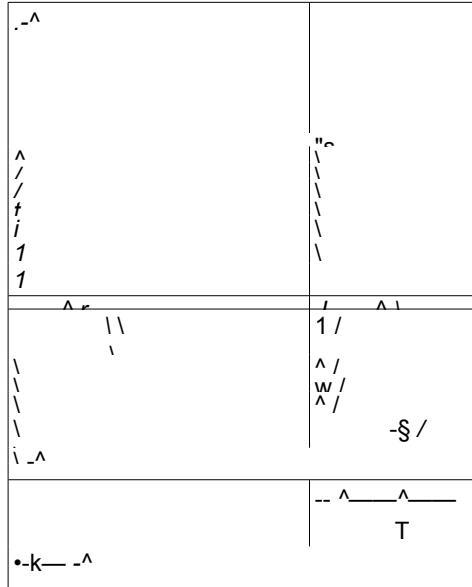


Plastic Plate used for Cylinder Head Volume Measurement



3. Obtain a burette or syringe which is calibrated at one-cc or smaller graduations. Fill it with thin oil.

Prior to the combustion chamber volume measurement, clean off any carbon on the combustion chamber, and remove any gasket flakes on the cylinder head mating surface. The standard spark plug should be installed in the chamber to be measured.

NOTE: The valves must seat well to prevent the oil from leaking out.

Apply a thin coat of grease to the cylinder head mating surface and place the plastic plate over the cylinder head combustion chamber, fitting its small hole with the circumference of the combustion chamber.

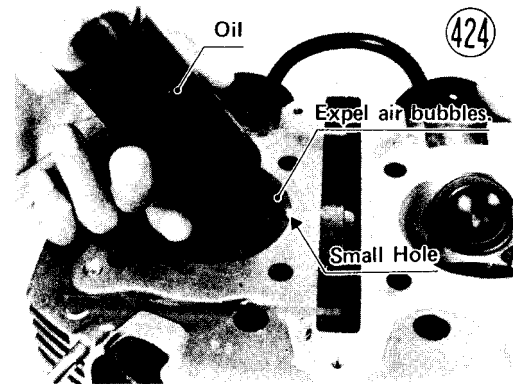
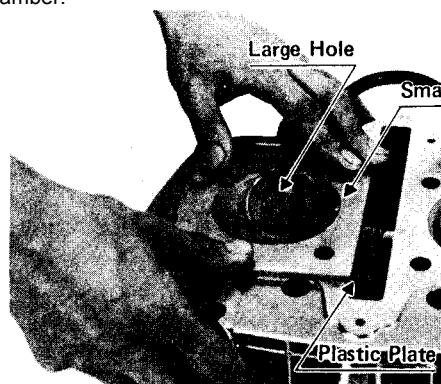


Table 22 Combustion Chamber Volume

Standard
52.5 cc

If the combustion chamber volume is too small, it is possible that the cylinder head was modified for higher compression. Make sure that all carbon deposits have been cleaned out of the chamber.

If the combustion chamber volume is too large, it is possible that the valves and valve seats have been resurfaced so much that the volume is increased. Make sure that the spark plug is the standard type and that it is fully tightened.

Valve, Valve Guide, Valve Seat

Valve face deformation or wear, stem bending or wear, and valve guide wear can cause poor valve seating. Poor seating can also be caused by the valve seat itself, if there is heat damage or carbon build-up. The result of poor valve seating is compression leakage and a loss of engine power.

In addition, valve and valve seat wear causes deeper valve seating and a decrease in valve clearance. Insufficient clearance upsets valve timing and may eventually prevent the valve from seating fully. So that wear never progresses this far, adjust the valve clearance in accordance with the Periodic Maintenance Chart (Pg.195).

Place the cylinder head on a level surface. Through the large hole, fill the combustion chamber with light oil such as 2-stroke oil or mission oil until the chamber is completely filled but not overly. Tilt the cylinder head slightly so that air bubbles come out through the small hole. The oil should just rise to the bottom edge of the holes in the plate. The amount of oil used to fill the chamber is the combustion chamber volume.

Valve inspection

Visually inspect the valve face, and replace the valve if it shows deformation or uneven wear.

Measure the thickness of the valve head using vernier calipers, and replace the valve together with its valve guide if the thickness is under the service limit.

If the seating surface of the valve or the end of the valve stem is damaged or badly worn, repair the valve with a valve refacer. The angle of the seating surface is $45.0\sim 45.5^\circ$.