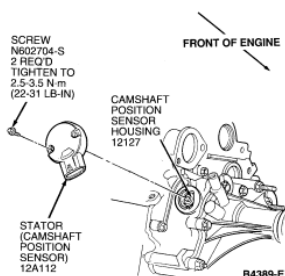


Camshaft Position (CMP) Sensor**3.8L Engine****SPECIAL SERVICE TOOL(S)
REQUIRED**

Description	Tool Number
Syncro Positioning Tool	T89P-12200-A

Removal

1. Disconnect battery ground cable (14301) .
2. Disconnect fuel charging wiring (9D930) from distributor stator (12A112) (camshaft position sensor).
3. Remove stator camshaft position sensor retaining screws and distributor stator (camshaft position sensor) from camshaft position sensor housing.
4. If removing camshaft position sensor housing from the engine front cover (6019) , proceed with Removal Step 5. If camshaft position sensor housing is not being removed, proceed to Installation Step 6.



5. **CAUTION:** Before proceeding with this procedure, set cylinder No. 1 to 26 degrees After Top Dead Center (ATDC) of the compression stroke. Then note the position of the stator (camshaft position sensor) electrical connector. The installation procedure requires that the connector be located in the same position.

Remove retaining bolt and hold-down clamp (12270) .

6. **NOTE:** The oil pump intermediate shaft (6A618) should be removed with the camshaft position sensor housing.

Remove camshaft position sensor housing from engine front cover .

Installation

1. **CAUTION:** If the replacement distributor stator (camshaft position sensor) does not contain a plastic locator cover tool, a special service tool such as Syncro Positioning Tool T89P-12200-A must be obtained prior to installation of the replacement distributor stator (camshaft position sensor). Failure to follow this procedure will result in improper stator (camshaft position sensor) alignment. This will result in the fuel system being out of time with the engine, possibly causing engine damage.

If the plastic locator cover tool is not attached to the replacement distributor stator (camshaft position sensor), attach Syncro Positioning Tool T89P-12200-A 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. The cover tool should be square and in contact with entire top surface of camshaft position sensor housing.

2. Transfer oil pump intermediate shaft from old camshaft position sensor housing to replacement camshaft position sensor housing.

3. **CAUTION:** If stator (camshaft position sensor) electrical connector is not positioned properly (for example, contacting the A/C compressor bracket), 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 housing so that drive gear engagement occurs when arrow on locator tool is pointed approximately 30 degrees counterclockwise from the front face of the cylinder block (6010) . This step will locate stator (camshaft position sensor) electrical connector in the pre-removal position.

4. Install hold-down clamp and retaining bolt and tighten bolt to 20-30 Nm (15-22 lb-ft).

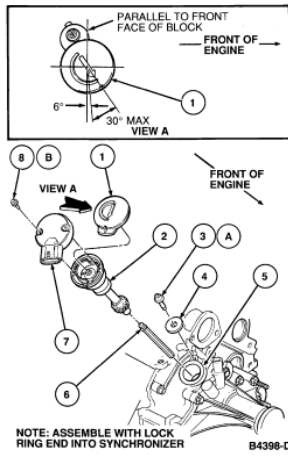
5. Remove Syncro Positioning Tool T89P-12200-A.

6. **CAUTION:** If stator (camshaft position sensor) electrical connector is not positioned properly (for example, contacting the A/C compressor bracket), 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 distributor stator (camshaft position sensor) and retaining screws. Tighten screws to 2.5-3.5 Nm (22-31 lb-in).

7. Connect fuel charging wiring connector to distributor stator (camshaft position sensor).

8. Connect battery ground cable .



Item	Part Number	Description
1	T89P-12200-A	Syncro Positioning Tool
2	12127	Camshaft Position Sensor Housing
3	N605907	Bolt
4	12270	Hold-Down Clamp
5	6019	Engine Front Cover
6	6A618	Oil Pump Intermediate Shaft
7	12A112	Distributor Stator (Camshaft Position Sensor)
8	N805029	Screw (2 Req'd)
A	—	Tighten to 20-30 Nm (15-22 Lb-Ft)
B	—	Tighten to 2.5-3.5 Nm (22-31 Lb-In)