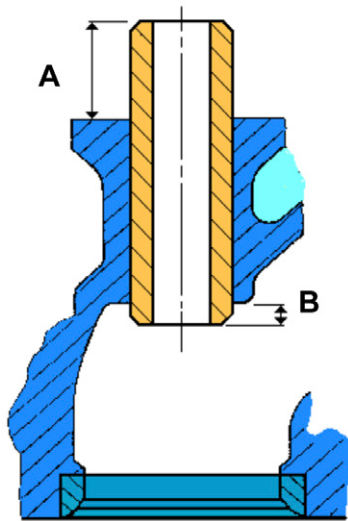


Valve Guides - Interference fit in the cylinder head

The interference fit of valve guides in aluminium and cast iron heads varies due to the differences in the coefficient of expansion (aluminium having a greater coefficient of expansion than cast iron). Generally, a valve guide installed in an aluminium head will require greater interference than if installed in a cast iron head.

1. Cast iron and bronze valve guides in a **Cast iron cylinder head**:
.001" to .0015" (0.025 to 0.038mm).
2. Cast iron and bronze valve guides in an **Aluminium cylinder head**:
.0015" to .002" (0.038 to 0.051mm).
3. All cylinder heads, especially aluminum, should be warmed evenly to approximately 150° Celsius prior to valve guide insertion. This will enable the valve guide acceptance bore (in the head), achieving maximum expansion.
4. If possible the valve guides should be pre cooled to achieve maximum contraction. Cooling methods: deep freeze, liquid nitrogen (preferred) or plumber's pipe freeze spray.
5. By following the above instructions the valve guides will almost drop into place thereby preserving the carefully factory machined bore size and surface finish both of which will ensure maximum service life of the component.
6. It is **Imperative** in all cases that the valve guide **bore is measured** after fitting to ensure the correct valve stem to valve guide clearance.



Measure valve guide protrusion in the direction of the valve spring (**A**) and also into the port (**B**) before removing 'old' guides. Install replacement guides in the same position.

Excessive valve guide protrusion in the direction of the valve spring (**A**) may result in the spring retainer/collets fouling the valve guide. Conversely, excessive protrusion into the port (**B**) can affect gas flow and temperature transfer characteristics of the valve/guide.