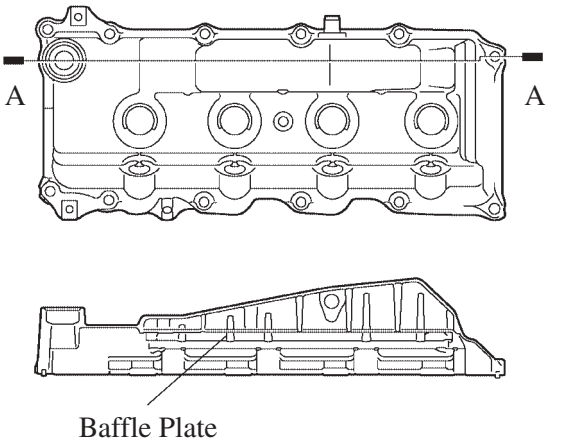
## ■ENGINE PROPER

### 1. Cylinder Head Cover

- The cylinder head cover is made of plastic to reduce weight and noise.
- A baffle plate is provided on the inside of the cylinder head cover to reduce the consumption of engine oil through blow-by gas.

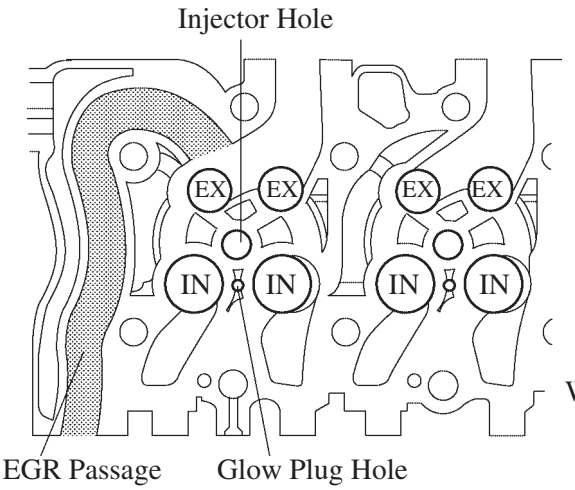



**A – A Cross Section**

195EG40

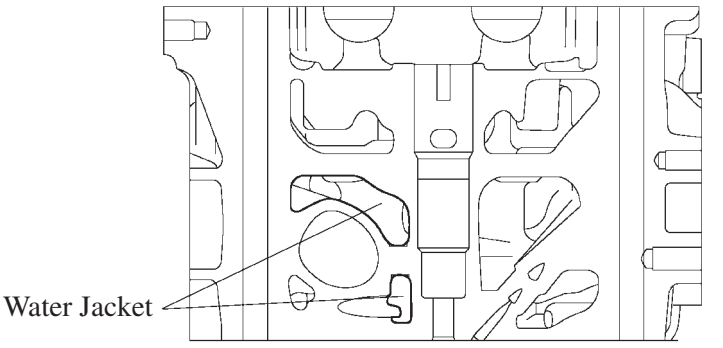
### 2. Cylinder Head

- The cylinder head is made of aluminum alloy.
  The injector has been located in the center of the combustion chamber in order to realize excellent engine performance and clean emission.
- Two intake ports with different shapes have been combined to promote the mixture of fuel and air by optimizing the swirl in the cylinder.
- A vertical two-stage construction has been adopted for the water jacket to realize excellent cooling performance.
- A glow plug is placed between the intake ports of each cylinder to ensure startability.
- The passage for the EGR is provided in the cylinder head. By cooling the exhaust gas, this makes it possible to re-circulate the great amount of exhaust gas.




**View of Upper Side**

195EG42

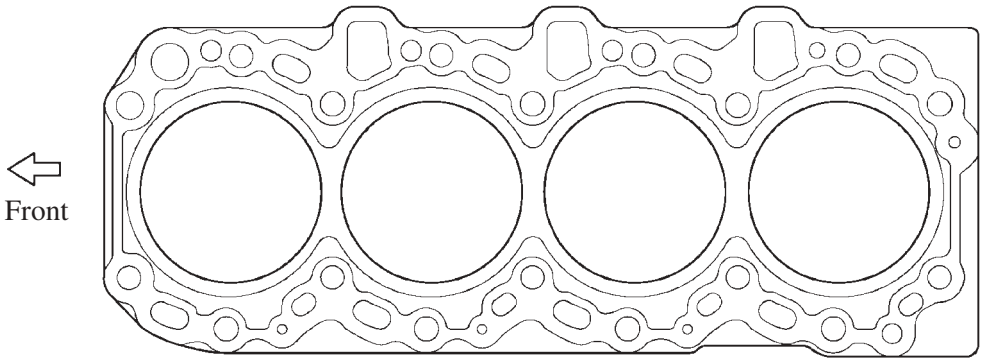



**Cylinder Head Cross Section**

195EG41

## 3. Cylinder Head Gasket

A steel-laminate type cylinder head gasket has been adopted. A shim has been added around the cylinder bore to increase the sealing surface, thus realizing excellent sealing performance.

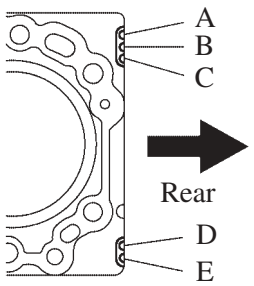



195EG43



**Service Tip**

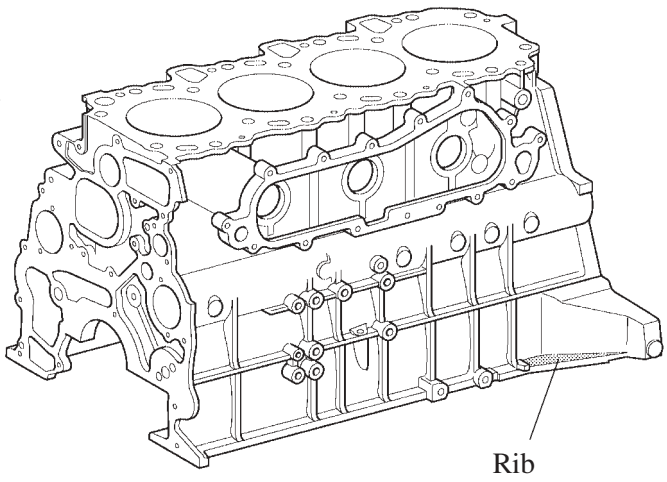
There are 5 sizes of new cylinder head gaskets, marked "A", "B", "C", "D", or "E" according to piston protrusion. For details, refer to see the 2KD-FTV Engine Repair Manual (Pub. No. RM907E).




224EG05

## 4. Cylinder Block

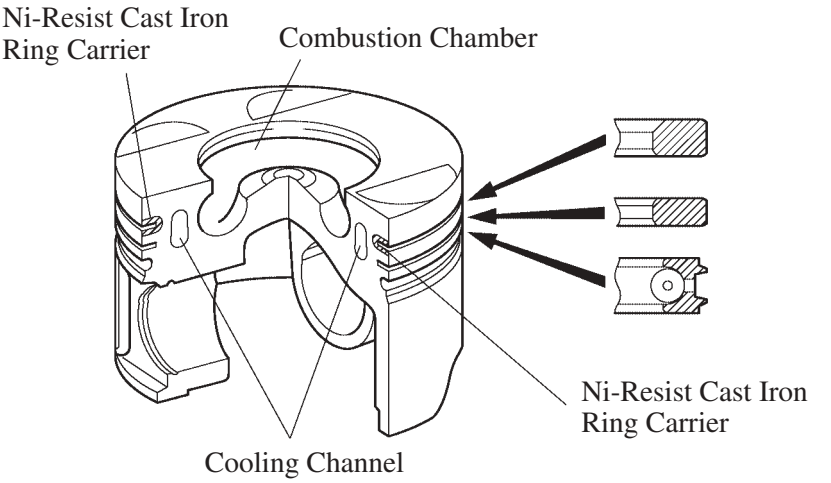
- This cylinder block is constructed of linerless cast iron alloy.
- A rib has been added to the back of the cylinder block to reduce engine vibration.




210EG27

## 5. Piston

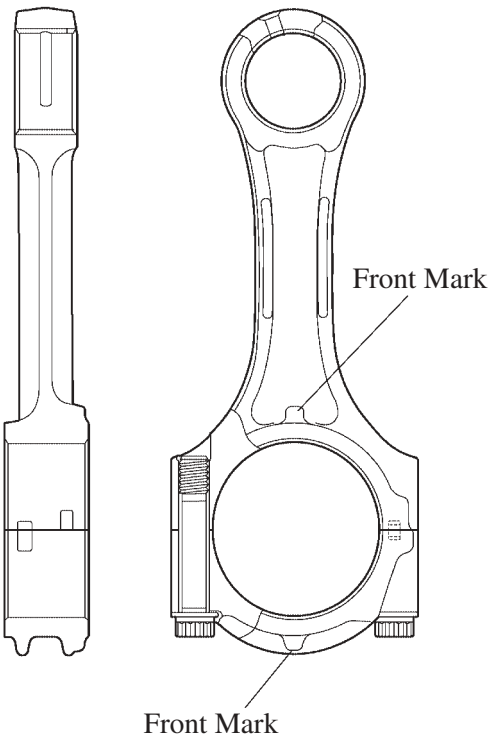
- In conjunction with the adoption of direct injection, piston provided with combustion chamber has been adopted.
- The piston is made of aluminum alloy.
- A cooling channel has been provided to reduce the piston temperature.
- To improve the wear resistance of the top ring groove, a Ni-resist cast iron ring carrier has been adopted.




224EG06

## 6. Connecting Rod

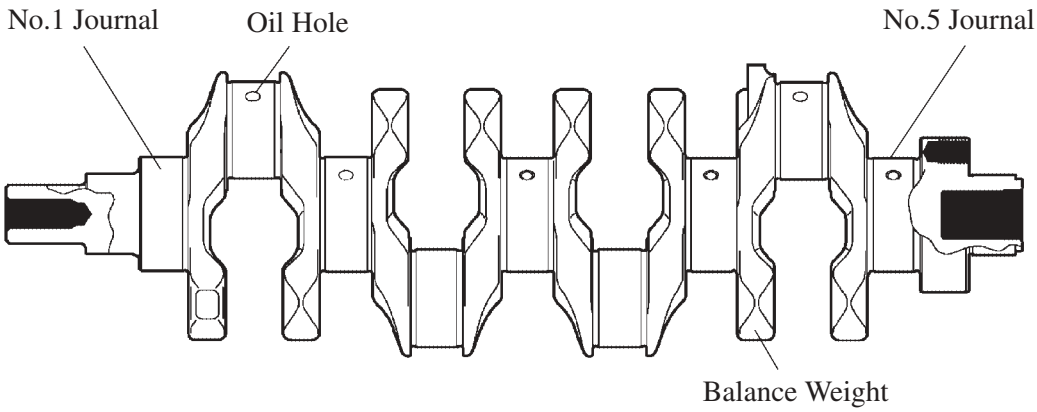
The connecting rods are made of high-strength material to ensure the proper strength.




210EG09

## 7. Crankshaft

- The crankshaft has 5 journals and 8 balance weight.
- The crankshaft is made of a highly-strengthened material without lead.

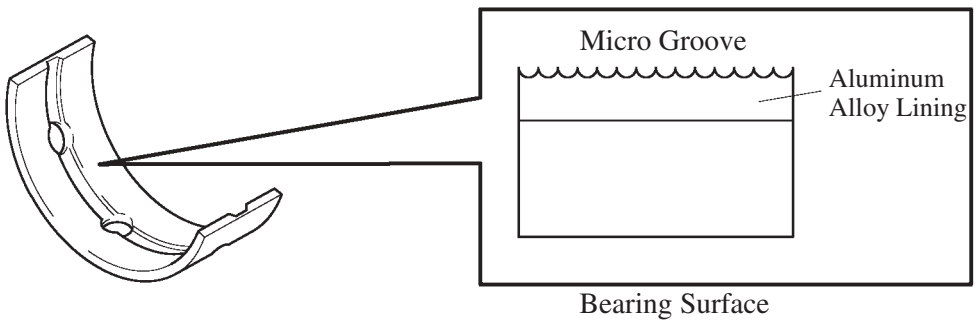



195EG46



## 8. Connecting Rod Bearing & Crankshaft Bearing

As on the 1KD-FTV engine, the microgroove bearings that have fine grooves on the bearing surface have been adopted to improve the conformance with the shaft and the retention of engine oil.




224EG07