

1997 Ford Truck Explorer 4WD V6-245 4.0L SOHC VIN E EFI

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Attachment III - Technical Information

OVERVIEW

While performing this procedure the technician will install a:

- ^ New upper and lower intake manifold gaskets.
- ^ New cam chain tensioner and washer.
- ^ Volume reduction plug into the left cylinder head oil galley.
- ^ New oil galley plug.

IMPORTANT TIME SAVING REPAIR TIPS

- ^ Always use a hand impact driver with a short extension when loosening the oil galley plug. Be sure the T-30 Torx(R) bit is in good condition, and that there is no foreign material inside the plug which would prevent the bit from fully seating. The plug may be seized on some higher mileage vehicles, and not seating the bit may cause the bit to damage the plug.
- ^ Before removing the engine coolant temperature sensor, relieve any residual cooling system pressure by removing the radiator cap and then reinstalling it. Doing this will allow you to remove the sensor without having to drain the cooling system.
- ^ During assembly, DO NOT use any silicone products as they may cause damage to the oxygen sensors.
- ^ Allow the engine and cooling system to cool down prior to beginning this repair.

Question -- Are these procedures the same as related procedures found in TSBs or in the Workshop Manual?

Answer -- No. If you follow the procedures in this set of instructions, you will not need to disconnect the battery or install a memory saver, or drain and refill the cooling system. Also, this procedure involves removal of the upper and lower intake manifolds to replace the gaskets. Once the manifolds and the ECT are removed, the oil galley plug and the cam tensioner are easily accessed.

LOWER INTAKE MANIFOLD REMOVAL

1. Remove the accelerator control splash shield.
2. Disconnect the speed control and accelerator cables from the throttle body control lever and the upper intake manifold.
3. Disconnect the intake air temperature (IAT) sensor.
4. Disconnect the fresh air tubes from the air cleaner outlet tube, then remove the air cleaner outlet tube.
5. Disconnect the idle air control (IAC) valve and the throttle position (TP) sensor.

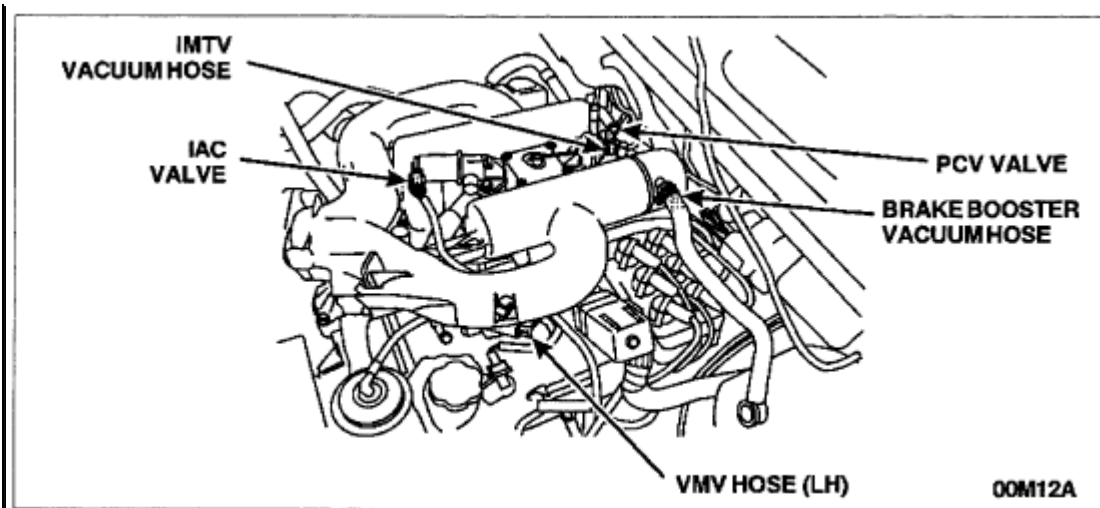


FIGURE 1

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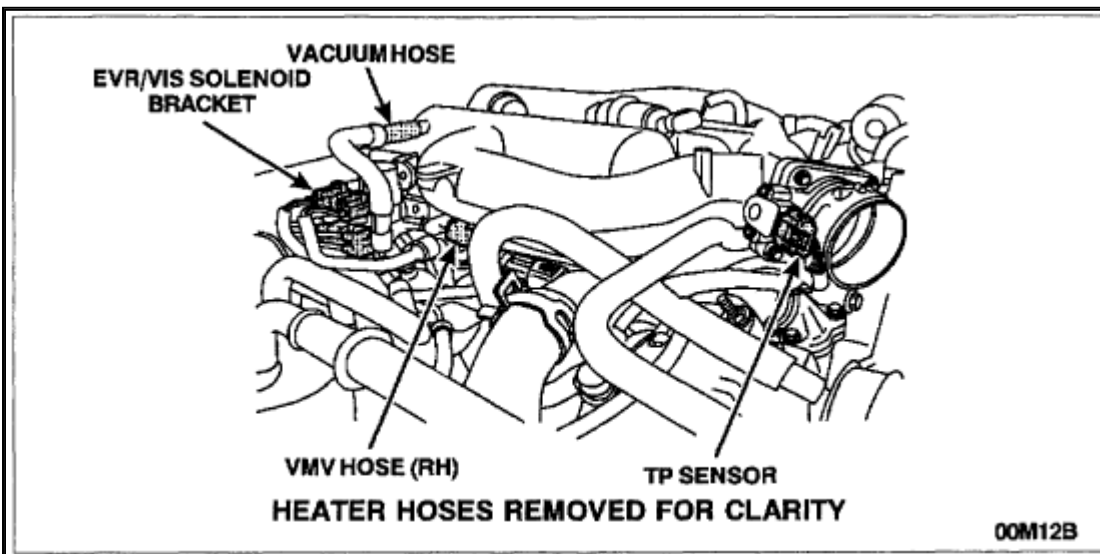


FIGURE 2

00M12B

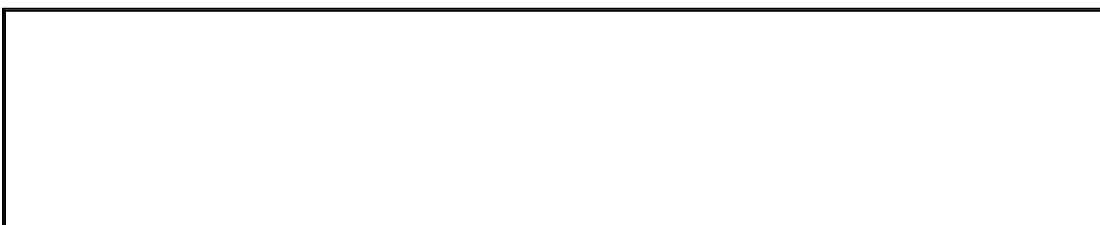
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6. Disconnect the following vacuum hoses: See Figures 1 and 2.

- ^ Brake booster.
- ^ Intake manifold tuning valve (IMTV) servo, if equipped.
- ^ Right side upper intake vacuum supply (two hoses).
- ^ PCV valve.

7. Remove the fasteners securing the EVR/VIS solenoid bracket. It is not necessary to disconnect the solenoids. Refer to Figure 2.

8. Remove the upper intake manifold screws.



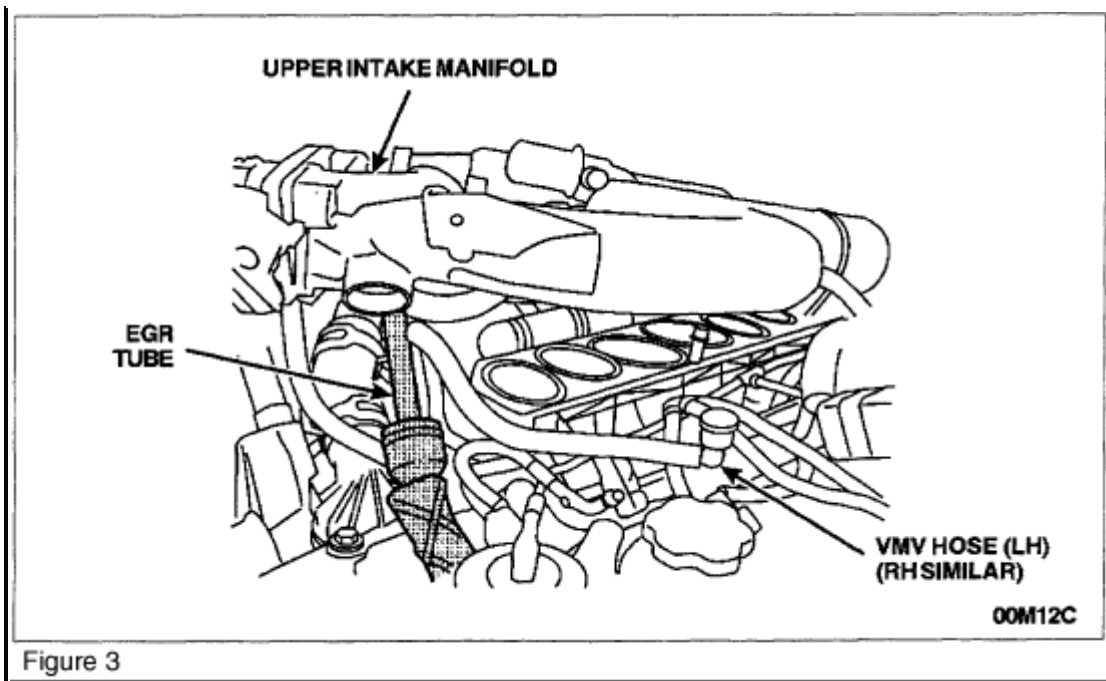


Figure 3

ZOOM

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9. Lift up the upper intake manifold to access the vapor management valve (VMV) hoses. Remove the locking clips and disconnect the right and left VMV hoses. See Figure 3.
10. Remove the upper intake manifold by carefully sliding the manifold off of the exhaust gas recirculation (EGR) tube. See Figure 3.

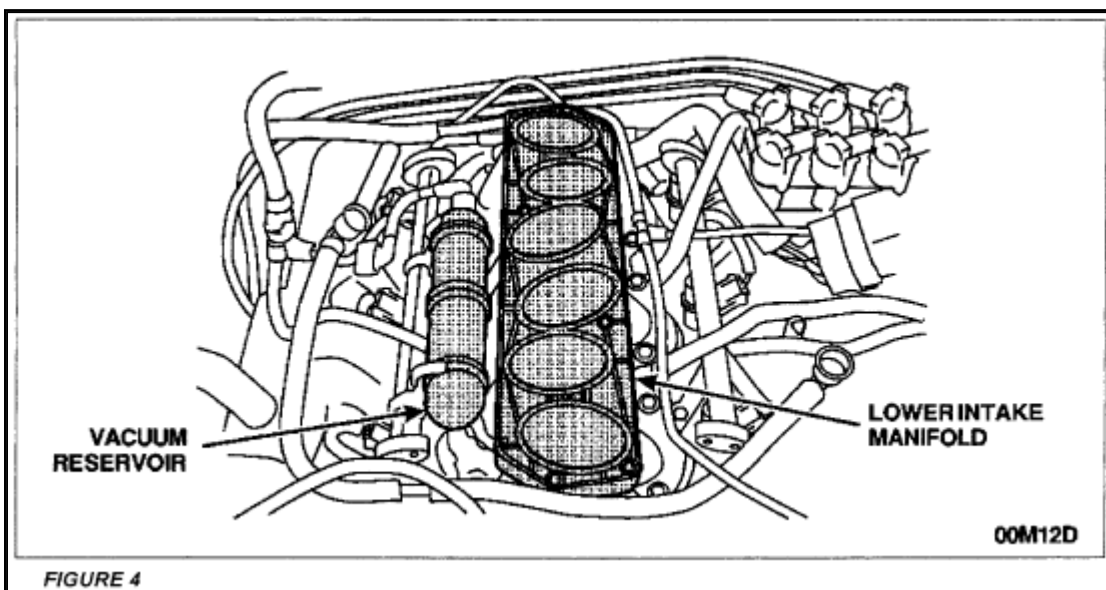


FIGURE 4

ZOOM

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11. If equipped, position the engine vacuum reservoir aside. See Figure 4.
 12. Remove the lower intake manifold. See Figure 4.
- CAUTION:** The intake ports of the cylinder heads must be covered to avoid any foreign material from entering the engine.
13. Clean all foreign material from the [intake manifold](#)/cylinder head area, then cover the cylinder head ports with clean shop towels.

VOLUME REDUCTION PLUG AND CAM CHAIN TENSIONER REPLACEMENT

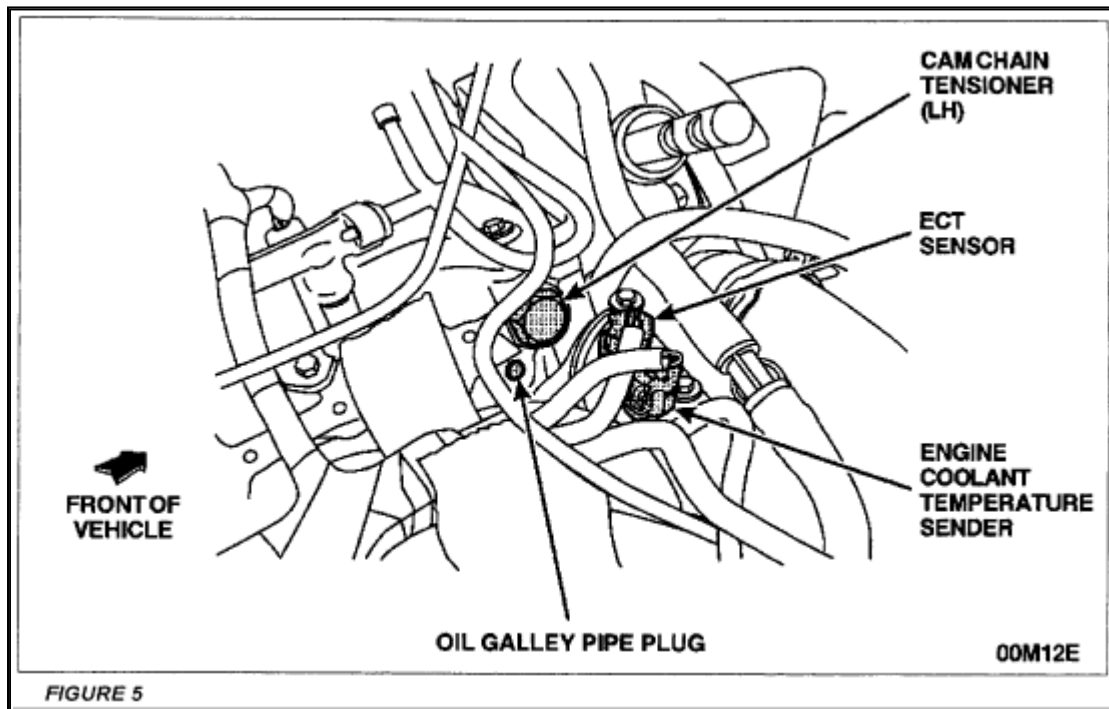


FIGURE 5

ZOOM

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1. Disconnect the engine coolant temperature (ECT) sensor and the engine coolant temperature sender. Position the wiring harness connectors away from the oil galley plug area. See Figure 5.
CAUTION: Damage to the oil galley plug will occur if the Torx(R) bit is not fully seated. Use a hand impact driver and an extension, striking the driver firmly, to loosen the plug.

2. Remove the oil galley plug. See Figure 5.

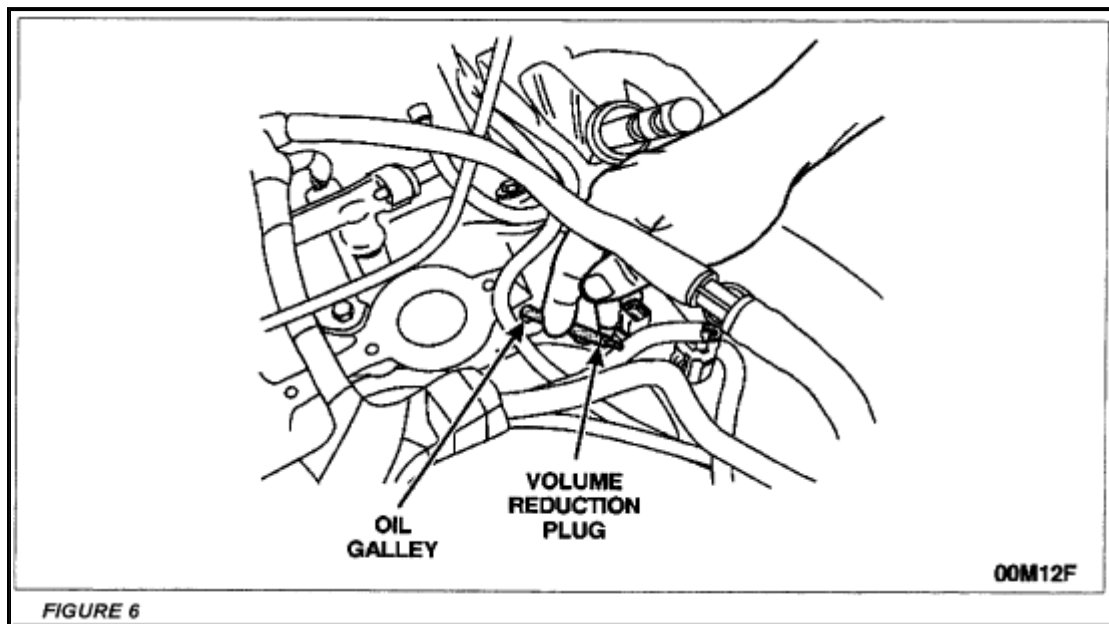


FIGURE 6

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3. Install the volume reduction plug into the oil galley. See Figure 6.

CAUTION: The new oil galley plug comes pre-encapsulated with sealant. Do not apply additional sealant to the

plug.

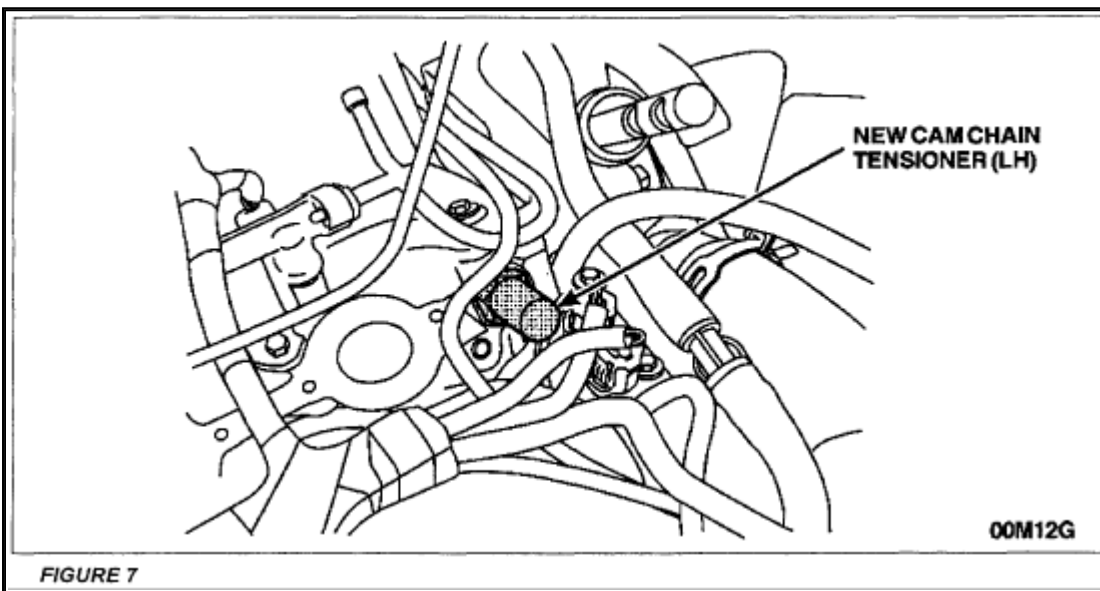
4. Install the new oil galley plug. Tighten the plug until it is flush with the face of the cylinder head.

NOTE: Failure to remove then reinstall the radiator cap may result in coolant draining when the engine coolant temperature (ECT) sensor is removed.

5. Remove, then reinstall, the radiator cap.

6. Remove the ECT sensor only. See Figure 5.

7. Remove and discard the left cam chain tensioner and washer. See Figure 5.



ZOOM

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8. Install the new cam chain tensioner and washer. Tighten the tensioner to 44 Nm (32 lb-ft). See Figure 7.

9. Install and connect the ECT sensor. Tighten the sensor to 15 Nm (132 lb-in).

10. Connect the coolant temperature sender.

LOWER INTAKE MANIFOLD -- INSTALLATION

1. Remove the old gaskets from the lower intake manifold. Clean the manifold gasket mating surfaces. Remove the shop towels from the cylinder heads and clean the gasket mating surfaces.

2. Install new lower intake manifold gaskets, making sure they are correctly seated.

3. Install the lower intake manifold. Tighten the bolts to 18 Nm (13 lb-ft).

4. Install the engine vacuum reservoir, if equipped.

5. Install the locking clips onto the right and left VMV hose connectors.

6. Install the new upper intake manifold gaskets.

CAUTION: When installing the upper intake manifold, be sure that all vacuum lines are positioned back to avoid pinching them under the manifold.

CAUTION: DO Not use any silicone-based lubricants on the EGR tube 0-ring.

NOTE: Using Penetrating and Lock Lubricant, E8AZ-19A501-B or equivalent non-silicone-based lubricant, lightly lubricate the EGR tube 0-ring to allow for easier installation of the upper intake manifold.

7. Position the upper intake manifold carefully, slide the manifold onto the EGR tube and connect both right and left VMV hoses. Also, be sure to route the IAC valve connector into position.
8. Install the upper intake manifold screws. Tighten the screws to 7 Nm (62 lb-in).
9. Connect the IAC valve and TPS connector.
10. Install the EVR/VIS solenoid bracket. Tighten the screws to 3 Nm (26 lb-in).
11. Connect the following vacuum hoses:
 - ^ Brake booster.
 - ^ Intake manifold tuning valve (IMTV) servo, if equipped.
 - ^ Right side upper intake vacuum supply (two hoses).
 - ^ PCV valve.
12. Install the air cleaner outlet tube, and connect the fresh air tubes and IAT sensor.
13. Correctly route and secure the accelerator and speed control cables. Tighten the screws to 3 Nm (26 lb-in).
14. Install the accelerator control splash shield.
15. Start the engine and check for correct operation. Check and top off the cooling system as needed.

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