

Cylinders

The cylinders of the 1600 S-90 engine are cast light alloy with flame sprayed carbon steel bore surfaces which have extremely good wear characteristics. (1600 S engine has light alloy cylinders with hard chromed bore surfaces.) For better heat transfer to the cooling air the finned cylinders are blackened.

Cylinder Heads

Each pair of cylinders carries a common, heavily finned, blackened, cylinder head of cast light alloy with shrunk in valve seats and guides. The spark plug sockets have Heli-Coil thread inserts. The valves are overhead in a "V". The diameter of the intake valve has been increased 2 mm over the size of the 1600 S engine valve. No gasket is employed for the cylinder to cylinder head joint. A ball check valve has been installed in the rocker box cover vents to prevent oil loss while traveling in curves.

Timing Gear

The camshaft is supported at three places directly in the crankcase without bearing inserts or bushings. The camshaft is driven by a cast, light alloy, helical, timing gear. The valves are operated from the camshaft through flat tappets, light alloy pushrods, and rocker arms. Each cam operates alternately a valve in each of two opposed cylinders. The exhaust valves are coated with high grade chrome-nickel steel.

Cooling System

The engine is cooled by blower circulated air. The blower is mounted on an extension of the generator shaft and is driven from the crankshaft by a V-belt. The blower draws air through an opening in the fan housing and forces it over the cooling fins on the cylinders and cylinder heads. The cooling air is guided by guides and duct plates to the lower air channel from which it either escapes to the atmosphere or is used as heating for the passenger compartment. The lower air channel has double outlet flaps (1600 S engine has only one) which, together with the inlet funnel on the fan housing, increase the air flow by 10%.

V-Belt

The high grade small cross-section V-belt has blue markings and writing on its circumference in contrast to the ones used on the other models which are yellow.

Centrifugal Valve

In order to insure a constant oil supply from the sump even while the car is traveling in a high speed curve, a centrifugally actuated valve has been installed at the oil intake between the strainer and magnetic filter.