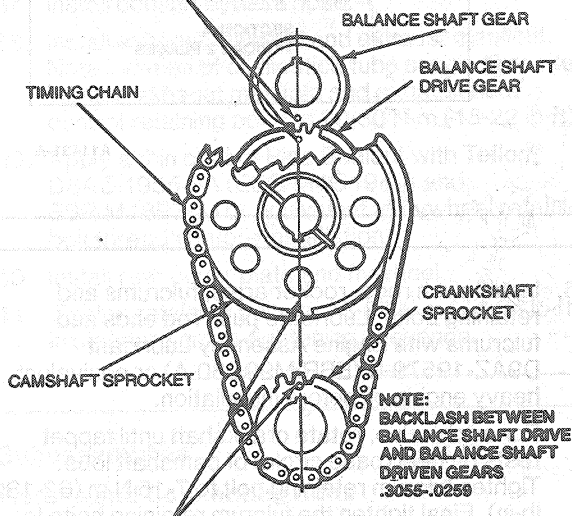


DISASSEMBLY AND ASSEMBLY (Continued)

12. Install balance shaft, thrust plate and gear, and tighten retaining bolts to 8-14 N·m (70-124 lb-in). Align balance shaft timing marks as shown.
13. Lubricate timing chain with clean engine oil XO-10W30-QSP (ESE-M2C153-E) or equivalent.
14. Rotate crankshaft, as necessary, to position crank sprocket keyway in 12 o'clock position. Install balance shaft drive gear spacer. Install timing chain tensioner (retracted position).
15. Install camshaft sprocket, crankshaft sprocket and timing chain. Pull pin on tensioner to release tensioner against chain.
16. Ensure crankshaft keyway, cam sprocket timing mark and crank sprocket timing mark are properly aligned after installation.

POSITIONING OF TIMING MARKS IN BALANCE SHAFT DRIVE GEAR AND BALANCE SHAFT DRIVEN GEAR MUST BE IN LINE AS SHOWN WITH NO. 1 PISTON AT TOP DEAD CENTER FIRING.



POSITIONING OF TIMING MARKS AND KEYWAY IN CAMSHAFT AND CRANKSHAFT SPROCKET MUST BE IN LINE AS SHOWN WITH NO. 1 PISTON AT TOP DEAD CENTER FIRING.

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17. Install distributor drive gear.
18. If water pump was removed from front cover during engine disassembly, position a new pump gasket on front cover and install water pump. Tighten pump retaining bolts to 20-30 N·m (15-22 lb-ft).

19. Install camshaft bolt and washer and tighten to 40-50 N·m (30-37 lb-ft).
20. Position a new front cover gasket on engine. Install cover and ignition timing indicator. Tighten attaching bolts to 20-30 N·m (15-22 lb-ft).
21. Install oil pickup and tube assembly using a new gasket. Tighten retaining bolts to 20-30 N·m (15-22 lb-ft), and support bracket retaining nut to 40-55 N·m (30-40 lb-ft).
22. Install oil pan as follows:

NOTE: Using solvent, clean oil pan and engine block seating surfaces before applying silicone sealer.

- a. Using a small-blade screwdriver remove any sealer which may have been squeezed into seal groove when rear main bearing cap was installed. Place a 6.35mm (1/4 inch) bead of Silicone Gasket and Sealant D6AZ-19562-AA or BA (ESB-M4G92-A and ESE-M4B195-A) or equivalent, into seal groove where bearing cap meets block.
 - b. Apply a 3mm (1/8 inch) bead of Silicone Gasket and Sealant Sealer D6AZ-19562-AA or BA (ESB-M4G92-A and ESE-M4G195-A) or equivalent to seams where front cover mates with cylinder block and to each end of pan end seal.
 - c. Apply RTV gasket material in zig-zag pattern to oil pan sealing surface.
 - d. Install oil pan. Tighten retaining bolts to 9-12 N·m (80-106 lb-in).
23. Lubricate oil filter gasket with clean engine oil and install. Thread filter onto adapter until gasket contacts cylinder block and then advance filter an additional one-half turn.
 24. Lubricate tappets with Engine Assembly Lubricant D9AZ-19579-D (ESR-M99C80-A) or equivalent, and install. Install guide plates and retainers.