Top Dead Centre location

1. Turn crankshaft until piston is somewhere near to required dead centre (TDC)

2. Affix a strip of gummed paper label to the flywheel, this may go all the way round if both dead centres are required, otherwise just make it long enough to accommodate the required marks.

3. Mark a suitable reference base line on the paper strip at a suitable distance from, and parallel to, the rear face of the flywheel.

4. Make a permanent FUDICIAL mark on the top of the bearing cap adjacent to the flywheel, using a suitable scriber.

5. Set vernier, or depth gauge to a suitable depth (0.1" or 3mm will suffice)

6. Place vernier, or depth gauge carefully into the bore, with the body resting on the cylinder block top face (as shown on drawing), and turn the crankshaft (as shown by solid arrow on drawing) until the piston just touches the bottom of the gauge.

7. Make a mark on the paper strip adjacent to the FUDICIAL line.

8. Now turn the crankshaft IN THE OPPOSITE DIRECTION (as shown by dotted arrow on drawing) until it again touches the bottom of the gauge, and make a second mark on the paper strip adjacent to the FUDICIAL line. These last 2 marks will be those shown as 'T1' and 'T2' on the drawing.

9. Extend both marks, at 90 deg. to the flywheel front face, until they cross the reference base line (see step 3).

10. Set up a pair of compasses, (or dividers) to a width just a little smaller than the distance between these 2 lines.

11. Using the 2 points marked 'a' and 'b' on the drawing, scribe an arc from each point, as shown.

12. Make a final mark on the paper strip, where these 2 arcs cross each other, and extend this onto the edge of the flywheel with a suitable scriber, and add TDC lettering, if space permits, for the cylinder being timed. E.G TDC 1

13. This Mark is the TRUE TOP DEAD CENTRE.

14. Align this mark with the FUDICIAL line and the piston is at TRUE TOP DEAD CENTRE.

15. If required, the same procedure can be used to find the true BTC, just set the depth gauge to a suitable distance from the bottom of the bore.

16. Repeat all above for the other cylinders.

17. If using a DTI (dial test indicator) rather than a vernier/depth gauge then, in step 6, turn the crank to get a suitable reading on the dial (and make a note of it) or better still, zero the dial, and make the first mark on the paper strip. Then for step 8, just turn crankshaft until dial again reads the same and make second mark. The biggest problem with using a DTI is finding a suitable place/method of firmly anchoring the DTI base/carrier to the engine cylinder block whilst the above steps are performed.