REMOVAL

1. Disconnect the battery ground cable.

2. Remove the radiator air deflector.
   a. Remove the screws.
   b. Remove the radiator air deflector.
3. Remove the accelerator control splash shield.
   a. Remove the bolts.
   b. Remove the accelerator control splash shield.

4. Remove the engine air cleaner assembly.

5. Remove the throttle return spring.
6. Disconnect the accelerator cable from the throttle body cam.
   a. Roll the throttle body cam forward.
   b. Slide the accelerator cable end from the throttle body cam.

7. If equipped, disconnect the speed control actuator cable from the throttle body.
   a. Remove the bolt.
   b. Disconnect the (A) speed control actuator cable from the (B) throttle body cam and position aside.
8. Disconnect the Throttle Position Sensor (TPS) electrical connector.

9. Disconnect the following vacuum connections.
   
   - EGR vacuum supply.
   - EGR vacuum regulator.
   - Vapor Management Valve (VMV).
10. Remove the EGR backpressure transducer bracket retaining nut.

11. Disconnect the EGR tube upper fitting.
12. Disconnect the Idle Air Control (IAC) electrical connector.

13. Disconnect the brake booster vacuum hose.

14. Remove the throttle body adapter bolts and the throttle body adapter assembly.
15. Remove the fan shroud.

1. Remove the bolts.
2. Position the fan shroud aside.

16. Raise and support the vehicle.

17. Remove the drain plug and drain the engine oil.
18. Remove the RH engine mount through bolt.

19. Remove the LH engine mount through bolt.
20. Position a suitable jack under the rear axle.

21. Position suitable jacks under the engine, and lift the engine.

22. Position hardwood blocks in the engine mount saddles to support the engine.

23. Lower the engine onto the blocks and remove the jacks.
24. Remove the oil pan bolts.
   - Position the oil pan aside to gain access to the oil pick up tube.

**NOTE:** Be careful when removing the oil pan gasket. The oil part gasket is reusable if it is not damaged.

25. Remove the oil pick up tube bracket bolt.

26. Remove the oil pick up tube bolts.
27. Remove the oil pan and the oil pick up tube together.

**INSTALLATION**

1. Clean and inspect the mating surfaces. **CAUTION:** Do not use metal
scrapers, wire brushes, power abrasive discs or other abrasive means to clean the sealing surfaces. These tools cause scratches and gouges which make leak paths. Use a plastic scraping tool to remove all traces of old sealant.

2. Position the oil pan gasket, the oil pan and the oil pick up tube together to the cylinder block.

3. Install the oil tube pick up bolts.

4. Install the oil pick up tube bracket bolt.
5. Apply silicone at the front cover to block mating surface.

   - Use Ford Silicone Gasket and Sealant F6AZ-19562-AA or equivalent meeting Ford specification WSE-M4G323-AB.

**NOTE:** If the oil pan is not secured within four minutes, the sealant must be removed and the sealing area cleaned with Metal Surface Cleaner F4AZ-19A536-RA or equivalent meeting Ford specification WSE-M5B392-A. Allow to dry until there is no sign of wetness, or four minutes, whichever is longer. Failure to follow this procedure may result in future oil leakage.

6. Apply silicone at the rear oil seal retainer to block sealing surface.

   - Use Ford Silicone and Gasket Sealer F6AZ-1956-AA or equivalent meeting Ford specification WSE-M4G323-AB.

**NOTE:** If the oil pan is not secured within four minutes, the sealant must be removed and the sealing area cleaned with Metal Surface Cleaner F4AZ-19A536-RA or equivalent meeting Ford specification WSE-M5B392-A. Allow to dry until
there is no sign of wetness, or four minutes, whichever is longer. Failure to follow this procedure may result in future oil leakage.

7. Position the oil pan gasket.

![Diagram of oil pan gasket]

8. Install the oil pan bolts and torque in the three stages, in the sequence shown.

- Stage 1: 2 Nm.
- Stage 2: 20-30 Nm.
- Stage 3: Rotate 90 degrees.
9. Position a suitable jack under the rear axle.

10. Place suitable jacks under the engine and lift the engine to remove the blocks.
11. Remove the wood blocks and lower the engine.
   
   - Remove the jacks.

12. Install the RH engine mount bolt.

13. Install the LH engine mount bolt.
14. Install the drain plug.  
15. Lower the vehicle.  
16. Position the **fan shroud** and install the fan shroud bolts.
17. Install a new gasket and the throttle body adapter assembly and tighten in two stages.

- Stage 1: **8-12 Nm.**
- Stage 2: **Rotate 90 degrees.**

18. Connect the brake booster vacuum supply.

19. Connect the IAC electrical connector.
20. Connect the upper EGR tube nut.

21. Install the EGR backpressure transducer nut.
22. Connect the following vacuum connectors.

- EGR vacuum supply.
- EGR vacuum regulator.
- Vapor Management Valve (VMV).

23. Connect the TPS electrical connector.

24. If equipped, install the speed control actuator cable on the throttle body.

    a. Install the bolt.
    b. Connect the (A) speed control actuator cable to the (B) throttle body cam.
25. Connect the accelerator cable to the throttle body cam.
   a. Roll the throttle body cam forward.
   b. Slide the accelerator cable into the throttle body cam.

26. Install the throttle return spring.
27. Install the engine air cleaner assembly.
28. Install the accelerator control splash shield.

29. Position the **fan shroud** and install the retaining screws.

30. Install the **radiator** air deflector.
31. Connect the battery ground cable. **NOTE:** When the battery is disconnected and reconnected, some abnormal drive symptoms may occur while the vehicle relearns its adaptive strategy. The vehicle may need to be driven 16 km (10 mi) or more to relearn the strategy.