

cables or by taping them together. The reflector can be rocked by the fingers without damage to the highly polished surface, as this is protected by a transparent and colourless covering, and any finger marks can be easily removed by means of a soft cloth. It is thus possible, by rocking the reflector with the fingers, to see if it is working freely.

If the fuse should blow repeatedly, and the cause of the trouble cannot be found, have the equipment examined at the nearest Lucas Service Depot.

#### Cleaning.

The highly finished surface of the reflector is covered with a fine transparent colourless protective covering which enables accidental finger marks to be removed with a soft cloth without affecting the surface. At the same time, this covering does not in the least impair the efficiency of the lamp. It is important that metal polishes are not used on the reflector.

Ebony black bodies may be cleaned with any good car polish. When the lamps are chromium-plated, it is only necessary to wipe them with a damp cloth; do not clean them with metal polish.

## LUCAS SERVICE DEPOTS.

All owners of Lucas equipment are urged to take advantage of the facilities offered by Lucas Service.

For the benefit of the users of our equipment, we have established Service Depôts in all large towns, which are not only at your disposal for repairs, overhauls and adjustments, but to give free advice. If you experience any difficulty with any part of the equipment, do not hesitate to consult us; we shall be only too pleased to be of assistance. The best course to adopt is to call at our nearest Service Depot, the addresses of which are given below, when the equipment can be examined as a whole.

If it is necessary to replace any part, order Genuine Lucas Spares. It is obvious that only the designers and manufacturers of the equipment are in a position to make replacement parts which will give satisfactory and lasting service.

When corresponding with Depôts, or when ordering spare parts, give the name, model and year of the engine; the unit of equipment; and particular part in question. Units of equipment are identified by letters and numbers stamped or moulded on some part of the article. It is essential to quote this marking to ensure that correct replacements are sent. Illustrated spare parts lists are available on application. State year, make and model of engine.

BELFAST	...	...	3/5, CALVIN STREET, MOUNT POTTINGER
Telegrams: "Servdep, Belfast"	...	...	Telephone: Belfast 57291 (3 lines)
BIRMINGHAM, 18	...	...	GREAT HAMPTON STREET
Telegrams: "Lucas, Birmingham"	...	...	Telephone: Central 8401 (10 lines)
BRIGHTON, 4	...	...	85, OLD SHOREHAM ROAD, HOVE
Telegrams: "Luserv, Brighton"	...	...	Telephone: Hove 1146 (4 lines)
BRISTOL	...	...	345, BATH ROAD
Telegrams: "Kingly, Bristol"	...	...	Telephone: Bristol 76001 (4 lines)
CARDIFF	...	...	54a, PENARTH ROAD
Telegrams: "Lucas, Cardiff"	...	...	Telephone: Cardiff 4603 (4 lines)
COVENTRY	...	...	PRIORY STREET
Telegrams: "Lucas, Coventry"	...	...	Telephone: Coventry 3068
DUBLIN	...	...	PORTLAND STREET NORTH, NORTH CIRCULAR ROAD
Telegrams: "Luserv, Dublin"	...	...	Telephone: Drumcondra 434 (4 lines)
EDINBURGH, 11	...	...	60, STEVENSON ROAD, GORGIE
Telegrams: "Luserv, Edinburgh"	...	...	Telephone: Edinburgh 62921 (4 lines)
GLASGOW	...	...	GRANT STREET (ST. GEORGE'S ROAD)
Telegrams: "Lucas, Glasgow"	...	...	Telephone: Douglas 3075 (5 lines)
LEEDS	...	...	64, ROSEVILLE ROAD
Telegrams: "Luserdep, Leeds"	...	...	Telephone: Leeds 28591 (5 lines)
LIVERPOOL 13	...	...	450/456, EDGE LANE
Telegrams: "Luserv, Liverpool"	...	...	Telephone: Old Swan 1408 (5 lines)
LONDON	...	...	DORDRECHT ROAD, ACTON VALE, W.3
Telegrams: "Dynomagna, Ealux, London"	...	...	Telephone: Shepherd's Bush 3160 (10 lines)
LONDON	...	...	757/759, HIGH ROAD, LEYTON, E.10
Telegrams: "Luserdep, Leystone, London"	...	...	Telephone: Leytonstone 3361 (5 lines)
LONDON	...	...	155, MERTON ROAD, WANDSWORTH, S.W.18
Telegrams: "Luserv, Put, London"	...	...	Telephone: Putney 5131 (4 lines)
MANCHESTER	...	...	TALBOT ROAD, STRETFORD
Telegrams: "Lucas, Stretford"	...	...	Telephone: Longford 1101 (5 lines)
NEWCASTLE-ON-TYNE, 2	...	...	64/68, ST. MARY'S PLACE
Telegrams: "Motolite, Newcastle-on-Tyne"	...	...	Telephone: Newcastle 25571 (3 lines)

IN ADDITION THERE ARE LUCAS-C.A.V.-ROTAX OFFICIAL BATTERY SERVICE AGENTS, OFFICIAL SPARES STOCKISTS AND DEALERS IN IMPORTANT CENTRES THROUGHOUT THE COUNTRY.



# MAINTENANCE INSTRUCTIONS FOR LUCAS ELECTRIC PROJECTORS

TYPES

LB & LBD135, LB & LBD135P,  
LB & LBD131, LB & LBD131P,  
LB & LBD130, LB & LBD130P,

FITTED WITH

ELECTRICALLY OPERATED  
DIPPING REFLECTORS.



DESIGNED AND MANUFACTURED BY  
JOSEPH LUCAS LIMITED,  
HEAD OFFICES AND WORKS.  
BIRMINGHAM, ENGLAND.

**INSTRUCTIONS**  
**FOR LUCAS ELECTRIC PROJECTORS TYPES**  
**LB AND LBD135 & 135P, LB AND LBD131**  
**& 131P, LB AND LBD130 & 130P**

With LBD type headlamps, a special domed fluted glass is fitted, giving a wide panoramic beam which illuminates the hedges and buildings along the widest road, and is of the greatest assistance in negotiating winding roads.

Headlamps type LB have exactly the same construction as the above, except that they are fitted with the Lucas "Diffusa" glass, which gives a long range beam but at the same time ensures adequate lighting near to the car.

For cars where side-lamps are not fitted, the above headlamps incorporate a pilot bulb for use when parking or driving in well-lighted streets.

**"Dip-and-Switch" Anti-Dazzle System.**

These lamps are fitted with an anti-dazzle device arranged for operation by a switch which is usually either mounted on the steering column or arranged for foot operation. When the switch is moved to the "DIP" position, the near-side headlamp beam is dipped and turned to the near-side of the road, and at the same time the off-side headlamp is switched off. With some equipments both headlamp beams are arranged to dip and turn to the left.

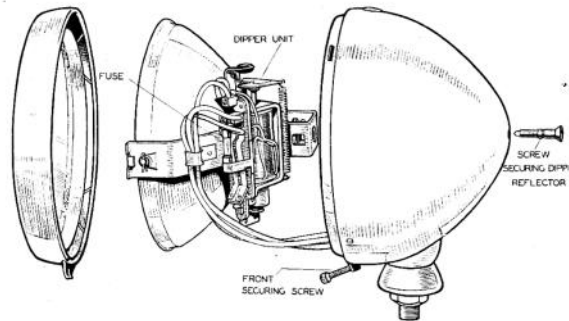
Should the car be run in countries where the rule of the road is right hand, the reflector can be arranged to dip vertically by fitting it in the alternative location slots in the headlamp rim.

The dipping of the headlamp beam is effected by a movement of the reflector. This is made in two parts: the centre portion is pivotted in a fixed rim which is in turn secured to the lamp body.

The movement of the reflector is controlled by a solenoid mounted on a bracket astride the back of the reflector. When the current is switched on, the plunger of the solenoid pushes a bracket on the underside of the bulb holder, thus tilting the reflector to the dipped position. As the plunger reaches the end of its travel it brings into circuit a high resistance winding which reduces the operating current for holding the reflector in the dipped position to a fraction

of an ampere. It also actuates a switch which breaks the off-side headlamp circuit. When the current is switched off, the reflector is returned to its normal position by means of a spring. Although the dipper gives a very definite action on dipping, careful tests have been made to show that the movement does not effect the bulb. The travel of the reflector is limited by means of rubber buffers, which prevents excessive shock.

The mechanism calls for no attention whatever. There is nothing to adjust and no lubrication is required.



**Removing the Lamp Front and Reflector.**

Slacken the fixing screw at the bottom of the lamp, and swing it aside from the slot in which it locates. The headlamp front can then be lifted off. When replacing, press the front on to the lamp body, locating the top of the rim first. Finally, swing the screw into the slot and tighten it to lock the front in position.

To remove the near-side or dipping reflector, withdraw the fixing screw at the back of the headlamp body. The reflector can then be withdrawn by dislocating the tongues of the two fixing brackets, rivetted to the reflector rim, from the slots in the lamp body. The off-side reflector is removed together with the lamp front.

**Bulb Replacement.**

With some types of lamps, it is first necessary to remove the bulb holder from the rear of the reflector in order to replace a bulb. To do this, spring back the two securing spring clips.

When replacing a bulb in these lamps, it is important not only that the same size bulb is fitted, but that it has a high efficiency and will focus in the reflector. Cheap and inferior replacement bulbs often have the filament of such a shape that it is impossible to focus correctly.

Lucas Genuine Spare Bulbs which are sold by any reputable garage, are specially tested to check that the filament is in the correct position to give the best results with Lucas lamps. To assist in identification, Lucas bulbs are marked on the metal cap with a number. When fitting a replacement, see that it is the same number as the original bulb.

We advise you to replace bulbs after long service before they actually burn out, as very often the filaments sag, making it impossible for them to be focussed correctly.

**Aligning and Focussing.**

The simplest way of checking the adjustment of the lamps is to take the car on a straight level stretch of road at night and examine the direction of the beams. They must be parallel with the road and with each other. If one appears to be out of alignment, adjust as follows:—

Slacken the single fixing nut and move the lamp on its universal mounting to the required position, finally locking the adjustment by tightening the fixing.

Before lamps are despatched from the Works the bulbs are carefully focussed to give the best results. After bulb replacement, check that it is focussed correctly. Alternative positions are provided for the bulb in its holder. Try each position for the best distribution of light.

**Dipper Fuse.**

A fuse is provided with the electrical dipper unit to protect the equipment in the event of the reflector failing to function properly. The fuse is of the cartridge type, and is carried in spring clips alongside the dipping mechanism. If the reflector fails to function, remove the fuse from its holder and see if there is a break in the fuse wire. A spare fuse is clipped to the reflector bracket.

Before replacing the fuse, examine the wiring for any evidence of short circuits, and also see that the moving portion of the reflector rocks freely. This should be tried when the reflector is fitted in the body, as it sometimes happens that the cables foul the reflector. This trouble can usually be overcome by a slight re-arrangement of the