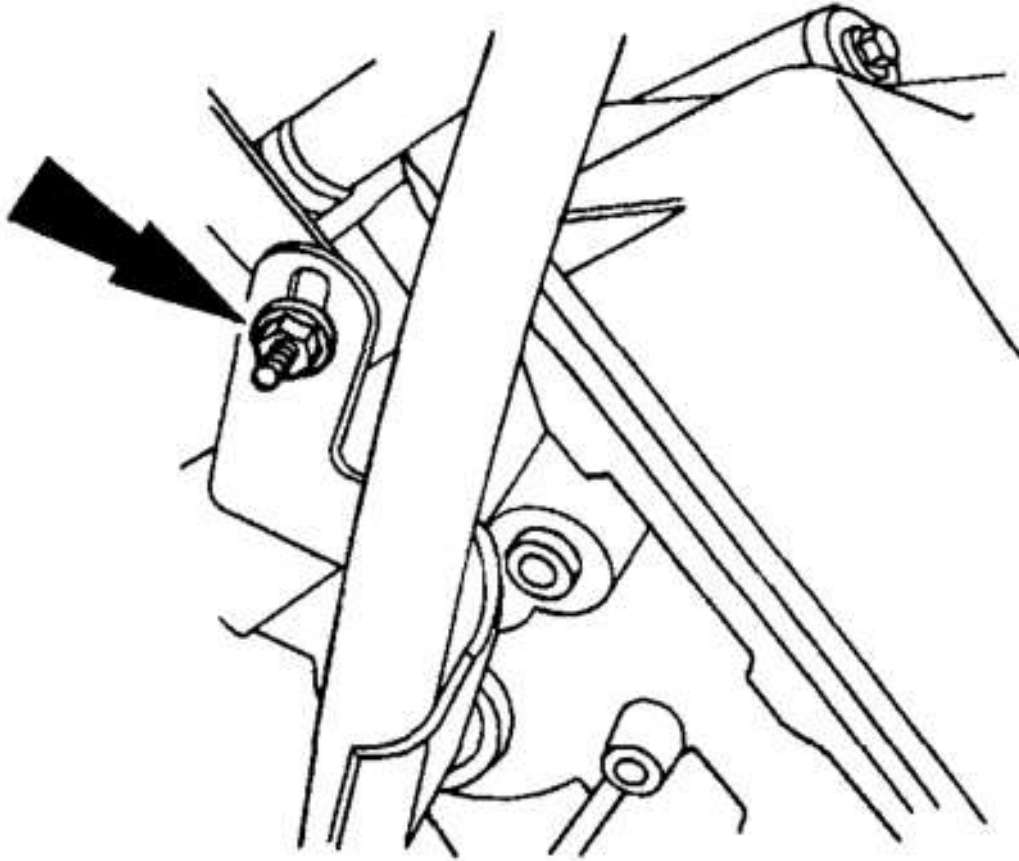


G01544919

**Fig. 395: Removing Lower Transmission-To-Engine Bolts**  
Courtesy of FORD MOTOR CO.

**All vehicles**

27. Lower the vehicle.
28. Remove the nut retaining the ground strap, and on automatic transmission-equipped vehicles, remove the transmission oil filler tube.

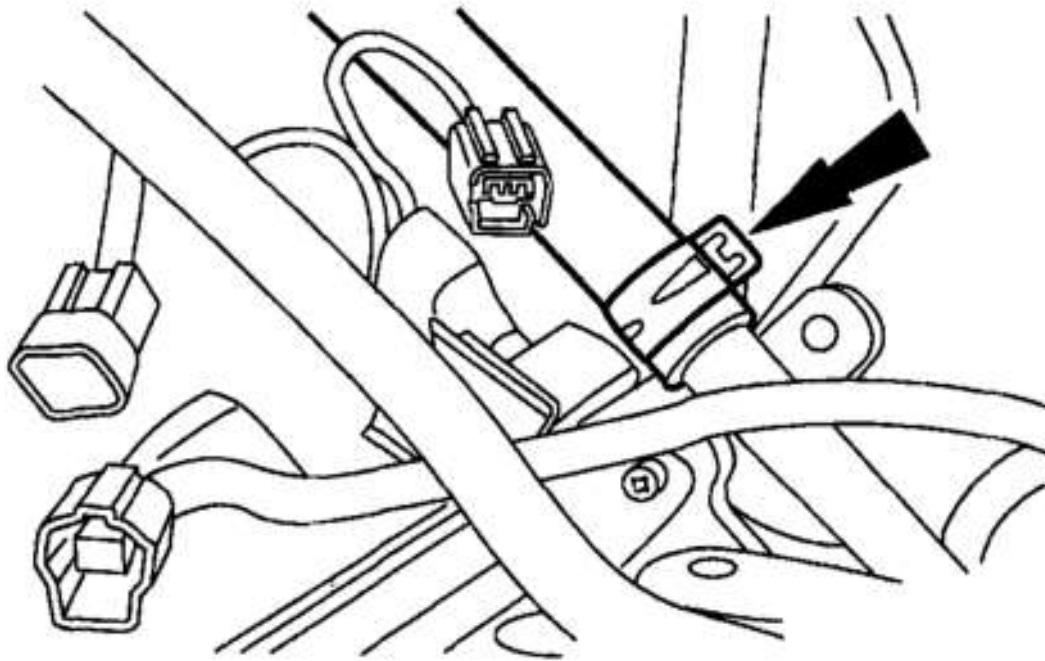


G01544920

**Fig. 396: Removing Nut Retaining Ground Strap**  
Courtesy of FORD MOTOR CO.

29. Disconnect the heater hose at the rear of the engine.



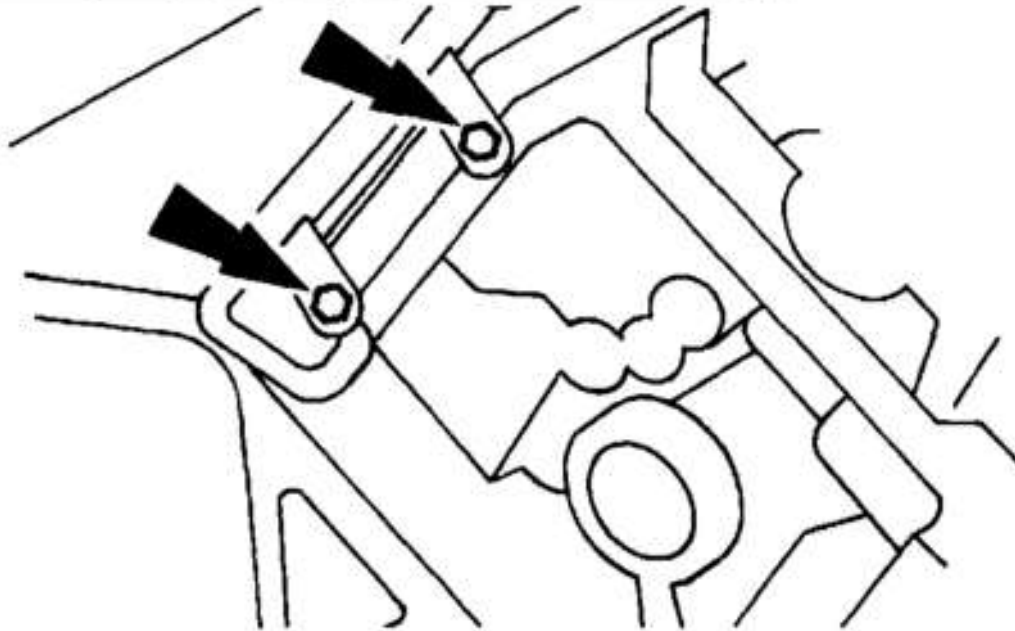


G01544921

**Fig. 397: Disconnecting Heater Hose At Rear Of Engine**  
Courtesy of FORD MOTOR CO.

30. Remove the two studs and the heater water tube.

20 - 30 Nm (15 - 22 Lb - Ft)

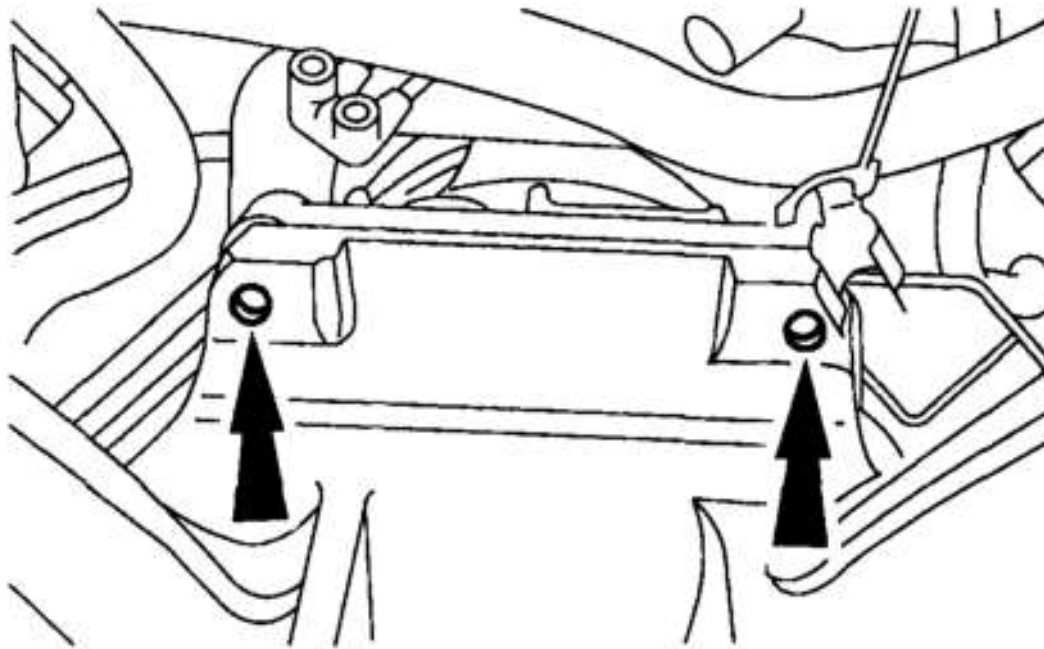


G01544922

**Fig. 398: Removing Studs And Heater Water Tube**  
Courtesy of FORD MOTOR CO.

**Automatic transmission vehicles**

31. Remove the three upper transmission-to-engine bolts.

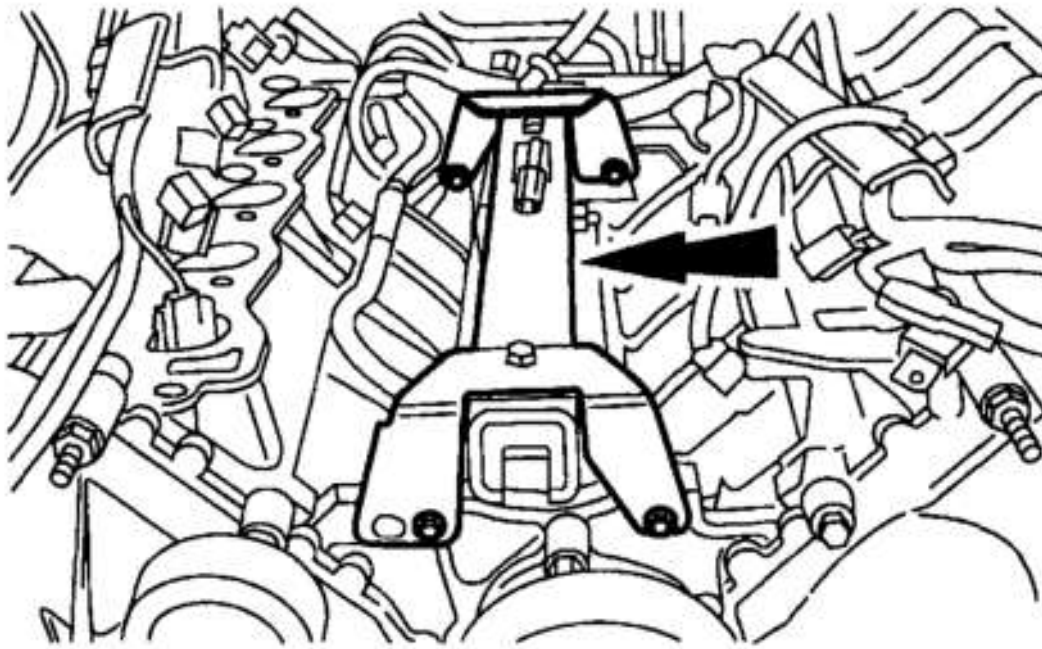


G01544923

**Fig. 399: Removing Upper Transmission-To-Engine Bolts**  
Courtesy of FORD MOTOR CO.

**All vehicles**

32. Install the Modular Engine Lift Bracket and support the engine with a suitable floor crane.

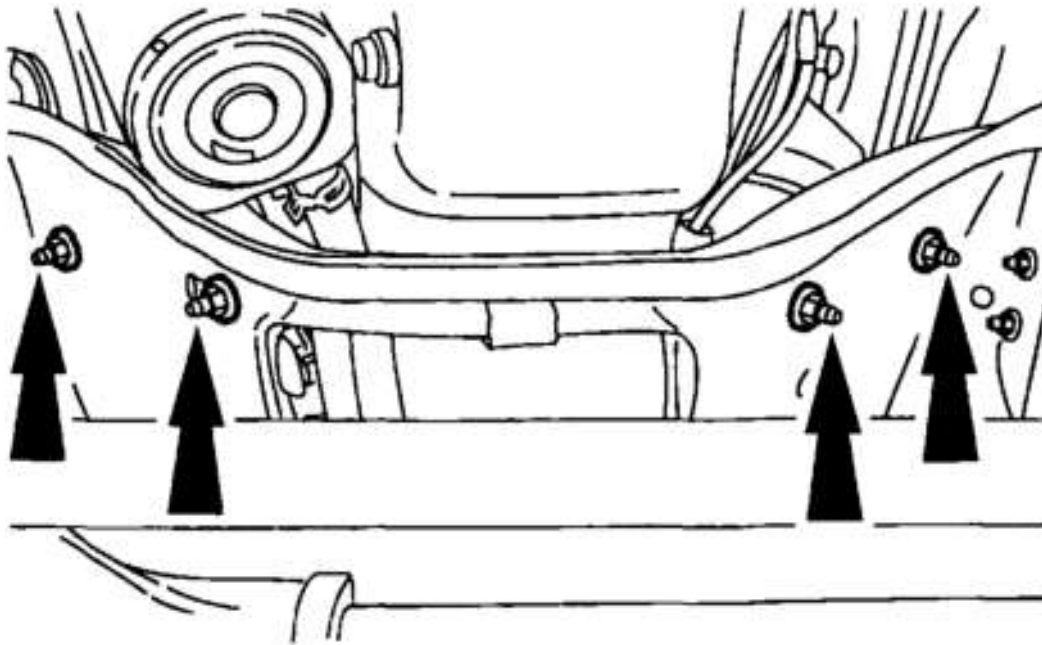


G01544924

**Fig. 400: Installing Modular Engine Lift Bracket And Supporting Engine With Suitable Floor Crane**

Courtesy of FORD MOTOR CO.

33. Remove the engine support insulator nuts.



G01544925

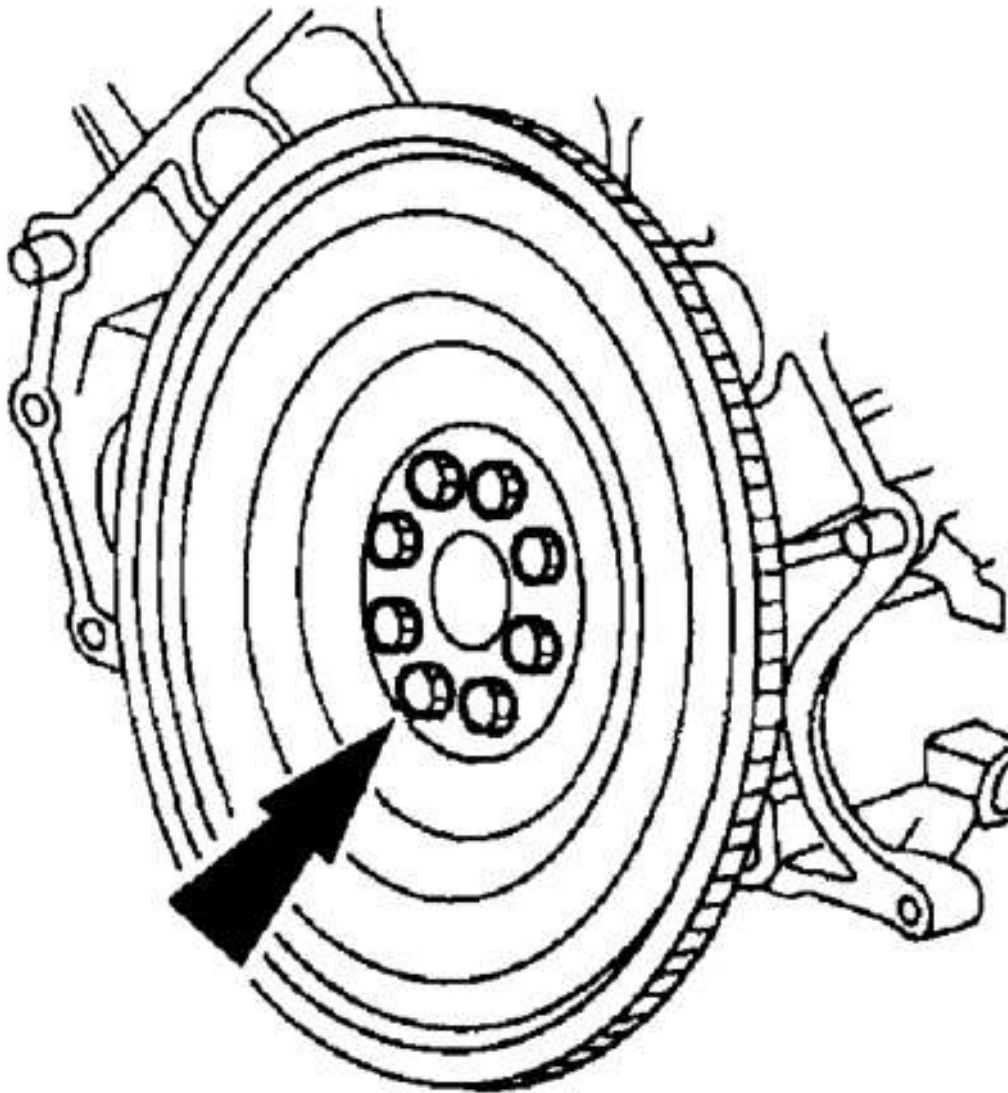
**Fig. 401: Removing Engine Support Insulator Nuts**  
Courtesy of FORD MOTOR CO.

**Automatic transmission vehicles**

34. Support the transmission with a jack.

**All vehicles**

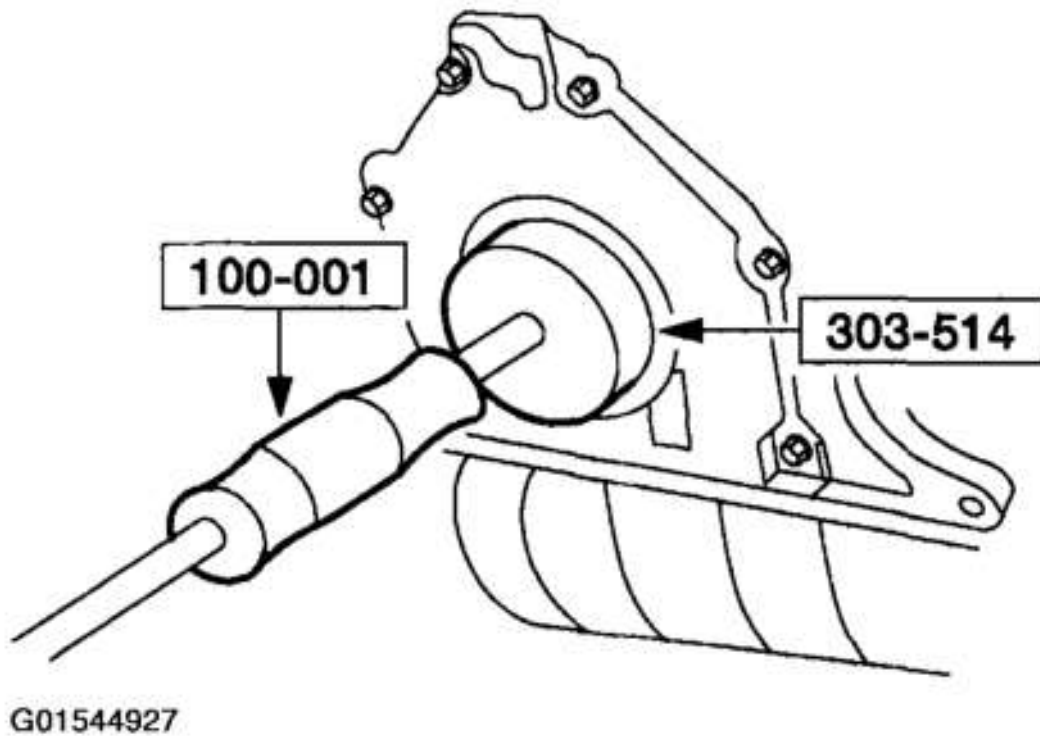
35. Remove the engine from the vehicle.
36. Remove the bolts, and remove the flywheel.



G01544926

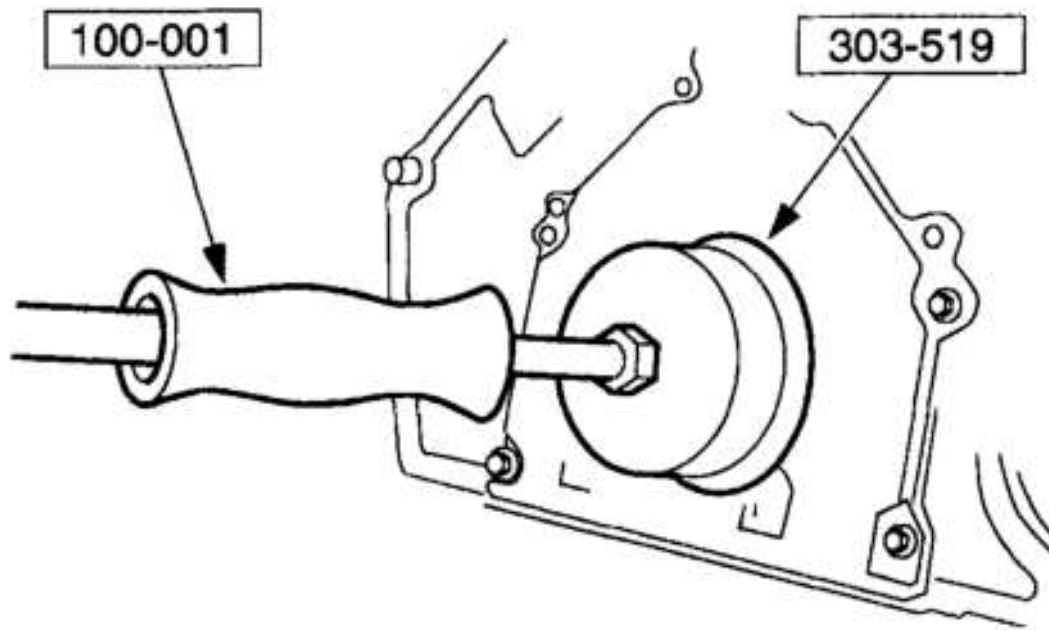
**Fig. 402: Removing Bolts And Flywheel**  
Courtesy of FORD MOTOR CO.

37. Using the special tools, remove the rear crankshaft oil slinger.



**Fig. 403: Removing Rear Crankshaft Oil Slinger Using Special Tools**  
Courtesy of FORD MOTOR CO.

38. Using the special tools, remove the crankshaft rear oil seal.

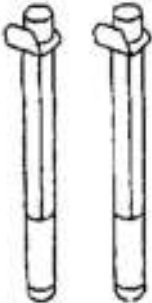
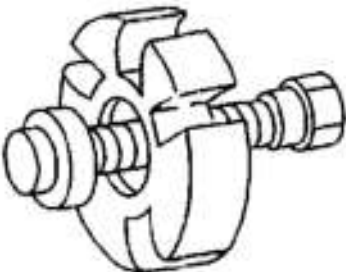
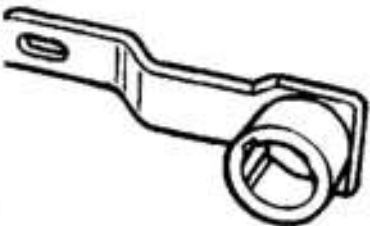


G01544928

**Fig. 404: Removing Crankshaft Rear Oil Seal Using Special Tools**  
Courtesy of FORD MOTOR CO.

39. Remove the bolts and remove the crankshaft rear oil seal retainer plate.



	<p><b>Guides, Connecting Rod</b> 303-442 (T93P-6136-A)</p>
	<p><b>Remover, Crankshaft Vibration Damper</b> 303-009 (T58P-6316-D)</p>
	<p><b>Holding Tool, Crankshaft</b> 303-448 (T93P-6303-A)</p>

G01544929

**Fig. 405: Removing Bolts And Crankshaft Rear Oil Seal Retainer Plate**  
Courtesy of FORD MOTOR CO.

40. Mount the engine on an engine stand.
41. Remove the Modular Engine Lift Bracket.