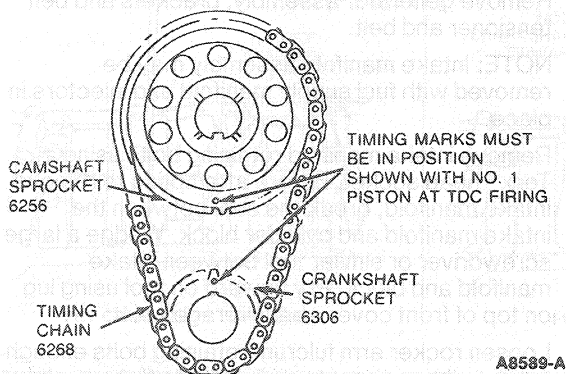


## REMOVAL AND INSTALLATION (Continued)

20. Remove front cover assembly retaining bolts.

**CAUTION: Use care to not damage machined surfaces when removing front cover. Only drive screwdriver enough to break gasket seal.**

21. Remove front cover and discard old gasket. Place a dull, thin-bladed screwdriver or similar device between front cover and cylinder block and tap to break seal. Walk front cover off cylinder block locating dowels using a soft rocking motion. Use crankshaft seal protector if available.
22. Align marks on camshaft and crankshaft gears as shown.



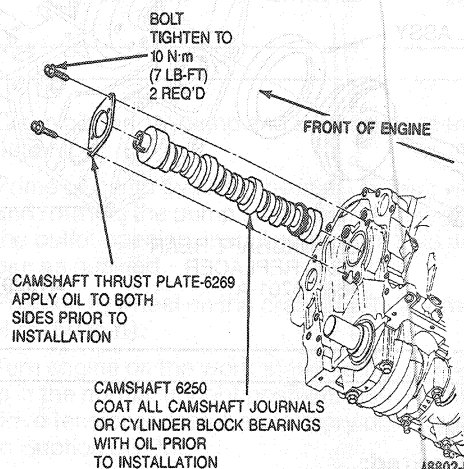
23. Check camshaft end play. Refer to Section 03-00. If clearance is excessive, replace camshaft thrust plate.
24. Check timing chain deflection. Refer to Section 03-00.
25. Remove camshaft sprocket retaining bolt and washer.
26. Remove timing chain and sprockets. Using one hand on the camshaft sprocket and the other on the crankshaft gear, pull assembly forward and off of crankshaft and camshaft.
27. Remove two camshaft thrust plate retaining bolts and thrust plate.
28. Carefully remove camshaft by pulling slowly toward front of engine keeping camshaft perfectly in line with camshaft bores. Damage to camshaft bearings and / or camshaft can occur if camshaft is allowed to drop on bearing surface or cylinder block.

#### Installation

**NOTE:** Lightly oil all retaining bolt and stud bolt threads before installation except those specified for special sealant.

**CAUTION: Aluminum components gouge easily which cause gasket leaks. Always use care when scraping aluminum gasket surfaces.**

1. Clean mating gasket surfaces of intake manifold and cylinder head. Lay a clean cloth or shop cloth in the tappet valley to catch any gasket material. After scraping, carefully lift cloth from tappet valley preventing any particles to enter oil drain holes or cylinder head. Use a suitable solvent to remove old rubber sealant. Clean gasket mating surfaces of front cover to cylinder block and oil pan to cylinder block.
2. Inspect camshaft bearings for wear. Refer to Section 03-00.
3. Clean and inspect all components before installation.
4. Lubricate camshaft lobes and bearing surfaces liberally with Engine Assembly Lubricant D9AZ-19579-D (ESR-M99C80-A) or equivalent. Coat distributor drive gear with Engine Assembly Lubricant D9AZ-19579-D (ESR-M99C80-A) or equivalent. Carefully slide camshaft through bearings into cylinder block. Keep camshaft in line with front bearing.
5. Lubricate camshaft thrust plate with Engine Assembly Lubricant D9AZ-19579-D (ESR-M99C80-A) or equivalent and install with two retaining bolts. Tighten bolts to 10 N·m (7 lb-ft).



6. If installing a new camshaft, check endplay. Refer to Section 03-00. If clearance is excessive, replace camshaft thrust plate.

**CAUTION: Do not replace camshaft sprocket bolt with a standard bolt or severe engine damage will occur. This bolt is an oil carrying, precision component.**