

No. CB.72

Cancels Service Bulletin No.
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CATEGORY 3A

DISCHARGED BATTERIES.

On cars used primarily in town areas, it may be found in certain instances that the average engine speed is too low to permit adequate charging of the battery. In order to increase the charge rate under such circumstances, the speed ratio of dynamo : engine may be increased from the standard 1.451 : 1, by replacing the dynamo pulley with one giving a 2 : 1 ratio.

This modification results in high dynamo speed at the upper end of the engine speed range, and it is essential that the 2 : 1 pulley is fitted only to machines on which the four securing screws of the drive end bearing plate have been peened over. To prevent loosening at high speed, longer screws were fitted and locked in this manner on all dynamos identified by the suffix "L", "M", and onwards.

The increase in speed of the dynamo will result in an increase in maximum output up to an engine speed of approximately 1200 r.p.m., but above this it will have no effect. The pulley should not be changed until it has been shown that the complaint is attributable to low speed operation and not to a defect in the charging system or battery.

When fitting the new pulley, a modified swivel arm will also be required. The dynamo must be changed if of pre- "L" pattern.

MATERIAL.

UB.4706	Swivel Arm.
UD.3243	Pulley (for cars with Manual Steering only).
UD.3244	Pulley (for cars with Power Assisted Steering only).

TIME ALLOWANCE. 2½ hours.

CHASSIS NOS.

Rolls-Royce Silver Cloud	SWA.2 - SED.213
Bentley 'S' Type.	B.2.AN - B.632.EG
Bentley 'S' Continental	BC. 1.AF - BC.40.CH

FOR INFORMATION.

SPARKING PLUGS

The recommended sparking plugs are tabulated below to eliminate any possible confusion regarding the selection of the correct plug for a specific engine.

Rolls-Royce Silver Cloud.

6.6 : 1 c.r.	Lodge CLNP Champion RN8
8.0 : 1 c.r.	Lodge HLNP Champion N5 *

Bentley 'S' Type.

6.6 : 1	Lodge CLNP Champion RN8
8.0 : 1 (F Series onwards)	Lodge HLNP Champion N5 *

Bentley 'S' Continental.

7.25 : 1	Lodge CLNP Champion RN8
8.0 : 1 (BC-21-BG onwards)	Lodge HLNP Champion N5 *

* Not for use on cars with wing mounted aerials.

With the exception of the Champion N5 these plugs all embody an internal suppression resistor. In addition platinum tipped electrodes are incorporated in the Lodge CLNP and HLNP.

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Electrodes of this material have an increased erosion resistance.

Radio interference has been a subject of complaint on cars fitted with wing mounted aerials. These are naturally more susceptible to interference than the standard roof type aerial on account of their relative proximity to the engine. For this reason additional suppression is required, and is achieved by the use of the appropriate suppressed plug. The use of the Champion N5 should be limited to cars with roof mounted aerials where radio interference is negligible and additional suppression is not required.

FOR INFORMATION.

INSTRUMENT PANEL LIGHTS.

The instrument panel lights are preset to a standard considered most suitable for night vision. However, complaints have been received stating that the instruments are insufficiently illuminated. Should this complaint arise, check by comparison with similar cars, whether the intensity of lights is below the standard setting.

In such cases it may be found that the reflecting surface of the inner bezel rim has been oversprayed black. Remove the facia panel and the glass of the defective instrument unit and repaint the oversprayed surface white to increase light reflection.

The following alterations may be made in the wiring circuit, at the customer's request, to increase the light above the standard setting.

There are two dimming resistors in the circuit. The main resistor controlling the strength of all instrument lights is located on the back of the panel light switch. To reduce the resistance and so increase the intensity of the lights, disconnect the three wires from No.5 terminal on the switch and reconnect direct to No.2 terminal.

The second resistor is attached to the back of the five in one unit and only controls the lights on this instrument. These may be intensified separately by moving the resistor clamping bands closer together.

Cancels Service Bulletin CB.78 dated 8.11.57

FOR INFORMATION.

DYNAMO FAILURE.

Investigation into the causes of electrical failure of the dynamo, has shown that the majority of this trouble on equipment modified as detailed in Bulletin CB.4, is due to sticking of the brushes.

Slight tilting of the brush in its carrier is permitted by the spring, and in order to accommodate this, it has been found necessary to increase the brush end clearance to $.018" - .024"$ by reducing the brush width. The existing face clearance of $.004" - .006"$ was found to be satisfactory (See Fig.1).

DYNAMO BRUSH CLEARANCES.

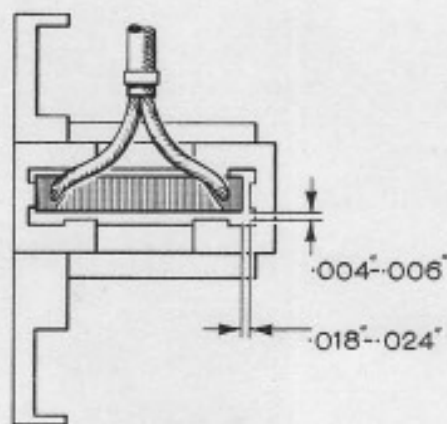


Fig.1. Die-cast brush
carrier
(pre- "Q" type)

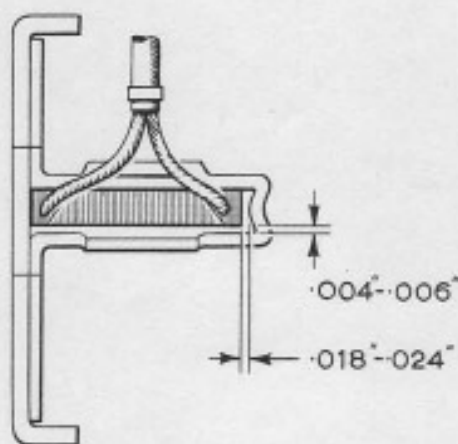


Fig.2. Pressed strip
brush carrier
(Type "Q")

This modification has been incorporated on replacement machines supplied recently, but where trouble is encountered with any dynamo up to and inclusive of type "M", the brush dimensions

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should be reduced, with a smooth file as necessary to obtain the clearance shown. Renew the brushes and clean the commutator if necessary, as detailed in Bulletin CB.4. Should excessive burning have occurred, a replacement dynamo must be fitted. Messrs. J. Lucas Ltd., are issuing instructions to their agents abroad, in order that this modification may be incorporated overseas.

Some machines identified as type "Q" have been fitted. These incorporate pressed brass strip brush carriers in lieu of the standard die-cast boxes (see Fig.2). On these machines the brush end clearance was not increased above the existing value of .006" - .008" because of the danger of pronounced brush noise, with this type of carrier. It has now been found that increasing the end clearance to .018" - .024" does not increase the noise to an objectionable level, and these machines are being produced with the clearance amended accordingly.

In service, complaints of failure should be dealt with in similar manner to that detailed for the die-cast brush carrier machines.

FOR INFORMATION.

DYNAMO FAILURE.

Dynamo charging failure has sometimes been caused by a short circuit between the brush flexible leads and the band cover. This will only occur if the insulation sleeves have been pulled back from their normal position, exposing the bare wires (see Fig. 1.). Rectify by stretching sleeves into their original position (see Fig.2).

If the band or brushes are removed for any reason, ensure that the insulation sleeves fully cover the brush leads and are in the correct position before finally assembling.

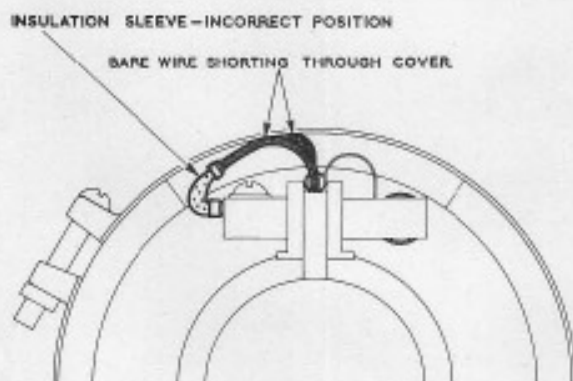


Fig. 1.

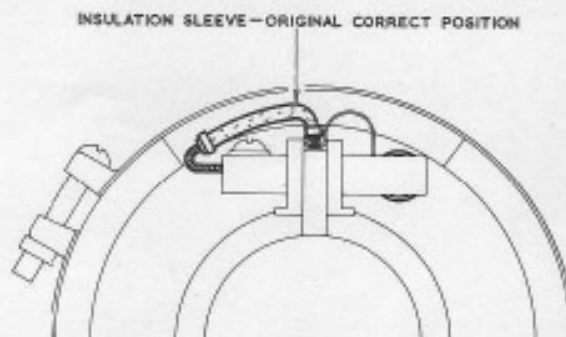


Fig. 2.

FOR INFORMATION.

INCREASED SETTING FOR VOLTAGE REGULATOR.

Instances have been reported of flat batteries during periods when cars were being driven at low speeds through towns or congested areas. This is due to prolonged operation whilst the battery is in a low state of charge.

Such a condition may result in sulphation and early deterioration of the battery.

The standard open circuit setting on the existing voltage regulator is between 14.2 and 14.8; investigation has proved that by increasing the setting to between 14.8 and 15.1 would improve the situation considerably.

It is recommended, therefore, that in the case of complaints, a voltage regulator which has a higher open circuit setting, should replace the unit at present fitted to the car.

A regulator with the increased setting can be identified by means of a letter "J" or "K" which is stamped on the base of the unit adjacent to the series letter.

FOR INFORMATION.

This Bulletin cancels CB.99.
dated 23.6.58.

WINDSCREEN WIPER MOTORS.

A new wiper motor (DR.3. type) is now being fitted to current production cars and by reason of its greater torque output and modified design, is an improvement on the DR.1. type motor which was fitted previously.

A normal wiping speed of 35 - 40 cycles and a fast speed of 50 - 55 cycles is available with the new motor.

Installation on current production cars has been altered necessitating a reduction in the length of the first run of bundy tubing and also the use of a shorter rack.

A special mounting plate has been designed to enable the DR.3. type motor to be fitted for replacement purposes on cars previously equipped with the DR.1. type, without any alteration to the bundy tubing or rack being necessary.

To fit a DR.3. motor in place of DR.1. type, follow the procedure given in this Bulletin.

The DR.3. wiper motor was fitted as standard equipment on the following chassis numbers and onwards.

Bentley 'S' type chassis No. B595 EK
Bentley 'S' type Continental chassis No. BC1EL
Rolls-Royce Silver Cloud chassis No. SFE 303

For cars previous to these chassis numbers the following parts are required.

Material required.

1 Wiper motor assembly	Part No. RH.712.
1 Connector	Part No. RD.6932.
1 Connector	Part No. RD.7050.
6 Terminals	Part No. RD.3425.
1 Cable eye	Part No. RD.3690.
1 Sleeve	Part No. RD.7589.
3 Straps	Part No. F59140.
5 Feet cable (pink)	3L/10606.
5 Feet P.V.C. tube (5 m.m. dia.).	

Disposal of material.

When a DR.3. type wiper motor is fitted to replace a DR.1. type, return the DR.1. to Hythe Road for credit.

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OPERATION.

INSTRUCTIONS FOR FITTING DR 3. TYPE WIPER MOTOR IN PLACE OF DR 1. TYPE.

To remove DR 1. wiper motor.

Unscrew the four screws and remove the cover from the wiper motor.

Remove the circlip, which retains the connecting rod, followed by the plain washer, conical spring and shaped washer (see fig. 1.); care should be taken when removing the conical spring as it is under compression.

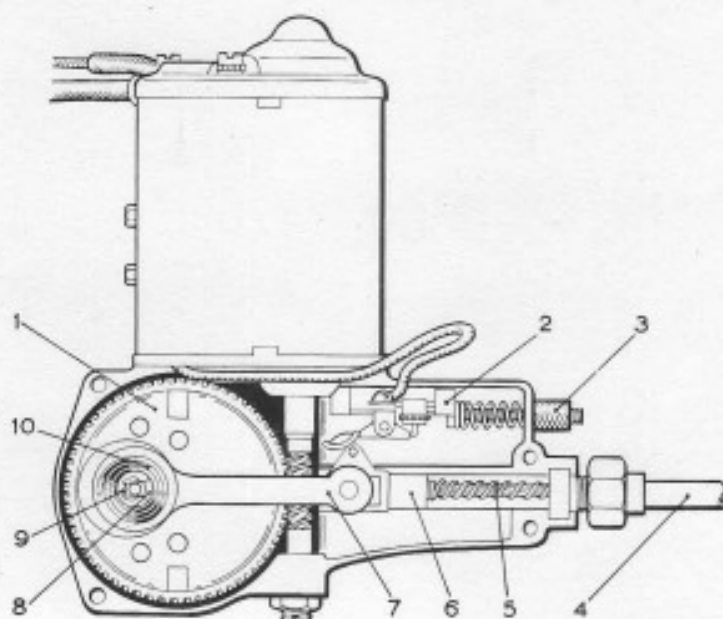


Fig.1. DR 3. Type windscreen wiper motor.

- | | |
|-------------------------|---------------------|
| 1. Gear wheel. | 6. Crosshead. |
| 2. Self-parking switch. | 7. Connecting rod. |
| 3. Adjusting nut. | 8. Plain washer. |
| 4. Bundy tubing. | 9. Circlip. |
| 5. Cable rack. | 10. Conical spring. |

Cont'd.....

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Lift the connecting rod to disconnect it from the crosshead, then withdraw the crosshead and bundy tubing from the motor.

Refit the connecting rod to the gear wheel followed by the shaped washer, conical spring, plain washer and circlip.

Refit the cover and secure it to the motor with the four screws.

Unscrew the three nuts securing the motor to the mounting bracket on the dash and detach the motor.

Disconnect the bonding braid and the five cables from the motor, cut off the terminals from the five cables and in their place fit a ferrule for a snap connector.

Detach the triangular mounting bracket from the wiper motor by removing the two 2 BA screws.

To fit DR 3. Wiper Motor.

Attach the triangular bracket to the mounting plate, supplied with the new wiper motor, by means of two 2 BA screws.

Fit the new motor (DR 3) to the mounting plate and secure it with the three 2 BA screws; secure the black earth wire from the motor and the bonded braid to the mounting bracket by means of one of the fixing bolts.

Fit the assembly to the bracket on the dash and secure the mounting plate with the three nuts.

Note:- When the new wiper motor is fitted to the car it should be in the same position (approximately) as was the old one, but should the motor foul the pipe to the demister valve, carefully bend the pipe to clear.

Fit the crosshead to the motor by reversing the procedure adopted when removing it from the old motor.

Connect the five cables to those on the dash (see table).

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Connect the cables on the new motor to the cables on the loom as follows:-

Cable on motor colour		Cable on loom colour
Brown	to	Green and White
White	to	Red and White
Orange	to	Purple
Red	to	White
Blue	to	Brown
New feed:-		
Green	to	Pink

To fit new feed cable.

Remove the cover from the distribution box; attached to the inside of the cover is a diagram showing the position of the terminals.

Locate the terminal marked "Wiper and Fuel Door", then remove from this terminal the feed cable to the wiper switch.

Ascertain that the correct cable has been removed, by switching on both the wiper motor and the fuel door, to see which operates.

Insulate this cable and secure it at the distribution box with insulating tape.

Attach the eye (RD.3690) to the new feed cable (pink) and connect the cable to No. 2 terminal in the distribution box.

Cover the cable with the 5 m.m. P.V.C. tube provided and secure the cable to the loom on the dash with the straps (F59140).

Fit a terminal for a snap connector to the cable and connect to the motor (see table).

FOR INFORMATION

MICRO SWITCHES

There have been instances of Retailers returning microswitches on the grounds of being faulty, but subsequent re-inspection has proved the switches to be serviceable in all respects.

Retailers are reminded that the microswitches which are mounted on the lower end of the steering column are adjustable and if it is found necessary the switch should be repositioned to obtain correct operation.

It should also be ascertained that the microswitch operating lever is not bent or damaged, and that the cable from the switch is not fouling the operating mechanism.

FOR INFORMATION

INITIAL CHARGING OF BATTERIES DISPATCHED UNFILLED

Certain instances have occurred of batteries which have been shipped uncharged not receiving the correct preparation for service.

Normally, instruction leaflets are dispatched with the batteries, but in the event of their loss and a battery being delivered unaccompanied by the necessary leaflet, the following information and description will be of assistance:-

FILLING

Specific Gravity of Acid

Climatic Conditions:-	Air temp. generally below 90°F. (32°C).	Air Temp. frequently above 90°F. (32°C).
Specific Gravity of acid for filling new cells	1.260	1.230
Specific Gravity of acid at end of charge period.	1.270 to 1.285	1.240 to 1.255
Maximum permissible acid temperature during charge.	110°F. (43½°C.)	125°F. (52°C.)

Fill each cell with cool "accumulator" acid of the correct specific gravity as indicated in the above table, until the level is $\frac{1}{4}$ in. above the tops of the separators.

The level will fall soon after filling and should be restored by the addition of the correct acid after which the battery must be allowed to stand for 12 hours.

At the end of this period topping-up will again be necessary to assume the correct level before replacing the vent plugs.

INITIAL CHARGE

The recommended charge rate for the initial charge is $3\frac{1}{2}$ amps. for 96 hours, but in cases of extreme urgency a charge current of 5 amps for a 70 hour period is permissible.

The charge may be interrupted provided that the charge periods are of at least 8 hours and the rest periods do not exceed 16 hours.

WARNING

If the acid temperature reaches the maximum stated in the above table the charge current should be reduced and the time increased proportionately, or the charge suspended.

The charge will not be completed until:-

- (a) The total charging time as specified for the rate of charge employed, has been given.
- (b) The voltage and specific gravity of each cell remain constant throughout five successive hourly readings.
- (c) Gas is freely evolved from each cell.

On completion of the charge, the specific gravity of the acid in each cell should not exceed the figure stated in the table; if it does, acid must be withdrawn from the cell and replaced by an equal volume of approved water (preferably distilled). The battery should then be charged for a further hour and the specific gravity retested.

The acid level must be adjusted to $\frac{1}{4}$ in. above the tops of the separators by withdrawing excess acid or topping-up with acid of 1.280 specific gravity (with "low" specific gravity acid 1.250) as required.