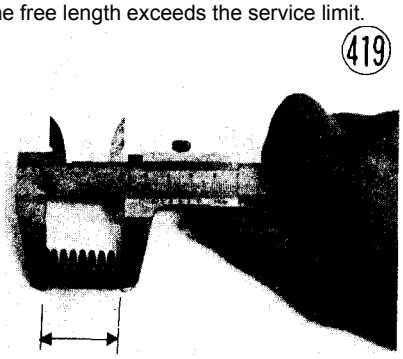
Chain tensioner wear

Remove the camshaft chain tensioner. Visually inspect the push rod, and check that it moves smoothly in the guide, with the springs removed. If there is any damage or abnormal operation, replace the tensioner with a new one.

Measure the spring free length. Replace the spring if the free length exceeds the service limit.



Free Length

Table 20 Chain Tensioner Spring Free Length

	Standard	Service Limit
Long	34.1 ~34.5 mm	32.5 mm
Short	17.06 mm	16.2 mm

CYLINDER HEAD, VALVES

The valves are mounted in the head; they are pushed open by the cams, and closed by the valve springs.

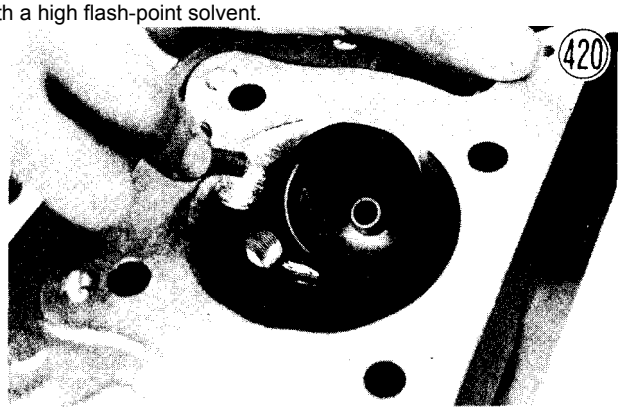
Valve guides are pressed into the cylinder head, and the valve seats are cast in. The valve seat, which is cut to the angles shown in Fig. 436, prevents compression leakage by fitting snugly against the valve. It also prevents the valve from overheating by allowing efficient heat transfer.

Cylinder Head

The cylinder head is made of aluminum alloy, used for its high heat conductivity, and is finned on the outside to aid dissipation of the heat generated in the combustion chambers. Carbon built up inside the combustion chambers interferes with heat dissipation and increases the compression ratio; which may result in preignition, detonation, and overheating. Trouble can also arise from improper head mounting or mounting torque, which may cause compression leakage.

Cleaning and inspection

Remove the cylinder head (Pg. 40) and valves (Pg. 41). Scrape out any carbon, and wash the head with a high flash-point solvent.



Cylinder head warp

Lay a straight edge across the lower surface of the head at several different points, and measure warp by inserting a thickness gauge between the straight edge and the head. If warp exceeds the service limit, replace the cylinder head.

Straight Edge

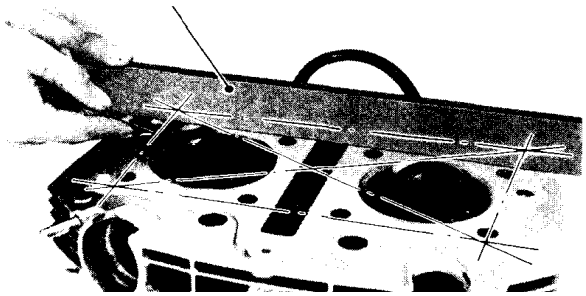


Table 21 Cylinder Head Warp

Standard	Service Limit
Under 0.05 mm	0.25 mm

Combustion chamber volume measurement

The combustion chamber volume should be measured anytime that compression measurement results in compression pressures well below or above the standard.

NOTES:

1. One more person will be needed to help expel air bubbles out of the cylinder head combustion chamber.
2. Prepare a piece of transparent plastic plate which has a flat surface and has two holes about 35 mm apart in its center portion. One is a large hole (about 6 mm in diameter), the other is small hole (about 3 mm in diameter). This plate must be oil resistant, about 120 mm square, and at least 3 mm thick.