

Parking lights and other accessories are always operated on current obtained from the battery.

The advantage of this system is that the rider can be completely independent of the state of charge in the battery for night driving.

When the switch is in the H position, no light can be obtained at the main bulb when the engine is not running, because in this position the bulb is not connected to the battery and no current is being produced by the generator.

In all the other switch positions the lamps are independent of engine speed, as they are connected to the battery through the headlamp switch.

It is recommended that the "H" position should be used on every possible occasion, as by this means no current is being taken from the battery. In addition to this, a small charge will also be given to the battery when the engine is running at moderate speeds.

**NOTE :** Go over all cables regularly, especially those leading to and from the Rectifier, and make sure that none of them is fraying. Should any show signs of doing so bind them at once with plenty of insulating tape and ensure that they are no longer able to flap about.

**SPARKING PLUG.** A Lodge HLN plug is fitted as original equipment. This plug will stand up to the maximum power output of the engine without pre-ignition and if the carburetter mixture is correct, little trouble should be experienced. The sparking plug gap should be checked every 2,000 miles and reset to .020". It is a good plan to carry a spare plug of the correct type so that when the plug in use requires cleaning, it can be removed and the clean spare inserted in its place. Keep the spare plug well wrapped up to protect the all important points.

**TO ENSURE BEST PERFORMANCE AND MINIMUM TROUBLE, ALWAYS FIT THE SPARKING PLUG RECOMMENDED BY US.**

**CLEANING THE PLUG.** Wash in petrol, scraping insulator with a knife or rubbing with a fine emery to remove carbon and wash again. The electrodes should be very carefully scraped. DO NOT rub a wire brush over the points — this will have a ruinous effect. Set point gaps to .020" by tapping OUTSIDE electrodes — NEVER attempt to bend the central electrode.

Do not over tighten the plug in the cylinder head ; this may result in stripped threads and flattening of the rolled copper washer.

**BRIDGING OF PLUG GAP.** This occurs in the form of a deposit between the central electrode and earth points causing a short circuit and preventing a spark. It is some-times mistaken for oiling-up but the cause is believed to be the residue of detergent in varying percentages in oils. It might also be "wet carbon" bridge, carburetter rich or carburetter flooding ; or a lead Bromide bridge — high plug temperature — weak mixture.

The high working temperature of a two-stroke engine appears to be the reason for this bridging and it follows that a weak mixture, retarded ignition, a choked exhaust system or anything likely to increase the working temperature may result in bridging. Attention to the following will result in an increased mileage before it becomes necessary to clean the points.

- Ensure ignition timing is correct and contact breaker gap is .018".
  - The carburetter may be set to give a richer mixture.
  - The normal spark plug gap should be increased as much as possible consistent with easy starting and good running.
- Poor condition of the contact breaker points and connections may lead to spark failure.

## IMPORTANT

Provided that the negative battery lead is suitably insulated, and the wiring is in good condition, no damage to the Rectifier will occur if the engine is used without the battery. It should, however, be clearly understood, that the switch should not be put to the "PARKING" position whilst the engine is running.

## BATTERY MAINTENANCE.

Deterioration soon sets in if the battery is left standing without attention for any length of time. To keep the battery in good condition, maintenance must be carried out whether the machine is in use or not.

Every month (every fortnight in summer), remove battery from the machine clean terminals, and top-up the three cells to  $\frac{1}{4}$ " above the level of the plates with distilled water—NOT tap water, as this contains impurities detrimental to the battery. Pour the distilled water through a glass funnel or syringe.

Many lighting troubles can be traced to unseen corrosion between the surfaces of the battery terminals ; the positive is earthed to reduce this effect to a minimum, but keep the terminals clean. A little grease smeared on them will help prevent corrosion. Do not keep distilled water in receptacles made of any kind of metal as this will quickly render it impure—make use of a clean glass bottle or jar. Rainwater collected in a jar makes a satisfactory substitute for distilled water.

NEVER bring a naked light near a battery with vent plugs removed or when the battery is being charged ; the gas given off by the electrolyte is dangerously explosive.

Battery acid is highly corrosive ; therefore throw away any cleaning rags used to clean the battery lest their use on other parts of the machine causes damage.

NEVER let a battery completely run down ; if this does occur, get it charged as soon as possible, or its length of life may be seriously shortened.

## Exhaust System

After a considerable mileage a mixture of carbon and oil will form in the exhaust system. The expansion chamber not only reduces exhaust noise but also to some extent reduces the formation of carbon which otherwise would take place. When the need arises to remove this deposit the whole system should be taken apart — the drawing is self explanatory. The carbon which is accessible can be removed by an ordinary scraper, the oil can be wiped off. The deposit not visible can be dealt with by flushing out once or twice with household detergent and boiling water.

