



Valve Guides - Interference fit in the cylinder head

The interference fit of valve guides in aluminium and cast iron heads varies as aluminium has a higher coefficient of expansion than cast iron. Generally, a valve guide in an aluminium head will require greater interference one in a cast iron head.

- Cast iron and bronze valve guides in a Cast iron cylinder head: 0.025 to 0.038mm ~ .001" to .0015"
- Cast iron and bronze valve guides in an Aluminium cylinder head: 0.038 to 0.051mm ~ .0015" to .002"
- Warm all cylinder heads evenly, especially aluminium, to approximately 150° Celsius prior to valve guide insertion. This enables the valve guide acceptance bore in the head, to achieve maximum expansion.
- If possible, pre-cool the valve guides to achieve maximum contraction. Cooling methods: preferably by liquid nitrogen, deep freeze or pipe freeze spray.
- By following the above instructions, the valve guides will almost drop into place. This preserves the carefully factory machined bore size and surface finish. Both of these will ensure maximum service life of the component.
- It is Imperative in all cases to measure the valve guide bore after fitting to ensure the correct valve stem to valve guide clearance.

Before removing 'old' guides' measure valve guide protrusion in the direction of the valve spring (A) and into the port (B). 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

