

## 4. Inspect valve guide

Valve guide, inlet and exhaust	Standard value	Serviceable limit
Outside Dia.	10.055~10.065 (0.3962~0.3966 in)	—
Interference Fit	0.640~0.065 (0.0016~0.0026 in)	—
Inside Dia.	5.475~5.485 (0.2157~0.2161 in)	Replace if over 5.525 (0.2175 in)

If the valve guide inside diameter is beyond serviceable limits, it may be repaired by using a reamer ① (Tool No. 07008-00101) and replacing the valve with one of an oversize. (Fig. 3.21)

5. When replacement of the valve guide becomes necessary, remove and replace with an oversize guide, use the valve guide remover (Tool No. 07047-04001) and the valve guide driver (Tool No. 07046-21601) for replacement operation. After installing the valve guide, use reamer to obtain the proper valve clearance. (Fig. 3.22)

## 6. Valve Seat

The condition of the valve seat plays a prominent roll in determining the performance of the engine, further, it serves as a means for dissipating the heat from the valves.

A valve seat in good condition should have a full surface contact with the valve face. Standard value ①—0.7~1.2 mm

(0.028~0.048 in)

Serviceable limit—in excess of 2 mm (0.08 in)

The valve seat contact can be checked by applying a thin coating of bluing or red lead evenly on the entire surface of the valve face and rotate the valve while holding it firmly against the valve seat. A good valve seating condition will show a uniform and continuous width of bluing on the valve seat.

Reworking of the valve, seat is performed by a set of three cutters ①. The 90° cutter is used for facing the valve contact area, and the location and width of the seat contact area is accomplished with the 60° and the 30° cutters.

Finally, the valve lapping operation is performed by lapping the ground valve face to the valve seat using a liberal amount of lapping compound on the valve face and work the valve back and forth using a suction cup lapping tool. Wash off the compound completely before making the test or before assembly. (Fig. 3.24)

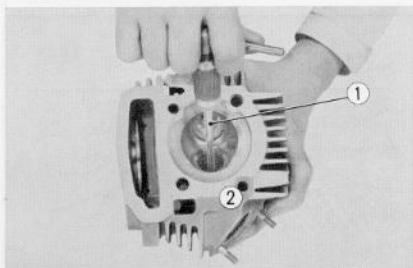


Fig. 3.21 ① Valve guide reamer ② Cylinder head

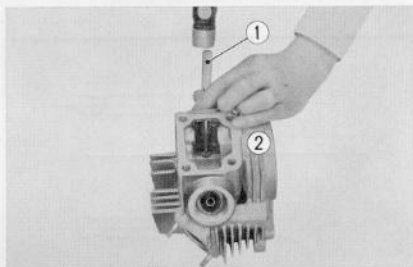


Fig. 3.22 ① Valve guide driver  
② Cylinder head

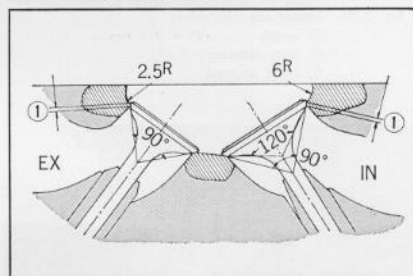


Fig. 3.23 Valve seat contact area  
① Valve seat contact width

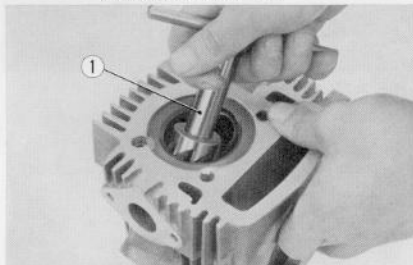


Fig. 3.24 Reworking the valve seat  
① Valve seat cutter