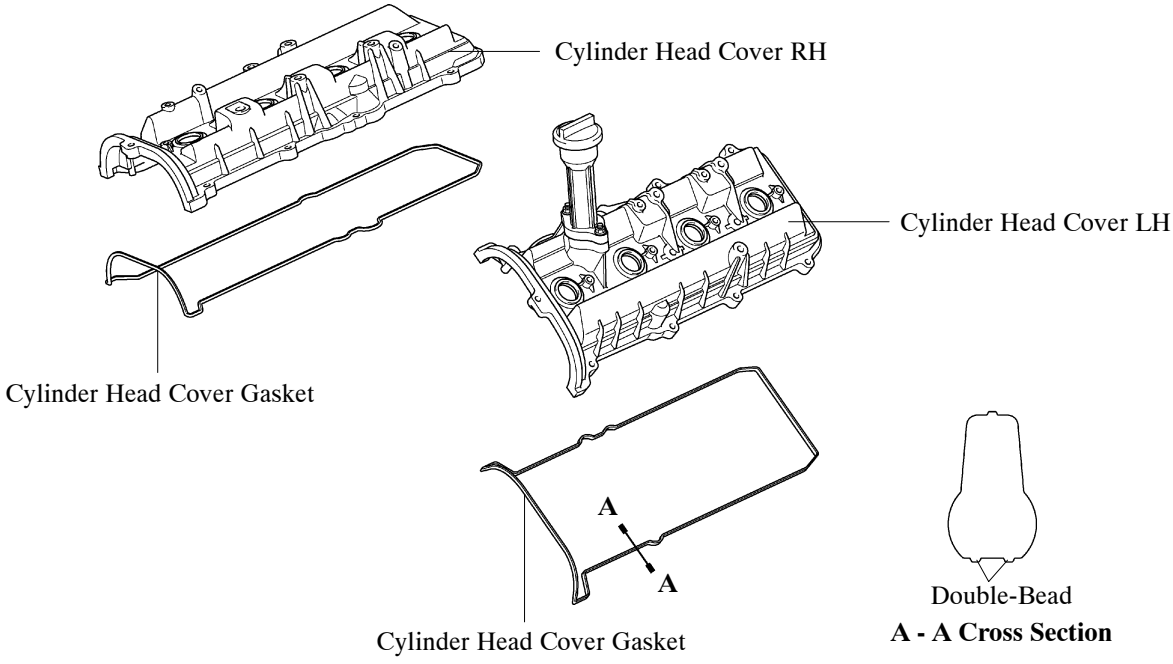
■ENGINE PROPER

1. Cylinder Head Cover

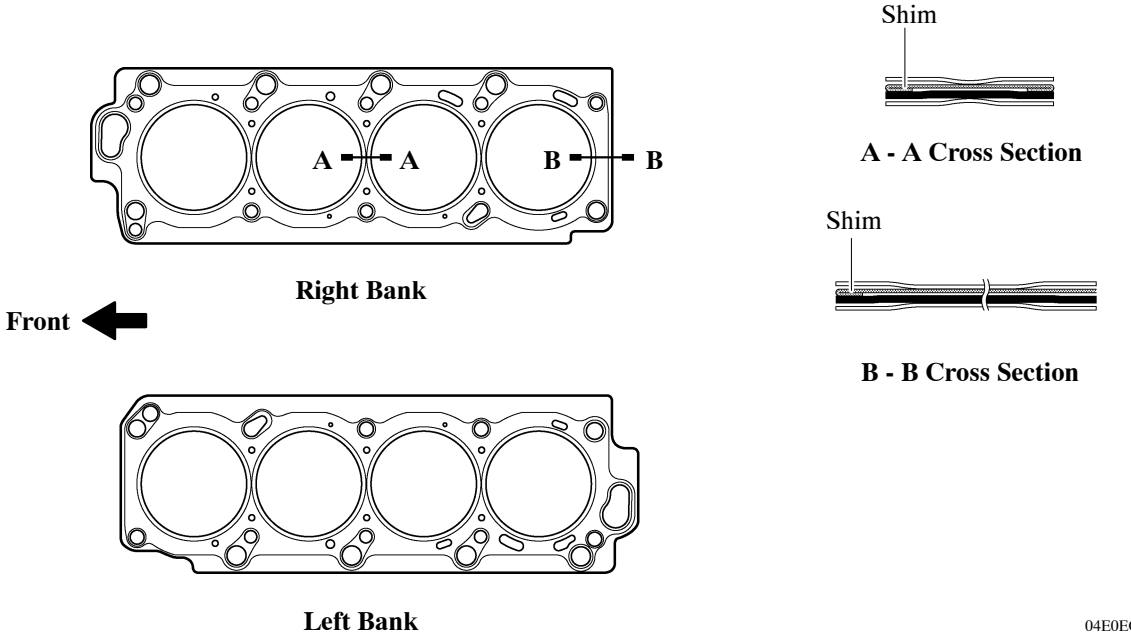
- Lightweight yet high-strength aluminum cylinder head covers are used.
- An oil filler extension housing is provided on the left bank cylinder head cover for use when filling the engine oil to improve serviceability.
- The cylinder head cover gaskets use a double-bead cross-sectional construction to improve their reliability.



04E0EG37C

2. Cylinder Head Gasket

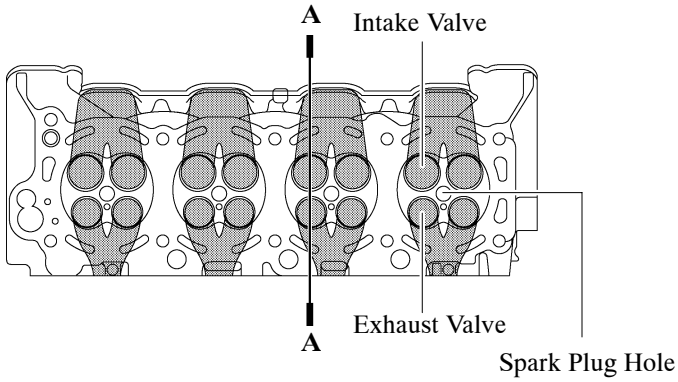
4-layer Steel-laminate type cylinder head gaskets are used. A shim is used around the cylinder bore of each gasket to help enhance sealing performance and durability. This results in improved fuel economy, a reduced consumption rate of engine oil and reduced emission of exhaust gases.



04E0EG38C

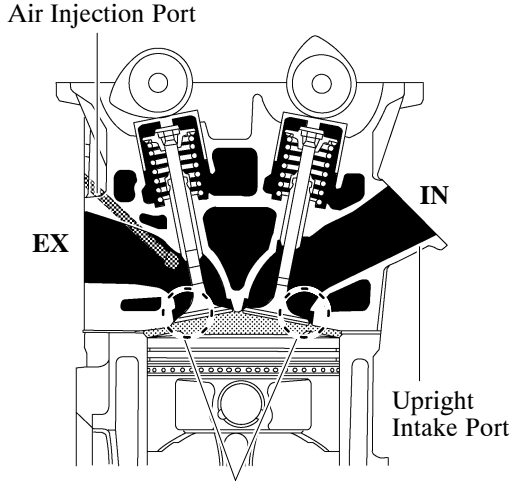
3. Cylinder Head

- The cylinder head, which is made of aluminum, contains a pentroof-type combustion chamber. The spark plug is located in the center of the combustion chamber in order to improve the engine's anti-knocking performance.
- Upright intake ports are used to improve the intake efficiency.
- A taper squish combustion chamber is used to improve anti-knocking performance and intake efficiency. In addition, engine performance and fuel economy are improved.
- A lead-free valve seat is used for environmental purposes.
- Plastic region tightening bolts are used for the cylinder head to ensure good axial tension.
- The air injection port is provided for the air injection system. For details, see page EG-140.



View from Button Side

04E0EG68C

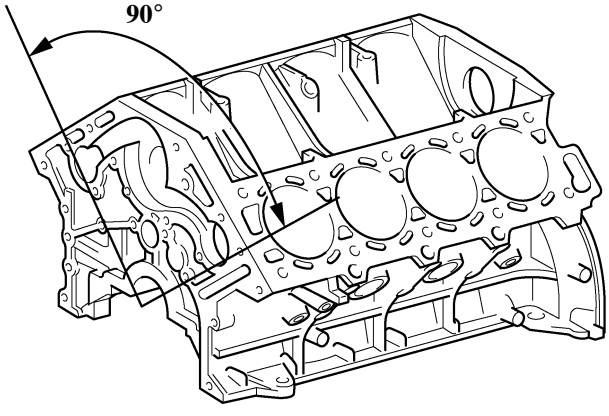


273GX76

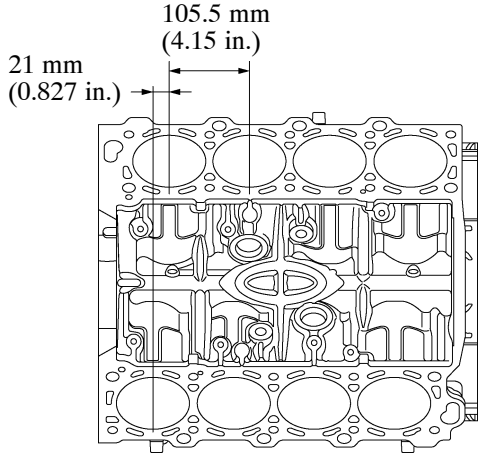
A - A Cross Section

4. Cylinder Block

- The cylinder block is made of cast iron alloy.
- The cylinder block has a bank angle of 90°, a bank offset of 21 mm (0.827 in.) and a bore pitch of 105.5 mm (4.15 in.), resulting in a compact block in its length and width considering its displacement.
- Part of the volute chamber of the water pump is incorporated into the cylinder block to shorten the engine length.
- Installation bosses of the two knock sensors are located on the inner side of left and right banks.



04E0EG39C

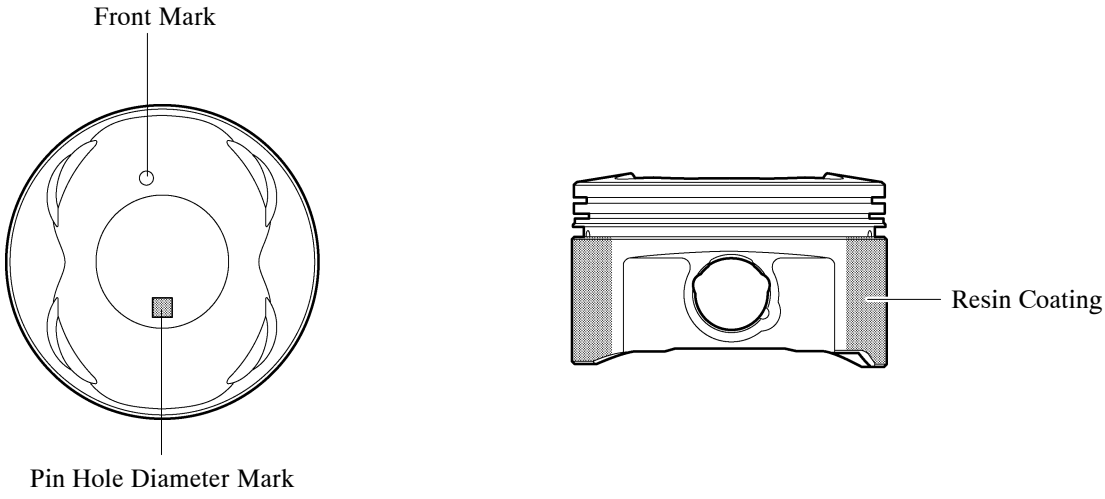


04E0EG40C

View of Top Side

5. Piston

- The pistons are made of aluminum alloy.
- The piston head portion uses a taper squish shape to accomplish fuel combustion efficiency.
- The piston skirt is coated with resin to reduce friction losses.
- The groove of the piston ring is coated with anodic oxide to improve wear resistance and corrosion resistance.
- Full floating type piston pins are used.

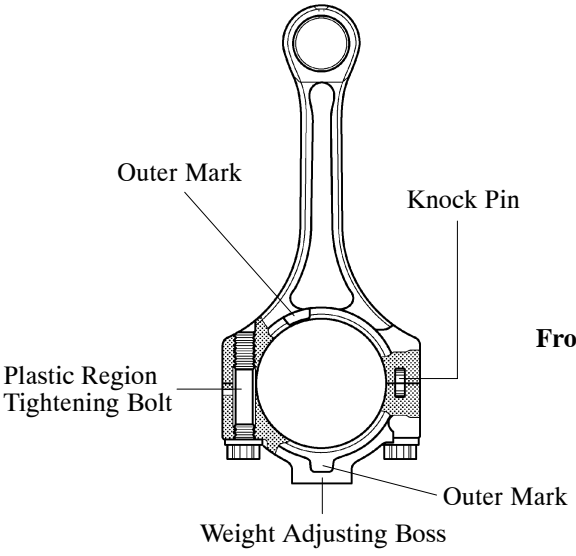


Service Tip

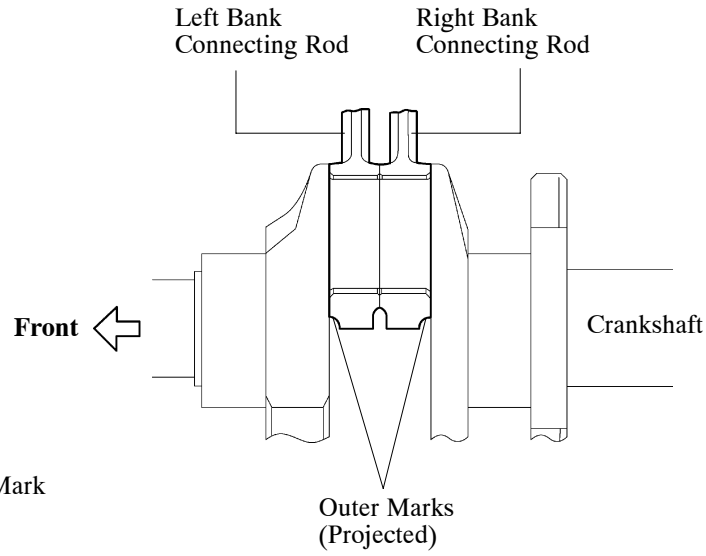
The same pistons are used for both right and left banks. When installing a piston, the front mark should face the front of the engine.

6. Connecting Rod

- The sintered and forged connecting rod is very rigid and has little weight fluctuation.
- A weight-adjusting boss is provided at the bearing caps to reduce fluctuation of weight and balance the engine.
- The connecting rods for the right and left banks are placed in opposite directions with the outer marks facing the crankshaft.
- Knock pins are used at the mating surfaces of the bearing caps of the connecting rod to minimize the shifting of the bearing caps during assembly.
- Plastic region tightening bolts are used.
- Aluminum bearings are used for the connecting rod bearings.



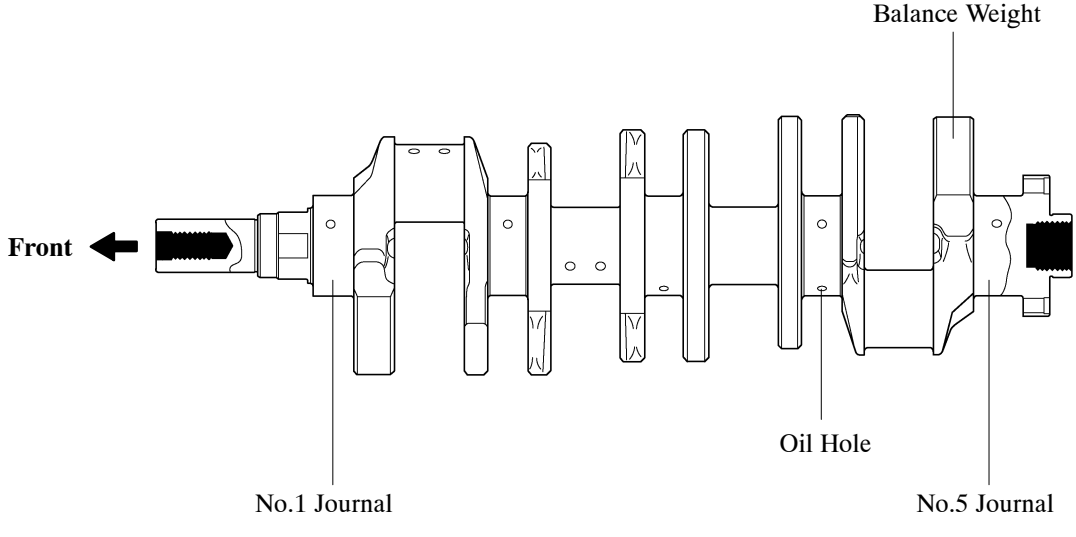
156EG03



04E0EG42C

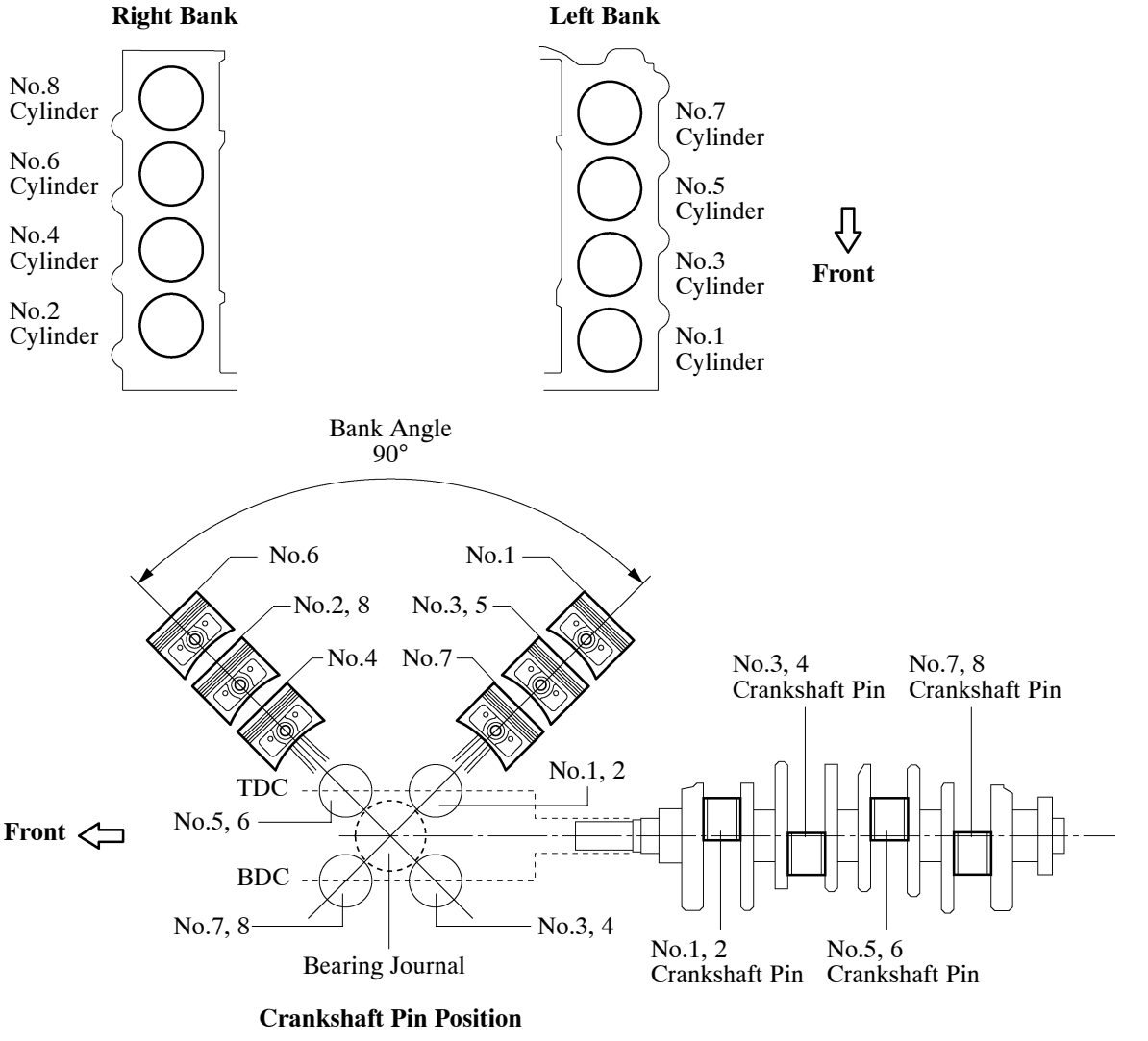
7. Crankshaft

- A crankshaft made of steel, which excels in rigidity and wear resistance, is used.
- The crankshaft has 5 main bearing journals, 4 crankshaft pins and 8 balance weights.
- The crankshaft main bearings are made of aluminum alloy.



04E0EG43C

NOTE: The positions of the crankshaft pins and pistons are illustrated below.

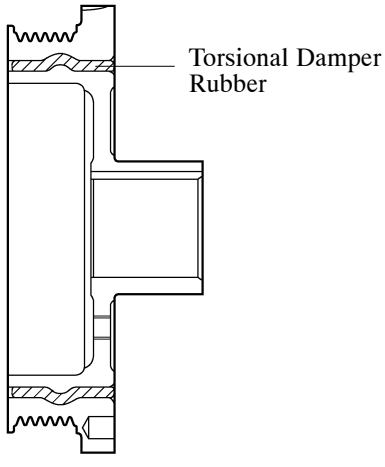


Crankshaft Pin Position

04E0EG44C

8. Crankshaft Pulley

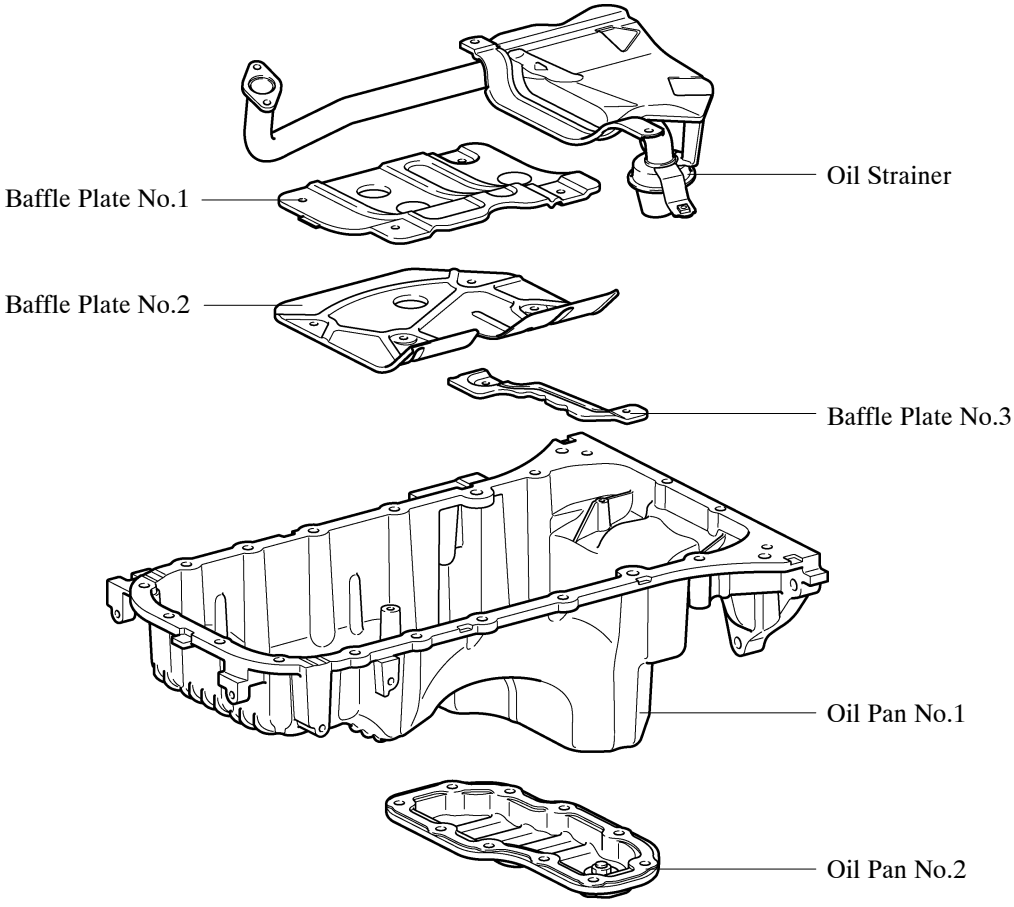
The rigidity of the torsional damper rubber is optimized to reduce noise.



232EG26

9. Oil Pan

- The oil pan No.1 material is made of aluminum alloy.
- The oil pan No.2 material is made of steel.
- The oil pan No.1 is secured to the cylinder block and the torque converter housing to increase rigidity.



04E0EG02C