

CRANKSHAFT, MAIN BEARING [SKYACTIV-D 2.2]

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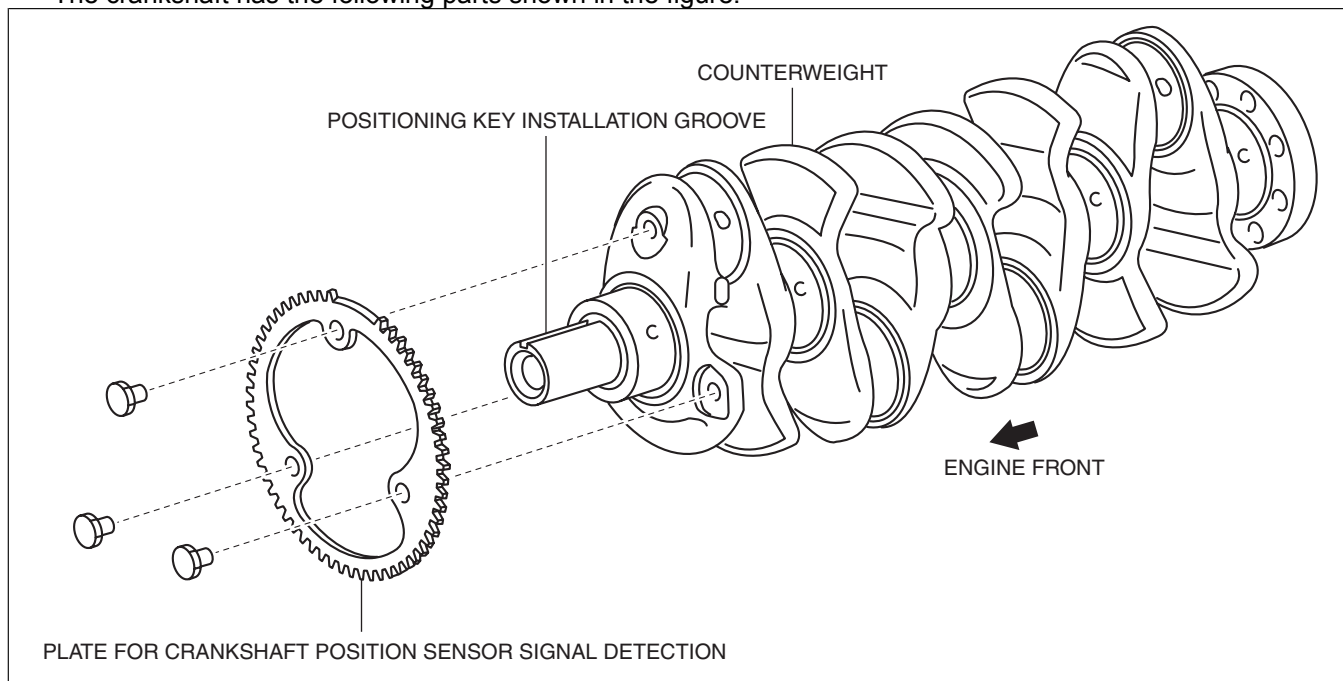
Purpose, Function

- The crankshaft converts the reciprocating movement of the piston to a rotational movement via the connecting rod.
- The main bearing forms an oil film on the outer surface of the crankshaft journal to prevent wear due to sliding.

Construction

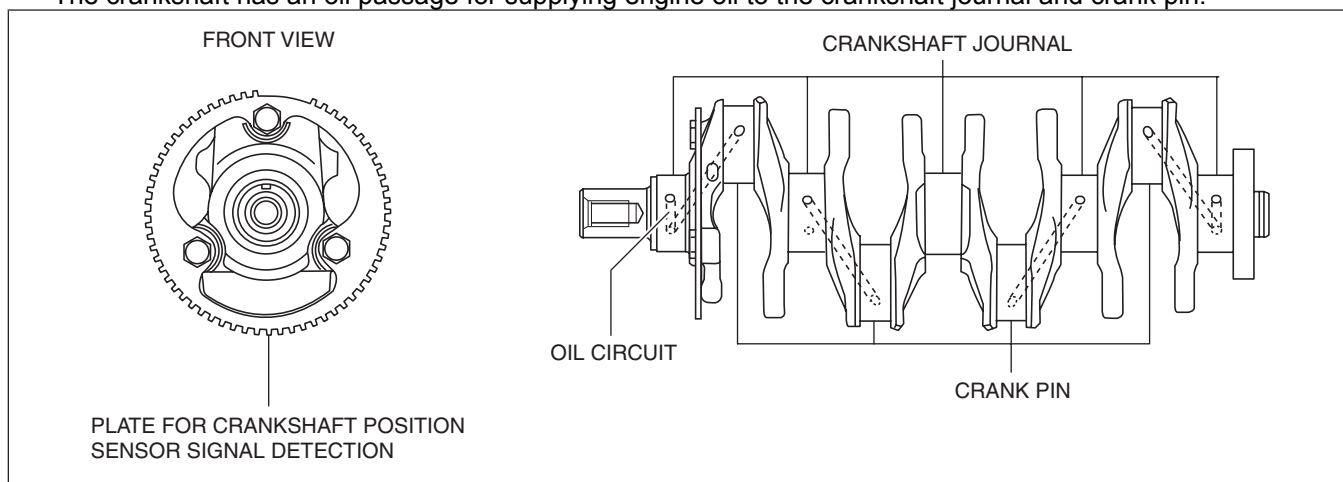
Crankshaft

- The crankshaft is installed to the inside (crankcase) of the cylinder block.
- The crankshaft has a key groove to match timing to the crankshaft pulley.
- The crankshaft has the following parts shown in the figure.



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- The sliding resistance and the part mass have been reduced by reducing the crankshaft journal diameter. In addition, rigidity is maintained by optimizing the shaft diameter ratio of the crankshaft journal and crank pin diameters.
- The crankshaft has five bearings and eight counterweights (full counterweights) for improved accuracy in the rotational balance.
- The crankshaft journal and crank pin have been induction hardened* to bear high loads.
- The crankshaft has an oil passage for supplying engine oil to the crankshaft journal and crank pin.



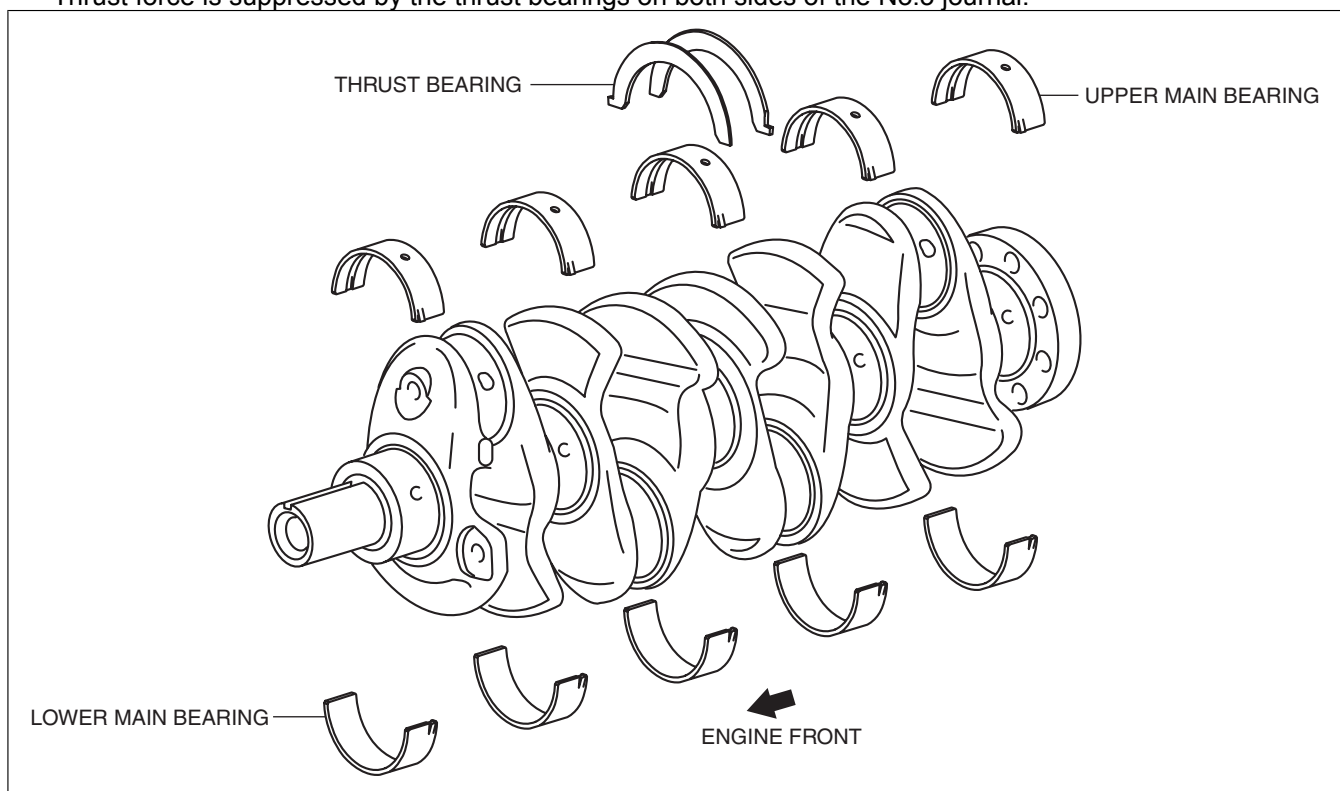
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* : A type of heat processing method which improves hardness and strength only at the surface of the metal.

Main bearing

- The main bearing is installed to the outer surface of the crankshaft journal.
- The upper main bearing and lower main bearing are made of aluminum alloy.

- The upper main bearing has an oil groove and oil hole.
- Thrust force is suppressed by the thrust bearings on both sides of the No.3 journal.



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