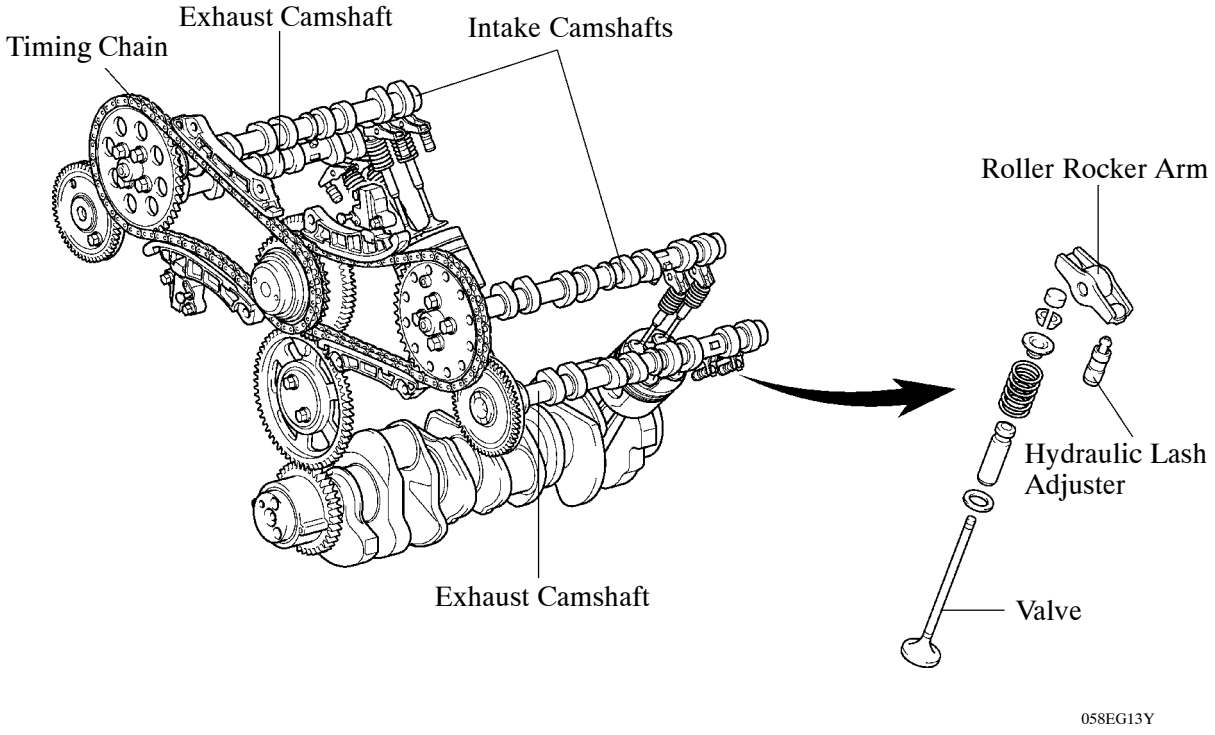
■ VALVE MECHANISM

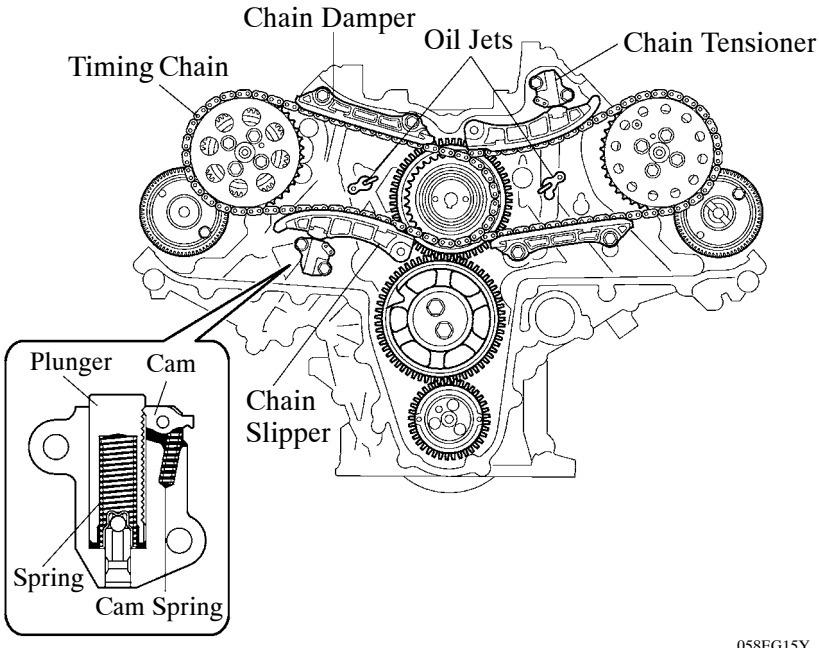
1. General

- 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 timing chain drives the intake camshaft, and a gear that is attached to the intake camshaft drives the exhaust camshaft.
- This engine uses roller rocker arms with built-in needle bearings. This reduces the friction that occurs between the cams and the areas (roller rocker arms) that push the valves down, thus improving fuel economy.
- The hydraulic lash adjusters, which maintain a constant zero valve clearance through the use of oil pressure and spring force, are used.



2. Timing Chain and Chain Tensioner

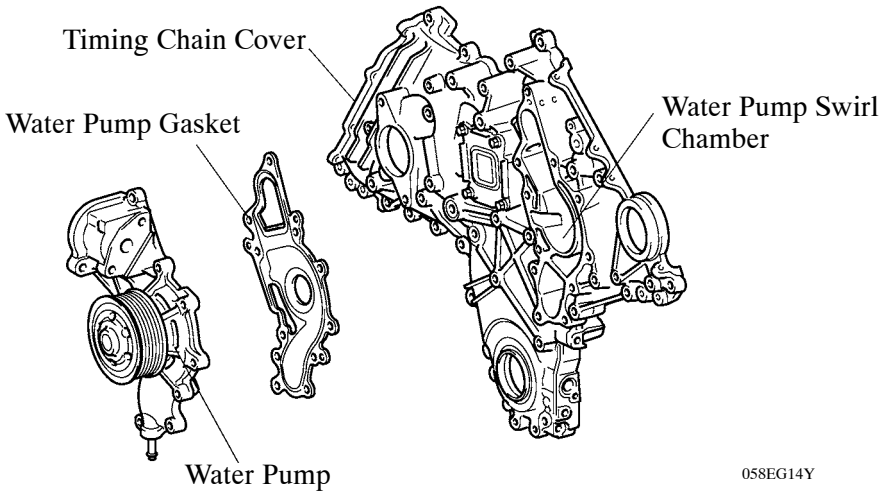
- Timing chains use bush chains with a pitch of 9.525mm (0.375 in.).
- The timing chain is lubricated by an oil jet.
- Chain tensioners use a spring and oil pressure to maintain proper chain tension at all times. They suppress noise generated by the timing chains.
- The chain tensioner is the ratchet type with a non-return mechanism.



Chain Tensioner

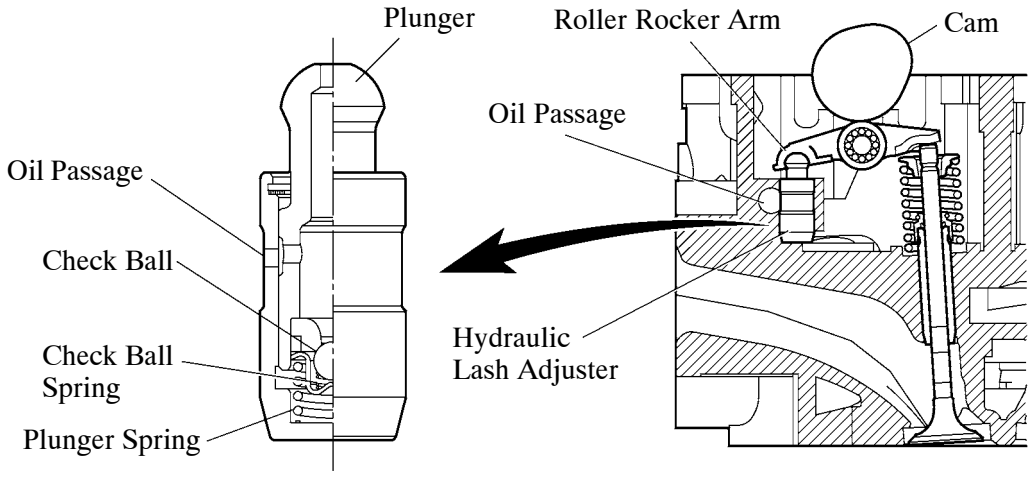
3. Timing Chain Cover

The timing chain cover has an integrated construction consisting of the cooling system (water pump and water passage). Thus, the number of parts has been reduced for weight reduction.



4. Hydraulic Lash Adjuster

- The hydraulic lash adjuster, which is located at the fulcrum of the roller rocker arm, consists primarily of a plunger, plunger spring, check ball, and check ball spring.
- The engine oil that is supplied by the cylinder head and the built-in spring actuates the hydraulic lash adjuster. The oil pressure and the spring force that act on the plunger push the roller rocker arm against the cam, in order to adjust the valve clearance that is created during the opening and closing of the valve. As a result, engine noise is reduced.



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Service Tip

Valve clearance adjustment is not necessary because a hydraulic lash adjuster is used in this model.