



ALL-BRITISH MAGLITAS

Or Combined Lighting and
Ignition for Motor Cycles

.....
INSTRUCTION BOOK
Types FB and FC
Serial Prefix "E"
.....

The M-L Magneto Synd., Ltd.
COVENTRY, England.

Telephones: Coventry 1008 and 1009. Telegrams: Carlton, Coventry

Sole Distributors Abroad and to Home Retail Trade:

Messrs. S. SMITH & SONS (M.A.) Ltd.

Central Works, Edgware Road, Cricklewood, London.

London Showrooms: 179-185, Great Portland St., London, W.1.

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SPECIAL NOTICE.

In the case of Rudge Whitworth Motor Cycles this booklet is only applicable strictly as far as the generator and switchbox is concerned, the lamps, battery and wiring being supplied by Messrs. Rudge-Whitworth themselves.

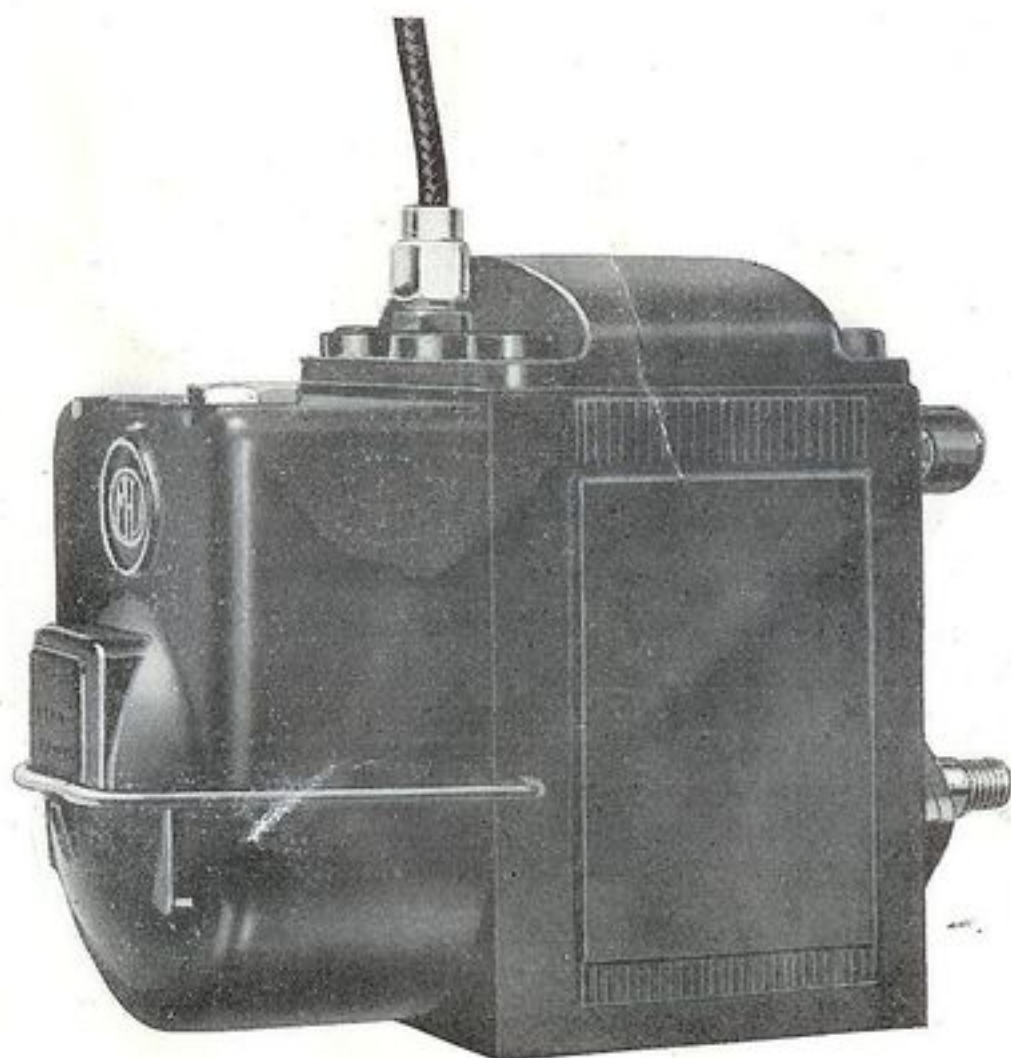
On these machines also the cushioning device in the tail lamp is dispensed with, and to guard against tail lamp breakage, it is recommended that 4 volt 0.5 ampere Carbon Filament Bulbs be employed.

On the later Rudge machines the metallic braiding referred to on page 5 is not employed, the frame of the motor-cycle itself being utilised for the return connection. Care must be taken in this case to see that the lamps, battery and switchbox are properly earthed, and not insulated by particles of enamel.

Messrs. Rudge-Whitworth have also supplied a number of 6 volt sets for export. On these machines 6 volt batteries and 6 volt lamps must, of course, be used.

M-L Maglita Instruction Book

Types FB and FC. Serial Prefix E.



General

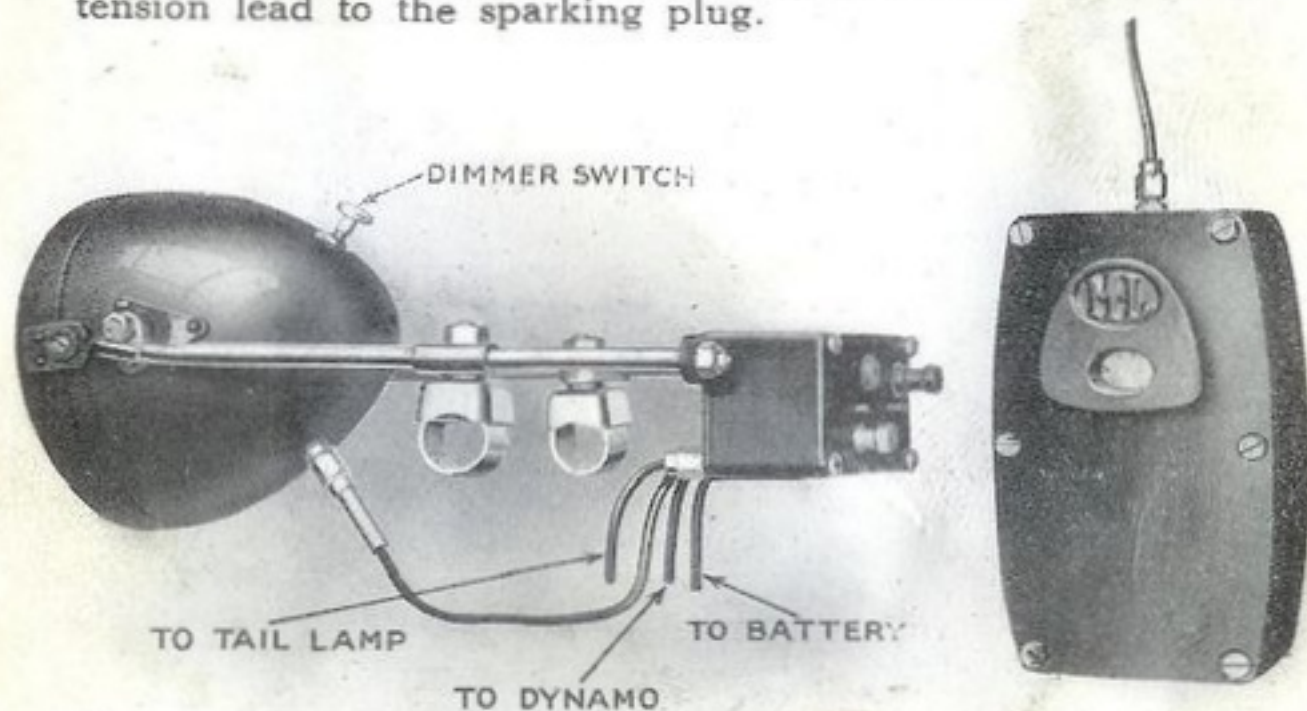
The Maglita lighting system comprises :—

1. The generator.
2. The battery box.
3. Switch unit.
4. Lamps and wiring.

Generator

The generator consists of a dynamo having two straight permanent magnets forming the sides of the machine, and fitted with laminated pole pieces. Between these pole pieces rotates an H armature, which provides current for the lighting. The upper pole piece is split, and the two halves are connected by a laminated bridge piece, on which is wound the ignition coil.

As the armature rotates the direction of flux in this coil reverses, and this reversal of flux is utilised to provide the spark for ignition. The lighting and ignition circuits are separate, so that a fault in the lighting system cannot affect the ignition. The flux distortion caused by the dynamo winding is compensated for by a winding on the bridge piece carrying the dynamo current. Further, the ignition windings are stationary and the dynamo winding only revolves, so that the machine is more robust than the ordinary magneto, in which the high tension winding is wound on a revolving armature. The ignition circuit is self-contained within the machine, the only portion external being the high tension lead to the sparking plug.



Battery

The battery, rated at 4 volts 10 ampere hours, in an ebonite case, is of the "Exide" type, manufactured by the Chloride Electrical Storage Co. Ltd., and is specially designed to meet the conditions of motor cycle service. It is carried in a cast aluminium box fitted with a detachable front, and a swivelling clamp for attachment to the rear down tube, or any other suitable portion of the motor cycle frame. On later machines the aluminium box is dispensed with, the battery being mounted in a moulded container carried by steel straps and a swivelling clamp.

Switchgear

The switchgear is carried in a small aluminium box, or on later machines on a steel plate fitted with a moulded

cover. Two types of box are made, one to be carried on rearward extensions of the lamp rods, and the other to clip on the top frame tube or in any other convenient place.

It consists of two switches, one to control the lights, and the other to connect the generator to the battery when charging. This second switch also acts as a cut out, and disconnects the battery automatically when the machine stops. It must be closed by hand after the engine has been started, and will then remain closed until the engine is stopped. It must always be closed when running with the lights on, and requires to be closed occasionally when running in daylight, in order to keep the battery charged and in good condition. (For further particulars see "Running Instructions.")

Lamps and Wiring

The head lamp is fitted with a carefully designed silvered parabolic reflector. Focussing is effected by rotating the bulb in the holder. It is carried on a pair of clips which permit it to be adjusted for vertical position of the beam. A small stand-by bulb is fitted in the head lamp in addition to the main bulb. The object of this is to economise current when the machine is standing. The two bulbs are connected in series, but the small bulb can be short circuited by a spring controlled plunger switch fitted in the top of the lamp body. When closed the stand-by bulb is short-circuited and the main bulb only lights up. When open the small bulb is in series with the large one, but as it is of much higher resistance this bulb only lights up. If the main bulb should burn out the pilot bulb will naturally be inoperative. If a spare main bulb is not available, the pilot bulb can be used by putting it in place of the main bulb and closing the dimmer switch.

The tail lamp is a tubular type lamp, which is fixed on the rear number plate. Provision is made for illumination of the number. The lamp incorporates a patent cushioning device for protecting the bulb from mechanical shock and thereby minimising the risk of filament breakage. In addition the lamp is so constructed that the bulb holder may be withdrawn and used as an inspection lamp when desired.

The wiring is a concentric system comprising a flexible insulated core, surrounded by a metallic braiding, and covered with a waterproof coating. The metallic braiding is earthed, and forms the return conductor of the system. One brush on the generator and the negative pole of the battery are earthed, while the central conductor is connected to the positive pole. The wiring is anchored where it enters the battery box, generator and lamps by special glands.

which firmly grip the metallic braiding and prevent any pull on the flexible conductor.

Types and Outputs

The FC machine is suitable for engine speed drive, on either two or four-stroke engines, and gives an output of 3 to 3½ amperes at a speed of 1,500 r.p.m. Type FB is intended for running at half engine speed, when it will give about 2 amperes at 800 r.p.m. on the Maglita, or 1,600 on the engine. The FC machine can be specially wound for running at half engine speed, but as it is a smaller machine than the FB, will give a correspondingly reduced output, and should not be used on any but small high speed engines of not more than 250 c.c.

Fitting to Engine

All machines are made with a centre height of 35 mm., and fixing holes are provided in the base. When 45 mm. centre height is required, an aluminium packing plate is screwed on to the base. The Engineering Standards K taper spindle, with ⅜-in. BSF thread, is used. M standard base fixing for crankcase mounting is available.

The Maglita, IF MOUNTED ON AN IRON BASE, should not come too close to iron portions of the frame or machine. A clearance of at least ¼-in. should be allowed.

In the case of a two-stroke machine, where the magneto normally runs at engine speed, standard magneto sprockets may be employed, but in the case of a four-stroke machine provision must be made for driving at engine speed—that is, twice the speed the magneto is usually driven.

On existing engines where the only drive that can be obtained is from the half-speed shaft, we recommend the use of 8 mm. duplex roller chain. Such chains give thoroughly satisfactory service, and are quite suitable for taking the drive. A 24-tooth driving sprocket, and a 12-tooth driven, can be accommodated within the chain case of most motor cycles, as they are little, if any, larger than the ½-in. pitch standard sprockets.

The Maglita is designed for Bowden cable control, a self-contained fitting being provided. The barrel and actuating pin which engages with the timing lever of the Maglita can be withdrawn by first removing the actuating pin with the maglita spanner and unscrewing the hexagon nut on the top

corner of the moulded front cover. To replace the cover adjust the control so that the lever draws the barrel up to its fullest extent, and set the timing lever of the maglita to its highest position also. The cover can then be slipped into position readily.

The end of the H. T. cable should be greased and screwed on to the wood screw in the H. T. terminal. The screw should enter the stranded core of the cable, and on screwing the cable down the rubber insulation will be expanded tightly inside the hole.

Timing

The timing of the spark for the Maglita should be the same as for a magneto, bearing in mind that on a four-stroke engine with the Maglita running at engine speed the crankshaft angle corresponding to a given angle on the Maglita is half that which would be employed with a half engine speed magneto. It is, therefore, desirable to always time with the Maglita fully advanced, in which position practically all normal running is done.

The best timing varies with different makes of engines, it being affected by compression, position of sparking plug, valve timing, etc. Instructions for timing are usually given in the engine or motor cycle maker's booklets, and where these are available they may be relied on to give the best results for that particular engine.

If the engine maker's instructions are not available, we recommend the following method:—

First find the "top dead centre" at the end of the compression stroke, and mark the pulley or driving sprocket, and the crankcase to correspond. Then rotate pulley backwards about 30 degrees for machines used on solo work, or 25 degrees for machines used with sidecars. (This may easily be estimated by holding a watch at the pulley centre. The required angle is equal to about five minutes or four minutes respectively, on the watch dial). Now set the Maglita with the points "just breaking," and with the lever in the fully advanced position. The best way to do this is to remove the cover and turn the machine round by means of a screwdriver inserted in the slot of the cam fixing screw. Having found this point, hold the armature stationary by means of a screw driver in the slotted spindle and tighten the sprocket on the tapered end. Before finally tightening this, check the timing

again, rotating the engine until the points break, and checking the position of the piston or crank.

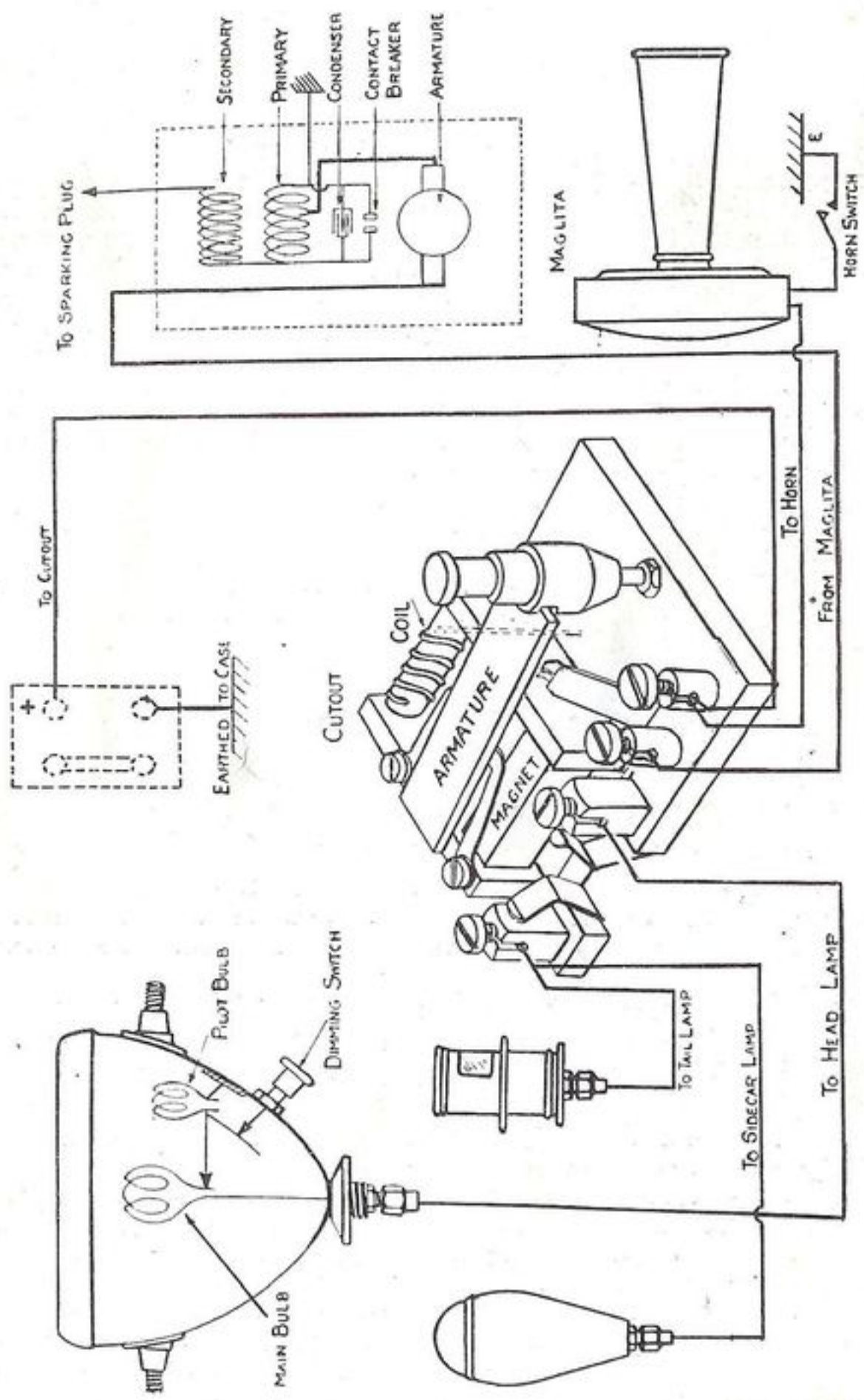
Fitting of Lamps

To fit the handlebar unit slip the steel strap which clips the handlebar off the head of the "T" bolt, and push it over the handlebar itself. Press the two ends of the strap together and slide them into the slots in the head of the "T" bolt. After all parts have been loosely assembled in place, they should be adjusted until the necessary clearance is obtained between the lamp and front fork, and between the switch gear and the tank. The nuts can then be tightened up, and final adjustment of the beam made at night by slacking the screws in the trunnions of the lamp and tipping the lamp upwards or downwards as required.

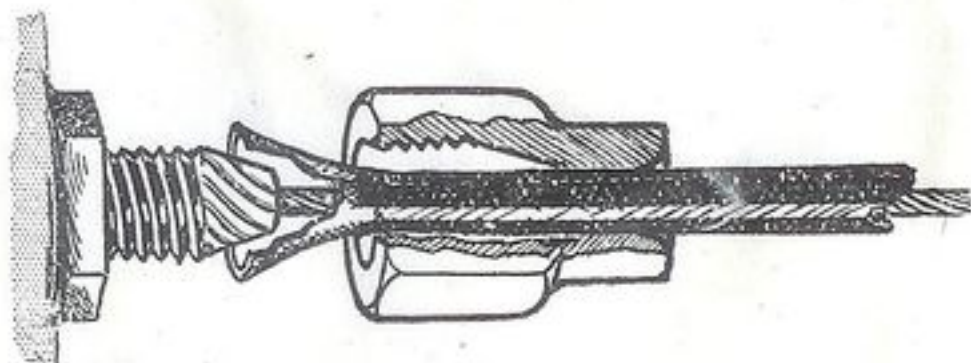
It is advisable always to mount the lamp in the lowest possible position. This enables a good light to be obtained on the road immediately in front of the machine, without tipping the beam downwards, which limits the extreme range of illumination. The lower the lamp the less the dazzle to oncoming traffic.

Connecting Up (*See diagram of Connections*)

1. Cut the cable to correct length.
2. Slip a gland nut over the end of the cable.
3. Remove black covering and metallic braiding from sufficient length of cable to reach from the terminal to its gland. The braiding can be easily removed without damaging the insulation by first pushing it back so that it expands, and then cutting it with a small pair of scissors. Then expose about $\frac{1}{4}$ -in. of braiding by removing the outer covering.
4. Insert the cable in the gland and push the cable up until the braiding expands over the tapered nose, and reaches up to the screwed portion of the gland.
5. Screw the gland nut home, clamping the braiding and cable securely in position.
6. In the case of the switchgear terminals bare about $\frac{1}{4}$ -in. of the inner core, and double the copper strands back upon themselves. Insert the end into the terminal and screw up, being careful not to screw so hard as to cut the wire. On the Maglita connect the lead from the switchgear to the upper left hand terminal. A small brass cleat is provided into which the lead should be soldered. Do not interfere with the right hand terminal. On switchgear follow the diagram on



page 9. To wire the head lamp remove the reflector, press back the phosphor bronze spring at the rear end of the plunger in the main bulb holder, and thread the end of the conductor through the hole. On releasing the spring the wire will be firmly gripped. The rubber covering of the cable should be gripped in the loop at the free end of the spring in order to prevent the cable vibrating and fracturing. In the case of the tail lamp the inner core of the cable is soldered to the plunger inside the lamp holder. Be careful to see that no stray ends or bare wires are left exposed outside the terminals, as accidental short circuits may be caused thereby. Be most careful to see that the battery is not connected up wrong way round. The lead from the charging switch must go to the positive or red terminal of the battery, and the negative terminal of the battery must be earthed. Reversing the battery will demagnetise the magnets of the Maglita, and render it useless until re-magnetised. Should re-magnetising be required for any reason, the complete machine should be returned to the Works. The magnets cannot be removed, and an ordinary magnetiser is useless for the purpose.



7. Connect the negative wire from the battery last of all, in order to avoid accidental short circuits while wiring the the rest of the machine.

Batteries sent out without acid must be filled and given a forming charge before putting into service. For directions see the makers' instructions which are attached to the side of the battery.

See that sufficient slack is allowed in cables to permit the steering being turned to full lock in either direction without pulling the cable taut.

Running Instructions

If the bulbs fitted are in accordance with our instructions there will be very little drain on the battery under normal conditions of night driving, unless the machine is left standing with the lights on, or driven very slowly under the same

conditions. A certain amount of daylight charging is necessary to make good any such drain also to keep the battery in condition, but overcharging should be avoided, as it will lead to loss of acid.

The amount of daylight running required is less when the Maglita is driven at engine speed, and will of course be less on a solo than on a sidecar machine where an extra lamp is provided. The current consumption of the standard head lamp bulb is 2 amperes, and of the tail lamp $\frac{1}{2}$ ampere. Half ampere bulbs are recommended also in the sidecar lamp, when fitted. With the half engine speed FB Maglita there is, therefore, a slight discharge from the battery at normal speeds of say 20 to 25 m.p.h. With the FC Maglita on a solo machine there is a small surplus. In the former case the amount of daylight charging should be not less than 50 per cent of the night running. In the latter case it should be limited to one or two hours a week. When a sidecar is employed the figures must be increased to allow for the current taken by the sidecar lamp. The amount of daylight charging must be increased if the machine is left standing for prolonged periods with the lights on.

The action of the charging switch is a good indicator of the working of the generator. Its opening when the engine stops is an indication that the battery is charged and that all connections are good.

Should it fail to open, either the battery is run down, which can be checked by trying the lights, or there is a bad connection in the charging circuit, in which case examine the dynamo brushes and clean them if necessary, in addition to inspecting the rest of the circuit.

Should the battery become faulty, and it be desired to run the lights independently, the battery should be disconnected entirely, and both the charging switch and the lighting switch closed when the lights are required. The generator will then feed the lamps without the intervention of the battery, and light may be obtained whenever the engine is running. The engine speed should be kept down to about 25 m.p.h. on top gear, when feeding the lamps direct, as at higher speeds there is danger of burning out the bulbs. With the battery disconnected, the charging switch will never open automatically, no matter how slowly the machine is run.

Great care must be taken, if running the lights direct from the engine, never to put the stand-by bulb in circuit. If this is done both the stand-by bulb and the tail lamp bulb will be burnt out.

As the generator does not deliver current during the whole of a revolution, there will be some position of the engine in which it is possible to close the charging switch, even while the machine is stationary, but a small movement of the machine will close the circuit, and cause the charging switch to open. In most cases when the machine is stationary it is impossible to close the charging switch, as it will immediately fly open again, but the fact that it is sometimes possible to do so need not be taken as an indication that the mechanism of the switch is out of order. The switch should, however, invariably open automatically when the engine is slowing down. During stopping the armature of the machine will pass through positions in which sufficient current is taken from the battery to operate the reverse current mechanism of the switch.

Care and Maintenance

(a) GENERATOR.

(1) *Contact Breaker*.—Examine the contact points occasionally. See that they are clean and keep the gap adjusted to .010-in., i.e., the thickness of the gauge on the magneto spanner.

(2) *Brushes*.—Examine the generator brushes every two or three thousand miles. See that they are clean and free from oil, and that they slide freely in their guides. When replacing be careful to put them back in their original position.

(3) *Lubrication*.—Place a spot of oil on the cam, and a drop of oil in the oil hole under the contact breaker, for the bearing, every 1,000 miles or so.

The large bearing at the spindle end is packed with grease during assembly, and will run indefinitely without lubrication.

Do not on any account remove the armature, as this would partially demagnetise the Maglita. If the machine should require re-magnetising, it should be returned to our Works, as an ordinary magnetiser is useless for the purpose.

(b) BATTERY.

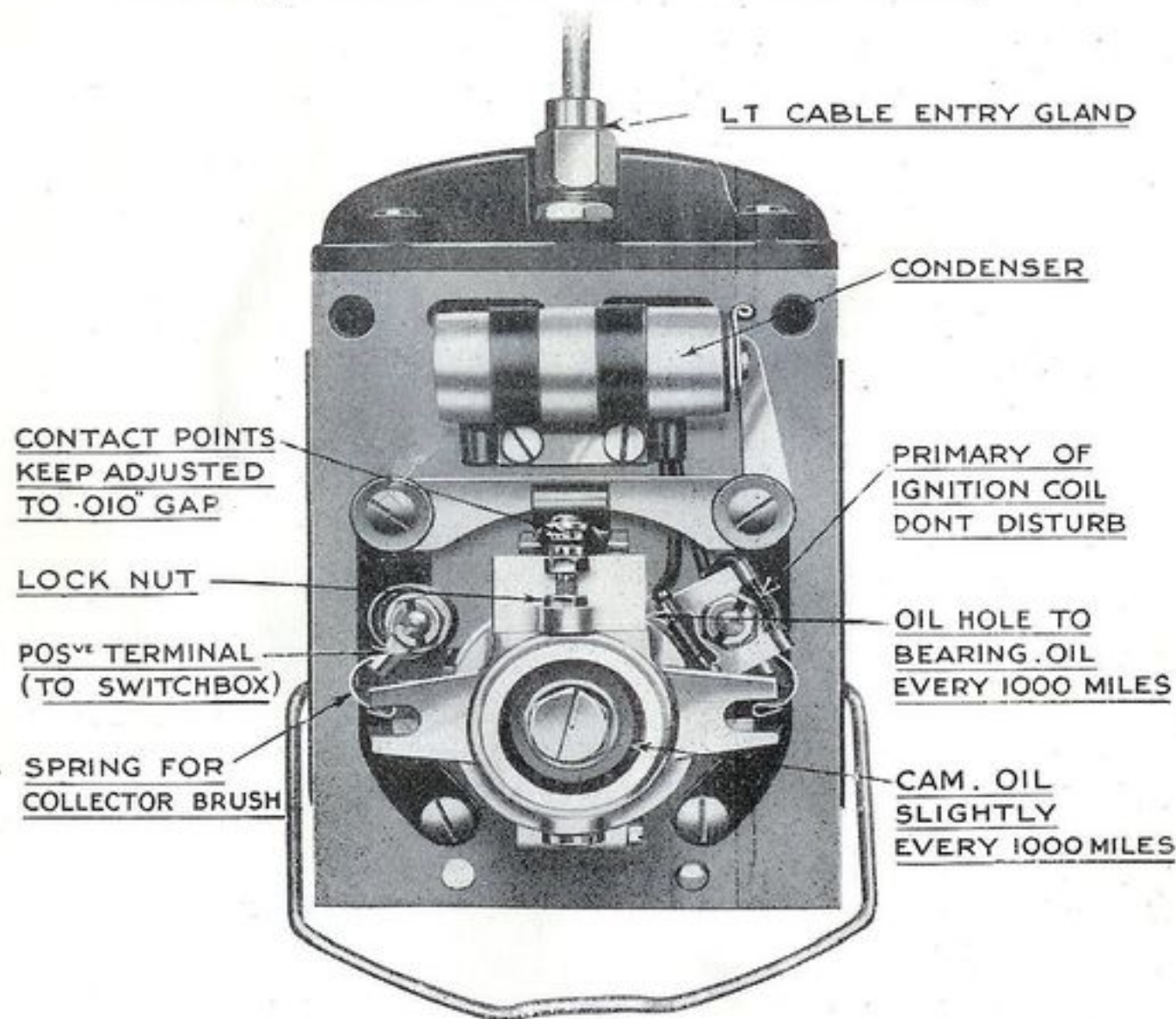
Check the acid level monthly. If it falls more than $\frac{1}{4}$ -in. below the top of the plates fill up with distilled water. Do not, however, fill above the plates unless the machine is going to be laid by for a lengthy period. Filling too full will cause swilling about of the acid, and may cause some to be blown out of the vents when charging. If the level is kept down to the top of the plates these act as a baffle. If the machine is to be laid by for any period greater than three weeks the

battery should be removed, and given a charge at least once a month. Do not let the battery remain in a discharged state.

Neglect of these precautions results in the formation of white sulphate of lead on the plates, which ruins the battery.

(c) HEAD LAMP

Do not continue to use a head lamp bulb after the glass has blackened with age. It cuts down the light considerably. When fitting a fresh bulb use one of the correct rating.



We recommend a 2 ampere vacuum type for the head lamp, $\frac{1}{2}$ ampere vacuum M.F. type for the pilot bulb, sidecar and tail lamp.

Gas filled bulbs may be used in the head lamp if desired. They give slightly more light and the light is whiter in colour, but the filament is generally too concentrated to give a good

even beam, although well adapted for a long intense beam with little side illumination. If gas filled bulbs are used a spare should be carried, as this type of bulb usually fails without any warning. Vacuum bulbs generally blacken badly before failing completely.

When buying spare bulbs be sure to specify single centre contact type. Double contact bulbs are useless.

If the reflector should become dirty it should be lightly polished with jeweller's rouge and a fine chamois leather. Ordinary polishing materials ruin the polished surface by inflicting scratches upon it.

Wiring

The wiring if properly fitted is a sound job, and should give no trouble. See that it is properly clipped to the frame so that it cannot get frayed and cut. If the wire gets frayed or damaged, replace it at once. Frayed and damaged wires are likely sources of trouble which will occur after dark, when it is difficult to locate the faulty spot.

Troubles and their Remedies

(a) IGNITION FAULTS.

In the case of irregular firing, first ascertain that the trouble is not due to the carburetter or induction system. A stuck valve, partially choked jet, or an incorrect petrol level may be the cause of such trouble. Then examine the contact breaker carefully, and see that the points are set to the correct gap, that they close properly, and are free from oil.

Examine the sparking plug, and if doubtful, replace with another.

In normal running the current drawn from the Maglita for charging the battery and lighting the lamps has no effect on the ignition, but a dead short circuit in the lighting system may cause misfiring. Should misfiring still occur, after tracing through the causes already enumerated, the charging wire should be disconnected from the left hand terminal. Do not touch the double connection from the right hand terminal. Should this stop the misfiring, the connections between the Maglita and the battery box should be carefully examined. Further than these points there is no possibility of a breakdown in the ignition circuit, other than the insulation of either

the ignition coil or the ebonite terminal. As both these are very carefully tested, and as there is an ample margin of safety, it is not likely to occur. Should, however, the ignition still be defective, the machine should not be dismantled further, but should be returned to the Works or nearest service depot.

(b) LIGHTING CIRCUIT.

1. LAMPS WILL NOT LIGHT WHEN STATIONARY, BUT LIGHT WHEN RUNNING. Battery run down or broken connection between battery and switchgear. In this case the cut out will not operate when the engine stops.

Test battery directly across terminals with lamp or voltmeter.

2. LAMPS WILL NOT LIGHT UNDER ANY CONDITIONS, BUT CUT-OUT SWITCH OPERATES.

Broken wiring between switchgear and lamps, or burnt out or broken bulbs. Remove bulbs and test independently.

In the case of the headlamp, failure of the main bulb will put both out of action. Should the headlamp refuse to light, although both bulbs are sound, remove the reflector, and see that the spring connection from the dimmer switch is making good contact with the main bulb holder, and also with the central screw on the back of the pilot holder.

3. LAMPS WILL NOT LIGHT EITHER RUNNING OR STATIONARY, AND CUT-OUT SWITCH DOES NOT OPERATE.

Maglita not charging and battery run down. Examine brushes, clean them and check spring tension. To check the Maglita, disconnect the positive (left hand) lead from the Maglita terminal, and connect the main bulb between this terminal and the negative terminal, or the body of the Maglita. Run the engine at a moderate speed, and if the Maglita is giving current the bulb will light up. If this is not the cause of the trouble, examine wiring between Maglita and switchgear.

4. LAMPS WILL LIGHT BUT CUT-OUT SWITCH DOES NOT OPERATE. Maglita not charging; examine brushes and wiring as under (3) above.

5. CUT-OUT WILL NOT STAY IN WHEN ENGINE IS RUNNING. This may occur due to dirt on the pole face of the cut-out magnet. Remove cover of switch case and carefully clean the pole face, if dirty. Be careful not to strain the mechanism of the cut-out in doing so. If this does not cure

the trouble, examine the wiring between the switchgear and Maglita for short circuits due to frayed wires or stray ends at the terminals.

6. LIGHTS FLICKER. LOOSE CONTACT.

Examine the terminals in the switch box, the battery terminals, and the bridge piece between the two cells of the battery, the dimmer switch contact, as in (2), and the spring plunger in the bulb holder.

Guarantee

Our manufactures are carefully inspected and submitted to our standard tests at our Works before despatch. We, therefore, give to all purchasers the following guarantee, which is to exclude and to take the place of any condition or warranty implied by statute or otherwise.

If within twelve months of the date of despatch any defect is discovered in respect of materials or workmanship, and which is reasonably within our control, we undertake to make good the defect at our own expense, provided that notice is given to us as soon as it is discovered, and that the apparatus is immediately forwarded to our works carriage paid. Our responsibility is in all cases limited to the cost of making good the defect in the apparatus itself. This guarantee does not apply to defects caused by wear and tear, abnormal conditions of working, accident, misuse or neglect.

This guarantee applies to all parts of the apparatus manufactured by ourselves, and includes the Maglita itself, switchgear, wiring, lamps, and all fittings. It does not apply to the battery and electric lamp bulbs, which are supplied subject to the usual conditions of the makers. These are made by reputable firms only, and are tested by us before despatch, and are carefully packed, and every care is taken to see that they are free from any defect, but we cannot undertake to give free replacement of any failing in service.

In the event of any defect occurring in the battery, notify the nearest Exide Service Depot, who will give any assistance in their power.

This guarantee does not include parts supplied in special sets fitted by motor-cycle manufacturers and utilising the Maglita and Switchbox supplied by ourselves. In such case the parts supplied by ourselves only come under our guarantee.

Spare Parts

Full particulars of the spare parts likely to be required will be found on pages 17 to 19.

4122/6



10B7



9N4



10T10



7B6



LC7B



9Q



LC6A



Sc 210



12LK5



9N3



Sc 184



Sc 174



4152



LG9



9LB11



LG1





10LD6



12LA19



10LD7



10LD4

8LD5



7LA15



12LG



9LB3



7LA16



LB4



LB1



9LB7



9LB2



7LB8



9LB9



8LD13

M-L Maglita List of Spare Parts.

Part No.	Illustrated on Page	Generator.	Prices		
			s.	d.	
Comp.	9Q	17	High Tension Terminal	5	0
Part	7B6	17	Spring for Carbon Brush		3
"	10B7	17	Carbon Brush and Flexible Lead ...	1	9
"	9N3	17	Tappet for Contact Breaker	1	6
"	9N4	17	Spring Contact for Contact Breaker	1	0
"	10T10	17	Retaining Spring for Front Cover ...		6
"	4122/6	17	Spring for C.B. with Contact Point	5	0
"	4152	17	Adjustable Contact Point	5	9
Scr.	174	17	Screw fixing C.B. Spring and 9N4		3

Switch Gear and Lamps.

Part	12LA19	18	Main Bulb Holder complete	7	6
"	LB1	18	Saddle for Handlebar Clamp	2	0
"	9LB2	18	Side Rod Clamp	2	0
"	9LB3	18	"T" Bolt	1	9
"	LB4	18	Strap clipping Handlebar	1	0
"	9LB7	18	Clamp for Head Lamp	1	6
"	7LB8	18	Screw for 9LB7		6
"	9LB9	18	Nut for 9LB3		4
"	9LB11	17	Spring Washer for 7LB8		2
"	LC6A	17	Gland for Cable		6
"	LC7B	17	Nut for Cable		6
"	10LD4	18	Armature for Cut-out	1	9
"	8LD5	18	Hinge Spring for 10LD4		3
"	10LD6	18	Charge Switch Plunger	1	6
"	10LD7	18	Lamp Switch Plunger	1	9
"	8LD13	18	Plunger Spring		3
"	7LD30	17	Cable, per foot		9
"	LG1	17	Dimmer Switch Fixing Nut		4
"	LG9	17	Dimmer Switch Washer		2
"	12LG	18	Dimmer Switch	2	6
"	12LK5	17	Nut securing Switch Box Cover ...		3
Scr.	184	17	Terminal Screw for Cut-out		3
"	210	17	Battery Box Lid Screw		4
			Sidecar Lamp with Cable and Con- nections	12	6
			4V 10 Ampere-hour Exide Battery ...	17	8

Bulbs.

Part	7LA15	18	Head-Lamp Bulb—4-volt, 8-watt ...	2	6
"	7LA16	18	Pilot, Sidecar or Tail-Lamp Bulb, 4-volt, 2-watt	1	8

In case of damage to the Lamp Body, Front, or Reflector, it is recommended that the complete lamp be returned to us, as complete interchangeability of these parts cannot be guaranteed.

When ordering spares, please specify the type and No. of the Maglita, as engraved on the cover. Give also the direction of rotation as viewed from the spindle or driven end.

Unless you have an account with us, orders should be accompanied by cheque or postal orders.

SUMMARY OF RUNNING INSTRUCTIONS.

The following summarises the important points to be noted, and they should be carefully followed if satisfactory results are to be obtained:—

BATTERY.

Regulate the amount of charging in accordance with the instructions given.

Watch the operation of the cut-out switch. It is a certain indication of any faults in the lighting system or of any attention which may be necessary to battery or generator.

Check acid level weekly and fill up with distilled water if necessary. Do not fill too full. If you do the acid will splash and may be blown out of the case. It should only just reach the top of the plates.

If you disconnect the battery, put the dimming switch in full on position and keep it there. Don't leave the machine standing with the main head lamp bulb on. It runs the battery down.

Do not leave the battery to stand in a discharged or partly empty condition, get it recharged.

LAMP BULBS.

Use the right size bulbs:

Head Lamp 4 volts 2 amp.

Tail, Pilot and Sidecar 4 volts 0.5 amp.

When buying a bulb see that the filament is in the right position to focus. Bulbs vary greatly, and the correct focussing of the head lamp is extremely important.

MAGLITA.

Keep the points set to the correct gap, .010".

Oil cam every 1,000 miles.

Clean the brushes every 2,000 miles, and see they do not stick in the holders.

GENERAL.

Do not try to connect extra fitments, such as horn and inspection lamps, to the battery except by the use of our standard plugs and connections.