



Valve Guide Installation

Almost all diesel engines and many petrol engines have cast iron, powder metal or bronze valve guides inserted into the cylinder head. A fully finished replacement valve guide may replace these during overhaul.

In many petrol engines, cylinder heads have valve guides cast integrally into them. After machining out of the parent bore on these it is possible to fit a "thin-wall" guide. Although these are generally produced to a finished size in the guide bore, there are specific precautions to take during fitting.

A certain degree of crush occurs when installing a valve guide, particularly for a "thinwall" replacement guide. This usually causes either slight distortion or corrugating of the guide bore. Occasionally such distortion leads to valve stem pick-up during service because of running clearance loss.

Sealing accuracy of the poppet valve depends on the how well the valve guide supports the stem and the concentricity of the valve guide and seat.

A certain allowance for the effects of crush is made during the valve guide manufacture. Much will depend however on the amount of interference between the guide and the parent bore to which it is fitted. Always check the guide clearance with the vehicle manufacturer's recommendations.

If in doubt as to whether distortion or corrugation exists a brief, make a clean-up operation using a reamer of the correct bore size.

