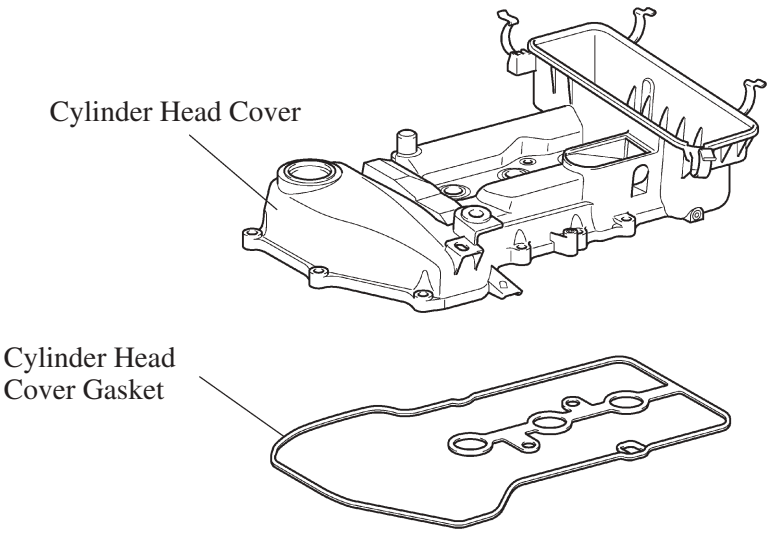
■ENGINE PROPER

1. Cylinder Head Cover

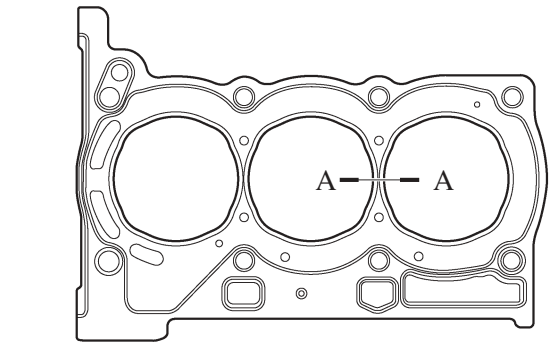
- A cylinder head cover made of plastic and integrated with the air cleaner case is used for weight reduction.
- Acrylic rubber, which excels in heat resistance and reliability, is used for the cylinder head cover gasket.



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2. Cylinder Head Gasket

- A steel-laminate type cylinder head gasket is used.
- The gasket surface is coated with NBR* to enhance the airtightness of the cylinder head.





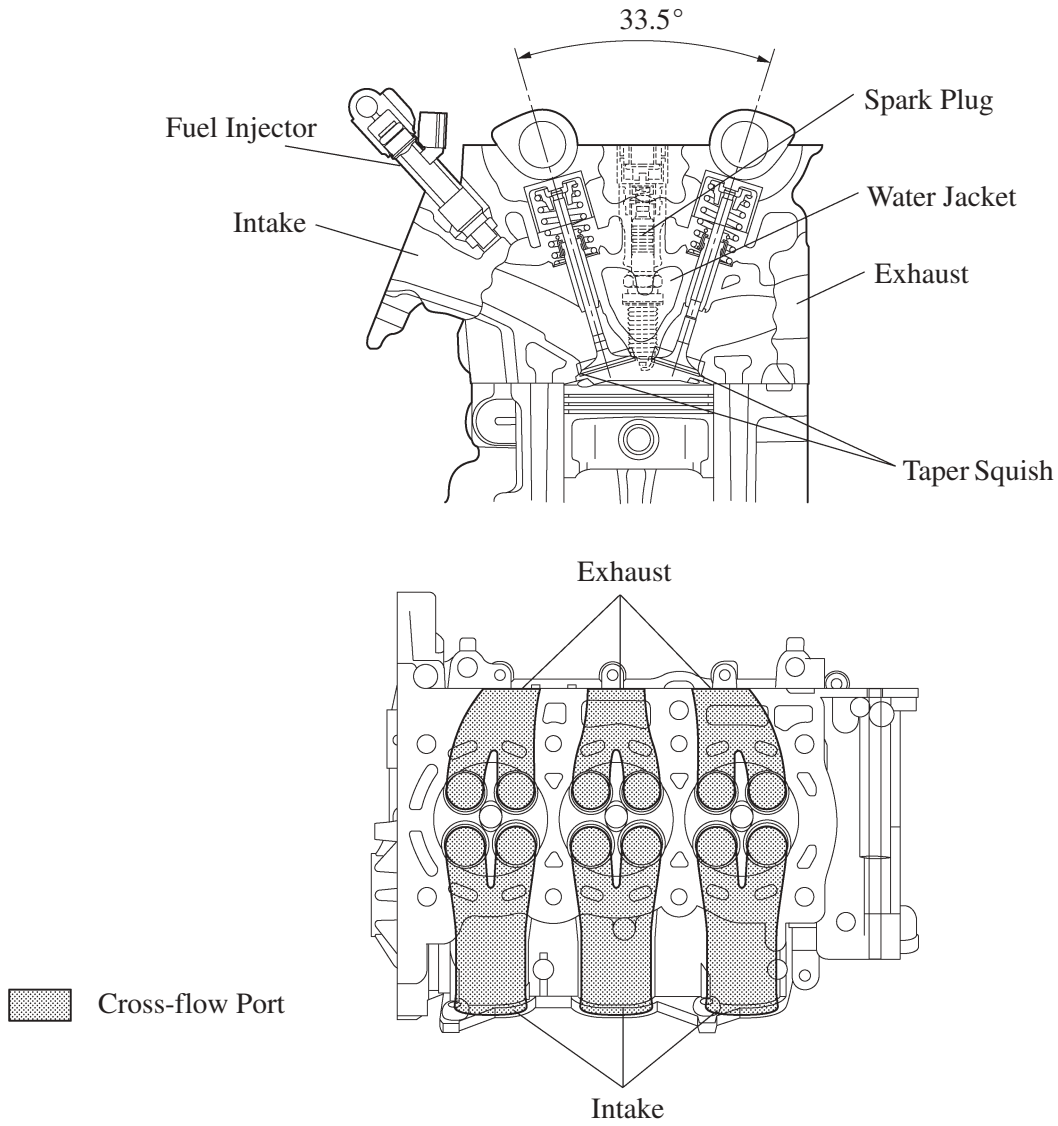
A – A Cross Section

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* NBR (Nitrile Butadiene Rubber):
A rubber material that excels in heat resistance, oil resistance, and wear resistance.

3. Cylinder Head

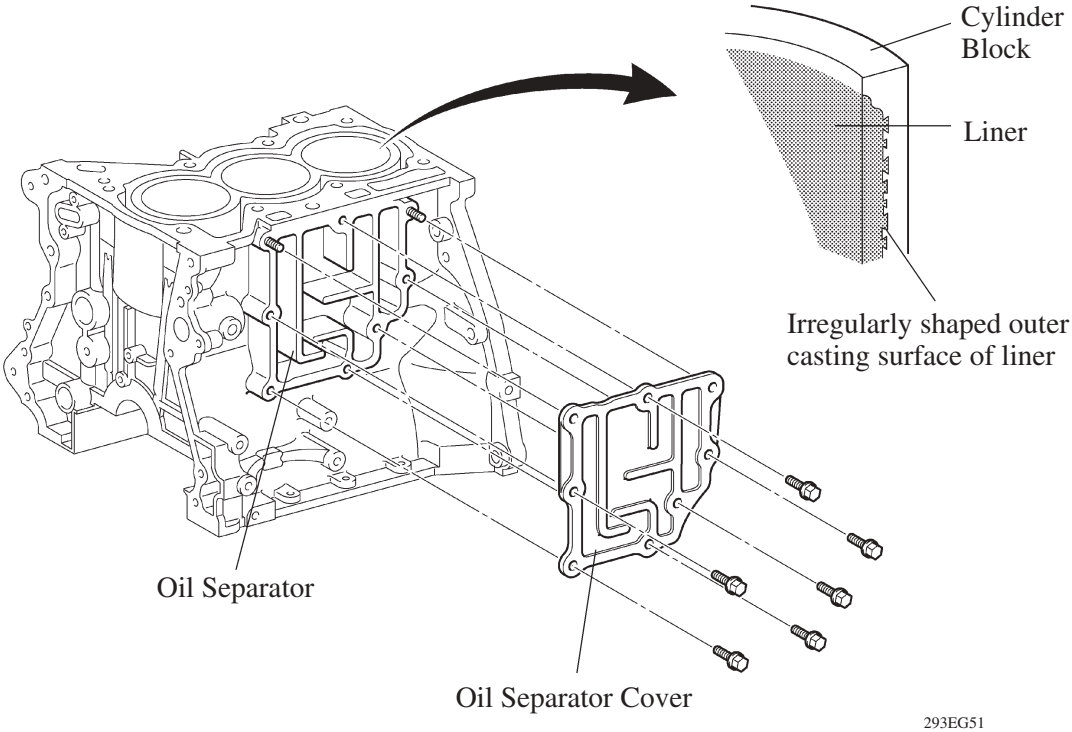
- The spark plug has been located in the center of the combustion chamber in order to achieve the high anti-knocking performance of the engine.
- The angle of the intake and exhaust valves is narrowed and set at 33.5° to realize a compact cylinder head.
- A taper squish combustion chamber is used to achieve high anti-knocking performance and intake efficiency. In addition, excellent engine performance and fuel economy have been realized.
- The shape of the intake ports has been optimized to realize efficient combustion.
- The cylinder head bolt employs plastic region tightening bolts.
- The routing of the water jacket in the cylinder head is optimized to achieve high cooling performance.

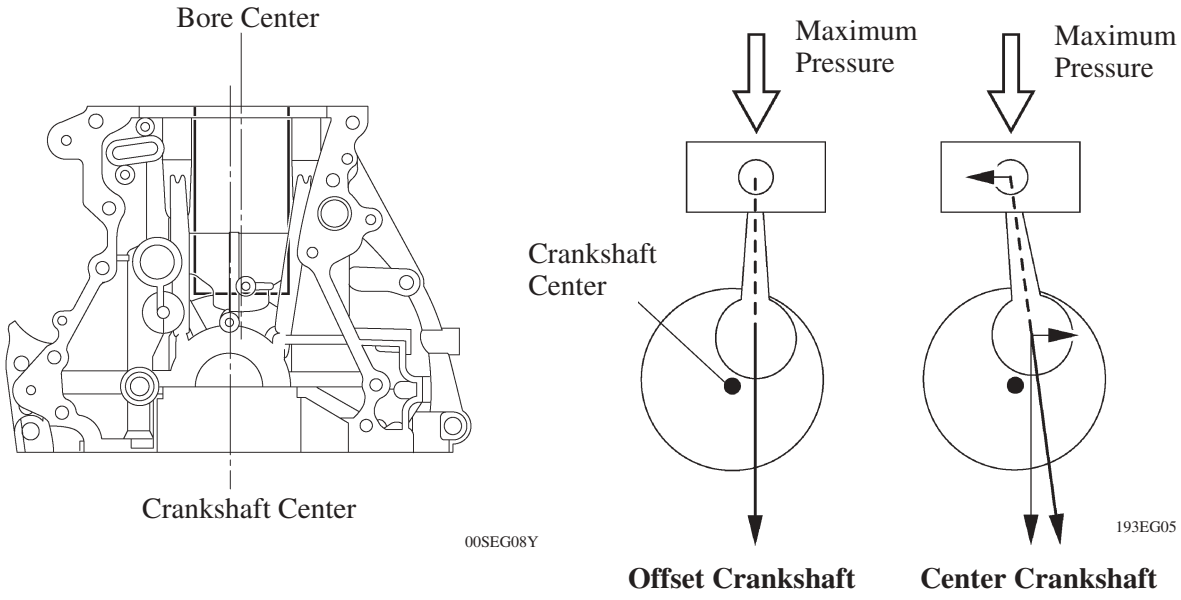


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4. Cylinder Block

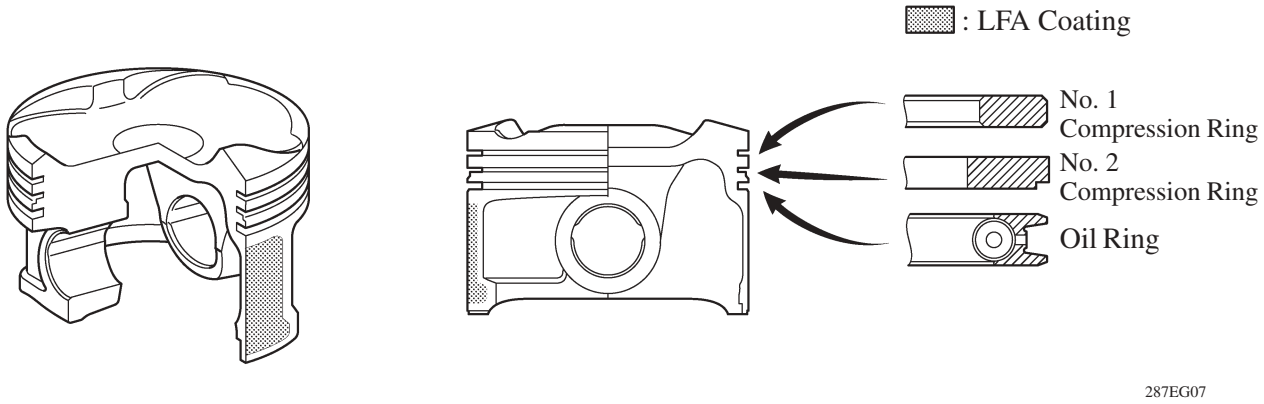
- An aluminum cylinder block with a 7 mm (0.28 in.) distance between the cylinder bores is used to realize a compact and lightweight configuration.
- An oil separator is provided in the blowby gas passage inside the cylinder block. This separates the engine oil from the blowby gas in order to reduce the degradation and consumption of volume of the engine oil.
- It is not possible to bore the block with this liner. The liners are the spiny type, which have been manufactured so that their casting exterior forms a large irregular surface in order to enhance the adhesion between the liners and the aluminum cylinder block. The enhanced adhesion helps heat dissipation, resulting in a lower overall temperature and heat deformation of the cylinder bores.
- Through the use of the offset crankshaft, the bore center is shifted 8 mm (0.31 in.) towards the intake, in relation to the crankshaft center. Thus, the side force to cylinder wall is reduced when the maximum pressure is applied, which contributes to fuel economy.





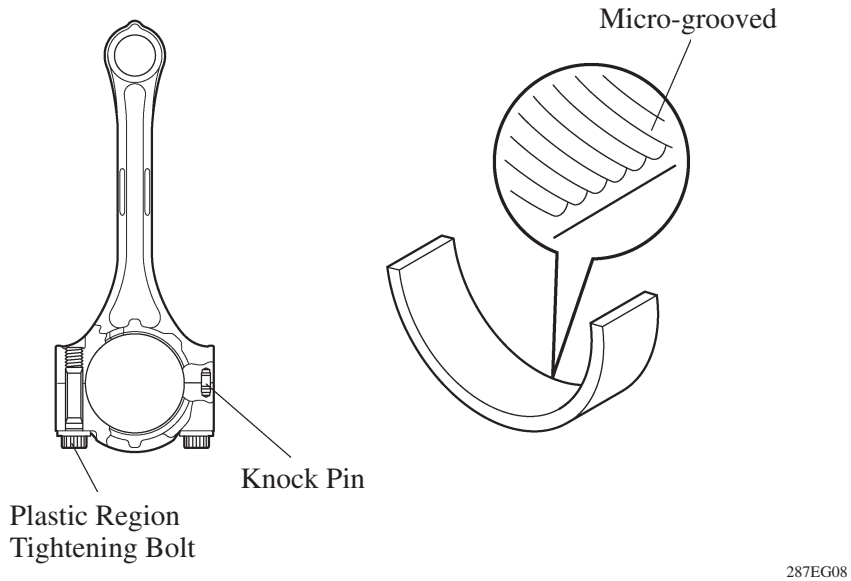
5. Piston

- The piston is made of aluminum alloy.
- The piston head portion uses a taper squish shape to accomplish fuel combustion efficiency.
- New LFA (Low Friction Resin with Alumina) coating is used on the sliding surface of the piston.
- Low-tension piston rings are used to reduce friction and achieve excellent fuel economy.



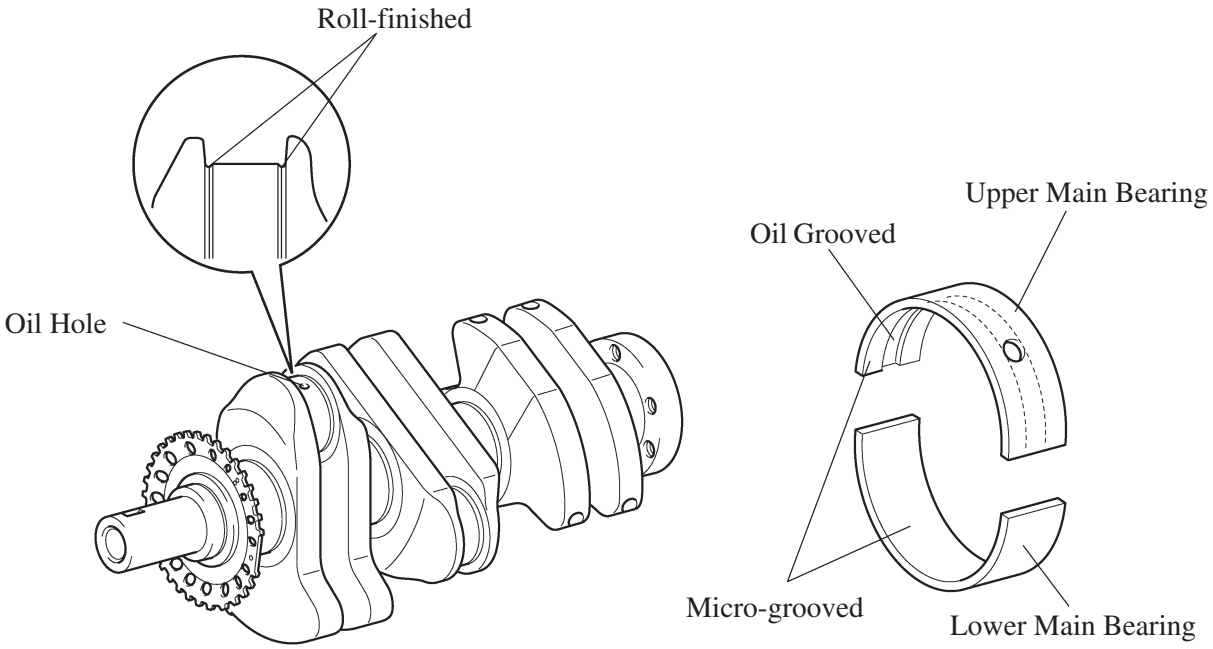
6. Connecting Rod and Connecting Rod Bearing

- Connecting rods that have been forged for high strength are used for weight reduction.
- Plastic region tightening bolts are used.
- The lining surface of the connecting rod bearing has been micro-grooved to realize an optimal amount of oil clearance. As a result, excellent cold-engine cranking performance has been realized and engine vibrations have been reduced.



7. Crankshaft and Crankshaft Bearing

- The crankshaft has 4 journals and 6 balance weights.
- All pins and journal fillets are roll-finished to maintain adequate strength.
- The crankshaft bearing is made of aluminum alloy.
- The lining surface of the crankshaft bearings has been micro-grooved to realize an optimal amount of oil clearance. As a result, excellent cold-engine cranking performance has been realized.
- The upper main bearing has an oil groove around its inside circumference.



8. Oil Pan

An oil strainer made of plastic is used for weight reduction.

