## STROBOSCOPIC TIMING LIGHT

The stroboscopic timing light provides a very rapid and convenient means of setting the ignition timing and checking the action of the centrifugal and vacuum advance action; provided its use is understood.

### How the timing light operates

Correctly connected and with the engine running, the timing light gives a high intensity flash every time No. 1 fires. When this light is directed onto the crankshaft pulley rim, the rim will appear to be stationary. The apparent distance between the groove on the crankshaft pulley rim and the fixed pointer above the pulley indicates the amount of ignition advance.

### The advantages of a stroboscopic timing light are:

1. It is simple to use and portable.
2. The ignition timing can be checked quickly and set while the engine is running provided the engine speed can be set with a tachometer.
3. It enables a quick check to be made of the distributor centrifugal and vacuum automatic advance mechanism with the distributor in position, while the engine is running.

### Precautions needed when using a stroboscopic timing light are:

1. A tachometer is needed to measure engine R.P.M. This is because the distributor centrifugal advance mechanism starts to operate just below idling speed, and the timing "seen" by a stroboscopic timing light, at idling speed, is slightly more advanced than the specific static ignition timing given in the Data Section under "Ignition". In consequence if the ignition timing were set to the static figure, with a stroboscopic timing light, it would usually be too retarded.

   CARE MUST BE TAKEN TO KEEP THE HANDS AND CLOTHING CLEAR OF THE GENERATOR AND WATER PUMP DRIVING BELT, WHEN USING THE TIMING LIGHT WHILE THE ENGINE IS RUNNING. ALSO, A PIECE OF SUITABLE METAL PIPE SHOULD BE PLACED ON THE SILENCER OUTLET PIPE TO DEFLECT THE EXHAUST GASES.

From this it will be seen that to set the ignition timing with a stroboscopic timing light the engine must be run at a known speed and the ignition timing for this speed checked with the stroboscopic light. A suitable engine speed for this is 1,000 R.P.M.

### Checking ignition timing—with stroboscopic timing light

1. Refer to the ignition data in General Data and obtain the mean centrifugal advance degrees for an engine speed of 1,000 R.P.M. for the particular engine on which the ignition timing is being checked. Add the figure obtained to the static ignition advance angle.

   **Example**

   | | |
   |---|---|
   | Centrifugal advance at 1,000 R.P.M. engine speed ... ... ... | 3° |
   | Static advance angle ... ... ... | 3° B.T.D.C. |
   | Advance at 1,000 R.P.M. is therefore | 6° B.T.D.C. |

2. Mark the crankshaft pulley before the T.D.C. groove with dividers set to the calculated figure. 1°=1·1 mm and if the calculated figure was 5° this would be 5½ mm. Paint the position with a narrow white line. Also paint the tip of the fixed T.D.C. pointer, using quick drying white paint.

   **Note.**—When the stroboscopic timing light is used in conjunction with more elaborate test equipment it will not be necessary to mark the pulley, if the degrees of advance can be checked by operating the advance measuring instrument, while using the timing light.

3. Connect a tachometer and stroboscopic timing light to the engine and run it at speed of 1,000 R.P.M. WITH THE VACUUM ADVANCE PIPE DISCONNECTED FROM THE DISTRIBUTOR. The vacuum advance pipe must be removed, as under light throttle running at this speed there may be some advance movement in the vacuum advance unit.
4. Project the beam of the stroboscopic timing light onto the T.D.C. pointer on the timing case. The white line on the crankshaft pulley rim should appear opposite the T.D.C. pointer while the engine is running at 1,000 R.P.M. If necessary adjust the distributor to obtain this condition.