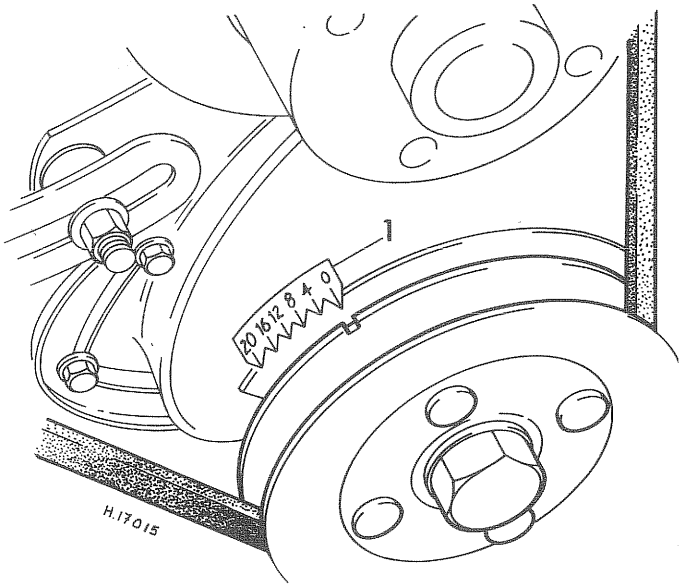


Fig. 4.13 The timing scale located on the timing cover of later models (Sec 10)

1 Timing scale

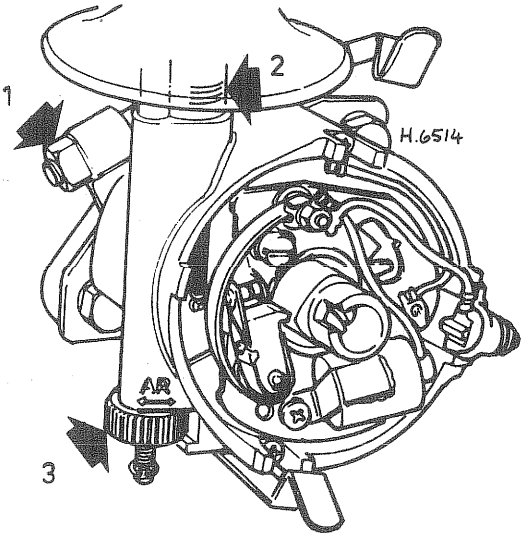
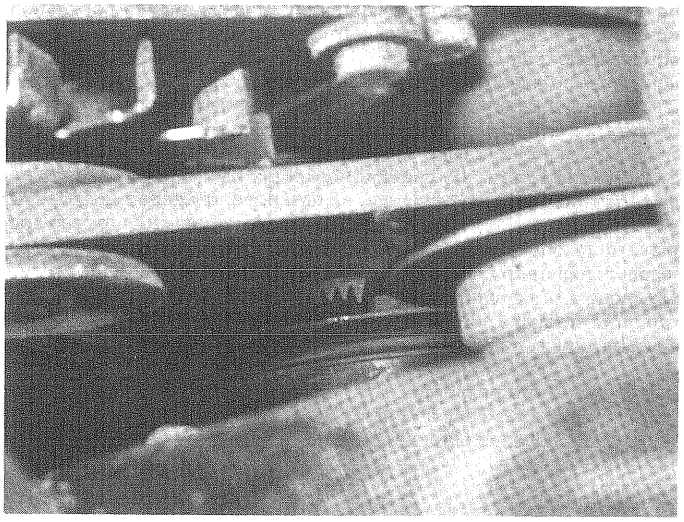


Fig. 4.14 Distributor timing adjustment points – Lucas 25D4 (Sec 10)

1 Distributor clamp pinch bolt
2 Vernier scale
3 Knurled adjustment wheel

distributor body clockwise until the points are *just* beginning to open. If they are already open, turn the distributor body anti-clockwise until they are fully closed, then turn it clockwise until they *just* begin to open. Now tighten the pinch bolt. If the distributor incorporates a knurled vernier adjustment wheel on the vacuum unit a very fine degree of accuracy can be obtained. Timing the wheel in the direction 'A' stamped on the vacuum unit advances the timing, and turning it towards 'R' retards it. Eleven clicks of the wheel represents 1° of timing movement and each graduation of the vernier scale is equal to approximately 5° of timing movement.

12 Difficulty will probably be experienced in determining exactly when the contact breaker points open, so the following method can be used. Connect a 12 volt bulb in parallel with the contact breaker points (one lead to earth and the other to the distributor (–) low tension terminal on the coil). With the ignition switch on the bulb will light as the points open. The distributor body should be turned as in paragraph 11 until the point is reached where the bulb *just* lights up.



10.17 On later models there are additional timing marks at the front of the engine

13 To adjust the ignition timing using a stroboscopic timing light, first connect the light in accordance with the manufacturer's instructions. A typical method of connection is to attach one lead to No 1 spark plug, and attach the other lead to No 1 spark plug HT lead.

14 Start the engine and allow it to reach normal running temperature.

15 Refer to the Specifications for the appropriate ignition timing setting and the corresponding engine speed.

16 Disconnect the vacuum advance pipe from the distributor and adjust the engine speed to that specified.

17 Remove the inspection cover from the flywheel or converter housing and shine the light beam into the aperture. Use a mirror to deflect the beam onto the flywheel or torque converter. On later models there is an additional and more easily visible timing scale on the timing cover, together with a notch or pointer on the crankshaft pulley (photo).

18 Turn the knurled adjustment wheel or slacken the distributor clamp or pinch bolt and rotate the distributor body until the timing marks and pointer appear stationary and directly in line with each other.

19 Tighten the clamp or pinch bolt, recheck that the timing is still correct, and then reconnect the vacuum pipe. After disconnecting the timing light, reset the engine idling speed to that specified (see Chapter 3).

20 Whichever method has been used to set the ignition timing, a thorough road test should be carried out to ensure that the engine performance is satisfactory under all engine load conditions. As a general guide, the timing is correct if very slight 'pinking' can be heard with the engine labouring (ie at the point where you would normally change to a lower gear). Any small corrections necessary can be made during the road test using the vernier adjustment wheel, or by turning the distributor body very slightly in the required direction.

11 Spark plugs and HT leads

1 The correct functioning of the spark plugs is vital for the proper running and efficiency of the engine.

2 At intervals of 6000 miles (10 000 km) the plugs should be removed, examined, cleaned, and if worn excessively, renewed. The condition of the spark plug will also tell much about the general condition of the engine.

3 If the insulator nose of the spark plug is clean and white, with no deposits, this is indicative of a weak mixture, or too hot a plug (a hot plug transfers heat away from the electrode slowly – a cold plug transfers heat away quickly). The plugs fitted as standard are detailed in the Specifications at the beginning of this Chapter.

4 If the top and insulator nose is covered with hard black-looking deposits, then this is indicative that the mixture is too rich. Should the plug be black and oily, then it is likely that the engine is fairly worn, as well as the mixture being too rich.