
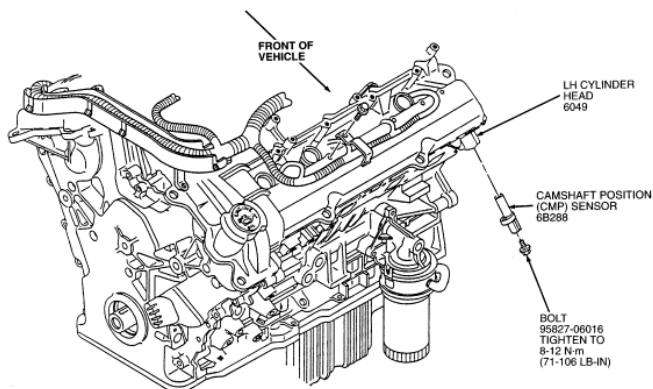


Camshaft Position (CMP) Sensor**SHO****Removal**

1. Disconnect battery ground cable (14301) . Refer to [Section 14-01](#).
2. Remove the engine appearance cover. For additional information, refer to [Section 03-01C](#).
3. Disconnect engine control sensor wiring (12A581) from camshaft position sensor (CMP sensor) (6B288) .
4. Remove camshaft position sensor retaining bolt and remove camshaft position sensor from engine.

Installation

1. Make sure camshaft position mounting sensor surface is clean and that camshaft position sensor O-ring is in proper location on camshaft position sensor .
2.  **CAUTION: Do not overtighten camshaft position sensor retaining bolt or damage to camshaft position sensor or engine mounting surface may occur.**
Position camshaft position sensor onto engine and install retaining bolt. Tighten retaining bolt to 8-12 Nm (71-106 lb-in).
3. Connect engine control sensor wiring to camshaft position sensor .
4. Install the engine appearance cover. For additional information, refer to [Section 03-01C](#).
5. Connect battery ground cable .


Camshaft Position Sensor

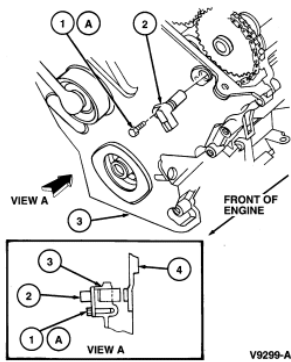
AN0066-A

3.0L (4V) Engine**Removal**

1. Disconnect battery ground cable . Refer to [Section 14-01](#).
2. Disconnect engine control sensor wiring from camshaft position sensor .
3. Remove camshaft position sensor retaining bolt and remove camshaft position sensor from engine.

Installation

1. Make sure camshaft position sensor mounting surface is clean and that camshaft position sensor O-ring is in proper location on camshaft position sensor .
2.  **CAUTION: Do not overtighten camshaft position sensor retaining bolt. Damage to camshaft position sensor or engine mounting surface may occur.**
Position camshaft position sensor onto engine and install retaining bolt. Tighten retaining bolt to 8-12 Nm (71-106 lb-in).
3. Connect engine control sensor wiring to camshaft position sensor .
4. Connect battery ground cable .



| Item | Part Number | Description |
|------|-------------|-----------------------------------|
| 1 | N806155-S2 | Bolt |
| 2 | 6B288 | Camshaft Position Sensor |
| 3 | 6019 | Engine Front Cover |
| 4 | 6250, LH | Camshaft |
| A | — | Tighten to 8-12 Nm (71-106 Lb-In) |

3.0L (2V) Engine

SPECIAL SERVICE TOOL(S) REQUIRED

| Description | Tool Number |
|------------------------------|-------------|
| Synchronizer Alignment Gauge | 303-589 |

CAUTION: Prior to removal of the camshaft position sensor (CMP sensor) (12126), set cylinder No.1 to zero degrees top dead center (TDC) of compression stroke. Note the position of the camshaft position sensor electrical connector. The installation procedure requires that the connector be located in the same position.

Removal

1. Disconnect battery ground cable . Refer to [Section 14-01](#).
2. Disconnect the crankcase ventilation hose from the air cleaner outlet tube fitting.
3. Remove the accelerator/speed control cable splash shield.
4. Disconnect the accelerator/speed control cable and return spring from the throttle body.
5. Remove the accelerator/speed control cable bracket from the throttle body and position aside.
6. Disconnect the 3 spark plug wires for the RH cylinder head from the coil pack.
7. Remove the spark plug wire separator from the throttle body and position the wires aside.
8. Disconnect engine control sensor wiring connector from camshaft position sensor .
9. Remove camshaft position sensor retaining screws and camshaft position sensor from camshaft position sensor housing.
10. If removing camshaft position sensor housing from the cylinder block (6010) , proceed with Removal Step 11. If not removing camshaft position sensor housing, proceed to installation Step 12.
11. Remove hold-down clamp (12270) (bolt and washer assembly).
12. Remove camshaft position sensor housing from cylinder block .


Installation

1. **CAUTION:** After installation, do not loosen the synchronizer bolt and rotate the synchronizer assembly. The synchronizer assembly is not adjustable. Do not loosen the synchronizer bolt after the alignment tool has been removed in order to align the CMP electrical connector for any reason. If the electrical connector is not in the correct position, the synchronizer assembly must be removed, the alignment tool and the assembly reinstalled if the engine has not been rotated from top dead center (TDC) of the compression stroke on the No. 1 cylinder.

CAUTION: A special service tool such as Synchronizer Alignment Gauge 303-589 must be used to position the synchronizer assembly prior to installation of the camshaft position sensor. Failure to follow this procedure will result in improper camshaft position sensor alignment. This will result in the fuel system being out of time with the engine, possibly causing engine damage.

Attach the Synchronizer Alignment Gauge as follows:

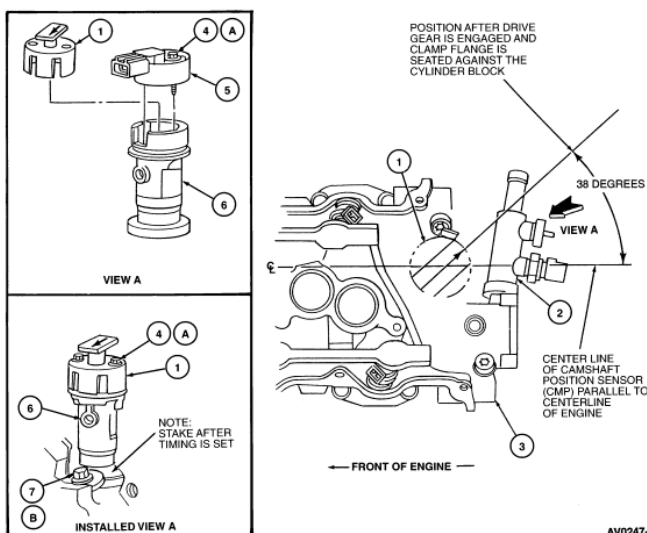
- a. Engage camshaft position sensor housing vane into the radial slot of the tool.
 - b. Rotate tool on camshaft position sensor housing until tool boss engages notch in camshaft position sensor housing.
2. Pre-lubricate synchronizer gear with engine oil meeting Ford specification WSS-M2C153-G prior to assembly.
 3. Install camshaft position sensor housing so that drive gear engagement occurs. Locate camshaft position sensor electrical connector in the pre-removal position.
 4. Install hold-down clamp (washer and bolt) and tighten bolt to 19-30 Nm (14-22 lb-ft).
 5. Remove the Synchronizer Alignment Gauge.

6.  **CAUTION:** If camshaft position sensor electrical connector is not positioned properly, **DO NOT** reposition the connector by rotating the camshaft position sensor housing. This will result in the fuel system being out of time with the engine, possibly causing engine damage. Remove the camshaft position sensor housing and repeat installation procedure, beginning with Step 1.

Install camshaft position sensor and retaining screws. Tighten screws to 1.5-4.0 Nm (14-35 lb-in).

7. Connect engine control sensor wiring connector to camshaft position sensor .
8. Install the spark plug wire separator.
9. Connect the spark plug wires to the ignition coil.
10. Install the accelerator/speed control/cable bracket.
11. Connect the accelerator/speed control cable and spring to the throttle body.
12. Install the accelerator cable splash shield.
13. Connect the crank case ventilation hose.
14. Connect battery ground cable (14301).

Camshaft Position Sensor



| Item | Part Number | Description |
|------|-------------|------------------------------------|
| 1 | 303-589 | Syncro Positioning Tool |
| 2 | — | Water Outlet (Part of Intake Assy) |
| 3 | 9424 | Intake Manifold |
| 4 | N602704-S | Screw and Washer |
| 5 | 6B288 | Camshaft Position Sensor |
| 6 | 12A362 | Synchronizer Assembly |
| 7 | 12270 | Hold-Down Clamp |
| A | — | Tighten to 1.5-4 Nm (14-35 Lb-In) |
| B | — | Tighten to 19-30 Nm (14-22 Lb-Ft) |

