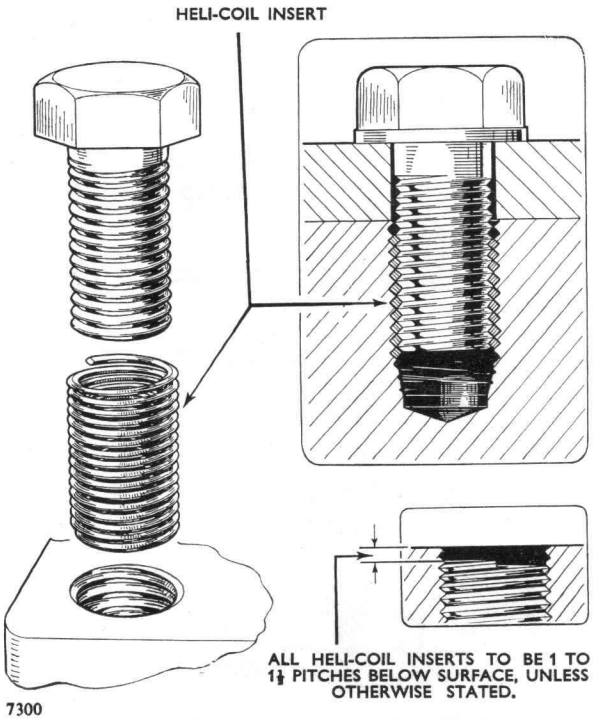

Fig. 59. *Heli-Coil insert details*

Reclamation of tapped holes in engine castings

The following information is provided for reclaiming damaged threads in the Engine aluminium castings, using the Heli-coil inserts.

When fitting Heli-coil inserts it is essential that the correct size insert is used as shown on the opposite page. All inserts must be positioned $\frac{1}{4}$ to $\frac{1}{2}$ of a pitch below the top face of the hole, except where otherwise stated. (See Fig. 59.)

Two taps are required, a roughing tap and a finishing bottoming tap. When using the finishing tap it is important to ensure that the tap is run down to the specified depth and out again without backing off (i.e., do not reverse direction of tap until the bottom of the hole is reached). Always use a lubricant when tapping threads.

If a cylinder head bolt breaks off during removal of the cylinder head the piece remaining in the cylinder block can be drilled out using a drill guide sleeve in the cylinder head bolt hole.

A drill guide sleeve can be made from a $\frac{7}{16}$ in. dia. high tensile bolt, having at least 2 ins. of plain shank, by drilling a $\frac{1}{4}$ in. dia. hole through the centre of the bolt, after cutting off the threaded end. Drilling should be done in a lathe and it is most important that the hole is exactly central. This can be achieved by rotating the drill slowly, while it is supported in the lathe tailstock, so that the drill turns in the opposite direction to the bolt, as the bolt rotates in the lathe headstock chuck.

With the cylinder head still in position and using the drill guide sleeve in the hole from which the broken bolt was removed, drill a $\frac{1}{4}$ in. dia. pilot hole through the broken portion of the bolt, taking care not to drill into the cylinder block. Then remove the drill guide sleeve, and with the cylinder head still in position, drill out the broken bolt with a $\frac{3}{8}$ in. dia. drill.

Remove the cylinder head, tap out the hole and screw in the Heli-coil insert. In this instance DO NOT break off the Heli-coil insert tang.

All cylinder head bolt threads should be dipped in Shell Ensis 256 oil before replacement.

The opposite page gives full details of insert sizes, taps, inserting tools etc., and this information must be strictly adhered to for each application.

A list of tool kits available and their source of supply is given in Section S (Special Tools) Kit HISK 1 covers all engine (and transaxle) applications except the sparking plug insert kit. Kits HISK 2 to 13 cover the various individual applications.