

# How was distributor advance & retard measured before the availability of the stroboscope?

## Eddie Loader

- 1 Remove distributor cap and rotor arm
- 2 a laminated cardboard disc (approx 3 inches diameter ) is slipped down the shaft, marked around the outer edge in degrees (360° for a full circle). This then moves with the base plate
- 3 the distributor shaft is then turned in each direction by using a hand-held tool that engages into slot that engages the rotor arm.
- 4 a temporary pointer is then positioned close to the periphery of the disc, resulting in the ability to read the maximum degree of advance.

This only measures the advance when the engine is not running. The invention of the stroboscope allowed measurement with the engine running, the strobe being pointed at a timing mark (see previous article).

The amount of advance that a distributor allows is fixed for that distributor, and cannot easily be changed. However, a distributor may stop fully advancing due to faults which can be serviced.

To be fully accurate, the dwell angle should be found first. The dwell angle is the arc (in degrees) that the distributor shaft rotates with the contact points fully closed. This is the period that the ignition coil builds up a strong magnetic charge for a powerful spark. The dwell angle depends in part on the points gap. If the dwell angle is too small, then the spark is weak, too large and the coil overheats. It can be measured with the engine off, but ignition on, by slowly rotating the distributor drive, whilst using a test light, which will go out when the contact points close, and come on again when they next open.