



LUBRICATION SYSTEM. Diagrammatic Arrangement
Fig. 2

13. Ignition and Lighting System

This model is fitted with the Lucas capacitor system which has been developed to enable machines to be run with or without a battery. The rider, therefore, has the choice of running with normal battery operation or running without battery if desired, (e.g., competing in trials or other competitive events), and for emergency in case of battery failure.

Before running the machine with the battery disconnected it is essential that the battery negative lead be taped up to prevent it from shorting to earth (frame of machine). Otherwise, the capacitor will be ruined.

Machines can readily be started without the battery and run as normal with full use of **standard** lighting. When stationary, however, parking lights will not work unless the battery is connected.

The system incorporates an alternator and 12 volt battery coil ignition equipment with a zener diode charging regulator mounted on an efficient heat sink and a spring mounted high-capacity electrolytic capacitor.

Twin contact breakers with an automatic timing advance mechanism mounted on the end of the front camshaft, are housed in the timing cover.

14. Carburettors

Twin Amal Concentric carburettors with a bore of 30 mm are fitted as standard.

15. Lubrication System

Oil is carried in a sump cast integral with the crankcase, ensuring the full rate of circulation immediately the engine is started and rapid heating of the oil in cold weather.

The positively driven double acting piston type oil pump running at $\frac{1}{4}$ engine speed, at the rear of the timing cover pumps oil to the bearings under pressure. A gauze strainer, attached to the sump drain plug, protects the pump from foreign matter, and oil after leaving the pump, passes through a large capacity felt filter removable from the top of the crankcase. Pressure to the big ends is kept at 60 lbs./sq. in. by a relief valve situated in the top of the crankcase. This is the right hand of the two screws behind the right hand cylinder barrel.

The capacity of the pump is sufficient to ensure that there is always more oil available than required by the big ends and oil passing through the main relief valve is fed through external pipes to the overhead rocker gear. A secondary relief valve (the left hand screw behind the cylinder barrel) is set at 10 to 15 lbs./sq. in. and passes surplus oil back into the sump.

The oil from the rocker bearings is squirted through a small hole in each rocker on to the top ends of the push rods. It then flows down the push rod tunnels into the cam tunnels, where it lubricates the cams and tappets and overflows into the timing chest, where it lubricates the timing

