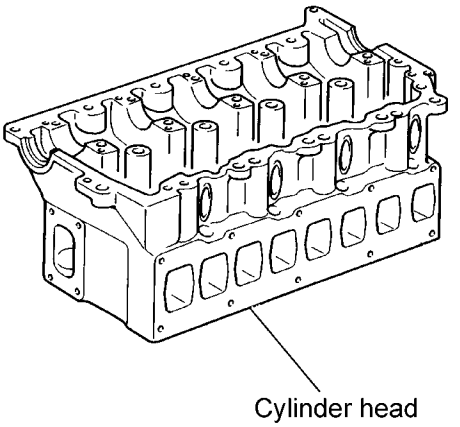
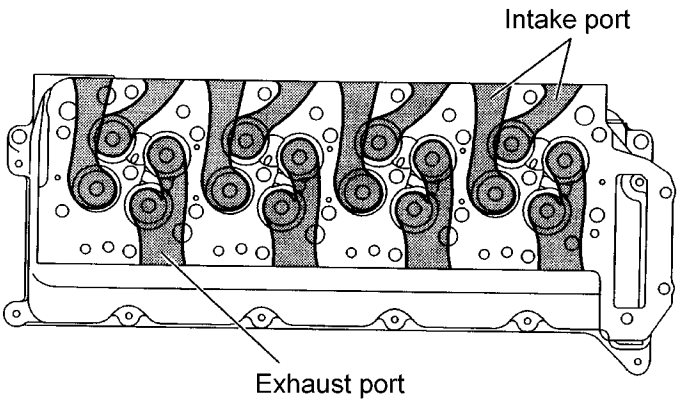
■S05C SERIES ENGINE PROPER

1. Cylinder Head

- The cylinder head cover is made of lightweight die-cast aluminum. The engine overall height was kept below that of the existing J05C by moving the breather chamber closer to the flywheel housing.
- The cylinder head was given an integrated construction, unlike the existing J05C, which has a separate cam housing. This allowed the use of fewer structural parts, resulting in a lightweight construction with tighter sealing characteristics.
- The cylinder head gasket is a 3-ply steel laminate type. And carbon graphite is used in the coolant passages because of its superior sealing characteristics.
- A cross-flow type arrangement of variously shaped ports was adopted to obtain effective air swirl in the combustion chamber for improved charging efficiency and exhaust efficiency.

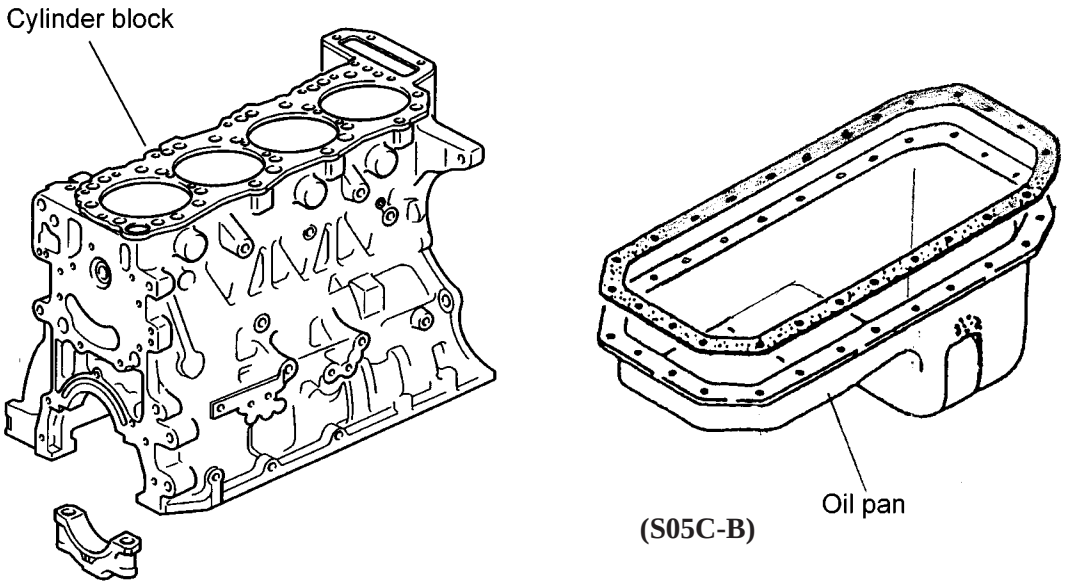




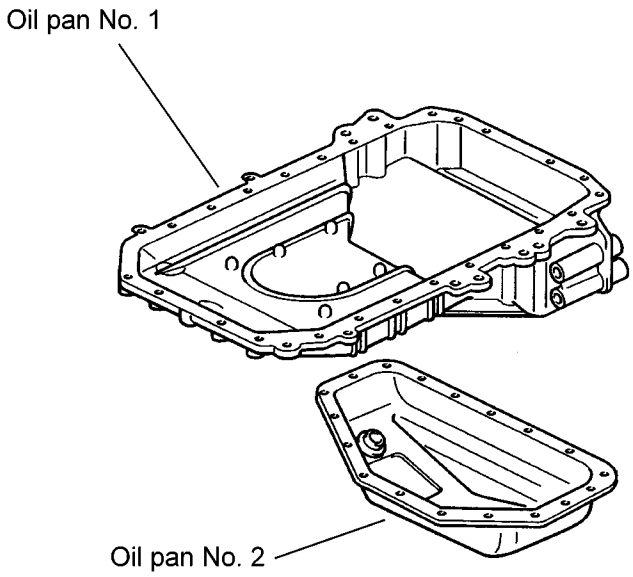
Port shape

2. Cylinder Block & Oil Pan

- The S05C deck height is 21.5 mm (0.85 in.) lower than that of the J05C, so they are short-stroke engines.
- A wide, shallow oil pan was adopted to reduce the overall engine height.
  The S05C-B: The oil pan is constructed in one piece damping steel plate.
  The S05C-TA and S05C-TB: The oil pan is constructed in two parts, one on top of the other. Oil pan No.1 is made of die-cast aluminum and oil pan No.2 has a damping steel plate construction.
- The flywheel housing has a lightweight and highly rigid die-cast aluminum construction. The breather chamber is installed on the gearcase.



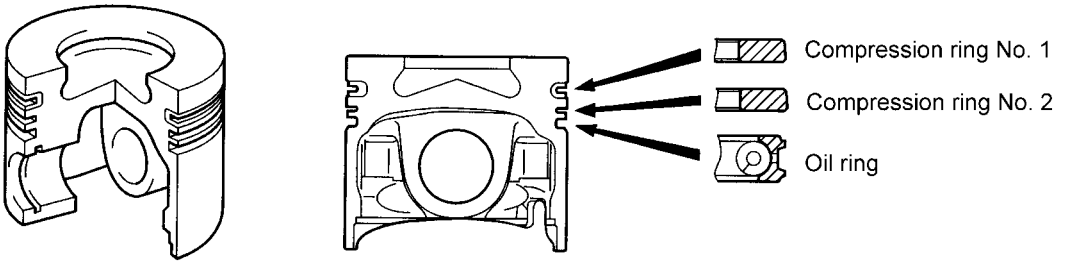
(S05C-B)



(S05C-TA, S05C-TB)

3. Piston

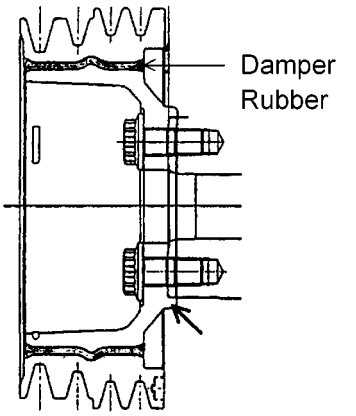
- The piston material is a lightweight heat-resistant aluminum alloy that can withstand high temperatures. The combustion chamber has an entrant shape. The top ring grooves are provided with wear-resistant rings to ensure long-lasting performance, and the skirt is plated for improved anti-scuffing characteristics.



Piston cross section

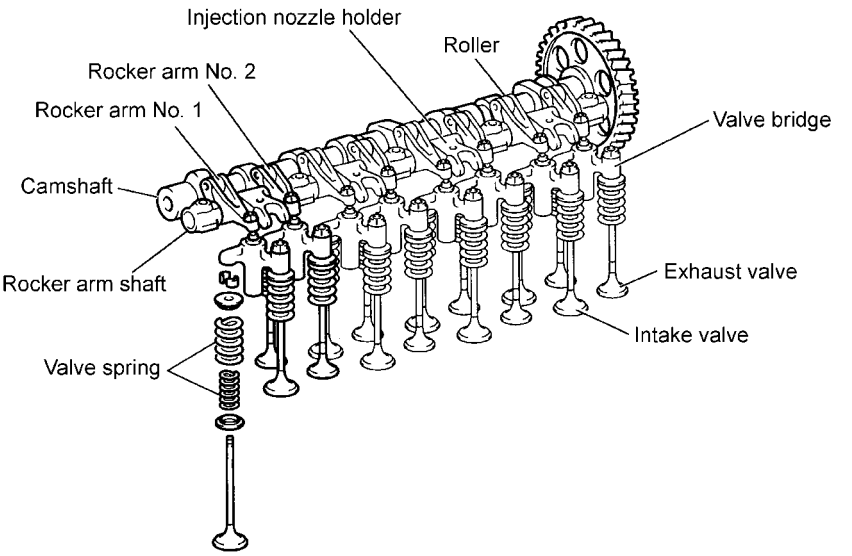
4. Crankshaft Pulley

- The crankshaft pulley is integrated with the crankshaft damper to reduce the engine overall length.



5. Valve Mechanism

- The camshaft is a hollow assembled type made of high-strength carbon steel. The cam profile was given a distinctive curved shape for improved intake efficiency and quieter performance.
- The rocker arm is a roller type with low friction loss.
- A valve bridge made of special forged steel was installed, and the valve mechanism was designed so that the valve clearance can be adjusted by turning the adjusting screw on one side of the rocker arm and valve bridge.



6. Timing Gear

- The crankshaft timing gear is arranged at the engine rear so that its rotation is transmitted through the idle gears to the timing gears.
- The sub idle gear is equipped with a friction ring for reduced gear noise.

