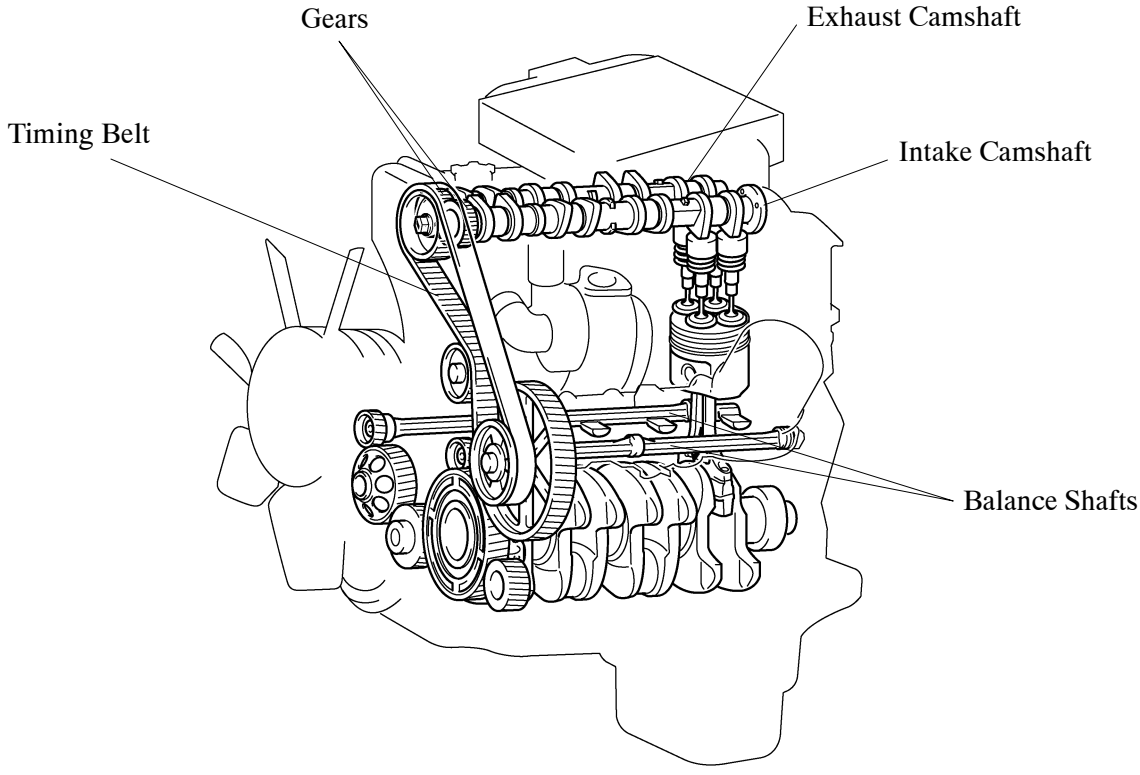
■VALVE MECHANISM

1. General

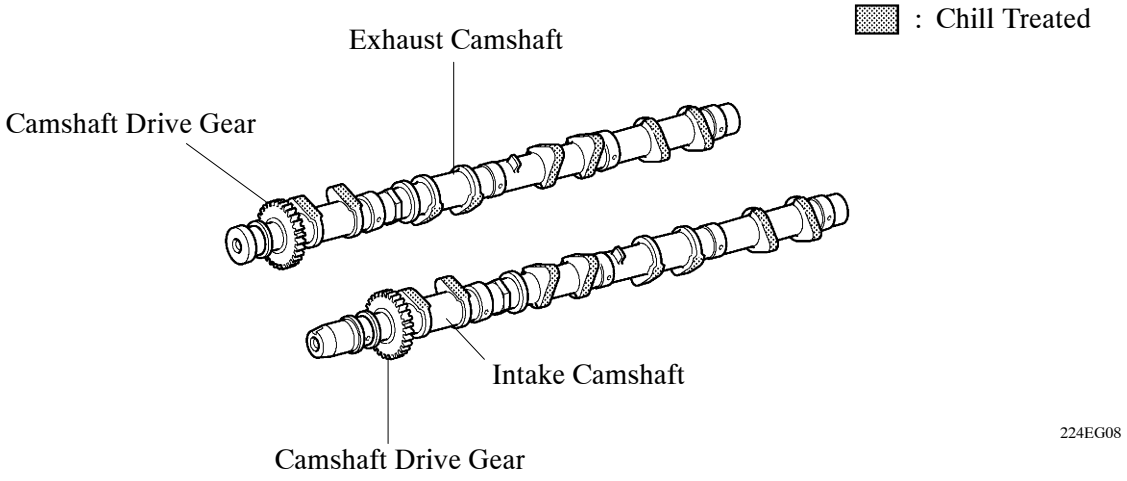
- Each cylinder has 2 intake valves and 2 exhaust valves. Intake and exhaust efficiency is increased by means of the larger total port areas.
- The valves are directly opened and closed by 2 camshafts.
- The intake camshaft is driven by a timing belt, while the exhaust camshaft is driven through gear on the intake camshaft.
- Small-diameter, and flat-teeth gears are used for driving the exhaust camshaft in order to reduce gear noise.



233EG24

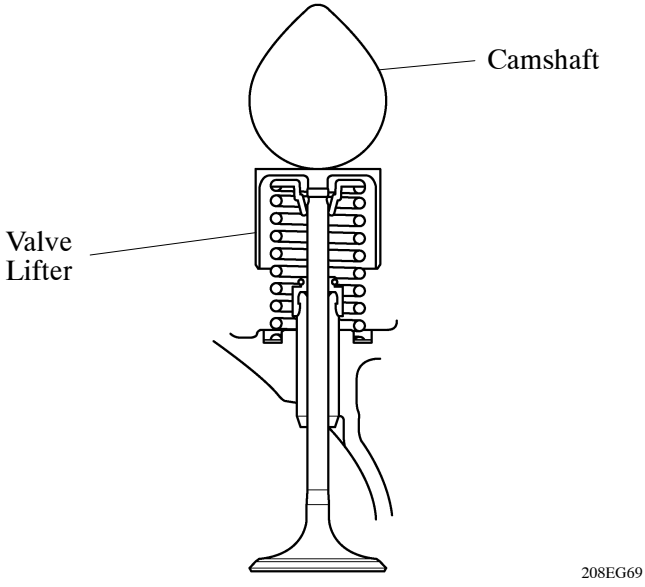
2. Camshaft

The cam nose has been chill treated to increase its abrasion resistance.



3. Intake and Exhaust Valves

Along with the increased amount of valve lift, shim-less valve lifters that provide a large cam contact surface have been adopted.
The adjustment of the valve clearance is accomplished by selecting and replacing the appropriate valve lifters.

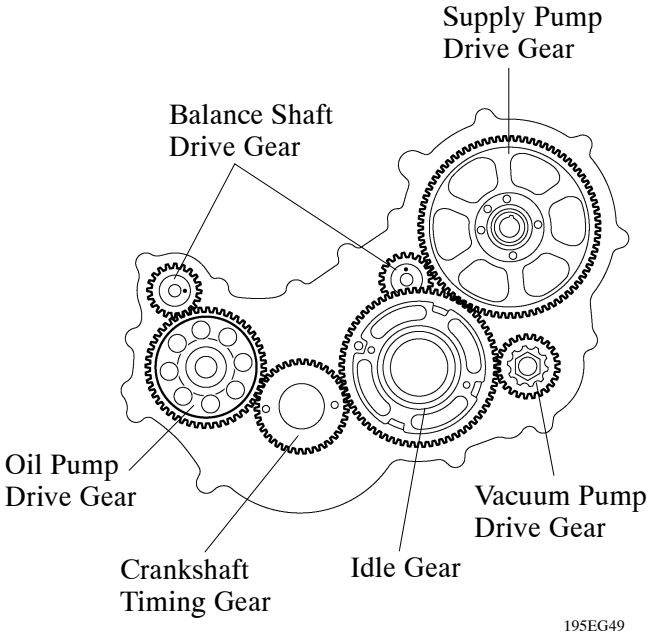


Service Tip

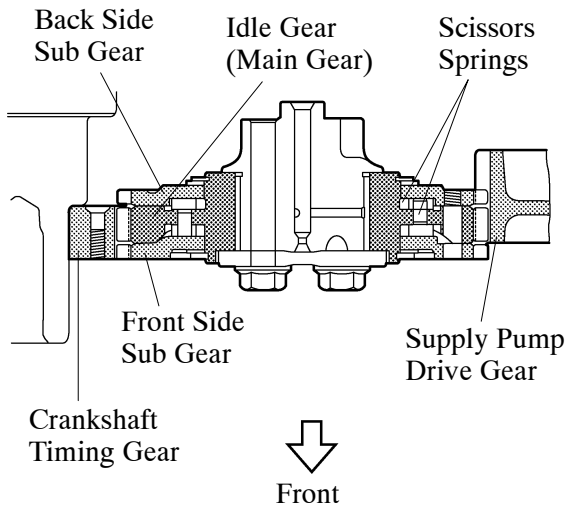
The valve lifters must be replaced when it is necessary to adjust the valve clearance. For this purpose, valve lifters with different thickness are available as service parts.
For details, refer to the 1KD-FTV Engine Repair Manual (Pub. No. RM992E).

4. Timing Gear Train

- The supply pump, vacuum pump, oil pump and balance shafts are driven by the crankshaft timing gear.
- The idle gear is constructed with a scissors gear on its front and back to reduce noise.



195EG49

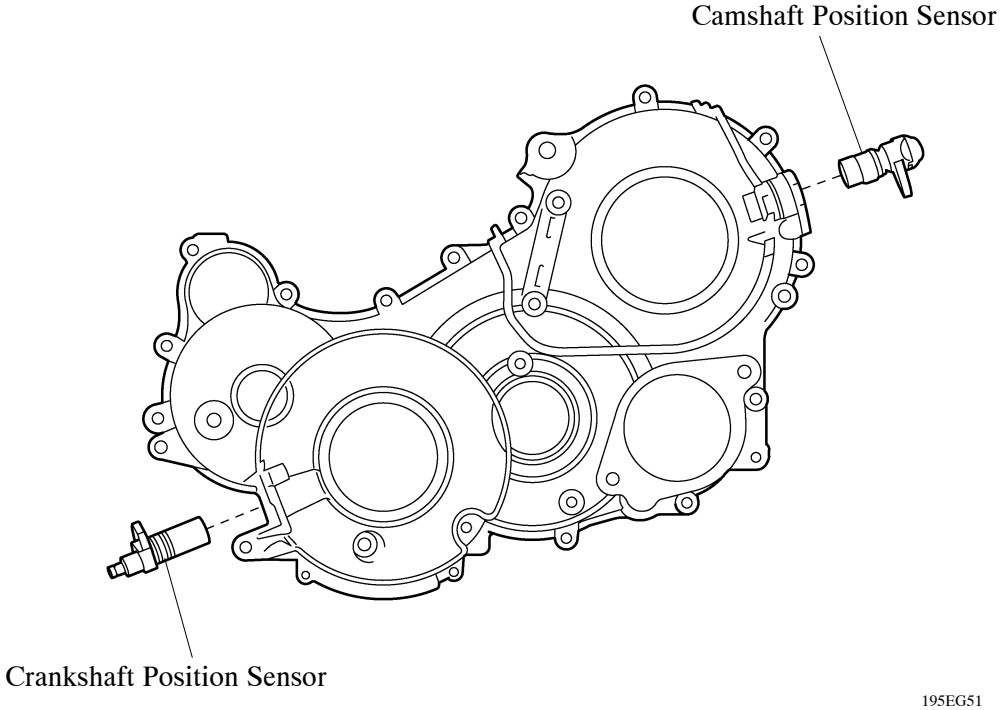


Idle Gear Cross Section

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5. Timing Gear Cover

A crankshaft position sensor and camshaft position sensor are mounted on the timing gear cover.



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