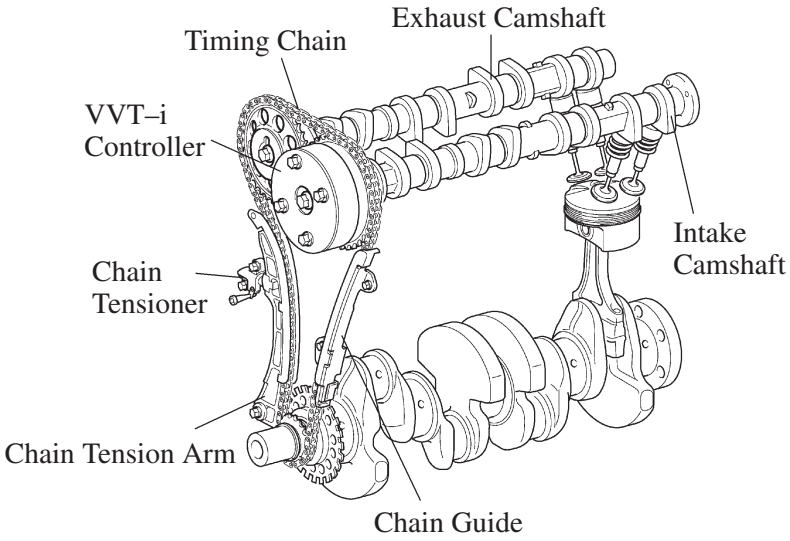
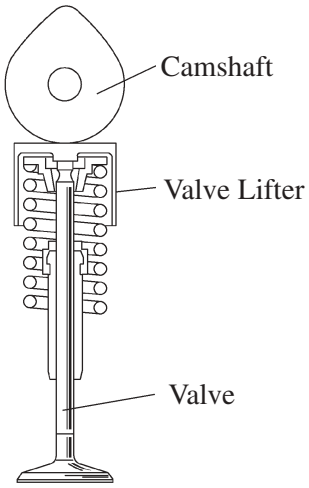
■VALVE MECHANISM

1. General

- The shimless type valve lifter is used to increase the amount of the valve lift.
- The intake and exhaust camshafts are driven by a timing chain.
- The VVT-i system is used to achieve low fuel consumption, high engine performance and reduce exhaust emissions. For details of VVT-i system, see page EG-138.



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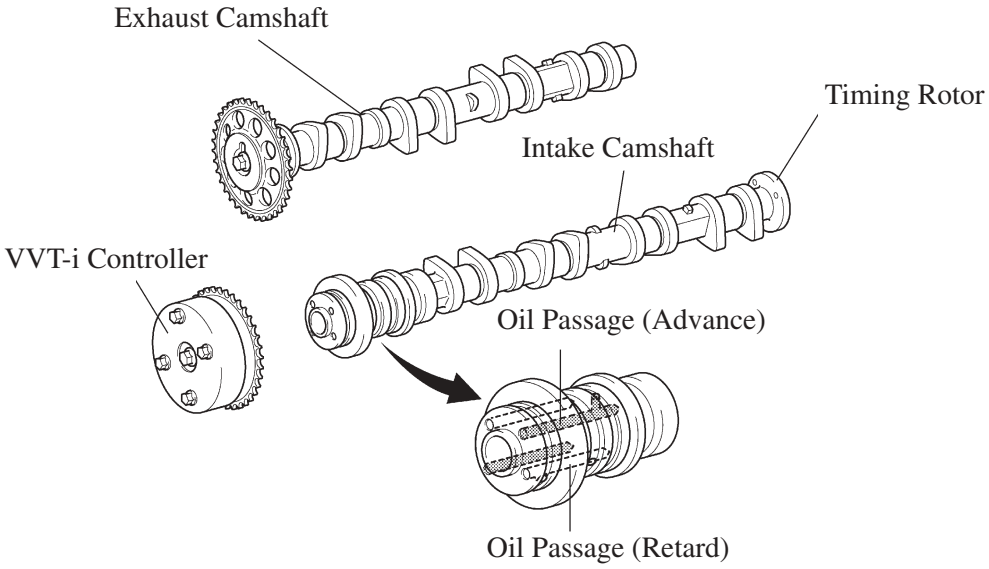
165EG12

Service Tip

The adjustment of the valve clearance is accomplished by selecting and replacing the appropriate valve lifters. Adjusting valve lifters are available in 35 increments of 0.02 mm (0.0008 in.), from 5.06 mm (0.199 in.) to 5.74 mm (0.226 in.).
For details, refer to Yaris Repair Manual (Pub. No. RM00S1E).

2. Camshaft

- Oil passages are provided in the intake camshaft in order to supply engine oil pressure to the VVT-i system.
- A VVT-i controller has been installed on the front of the intake camshaft to vary the timing of the intake valves.
- The timing rotor is provided behind the intake camshaft to trigger the camshaft position sensor.

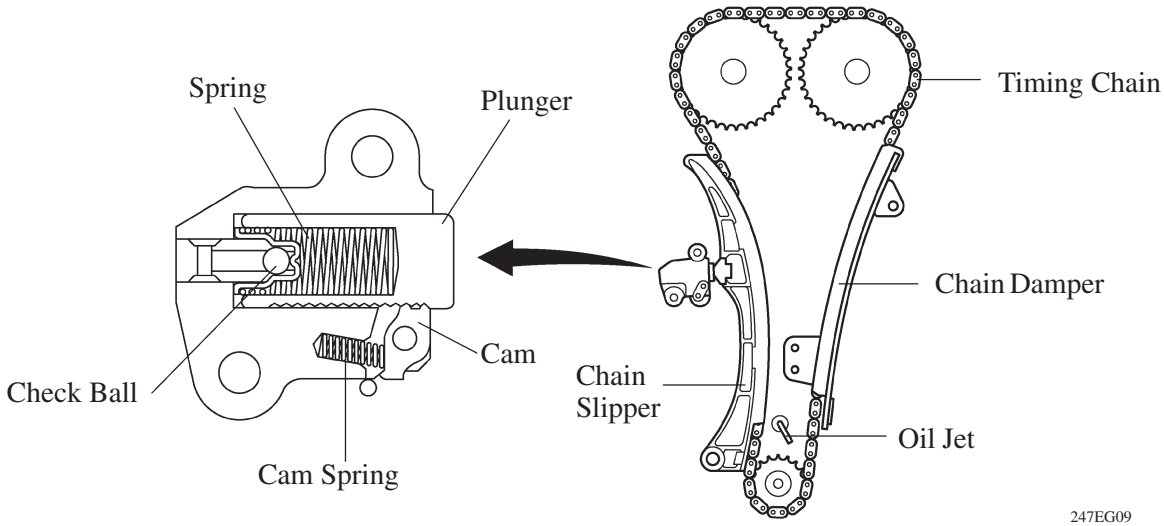


247EG08

3. Timing Chain and Chain Tensioner

- A roller type timing chain with an 8.0 mm (0.315 in.) pitch is used to make the engine compact and reduce noise.
- The timing chain is lubricated by an oil jet.
- The chain tensioner uses a spring and oil pressure to maintain proper chain tensioner at all times. The chain tensioner suppresses noise generated by the timing chain.
- A ratchet type non-return mechanism is used in the chain tensioner.

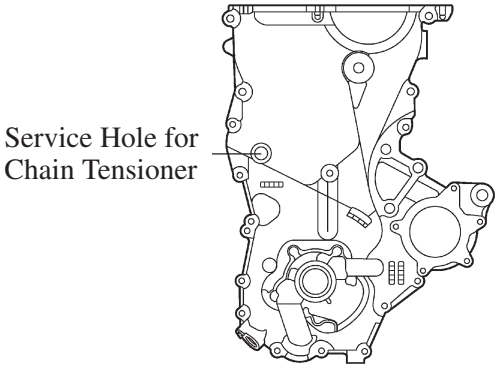
▶ Chain Tensioner ◀



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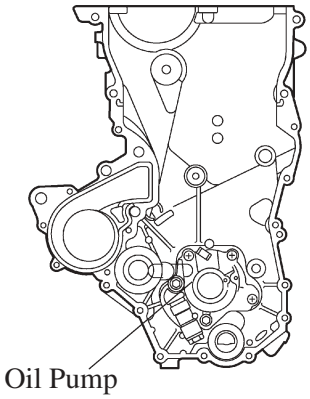
4. Timing Chain Cover

- A single-piece, aluminum diecast timing chain cover that entirely seals the front portion of the cylinder block and the cylinder head is used.
- A service hole for the chain tensioner is provided in the timing chain cover to realize high serviceability.



171EG31

Front View



171EG32

Back View