

GENERAL

Mechanical

1. General

The H6 engine is of a horizontally opposed, six-cylinder design. This four-stroke-cycle, water-cooled, DOHC engine uses a total of 24 valves and its main components are made of aluminum alloy. It is fueled by a multiple fuel injection system.

The engine's major structural and functional features are as follows:

- A maintenance-free, chain-and-sprocket type camshaft drive mechanism is used which also contributes to reduction in the overall length of the engine.
- The cylinder block is an aluminum die casting fitted with iron die-cast cylinder liners.
- Lightweight and compact design

The cylinder bore pitch is 98.4 mm (3.874 in), which is much shorter than 113 mm (4.45 in) of the H4 engine.

The cylinder bore and piston stroke dimensions have been selected optimally for sufficient output and reduced size of the engine; they are 89.2 mm (3.512 in) and 80 mm (3.150 in) in contrast to 99.5 mm (3.917 in) and 79.0 mm (3.110 in) of the H4 engine.

The cylinder block is of a "triple siamese cylinder" design with the three cylinders of each bank cast without coolant passages between cylinders, while ensuring adequate cooling by employing an open-deck design.

The right bank camshafts and the left bank camshafts are driven by different timing chains, whereas the accessories are driven through their own pulleys by a single serpentine belt (two belts were used in the previous model's engine).

- Quiet operation

Unlike V6 engines, horizontally opposed six-cylinder engines do not generate secondary vibration (which is caused by primary operational vibration in a V6 engine and has a frequency twice as large as that of the primary vibration) although V6 engines have space saving merit. In addition to this inherent quietness provided by complete dynamic balance, the H6 engine incorporates the following quietly operating considerations:

The crankshaft is supported by seven bearings and has a diameter of 64.0 mm (2.52 in), which is 4.0 mm (0.157 in) larger than with the previous model's engine.

The chains driving the camshafts are provided with hydraulic tension adjusters and covered by a chain cover at the front of the engine.

An aluminum die-cast upper oil pan reinforces the joint of the right and left cylinder block banks, while giving additional rigidity to the crankshaft bearing areas.

The engine is connected to the transmission more rigidity than with the previous model by using 11 bolts (eight bolts in the previous model).

- Clean exhaust gas and high power

The H6 engine has enabled the Legacy to comply with US LEV standard without sacrificing output power by adopting, among others, tumble flow generating intake ports and a variable length intake manifold that creates a resonance ramcharging effect.

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