

CYLINDER HEAD/VALVES

Measure each valve guide I.D. and record it.

SERVICE LIMIT: IN/EX: 5.03 mm (0.198 in)

Subtract each valve stem O.D. from the corresponding guide I.D. to obtain the stem-to-guide clearance.

SERVICE LIMIT:

IN: 0.08 mm (0.003 in)

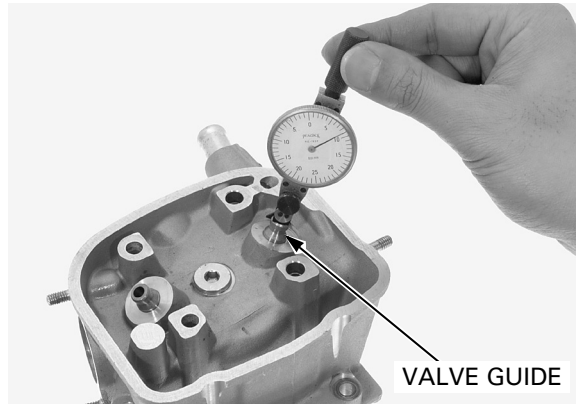
EX: 0.10 mm (0.004 in)

Inspect and reface the valve seats whenever the valve guides are replaced (page 9-16).

If the stem-to-guide clearance exceeds the service limit, determine if a new guide with standard dimensions would bring the clearance within tolerance.

If so, replace any guides as necessary and ream to fit (page 9-16).

If the stem-to-guide clearance exceeds the service limit with new guide, also replace the valve.



VALVE GUIDE REPLACEMENT

Chill new valve guides in a freezer for about 1 hour.

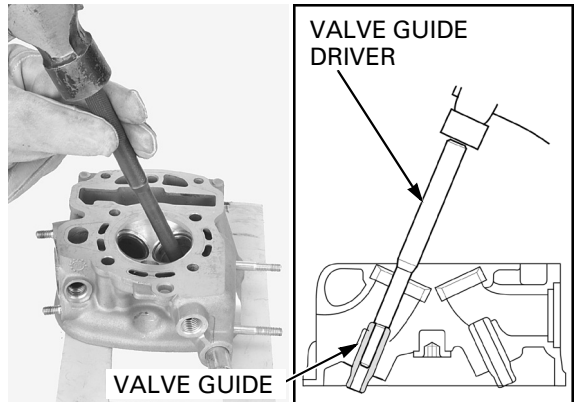
Heat the cylinder head to 130 – 140 °C (275 – 290 °F) with a hot plate or oven. Do not heat the cylinder head beyond 150 °C (300 °F). Use temperature indicator sticks, available from welding supply stores, to be sure the cylinder head is heated to the proper temperature.

Using a torch to heat the cylinder head may cause warpage.

Support the cylinder head and drive the valve guides out of the cylinder head from the combustion chamber side.

TOOL:

Valve guide driver, 5.0 mm 07942-MA60000



Take out new valve guides from the freezer.

Drive new guides from the camshaft side while the cylinder head is still heated.

Drive new valve guides into the cylinder head to the specified height from the cylinder head.

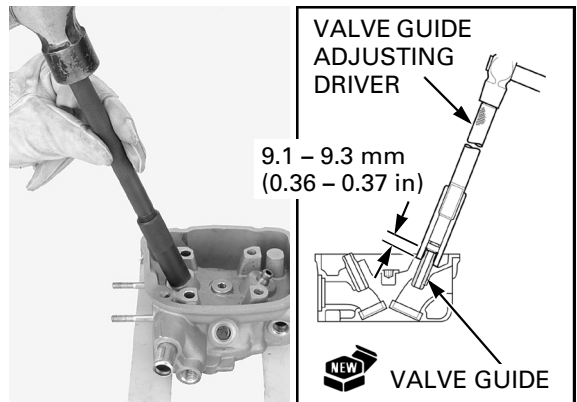
TOOL:

Valve guide adjusting driver 07743-0020000

VALVE GUIDE PROJECTION:

IN/EX: 9.1 – 9.3 mm (0.36 – 0.37 in)

Let the cylinder head cool to room temperature.



Ream new valve guides after installation.

Take care not to tilt or lean the reamer in the guide while reaming. Use cutting oil on the reamer during this operation.

Insert the reamer from the combustion chamber side of the cylinder head and also always rotate the reamer clockwise.

TOOL:

Valve guide reamer, 5.0 mm 07984-MA60001

Clean the cylinder head thoroughly to remove any metal particles after reaming and reface the valve seat (page 9-18).

