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SERVICE BULLETIN INDEX

T.S.D. 2933

The following list contains all relevant Service Bulletins issued for the Silver Shadow, T Series, Corniche and Camargue motor cars, between January 1972 and December 1975 inclusive.

A. GENERAL INFORMATION

SY/A11		Car Serial Number Plate
SY/A12	p 12 issue 2	Specification improvements
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SY/A22	issue 2	Specification changes - Silver Shadow and 'T' Series
SY/A24		Car Protection Kit - RH 2662

B. SPECIAL PROCESSES

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SY/E16		Pressure Control system. Emission Control. USA & Canada
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SY/E20		Emission control 1973. Japan
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SY/E28		Spark plugs
SY/E30		Oil pump
SY/E32		Engine assembly lubricants

F. PROPELLER SHAFT AND UNIVERSAL JOINTS

SY/F	No bulletins issued.
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SY/G47	issue 2	Rear height control valve noise
SY/G48		Accumulator charging valve
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SY/G58		Deceleration conscious valve
SY/G59		Brake fluid reservoir cleaning
SY/G60		Mintex M 170 brake pads
SY/G61	issue 3	Preservative coated brake discs
SY/G62		Accumulator sphere

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SY/H18		Longer front shock dampers
SY/H20		Front road spring retaining tool
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SY/H24		Suspension specification
SY/H25	issue 2	Checking and adjusting steering geometry

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SY/K9	Choke fast idle adjustment
SY/K10	Carburetter jet drop
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SY/M56		Operation of the automatic speed control
SY/M57		Windscreen washer fluids
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SY/P1	Torque tightening. Cylinder head nuts
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RRT	T (RRT) TRANSMISSION PART 1 - 4 SPEED AUTOMATIC GEARBOX
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GM T (GM) TRANSMISSION PART 2 + TORQUE CONVERTER

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SY/GM 39 issue 2 Governor lubrication

SY/GM 41 Gearbox actuator

SY/GM 42 Gearbox identification Japan & N America only

SY/GM 43 Gearbox identification

SY/GM 44 Gearbox actuator breather pipe

SY/GM 45 Gearbox kick-down switch

SY/GM 46 Gear changes and gearbox noise

SY/GM 47 Vacuum modulator with screw omitted

SY/GM 48 Converter replacement in service

SY/GM 49 Governor revision

SY/GM 50 Reaction carrier. Optional design

SY/GM 51 Teflon oil seal rings

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SY/GM 53 Renewal of intake filters

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CHAPTER A

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CATEGORY C

CAR SERIAL NUMBER PLATE

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley T Series cars imported into France after 1st January, 1972.

All Rolls-Royce Silver Shadow and Corniche cars, and all Bentley T Series and Corniche cars imported into North America after 1st January, 1972.

DESCRIPTION

In order to comply with legislation in France and North America it has been necessary to change the form of Car Serial Number identification in these territories after 1st January, 1972.

There are now two additional methods of motor car identification which complement the existing system.

1. All cars, other than Corniche, destined for France equipped with the long stroke engine.

These cars have the prefix SYE added to the Car Serial Number.

Examples

SYE SRX (Standard Rolls-Royce 4-Door Saloon)

SYE SBX (Standard Bentley 4-Door Saloon)

SYE LRX (Long Wheelbase Rolls-Royce Saloon)

SYE LBX (Long Wheelbase Bentley Saloon)

The identification of Rolls-Royce and Bentley Corniche cars in France remains unchanged.

Examples

DRX)
) Rolls-Royce Corniche cars

CRX)

DBX)
) Bentley Corniche cars

CBX)

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2. All cars built to comply with the 1972 American Federal Safety Standards Requirements for exhaust and evaporative emissions.

The last letter of the Car Serial Number has been replaced by 'A'.

Examples

SRA (Standard Rolls-Royce 4-Door Saloon)
SBA (Standard Bentley 4-Door Saloon)
LRA (Long Wheelbase Rolls-Royce Saloon)
LBA (Long Wheelbase Bentley Saloon)
CRA)
) Rolls-Royce Corniche cars
DRA)
CBA)
) Bentley Corniche cars
DBA)

The identification of cars built to comply with the regulations of any territories other than France and North America remains unchanged.

Arr/JC1/Hly

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CATEGORY C

SPECIFICATION IMPROVEMENTSAPPLICABLE TO

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley T Series and Corniche cars, produced after the following Car Serial Numbers, unless otherwise stated.

SRH 16214, CRH 16578, SBH 16449 and DRB 15936.

DESCRIPTION

Detailed below are the specification improvements which have been introduced on cars produced after the above serial numbers.

1. Exhaust System

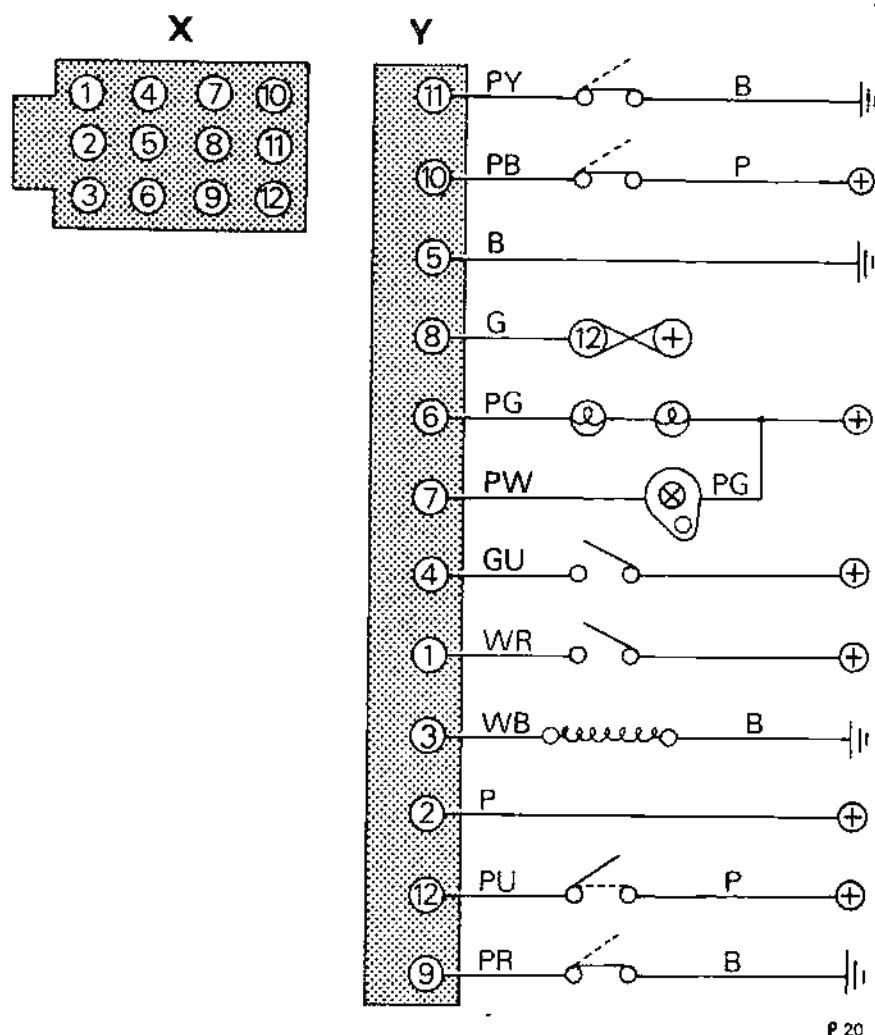
This feature is applicable to all cars produced after the serial numbers quoted.

The exhaust tailpipe now protrudes horizontally as opposed to the downward attitude of the earlier system. The appearance of the visible section of the tailpipe has been improved by a polishing operation.

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Figure 1. Electrical connections to the Interlock Control Unit.

- X. View of control unit plug.
 Y. Schematic diagram of control unit connections.
 1. Starter motor switch.
 2. Feed from fuse.
 3. Starter motor relay winding.
 4. Gearbox actuator switch (closed in forward gears).
 5. Control unit earth.
 6. 'Fasten Seat Belt' warning lamp.
 7. Seat belt warning buzzer.
 8. Ignition feed to control unit.
 9. Passengers' belt switch - belt unfastened.
 10. Driver's seat switch - seat unoccupied.
 11. Driver's belt switch - belt unfastened.
 12. Passengers' seat switch - seat unoccupied.

Note This unit will be damaged by incorrect connections.

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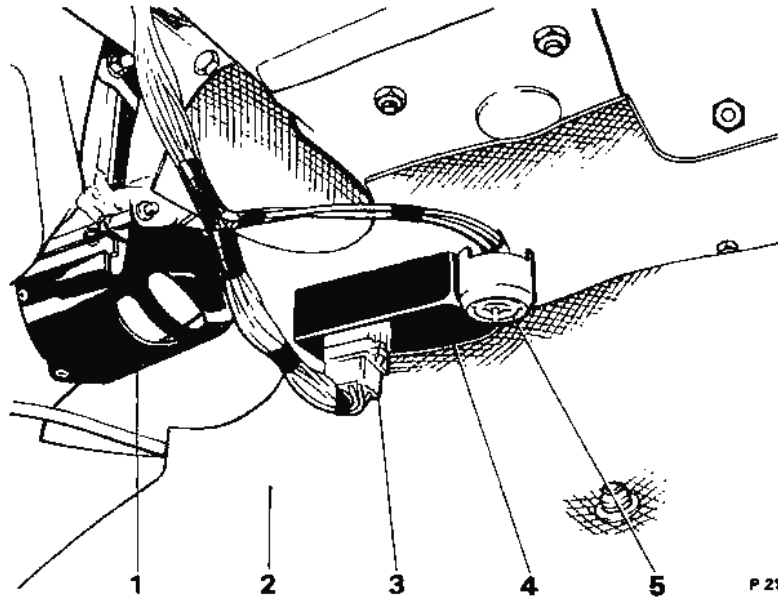


Figure 2 Location of Interlock control unit and seat belt buzzer.

1. Lower air conditioning outlet
2. Toeboard.
3. Control unit connecting plug.
4. Control unit.
5. Seat belt buzzer.

Note The Interlock control unit will be damaged by incorrect connections.

2. Instrument Lighting

This feature is applicable to cars produced after the serial numbers quoted, and destined for North America or Australia.

The three position instrument lighting control switch has been deleted in favour of a control which provides infinitely variable lighting. The new control is mounted in the same place as the earlier switch.

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3. Air Intakes

This feature is applicable to all cars produced after the car serial numbers quoted.

The small air intake grilles beneath each pair of headlamps have been deleted.

4. Fog Lamps

This change is applicable to all cars produced after the serial numbers quoted, except those destined for North America.

Fog lamps are now fitted to all the above cars. The lamps normally used are the rectangular Lucas model FT8 and they are controlled by the 'Fog' position of the lighting switch.

The fog lamps circuit is protected by fuses number 13 and 14 located on the fuseboard.

5. Seat Belt/Starter Motor Interlock

This improvement is applicable to cars destined for North America produced after the serial numbers quoted.

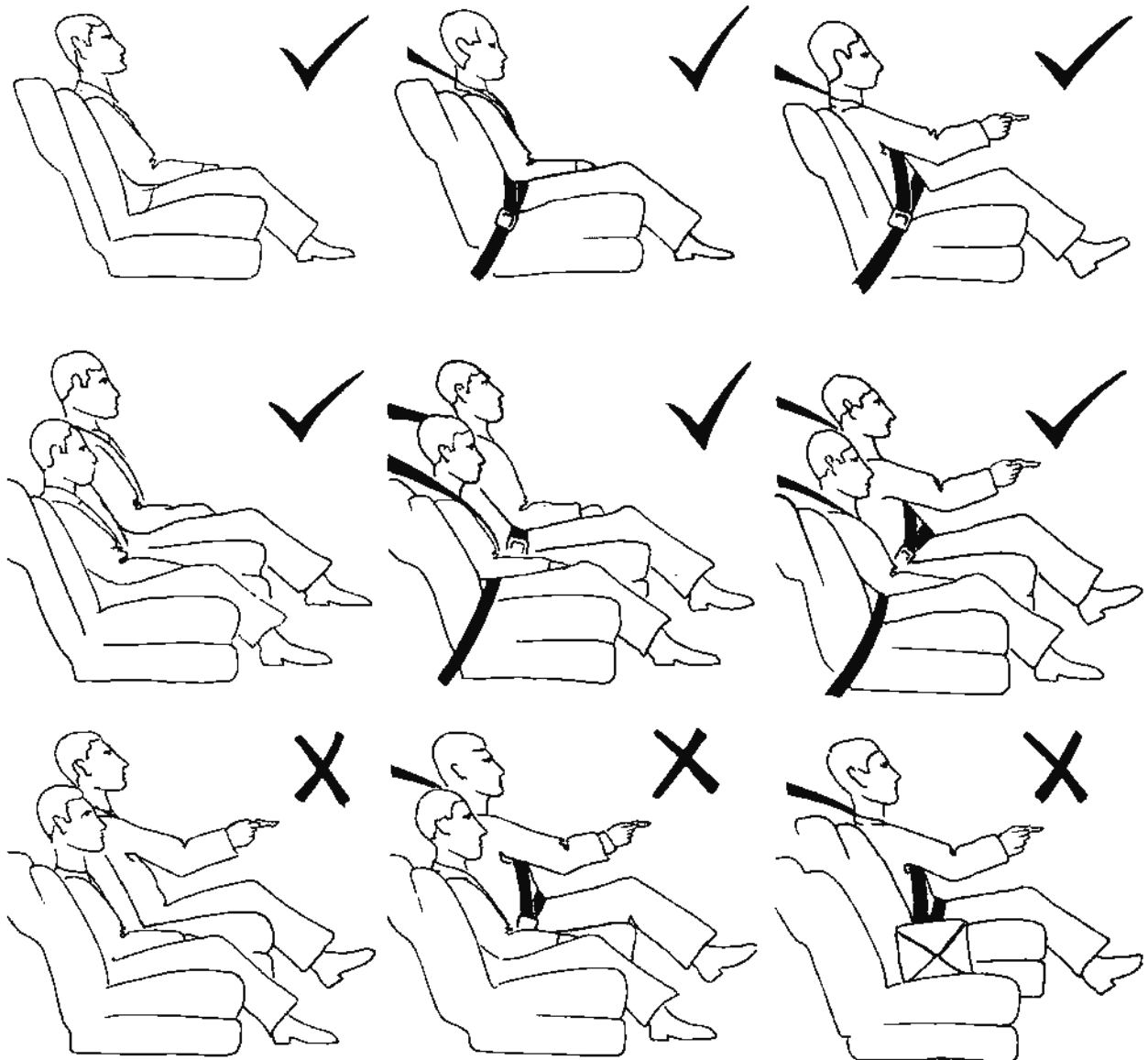
The starter motor and seat belt electrical circuits are now interlocked and the two circuits are controlled by an electronic control unit.

This control unit is connected to a sensor switch in each front seat cushion and to a switch in each front seat belt, and is able to detect which seats are occupied and whether the corresponding seat belts are fastened. The control unit can also inhibit the electrical circuit from the starter motor switch to the starter motor.

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Figure 3 Using the Seat belt/Starter Interlock system.

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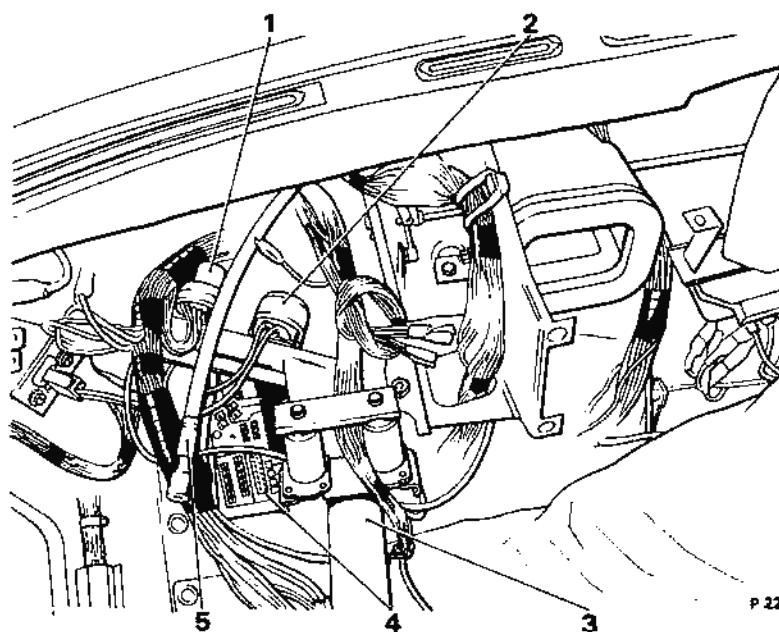


Figure 4 Location of Warning buzzers

1. Engine high metal temperature warning buzzer.
2. Ignition key warning buzzer.
3. Steering column.
4. Fuseboard.
5. Speedometer cable.

This system has been fitted to prevent the car being started without the seat belts first being fastened.

The control unit for these interlocked circuits are contained in a black plastic box which is mounted in the interior of the car immediately to the left of the right-hand group of toeboard sockets. A diagram of these circuits is shown in Figure 1. and a view of the control box location in Figure 2.

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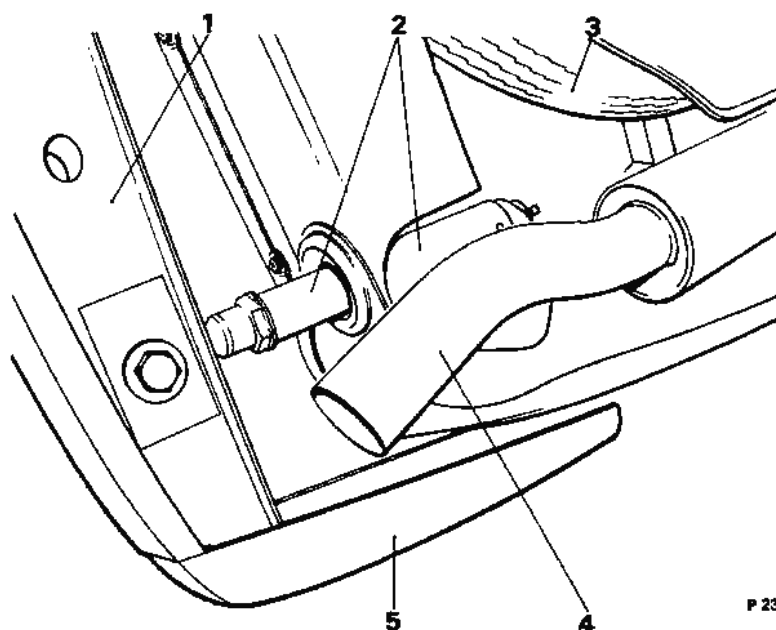


Figure 5 The new bumper

1. Main beam of bumper.
2. Bumper mounting unit.
3. Spare wheel.
4. Exhaust tailpipe.
5. Rear bumper side member.

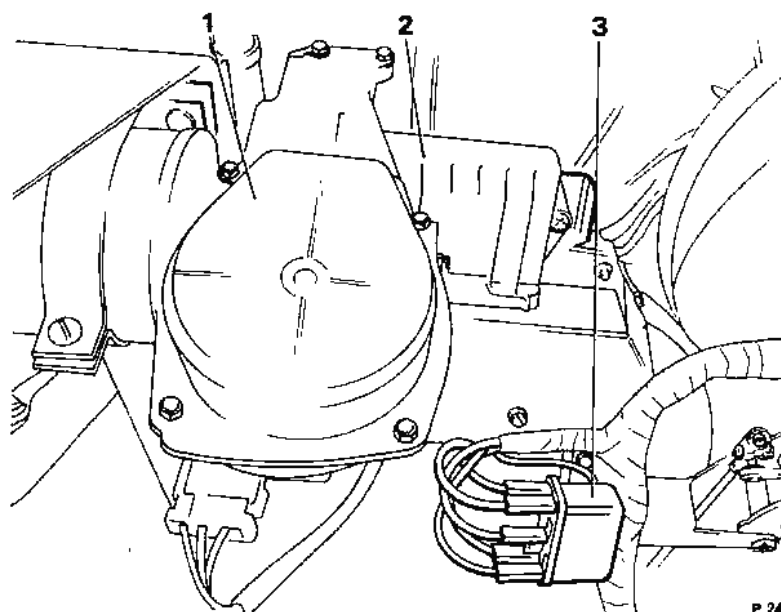
The control unit will only allow the engine to be started if the following procedure (see Fig. 3) is followed:-

1. Occupy the driver's seat.
2. Fasten the seat belt.
3. Ensure that if the front passenger seat is occupied, the passenger's belt is fastened. If unoccupied check that no parcels or similar objects are resting on the passenger's seat.
4. Depress the accelerator pedal, and ensure the gear lever is in the 'Park' or 'Neutral' position. Apply the parking and foot brakes.

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Figure 6 Location of the Starter motor relay

1. Wiper motor.
2. Alternator control unit.
3. Starter motor relay.

5. Start the engine.

It should be noted that the previous actions must be performed in the above sequence otherwise the car will NOT start.

For example someone who does not wish to wear seatbelts and therefore fastens the belt before occupying the seat, or leaves the belt unfastened will find that:-

1. If the engine is not running, attempting to start the engine will only result in the 'Fasten Seat Belts' lamp and warning buzzer operating.

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2. If the engine is already running, on attempting to select any gear, the 'Fasten Seat Belts' lamp and warning buzzer will operate.

6. Warning Buzzer

This feature is applicable to all cars produced after the serial numbers quoted.

Cars are now fitted with a new type of warning buzzer.

This buzzer is housed in a cylindrical grey plastic case. There are separate buzzers for the following circuits.

1. Seat belt warning (North America only) - This unit is mounted adjacent to the seat belt interlock control unit, immediately to the left of the right-hand group of toeboard sockets. It is only fitted to cars equipped with the Kangol seat belts.
2. Ignition key warning buzzer (all cars) - This is also mounted on the steering column support bracket below the ammeter shunt. The buzzer is activated by a Purple/Blue cable and a Red/Brown cable.
3. Engine high metal temperature buzzer (all cars) - This is also mounted beneath the ammeter shunt and is activated by a Green cable and a Green/Purple cable. The case of this buzzer includes a small trumpet which makes the noise from this buzzer different to that emitted by the other two. The electrical circuits of the latter two buzzers remains unchanged and their location is shown in Figure 4.

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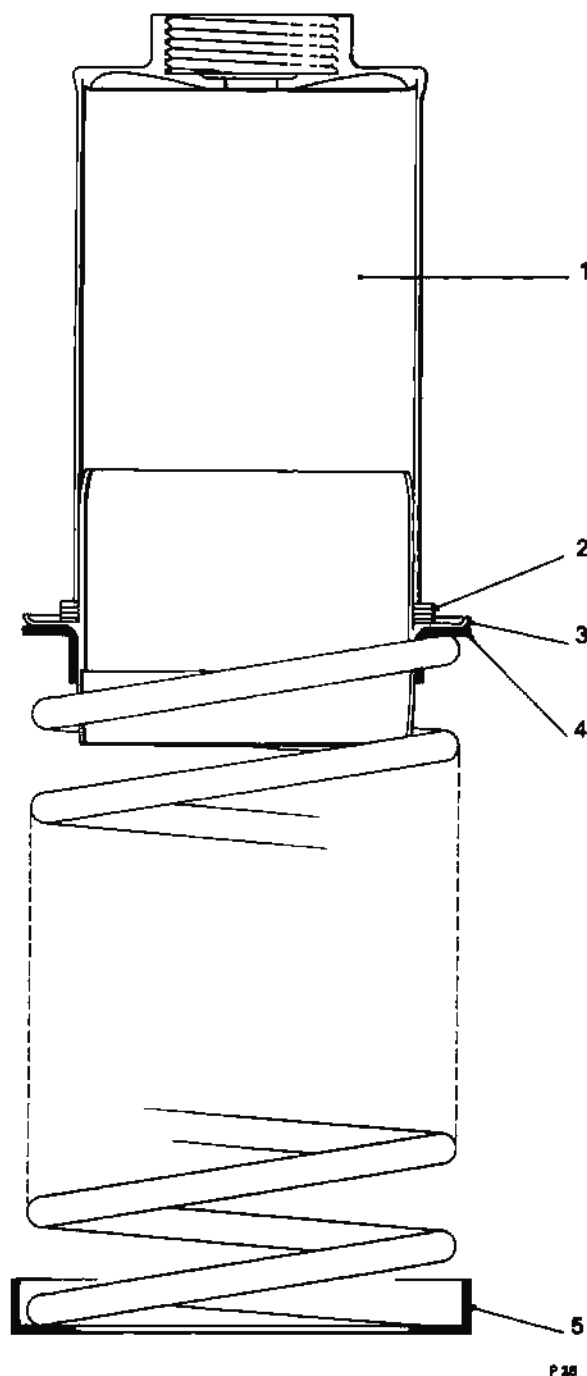


Figure 7 The rear road spring mounting.

1. Hydraulic ram mounting member.
2. Adjustment washers.
3. Spring seating member.
4. Spring upper canvas seat.
5. Spring lower canvas seat.

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7. Front and Rear Bumpers

This change is applicable to all cars destined for North America produced after car serial numbers quoted.

The appearance and method of mounting the front and rear bumpers has changed.

The main bumper member is a strong steel beam over which is fitted a polished stainless steel finisher. Inset into the vertical face of the finisher is a black rubber compound protector which extends round the sides of the wings.

The beam section is mounted to the car by two energy absorbing units which are fastened to the bumper by two large bolts which are visible from the underside of the bumper.

The energy absorbing units are secured to the longerons at the front and rear of the car by cast brackets. The position of the front and rear bumper aprons has been altered and they are now mounted immediately above the upper surface of the bumpers.

A view of the new bumper assembly is shown in Figure 5.

8. Starter Motor Relay

This change is applicable to all cars produced after the serial numbers quoted.

The appearance and specification of the relay which activates the starter motor solenoid has been changed.

The new relay is mounted on the right-hand valance in front of the relay board. In appearance the relay is similar to the other Lucas relays used on these cars, with the exception that the starter solenoid relay bears a red warning label. This label indicates the correct cable which should be connected to each of the relay terminals.

The electrical circuitry of this relay is similar to that of the previous relay.

The location of the relay is shown in Figure 6.

9. Rear Spring Upper Mounting

This feature is applicable to all cars produced after the car serial numbers quoted.

The rubber isolators used in the rear spring installation have been deleted and replaced with rigid tubular units as shown in Figure 7.

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Past experience has shown that any loss of standing height at the rear is largely attributable to settling of the rubber isolator and that distortion of this isolator can and does accentuate spring bow. The elimination of the rubber isolator brings about an improvement in both of these respects. With the introduction of these new pieces, the adjustment of the rear standing height has been refined by locating the adjusting washers between the upper and lower tubes as shown. The arrangement of the lower end of the spring is also shown.

It should be noted that the opportunity has been taken to incorporate the effect of the thick packing ring previously used in the lower spring seat. This has been done by increasing the length of the new tube by an equivalent amount.

METHOD OF ADJUSTING MECHANICAL STANDING HEIGHT

The adjustment of mechanical standing height on all cars prior to the deletion of the isolator is described in Service Bulletin SY/H17.

The adjustment of mechanical standing height on cars incorporating this change differs in the following way:-

1. The new packing washers are 0.100 in. (2,54 mm.) thick as opposed to the 0.050 in. (1,27 mm.) thick washers previously used.

Since they are in the same position relative to the road wheel as the earlier washer, the effect of one new packing washer will be to raise the standing height of the car by 0.17 in. (4,31 mm.) which is twice as much as the previous washers.

2. The maximum number of these new washers which can be used is ten.
3. In the unlikely event of the required number of washers exceeding this maxima it is permissible to use a thick packing ring and additional canvas seat at the bottom of the spring.

NOTE: One thick packing ring and canvas seat is equivalent to six new adjusting washers or an increase in standing height of 1.020 in. (25,9 mm.).

4. When assembling the upper tube on to the spring locating tube, the mating surfaces should liberally be smeared with grease to ease assembly and any subsequent dismantling.

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INTERCHANGEABILITY

The new components can be used on earlier cars providing in complete assembly sets. It is permissible to fit the assembly to one side of a car only.

The method of attaching the upper damper mounting and the ram piston remain unchanged.

10. Steering Column

These detail changes are applicable to all cars produced after car numbers SRH 16144, CRX 16174 and SRB 16150.

There have been a number of small changes to the steering column on these cars. The changes affect the mounting bolts and washers, the clamps which secure the gear selector switch to the top end of the outer column and the mounting of the column to the floor panel.

The changes to the mounting screws and washers are to accommodate slight dimensional changes in the mounting brackets of the column. The method of fitting or removing the column remains unchanged and is as shown in Chapter N of the Workshop Manual.

The new column can be identified by the coil spring visible at the lower end of the column.

The changes to the clamps which secure the gear selector switch are to accommodate a number of rivets which are used at the top end of the new column. The new clamp assembly is also suitable for use on earlier cars.

It should be noted that with the new column, a rubber washer is fitted between the floor skin and the abutment plate of the column, on the inside of the passenger compartment.

The new column can be used on earlier cars providing that the new bolts, washers, clamps and rubber washers are also used.

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The part numbers of the changed components are shown below:

EARLIER CARS	COMPONENTS	NEW CARS
UR 15914	Steering column assembly right-hand drive cars.	UR 18266
UR 15913	Steering column assembly left-hand drive cars.	UR 18267
SPC 1405	Screw - column upper mounting.	SPC 1189
	Washer - column mounting.	UR 18273
UG 16016	Clamp - gearchange selector switch base.	UR 18077
UR 11827	Clamp - cowl to column.	UR 18079

Whenever fitting a steering column to a car it is most important that the column securing circlip beneath the floor skin is fully engaged in its locating groove.

JCL/ECK

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CATEGORY CCARS BUILT TO THE 1973 AUSTRALIAN SPECIFICATIONAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche Cars and all Bentley 'T' Series and Corniche Cars built to 1973 Australian Specification.

DESCRIPTION:

As a result of legislation in Australia, cars built to the 1973 Australian specification include a number of new features, the most important of which are detailed below.

1. Visibility requirements necessitate the fitting of a four inch speedometer. Allied to this is the lowering of the front seats on all cars except long wheelbase with Division.
2. A fixed exterior mirror with flat glass is fitted to the right-hand door.
3. Head restraints are fitted to the front seats.
4. Cars delivered in Australia have seat belts fitted when they reach the Distributor. Cars delivered for use in other territories prior to their use in Australia will have the appropriate seat belts fitted. For example, a car which is to be used initially in the United Kingdom will have the appropriate British Standard seat belts fitted. These belts must be changed when the car is taken to Australia and the owner of the car is responsible for the change.
5. Firestone and Avon tyres have not been certified for use in Australia. Only Dunlop radial tyres will therefore be fitted.
6. A longer windscreen wiper arm is fitted to the driver's side.
7. The ignition lock has five tumblers rather than four and must as such have a different key. This key, which operates the ignition lock only, has the number prefix RRA. The master key (prefix RRM) operates all locks with the exception of the ignition while the limited key (prefix RRL) operates the door locks only. Two of each type of key are supplied with each car.
8. The electric window lift is wired through the switchbox such that the ignition must be on before the windows can be operated.

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Page No 1 of 1CATEGORY CIMPROVEMENTS TO SPECIFICATIONAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars from the following serial numbers:

Four door saloon:	SRH 17518 and onwards
Long Wheelbase:	LRH 16584
	LRH 16609 and onwards
Corniche Saloon:	CRH 16916 and onwards
Corniche Convertible:	DRH 16988 and onwards

DESCRIPTION:

All cars from the above serial numbers have an improved specification as follows:

1. Automatic speed control, which is fitted as standard equipment on Corniche cars, is now being fitted to all cars. This device allows a speed to be maintained automatically without the driver using the accelerator pedal.
2. A stereo tape player, which is standard on Corniche cars, is being fitted to all cars. This is the Radiomobile Stereo 8 cartridge player.
3. A tape stowage bin, which is designed to accommodate eight cartridges, is fitted between the front seats on all four door cars but will not be fitted to Corniche cars.
4. Lambskin rugs to front and rear are fitted to all four door cars while nylon rugs are fitted to Corniche cars.
5. An internally adjustable driver's door mirror is being fitted to all cars except those destined for France, Australia or Japan, where legislation requires the use of other types of mirror.
6. Headrests are being fitted to the rear seats of all four door cars but will not be fitted to Corniche cars at present.

JC1/GF

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CATEGORY CSPECIFICATION CHANGES - 1975APPLICABLE TO:

All Rolls-Royce Silver Shadow, Rolls-Royce Corniche, Bentley T Series and Bentley Corniche motor cars produced after serial number:

SRD 20755

LRD 20628

CRD 20171

JRD 19094

DESCRIPTION:

The specification of all cars built for use in North America and produced after the above car serial numbers, has been changed to comply with legislation applicable from the 1 January 1975.

The affected cars can be identified by the use of the letter 'D' as the third letter of the car serial number as opposed to the 'C' used on 1974 cars.

Whilst the Workshop Manual, Handbook and the Service Schedule Book have been amended to include these specification changes, this Service Bulletin is intended as a quick reference to those changes which will affect service procedures.

NOTE:

The following five items are applicable to cars destined for North America and Japan.

1 IGNITION SYSTEM

An electronically controlled ignition system is used. This means that the coil, distributor and ballast resistor have been changed.

The high tension harnesses are now clipped to the engine rocker covers.

NOTE - The sparking plug gaps should be set to 0.035 inches. The ignition timing should be set to 15° BTDC at an engine speed of 1,200 rpm. The initial static timing should be 5° BTDC.

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2 CARBURETTERS

The carburetter linkages have been re-designed and the throttle plates are now contra-rotating.

Both carburetter levers have been accurately set and any necessary adjustment to carburetter balance should be achieved by using the eccentric adjuster fitted to the 'A' bank lever.

3 VACUUM HOSES - EMISSION CONTROL SYSTEM

There are a number of changes to the routing of these hoses. IT IS IMPORTANT THAT THE ENGINE IS NOT OPERATED WITH ANY OF THESE HOSES DISCONNECTED OR NOT CONNECTED CORRECTLY.

4 SPEED CONTROL REGULATOR

The speed control regulator is now fitted on the left hand valance.

5 THE ENGINE

The compression ratio has been changed from 8:1 to 7.3:1 and the design of the pistons altered. This change means that the pistons are not interchangeable from bank to bank. Pistons are identified by the letter A or B and must only be used on the corresponding engine bank.

NOTE - The following three items are applicable to cars destined for North America only.

6 FUEL SYSTEM

These cars are designed to run on lead-free fuel ONLY. Warning labels are included in the fuel gauge and the fuel filler flap, and the neck of the filler is only capable of accepting the narrow nozzle of a lead-free fuel pump.

NOTE - The use of leaded fuel will permanently damage components in the emission control systems.

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7 EXHAUST SYSTEM

The exhaust system includes a catalyst which is built into the front silencer assembly. This silencer must be changed every 50,000 miles or 4 years, whichever is the earlier. This must be done to comply with the EPA emission regulations, and is chargeable to the customer. The exhaust downtake pipes are now attached to the centre point of each exhaust manifold and the left hand downtake pipe is also fitted with a pipe which supplies exhaust gas to the EGR system.

NOTE - The catalyst will be permanently damaged by the use of leaded fuels or by rough handling.

8 HYDRAULIC ACCUMULATORS

The accumulators are now fitted one to each side of the engine. The accumulator switches are fitted on the left hand valance, each switch having its own bleed screw. Before bleeding the switches, run the engine until the hydraulic systems are fully pressurised. SWITCH OFF THE ENGINE AND BLEED THE SWITCHES IN THE NORMAL MANNER.

ECK

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CATEGORY C

CHANGES TO SPECIFICATION - WARNING LAMPS

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley T Series from the following car serial numbers:

SPECIFICATION 1

Four Door Saloons - SRX 20730
Long Wheelbase - LRH 20700

SPECIFICATION 2

Four Door Saloons - SRH 20142 (note 22 cars, not in numerical order, were also subject of the change prior to this number).
Long Wheelbase - LRH 19640, LRH 19682

DESCRIPTION:

- 1 Specification change 1 for Silver Shadow and T Series cars was as follows:
 - a) the PARTIAL BRAKE FAILURE warning lamp, situated above the clock has been deleted and a FASTEN SEAT BELTS warning lamp substituted. The lamp is amber and wired into the interior lamps circuit.
- 2 Specification change 2 for Silver Shadow and T Series cars was as follows:
 - a) the colours of the LOW FUEL and STOP LAMP FAILURE warning lamps have changed from green (low fuel) and red (stop lamp failure) to amber for both.

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CATEGORY CSPECIFICATION DETAILS - CAMARGUEAPPLICABLE TO:

All Rolls-Royce Camargue motor cars from Car Serial Number JRH 14674.

INTRODUCTION:

The Rolls-Royce Camargue is an addition to the current range of motor cars produced by Rolls-Royce Motors.

The purpose of this Service Bulletin is to give a brief description of the main differences between the Silver Shadow and Camargue models with respect to service arrangements and techniques.

The Camargue will have separate service literature to that of the Silver Shadow.

DESCRIPTION:

1. Engine (all cars other than USA, Canada and Japan) - as per Silver Shadow with the exception of:
 - a) Compression ratio 8:1.
 - b) Solex 4A1 four barrel carburetter comprising two primary chokes and two secondary chokes.
 - c) Twin pipe exhaust system with six boxes.
2. Engine (all cars for USA, Canada and Japan) - as per Silver Shadow with the exception of:
 - a) Compression ratio 7.3:1.
 - b) Twin SU HD8 carburetters.
 - c) Lucas Opus transistorised ignition system.
 - d) Single pipe exhaust with catalytic converter.

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3. Steering system and settings - as for Silver Shadow with exception of steering column which is 2,5 cm (1.0 in) shorter.
4. Suspension and settings - as for Silver Shadow.
5. Hydraulic systems - as for Silver Shadow.
6. Transmission - as for Silver Shadow.
7. Braking system - as for Silver Shadow.
8. Automatic air conditioning - this is a new system to Rolls-Royce motor cars, descriptive literature has been issued. A special test box, available from the Factory is required to be used in conjunction with the relevant Fault Diagnosis procedures in the Workshop Manual.

The Servo assembly, servo module (2), fan speed power circuit, fan speed switching and delay circuit and voltage stabiliser unit will each be available as service exchange units.

9. Electrical system.

- a) All cabling throughout the car is metric and plastic covered; any rectification work must be carried out using metric plastic covered cable.
- b) Access to the front lamp cluster bulbs is by removing the lens. Access to the rear lamp cluster bulbs is by peeling back the trim of the boot, access to the reverse lamp bulb is by removing the lamp complete from the body.

The automatic speed controls are now fitted to the gear range selector lever - the operation and speed range are as for Silver Shadow.

The wiper motor and wiper arrangement are peculiar to the Camargue, the motor is of the permanent magnet type but the wiper arrangement is by mechanical linkage with pantograph wiper arm movement.

The window lift motors are permanent magnet type.

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10. Service details - as for Silver Shadow except where otherwise stated.
11. Special note - Early RHD Camargue cars have been built with the following:
 1. Lucas 20 ACR alternators.
 2. 9:1 compression ratio engines with twin SU HD8 carburettors.

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CATEGORY CSPECIFICATION CHANGES - CORNICHE MOTOR CARSAPPLICABLE TO:

All Rolls-Royce and Bentley Corniche motor cars from the following car serial numbers : CRH 22648, CRX 22919, DRH 22583, DRX 22781 including CRH 21998, CRX 21729 which were pre-production motor cars.

DESCRIPTION:

The specification of Corniche motor cars produced after the above car serial numbers has been changed. The purpose of this Service Bulletin is to briefly outline these changes in specification and how these affect service procedures.

1 ENGINE

The specification of cars destined for North America, Australia and Japan remain unchanged. All other cars are as follows:

- a) The compression ratio is lowered to 8:1. This has been achieved by the use of a different design of piston.
- b) A Lucas Opus Mk II ignition system is used with a new coil and ballast resistor fitted with a vacuum advance device.

The Opus ignition distributor does not use contact breaker points, control of the ignition coil being achieved by an electronic circuit. The dwell angle is therefore fixed and does not require setting.

The ignition timing should be set statically to T.D.C. then adjusted to 15° B.T.D.C. at 1 200 r.p.m. with the distributor vacuum pipe removed and blanked.

Periodic lubrication of the distributor mechanical advance mechanism is still required. This should be done every 20 000 Km (12 000 miles) or 12 months and consists of a few drops of oil into the top of the spindle and on to the advance mechanism using the aperture in the baseplate.

The only components which are interchangeable with those fitted to earlier cars are the ignition high tension harness and the distributor cap.

Engine tuning using ignition analysing equipment can be achieved by connecting the equipment to the car in the usual manner.

NOTE

The electronic circuit of the Opus distributor will be permanently damaged by loose or incorrect connections to any of the ignition components.

Care should be taken to replace the flash-over shield beneath the rotor arm otherwise high tension sparking could damage the electronic circuit.

The recommended sparking plugs are Champion RN 14 Y or XN 14 Y and the gaps should be set to 0,762 mm. (0.030 inches).

- c) The carburetter air flow characteristics have been improved by using contra-rotating throttles. However, the setting and adjustment of the throttles remains unchanged.
- d) A controlled temperature air intake system is now fitted.

Warm air is drawn in by a pick-up above 'A' bank exhaust manifold and is then blended with cold air by a vacuum controlled flap to achieve a suitable intake temperature. The flap is controlled by a bi-metallic bleed valve situated in the choke housing elbow. The blended air then passes through the paper element air cleaner, which is unchanged.

A metal resonator is fitted inside the air trunking which has a revised clipping arrangement.

2 BRAKES

The following changes are applicable to all Corniche motor cars:

- a) The brake actuation unit has been altered by deletion of the master cylinder, repositioning of the 'G' valve, and by the introduction of a mechanism which provides progressive brake pedal travel.

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This mechanism also incorporates an 'on'-stop. The pedal return springs are repositioned (refer to Fig 1).

- b) Should it be necessary to re-set any part of the brake actuation mechanism, the settings must be performed in the following order.

1 'Off-Stop' Setting

Slacken the four bolts which secure the 'off-stop' bracket to the mechanism sideplates. With the brake pedal in the 'off' position, slide the bracket forward until it just takes up the free play in the distribution valve spindles.

2 'On-Stop' Setting

Adjust the two nuts on the rubber spring assembly (see Fig 1, Item 4) until the end of the rubber spring touches the abutment face of the cone.

3 Primary Spring

Adjust the primary spring screw until no free play exists between the spring and its attachment points. Rotate the screw a further $1\frac{1}{2}$ turns rearwards (anti-clockwise) to give the correct amount of pre-tension.

4 Brake Pedal Height

The distance between the underside of the brake pedal pad and the pedal seal housing must not be less than 101,6 mm (4 inches).

- c) Pipe runs have been altered particularly in the region of the brake actuation unit.

When the accumulators are located one on each side of the engine the 'A' bank accumulator is connected to the upper distribution valve which in turn feeds the front calipers of the front wheels, and the upper cylinders of the rear wheel calipers (No 1 system). The 'B' bank accumulator is connected to the lower distribution valve which feeds the rear calipers of the front wheels, lower cylinders of the rear wheel calipers and height control rams (No 2 system). When two accumulators are fitted on the 'B' bank side of the engine, the front accumulator serves the No 1 system and the rear accumulator serves the No 2 system.

The rear wheel calipers have been altered so that the two pistons are now of equal size. The calipers are Girling 11/11 type with 40,492 mm. (1.594 inch) diameter pistons.

- d) The bleed points for the revised hydraulic system are shown in Figure 3. It should be noted that the disposition of the accumulators and the accumulator switches are as follows:

North American Cars

One accumulator on the 'A' bank side of the engine which feeds braking system number 1.

One accumulator on the 'B' bank side of the engine which feeds braking system number 2 and the levelling system.

Each accumulator is fitted with a bleed screw.

Two accumulator switches are fitted, one on each valance plate.

NOTE

On North American cars the pressure at which the accumulator switch operates the warning light has been increased.

This means that an illuminated warning lamp does not necessarily indicate a depressurized system. When depressurizing, the brake pedal should be pumped a further thirty times after the warning lamp is illuminated to ensure complete depressurization.

Japanese and Australian Cars

Both accumulators are fitted on the left-hand side of the engine. The front feeds braking system number 1 and the rear feeds braking system number 2, and the levelling system.

Both accumulator switches and their individual bleed screws are fitted on the left-hand valance.

All Other Cars

One accumulator on the 'A' bank side of the engine which feeds braking system number 1.

One accumulator on the 'B' bank side of the engine which feeds braking system number 2 and the levelling system.

Each accumulator is fitted with a bleed screw.

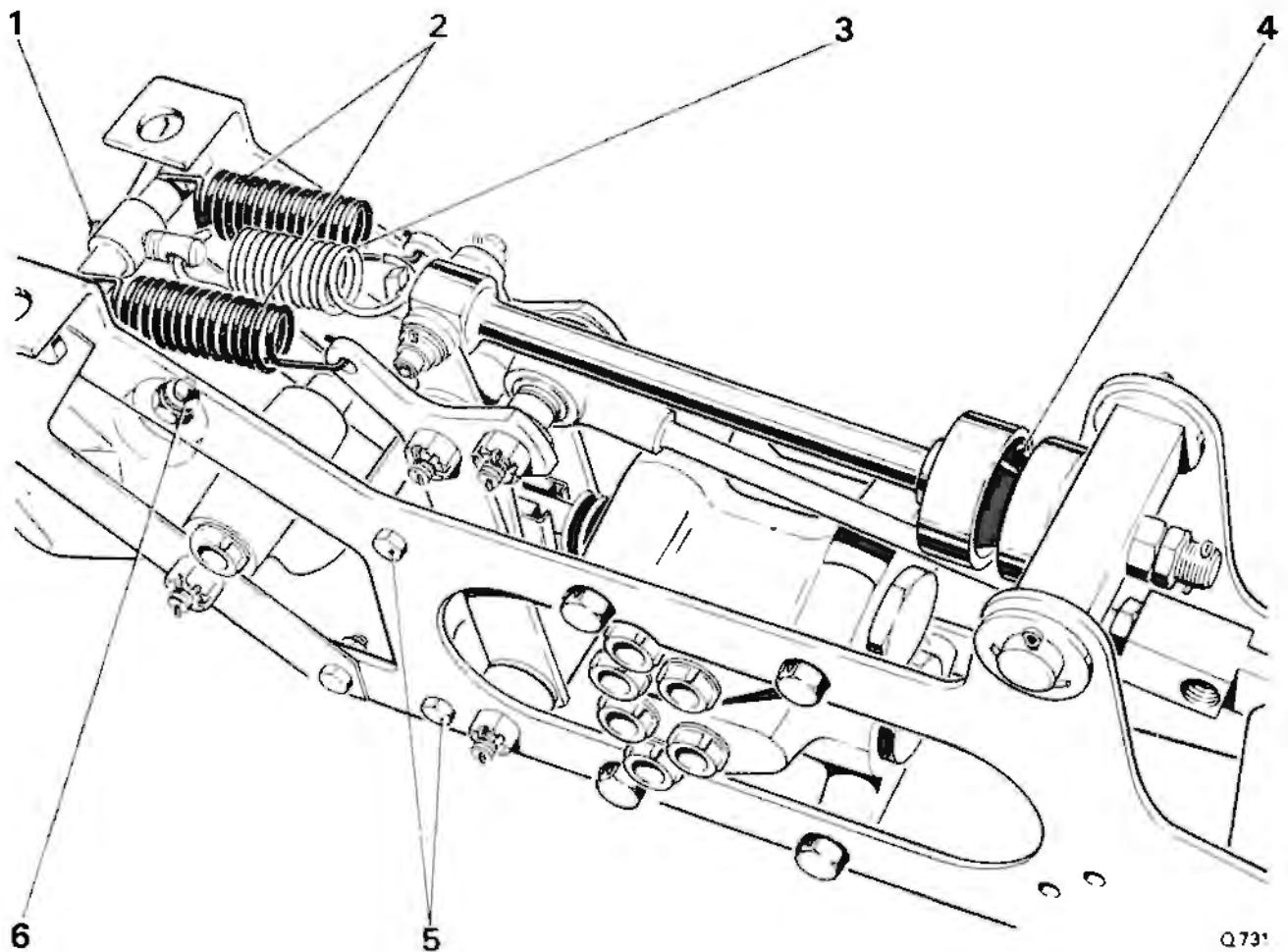
Two accumulator switches are fitted, one on each valance plate.

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Fig 1
BRAKE ACTUATION UNIT

- 1 ADJUSTMENT (Primary Spring)
- 2 PEDAL RETURN SPRINGS
- 3 PRIMARY SPRING
- 4 RUBBER SPRING ASSEMBLY (Incorporates An On/Stop)
- 5 OFF/STOP ADJUSTMENT BOLTS
- 6 BLEED SCREW (Deceleration Conscious Pressure Limiting Valve)

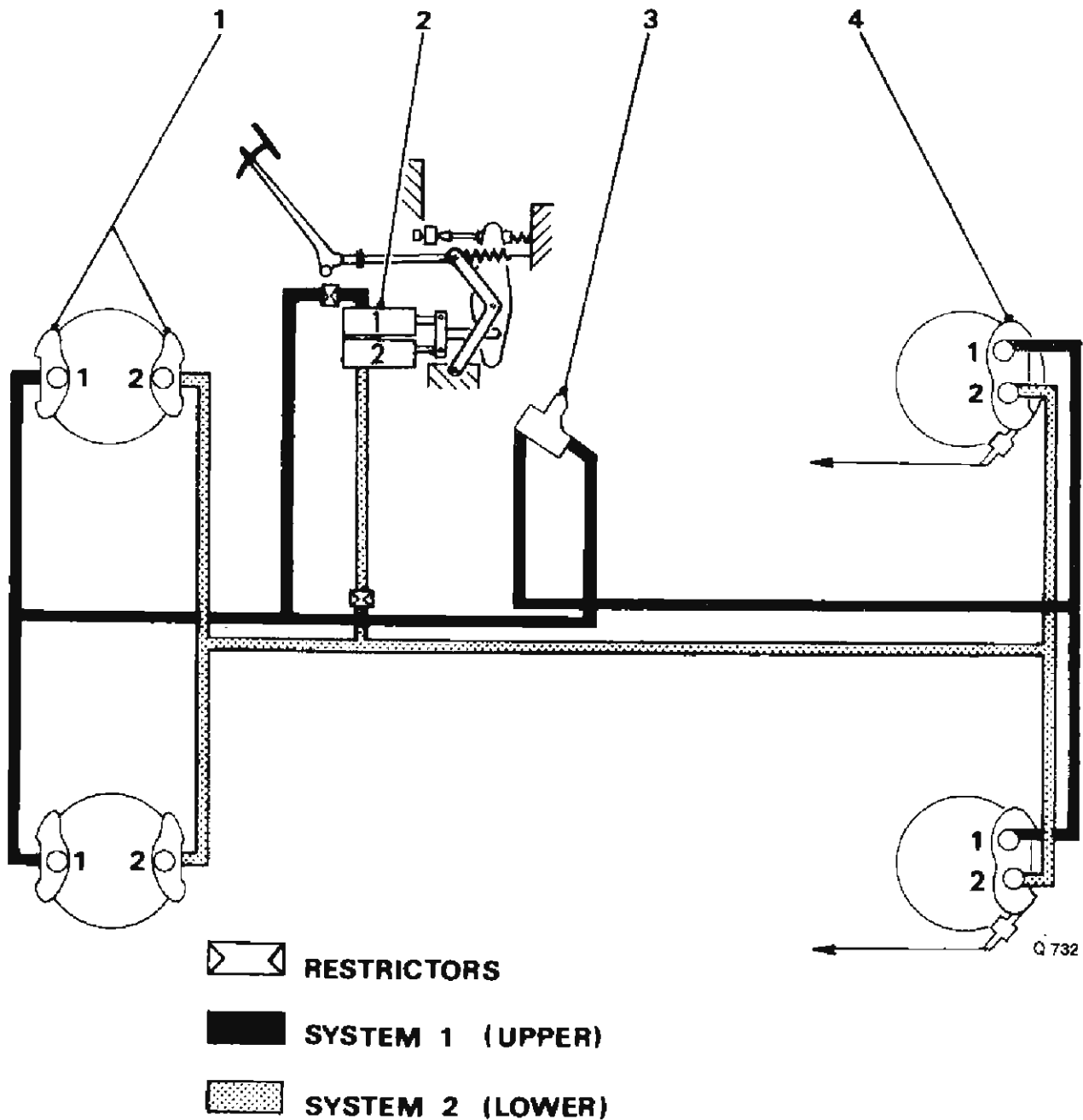


Fig 2
HYDRAULIC SYSTEM

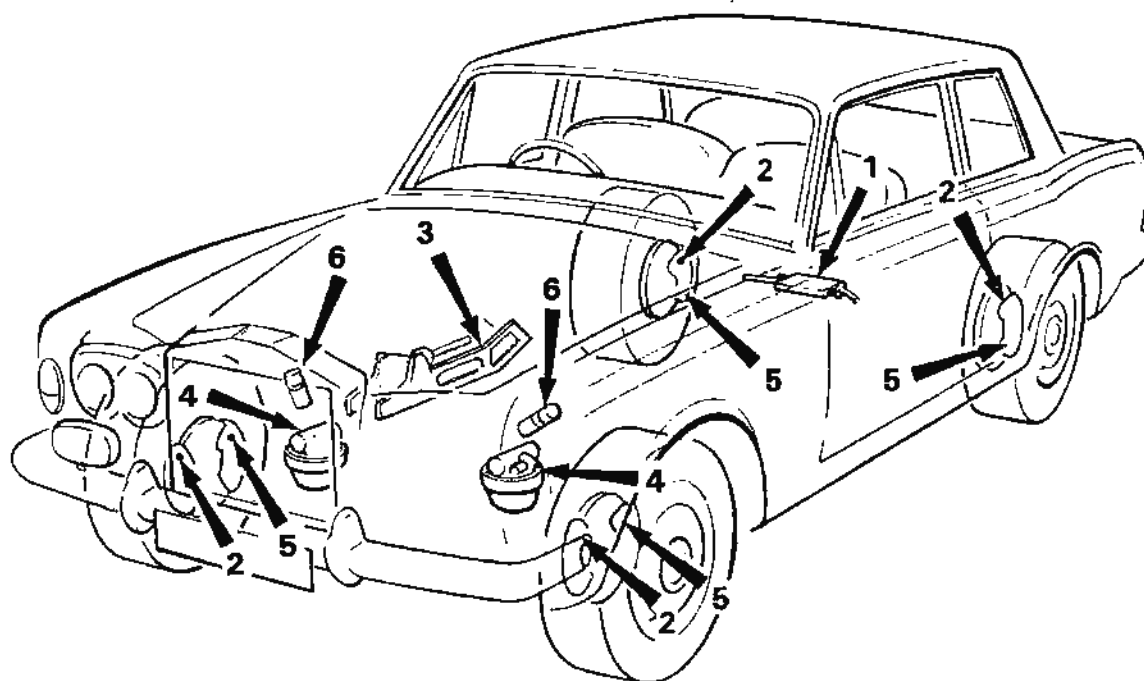
- 1 Front Wheel Brake Calipers
- 2 Brake Distribution Valves
- 3 Deceleration Conscious Pressure Limiting Valve
- 4 Rear Wheel Brake Calipers

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Fig 3
BLEED POINTS IN THE HYDRAULIC SYSTEM

- 1 Remote Bleed Screws for Hydraulic Rams
- 2 No. 1 Power Brake Circuit Bleed Screws
- 3 Bleed Screw for Pressure Limiting Valve
- 4 Accumulator Valve Bleed Screws
- 5 No. 2 Power Brake Circuit Bleed Screws
- 6 Accumulator Pressure Switches

3 FUEL SYSTEM

These changes apply to cars destined for North America only.

- a) The route of the fuel vapour emission control pipes have been altered in the boot area to prevent spillage in the event of an accident.
- b) A flow check valve is fitted at the fuel pump outlet.
- c) A fuel pump of higher delivery pressure is fitted, this pump being identified by the number AUB414 replacing AUB402 on the identification label.

4 BODY

- a) The underfloor cruciform frame is altered to suit the six box twin exhaust system.
- b) A single pipe exhaust system with centre off-takes and catalytic converter is fitted to cars destined for North America.

A single pipe exhaust system with front off-takes is fitted to cars destined for Australia and Japan.

On all other cars the exhaust system is fitted with a centre off-take on 'A' bank manifold and a front off-take on 'B' bank manifold as shown in Figure 4.

NOTE

RHD cars built with centre off-take manifolds on 'A' bank cylinder have an exhaust downtake which runs close to the steering column linkage and in this state the steering pressure hose is very close to the hot exhaust system. A re-routing of the pressure hose to clear the exhaust downtake is called for as follows:-

- a) The pressure hose (UR 17110) should be located on the back of the steering pump and the initial pipe run should be similar to the current run i.e. vertically downwards, falling rearward of the front engine crossmember.

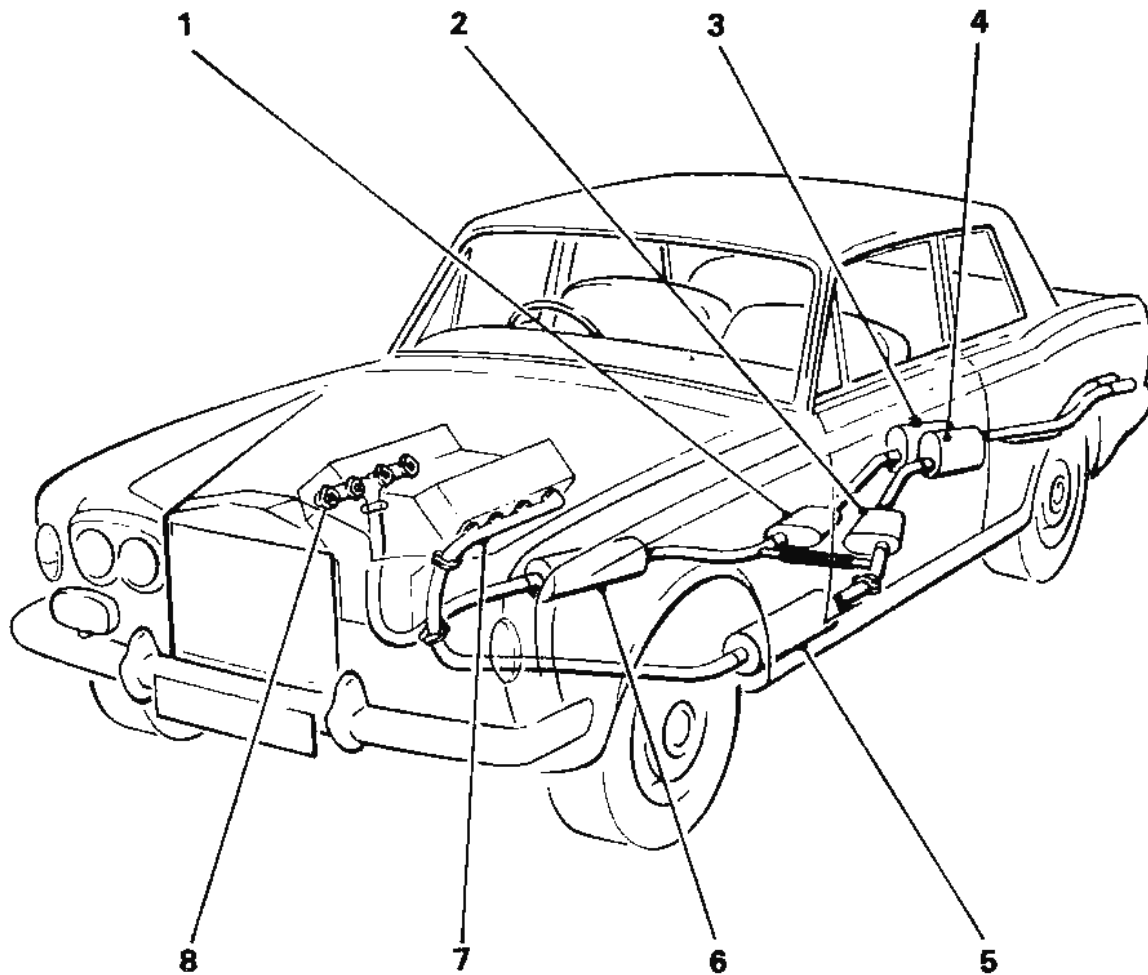
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- b) The hose should then be fed forward, underneath the engine mounting crossmember and then rise steeply nearby the steering box, and the hose end fitting located in the feed line of the Saginaw steering box.
- c) The hose clip should be located on the lower engine mounting crossmember to steering box bolt. This will involve removing the crossmember bolt after sub-frame assembly. There is a need to re-torque and yellow paint the nut after clipping.
- d) The clips should be adjusted to a position such that the line of the pressure hose is well clear of the steering box pendulum lever.
- c) On right-hand drive cars the driver's door is fitted with an ashtray.
- d) Permanent magnet window lift motors are fitted similar to those used in the Silver Shadow.
- e) On saloon motor cars the rear quarter lights are fixed.
- f) Saloon motor cars are fitted with swivelling sunvisors.
- g) A 25,40 mm. (1 inch) shorter steering column is used.
- h) A 393,70 mm. (15.5 inch) steering wheel is used.
- i) A new steering cowl is fitted.
- j) The speed control switches are now fitted into the gear range selector lever. The operation and speed ranges are not altered.
- k) A new metal instrument board is fitted with a re-arranged layout and modified top and bottom trim panels.
- l) A stowage bin is fitted between the front seats.



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Fig 4
6 BOX TWIN EXHAUST SYSTEM (OTHER THAN NORTH AMERICA,
AUSTRALIA AND JAPAN)

- 1 Expansion Box
- 2 Expansion Box
- 3 Rear Silencer
- 4 Rear Silencer
- 5 Front Silencer
- 6 Front Silencer
- 7 'B' Bank Manifold (Front off-take)
- 8 'A' Bank Manifold (Centre off-take)

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5 INSTRUMENTS

- a) The speedometer is repositioned resulting in a revised cable run.
- b) A temperature gauge which indicates external ambient temperature is fitted; this being connected to a matched sensor behind the radiator grille. Care should be taken when removing the radiator shell, not to damage this sensor.
- c) The fuel/oil level, coolant temperature, oil pressure and ammeter gauges are now combined in a 4 in 1 instrument.
- d) A new warning lamp cluster is fitted containing 10 warning lamps as follows:

Power Brake No.1 - Red

Park Brake - Red

Engine Overheat - Red

Washer Fluid Level - Yellow

Ice - Yellow

Power Brake No.2 - Red

Brake Fluid Level - Red

Coolant Level - Red

Stop Lamp - Yellow

Low Fuel - Yellow

6 AUTOMATIC AIR CONDITIONING

This is a new system to Corniche motor cars and literature describing this system has already been issued. When carrying out service work a special test box available from Rolls-Royce Motors will be needed in conjunction with the Workshop Manual.

The servo assembly is composed of a number of components which are available as Service Exchange units. These include:

Servo Assembly

Servo Module

Fan Speed Power Unit

Fan Speed Switching Unit

Voltage Stabiliser

7 ELECTRICS

- a) A switch panel inboard of the steering column contains ACU temperature selector dials and function switch, aerial switch and hazard warning switch.

- b) A switch panel outboard of the steering column contains the petrol filler button, oil level test button, windscreen wiper switch and variable panel light switch.
- c) The fuseboard is fitted on the passenger's side, below the cubby box.
- d) The instrument board contains a centre panel with the ACU air outlet, radio, quadraphonic tape player, cigar lighter, speaker balance control and seat belt warning lamp.
- e) All electric cables throughout the motor car are metric and plastic covered.
- f) The windscreen washer bottle is fitted with fluid level probes which are connected to an amplifier similar to, but not interchangeable with, the engine coolant level amplifier. For right-hand drive cars refer to fig. 5. For left-hand drive cars refer to fig. 6.

The windscreen washer level amplifier controls a warning lamp which has been added to the warning lamp cluster on the instrument board. This lamp will illuminate when the windscreen washers are operated should the fluid level be low.

- g) On all cars with the exception of those destined for Switzerland, rear fog lamps are fitted, controlled by a switch and warning lamp in the centre console.

The lamps are protected by fuses which are located in the main fuse box.

The control circuit includes a relay which enables the lamps to be used with the main lighting switch, in either Head or Fog positions. This relay is mounted adjacent to the fuses.

- h) The battery charging circuit on the above cars have been refined by the addition of a battery temperature compensating circuit. Cars fitted with this can be identified by the seven cables connected to the alternator control as opposed to the five on earlier units. The alternator control unit is fitted adjacent to the battery box.

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The purpose of this new circuit is to ensure that the battery always receives the right amount of charge relative to its voltage and its temperature.

To force a high charge into a battery when the ambient temperature is high is undesirable and when the battery temperature is very low, the necessary charge rate should be slightly increased to compensate for this.

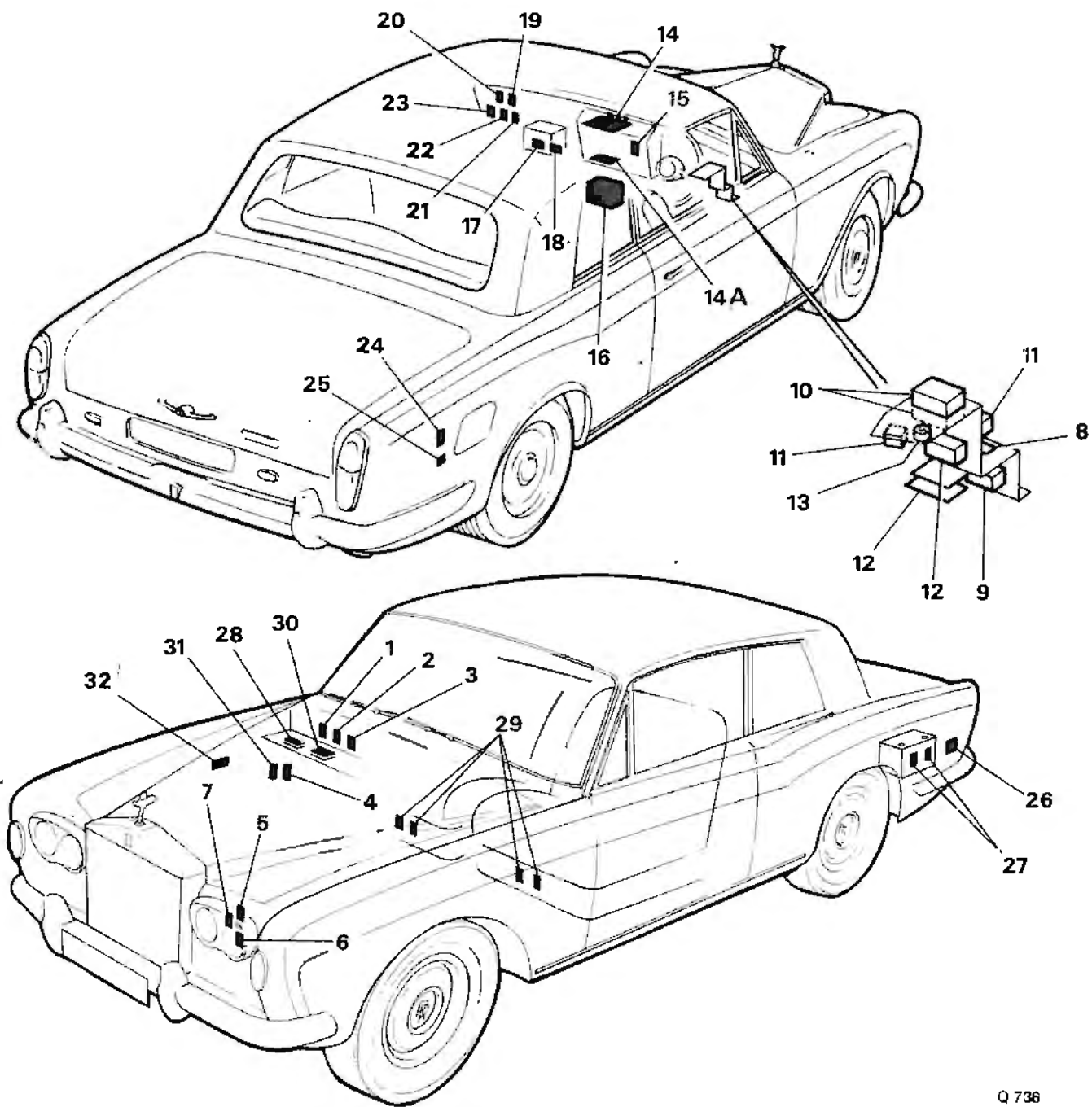
The temperature compensation circuit is controlled by two sensing switches which are mounted in the battery box.

Normally voltage control is provided by the connection to the M (medium charge) terminal via the low temperature switch.

Should the battery temperature be below 0°C the low temperature switch opens and control is affected provided by the connection to terminal H (high charge).

If the battery temperature exceeds 35°C the high temperature switch closes and this connects the L (low charge) terminal to the battery.

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Fig. 5
RELAY POSITIONS RIGHT-HAND DRIVE CARS

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FIG 5 INDEX FOR RELAY POSITIONS - RIGHT HAND DRIVE CARS

1. Fan and compressor relay.
2. Fan delay relay.
3. Servo isolation relay.
4. Choke on start relay.
5. Horn relay.
6. Head flash relay.
7. Head safety relay.
8. Diodes (Brought together at a common spot).
9. Fuel pump cut off relay.
10. Intermittent and wash/wipe control unit.
11. Interior lamps delay unit and relay.
12. Instrument lights dimming unit relay.
13. Engine overheat buzzer.
14. Warning light test board.
- 14A Radio/Tape changeover relay.
15. Hood down temperature relay - Upper system (Convertible).
16. ACU Servo.
17. Lower quantity relay.
18. Fan shut off relay.
19. Recirculation flap relay.
20. Rear fog lamps relay.
21. Wiper feed relay.
22. Hood interlock relay (Convertible).
23. Washer fluid level amplifier.
24. Rear window demist relay (Saloon).
25. Stop lamp failure relay.
26. Voltage regulator.
27. Battery temperature switches.
28. Fusebox - fan and compressor.
29. Seat motor relays.
30. Ammeter shunt.
31. Instrument lights dimming relay
32. Speed control cut-out relay.

The following are contained in the main fusebox:-

Window lift thermal switch.
 Rear fog light fuses.
 Headlamp thermal switch.
 Gearchange thermal switch.
 Head safety thermal switch.
 Door locking solenoids thermal switch.
 Direction indicator flasher unit.
 Hazard warning flasher unit.

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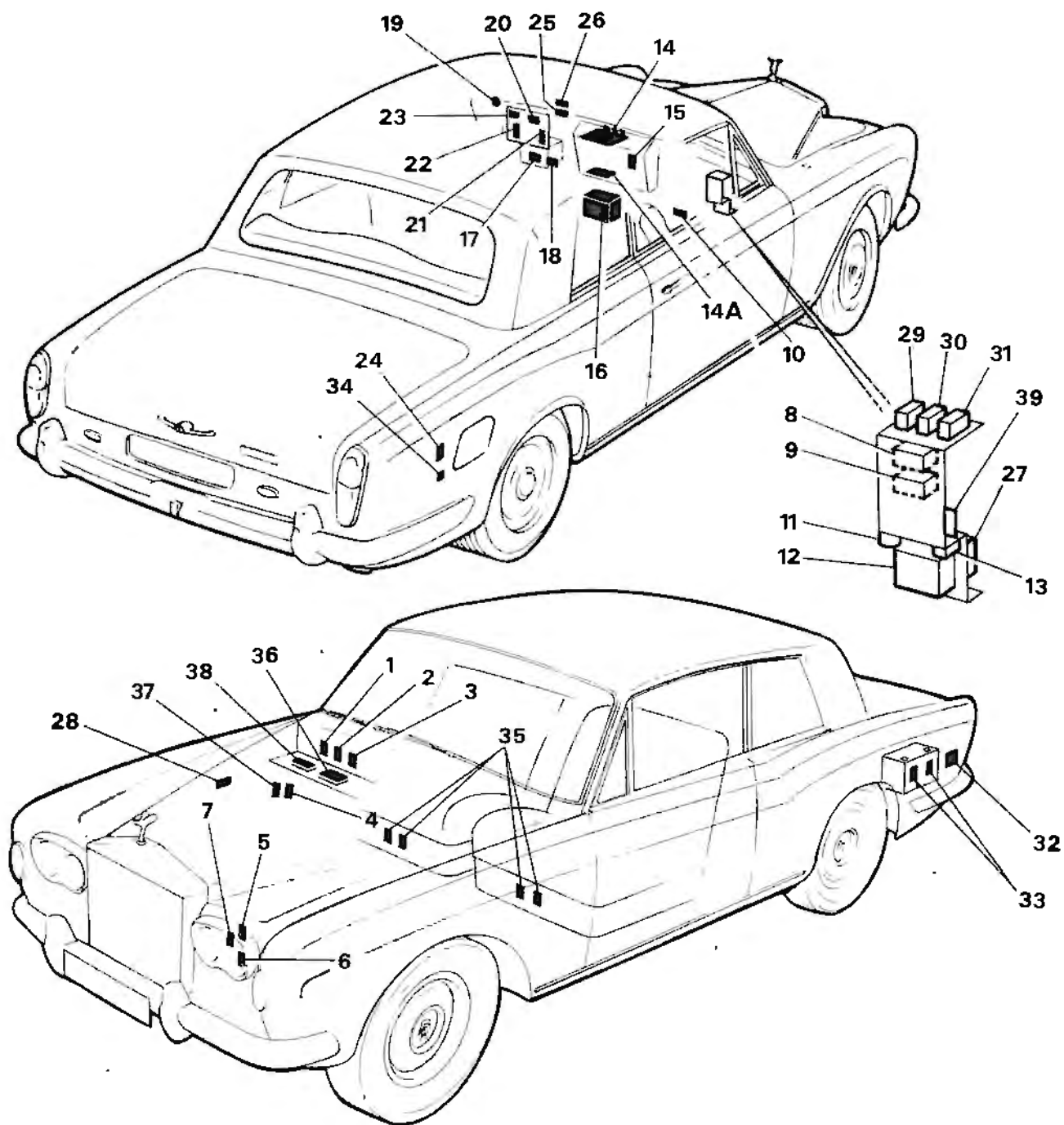


Fig. 6
RELAY POSITIONS LEFT-HAND DRIVE CARS

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FIG 6 INDEX FOR RELAY POSITIONS - LEFT HAND DRIVE CARS

1. Fan and compressor relay.
2. Fan delay relay.
3. Servo isolation relay.
4. Choke on start relay.
5. Horn relay.
6. Head flash relay.
7. Head safety relay.
8. Washer fluid relay.
9. Hood interlock relay (Convertible).
10. Seat belt warning unit (USA only).
11. Engine overheat buzzer.
12. Wash/wipe control.
13. Interior lights delay unit.
14. Warning light test board.
- 14A Radio/Tape changeover relay.
15. Hood down temperature relay - Upper system (Convertible).
16. ACU Servo.
17. Lower quantity relay.
18. Fan shut off relay.
19. Key warning buzzer (USA only).
20. Fuel pump cut off relay.
21. Rear fog lamps relay.
22. Recirculation flap relay.
23. Washer fluid level amplifier.
24. Rear window demist relay (Saloon).
25. Electric window lift relay (USA and Australia only).
26. Key warning buzzer relay (USA only).
27. Intermittent wipe control.
28. Speed control cut off relay.
29. Panel lights relay.
30. Wiper feed relay.
31. Interior lights relay.
32. Voltage regulator.
33. Battery temperature relay.
34. Stop lamp failure relay.
35. Seat motor relays.
36. Ammeter shunt.
37. Starter relay.
38. Fuse box - fan and compressor.
39. Panel lights dimming unit.

The following are contained in the main fusebox:-

- Window lift thermal switch.
- Rear fog light fuse.
- Headlamp thermal switch.
- Gearchange thermal switch.
- Head safety thermal switch.
- Door locking solenoids thermal switch.
- Direction indicator flasher unit.
- Hazard warning flasher unit.

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CATEGORY CSPECIFICATION CHANGESAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley 'T' Series motor cars including all Long wheelbase cars from the following car serial numbers:

SRD 22118

LRD 22073

In addition, car numbers SRH 21515 and SRD 21693 are also subject to these changes.

DESCRIPTION:

The specification of Rolls-Royce Silver Shadow and Bentley 'T' Series motor cars produced after the above car serial numbers has been changed.

The purpose of this Service Bulletin is to briefly outline these changes in specification and how these affect service procedures.

1 ENGINE

The specification of cars destined for North America or Japan remain unchanged. All other cars are as follows:

- a) The compression ratio is lowered to 8:1. This has been achieved by the use of a different design of piston.
- b) A Lucas Opus Mk II ignition system is used with a new coil and ballast resistor and fitted with a vacuum advance device.

The Opus ignition distributor does not use contact breaker points, control of the ignition coil being effected by an electronic circuit. The dwell angle is therefore fixed and does not require setting.

The ignition timing should be set statically to T.D.C. then adjusted to 15° B.T.D.C. at 1,200

r.p.m. with the distributor vacuum pipe removed and blanked.

Periodic lubrication of the distributor mechanical advance mechanism is still required. This should be done every 20,000 km (12,000 miles) or 12 months and consists of a few drops of oil into the top of the spindle and onto the advance mechanism using the aperture in the base plate.

The only components which are interchangeable with those fitted to earlier cars are the ignition high tension harness and the distributor cap.

Engine tuning using ignition analysing equipment can be achieved by connecting the equipment to the car in the usual manner.

Note

The electronic circuit of the Opus distributor will be permanently damaged by loose or incorrect connections to any of the ignition components.

Care should be taken to replace the flash-over shield beneath the rotor arm otherwise high tension sparking could damage the electronic circuit.

The recommended sparking plugs are Champion RN 14 Y or XN 14 Y and the gaps should be set to 0.762 mm (0.030 inches).

- c) The carburettor airflow characteristics have been improved by using contra-rotating throttles. However, the setting and adjustment of the throttles remains unchanged.
- d) The engine valve timing has been retarded. This has been achieved by alterations to the crankshaft timing pinion which means that the camshaft is interchangeable.

The revised valve timing is $12\frac{1}{2}^{\circ}$ A.T.D.C. with an inlet valve lift of 0.762 mm (0.030 inches).

- e) A controlled temperature air intake system is now fitted.

Warm air is drawn in by a pick-up above 'A' bank exhaust manifold and is then blended with cold air by a vacuum controlled flap to achieve a suitable intake temperature. The flap is controlled by a bimetallic bleed valve situated in the choke housing elbow. The blended air then passes through the paper element air cleaner, which is unchanged.

A metal resonator is fitted inside the air trunking which has a revised clipping arrangement.

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Issue 2
Bulletin No SY/A222 BRAKES

- a) The brake actuation unit has been altered by deletion of the Master Cylinder, repositioning of the 'G' valve, and by the introduction of a mechanism which provides progressive brake pedal travel. This mechanism also incorporates an 'on' stop. The pedal return springs are repositioned (refer to Fig. 1.).
- b) Should it be necessary to reset any part of the brake actuation mechanism, the settings must be performed in the following order and manner.

1 'Off stop' setting

Slacken the four bolts which secure the 'off stop' bracket to the mechanism side plates. With the brake pedal in the 'off' position, slide the bracket forwards until it just takes up the free play in the distribution valve spindles.

2 'On stop' setting

Adjust the two nuts on the rubber spring assembly (see Fig. 1, Item 4) until the end of the rubber spring touches the abutment face of the cone.

3 Primary spring

Adjust the primary spring screw until no free play exists between the spring and its attachment points. Rotate the screw a further $1\frac{1}{2}$ turns rearwards (anti-clockwise) to give the correct amount of pre-tension.

4 Brake pedal height

The distance between the underside of the brake pedal pad and the pedal seal housing must not be less than 101.6 mm (4 inches).

- c) Pipe runs have been altered particularly in the region of the brake actuation unit.

The front or right-hand accumulator is connected to the upper distribution valve. The upper distribution valve feeds the front calipers on the front wheels, and the top cylinder of the rear wheel calipers (No. 1 system) (refer to Fig. 2).

The rear or left-hand accumulator is connected to the lower distribution valve. The lower distribution valve feeds the rear calipers on the front wheels and the lower cylinder of the rear wheel calipers (No. 2 system) (refer to Fig. 2).

The rear wheel calipers have been altered so that the two pistons are now of equal size. The calipers are Girling 11/11 type with 40,492 mm (1.594 inch) dia. pistons.

- d) The bleed points for the revised hydraulic system are shown in Fig. 3. It should be noted that the disposition of the accumulators and the accumulator switches is as follows.

North American cars

One accumulator on the right-hand side of the engine which feeds braking system number 1.

One accumulator on the left-hand side of the engine which feeds braking system number 2 and the levelling system.

Each accumulator is fitted with a bleed screw.

The two accumulator switches are both fitted on the left-hand valance plate and each switch has a bleed screw.

Japanese and Australian cars

Both accumulators are fitted on the left-hand side of the engine. The front feeds braking system number 1 and the rear feeds braking system number 2 and the levelling system.

Both accumulator switches and their individual bleed screws are fitted on the left-hand valance.

All other cars

Each accumulator is fitted with a switch and a bleed screw. The front accumulator feeds braking system number 1 and the rear accumulator feeds braking system number 2 and the levelling system.

- e) On North American cars only, the pressure at which the accumulator switch operates the warning light has been increased.

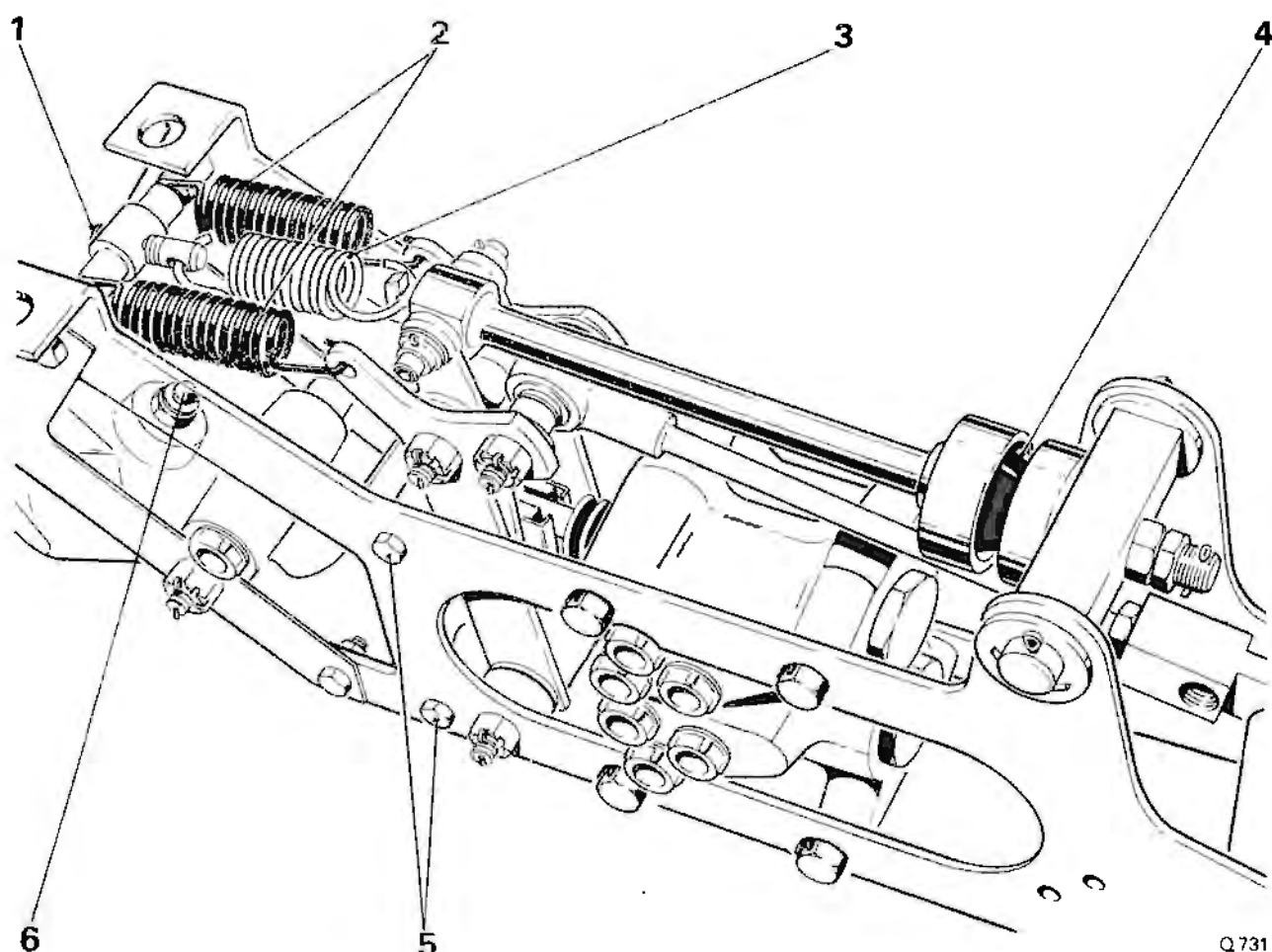
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Fig. 1
BRAKE ACTUATION UNIT

1. Adjustment (primary spring)
2. Pedal return springs
3. Primary spring
4. Rubber spring assembly (incorporates an on/stop)
5. Off/stop adjustment bolts
6. Bleed screw (deceleration conscious pressure limiting valve)

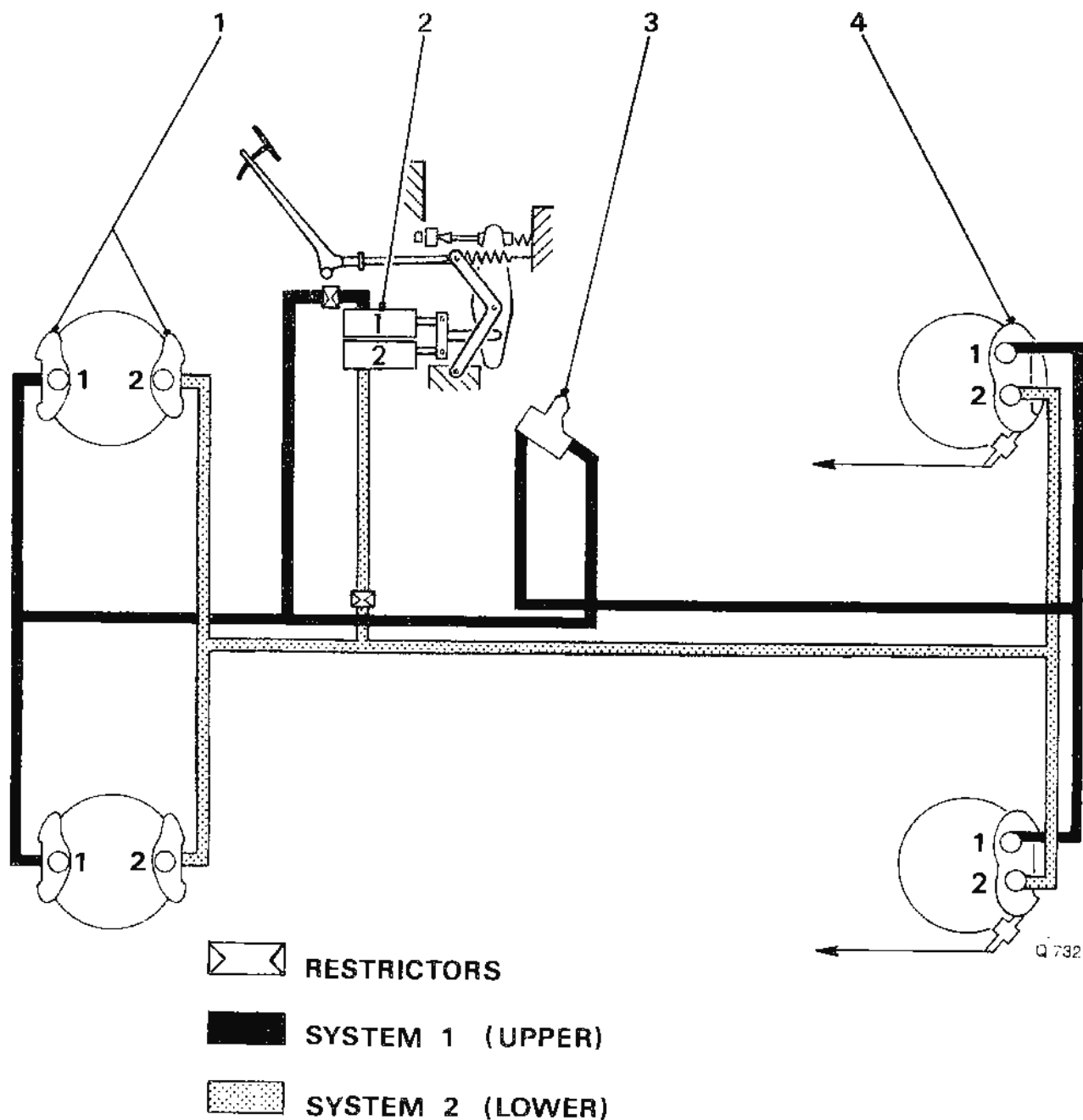


Fig. 2

HYDRAULIC SYSTEM

1. Front wheel brake calipers
2. Brake distribution valves
3. Deceleration conscious pressure limiting valve
4. Rear wheel brake calipers

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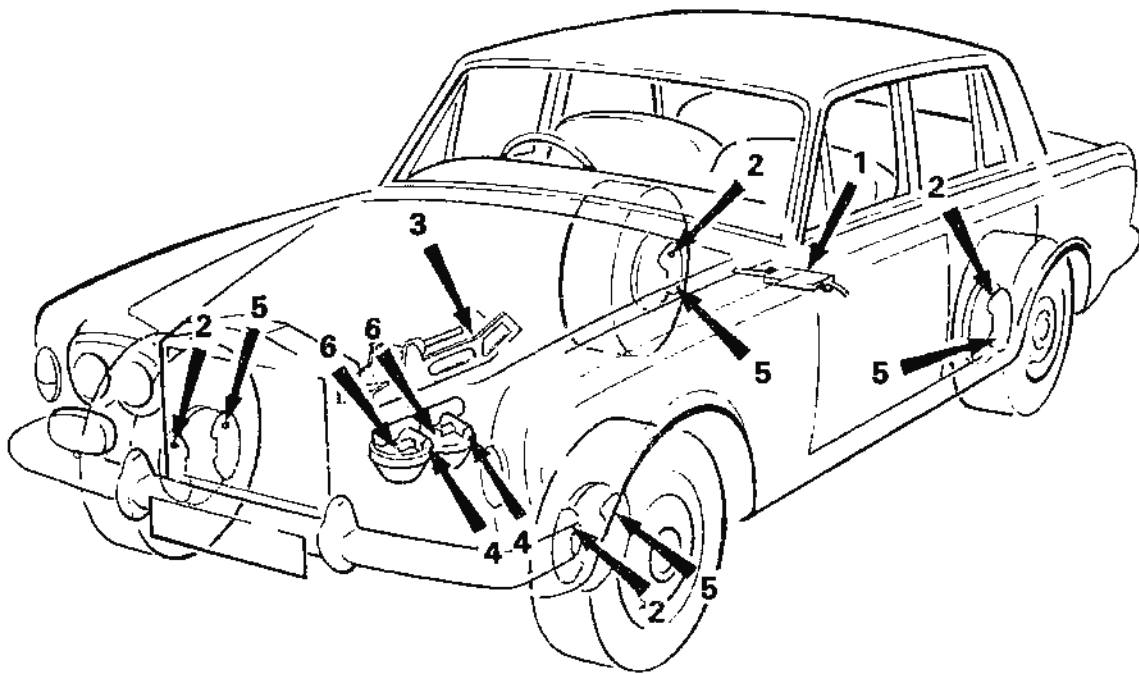


Fig. 3

BLEED POINTS IN THE HYDRAULIC SYSTEM
(Illustration shows a U.K. specification car)

1. Remote bleed screws for hydraulic rams
2. No. 1 power brake circuit bleed screws
3. Bleed screw for pressure limiting valve
4. Accumulator valve bleed screws (Front-Power brakes circuit, Rear-Power brakes circuit).
5. No. 2 power brake circuit bleed screws
6. Accumulator pressure switches

Note

This means that an illuminated warning lamp does not necessarily indicate a depressurised system. When depressurising, the brake pedal should be pumped a further thirty times after the warning lamp is illuminated to ensure complete depressurisation.

3 FUEL SYSTEM

These changes apply to cars destined for North America only.

- a) The route of the fuel vapour emission control pipes have been altered in the boot area to prevent spillage in the event of an accident.
- b) A flow check valve is fitted at the fuel pump outlet.
- c) A fuel pump of higher delivery pressure is fitted, this pump being identified by the number AUD414 replacing AUD402 on the identification label.

4 ELECTRICS

- a) The auto-park relay has been deleted and the circuits previously switched by the key micro-switch have been re-arranged.

The key micro-switch is now connected directly to the 'P' position of the gear change selector switch such that on withdrawing the ignition key the gearbox is automatically moved into the 'park' condition.

The 'Lock' contact has been deleted.

- b) The exterior lighting system has been altered by the deletion of the two level lighting contact in the switch-box and by the removal of the split parking circuit.
- c) The speed control regulator on all left-hand drive cars has been repositioned and is now mounted on the left-hand valance. The operation and electrical circuit of the speed control unit remain unchanged.
- d) On all cars with the exception of those destined for Switzerland, rear fog lamps are fitted, controlled by a switch and warning lamp in the centre console.

The lamps are protected by fuses which are mounted adjacent to the window lift thermal switch behind the knee roll on the passenger's side.

The control circuit includes a relay which enables the lamps to be used with the main lighting switch, in either HEAD or FOG positions. This relay is mounted adjacent to the fuses.

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- e) The windscreen washer bottle is fitted with fluid level probes which are connected to an amplifier similar to, but not interchangeable with, the engine coolant level amplifier. The amplifier is mounted adjacent to the window lift thermal switch.

The windscreen washer level amplifier controls a warning lamp which has been added to the warning lamp cluster on the instrument board. This lamp will illuminate when the windscreen washers are operated should the fluid level be low.

- f) The two warning lamp clusters on the instrument board have been altered as shown below:

<u>DELETED</u>	<u>ADDED</u>	<u>UNCHANGED</u>
1 Low Pressure	Power Brake 1	Coolant
2 Low Pressure	Power Brake 2	Low Fuel
Low Fluid	Brake Fluid	Stop Lamp
Master Cylinder	Washer Fluid	Parking Brake

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CATEGORY C

CAR PROTECTION KIT - RH 2662

APPLICABLE TO:

All Silver Shadow, T Series, Corniche and Camargue motor cars.

DESCRIPTION:

A Car Protection Kit, part number RH 2662, has been developed to keep cars clean during servicing and to help the Franchise Holder to sell service. It consists of a seat cover, a steering wheel cover, two floor mats and a napkin, all in a plastic bag. All the items are in white and exhibit the Rolls-Royce Service logo in brown. The floor mats also refer to the fact that the car has been serviced by an official Franchise Holder.

It is anticipated that the seat cover and steering wheel cover will be fitted as soon as the car enters the workshop and will be removed when the customer picks up the car. At that stage, the floor mats and napkin will be installed, so that the customer is aware that care has been taken. It is anticipated that a customer will recognise a Rolls-Royce Franchise Holder by the use of this kit.

The kits are available in packs of 50, and these should be ordered through the usual Parts channels.

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CHAPTER B

SPECIAL PROCESSES

CHAPTER C

AIR CONDITIONING

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CATEGORY CTHE SUCTION THROTTLING VALVEAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars.

DESCRIPTION:

A number of suction throttling valves which have been returned for warranty consideration have had the upper threaded bore badly distorted. The distortion takes place in the area adjacent to the cast arm which carries the operating lever.

It is important that when dismantling a suction throttling valve, the following procedure is observed to ensure that the valve housing is not subjected to any undue stressing.

PROCEDURE:

1. Remove the two springs from the operating arm and then remove the rivet securing the arm to the upper body of the valve.
2. Scribe alignment marks on the two valve housings to facilitate assembly.
3. Loosen the five screws which secure the housings together and, by slackening each screw one turn at a time, separate the two housings.
NOTE:
Care should be taken during this operation due to the strong compressive force of the valve spring.
4. Should it be necessary to dismantle the valve any further, the procedure set out in the Workshop Manual, Section C.5, should be followed.

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CATEGORY C

"DYTEL" REFRIGERANT LEAK DETECTOR

APPLICABLE TO:

All Rolls-Royce and Bentley Motor Cars fitted with a refrigeration system.

DESCRIPTION:

It is known that many refrigeration engineers use "Dytel" for leak detection on refrigeration systems. While we neither advise nor condemn the use of this material, it is important to note the hazards of using it.

When "Dytel" comes into contact with car paintwork it must be removed immediately and certainly within one hour otherwise staining will occur.

Removal is effected using a cloth dipped in "Freon TF" ("Freon 113") solvent.

If a Distributor or Retailer employs the services of a sub-contract refrigeration engineer, the information in this Service Bulletin should be transmitted to him.

JC1/GF

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CATEGORY CREFRIGERANT COMPRESSORAPPLICABLE TO:

All Rolls-Royce Silver Shadow, Corniche and Camargue, all Bentley 'T' Series and Corniche motor cars fitted with a refrigeration system.

DESCRIPTION:

Of the refrigerant compressors which are removed from cars in service a significant proportion could be corrected on the car by attention to the clutch coil assembly, the clutch bearing or the clutch driving plate.

Future Warranty Claims for the replacement of the complete refrigerant compressor will not be accepted unless the fault cannot be rectified in the field.

The necessary parts and tools to renew the above components are now available from Rolls-Royce Motors Limited.

This Service Bulletin contains the instructions to perform these operations without the need to depressurise the refrigeration system.

SECTION 1

TO CHANGE THE CLUTCH DRIVING PLATE IN THE REFRIGERANT COMPRESSOR WHILST IN SITU

PROCEDURE:

1. Disconnect the battery.
2. Fit a shield to the nearside wing to prevent damage to paintwork.
3. Loosen the steering pump mounting pulley bolts to enable the compressor belt to be slackened.
4. Release the 3 nuts from the rear of the refrigerant compressor, slacken the nut holding the fluid pipe bracket and release the 2 bolts from the front of the refrigerant compressor.

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5. Swing the compressor unit over to the nearside and proceed as follows:
- 5a. Using (RH 7798) holding tool, remove the compressor shaft locknut (CD 4651) (Fig.1 item 7) with the aid of a suitable 9/16 A F socket and torque wrench.
- 5b. Using (RH 8506) special puller, withdraw the clutch hub and drive plate assembly (CD 4648) (Fig.1 item 6), (the puller must be screwed into its seat on the compressor shaft to prevent the clutch hub and drive plate assembly threads being damaged).
- 5c. Fit a new clutch hub and drive plate assembly.
- 5d. Locate the key in the compressor shaft keyway, allowing it to project for approximately 4,76 mm (0.1875 inches) from the end of the keyway.
- 5e. Locate the hub assembly on the keyway and using (RH 7799) special hub and drive plate fitting tool and a suitable distance piece, draw the hub and drive plate assembly (CD 4648) on to the compressor shaft until there is approximately 2,38 mm (0.2812 inches) space between the frictional surfaces of the clutch hub and drive plate assembly and the pulley.
- 5f. Tighten the compressor shaft locknut (CD 4651) (Fig.1 item 7) to 2,07 kgm (15 lb.ft), the air gap between the frictional faces should now be between 0,558 mm and 1,447 mm (0.022 ins and 0.057 ins), the shoulder or circular projection on the locknut (CD 4651) must face towards the circlip (CD 4650) (Fig.1 item 8).
- 5g. Refit the refrigerant compressor by reversing the procedures described in Section 1 items 1 to 5.

PARTS REQUIRED

LOCKNUT (CD 4651)

CLUTCH HUB AND DRIVE PLATE ASSEMBLY (CD 4648)

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TOOLS UTILISED

HOLDING TOOL (RH 7798)
SPECIAL HUB AND DRIVE PLATE FITTING TOOL (RH 7799)
SPECIAL PULLER (RH 8506)

TIME ALLOWED FOR RENEWING THE CLUTCH DRIVING PLATE IN THE
REFRIGERANT COMPRESSOR 0,60 HOURS.

SECTION 2

TO CHANGE THE CLUTCH BEARING IN THE REFRIGERANT COMPRESSOR
WHILST IN SITU

PROCEDURE:

- 6 Carry out procedures described in Section 1 items 1 to 5b.
- 6a Remove the circlip (CD 4650) and hub spacer washer (Fig. 1 item 8).
- 6b Fit the special puller pilot (RH 7792) over the compressor shaft (Fig. 1 item 14), and using the special puller (RH 8741) withdraw the pulley assembly (Fig. 1 item 3).
- 6c Remove the wire retaining ring (CD 4647) (Fig. 1 item 5).
- 6d Using the removal tool (RH 7795) compressor pulley bearing, and Universal handle (RH 7794), press the bearing (CD 4645) (Fig. 1 item 4) out of the pulley housing (Fig. 1 item 3).
- 6e Clean the pulley housing (Fig. 1 item 3) and fit a new bearing (CD 4645) using (RH 7796) installing tool, compressor pulley and (RH 7794) universal handle, press the bearing (CD 4645) into the pulley housing (Fig. 1 item 3).
- 6f Fit the wire retaining ring (CD 4647) (Fig. 1 item 5).
- 6g Using installing tool (RH 7796) with the aid of (RH 7794) universal handle, press the pulley and bearing assembly on to the compressor shaft (Fig 1 item 14) ensure the pulley will rotate freely.
- 6h Clean the hub frictional face with methylated spirits to remove any unwanted foreign deposits.
- 6j Refit the refrigerant compressor by reversing the procedures described in Section 1 Items 1 to 5 and 5d to 5f,

PARTS REQUIRED

CIRCLIP (CD 4650)
WIRE RETAINING RING (CD 4647)
BEARING (CD 4645)

TOOLS UTILISED

SPECIAL PULLER PILOT (RH 7792)
SPECIAL PULLER (RH 8741)
SPECIAL PULLER (RH 7795)
BEARING PULLER HANDLE (RH 7794)
SPECIAL HUB AND DRIVE PLATE FITTING TOOL (RH 7799)
SPECIAL PULLER (RH 8506)
HOLDING TOOL (RH 7798)
BEARING INSTALLING TOOL (RH 7796)

Time allowed for renewing the clutch bearing in the refrigerant compressor - 0.80 hours.

SECTION 3

TO CHANGE THE CLUTCH COIL ASSEMBLY IN THE REFRIGERANT COMPRESSOR WHILST IN SITU

PROCEDURE:

- 7 Carry out the procedures described in Section 1 items 1 to 5b. Section 2 items 6 to 6b.
- 7a Disconnect the two 'LUCAR' terminals.
- 7b Remove the circlip (CD 4705) securing the coil to the compressor body (Fig. 1 item 2).
- 7c Fit a new coil (CD 4697) (Fig. 1 item 1)
- 7d Fit the circlip (CD 4705) with its flat face to the coil housing.
- 7e Refit the refrigerant compressor by reversing the procedures described in Section 1 items 1 to 5 and 5d to 5f. Section 2 items 6g to 6h. Section 3 item 7a.

PARTS REQUIRED

CIRCLIP (CD 4705)
COIL (CD 4697)

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TOOLS UTILISED

HOLDING TOOL (RH 7798)
SPECIAL PULLER (RH 8506)
SPECIAL HUB AND DRIVE PLATE FITTING TOOL (RH 7799)
SPECIAL PULLER PILOT (RH 7792)
SPECIAL PULLER (RH 8741)

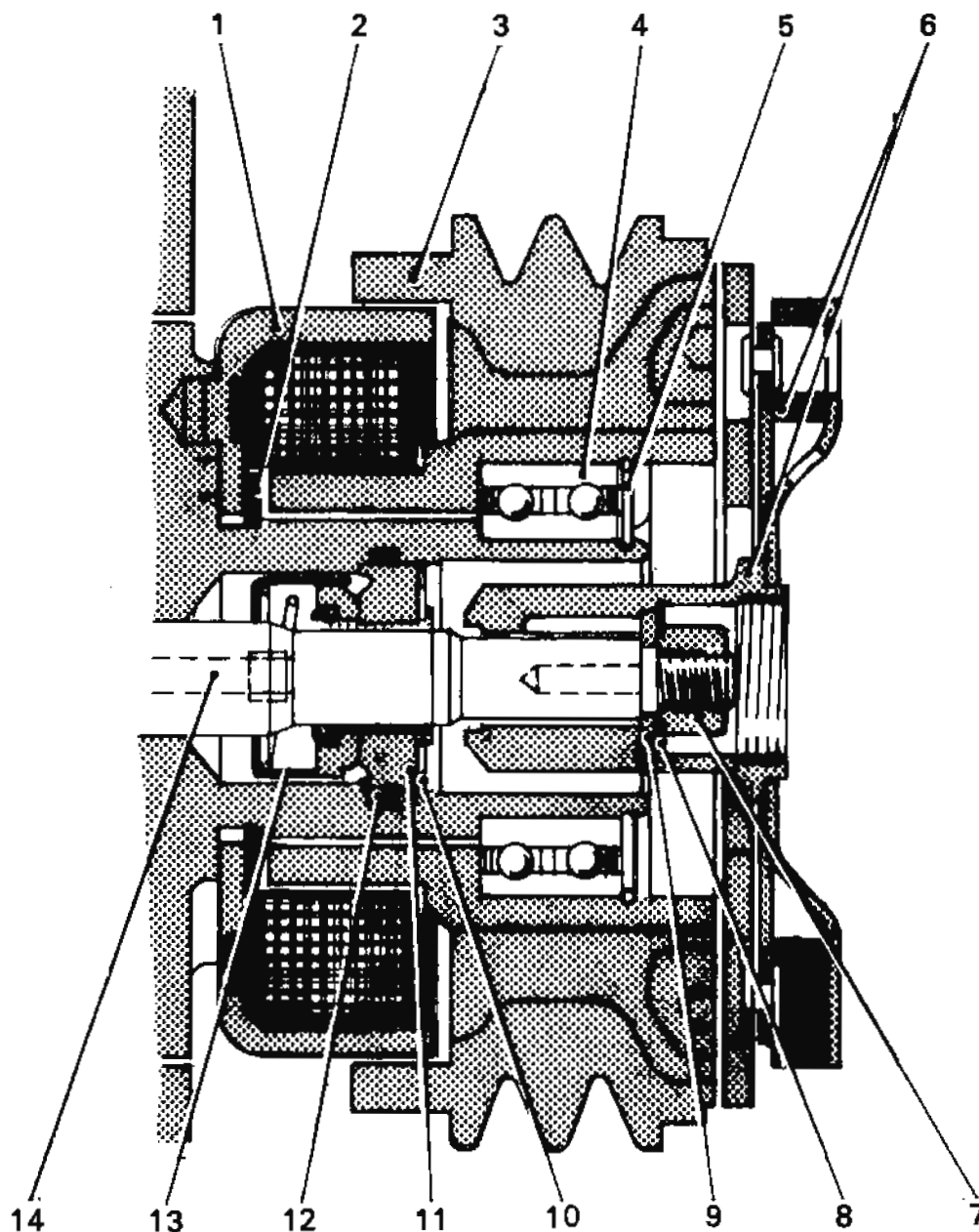
Time allowed for renewing the clutch coil assembly in the refrigerant compressor - 0.90 hours.

NOTE

Do not hammer or force the assembly onto the compressor shaft when rebuilding the refrigerant compressor. Always use the correct tools when removing or replacing clutch parts or serious damage may result to the internal components of the refrigerant compressor.

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FIGURE 1

CUT-OUT SECTION OF THE CLUTCH HOUSING

1. Coil and Housing Assembly.
2. Coil Housing Retainer Ring.
3. Pulley.
4. Pulley Bearing.
5. Pulley Bearing Retainer Circlip.
6. Clutch Hub and Drive Plate Assembly.
7. Shaftnut.
8. Clutch Hub Retainer Ring.
9. Spacer.
10. Shaft Seal Seat Retainer Ring.
11. Shaft Seal Seat.
12. Shaft Seal Seat 'O' Ring.
13. Shaft Seal.
14. Compressor Shaft.

CHAPTER D

LUBRICATION AND MAINTENANCE

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and Retailers

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CATEGORY C

TRANSMISSION SYSTEM LUBRICANTS

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars, and all Bentley T Series and Corniche cars.

DESCRIPTION

Confusion has arisen over the use of Castrol Hi-press 140 SC oil in the final drive unit of the above motor cars. The following paragraphs describe the correct usage of the lubricants.

- 1) Castrol Hi-press 140 SC is available to Rolls-Royce Motors Limited only.
- 2) Castrol Hi-press 140 SC will be used for initial fill purposes in new motor cars and for initial fill of replacement axle units which are fitted by Rolls-Royce Motors Limited.
- 3) Castrol Hypoy SAE 90 EP or Hypoy B will be used for initial fill of all replacement axle units which are fitted by persons other than Rolls-Royce Motors Limited.
- 4) Castrol Hypoy SAE 90 EP or Hypoy B can be used for all top-up purposes or axle re-fill purposes.

Please remove and destroy Service Bulletins SY/D12, SY/D12 (Issue 2) and SY/D12 (Issue 2) Addendum.

Arr/JC1

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ISSUE 3

CATEGORY C

SERVICE SCHEDULES

APPLICABLE TO :

All Rolls-Royce Silver Shadow, Rolls-Royce Corniche, Bentley T Series and Bentley Corniche motor cars.

DESCRIPTION :

The following information supersedes that given in Service Bulletins - SY/D1, SY/D8, SY/D9, SY/D13 Issue 2, SY/D16 and SY/D20, which should be removed and destroyed.

Certain items in these service schedules are marked with an asterisk (*). The servicing for these items should be carried out at the periods specified in order to comply with the Rolls-Royce Motors Limited Warranty, during the Warranty period.

In order to comply with the relevant Emission Control Regulations, items marked thus (+) must be carried out during the entire service life of the vehicle.

Regular Maintenance

1. Battery (not applicable to cars fitted with the Dagenite Autofil or Dagenite Demon battery) : Weekly, check the electrolyte level; top-up with distilled water if necessary.
2. Engine : Weekly or every 800 kilometres (500 miles), whichever is the earlier check the oil level by means of the dipstick; top-up if necessary.
3. Lamp units : Weekly, check the lamp bulbs for correct operation and replace any faulty bulbs.
4. Tyre pressures : Weekly, check the tyre pressures, including the spare; adjust if necessary.

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5. Windscreen Washer reservoir : Weekly, check the fluid level; top-up if necessary.
6. Carburetter : Monthly, check the oil level in the reservoirs of the automatic air valve dampers; top-up if necessary.
7. Hydraulic reservoirs : Monthly, check the level of fluid in the reservoirs; the engine should be run for 4 minutes before checking the fluid level. Top-up if necessary to the indicated level. If frequent topping-up is necessary check the hydraulic systems for leaks and rectify if necessary.
8. Engine cooling system : Every three months , check the level of coolant in the radiator header tank; if necessary top-up with the correct anti-freeze/water mixture or inhibited solutions.

Initial Service - 5 000 kilometres (3 000 miles) or 3 months whichever is the earlier

- *1. Engine: Change engine oil.
- *2. Engine cooling system : Tighten the worm drive clips securing all coolant hoses.
- *3. Torque converter transmission : Check the fluid level with the engine running and top-up if necessary.
4. Belts and belt tension : Check the condition and tension of the belts driving the coolant pump, steering pump and refrigeration compressor and the alternator; adjust or replace as necessary.
5. Steering pump : Check the fluid level of the steering pump reservoir; top-up if necessary.
6. Test : Road test the car for satisfactory performance.

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Every 5 000 kilometres (3 000 miles) or 3 months whichever is the earlier

- *1. Engine : If the car is used for constant stop/start operation, change the engine lubricating oil.

Every 10 000 kilometres (6 000 miles) or 6 months whichever is the earlier

- *1. Battery : Check the electrolyte level; top-up with distilled water if necessary.

- *2. Brakes : Inspect footbrake and handbrake or parking brake pad linings; fit new pads if necessary. When renewing footbrake pads examine condition of dust excluders on calipers and renew if necessary.

Manually adjust the handbrake or parking brake caliper mechanism.

Inspect all pipes and connections. Report any defects to the Owner.

- *3. Engine : Change the engine oil and fit a new oil filter element.
- *4. Torque converter transmission (if fitted) : Check the fluid level with the engine running and top-up if necessary.
5. Automatic gearbox (if fitted) : Check the fluid level and top-up if necessary.
6. Belts and belt tension : Check the condition and tension of the belts driving the coolant pump, steering pump, generator or the refrigeration compressor and the alternator (if fitted); adjust or replace as necessary.

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- +7. Carburetters : Check the oil level in the air valve dampers; top-up if necessary. Check the idle speed and adjust if necessary.
- 8. Control linkages : Lubricate the accelerator linkage and the gear range selector controls (adjacent to the transmission casing) with engine oil.
- 9. Electrical system : Check all exterior lamps, interior lamps, warning lamps and devices, instruments and air conditioning controls for correct operation; rectify as necessary.
- 10. Handbrake or Parking brake linkage : Lubricate the pivot pins and pulleys with the approved grease.
- +11. Ignition system : Check and if necessary adjust the distributor dwell angle.

Check the ignition timing and adjust if necessary.
- 12. Propeller shaft (Cars fitted with the four speed automatic gearbox) : Examine the neoprene seal at the front end of the shaft for serviceability; rectify as necessary.
- 13. Check the following levels and pressures : Check the fluid level in the steering pump reservoir and top-up if necessary.

Check the level and specific gravity of the engine coolant; correct as necessary.

Check the fluid level in the windscreen washer reservoir and top-up if necessary.

Run the engine for four minutes then check the fluid levels of the hydraulic systems reservoirs; top-up if necessary with recommended fluid.

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Check and if necessary adjust tyre pressures. Inspect the tread depth of all tyres; also inspect the tyres for damage. Report any defects to the Owner.

14. Test : Road test the car for satisfactory performance.

Every 20 000 kilometres (12 000 miles) or 12 months whichever is the earlier

- *+1. Air silencer and cleaner : Clean and oil the wire mesh filter elements or (dependent upon type of filter fitted), fit new paper element (s).
- *2. Battery : Check the electrolyte level; top-up with distilled water if necessary.
- *3. Brakes : Inspect footbrake and handbrake or parking brake pad linings; fit new pads if necessary. When renewing footbrake pads examine condition of dust excluders on calipers and renew if necessary.

Manually adjust the handbrake or parking brake caliper mechanism.

Inspect all pipes and connections. Report any defects to the Owner.

- *+4. Carburettors : Check the air valve damper oil levels; top-up if necessary.

Check and adjust float chamber depression.

Check engine idle speed and choke idle speed; adjust if necessary.

Ensure exhaust emissions comply with E.C.E. Regulation 15, if applicable.

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- *5. Engine : Change engine oil and fit a new oil filter.
- *+6. Engine breather system : Remove and clean the gauze flame traps in the crankcase breather tube. Clean the adapter in the choke butterfly housing.
- *7. Final drive unit : Check the oil level; top-up if necessary.
- *8. Front suspension : Inspect the front suspension ball joint rubber covers; if the covers are damaged, fit new joints and covers.
- *+9. Ignition system : Fit new distributor contact breaker points; set dwell angle. Fit a new distributor cam lubrication pad (if applicable). If cam lubrication pad is not fitted lightly smear the cam with grease. Lubricate the distributor spindle (shaft bearings) and automatic advance mechanism with clean engine oil.

Fit new sparking plugs.

Check ignition timing with stroboscope and adjust if necessary.
- *10. Steering mechanism: Lubricate the steering mechanism at the six grease points. Inspect the rubber covers on the ball joints; if the covers are damaged the joints should be dismantled and new parts fitted as necessary.
- *11. Torque converter transmission (if fitted) : Change transmission fluid.

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12. Automatic gearbox (if fitted) : Drain the gearbox and fluid coupling; fill with an approved fluid.
13. Belts and belt tension : Check the condition and tension of the belts driving the coolant pump, steering pump, generator or the refrigeration compressor and the alternator (if fitted); adjust or replace as necessary.
14. Control linkages : Lubricate the accelerator linkage and the gear range selector controls (adjacent to the transmission casing) with engine oil.
15. Electrical system : Check the exterior lamps, interior lamps, warning lamps and devices, instruments and air conditioning controls for correct operation; rectify as necessary.
16. Handbrake or Parking brake linkage : Lubricate the pivot pins and pulleys with approved grease.
17. Propeller shaft (cars fitted with the four speed automatic gearbox) : Examine the neoprene seal at the front end of the shaft for serviceability; rectify as necessary.
18. Spare wheel carrier : Lubricate the spare wheel carrier lowering bolt and mechanism.
19. Check the following levels and pressures : Check the fluid level in the steering pump reservoir; top-up if necessary.

Check the fluid level in the steering idler box damper; top-up if necessary.

Check the level and specific gravity of the engine coolant; correct as necessary.

Check the fluid level in the windscreen washer reservoir and top-up if necessary

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Run the engine for four minutes then check the levels of the hydraulic systems reservoirs; top-up if necessary with recommended fluid.

Check and if necessary adjust the tyre pressures. Inspect the tread depth of all tyres; also inspect the tyres for damage. Report any defects to Owner.

20. Test : Road test the car for satisfactory performance.

Every 40 000 kilometres (24 000 miles) or 2 years whichever is the earlier

In addition to the 20 000 kilometres (12 000 miles) service schedule carry out the following.

In the case of the Carburetter, Final drive unit, Propeller shaft and the Torque converter transmission the servicing necessary is listed in this schedule therefore, the 20 000 kilometres (12 000 miles) service schedule should not be consulted for these items.

- *+1. Automatic choke : Check the flow through the choke stove pipe and check for correct function: correct as necessary.
- *+2. Carburetters : Clean the air valve pistons. Top-up the air valves with new engine oil.

Fit new paper element filters to the float chamber inlet connections (if applicable).

Check and adjust float chamber depression.

Check engine idle speed and choke idle speed; adjust as necessary.

Ensure exhaust emissions comply with E.C.E. Regulation 15, if applicable.

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- *3. Engine cooling system : Fit a new thermostat. Examine the condition of all hoses; fit new hoses as necessary. Fit new heater tap hoses (irrespective of visual appearance).
- *4. Final drive unit : Change the oil.
- *+5. Fuel mixture weakening device filter (if fitted) : Fit a new fuel weakening device filter.
- *6. Torque converter transmission (if fitted) : Change the Transmission fluid and fit a new intake strainer. Renew 'O' ring on intake pipe and fit a new seal to bore of intake strainer.
- 7. Dynamo (if fitted) : Check the brushes for wear and for freedom in their holders; fit new brushes if necessary.
- 8. Fuel filter : Clean out the filter bowl and fit a new filter element.
- 9. Fuel pumps : Remove pumps and test fuel pump efficiency; fit new pumps if necessary.
- 10. Fuel tank : Release the fuel tank drain plug and allow any accumulated water to drain away; fit the drain plug and add four S.B.N. inhibitors to the tank.
- 11. Height control mechanism : Disconnect, clean and lubricate the height control valve ball joints; connect the ball joints. On early cars fitted with adjustable link rods, ensure the length of the rod remains unaltered.
- 12. Power operated hood (If fitted) : Check the level of fluid in the reservoir; top-up if necessary.
- 13. Propeller shaft (Cars fitted with the four speed automatic gearbox) : Examine the neoprene seal at the front end of the shaft for serviceability; rectify as necessary.

Examine the rear joint for signs of grease leakage; rectify as necessary.

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Check the torque tightness of the bolts securing the front and rear joints; rectify as necessary.

14. Rear wheel drive-shafts : Lubricate the outer universal joints with approved grease.
15. Steering pump (Hobourn Eaton) : Renew the filter element in the steering pump reservoir.

Every 60 000 kilometres (36 000 miles) or 3 years whichever is the earlier

*In addition to the 20 000 kilometres (12 000 miles) service schedule carry out the following.

1. Wax capsule type fuel mixture weakening device cut off valve (if fitted) : Fit the later type thermal switch assembly.

Recommended Seasonal Schedules

Every 12 months

1. Air conditioning system : Check that the foam filter element in the scuttle intake grille is free from obstruction; fit a new element if necessary. On long wheelbase cars fitted with a centre division, ensure that the foam filter element fitted below the rear refrigeration system air intake grille is free from obstruction. Fit a new filter element if necessary.

Check the refrigeration system for correct operation; rectify as necessary. Any work on the refrigeration system must only be carried out by an experienced refrigeration engineer.

2. Body drain holes : Ensure that the body drain holes are not obstructed.

* Denotes change of information to original page dated 5 6 75.

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3. Engine cooling system : Drain off the old coolant and fill the system with fresh anti-freeze/water mixture or inhibited solution. Just prior to the Autumn, clean any debris from the surface of the refrigeration condenser and radiator matrices by reverse flushing with a hose.

Every 2 years

1. Engine cooling system : Carry out the 12 months service procedure and also thoroughly reverse flush the cooling system. Examine coolant hoses and fit new hoses as necessary.

Service Recommendations

It is emphasised that these service recommendations are not a normal servicing arrangement and should only be carried out by the request of the Owner.

Every 80 000 kilometres (48 000 miles)

1. Brake and hydraulic systems : Fit new front and rear accumulator to frame hoses. Examine the condition of the sub-frame to brake caliper hoses; fit new hoses where necessary. Drain off the hydraulic fluid; clean out the hydraulic fluid reservoirs and clean the sight glasses. Fill the systems with fresh Castrol RR 363 Brake Fluid and bleed the systems.

Every 160 000 kilometres (96 000 miles)

1. Brake and hydraulic systems : Fit all new flexible hoses to the brake and hydraulic systems. Fit new seals to the disc brake calipers, the deceleration conscious pressure limiting valve, and the master cylinder. Drain off the hydraulic fluid; clean out the hydraulic fluid reservoirs and clean the sight glasses. Fill the systems with fresh Castrol RR 363 Brake Fluid and bleed the systems.
2. Fuel system : Fit a new convoluted hose between the filler head and the fuel tank. Examine all flexible fuel pipes; renew any that show signs of deterioration.

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Addendum to Issue 3

CATEGORY C

SERVICE SCHEDULES

APPLICABLE TO:

All Silver Shadow, T Series, Corniche, Camargue and Phantom VI cars.

DESCRIPTION:

This Addendum has been issued to include the following under the heading of Service Recommendations Page 11.

Every 4 years or 80 000 km. (48 000 miles) whichever is earlier

Braking and hydraulic systems: Drain off the hydraulic fluid and clean the reservoirs and sight glasses. Fill the system with fresh Castrol RR 363 Brake Fluid; bleed the systems.

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CATEGORY C

TRANSMISSION SYSTEM LUBRICATION

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars, and all Bentley T Series and Corniche cars.

DESCRIPTION

This Service Bulletin has been issued to show the current lubricants approved for use in the final drive components of the above motor cars.

Component	B.P.	CASTROL	ESSO	MOBIL	SHELL
Final Drive Unit and Drive-shaft Detroit joints	B.P. Gear Oil S.A.E. 90 EP	Castrol Hypoy 90 or Castrol Hypoy B	Esso Gear Oil GX 90/140 or GX 90	Mobilube HD 90	Shell Spirax 90 EP
Drive-shaft outer Universal joints	B.P. Energrease L.2	Castrol LM Grease	Esso Multi-purpose Grease H	Mobilgrease MP	*Shell Retinax A

*First preference

Note On cars fitted with Four Speed Automatic Gearbox, the Detroit joint on the propeller shaft should be greased with Shell Retinax A.

IMPORTANT

This Service Bulletin should be read in conjunction with Service Bulletin SY/D12 (Issue 3) dated 24th February, 1972.

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CATEGORY C

TRANSMISSION SYSTEM LUBRICATION

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars, and all
Bentley T Series and Corniche cars.

DESCRIPTION

This Service Bulletin has been issued to show the current lubricants
approved for use in the final drive components of the above motor cars.

Component	B.P.	CASTROL	ESSO	MOBIL	SHELL
Final Drive Unit and Drive-Shaft Detroit joints	B.P. Extra Duty Gear Oil S.A.E. 90 EP or B.P. Gear Oil MP 80/90	Castrol Hypoy 90 or Castrol Hypoy B	Esso Gear Oil GX 90	Mobilube HD 90	Shell Spirax 90 EP
Drive-shaft outer Universal joints	B.P. Ener- grease MP	Castrol MP Grease or Castrol LM Grease	Esso Multi- purpose Grease H	Mobilgrease MP	Shell Darina Grease AX

IMPORTANT

This Service Bulletin should be read in conjunction with Service Bulletin
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CATEGORY C

THE FUEL SYSTEM

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars.
All Bentley 'T' Series and Corniche cars.

DESCRIPTION:

The following operations have been added to the Service Recommendations for 96,000 miles (160000 Km):

1. Renew the hose between the filler head and petrol tank.
2. Examine the flexible fuel pipes at the fuel filter, fuel pump and engine and renew if necessary.

JCl/GF

CHAPTER E

ENGINE

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CATEGORY C

OVERSIZE CYLINDER LINERS

APPLICABLE TO

All Rolls-Royce Silver Shadow and Corniche cars, and all Bentley T Series and Corniche cars.

DESCRIPTION

It has been found necessary whilst building service re-conditioned engines, to bore some cylinder blocks (not liners) to 0.015 in. (0,39 mm.) oversize in order to ensure the correct alignment of the cylinder bores in the block. This in turn necessitates the use of 0,015 in. (0,39 mm.) oversize (outside diameter) cylinder liners. Such cylinder liners may be identified by the marking 'O/L' on the cylinder liner top face adjacent to the piston grade marking.

Any engine fitted with oversize cylinder liners can be identified by the marking 'O/L' on the small boss at the front of the engine on the 'A' bank side.

Before ordering replacement cylinder liners for a motor car the markings 'O/L' should be looked for, especially if it is known that the car has been fitted with a service re-conditioned engine.

Note

It is still necessary to state the depth of the top land in the block when ordering replacement oversize cylinder liners in order to ensure that the correct cylinder head gasket 'nip' is maintained.

Parts Required

<u>Description</u>	<u>Part Number</u>
Liner - Engine oversize	RH 8440

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CATEGORY C

CYLINDER HEAD GASKETS

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars, and all Bentley T Series and Corniche cars.

DESCRIPTION:

All cars now leaving the Factory have been fitted with a different type of cylinder head gasket. The new gasket, Part Number UE 31004, is of the type fitted to the Rolls-Royce Silver Cloud III and Bentley S3 cars, and has superior sealing qualities over the gasket it now supersedes.

The new cylinder head gasket must be used as a replacement on all cars from Car Serial Number SRH 8742.

The early type of cylinder head gasket fitted to Rolls-Royce Silver Shadow and Bentley T Series cars, Part Number UE 32807 may be used up on all cars prior to Car Serial Number SRH 8742.

Figure 1, shown on page 2, illustrates the two cylinder head gaskets and lists their appropriate applications.

This Service Bulletin should be read in conjunction with Service Bulletins SY/E14 and SY/P1.

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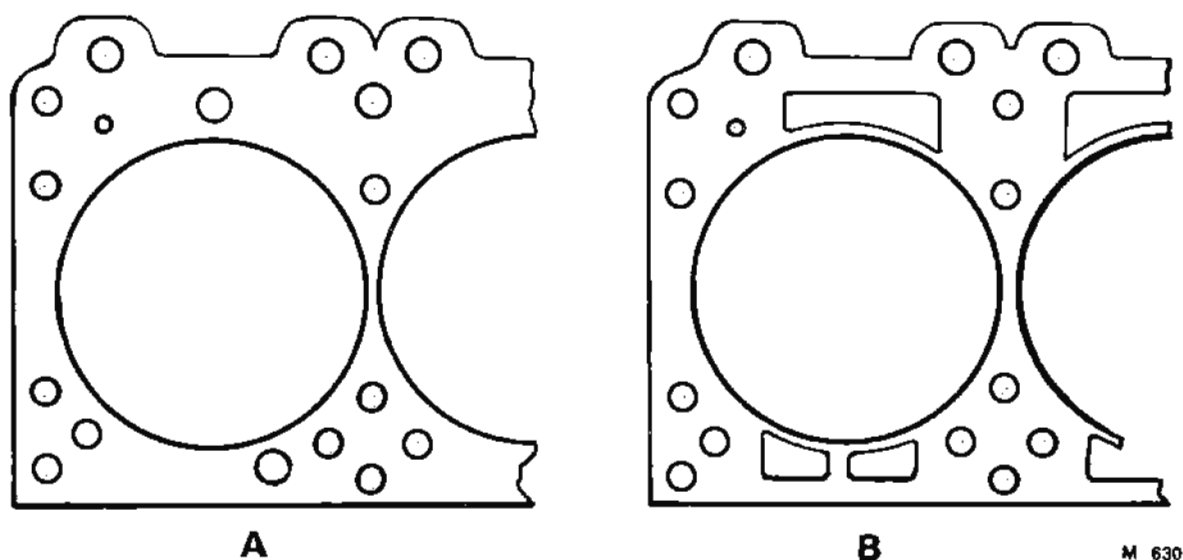


Fig.1 Cylinder head gasket identification and application

- A Gasket - Part Number UE 31004
Fitted to all cars from Car Serial Number SRH 8742, and all cars prior to Car Serial Number SRH 8742 when stocks of B are used up.
- B Gasket - Part Number UE 32807
To be used up on cars prior to Car Serial Number SRH 8742.

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CATEGORY C

CYLINDER HEADS - TORQUE TIGHTENING

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars, and all Bentley T Series and Corniche cars.

DESCRIPTION

A revised method of tightening down the cylinder head securing nuts has been introduced on cars now leaving the Factory.

The revised method prevents uneven clamping, and the possibility of cylinder head distortion during the tightening process.

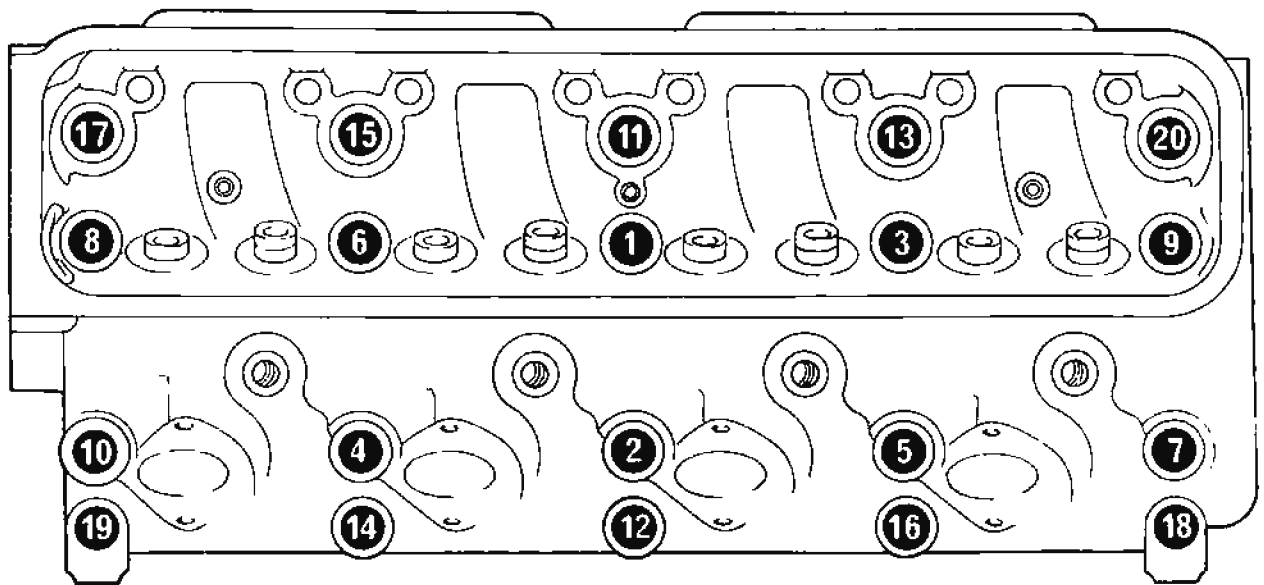
When fitting cylinder heads to any of the cars listed under Applicable To all the nuts should be first torque tightened to between 20 lb ft and 25 lb ft (2,75 kg.m and 3,5 kg.m), then finally tightened to between 50 lb ft and 55 lb ft (7,0 kg.m and 7,6 kg.m).

The correct sequence, shown in Figure 1, must be followed during both stages of tightening.

It should be noted that all cars now leaving the Factory have the cylinder head nuts tightened to between 50 lb ft and 55 lb ft (7,0 kg.m and 7,6 kg.m), and these figures should be adopted on all cars if at any time the cylinder heads are removed and fitted.

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Fig.1 Cylinder head torque tightening sequence

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CATEGORY CENGINE DRIVE BELTSAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars.

DESCRIPTION:

All cars now leaving the factory are fitted with 'Rofan' engine drive belts. These belts have a superior performance to the previous type and it is important that they are correctly tensioned if the increased belt life of which they are capable is to be achieved.

Whenever a drive belt is fitted or re-tensioned it should be tensioned in accordance with the table below. Where an accurate belt tension meter is available, the belts can be set to the appropriate static tension. When such a meter is not available, a spring balance can be used to set the belts to the equivalent load/deflection figures.

DRIVE BELT TENSION CHART:

Belt Number:	Drive	Static Lbs Tension (Kgs)	Load Lbs (Kgs) to deflect belt by 0.375" (9.525 mm)
UE 37810	Crankshaft/ Coolant pump.	50 (22.6)	9 (4.08) Measured at midpoint of crankshaft/coolant pump run.
UE 37811	Steering pump/ Compressor.	70 (31.7)	9 (4.08) Measured at midpoint of steering pump/compressor run.
UE 37812	Alternator.	50 (22.6)	8 (3.625) At midpoint of run.
UE 36363	Air pump	40 (18.1)	12 (5.45) At midpoint of run.

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CATEGORY CPRESSURE CONTROL VALVE - EMISSION CONTROL SYSTEMAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley 'T' Series cars.
All Rolls-Royce and Bentley Corniche cars.

DESCRIPTION:

The pressure control valve is designed to prevent air from the pump passing to the gulp valve under engine idle conditions. This was necessary since inlet manifold depression at idle approached the overrun figure which might have triggered the gulp valve and so caused uneven idling.

Recent internal changes to the gulp valve now enable it to operate in the correct mode without the aid of the pressure control valve. It has therefore been deleted.

In time, replacement pressure control valves will become unobtainable. In such circumstances the earlier systems will have to be modified to the later arrangement which will in some instances necessitate replacement of the gulp valve.

PROCEDURE:

Because some engines were built with the later gulp valve and a pressure control valve, the gulp valve should first be examined to determine whether it is of the early or later type. This can be done simply, by removing the rubber signal pipe from the gulp valve and determining the size of the hole down the centre of the adaptor pipe attached to the valve. The earlier valves have a diameter of approximately .150" (3.6 mm) whilst the later valves have a diameter of approximately .030" (0.76 mm). If an early gulp valve is fitted it will have to be replaced by one of the later type.

The following new parts will be required :-

- | | | |
|--|-------|----------|
| 1. Gulp valve | 1 off | UE 37231 |
| 2. Pipe four-way connector to gulp valve | 1 off | UE 38044 |
| 3. Hose four-way connector to pipe | 1 off | UE 38045 |
| 4. Hose - pipe to gulp valve | 1 off | UE 38051 |
| 5. Clip - jubilee - hoses to pipe | 2 off | UE 37139 |

If a later gulp valve is already fitted then the above parts with the exception of the gulp valve will be required.

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CATEGORY CCRANKSHAFT DAMPERAPPLICABLE TO:

Rolls-Royce Silver Shadow and Corniche cars and Bentley 'T' Series and Corniche cars from car serial number SRH 13000 to car serial number SRH 13754.

DESCRIPTION:

It has been found that the rubber used in the crankshaft dampers of a number of cars recently built, contains some agent which affects the bonding of the inertia ring. Under certain circumstances this could cause separation of the inertia ring from the damper.

Should this occur the ring cannot come off the spigot of rubber in the damper due to the close proximity of the crankshaft pulley. It will however create a noise which is audible from within the saloon. Therefore, should an owner complain of a noise from the front of the engine on any of the above cars the condition of the metalastik damper should be checked. This can be done from beneath the car using a mirror or from the left-hand side of the engine compartment. If the inertia ring has separated or shows signs of separating from the rubber damping medium, the damper assembly should be replaced as detailed in the following procedure.

It should be noted that the type of crankshaft damper used has recently changed, the new one being of a slightly larger diameter. The condition referred to above applies to the earlier smaller diameter type of damper.

PROCEDURE:

1. Slacken off the steering pump support bracket mounting bolts and remove the steering pump/refrigeration compressor driving belts from the crankshaft pulley.
2. Slacken off the jockey pulley and remove the water pump driving belts from the crankshaft pulley.

NOTE:

It may be found easier to manipulate these belts if the alternator belt is first removed.

3. The pulley is removed by first removing the five setscrews and the locking plate securing it and the damper to the crankshaft. Access to the setscrews is obtained from beneath the car and down the centre of the pulley.
4. The pulley and damper can now be removed.

NOTE:

That both the pulley and the damper are located on the crankshaft dowel pins.

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CRANKSHAFT DAMPER

5. Examine the pulley and surrounding components to ensure that no damage has occurred. Replace any damaged components.
6. Fit the new damper onto the locating dowels.
7. Fit the pulley and locking plate and secure with the five setscrews. The setscrews should be tightened to 16 to 18 lbs. ft. (2,21 to 2,49 kg.m).
8. Fit the driving belts to the crankshaft pulley. The driving belts should be tensioned as given in the chart below:

DRIVE BELT TENSION CHART

Belt Number:	Drive	Static Lbs Tension (Kgs)	Load Lbs (Kgs) to deflect belt by 0.375" (9.525 mm)
UE 37810	Crankshaft/ Coolant pump.	50 (22.6)	9 (4.08) Measured at midpoint of crankshaft/coolant pump run.
UE 37811	Steering pump/ Compressor.	70 (31.7)	9 (4.08) Measured at midpoint of steering pump/ compressor run.
UE 37812	Alternator.	50 (22.6)	8 (3.625) At midpoint of run.
UE 36363	Air pump.	40 (18.1)	12 (5.45) At midpoint of run.

TIME ALLOWED

To complete above procedure - 4 hours.

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CATEGORY CCRANKSHAFT PULLEYSAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley 'T' Series cars after car serial number SRH 8742. All Rolls-Royce and Bentley Corniche cars.

DESCRIPTION:

Cars now leaving the factory are being fitted with a larger crankshaft damper and a pulley with a machined eccentric balance weight UE 37315 in place of the one with the 'cast on' balance weight.

Final balance of the engine at the front of the crankshaft is now achieved by drilling holes in the pulley instead of in the damper. This means that it is not possible to transfer a pulley from one engine to another since this would affect the engine's balance. Because of this it has been decided that all $6\frac{3}{4}$ litre engines returned to the factory for reworking will be modified to the later arrangement. Therefore all future $6\frac{3}{4}$ litre service replacement engines will be supplied complete with a crankshaft pulley.

In order to prevent confusion it must be ensured that all $6\frac{3}{4}$ litre engines returned to the factory have their crankshaft pulley returned with them.

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CATEGORY C :

BRAKE PUMP AND ACCUMULATOR VALVE HYDRAULIC KNOCK

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley 'T' Series cars.
All Rolls-Royce and Bentley Corniche cars.

DESCRIPTION:

Because of the similar nature of brake pump and accumulator valve knock it would appear that some service personnel are not absolutely clear on the cause, the cure or on how to differentiate between a knock emanating from the brake pump or the accumulator valve.

This Bulletin is intended as a guide for both diagnosis and the rectification necessary to remedy hydraulic knock from either of these areas.

It should be remembered that a malfunction in the hydraulic system can result in many types of hydraulic knock.

BEFORE CARRYING OUT ANY BRAKE PUMP OR ACCUMULATOR HYDRAULIC KNOCK RECTIFICATION WORK, BOTH THE HIGH PRESSURE HYDRAULIC SYSTEMS MUST BE GAUGE CHECKED TO ENSURE THAT THEY ARE OPERATING SATISFACTORILY.

IT MUST ALSO BE ASCERTAINED THAT THE BRAKE PUMP TO ACCUMULATOR PIPES ARE NOT FOULING THE BODY. SPECIAL ATTENTION SHOULD BE PAID TO THE AREA WHERE THE PIPES PASS DOWN IN FRONT OF THE ENGINE COMPARTMENT BULKHEAD.

BRAKE PUMP KNOCK

Brake pump knock can occur on any Rolls-Royce Silver Shadow and Corniche or Bentley 'T' Series and Corniche motor cars.

The knock occurs whilst the hydraulic system is pressurising and can be heard from both inside the car and dependent upon the severity from the right-hand side of the engine compartment when the bonnet is open.

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This knock is caused by wear taking place in the brake pump non-return valve and therefore should not normally occur on new or low mileage cars. Generally it increases with mileage as wear takes place. This wear results in the seat on the non-return valve cone moving away from the peak of the cone.

Brake pump knock which reaches an unacceptable level may be cured by renewing the brake pump non-return valve.

NOTE:

HYDRAULIC KNOCK IS A FEATURE OF THE HIGH PRESSURE HYDRAULIC SYSTEMS AND WILL ALWAYS BE EVIDENT TO A SMALL DEGREE WHILST THEY ARE PRESSURISING. THIS FEATURE IS STANDARD AND NO RECTIFICATION WORK IS NECESSARY.

ACCUMULATOR VALVE KNOCK

Accumulator valve knock can occur on cars fitted with the smaller diameter .375 in. O.D. (9.525 mm) brake pump to accumulator rigid pipes, i.e. cars after car serial number SRA 12490. It should be noted that a few cars prior to this were also fitted with these pipes.

IT DOES NOT OCCUR ON CARS PRIOR TO THIS FITTED WITH THE LARGER .5625 in.O.D. (14.287 mm) DIAMETER PIPES.

It is audible from inside the car whilst the hydraulic systems are pressurising predominantly from the left-hand front footwell area. It CANNOT be heard from the right-hand side of the engine compartment with the bonnet open.

The knock is not mileage conscious and therefore does not increase during the life of the vehicle.

It has been found that the introduction of the smaller diameter pipes requires greater damping on the accumulator non-return valve to prevent hydraulic knock. This has been achieved by increasing the diameter of the non-return valve damping collar.

Accumulator valve knock may be eliminated by fitting one of these increased damping diameter non-return valves which are now being supplied for all replacement purposes.

IT IS ESSENTIAL WHEN FITTING ONE OF THESE VALVES TO ENSURE THAT IT FITS FREELY IN THE ACCUMULATOR BOBBIN BORE. UNDER NO CIRCUMSTANCES MAY A VALVE BE FITTED IF THERE IS ANY EVIDENCE WHATSOEVER OF IT STICKING IN THE BOBBIN BORE.

All cars after car serial number SRH 14650 have been fitted with the later valves.

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N.B.

The main purpose of this Bulletin is to point out the difference between brake pump and accumulator valve knock.

It is therefore again stressed that if the knock is audible from the right-hand side of the engine compartment with the bonnet open, then it is emanating from the brake pump. If not then it is most likely coming from the accumulator valve.

PARTS REQUIRED:DISPLACED

UE 31246 non-return valve-accumulator

NEW:

UE 38482

TIME ALLOWANCE

1. To change brake pump non-return valves including depressurising system, replace valve with pump in position, bleed system, all connections.

Both pumps	2.10 hours.
Front pump	1.00 hour.
Rear pump	1.10 hours.

2. To change accumulator non-return valve including depressurising system, removing, overhauling and replacing valve assembly, bleeding system and checking for correct operation.

Right-hand drive cars:

Front accumulator	3.85 hours.
Rear accumulator	5.25 hours.
Both accumulators	6.50 hours.

Left-hand drive cars

Front accumulator	3.85 hours.
Rear accumulator	6.25 hours.
Both accumulators	7.50 hours.

Arr/JCI/Hly.

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CATEGORY C1973 EMISSION CONTROL SYSTEMSCARS DESTINED FOR JAPAN AFTER 1ST APRIL 1973APPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley T series motor cars and all Rolls-Royce and Bentley Corniche motor cars destined for Japan after 1st April 1973 (i.e. Car Serial Numbers SRH 15522, SRH 15635, SRX 15637 and onwards).

DESCRIPTION:

The engine build specification for Japanese cars has been amended as from 1st April 1973. Changes from the present engine build specification are as follows.

1. Engine compression ratio reduced to 8:1.
2. Engine fan diameter increased to 20 in. (50,80 cm.).
3. Lower engine oil dipstick fitted.
4. Transmission modulator and T.V. vacuum pipe changed.
5. Choke solenoid now held on during engine cranking.
6. Two vane air pump fitted to air injection system.
7. Exhaust gas recirculation system fitted.
8. Exhaust gas recirculation heat shield fitted.
9. Distributor with vacuum retard fitted.
10. Carburetter needles changed.

Changes 1 to 6 inclusive are basically component changes and workshop personnel should in addition to their normal duties, only have to ensure that the correct parts are obtained, if replacement becomes necessary.

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Changes 7 to 10 inclusive are necessary for engines to meet the 1973 Emission Control Regulations in Japan and workshop personnel will require the servicing details given in WORKSHOP MANUAL T.S.D. 2476 - CHAPTER U (Part 2) with the following differences.

EXHAUST GAS RECIRCULATION SYSTEM

This is similar to the system detailed in Chapter U except that the 'A' bank exhaust manifold has the exhaust gas recirculation system take-off flange above the manifold as shown in Figure 1.

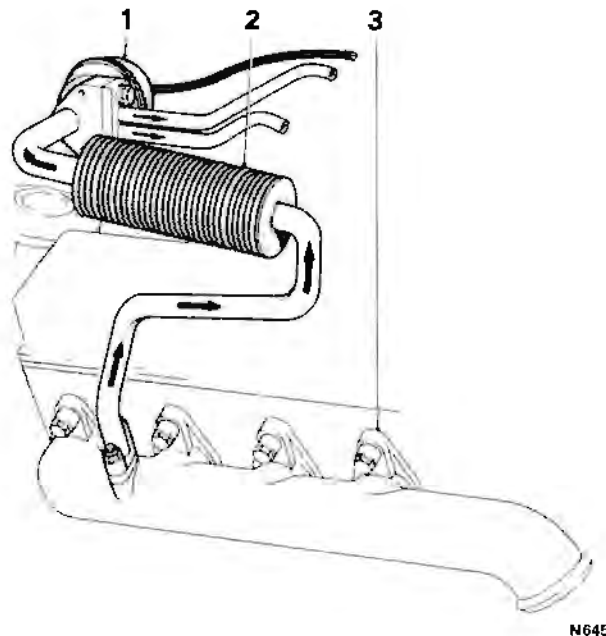


Fig 1. Exhaust gas recirculation system pipe run from exhaust manifold to exhaust gas recirculation valve.

1. Exhaust gas recirculation valve
2. Exhaust gas recirculation cooler
3. 'A' bank exhaust manifold

The exhaust gas recirculation system cooler is situated above the engine on the 'A' bank side as shown in Figure 2 on page 3.

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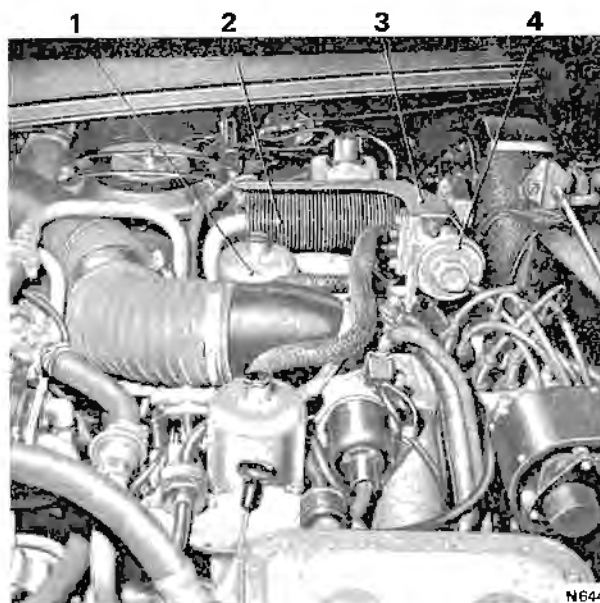


Fig 2. Exhaust gas recirculation system cooler and heat shield.

1. 'A' bank carburetter
2. Exhaust gas recirculation cooler
3. Heat shield
4. Exhaust gas recirculation valve

As a result of these two changes the pipe run between the exhaust manifold and cooler has changed.

For details of the remainder of the exhaust gas recirculation system see Chapter U (Part 2).

THE CARBURETTERS AND AUTOMATIC CHOKE SYSTEM

The details for this section differ from Chapter U (Part 2) in two instances only.

The carburetter needles have been changed to BBY and when tuning the carburetters the engine idle speed C.O. setting has been revised from 5.0% - 5.5% to 3.0% - 4.0%.

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CATEGORY C

CYLINDER HEADS

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars.

All Bentley 'T' Series and Corniche cars.

DESCRIPTION:

It is apparent that cylinder heads in service are being machined to remove bow which can occur under certain circumstances.

Previously service personnel have not been aware of the permissible amount of material which may be removed from the cylinder head face. As a result of this it has been found that some cylinder heads have been machined well below limits.

The maximum of material which may be machined from the cylinder head face is 0.025" (0.635 mm).

It has been found however that more than the necessary amount has often been removed such that any further machining would reduce the face thickness below the permissible limits. Thus the head has been scrap after only a small service life.

The following procedure must be strictly adhered to when machining cylinder heads:-

PROCEDURE:

The cylinder head must first be measured to determine whether there is sufficient material to permit machining.

1. The depth from the rocker aperture sealing face to the cylinder head sealing face is nominally 4.420" (112.27 mm). The minimum permissible depth after machining is 4.393" (111.58 mm).
2. The amount of bow evident on the cylinder head face should be determined.

If there is insufficient material on the cylinder head to eliminate the bow by machining, advice should be sought from the factory before proceeding further.

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3. When machining the cylinder head must be clamped level and must be well supported.
4. The cutting tool should be adjusted until it is just touching the 'high spot' on head. The head should then be machined preferably using a minimum of two cuts. The total depth of machining should be equal to the bow which has been previously measured. The final cut should be of approximately .002" - .003" (.05 mm - .075 mm).
5. If there is no suitable equipment available for accurately measuring the bow evident then several light cuts should be taken until the head is nearly machined its full length. The final cut should not be deeper than .0015" - .002". (.035 - .05 mm).

UNDER NO CIRCUMSTANCES SHOULD A LARGE UNCALCULATED CUT BE TAKEN SINCE THIS INVARIABLY RESULTS IN THE REMOVAL OF MORE MATERIAL THAN IS NECESSARY. THIS IN TURN REDUCES THE POSSIBILITY OF ANY FURTHER MACHINING SHOULD IT EVER BE NECESSARY.

Arr/JC1/Hly

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CATEGORY C

POSITION OF CONNECTING ROD SLOTS

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars.

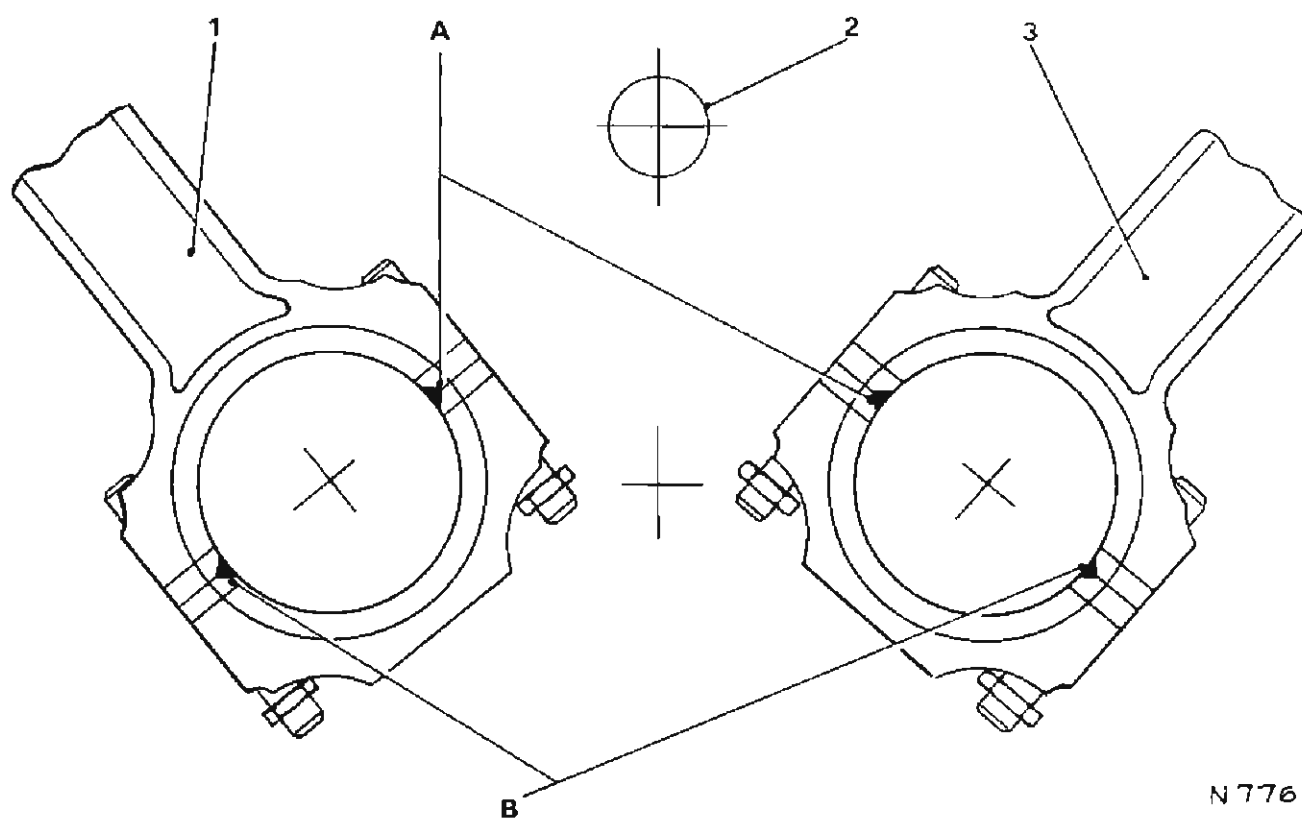
DESCRIPTION:

A number of engines have been produced with the connecting rod tangs facing outboard rather than inboard. (See illustration). The position of the tangs should therefore not be used as a guide as to whether the piston is correctly fitted into the liner, as stated in Chapter E of the Workshop Manual. The only guide is the word 'FRONT' stamped on the piston crown.

The engines referred to above were originally fitted to certain chassis numbers between SBH 15100 and CRH 15800.

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1. 'A' bank connecting rod
 2. Camshaft
 3. 'B' bank connecting rod
- A. Tangs positioned inboard
B. Tangs positioned outboard

Arr/JC1/GF

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CATEGORY C

PAPER OIL FILTER ELEMENT

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars, and all Bentley T Series and Corniche cars.

DESCRIPTION:

The felt type oil filter element has been superseded by a paper type of element.

This paper element is fully interchangeable and will in future be supplied for all replacement purposes on the above cars.

It is still recommended that the oil filter element be changed at 6,000 miles (10,000 kilometres) or six monthly intervals.

JCl/Hly

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CATEGORY C

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CONNECTING ROD BOLTSAPPLICABLE TO:

All Rolls-Royce Silver Shadow, Corniche, two-door saloons and two-door Convertible cars.

All Bentley 'T' Series, Corniche, two-door saloon and two-door Convertible cars.

DESCRIPTION

The connecting rod nut once tightened is prevented from coming undone by inducing a predetermined amount of stretch in the connecting rod bolt. This stretch also provides the necessary clamping load between the connecting rod cap and connecting rod to prevent fretting due to the high inertia stresses which occur under normal running conditions. Ideally the stretch should be of the order 0.006 to 0.008 in. (0,15 mm. to 0,20 mm.).

If an engine is installed in a car it is not easy to measure the connecting rod bolt stretch.

There is an approximate relationship between bolt stretch and the torque figure to which it is tightened and Rolls-Royce Motors have advocated tightening to a given torque figure rather than measuring the bolt stretch.

The relationship between stretch and torque tightness is only approximate due to variations in thread friction and friction between the nut and connecting rod cap as a result of variations in material hardness and threadform. A torque figure of 35-40 lb. ft. (4,84 - 5,53 kg.m) is required to ensure that the minimum stretch of 0.006 in. (0,15 mm.) is always induced in the bolt. However, due to the variations in thread and nut friction torque figures of this order can in certain circumstances result in a bolt stretch of up to 0.015 in. (0,38 mm.) which is beyond the material elastic limit, meaning that when the nut is removed the bolt will not return to its original length but retains a permanent increase in length.

A bolt which is stretched up to 0.015 in. (0,39 mm.) on initial tightening will perform quite adequately without any undesirable effects. However, if the connecting rod cap is disturbed for any reason in service there is a serious risk of the bolt over-stretching on retightening, which could result in subsequent failure.

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It is therefore recommended that whenever a connecting rod cap is removed in service on any of the above cars, that the connecting rod bolts are renewed, and the nuts retightened in the following manner.

PROCEDURE:

To renew connecting rod bolt - connecting rod cap removed.

1. Remove the old bolt by tapping the threaded end of the bolt.
2. Inspect the new bolt removing any burrs and dirt from the mating surface of the bolt head.
3. Inspect the mating surface of the connecting rod on which the bolt head rests. Remove any burrs and dirt.
4. Insert the new bolt and pull it as far as possible by hand through the connecting rod web.
5. Place a tube 3/8 in. (9,53 mm.) internal diameter and 7/8 in. (22,23 mm.) long over the stud, fit the nut and tighten to 20 - 25 lb. ft. (2,76 - 3,46 kg. m) torque to pull the stud through the connecting rod web.
6. Ensure that the underside of the bolt head is fully down on the machined pad of the connecting rod. IF FOR ANY REASON THE BOLT IS NOT FULLY DOWN IT COULD SUBSEQUENTLY MOVE IN SERVICE RESULTING IN LOSS OF BOLT STRETCH. THIS IN TURN COULD RESULT IN BOLT FAILURE.
7. Before replacing the connecting rod cap lubricate the bolt threads and run the nuts down the bolts. If any effort is required to move the nuts on the bolt the reason should be investigated and corrected before proceeding further.
8. The connecting rod bolt lengths should be measured before tightening.
9. Replace the connecting rod cap and torque tighten the connecting rod nuts to 35-40 lb. ft. (4,84 - 5,53 kg. m).
10. Remeasure the bolt lengths which should have increased 0.006 - 0.015 in. (0,15 mm. to 0,38 mm.).
11. If the correct stretch cannot be achieved or if there is evidence of the bolt overstretching then it must be changed.

JC1/Hly

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CATEGORY CCRANKSHAFT PINION GEAR SLOTTED NUTAPPLICABLE TO:

All Rolls-Royce Silver Shadow 2 door and Corniche cars.
All Bentley 'T' Series, 2 door and Corniche cars.

DESCRIPTION:

The torque figure to which this nut should be tightened has been increased from 200 lbs ft (27.65 kgm) to 250 lbs ft (34.56 kgm). Whenever this nut is fitted in service it should be tightened to this new figure. Any crankshaft pinion gear slotted nuts removed in service should be discarded and a new nut fitted.

When re-fitting the pinion gear, spacer, and oil flingers, they should be checked to ensure that they are free from burrs and that the mating surfaces are polished to a smooth finish using fine emery cloth.

JC1/Hly

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CATEGORY CDISPLACED ENGINESAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche and all Bentley T Series and Corniche motor cars.

DESCRIPTION:

When engines are returned to Rolls-Royce Motors Limited it is often found that damage has been caused to the engine because no corrosion protection has been provided or the engine has been badly packed.

This damage sometimes necessitates new components being used, which would not have been necessary had reasonable precautions been taken.

Before returning an engine, please comply with the following procedure.

PROCEDURE:

- 1 If any components, such as cylinder heads, are removed during diagnosis procedure, ensure these are replaced before despatching the engine.
- 2 Remove the sparking plugs and manually turn the crankshaft to help remove any coolant which may be present in the bores.
- 3 Treat all of the engine bores with engine oil or a corrosion inhibitor.
- 4 Cover any exposed ports or holes in the engine.
- 5 Ensure that all required engine components are packed with the engine.
- 6 Securely pack the engine and return as soon as possible.

Eck

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CATEGORY C

ENGINE VALVE COLLETS

APPLICABLE TO:

All Rolls-Royce Silver Shadow , Rolls-Royce Corniche, Rolls-Royce Camargue, Bentley 'T' Series and Bentley Corniche motor cars.

DESCRIPTION:

The valve collets with the rubber bonded to one edge, (Part No UE 6987) have been discontinued and new collets (Part No EB 1748), without the bonded rubber have been introduced.

For all engine overhauls only the new EB 1748 valve collets are available.

The earlier valve collets had rubber bonded to one edge of each valve collet to seal against leakage down the valve stem.

The new collet deletes this bonded rubber but is now sealed with "Silastic 732 RTV Sealant" (Part No G2/131).

PROCEDURE

1. Ensure that the top washer and collets are degreased and that the valve stem taper is wiped clean.
 2. Assemble the valve collets in pairs on a clean dry surface. Apply a coat of "Silastic" along one edge of each collet so that when assembled a "Silastic" coated edge opposes an un-coated edge. Allow approximately 10 mins. before assembly.
 3. Compress the valve springs and carefully insert the collets, keeping the gaps as equal as possible.
- Release the valve spring and wipe off the excess sealant from the valve tip and top washer.
4. Allow a period of at least 12 hours from applying the sealant before running the engine.

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SPARKING PLUGSAPPLICATION:

All Rolls-Royce Silver Shadow, Rolls-Royce Corniche and Rolls-Royce Camargue, Bentley 'T' Series and Bentley Corniche motor cars.

DESCRIPTION:

1. All European and Australian cars that are fitted with OPUS electronic ignition systems will for an interim period be fitted with Champion XN 14Y sparking plugs. Eventually these plugs will be changed to Champion RN 14Y.

The gaps for both plugs should be set to 0.76 mm (0.030 in).

2. All 1975 specification American and Japanese emission cars will continue to be fitted with N14Y plugs. These will eventually change to RN 14Y plugs.

The gap for both plugs should be set to 0.89 mm (0.035 in).

3. All cars fitted with conventional ignition systems will continue to be fitted with Champion N14Y plugs which should still be fitted as replacements. However it will be permissible to fit the RN 14Y plugs as replacements if N14Y plugs are not available.

The plug gaps for all conventional ignition system engines remains at 0.64 mm (0.025 in).

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CATEGORY ATHE OIL PUMPAPPLICABLE TO:

Rolls-Royce Silver Shadow and Corniche cars, and Bentley 'T' Series and Corniche cars, produced between the following car serial numbers:-

SRD 21321 and SRX 22146
DRD 20469 and DRH 22452
LRD 21591 and LRH 22172

A full list of affected cars is shown on Pages 8, 9 and 10 since affected car serial numbers are not necessarily consecutive.

DESCRIPTION:

Some little time ago the design of the oil pump relief valve was modified and it was fitted with a slightly different retaining plug. This new plug has a spigot to locate the spring and in contrast to the previous design is flush-faced on the outside. (See Fig 1).

An error in assembly has resulted in a number of these plugs being incorrectly fitted with the spigot facing outwards. In these cases it is possible, under certain circumstances, for the relief valve spring to become misaligned with a resultant drop in oil pressure.

We have decided that all cars in the quoted ranges should be checked for this condition and the plug removed and replaced correctly where necessary.

The following procedure gives details of the operation and the tools required.

It should be noted that a number of cars and engines have been checked at the factory or before delivery and therefore before starting this work the car should be checked to see if it has a blue spot on the crankcase adjacent to the alternator. This blue spot or a white spot on the left hand top side of the radiator matrix indicates that the pump has received attention at the factory or in service respectively.

The time allowance to check the oil pump is eight hours, and this can be claimed on a normal Warranty Claim Form.

The Warranty Claim Form should be clearly marked 'Check oil pump, in accordance with Service Bulletin SY/E30'.

Any oil pump purchased for spares use since April 1975 under part number UE 36683 or UE 37549 or UE 39346 should be checked in accordance with the instructions in this Service Bulletin.

PROCEDURE:

- 1.1 Check for paint markings on either the engine or radiator. If no markings are visible continue with the procedure.
- 1.2 Place the car on a ramp. Place the gear selector lever in "Park" with the handbrake on, and the gearchange isolator removed from the fuseboard.
- 1.3 Disconnect the battery.
- 1.4 Drain the engine oil into a clean container.
- 1.5 Remove the exhaust pipe section which fits adjacent to the sump.
- 1.6 Support the sump using a trolley jack or similar equipment and remove the four nuts and bolts securing the crossmember. Remove the two setscrews securing the crossmember to the underside of the front engine mounting foot cover plate.
- 1.7 Remove the crossmember.

STEERING LINKAGE

- 2.1 Remove the split pins and nuts from both ends of the ball joints on the outer edges of the track rods. Using tool RH 8080 extract the two ball pins from their tapers.
- 2.2 Remove the split pins and nuts from the outer ends of the steering crossmember. Using tool RH 8100 extract the ball pins from their tapers.

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- 2.3 Remove the steering levers from the car.
- 2.4 Disconnect the lead to the sump oil level gauge, remove the dipstick.
- 2.5 Take the engine weight under the crankshaft pulley using a screw jack. Protect the pulley by using a piece of wood between the jack and the pulley.

Remove the trolley jack.

- 2.6 Remove the sump set screws and remove the sump.
- 3.0 CHECKING AND CORRECTLY FITTING OIL PUMP PRESSURE RELIEF VALVE END PLUG AND CIRCLIP

When the sump is removed the oil pump is now accessible and the relief valve spring is visible.

Check by feel or with a mirror the end plug fitting.
(see Figure 1).

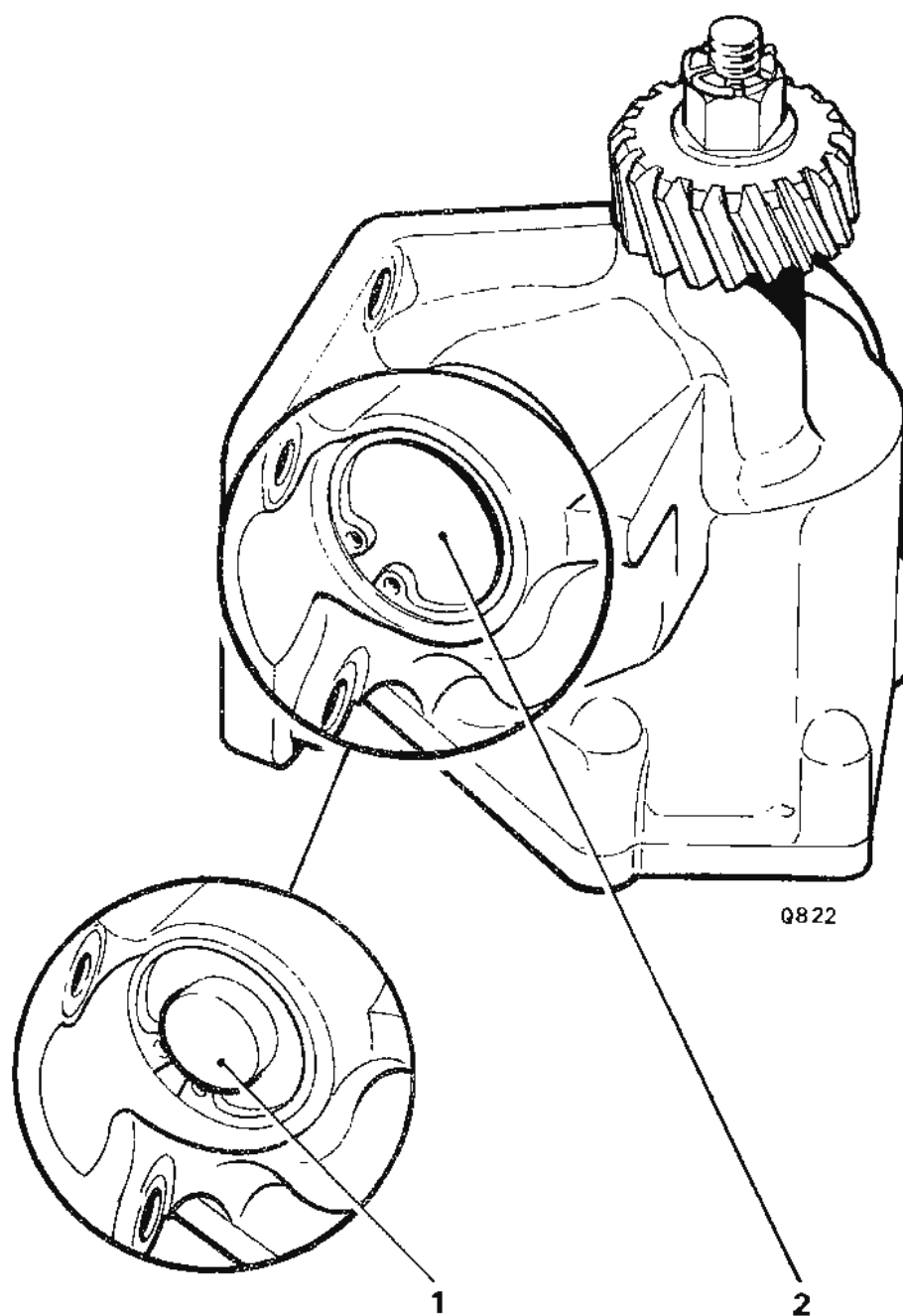


Figure 1.

1. Incorrect.

2. Correct.

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If incorrectly fitted adopt the following procedure:-

- 3.1 Depress the end plug to further compress the spring and introduce through the hole in the oil pressure relief valve chamber a suitable tool to hold the spring, thus removing the pressure from the end plug. (A small screw-driver makes an ideal tool).

The tool should not cover the end of the spring, but should leave approximately two coils at the plug end face.

- 3.2 With this tool held in position the load is removed from the end plug.

Remove the circlip with the aid of a pair of right-angled circlip pliers obtainable from a good tool stores, or by modifying a pair of long-nosed pliers by bending the tips at a right-angle.

It will prove easier to manoeuvre the "eyes" of the circlip to the bottom of the groove before attempting removal.

Examine the circlip and replace if either damaged or distorted (Part No SPC 1440).

Remove the end plug.

- 3.3 View along the pressure relief valve chamber (using a mirror) to centralise the spring.
- 3.4 Fit the end plug such that the spigot is now inside the relief valve chamber.

The spigot should locate in the internal diameter of the spring coils.

- 3.5 If the end plug does not reveal the circlip groove then either further depress the plug and lock the spring as in 3.1 or use some suitable tool to lever against the crankcase onto the end plug.

- 3.6 Fit the circlip and ENSURE THAT THE CIRCLIP IS FULLY LOCATED WITHIN ITS GROOVE FOR ITS FULL CIRCUMFERENCE.

Check the circlip by pulling the circlip round in its groove using a piece of wire. If seated incorrectly the circlip will spring out.

When completely satisfied of the circlip location remove the resistance to the relief valve spring.

- 3.7 The spring should now be located on the spigot and this may be visibly examined through the hole in the relief valve chamber.

Adjustment must be made if the spring is not correctly seated around the spigot.

It is recommended that the spring be compressed and released onto the end plug a number of times to load the circlip and serve as a double check as to its location.

4.0 REBUILD INSTRUCTIONS.

- 4.1 Reconnect sump, steering linkage and exhaust pipes.

If the sump joint is damaged during removal replace with a new one, Part No UE 7023.

New split pins (Part No UA 10022) must be used on all the steering joints previously dismantled.

Ensure that all fasteners are correctly torque tightened where necessary:

All steering linkage connections 35 - 40 lbf ft.

Crossmember to steering box and idler box 50 - 60 lbf ft.

- 4.3 Refill the engine with oil checking the level using the dipstick.
- 4.4 Re-connect the battery.
- 4.5 Fit an engine oil pressure gauge, run the engine to ensure there are no oil leaks, and allow the engine to thoroughly warm up.

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The correct time for checking the oil pressure is after the coolant thermostat has opened, and this can be detected by "feel" at the thermostat housing.

The oil pressure should read between 32 and 52 lb in².

- 4.6 Following the completion of the above work the car should be identified as having been checked by applying a spot of white paint to the left hand top side of the radiator matrix.

This is important to prevent duplication.

ECK/DC

DRD 20469	SRD 21801	SRD 21967
SRD 21321	SRD 21803	SRD 21970
LRD 21591	SRD 21805	SRD 21973
LRD 21592	SRD 21807	SRD 21976
LRD 21649	SRD 21809	LRD 21982
LRD 21651	SRD 21812	LPD 21985
LRD 21652	LPD 21845	LPD 21986
LRD 21653	LRD 21847	LRD 21991
LRD 21655	LRD 21848	LRD 21994
LRD 21656	LRD 21849	DRD 21995
LRD 21657	LPD 21850	DRD 21997
LRD 21658	LRD 21851	CRD 21999
LRD 21659	LRD 21852	CPD 22000
DRD 21665	LRD 21853	CRD 22001
DRD 21666	LRD 21855	SRD 22007
SRD 21710	LRD 21856	SPD 22011
LRD 21713	LRD 21857	SPD 22015
LRD 21714	CRD 21860	SRD 22018
LRD 21715	CRD 21862	SPD 22028
LRD 21716	DRD 21863	SRD 22035
LRD 21718	CPD 21864	SRD 22041
LRD 21720	SRD 21872	SRD 22045
LRD 21721	SPD 21876	LRD 22050
LRD 21723	SRD 21881	SRD 22075
LPD 21724	SRD 21886	SRD 22091
LRD 21725	SRD 21892	SRD 22101
DRD 21730	SRD 21897	DRD 22119
DRD 21731	SRD 21900	DRD 22120
CRD 21732	SRD 21904	CRD 22121
SRD 21754	SRD 21910	CRD 22122
SRD 21764	DRD 21915	DRD 22123
SRD 21766	DRD 21916	DRD 22184
SRD 21772	DRD 21918	DRD 22185
SRD 21774	DRD 21919	DRD 22187
SRD 21776	CRD 21920	CRD 22188
SRD 21777	DRD 21921	CRD 22189
LRD 21779	CRD 21922	DRD 22190
LRD 21781	LPD 21926	DRD 22191
LRD 21782	LRD 21929	DRD 22254
LRD 21783	LRD 21930	CRD 22258
LRD 21784	LPD 21931	DRD 22321
LRD 21786	LRD 21932	
LRD 21787	LRD 21934	
LRD 21788	SRD 21938	
LRD 21789	SRD 21943	
LRD 21790	SRD 21946	
LRD 21791	SRD 21951	
DRD 21792	SRD 21954	
DRD 21793	SRD 21960	
DRD 21795	SRD 21963	

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SBH 21773	SRH 21907	SRH 22020
SRH 21778	SRH 21908	SRH 22023
SBH 21802	SRH 21909	SRH 22025
SRH 21808	SRH 21913	SRH 22027
SRH 21813	SRH 21914	SRH 22029
SRH 21815	SRH 21936	SRH 22031
SRH 21817	SRH 21939	SRH 22036
SRH 21821	SRH 21942	SRH 22038
SRH 21828	SRH 21945	SRH 22040
SRH 21830	SRH 21949	SRH 22043
SRH 21832	SRH 21952	SRH 22044
SRH 21834	SRH 21955	SRH 22046
SRH 21836	SRH 21956	SRH 22076
SRH 21837	SRH 21962	SRH 22079
SRH 21838	SRH 21964	SRH 22082
SRH 21839	SRH 21965	SRH 22086
SRH 21840	SRH 21966	SRH 22089
SRH 21841	SRH 21968	SRH 22092
SRH 21844	SRH 21969	SRH 22095
SBH 21871	SRH 21971	SRH 22099
SBH 21874	SRH 21972	SRH 22102
SRH 21880	SRH 21974	SRH 22103
SRH 21883	SRH 21978	SRH 22105
SBH 21885	SRH 21979	SRH 22107
SRH 21887	SRH 21980	SRH 22108
SRH 21889	SRH 21981	SRH 22109
SRH 21893	SRH 21998	SRH 22113
SRH 21895	SRH 22002	SRH 22114
SBH 21898	SRH 22006	SRH 22131
SRH 21901	SRH 22008	SRH 22133
SRH 21902	SRH 22010	SRH 22140
SRH 21903	SRH 22012	SRH 22172
SBH 21905	SRH 22014	DRH 22386
		DRH 22452

LRX 21717	SRX 21879	SRX 22016
SRX 21737	SRX 21882	SRX 22019
LRX 21780	SRX 21884	SRX 22021
CRX 21796	SRX 21890	SRX 22024
DRX 21797	SRX 21891	SRX 22026
DRX 21798	SRX 21896	SRX 22033
SRX 21814	SRX 21899	SRX 22037
SRX 21816	SRX 21911	SRX 22039
SRX 21818	CRX 21917	SRX 22042
SRX 21820	SRX 21937	SRX 22081
SRX 21825	SRX 21940	SRX 22084
SRX 21827	SRX 21941	SRX 22088
SRX 21829	SRX 21948	SRX 22090
SRX 21831	SRX 21953	SRX 22094
SRX 21833	SPX 21957	SRX 22098
SBX 21835	LRX 21987	SRX 22100
DRX 21858	CRX 21996	SRX 22137
DRX 21859	SRX 22005	SRX 22146
DRX 21861	SRX 22009	CBX 22186
SRX 21873	SRX 22013	CRX 22256

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CATEGORY CENGINE ASSEMBLY LUBRICANTSAPPLICABLE TO:

All Silver Shadow, T Series, Corniche and Camargue cars.

DESCRIPTION:

During the critical 'first start' conditions after engine overhaul work has been carried out, certain components are in need of additional lubrication until correct oil circulation is achieved.

PROCEDURE:

Pistons and rings should be assembled with a coating of 'Molykote G Rapid' (Part No X2/107 supplied in 50 grm. tubes or 1 kg. tins) and liberally lubricated with engine oil prior to insertion into the cylinder bores.

The camshaft and tappets should be lubricated with EP (extreme pressure) oil such as Castrol Hipress SC 140 oil.

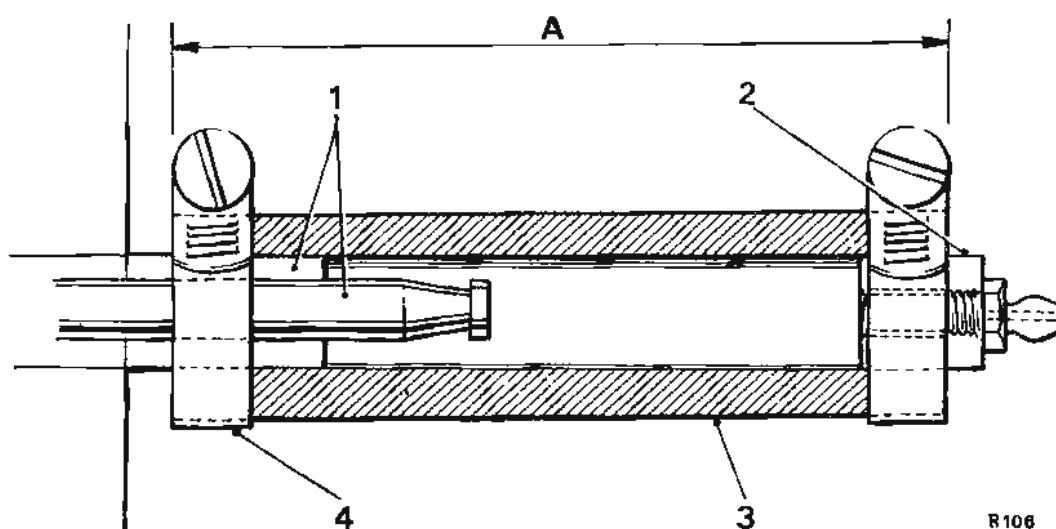
When fitting the valves to the cylinder head especially when using the rubber valve seals (Part No RH 7906) it is essential that the valve stems are thinly coated in either ROCOL MTS 1000 grease (Part Number X2/123 supplied in 5 kg. tins) or Molykote G Rapid (Part Number X2/107) and liberally lubricated with engine oil during assembly. Cleanliness is of the utmost importance.

Failure to observe these instructions can result in valve stem seizure during initial and early service life.

During the fitting of the valve stem oil seals with the cylinder heads in situ difficulty will be experienced in adequately lubricating the valve stems. To overcome this problem it will be necessary to make a simple tool which will fit over the end of the valve guide and enable Rocol MTS 1000 or Molykote G Rapid lubricant to be forced down the clearance between the valve guide and stem with the aid of a hand operated high pressure grease gun. To ease penetration between the guide/stem clearance and improve the lubrication properties mix the Rocol or Molykote with 25% engine oil.

2 of 2

Essentially the tool is a short piece of thick walled rubber tube; a drilled plug fitted with a grease nipple is secured in one end by a Jubilee clip and the other end is secured also by a Jubilee clip to the valve guide. A diagram of the tool is shown below. With the tool fitted to the valve guide apply the grease gun and force the lubricant down the guide/stem clearance.



R106

KEY: A 10,2 cm. (4 inch) approximately.

1. Valve and guide.
2. 16 mm. (0.62 inch) plug, drilled tapped and fitted with a grease nipple.
3. Thick-walled rubber tube.
4. 2 off 25,4 mm (1 inch) Jubilee clips.

CHAPTER F

PROPELLER SHAFT AND UNIVERSAL JOINTS

CHAPTER G

HYDRAULIC SYSTEM

~~ROLLS-ROYCE SILVER SHADOW
AND BENTLEY T SERIES~~

No. SY/G 38
~~Circulation: All Distributors and
Retailers~~

CATEGORY C

BRAKE PUMP TO ACCUMULATOR RIGID PIPES

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley T Series cars.

DESCRIPTION

The flexible hoses which connect the hydraulic brake pumps to the accumulators are renewed as part of the 48,000 miles (80000 km.) recommended service schedule.

Current production cars are now being fitted with rigid pipes made of mild steel in place of these flexible hoses. These rigid pipes do not need to be changed at any of the schedule services.

The flexible hoses and the rigid pipes are interchangeable and in future the new pipes will be supplied for all replacement purposes. The rigid pipes may be fitted at the appropriate schedule service and should always be fitted in pairs.

This Service Bulletin has been issued to advise the correct method of fitting the new pipes.

It is a feature of these steel pipes that the hydraulic 'knock' which may be audible on each pressure stroke of the brake pump may be accentuated. This feature is standard and no rectification work is necessary.

Although the front pump to accumulator steel pipe will fit all cars, two different rear pipes are available to allow for the difference in shape between the Rolls-Royce four speed gearbox and the torque converter transmission.

PROCEDURE

NOTE

The seven clips which secure the rigid pipes are identified in Figure 1 and this should be used in conjunction with the following text to ensure that the clips are fitted correctly.

continued...

- 2 -

1. Depressurise the hydraulic systems as described in Chapter G of the Workshop Manual.
2. Remove and discard the brake pump to accumulator flexible hoses.

FITTING OF REAR PIPE

3. Attach three clips (UR 16857, UR 16867 & UR 16858) to the rear pipe. The clips should be fitted in the upper, central and lower positions respectively, as shown at 5, 6, & 8 in Figure 2.
4. Loosely attach the extension pipe shown at 7 in Figure 2 to the pipe.
5. Loosely attach one of the larger brackets (UR 16866) to the upper clip as shown in Figure 3 - illustration B.
6. Lower the pipe into position on the rear pump and accumulator holding the pipe above the rear accumulator with the straight upper length of the pipe pointing towards the radiator. Carefully lower the pipe into place, simultaneously turning the pipe until the upper length is correctly aligned with the rear brake pump. This is a difficult operation but it should be noted that the pipe can be aligned without the use of force.
7. Finger tighten the pipe seating nuts to the pump and accumulator. At this stage the engine breather pipe may require moving forwards to clear the pipe being fitted.
8. Fit the lower clip to the rear accumulator securing bolt.
9. Secure the bracket at the upper end of the pipe to the cylinder head as shown in Figure 3 - illustration B.
10. Loosely attach the central clip (UR 16867) to the cylinder head as shown in Figure 3 - illustration A.
11. Tighten the pipe seating nuts onto the accumulator and brake pump taking care not to strain the pipes.
12. Tighten the extension pipe onto the lower end of the main pipe.

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AND BENTLEY T SERIES

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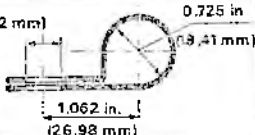
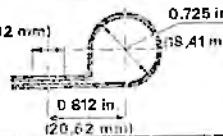
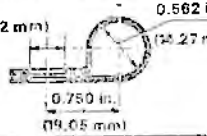
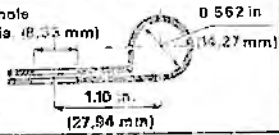
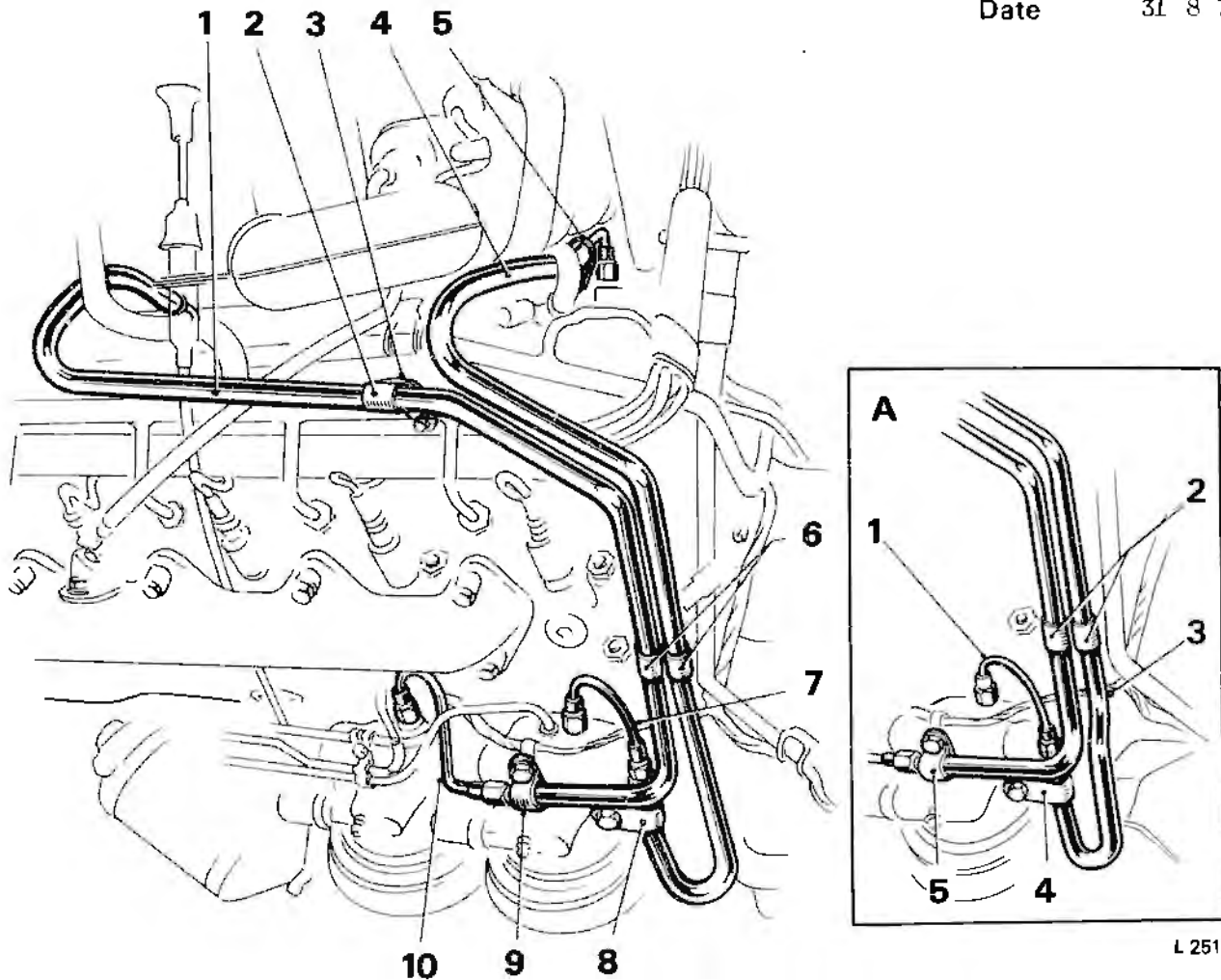
USE OF CLIPS	CLIP IDENTIFICATION	BRACKETS
1 off Rear pipe to rear accumulator	0.312 in. (7.92 mm)  UR 16858	None
3 off Upper end of front pipe Upper end of rear pipe Lower end of front pipe	0.312 in. (7.92 mm)  UR 16857	Use with longer bracket UR 15866 for upper end of rear pipe Use with short bracket UR 16863
1 off Front pipe to rocker cover	0.312 in. (7.92 mm)  UR 16854	Use with longer bracket UR 16865
2 off Both pipes to cylinder head	elongated hole 0.328 in. dia. (8.33 mm)  UR 16867	None

Fig. 1 Clip Identification.

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Fig. 2 Position of rigid pipes and clips.

1. Pipe (UR 16925)
2. Clip (UR 16854)
3. Bracket (UR 16866)
4. Pipe (UR 16927)
5. Clip (UR 16857) and bracket (UR 16866)
6. Clip (UR 16867)
7. Pipe (UR 16926)
8. Clip (UR 16858)
9. Clip (UR 16857)
10. Pipe (UR 16924)

Inset A - Cars with the four speed automatic gearbox.

1. Pipe (UR 16926)
2. Clip (UR 16867)
3. Pipe (UG 13331)
4. Clip (UR 16858)
5. Clip (UR 16857)

/continued.....

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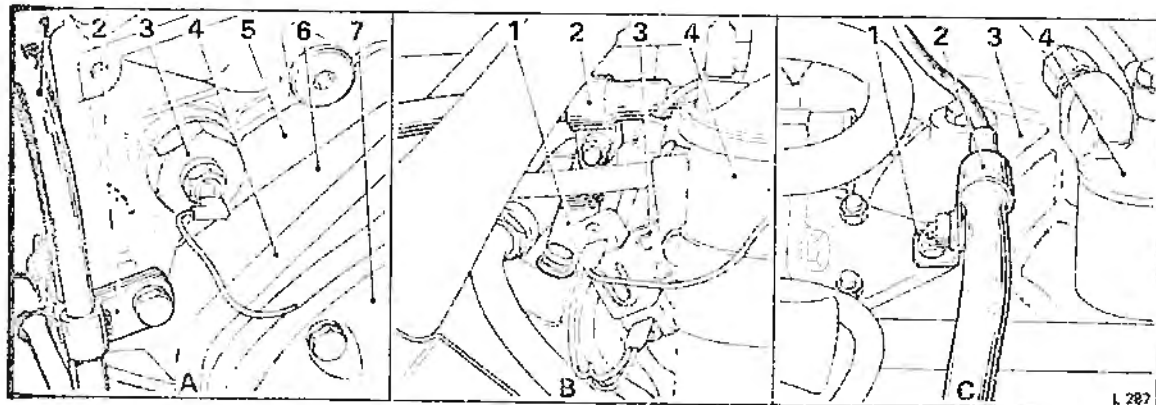


Fig. 3 Clips and locations - Pipes - Brake pump to accumulator.

- | | | | | |
|----|----|-------------------------------|----|----------------------|
| A. | 1. | Rear pipe | 5. | Cylinder head |
| | 2. | Clips | 6. | Crankcase |
| | 3. | Temperature transmitter | 7. | Transmission |
| | 4. | Transmission oil cooler pipe. | | |
| B. | 1. | Bracket | 3. | Ballast resistor |
| | 2. | Clip | 4. | Ignition Coil |
| C. | 1. | Bracket | 3. | Manifold (induction) |
| | 2. | Clip | 4. | Carburettor |

FITTING OF FRONT PIPE

13. Fit a clip (UR 16857) to each end of the front pump to accumulator pipe.
14. Fit the small bracket (UR 16863) to the upper-most clip on the pipe and fit the remaining large bracket (UR 16866) to the rocker cover securing nut, as shown in Figure 3 illustration C, and Figure 2 respectively.
15. Lower the pipe into position and finger tighten the extension piece to the main pipe.
16. Loosely attach the pipe seating nuts to the brake pump and the accumulator.

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NOTE

In order to fit the pipe to the brake pump it may be necessary on certain cars to move the refrigerant delivery hose which is attached to the refrigerant compressor. This is achieved by rotating the hose on its seating on the compressor, until sufficient clearance is obtained. The hose should not be moved too far as a foul may occur with the spring pot. The hose seating nut should not be slackened as this would allow an escape of refrigerant pressure.

17. Fit the lower clip to the rear accumulator securing bolt using two flat washers between the pipe clip and the wiring loom clip.
18. Fit the bracket on the upper clip to the bracket on the inlet manifold as shown in Figure 3 - illustration C.
19. Fit the remaining clip (UR 16867) to the front pipe and loosely attach it to the cylinder head as shown in Figure 3 - illustration A.
20. Tighten the two end nuts of the pipe and tighten the extension pipe to the main pipe.
21. Fit a clip (UR 16854) to the front pipe and secure it to the bracket on the rocker cover.

FINAL FITTING OPERATION - BOTH PIPES

22. Tighten the two clips (UR 16867) securing both pipes to the cylinder head.
23. Check that clearance exists between the front pump to accumulator pipe and the following components:
 - (a) The refrigerant delivery hose.
 - (b) The rear end of the high tension cable conduit tube.
 - (c) The extension pipe and the cylinder block.

Check that clearance exists between the rear pump to accumulator pipe and the following components:

- (a) The engine breather pipe.
- (b) The heater coolant tube.
- (c) The high tension cable conduit tube.
- (d) The extension pipe and the cylinder block.

continued...

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- 24. Top-up and bleed the high pressure hydraulic systems as described in Chapter G. Section G3 of the Workshop Manual.

MATERIAL REQUIRED

CARS FITTED WITH THE TORQUE CONVERTER TRANSMISSION

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>	
UR 16927	Rear pipe	1	
UR 16925	Front pipe	1	
UR 16926	Rear Extension pipe	1	
UR 16924	Front Extension pipe	1	
UR 16863	Bracket	1	
UR 16857	Clip	3	KIT NO. 12
UR 16866	Bracket	2	
UR 16854	Clip	1	
UR 16867	Clip	2	
UR 16858	Clip	1	

CARS FITTED WITH THE FOUR SPEED AUTOMATIC GEARBOX

As above except that Rear Pipe UR 16927 is replaced by Rear Pipe UG 13331.

All necessary parts are contained in Kit Number 14.

IMPORTANT

When ordering parts ONLY KIT NUMBERS should be quoted.

TIME ALLOWED

Fitting rigid pipes on left-hand drive cars - 7 hours (8 hours on cars fitted with Exhaust Emission Control).

Fitting rigid pipes on right-hand drive cars - 6 hours.

Topping-up and bleeding the hydraulic systems-1.1 hours.

Continued...

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ACCESSIBILITY

On cars fitted with rigid pipes the accessibility of the brake pump and the accumulator are affected, and before any service work can be undertaken on either of these items, the rigid pipes will have to be unclipped and moved to allow access to these units.

The changes to the existing procedures are listed below:

BRAKE PUMPS

1. If it is required to remove or gain access to either brake pump it will be necessary to remove all clips from that particular pipe, excepting the lower clip which secures the pipe to the accumulator. This will release the pipe sufficiently to allow it to be swung away from the pump. The pump can then be removed in the normal manner as described in Chapter G of the Workshop Manual.

FRONT ACCUMULATOR

1. In order to remove the front accumulator it will be necessary to remove only the extension pipe which connects the main front pipe to the accumulator. The front accumulator can then be removed as described in Chapter G of the Workshop Manual.

REAR ACCUMULATOR

When removing the rear accumulator the following procedure should be adopted:-

1. On left-hand drive cars the front accumulator should be removed. On right-hand drive cars the front accumulator bolts should be slackened.
2. Remove the front pipe extension piece shown at 10 in Figure 2.
3. Remove the clips shown at 6, 8, and 9 on Figure 2.
4. Remove the rear pipe extension piece.
5. The rear pipe can now be moved away from the accumulator sufficiently for the latter to be removed in the usual manner as described in Chapter G of the Workshop Manual.

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To cater for the increased work noted previously, the times quoted in Service Bulletin SY/G31 and in the Man Hour Schedule have been amended AND THE REVISED TIMES LISTED BELOW SHOULD BE USED FOR ALL CARS FITTED WITH RIGID PIPES.

<u>RIGHT-HAND DRIVE CARS</u>	<u>TIME ALLOWED</u>
FRONT ACCUMULATOR ASSEMBLY ONLY - replace Including bleeding the systems and fitting the road wheel.	2.60 hours
REAR ACCUMULATOR ASSEMBLY ONLY - replace Including slackening the front sphere for access, bleeding the system and fitting the road wheel.	4.0 hours

<u>LEFT-HAND DRIVE CARS</u>	
FRONT ACCUMULATOR ASSEMBLY ONLY - replace Including bleeding the systems and fitting the road wheel.	2.60 hours
REAR ACCUMULATOR ASSEMBLY ONLY - replace Including removing and fitting the front accumulator, bleeding the systems and fitting the road wheel.	5.0 hours

<u>ALL CARS</u>	
To replace both accumulator assemblies in one operation. Including bleeding the systems and fitting the road wheel.	5.0 hours
BRAKE PUMP - replace Including removal of carburetters, inlet manifold and bleeding the systems.	5.80 hours (7.50 on cars fitted with Exhaust Emission Control).
BOTH BRAKE PUMPS - replace Including removal of carburetters, inlet manifold and bleeding the systems	6.20 hours (7.90 on cars fitted with Exhaust Emission Control).

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BRAKE PUMP - replace 'O' rings
Including slackening of pipe for access,
removal of pump body and bleeding system.

1.8 hours

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CATEGORY C

BRAKE FLUID

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley T Series cars and all
Rolls-Royce or Bentley Corniche cars.

DESCRIPTION

From Car Serial Numbers SRH 11085 and CRH 11148 the above motor cars
have their hydraulic systems filled with Castrol/Girling Brake Fluid
Green.

It is proposed by Castrol to begin supplying this fluid to the
Australian market in approximately July of 1972. Until that time the
nearest fluid to the Castrol/Girling Brake Fluid Green performance
that is available for re-fill use in Australia is a fluid marketed
under the name of Castrol/Girlock Amber.

It is therefore recommended that until supplies of Castrol/Girling
Brake Fluid Green become available Castrol/Girlock Amber should be used
for top-up and re-fill purposes. This fluid is miscible with
Castrol/Girling Brake Fluid Green and there should therefore be no
problems with its use.

Once Castrol/Girling Brake Fluid Green becomes available it
should be used for all top-up and re-fill purposes. It is not
necessary to drain the previous mixture of Castrol/Girling Brake
Fluid Green and Castrol/Girlock Amber from the system.

Arr/JC1

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CATEGORY CREAR HEIGHT CONTROL VALVE NOISEAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley T Series and all Rolls-Royce and Bentley Corniche cars produced after the following Car Serial Numbers.

Four-door Saloon cars	SRX 9393
Two-door Saloon cars	CRX 9248
Convertible cars	DRX 9247
Long Wheelbase cars	LRX 9281

DESCRIPTION

Over the past few months there has been an increase in the incidence of noisy height control valves in service. This noise has occurred in the form of a creaking or clicking noise low down in the rear quarters of the car.

It has been found that the noise followed a change to the valve installation to increase its sensitivity to wheel movements. This change was introduced to reduce any loss of levelled height occurring in service due to settling of various components.

This change increased the loads on the operating linkage and also the rubbing speed of the internal moving parts resulting in copper being deposited on the cross-shaft with increasing friction and subsequent noise.

A bearing of improved material known as 'Fluorosint' has therefore been developed as a replacement for the present phosphor bronze bearings. These bearings are now available for fitting to valves in service.

Because of the lower friction of these 'Fluorosint' bearings and quicker action of the valve it is possible that hydraulic pipe knocks may be produced. Therefore a new type of inlet/exhaust valve has been developed to provide the correct degree of damping on the action of fluid flow in the valve. The new inlet/exhaust valve is of a composite construction consisting essentially of a steel washer with a nylon insert moulded in its centre.

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It is important that whenever 'Fluorosint' bearings are used in a valve, a new composite inlet/exhaust valve is used also, as described in the fitting instructions. In those cases where this modification is the subject of a warranty claim please quote this Bulletin number.

Because of a pressure difference which can arise between the inner and outer end faces of the bush under certain conditions, it is possible for the 'Fluorosint' bush to be moved longitudinally in its bore. This can result in the outer end of the bush pushing against the shaft seal, thus distorting the seal and allowing leakage at the operating shaft.

This pressure difference is increased by the reduction in clearance between the shaft and the bush such that fluid cannot travel across the bush and thereby equalise the pressure.

In order to overcome this, a shallow slot should be cut across the bearing face of the bush, thus ensuring that any pressure which develops in the valve housing, is felt on both end faces of the bush.

It is important that the slot is placed in the position shown in Figure 2A.

PROCEDURE

Before beginning this procedure it should be ensured that clean facilities are available for the valve overhaul.

1. Place the car on a ramp and depressurise the hydraulic system as described in the Workshop Manual T.S.D. 2476 Section G1.
2. Disengage the lower ball joints of the height control valve linkages.
3. Remove the flexible hoses and steel pipes from the rear adaptors of both height control valves.
4. The pipes from the front end of the valves are connected into junction blocks on the sub-frame crossmember. The pipes should be disconnected from the junction blocks.
5. Remove the nuts and bolts which secure the two valves to the car.
6. Remove the valves, operating linkages and steel pipes from the car as assemblies.
7. Remove the operating linkage from one of the valves after first marking the position of the lever on the shaft.
8. Remove the circlip and reservoir adaptor (see Fig. 1).

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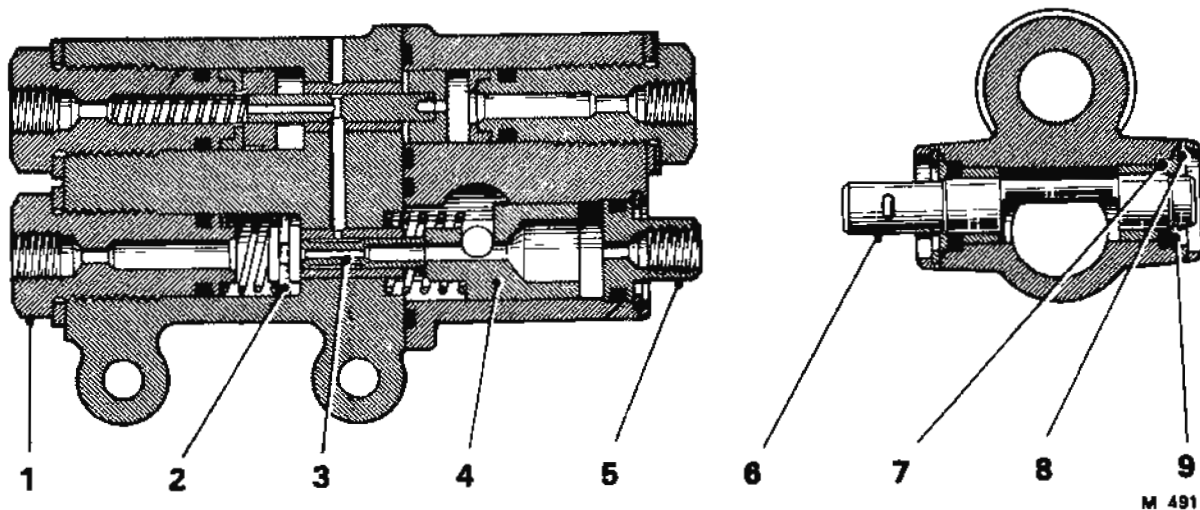


Fig. 1 Sectional View - Rear Height Control Valve

1. Adaptor-high pressure inlet
2. Inlet valve
3. Plunger valve
4. Plunger
5. Adaptor-reservoir connection
6. Operating shaft
7. Sealing ring
8. Circlip
9. Washer

9. Remove the two circlips from the operating shaft bore and remove the backing washers and seals.
10. Remove the four nuts and washers which secure the two parts of the valve together.
11. Rotate the operating shaft through 180° to disengage the shaft from the plunger.
12. Withdraw the plunger.
13. Withdraw the operating shaft from the valve noting the position of the shaft to facilitate re-assembly. Inspect the shaft for any signs of copper being deposited on the two bearing surfaces. Any deposits of copper should be carefully smoothed with fine emery tape, but it will not be necessary to remove the deposits completely.
14. Place a washer (Part Number UA 2051) on the inside edge of one of the bushes and using a suitable piece of bar, carefully tap the bush out of the housing. Repeat this operation on the remaining bush.

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15. Remove the high pressure inlet adaptor, withdrawing the spring; discard the inlet valve.
16. Fit the new inlet valve and spring ensuring that the spring is correctly located on the valve.
17. Refit the high pressure inlet adaptor.

Note The following operations which detail the fitting of the new bushes should be carefully followed. If the bushes are damaged or misaligned the valve may leak from the shaft seal.

18. Place one of the new bushes into the housing (see Fig. 2), ensure that it is square with the bore.

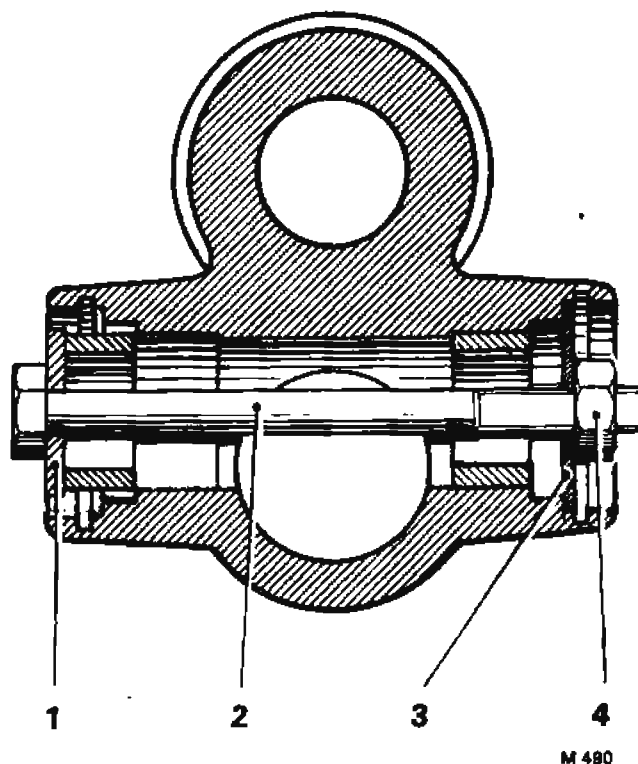


Fig. 2 Method of Fitting New Bushes

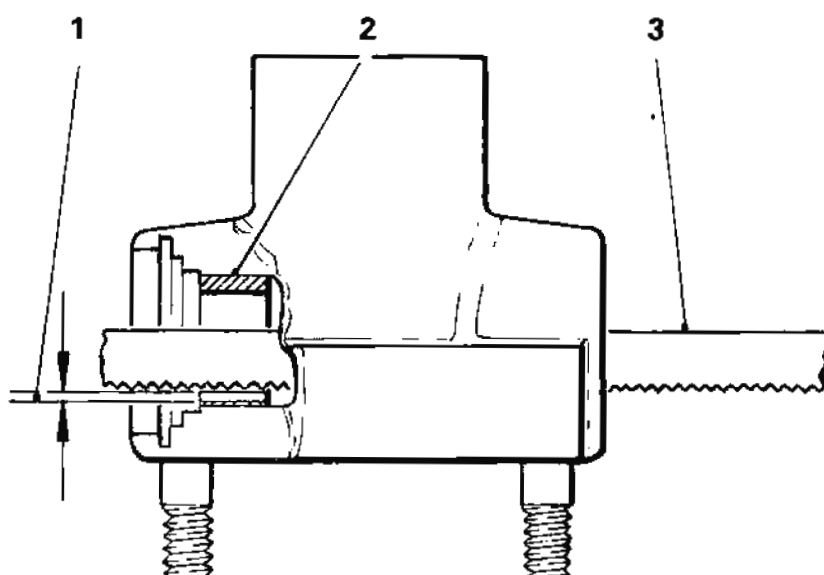
1. Small washer (UA 6102)
2. Bolt (UA 118)
3. Large Washer (UA 2053)
4. Nut (UA 301)

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19. Take a washer (Part Number UA 6102) and after ensuring that it is a free fit in the bore, place it on the outer edge of the bush. Pass a bolt (Part Number UA 118) through the washer and fit a washer (Part Number UA 2053) to the other end of the bolt. Using a nut (Part Number UA 301) carefully draw the bush into the housing until the washer (Part Number UA 6102) contacts the end of the bore.
20. Reverse the bolt and the washers and carefully draw the remaining bush into place.
21. Place the levelling valve housing with the studs pointing downwards onto a flat surface.
22. Pass a hacksaw blade through the bore of both bushes and carefully slot both bushes to a maximum depth of 0.020 in. (0.051 mm.) as shown in Figure 2A.
23. Carefully remove all burrs and debris from the bushes.



M 668

Fig. 2A Method of Slotting Bushes

1. Maximum of 0.020 in.
(0.051 mm.) slot
2. 'Fluorosint' bush
3. Hacksaw blade

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24. Thoroughly wash all parts with clean methylated spirits and dry off the compressed air.
25. Remove all exposed rubber seals and fit new seals.
26. Fit the operating shaft to the valve noting that the position of the shaft denotes whether the valve assembly will be left or right-hand.
27. Fit new shaft seals, the backing washers and circlips. The seals should be lubricated with brake fluid.
28. Insert the spring and plunger into the bore ensuring that it moves freely. Allow the nose of the plunger to pass the operating shaft then rotate the shaft through 180° to lock the plunger into position.
29. Fit a new sealing ring to the adaptor. Fit the adaptor and circlip previously removed.
30. Fit the two parts of the valve together using new seals on the housing face.
31. Repeat Operations 7 to 30 inclusive on the remaining valve.
32. To identify the valve as having been modified apply a spot of blue paint to the high pressure inlet adaptor of both valves.
33. Ensure that the valve linkage balls are free from cadmium plate, are lubricated and are correctly adjusted. Fit the operating lever in accordance with the marks previously made.
34. Refit the valves to the car, leaving the lower joints of the operating linkage disconnected.
35. Bleed the rear levelling system at the two rear bleed nipples. It is not necessary to bleed any of the braking system.
36. Distribute a weight of approximately 600 lb. (272 kg.) equally between the front and rear seats.
37. Run the engine with the gear range selector lever in the Park position and the gearchange thermal switch removed.
38. Check and adjust the levelled height as necessary; the height from the ground to the centre of the rearmost bottom bolt which attaches the crossmember mounting forging to the body sill should be 0.875 in. $\pm$ 0.125 in. (22,22 mm. $\pm$ 3,175 mm.) less than the distance from the ground to the centre of the rearmost bottom bolt attaching the rear yoke to the trailing arm (see Fig. 3).

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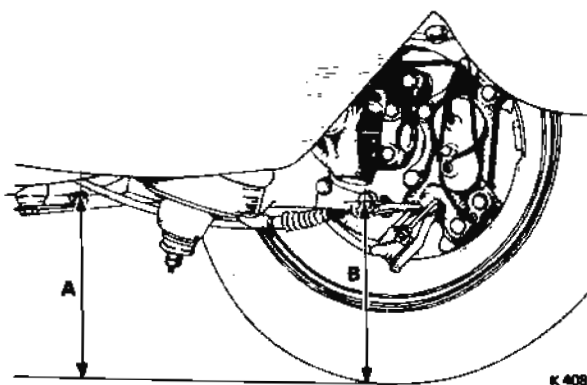


Fig. 3 Car Height Checking Points - Rear

- A. Datum to centre of forging securing bolt
- B. Datum to centre of axle yoke securing bolt

Parts Required

Kit Number - 16

Time Allowed

3.50 hrs. This time is inclusive of removal, overhaul and refitting the two valves, bleeding, resetting levelled height and road testing.

Arr/JC1/Eck

Service Bulletin issued for

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CATEGORY C

ACCUMULATOR CHARGING VALVE

APPLICABLE TO:

All Rolls-Royce Silver Shadow, Bentley T Series and Corniche motor cars.

DESCRIPTION

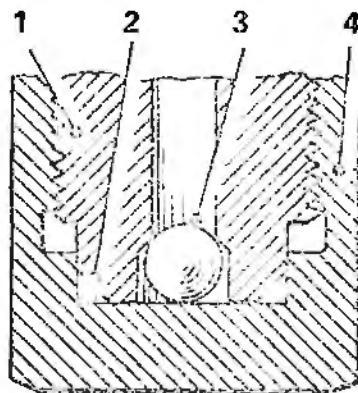
The method of sealing the cap of the accumulator sphere charging valve has been improved. The new method of sealing does not employ a nylon ball but relies on a sealing ring which seals against a seat formed in the adaptor of the accumulator sphere, as shown in Figure 1.

Whilst the existing procedures and equipment can also be used for nitrogen charging accumulators with the new sealing arrangement, it should be noted that the sealing rings and the charging valve caps are not interchangeable and care should be taken that the correct parts are used.

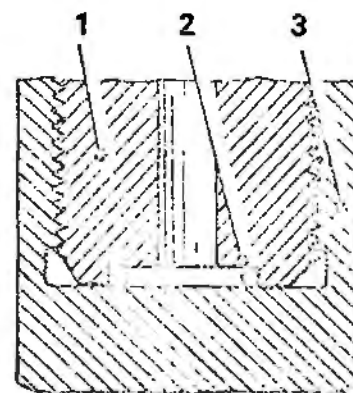
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A



B

M 438

Fig. 1 Accumulator charging valve seals

A

- 1 Accumulator lower half
- 2 Sealing ring
- 3 Ball
- 4 Sealing cap

B

- 1 Accumulator lower half
- 2 Sealing ring
- 3 Sealing cap

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CATEGORY CBRAKE PUMPSAPPLICABLE TO:

All Rolls-Royce Silver Shadow, Bentley T series and Corniche motor cars after Car Serial Numbers:

Four Door Saloons SRH 11688 and onwards but including
 SRH 11665, SRX 11677, SRH 11679, SRX 11680
 and SRH 11685.

Corniche Cars CRH 11812 and onwards but including
 CRH 11806 and DRH 11807.

Long Wheelbase Cars LRH 11816 and onwards.

DESCRIPTION:

A new brake pump cam follower has been introduced on the above cars. The new cam follower is of larger diameter and has a chamfered face, and has superior wear qualities over the previous type cam follower. The increase in diameter necessitates the use of a larger diameter push rod housing. The depth of the base of the cam follower has also been increased and in order to retain the existing push rod to pump clearance setting a shorter push rod is now fitted.

IT IS STRESSED THAT THE OLD AND NEW PARTS INDIVIDUALLY ARE NOT INTERCHANGEABLE. In the event of it being necessary to replace one or more of these components on cars prior to those listed under the heading APPLICABLE TO, a complete kit will be supplied containing the new cam follower, push rod, housing and 'O' ring and it is essential that all the parts are fitted as a complete kit.

On cars after those given under the heading APPLICABLE TO, the new parts are supplied separately. When new parts are fitted it is most important that the push rod setting is checked and reset if necessary as described in the Workshop Manual TSD 2476 Chapter E - Engine - Section E44.

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In the event of a new camshaft being fitted to a car it is essential that new followers of the increased diameter are fitted. Under no circumstances may used followers of either the small or large diameter be fitted.

The following is a list and Part Numbers for the new and displaced parts:

DISPLACED	DESCRIPTION	NEW
UE 36288	Push Rod	UE 36794
UE 34808	Push Rod Housing	UE 37428
UE 33879	Cam Follower	UE 36793
UE 33523	Retaining Ring (Cam follower)	UE 36218

For cars prior to those given under the heading APPLICABLE TO kit number RH 2541 is required.

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CATEGORY C

THE BRAKE PUMP CAM FOLLOWER

APPLICABLE TO

All Rolls-Royce Silver Shadow and Corniche cars, and all Bentley T Series and Corniche cars.

DESCRIPTION

The brake pump cam follower is retained in the bore of the pump push rod housing by a sealing ring, as shown in Figure 1.

In a number of cases it has been noticed that after a period of time has elapsed the sealing ring tends to 'grow' thus reducing its hold on the brake pump cam follower.

Whilst this effect will have no detrimental effect on the brake pump when installed, it is possible that an abnormally enlarged sealing ring will allow the cam follower to fall completely out of the push rod housings if the engine tappet cover is disturbed.

It is important therefore that before fitting a tappet cover to an engine, care is taken to ensure that the cam follower cannot slide out of the push rod housing. If necessary new sealing rings should be fitted to both brake pumps.

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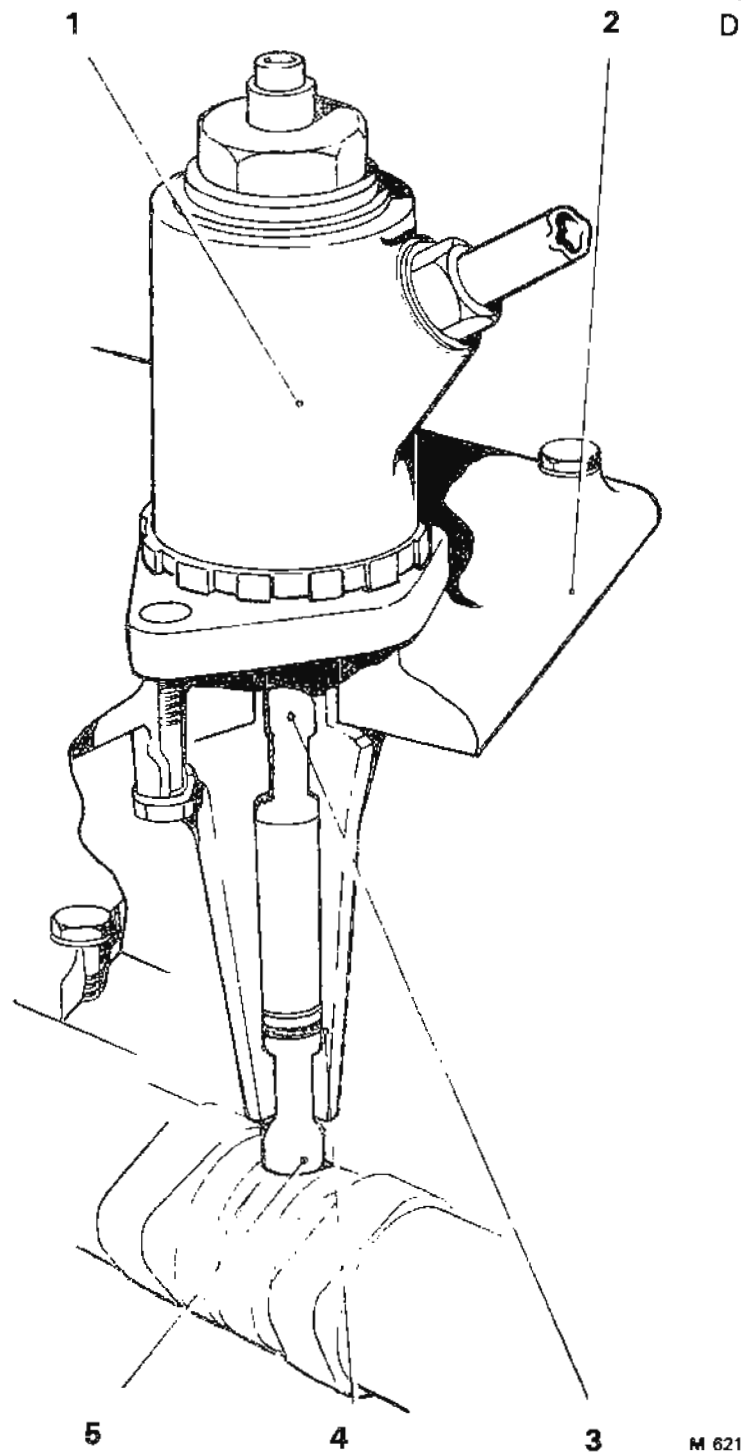


Fig.1 Hydraulic pump sealing ring
1 Pump body 3 Plunger
2 Tappet cover 4 Sealing ring
5 Cam follower

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CATEGORY CBRAKE ACCUMULATOR PRESSURE SWITCHAPPLICABLE TO

All Rolls-Royce Silver Shadow and Corniche cars, and all Bentley T Series and Corniche cars.

DESCRIPTION

All cars now leaving the factory are fitted with a revised hydraulic accumulator pressure switch. The new switch incorporates various internal changes and at the same time a superior type of electrical connector has been introduced.

The new switch will be supplied for all replacements in the near future. However, the previous 'Lucar' type of connector is not suitable for use with the new switch. Therefore, the new switch will be supplied with a link loom to enable it to be fitted to earlier cars. The material will be supplied in kit form.

Parts Required

<u>Displaced</u>	<u>Description</u>	<u>New</u>
UD 17893	Assy.-Pressure switch- Brake accumulator	UD 17952
	Kit - Assy.-Pressure Switch - Link loom	RH 8502

TIME ALLOWED 0.3 hrs.

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CATEGORY C

BRAKE PUMP TO ACCUMULATOR PIPES

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley T Series and all Rolls-Royce and Bentley Corniche cars produced after Car Serial Number SRH 10714.

DESCRIPTION

The steel pipes which connect the hydraulic brake pumps to the accumulator valves have been changed on all cars produced after the above Car Serial Number; it should also be noted that some 50 cars produced before this number were similarly affected.

Previously the pipes were constructed mainly of 0.50 in. (12,7 mm.) steel piping, the two end fittings being carried on 0.250 in. (6,35 mm.) Bundy stub pipes brazed to the main pipe.

The new pipes are constructed in one piece 0.375 in. (9,52 mm.) diameter Bundy tubing. However, because of the increased diameter Bundy pipe it has been necessary to modify the size of the adaptors which connect the pipes to the brake pumps and to the accumulators.

The routing of the new pipes is virtually identical to that followed by the previous pipes and the clipping arrangement is similar. Both the route and clipping of the new pipes are shown in Figure 1.

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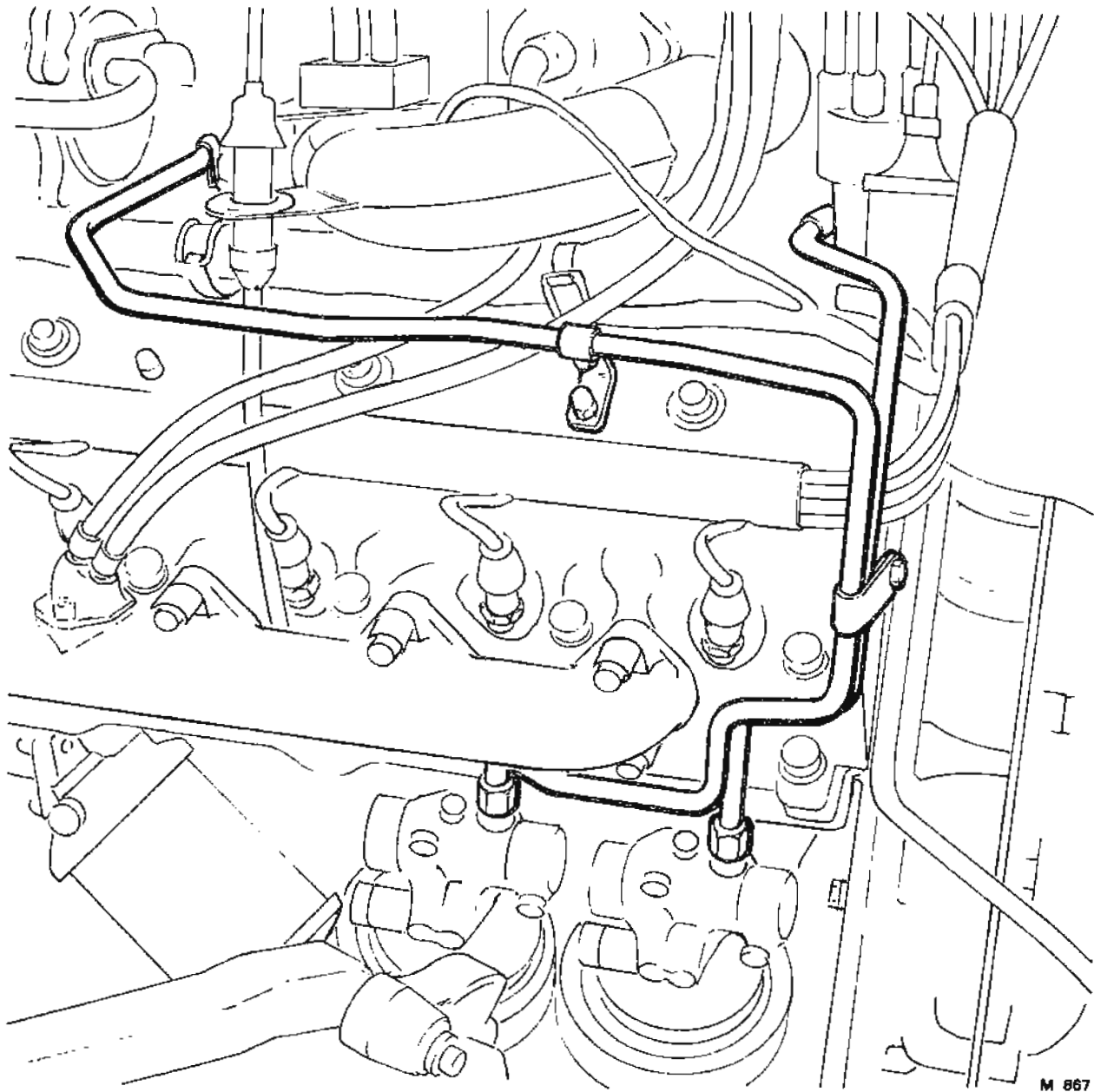


Fig. 1 Pipes and Clipping arrangement

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CATEGORY CCASTROL RR 363 BRAKE FLUIDAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars.

DESCRIPTION:

New cars now leaving the factory are filled with a new type of brake fluid called Castrol RR 363 brake fluid.

This fluid formulated and manufactured by Castrol for use in Rolls-Royce cars complies with the requirement of Rolls-Royce Motors Ltd and those countries in which Rolls-Royce and Bentley cars are sold.

It must be noted that this new fluid is now the only brake fluid recommended by Rolls-Royce Motors Ltd for use in the above cars.

Castrol RR 363 is however miscible with Castrol/Girling Green and Castrol/Girling Crimson brake fluid and the Australian Castrol/Girlock Amber brake fluid. Therefore, it is quite permissible to use Castrol RR 363 for topping up purposes on any of the above cars.

The fluid will be available from Castrol through their own outlets in the majority of territories throughout the world. In those isolated cases where the local Castrol outlet is unable to obtain Castrol RR 363, the fluid may be obtained by the Rolls-Royce Distributor or Retailer direct from Rolls-Royce Motors Limited. It must be stressed that the fluid will not be available from Rolls-Royce Motors Ltd to any Rolls-Royce Distributor where the local Castrol outlet is able to order supplies.

A new self-adhesive brake fluid reservoir label is also obtainable from Rolls-Royce Motors Limited. This is worded so as to supersede previous labels and should be used on all the above cars when the new fluid is used in the hydraulic system even when using the fluid for topping up purposes only. Before applying the label it must be soaked in clean water and the surface to which it is to be stuck should be thoroughly cleaned.

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It is noted that new cars filled at the factory with this fluid use a label which is riveted to the reservoir. However, a number of cars were filled with the fluid before the riveted label was ready and may leave the factory in this condition. Please ensure that a self-adhesive label is fitted to these cars at the earliest opportunity.

PARTS REQUIRED:

New self-adhesive reservoir label RH 8713

New brake fluid - Please order fluid by name and quantity
i.e. 1 gallon of Castrol RR 363 brake
fluid.

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CATEGORY C

THE LOW BRAKE FLUID WARNING LAMP

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley T Series cars,
produced after SRH 13754 and LRA 13921.

DESCRIPTION:

The low brake fluid level warning device fitted to the
above cars is prevented from inadvertant operation by
an electrical delay device.

The circuit of the warning lamp is shown in Figure 1.

All cars, except Corniche cars, produced after car serial
number:

SRH 16668

are fitted with anti-surge covers around the fluid reservoir
floats. This prevents normal fluid surge from affecting
the floats, eliminating the need for the electrical delay
device. This device has therefore been deleted.

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EARLY RESERVOIR

NEW RESERVOIR

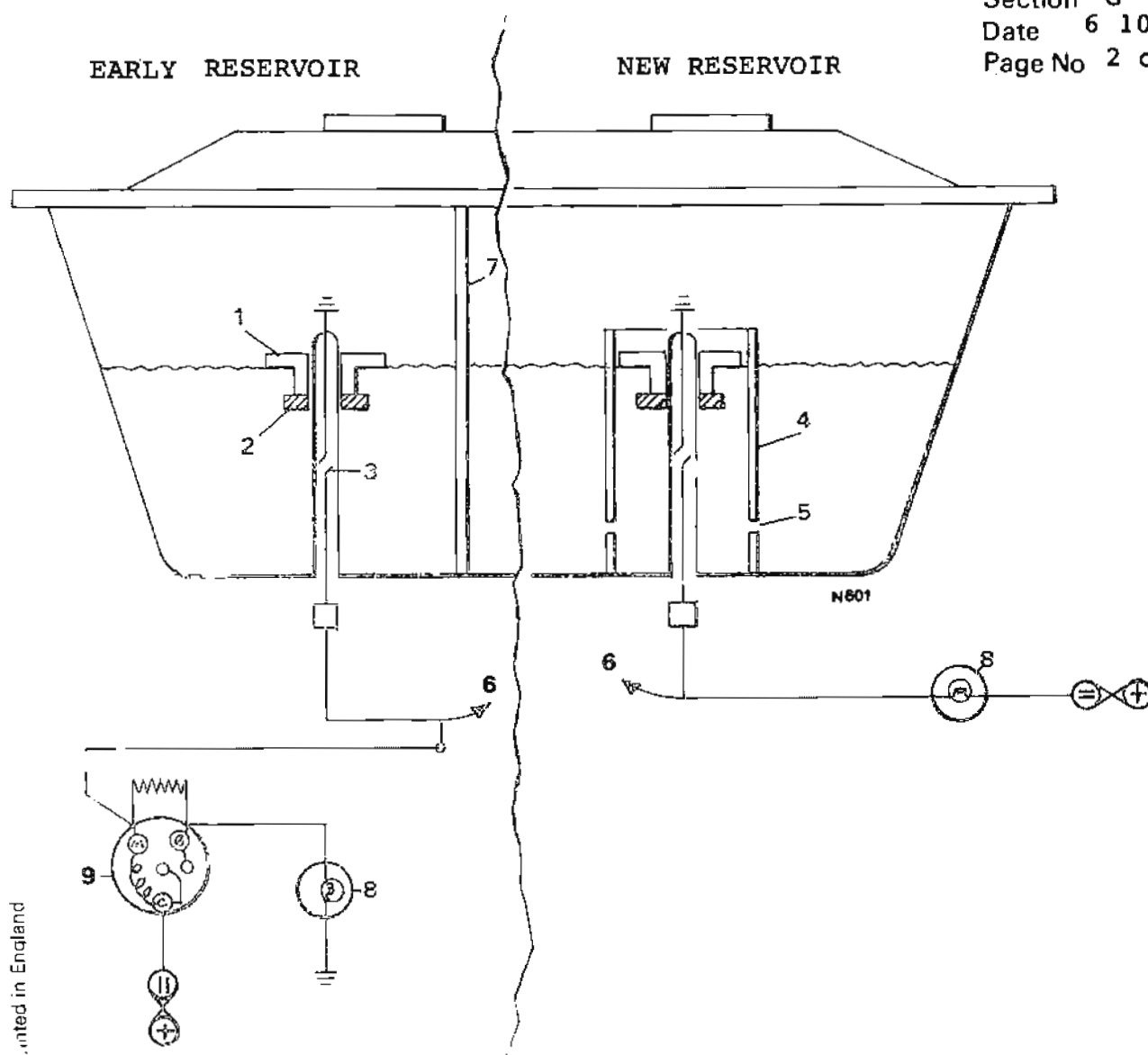


Figure 1. Low Fluid Level Warning Devices.

- | | |
|--------------------|--------------------------------|
| 1. Float | 6. Connection to second switch |
| 2. Magnet | 7. Dividing plate |
| 3. Switch contacts | 8. Low Fluid warning lamp |
| 4. Surge baffle | 9. Thermal delay switch |
| 5. Bleed holes | |

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CATEGORY C

THE FOOT OPERATED PARKING BRAKE

APPLICABLE TO:

All left hand drive Rolls-Royce Silver Shadow and Corniche cars and all left hand drive Bentley 'T' Series and Corniche cars, produced after the following car serial numbers:-

SRB 16079 - Four Door Saloons
LRB 15884 - Long Wheelbase cars
CRB 16011 - Corniche cars

It should be noted that the foot operated parking brake has also been fitted to a further fifty left hand drive cars produced prior to the above car serial numbers.

DESCRIPTION

All left hand drive cars produced after the above car serial number are fitted with a foot operated parking brake.

Whilst the parking brake cable, the intermediate lever and the rear brake caliper linkage remains basically the same, the brake is now applied by means of a foot pedal. Releasing the brake is achieved by pulling a release handle which is built into the knee roll trim.

The main components of the parking brake mechanism are shown in Figures 1, 2, 3, and 4.

APPLICATION OF PARKING BRAKE

Referring to Fig. 1, pressing the parking brake pedal will pivot the main operating lever thereby pulling the cable and applying the parking brake. At the same time the movement of the operating lever will draw the locking rod down through the hole in the locking plate. The warning lamp switch will also be operated to illuminate the warning lamp.

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On removing the foot from the pedal, the locking rod will attempt to slide back through the locking plate. However, friction between the two will cause the locking plate to rotate upwards about its pivot point. This action causes it to lock onto the rod and thus hold the mechanism in the applied position as shown in Fig. 2. It is therefore important that the locking rod is not lubricated as this may interfere with the locking action.

RELEASE OF PARKING BRAKE

Referring to Fig. 2, operating the release handle against the return spring pressure causes the release lever to move around its pivot point.

This movement brings the lever into contact with the locking plate and will then move the locking plate downwards around its pivot point. This breaks the grip between the locking plate and the rod, thus allowing the rod to slide upwards through the locking plate until the rod strikes the rubber buffer. Therefore the parking brake will be released and the parking brake warning light will be extinguished.

The release handle will now return to its 'off' position under the influence of its return spring.

The force tending to hold the park brake pedal in the 'off' position is provided by the main spring of the intermediate lever and the return springs on each rear brake caliper.

RELEASE HANDLE FREE TRAVEL

The free travel of the release handle takes place between the release lever contacting its stop pin (item 4 Figure 3) and the release lever pad contacting the locking plate. The setting of this free travel is illustrated in Figure 3.

When the parking brake pedal is pressed slowly, the lock plate will rise from its off position for approximately one third of lock rod travel and will fall for the remaining rod travel.

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To adjust the amount of release handle free travel the following procedure should be followed:-

PROCEDURE

1. Slacken both bolts which secure the actuator lever to the release lever as shown in Fig. 3 .
2. Slowly press the parking brake pedal until the locking plate is in its highest position. This will approximately coincide with one third of the length of the locking rod.
3. Ensure that the release lever is resting against its stop pin.
4. Move the actuator lever about its pivot bolt until a clearance of 0.005 to 0.010 inches (0.127 mm to 0.254 mm) exists between the tip of the actuator lever and the locking plate as shown at 3 in Fig. 3.
5. Tighten both actuator lever bolts and then re-check the setting. The smaller of the two bolts must only be torque tightened to 5 lbs/ft (0.7 kg/m).

ADJUSTMENT OF PARKING BRAKE SWITCH

PROCEDURE

1. Apply the parking brake such that a clearance of 0.125 inches (3.18 mm) exists between the top of the locking rod and the bottom face of the rubber buffer as shown at 2 in Fig. 3.
2. Slacken the two bolts which secure the micro switch to the mounting plate and set the switch such that it is just on the point of operating.

LOCKING ACTION PROBLEMS

In the unlikely event of any problem occurring with the locking action between the lockplate and the lockrod the following action should be taken:

1. Inspect the plating of the locking rod.
2. If the rod plating is worn through at any point the rods should be replaced. If the plating is acceptable the locking plate should be replaced.

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NOTE:

When either a new lock rod or lock plate is fitted the lock plate hole should be sparingly lubricated with Retinex A grease. Do not lubricate or polish the lock rod which must be clean and dry.

REAR CALIPER LINKAGES

The rear caliper linkages remain unchanged. Therefore the methods of setting the linkage or replacing the parking brake pads remains unchanged and are as described in Chapter G Section G 16 of the Workshop Manual.

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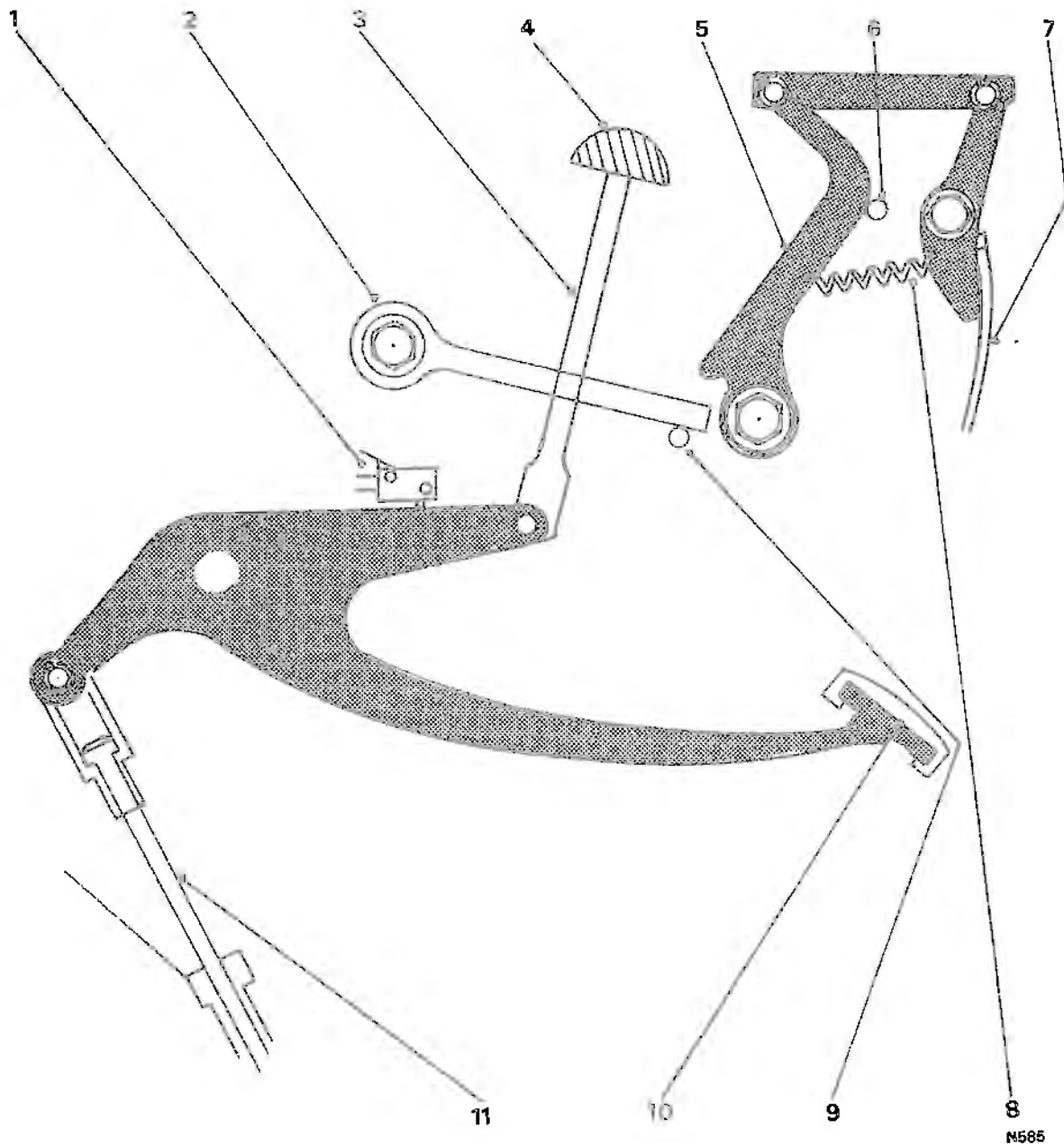


Figure 1. Parking Brake OFF

- | | |
|------------------------|-------------------------|
| 1. Warning Lamp Switch | 7. Release Handle |
| 2. Locking Plate | 8. Return Spring |
| 3. Locking Rod | 9. Locking Plate Stop |
| 4. Rubber Buffer | 10. Parking Brake Pedal |
| 5. Release Lever | 11. Parking Brake Cable |
| 6. Release Lever Stop | |

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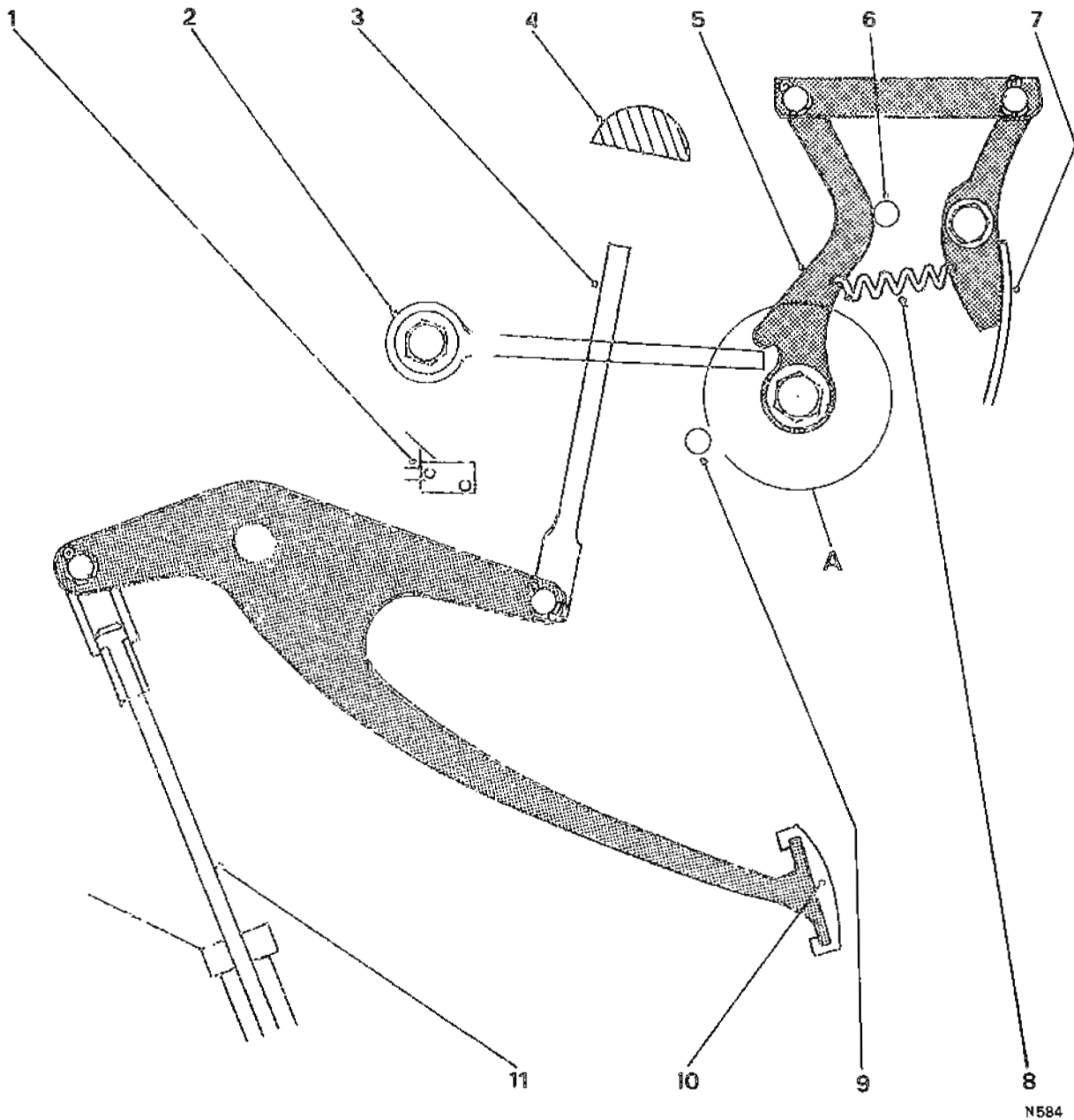


Figure 2. Parking Brake Applied

- | | |
|------------------------|------------------------------|
| 1. Warning Lamp Switch | 7. Release Handle |
| 2. Locking Plate | 8. Return Spring |
| 3. Locking Rod | 9. Locking Plate Stop |
| 4. Rubber Buffer | 10. Parking Brake Pedal |
| 5. Release Lever | 11. Parking Brake Cable |
| 6. Release Lever Stop | A. Details shown in Figure 3 |

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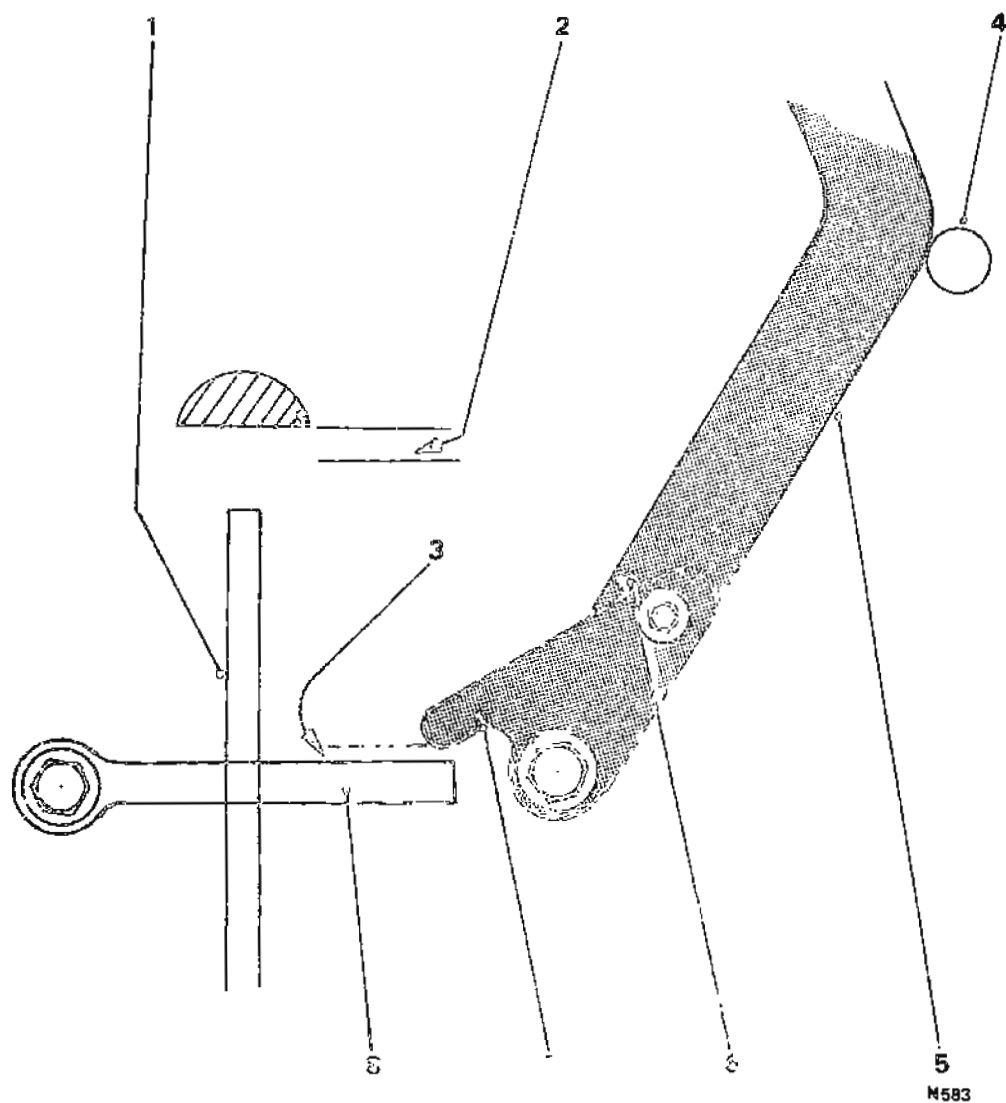


Figure 3.

Release Lever Setting

- | | |
|----------------------------|--------------------|
| 1. Locking rod | 5. Release Lever |
| 2. Switch Setting | 6. Adjustment Slot |
| 3. Release Lever Clearance | 7. Actuator Lever |
| 4. Release Lever Stop | 8. Locking Plate |

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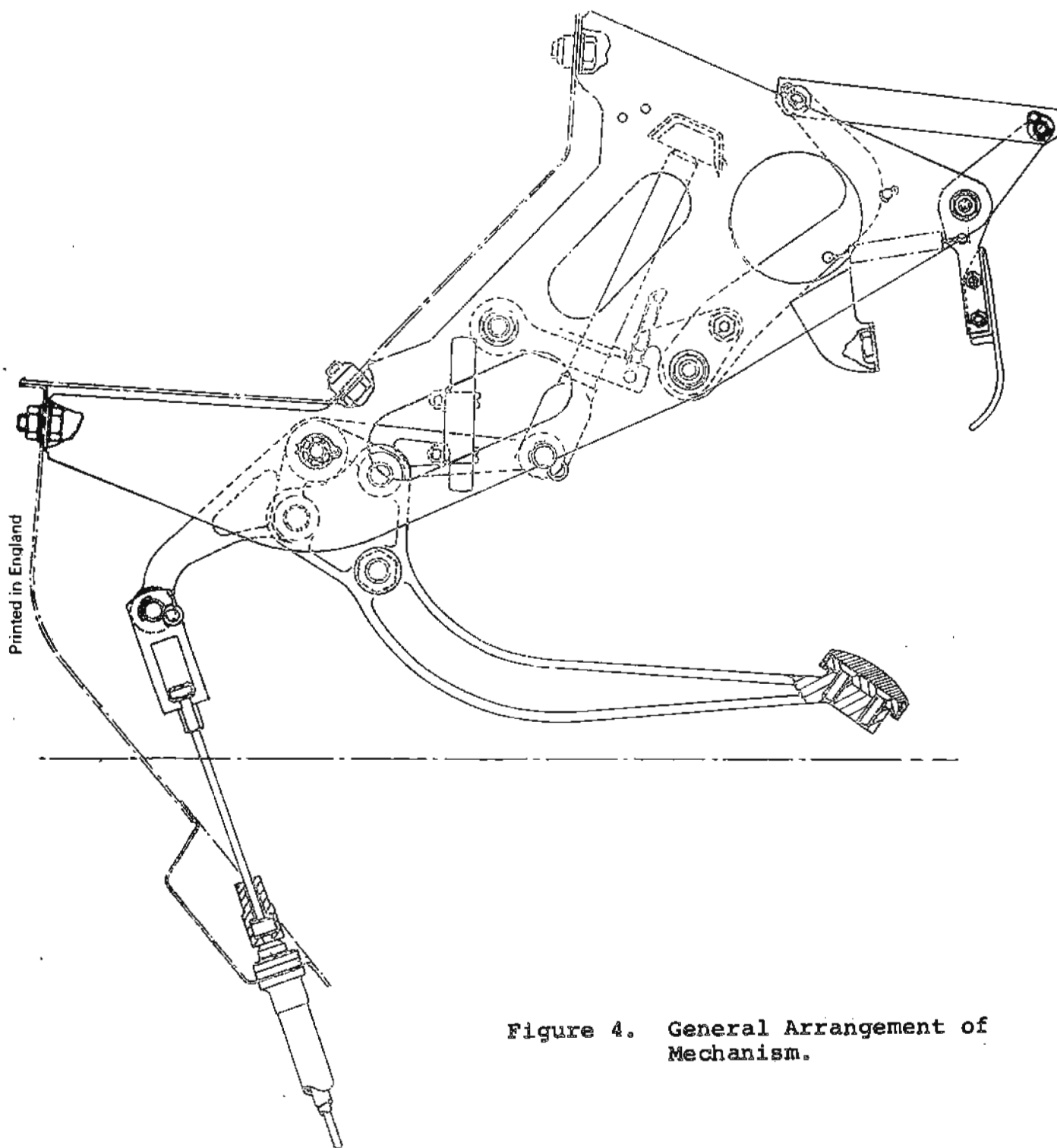


Figure 4. General Arrangement of
Mechanism.

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CATEGORY CCHANGES TO THE BRAKE ACTUATION MECHANISMAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars.
All Bentley 'T' Series and Corniche cars.

DESCRIPTION

This Bulletin describes the revised settings for the changes which have been made to the above mechanism. The opportunity has also been taken to describe these changes in detail. The first part of this Bulletin is therefore for information purposes only. If on account of the number of changes and the different cars to which they apply, the Bulletin appears confusing, then service personnel need only refer to the section Procedure and Summary of important points when requiring setting directions.

Since the introduction of the rubber on-stop on the brake actuation linkage mechanism, there have been several changes to the assembly. When referring to the changes listed below the following points should be noted.

1. The changes are given in chronological order.
2. A comprehensive list of car serial numbers is given for each change.
3. Some of the changes were only introduced on four-door cars others only on two-door cars, and only on cars destined for certain territories. For ease of identification three territories are given.
 - a) Cars built for use in Sweden.
 - b) Cars built to comply with the North American Federal Safety Regulations.
 - c) All other territories.

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The types of car are divided into -

- i) Four-door saloons (including Long Wheelbase cars)
 - ii) Two-door cars (two-door Convertible, two-door Saloon and all Corniche cars).
4. Where no reference is made to any particular territory or type of car, no change has been made.
 5. Increased leverage ratio brake pedal. This has been achieved by increasing the lever ratio on the brake pedal operating lever and by minor changes to the brake actuation mechanism, such that the load required at the pedal for any given braking force is significantly reduced.
 6. The intermediate solid on-stop has an external diameter of 0.843" (21.4mm).

The large diameter on-stop has a diameter of 1.125" (28.6 mm).

NOTE: With the introduction of the later of these changes the master cylinder off-stop clearance has been revised to .025 - .030 in. (0.635 - 0.761 mm). In the interests of commonisation this setting is now specified as standard for all brake actuation boxes fitted to all Rolls-Royce Silver Shadows, Bentley 'T' Series, Corniche cars and two-door Coachbuilt cars.

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1ST CHANGE

APPLICABLE TO: All Rolls-Royce Silver Shadow)
two-door Convertible, two-door) built for use in
Saloons and Corniche cars.) Sweden from Car
Serial Number:
All Bentley 'T' Series two-door)
Convertible, two-door Saloons)
and Corniche cars.)

SRH 8103 (four-door Saloon)	LRX 8126 (Long Wheelbase
including:	Saloon)
SRH 7974	DRH 8091 (two-door
SRH 8008	Convertible and
SRH 8014	including: Corniche)
SRH 8017	DRH 8089
SRH 8020	
SRH 8058	CRH 8046 (two-door Saloon
SRH 8082	including: and Corniche)
excluding	CRH 7998
SRH 8123	

REASON: To introduce a master cylinder circuit failure warning light.

- ALTERATION: 1. Replacement of rubber on-stop by intermediate solid on-stop.
2. Introduction of microswitch on brake actuation mechanism.

Refer to diagram 4.

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2ND CHANGE

APPLICABLE TO: All Rolls-Royce Silver Shadow and)
Corniche cars)
All Bentley 'T' Series and Corniche) built to comply
cars)
with the North American Federal Safety Regulations
from car serial number

SRX 11135 (four-door Saloons)	LRX 11252 (Long Wheelbase Saloons)
including:	including:
SRX 11119	LRX 11157
SRX 11123	LRX 11158
SRX 11127	LRX 11159
SRX 11131	LRX 11160
	LRX 11161
DRX 11206 (all Corniche cars)	LRX 11163
including:	LRX 11164
DRX 11152	LRX 11165
	LRX 11244
	LRX 11246
	LRX 11247
	LRX 11249
	LRX 11250

REASON: To introduce 'light' pedal action on all cars built to
comply with the North American Federal Safety Regulations.

- ALTERATION: 1. Replacement of the brake operating lever by one
with an increased leverage.
2. In order to ensure the correct operation of the
brake actuation assembly at all times it was
also necessary to increase the brake pedal
height - i.e. increase the brake pedal to toe-
board clearance.

Refer to diagram 1.

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3RD CHANGE

(Coincident with Changes to the Electrical Specification 1972).

APPLICABLE TO: All four-door saloons built to comply with the
North American Federal Safety Regulations from
car serial number
SRH 13754 (four-door Saloons)
LRA 13921 (Long Wheelbase Saloons)
All other four-door Saloons from car serial number
SRH 13754 (four-door Saloons)
LRX 13973 (Long Wheelbase Saloons)

REASON: To introduce a master cylinder circuit failure warning
light on all four-door Saloons (previously only fitted
to cars built for use in Sweden).

ALTERATION: 1. Replacement of rubber on-stop by intermediate
solid on-stop.
2. Introduction of microswitch on brake actuation
mechanism.
3. On four-door cars built to comply with the North
American Federal Safety Regulations it is still
necessary to retain the increased brake pedal
to toe-board clearance.

Refer to diagram 2 (four-door cars built to comply
with the North American Federal
Safety Regulations)
4 (all other four-door saloons)

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4TH CHANGE

(Coincident with Changes to the Electrical Specification 1972)

APPLICABLE TO: All Rolls-Royce and Bentley Corniche cars from car
serial number

DRH 13861 (Corniche convertible)

CRH 13984 (Corniche Saloon)

REASON: To introduce 'light' pedal action on all two-door cars
(previously only fitted to cars built to comply with the
North American Federal Safety Regulations).

- ALTERATION:
1. Replacement of brake operating lever by one with
an increased leverage.
 2. Note that cars built for use in Sweden do not
have the rubber on-stop but retain the inter-
mediate solid on-stop and microswitch.
 3. In order to ensure the correct operation of the
brake actuation assembly at all times it was
also necessary to increase the brake pedal
clearance on both Swedish and other cars.

Refer to diagram 2 (all two-door cars built for use
in Sweden)

- 1 (all two-door cars other than those
built for use in Sweden).

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5TH CHANGE

REASON: To replace rubber on-stop by intermediate solid on-stop on two-door cars with 'light' pedal action (previously only fitted to cars built for use in Sweden).

- ALTERATION: 1. Replacement of rubber on-stop by intermediate solid on-stop.
2. Introduction of microswitch - not utilised except on cars built for use in Sweden.

Refer to diagram 2.

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6TH CHANGE

APPLICABLE TO: All Rolls-Royce Silver Shadow and Bentley 'T' Series cars built to comply with the North American Federal Safety Regulations from car serial number

SRB 15039 (four-door Saloons)	LRB 15059 (four-door Long Wheelbase Saloons)
including:	including:
SRB 14954	SRX 15011
SRB 14956	SRB 15015
SRB 14959	SRB 15021
SRB 14964	SRB 15025
SRB 14968	SRB 15031
SRB 14970	SRB 15035
SRB 14975	SRB 15039
	LRA 14778
	LRA 14840

All Rolls-Royce and Bentley Corniche cars from car serial number:

CRX 15046 (Corniche Saloons)	DBH 14995 (Corniche Convertible)
including:	including:
CRX 14992	DBH 14887
CRH 14994	

REASON: To replace intermediate solid on-stop by one of a larger diameter on all 'light' brake pedal action cars, thus commonising pedal height.

- ALTERATION:
1. Replacement of intermediate solid on-stop by large diameter on-stop.
 2. Pedal height setting of all 'light' brake pedal action cars lowered to original standard setting.

Refer to diagram 3.

continued ..

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7TH CHANGE

APPLICABLE TO: All Rolls-Royce Silver Shadow four-door Saloons and
All Bentley 'T' Series four-door Saloons other than
those built to comply with the North American
Federal Safety Regulations from car serial number

SRH 15854	LRH 15676 (Long Wheelbase
including:	cars)
SRH 15707	SRH 15838
SRH 15829	SRH 15839
SRH 15832	SRH 15848
SRH 15833	SRH 15849
SRH 15834	SRH 15850
SRH 15835	SRH 15851
SRH 15836	

REASON: To introduce 'light' pedal action on all cars not already
so equipped.

ALTERATION: 1. Replacement of brake operating lever by one with
an increased leverage.

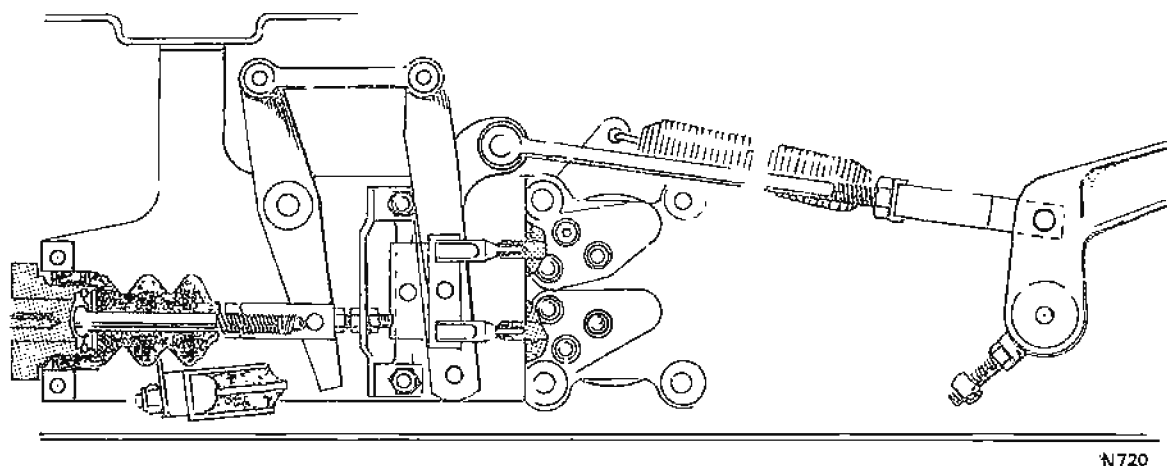
2. Replacement of the intermediate solid on-stop by
the large solid on-stop.

Refer to diagram 3.

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Fig. 1

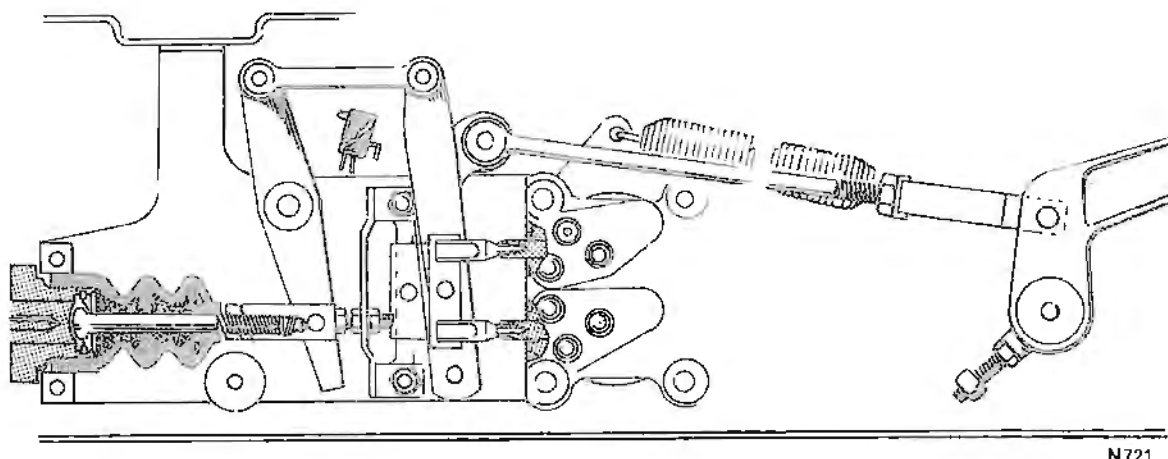
Illustrating rubber on-stop combined with 'light' brake pedal action

ON-STOP SETTING	.750 - .765 in. (19.05 - 19.44 mm)
BRAKE PEDAL HEIGHT	4.49 - 4.50 in. (114.0 - 114.2 mm)

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Fig. 2

Illustrating intermediate (.843" 21.4 mm dia) solid on-stop combined with 'light' brake pedal action and master cylinder circuit failure warning light switch.

ON-STOP SETTING	0.775 - 0.800 in. (19.68 - 20.32 mm)
BRAKE PEDAL HEIGHT	4.49 - 4.50 in (114.0 - 114.2 mm)

continued...

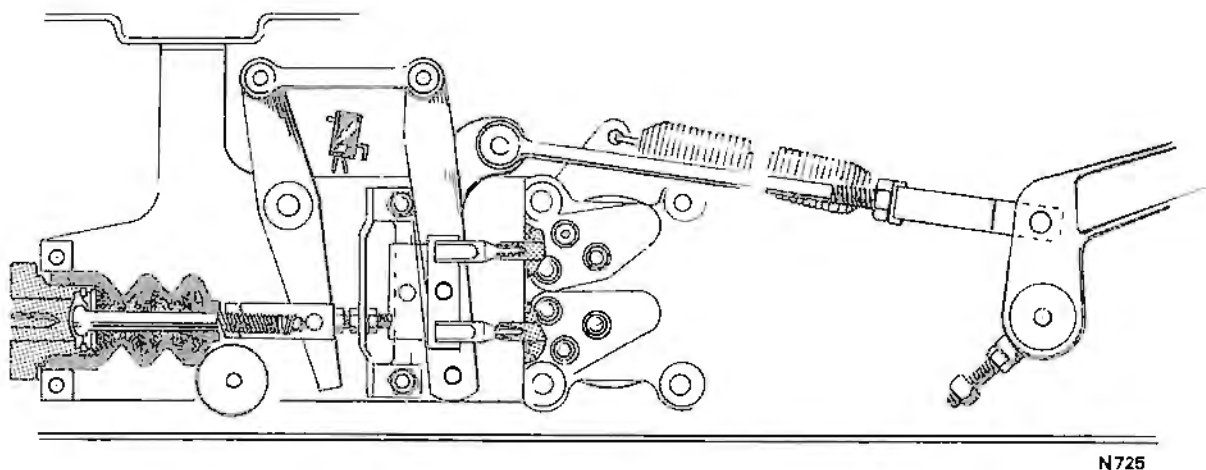
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Fig.3

Illustrating large diameter (1.125 in. 28.6 mm) solid on-stop combined with 'light' brake pedal action and master cylinder circuit failure warning light switch.

ON-STOP SETTING	.630 - .665 in (16.0 - 16.62 mm)
BRAKE PEDAL HEIGHT	4.39 - 4.40 in (111.51 - 111.76 mm)

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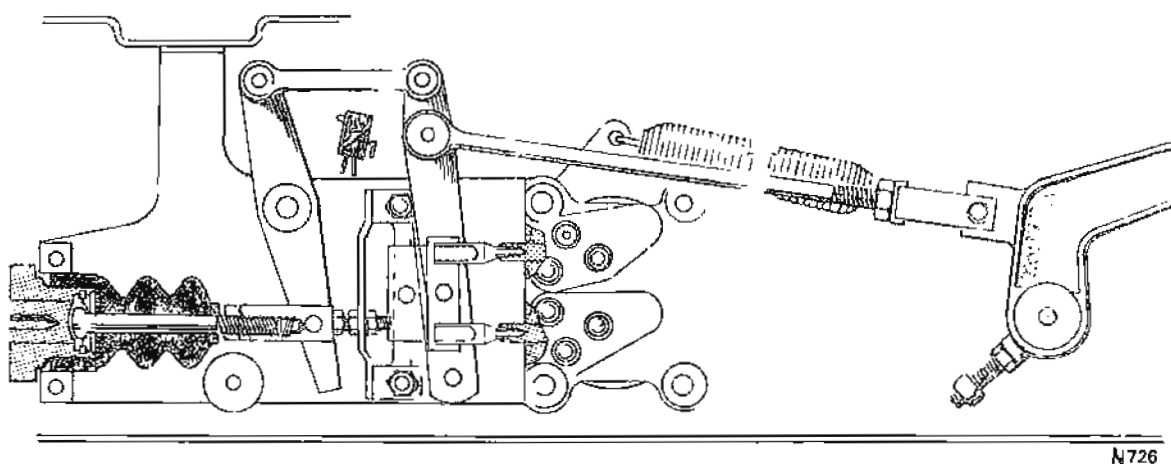


Fig. 4

Illustrating intermediate (.843 in. 21.4 mm) solid on-stop combined with early brake pedal action and master cylinder circuit failure warning light switch

ON-STOP SETTING	0.775 - 0.800 in (19.68 - 20.32 mm)
BRAKE PEDAL HEIGHT	4.39 - 4.40 in (111.51 - 111.76 mm)

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The main purpose of this Bulletin is to describe the various changes which have taken place and to inform service personnel of the revised settings.

Because of the large number of variations and the spread of the car serial numbers affected, it may sometimes prove difficult to determine which particular arrangement is fitted to any one car. However, whether the assembly is of the 'light' pedal or early type can be determined by visual inspection. Once this is determined the setting procedure is straightforward. Thus it is suggested that the following method should be adopted when checking or resetting the brake pedal height and master cylinder off-stop settings.

PROCEDURE:

The brake pedal operating lever and brake actuation operating rod should be examined.

If the jaw at the pivot point securing the brake actuation rod to the brake pedal operating lever is on the brake actuation rod, then the mechanism is of the early type (See Fig. 4).

If the jaw is integral with the brake pedal operating lever then the mechanism is of the 'lighter' pedal type (See Fig. 1, 2 and 3).

- SETTINGS: EARLY CARS
1. All cars having the early mechanism should have the standard pedal height (refer Workshop Manual TSD 2476 Chapter G Page G 78).
 2. The master cylinder off-stop clearance should be set to .025" - .030" (0.635 - 0.76 mm).

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LATER CARS

1. All cars having the later 'light' pedal mechanism. Here there are two different pedal height settings which should be used as appropriate. If the mechanism has the latest large solid on-stop (1.25" 28.6 mm diameter) the brake pedal height should be set to the standard pedal height as above.

All other cars having the 'light' pedal mechanism should have the pedal height increased by 0.100" (2.54 mm).

2. The master cylinder off-stop clearance should be .025" - .030" (0.635 - 0.76 mm).

MASTER CYLINDER CIRCUIT FAILURE WARNING LIGHT SWITCH - TO ADJUST

The microswitch must be adjusted after the on-stop has been set to the correct clearance. The switch should be adjusted such that the contacts can be heard to operate immediately prior to the master cylinder operating lever touching the on-stop.

SUMMARY OF IMPORTANT POINTS

1. 'Lighter' brake pedal action cars can be identified by examining the brake pedal operating lever and brake actuation mechanism operating rod.

'Lighter' pedal action cars have the jaw, of the pivot point securing the actuation operating rod to the brake lever, integral with the brake operating lever. See Fig. 1, 2 and 3.

Early cars have the jaw screwed onto the brake actuation operating rod - See Fig. 4.

2. The larger diameter on-stop has an external diameter of 1.125 (28.6 mm). The intermediate diameter on-stop has an external diameter of 0.843" (21.4 mm).
3. All cars having the 'lighter' brake pedal action and which are fitted with any on-stop other than the large diameter on-stop (1.125" 28.6 mm) must have the higher brake pedal setting.

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4. All cars having the 'lighter' brake pedal action fitted with the large diameter on-stop and all cars with the early brake actuation mechanism should have the standard pedal height setting.
5. All cars having the 'lighter' brake pedal action introduced coincident with changes to the Electrical Specification 1972, should have a master cylinder off-stop clearance of .025" - .030" (0.635 - 0.766 mm).

In the interests of commonisation it has been decided that all cars fitted with an adjustable offstop i.e. all cars after car serial number SRH 1899 and any cars prior to this which have been fitted with an adjustable offstop must have the clearance reset to .025" - .030" (0.635 - 0.766 mm) whenever it is found necessary to check or reset the offstop clearance.

6. Whenever a brake actuation assembly has been dismantled or the brake pedal height or on-stop setting altered, the brake pedal should be checked to ensure that the distribution valves open fully before the pedal contacts the toe-board when the master cylinder is inoperative.

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Page No 1 of 2CATEGORY CFRONT BRAKE CALIPERSAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley 'T' Series cars from car serial number

SBB 15950 (Four door Saloons)
including
SRH 15522
SRH 15903
and
SRH 15942 to SRH 15930 inclusiveLRB 15817
including
LRB 15738
LRB 15739
LRB 15742
LRB 15812
LRB 15815

All Rolls-Royce and Bentley Corniche cars from car serial numbers

CRH 14889 (two door saloon)
including
CRX 14670
CRX 14672
CRX 14783
CRX 14784
CRX 14823
CRX 14830
CRX 14835
CRX 14886DRH 14829 (two door Convertible)
including
DRH 14665
DRH 14667
DRH 14671
DRH 14673
DRH 14782
DRH 14785
DRH 14787
DRX 14788
DRH 14828DESCRIPTION:

Ventilated brake discs and metric calipers previously only fitted to Rolls-Royce and Bentley Corniche cars have now been introduced on all Rolls-Royce Silver Shadow and Bentley 'T' series Four door Saloons and Four door Long Wheelbase Saloons. This bulletin has been reissued to give the car serial numbers onto which this change has been incorporated.

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Metric tapping of the pipe connection bosses and increased diameter mounting holes have been introduced on the front brake calipers. This has necessitated modifications to the hydraulic connecting pipes and the introduction of a new bolt, with an increased location diameter for attaching the caliper to the stub axle yoke. It should be noted that the hydraulic pipes have a metric connector at the caliper end only, the other connection is still unified. The metric end of the pipe is coloured Black for identification purposes.

At the same time the opportunity has been taken to introduce a new Mintex pad lining material - M 170 - to both the front and rear calipers on all cars after those listed above. It should be noted that the new front brake pads and back plates are a different shape from those fitted to earlier cars and are therefore, not interchangeable. It is not permissible to mix different pad materials on any one car. Therefore, M170 pads must not be fitted to cars prior to those listed above. The front brake calipers are also not interchangeable with those on cars prior to the car serial numbers listed above.

Note: Though Mintex M170 pads will physically fit the rear calipers of cars prior to those listed above, care must be taken to ensure that this does not happen as the result will be a mixture of different pad materials, on the same car.

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CATEGORY CTHE DECELERATION CONSCIOUS VALVEAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche motor cars, and all Bentley T Series and Corniche motor cars produced after the following Car Serial Numbers:

SILVER SHADOW AND T SERIES SALOON

SRX 18939	SRH 19155	SRC 19184
SRH 19014	SRX 19156	SRX 19186
SRC 19028	SRH 19158	SRH 19187
SRX 19135	SRC 19159	SFX 19190
SRC 19137	SRH 19160	SRC 19193
SRH 19143	SRH 19161	SRX 19195
SRX 19146	SRX 19162	SRX 19199
SRH 19147	SRH 19164	SRH 19200
SRH 19148	SRC 19165	SRC 19201
SRX 19149	SRX 19167	and onwards

SILVER SHADOW AND T SERIES LONG WHEELBASE CARS

LRC 19080
LBX 19087
LRC 19115
LRC 19121 and onwards

CORNICHE CONVERTIBLE

DRC 19177	DRC 19228
DRX 19178	DRC 19229
DRC 19181	DRC 19231
DRC 19226	DRX 19232
DRH 19227	and onwards

CORNICHE SALOON

CRH 19179

DESCRIPTION:

The operation of bleeding the deceleration conscious valve in the brake actuation mechanism has been eased by repositioning

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the bleed screw.

The bleed point of the deceleration valve is now connected by a short length of pipe to a junction block on the lower edge of the brake actuation box side brackets. The bleed screw is fitted into this junction block. Thus the bleed screw is easily accessible once the actuation mechanism lower shield is removed.

It will be necessary to bleed the deceleration conscious valve after disturbing the front brake pump or the front accumulator. Hydraulic system bleeding at this point will also be necessary in the event of a 'honking' noise being apparent whenever the brake pedal is depressed sharply, as this noise indicates that there is air in the high pressure system serving the upper cylinders of the rear wheel brake calipers.

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CATEGORY C

BRAKE FLUID RESERVOIR CLEANING

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars.
All Bentley 'T' Series and Corniche cars.

DESCRIPTION:

It has been found that Castrol/Girling Green fluid can leave a fine green deposit on the inside of the hydraulic fluid reservoir. This deposit can sometimes partially obscure the sight glasses, which could lead to difficulty in reading the fluid level.

Whenever Castrol/Girling Green fluid is drained from the reservoir, for example at the recommended 48,000 mile (80,000 km)/2 year fluid change, the reservoir and sight glasses should be thoroughly cleaned. Care should be exercised to ensure that no foreign matter is introduced during this operation.

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CATEGORY CMINTEX M170 BRAKE PADSAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley 'T' Series
 four door saloon cars after SRH 15950 including:

SRH 15522	SRH 15925	SRH 15928
SRH 15903	SRH 15926	SRH 15929
SRH 15924	SRH 15927	SRH 15930

All Rolls-Royce Silver Shadow four door long wheelbase
 cars after LRB 15817 including:

LRB 15738	LRB 15742	LRB 15815
LRB 15739	LRB 15812	

All Rolls-Royce and Bentley Corniche saloon cars after
 CRH 14889 including:

CRX 14670	CRH 14784	CRH 14835
CRH 14672	CRX 14823	CRH 14886
CRH 14783	CRH 14830	

All Rolls-Royce and Bentley Corniche convertible cars
 after DRH 14828 including:

DRH 14665	DRH 14673	DRH 14787
DRH 14667	DRH 14782	DRX 14788
DRH 14671	DRH 14785	

DESCRIPTION:

The brakes on current Silver Shadows, like the tyres, require an initial progressive running in period. During this time, approximately 700-800 miles, the brakes should not be used harshly or for prolonged periods unless this is absolutely necessary and the brake duty, ie how hard the brakes are applied and how often, should be progressively increased.

If pads are excessively heated during this period surplus bonding resin can be released from the material and then as the brake assembly cools this resin bonds itself to the friction surfaces of the pads and disc.

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This coating of resin can, under some circumstances, result in brake judder on light pedal application and possibly pedal pumping or flutter due to variations in the thickness of the rear discs resulting from uneven build up of resin and corrosion deposits. It may also cause rumbling noises at lower speeds when the brakes are applied.

The resin coating gives the appearance of either a clear lacquer or a black polished surface. In extreme cases it may even appear as a broken polished dark surface.

These dark surfaces can arise when the resin is deposited over some other brake disc surface contaminant such as light surface corrosion. This condition can be checked by scraping across the surface of the disc with a sharp pointed instrument and observing whether this dark coating flakes off to reveal surface corrosion of the disc.

In such circumstances there is no possibility of rectifying the brake complaint until the bright metal surface of the disc has been restored. Under no circumstances should a brake disc be removed for a brake complaint until the above condition has been rectified and the car re-tested for the complaint.

In the event of any of the previously described complaints arising the brake discs and pads should be restored to their original state as described in the following procedure. It is not necessary to remove the discs from the car to clean off the deposits.

PROCEDURE:

- 1 Jack up the car and remove the road wheels as described in the Workshop Manual.
- 2 Remove the brake pads taking care not to damage them.
- 3 Scrape the disc surfaces with a broad bladed screwdriver to remove any deep resin deposits which may be present.

Using coarse sand or emery paper remove the remaining resin until the metal of the disc may be seen to be shiny grey over its entire swept area. This is most important since the resin itself which is clear may have become polished and sometimes it appears that the resin has been removed when it is in fact still present.

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- 4 Remove any resin from the friction surface of the pads using coarse emery or sand paper.
- 5 Re-fit the brake pads.
- 6 Re-fit the road wheels.
- 7 Lower the car.

NOTE:

Resin build up is a result of incorrect bedding-in procedure. Rectification following the above procedure will not be considered under the terms of the Rolls-Royce Motors Warranty. Action such as changing brake discs will NOT be permitted without the approval of a Rolls-Royce Motors representative.

The importance of the correct running-in procedures for brake pads and tyres MUST be emphasised to the owner whilst at the same time he should be made aware that in the long term these pads offer significant advantages in terms of pad life and better resistance to squeal and high speed rumble.

OPERATION TIMES:

For the above procedure on all four wheels ie not including road test time:	3.00 hrs
Front Wheels only:	1.75 hrs
Rear Wheels only:	1.25 hrs

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CATEGORY C

PRESERVATIVE COATED BRAKE DISCS

APPLICABLE TO:

All Rolls-Royce Silver Shadow, Rolls-Royce Corniche, Bentley T Series and Bentley Corniche motor cars produced after the following car serial numbers:

SRH 19615

LRH 19378

CRH 19419

DESCRIPTION:

All brake discs are now treated with a protective film, and all cars produced after the above car serial numbers are fitted with these discs.

When using these discs for service replacement purposes, it will be found that the brakes will need to be gently bedded in, until the protective film has been removed from the working surfaces of the discs, by the first few brake applications.

PROCEDURE:

1. Fit the brake disc as shown in the Workshop Manual.
2. Road test the car, noting that if only one front brake disc has been replaced the car will gently pull to the side opposite the new disc.
3. The brakes should be gently bedded in by braking lightly from a road speed of 72 k.p.h. (45 m.p.h.).

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4. Repeat this operation until the brake action is smooth.

TIME ALLOWANCE

Time for changing and renewing one front disc 3 hours.

Time for changing and renewing one rear disc 4.75 hours.

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CATEGORY C

THE ACCUMULATOR SPHERE

APPLICABLE TO:

All Silver Shadow, T Series, Corniche and Camargue motor cars from the following car serial numbers:

LRH 22371	SRX 22415
LRX 22502	LRD 22380
CRX 22518	SRD 22412
DRH 22580	JRX 22587

DESCRIPTION:

The accumulators now fitted to all cars from the above mentioned car serial numbers have undergone a slight alteration in that the fluid capacity is now 260 c.c. as opposed to the previous unit which was 310 c.c.

The new accumulator operates at the same hydraulic and nitrogen pressures and is fully interchangeable with previous accumulators.

ECK/MH

CHAPTER H

SUB-FRAME AND SUSPENSION

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CATEGORY C

LONGER FRONT SHOCK DAMPERS.

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars from car serial number SRH 11466 onwards.

DESCRIPTION:

Longer front shock dampers have been introduced on the above cars to reduce the damper bearing side load. This reduction in load is effected by increasing the span of the rod guide and piston bearing.

At the same time the opportunity has been taken to simplify the upper mounting point, deleting the ram and the isolator, etc. The longer shock damper now mounts directly into a top cover plate bolted to the spring pot tower (See Fig.1). The methods of attaching the spring to the shock damper and the shock damper body to the lower triangle remain unchanged.

It is possible to replace a short shock damper by a long shock damper provided:

- (a) The new top cover (UR 17050) is used to replace the old top cover, ram and isolator.
- (b) Earlier cars fitted with front height control have the levelling system blanked off as described in Service Bulletin SY/G.37.

NOTE:

The replacement of short dampers by long dampers constitutes a change to specification and as such must not be undertaken without prior approval from Rolls-Royce Motors Limited.

PROCEDURE:

Long type shock damper - To remove

1. Position the car on a ramp, firmly apply the handbrake and chock the rear wheels.
2. Remove the gear range selector thermal cut-out switch.

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3. Position a hydraulic jack and extension fitted with a protective hardwood block beneath the pivot points of the lower front triangle levers; raise the car.
4. Position suitable blocks to support the shaped wooden beams (RH 8920) placed beneath the sill of the body just rearward of the front wheels.
5. Carefully lower the car onto the sill boards.
6. Remove the nut, washer and spigotted bush from the top of the shock damper push rod.
7. Fit the road spring compressing tool (RH 7889) (see Fig. 2) in position. It is most important that each long bolt of the compressor is screwed fully into the base plate of the tool.
8. Secure the halves of the base plate by fitting the 5/16 in. UNF setscrews provided.
9. Using the nuts, thrust races and special washers provided compress the spring sufficiently to enable the split adjusting washers to be removed.
10. Remove the split pin, castellated nut and washer which secures the shock damper ball pin to the lower triangle levers.
11. Use the extractor tool (RH 8100) to separate the seal between the taper of the shock damper ball pin and the taper of the ball joint housing.
12. Remove the bolt which locates the lower triangle levers adjacent to the lower ball joint lever.
13. Slacken the dowel bolt which also serves to align and secure the lower triangle levers to the lower ball joint lever. The lower ball joint lever will then swivel clear.

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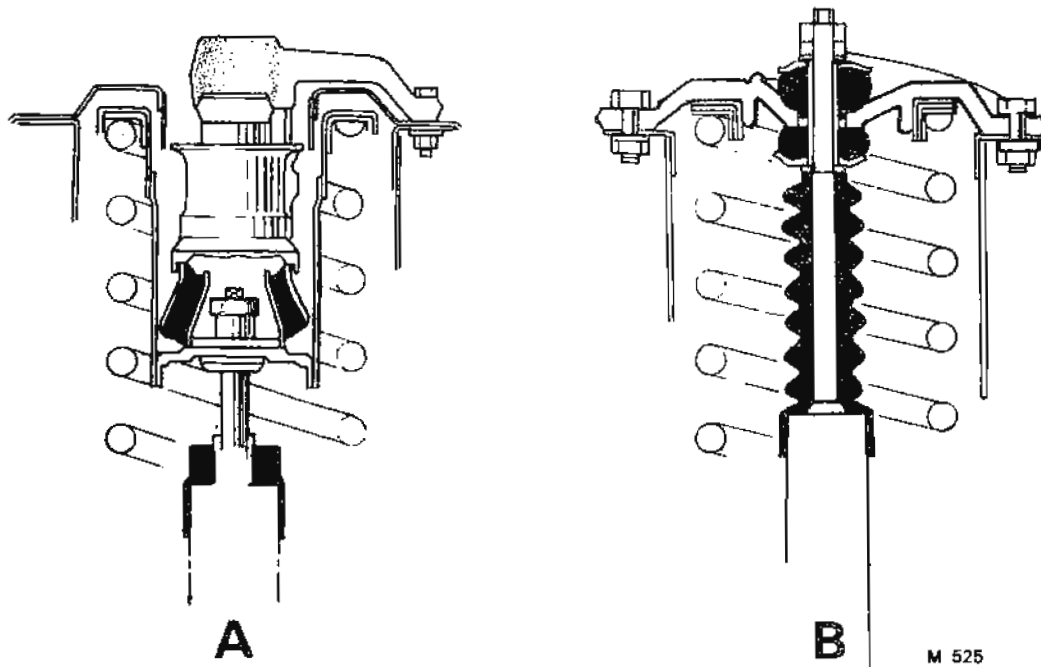


Fig. 1 Displaced and new shock dampers

- A. Displaced shock damper arrangement
- B. New shock damper arrangement

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14. Push the shock damper upwards until the ball pin is clear of the mating bore in the lever, then lower the shock damper from the car by moving it sideways and downwards to clear the lever, retain the split washer(s).

Long type shock damper - To fit

To fit a new shock damper reverse the procedure for its removal noting the points in the Workshop Manual TSD 2476 Chapter H, Section H2 - Front Shock Damper - To fit.

Fitting a long type shock damper in place of a short shock damper

In the event of it being necessary to replace a short damper with a longer damper the following procedure should be followed.

1. Remove and dismantle the front road spring assembly as described in the Workshop Manual TSD 2476 Chapter H, Section H4 - Front Road Spring - To remove.

Retain the spring and the spring support assembly. If the spring support assembly is seized onto the shock damper it must be renewed. Examine the spring seatings and renew if necessary.

2. Fit the spring seating onto the new top cover.
3. Using the compressing tool (RH 7909) compress the top cover, spring and spring support assembly to enable the road spring compressing tool (RH 7889) to be fitted.

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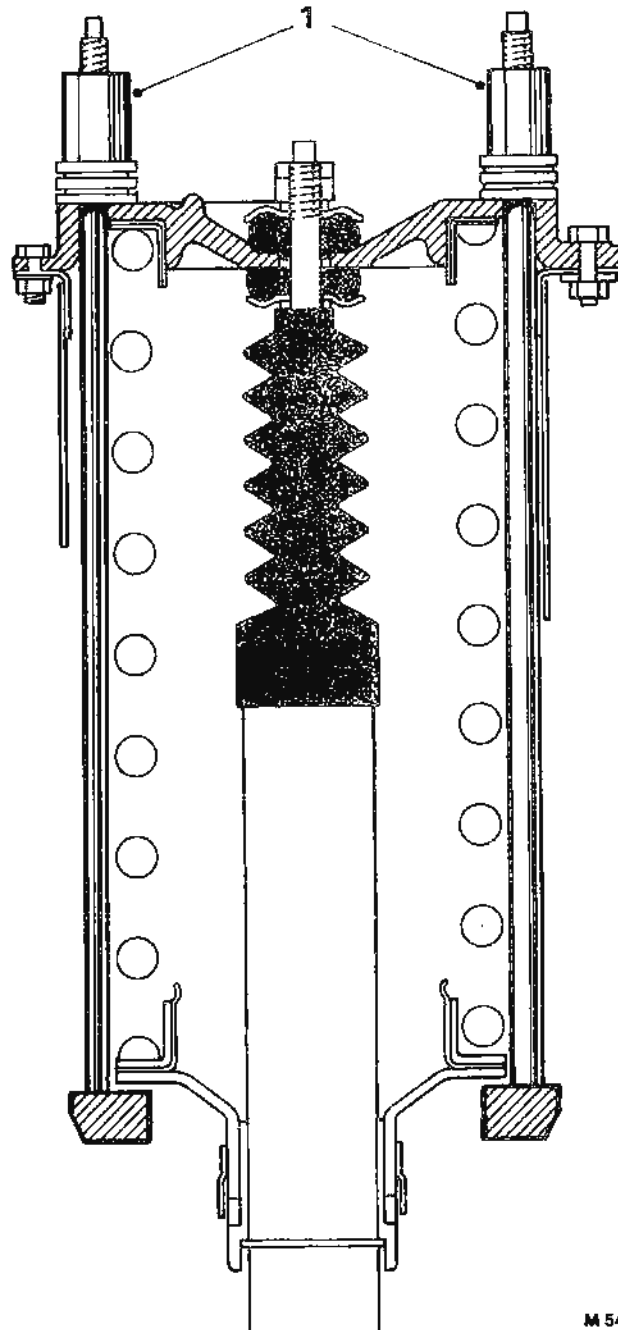
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4. Place the shock damper washer and non-spigotted rubber on the shock damper stem. Slide the shock damper sleeve over the shock damper body and push the shock damper through the spring support assembly until the end of the spindle protrudes through the top cover; fit the spigotted rubber (spigot downwards) top washer, nut and tighten.
5. Inspect the bottom ball joint as described in the Workshop Manual TSD 2476 Chapter H, Section H2 - Shock Damper Ball Joint - To maintain; Renew the ball joint if necessary.
6. Fit the ball joint to lower end of the shock damper and torque tighten.
7. Lower the entire assembly into the spring pot tower and bolt down the top cover.
8. Bolt the bottom ball joint housing to the lower triangle lever attachment.
9. Fit the split adjusting washer (s) and decompress the spring. When fitting the spring assembly the following points should be noted:-
 - (a) Care should be taken to avoid any side loading when fitting the shock damper and the assembly to the car, as this could result in permanent damage to the piston rod and seal.
 - (b) It is important that the front rebound stops are in position when fitting the road spring assembly. Over-travelling the suspension ball joints can result in damage to the ball joint seals.
 - (c) After fitting the assembly the car should be 'bounced' to settle the spring.
 - (d) The mechanical standing height must then be checked as described in Workshop Manual TSD 2476 Chapter H, Section H8 - Suspension Settings.
 - (e) The circlip, which is fitted to the front shock dampers, carries the lower spring support sleeves. When assembling these sleeves, liberally coat the mating surfaces of the sleeves and shock dampers with an approved grease. This will assist fitting and any subsequent removal of the sleeves.

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Fig. 2 Spring compressing tool in position

- 1 Compressing tool comprising long studs and split base plate

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- (f) Cars fitted with front levelling which has not yet been blanked off should have the front levelling deleted as described in Service Bulletin SY/G37.
- (g) The existing parts should be replaced by the parts given in the following list, when replacing shorter shock dampers with the new longer shock dampers.

<u>Description</u>	<u>New</u>
Bolt (8 off)	UA 156/Z
Bolt (8 off)	UA 104/Z
Cover (2 off)	UR 17050
Shock damper (2 off)	UR 17051
Heavy duty shock damper (2 off)	UR 17406
Spigotted rubber (2 off)	UR 17646

Note:

It would appear from past experience that shock dampers have been changed in an attempt to rectify complaints of suspension noise and soft suspension. On inspection the displaced shock dampers have been found to be operating satisfactorily and were obviously not the source of trouble.

It is therefore stressed that in such complaint cases all possible sources of trouble should be investigated rather than immediately assuming the fault to lie in the shock dampers.

After Car Serial Number SRH 11466 shock damper changes will not be accepted under Warranty without prior authority from either the Factory or the Service Representative.

TIME ALLOWED

To renew one long front shock damper - 2.25 hrs. (4.25 hrs. for two).

To replace two short shock dampers by two long shock dampers - 5.5 hrs.

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CATEGORY C

THE FRONT ROAD SPRING RETAINING TOOL

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley T Series.
All Rolls-Royce and Bentley Corniche cars.

DESCRIPTION

The two long studs which form part of the front road spring retaining tool (RH 7889) are heavily loaded when in use and should therefore be regularly inspected and renewed as necessary.

Regular inspection should include the inspection of the threads for flank damage, for signs of the nuts having been threadbound or for 'necking' over the length of the threaded section. The threads of the two nuts should also be inspected. If necessary, the threads should be greased using Retinax A grease.

The material from which the studs are manufactured is carefully selected and specially heat treated and it is therefore important that no other material should be used in this application and that replacement studs should always be obtained from Rolls-Royce Motors Limited.

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CATEGORY CWHEEL HUBSAPPLICABLE TO

All Rolls-Royce Silver Shadow and Corniche cars, and all Bentley T Series and Corniche cars from Car Serial Number SRH 11715.

DESCRIPTION

All cars after the above serial number are fitted with a different type of hub flange and wheel studs. The wheel studs are no longer bolted through the flange but are now an interference push fit.

When renewing a damaged wheel stud, it may be found necessary in some instances to use a Press of approximately 2 tons (2 032 kg) capacity to remove and fit the wheel stud from the hub flange. When fitting the new wheel stud it should be rotated until the splines line up with those already cut in the hub and then pressed into place. Adequate interference is maintained to renew each wheel stud three or more times in service.

<u>Displaced</u>	<u>Description</u>	<u>New</u>
UG 13164	Assy. - Front hub - R.H.	UG 13014
UG 13163	Assy. - Front hub - L.H.	UG 13015
UG 13162	Assy. - Rear hub - R.H.	UG 13016
UG 13161	Assy. - Rear hub - L.H.	UG 13017
UG 12916	Wheel Stud - R.H.	UG 13012
UG 12917	Wheel Stud - L.H.	UG 13013
UA 355/R	Nut - Wheel Stud	Deleted

It should be stressed that these parts are not interchangeable.

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CATEGORY CCOMPLIANT FRONT SUSPENSIONAPPLICABLE TO:

All Rolls-Royce and Bentley Corniche cars after Car Serial Number DRA 12734.

All Rolls-Royce Silver Shadow and Bentley T Series Long Wheelbase cars after Car Serial Number LRX 13201 including LRH 13084.

All Rolls-Royce Silver Shadow and Bentley T Series Four-door saloon cars after Car Serial Number SRH 13485 including SRH 12586, SRX 12687, SRH 12853, SRH 13066.

INTRODUCTION

Silver Shadow cars have been fitted with cross-ply tyres as original equipment, but in Service, since April 1967 the use of radial-ply tyres has been approved where greater tyre mileage was desired.

The fitting of radial-ply tyres, although nearly doubling tyre life, improving wet hold, decreasing noise at higher frequencies, and giving an improvement to the feel of the steering, also introduces increased harshness, noises at discreet lower frequencies and a deterioration in ride to a degree that is unacceptable to Owners and the standard that Rolls-Royce Motors wish to achieve.

Significantly, radial-ply tyres were not previously standardised on the Silver Shadow, although they were on the Corniche. The reason for this is that radial-ply tyres reduce body and scuttle shake on the Corniche and it was considered that the favourable features obtained made the compromise worthwhile.

The wish to fit radial-ply tyres as original equipment on all cars, resulted in the design and development of the recently introduced Compliant Front Suspension.

Radial-ply tyres MUST ALWAYS BE USED on cars fitted with the compliant front suspension.

DESCRIPTION

The compliant front suspension is designed to have a tuned degree of fore-and-aft flexibility to eliminate harshness, and this together with new front sub-frame rubber mountings has resulted in an improved ride.

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In addition to the effect of the radial-ply tyres, handling is improved further by raising the roll centre of the front suspension, and by designing the new sub-frame mountings to reduce movement of the front sub-frame when steering the car. These improvements give a small reduction in roll angles and improved steering response.

In order to provide the necessary suspension and steering clearances with the raised roll centre on compliant suspension, various minor changes have been made, and are given in the following list.

1. The outer steering rods have been modified and are not interchangeable with the previous type.
2. The lower front triangle levers have been modified to provide increased clearance with the outer track control arms. The steering lock-stop on the lever has also been revised.
3. The lower suspension ball joint has been inverted. The ball joint housing is incorporated in the stub-axle yoke and the taper is now incorporated in the lower suspension ball joint carrier.
4. The upper triangle lever has been replaced by a single lever which is controlled in the fore-and-aft direction by a compliance rod. New mountings have been introduced to carry the new upper suspension lever assembly.

The rubber sub-frame mountings whilst providing the desired degree of longitudinal flexibility are much stiffer laterally than the earlier 'Vibrashock' mountings. There is therefore no longer any need for the Panhard rod.

Corniche cars fitted with the compliant front suspension are also equipped with ventilated front brake discs. These have superior cooling properties which reduces both brake disc and brake pad wear. The brake discs are of a thicker section and require the use of a modified brake caliper. Neither the brake discs nor the calipers are interchangeable with the non-ventilated type of brake disc and associated caliper.

In addition to these changes the opportunity has been taken to standardise the anti-roll bar arrangement used on North American cars and bring it into line with those used on European cars. Thus the small diameter front anti-roll bar previously fitted to North American cars has been replaced with one of a larger diameter and a rear anti-roll bar has been introduced. This combined with the other changes reduces the amount of body roll for any given cornering condition and thus further improves handling characteristics.

The service procedures for cars fitted with compliant front suspension are for the most part the same as for all cars prior to those listed on Page 1, procedures which have changed are as follows.

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PROCEDURE

Front Sub-frame, Engine and Transmission

To remove and re-fit as a unit (Workshop Manual TSD 2476 - Chapter H Section H1 - Page H1)

This procedure remains unchanged, but the following two points should be noted

1. The Panhard rod is no longer fitted.
2. On left-hand drive cars the longeron to front sub-frame hoses have to cross.

It is important, in order to prevent these hoses from chafing against one another to ensure that the Blue line hose crosses over and not beneath the Purple line hose (see Fig. 1).

Front Sub-frame rubber mounts - To fit (with sub-frame, engine and transmission removed)

1. Place the mount in position such that the reliefs in the rubber of the mount are at right-angles to the centre line of the car, i.e. such that they lie across the car (see Fig. 2). Hold the mount in this position using the tube spanner RH 7774.
2. Using the tube spanner RH 8576 screw the upper locking ring into position and torque tighten to between 100 lb. ft. and 120 lb. ft. (13,82 kg.m. and 16,58 kg.m.).

NOTE: It is imperative that the mountings are fitted such that the reliefs in the rubber lie across the car in order to achieve the desired degree of flexibility in the fore-and-aft direction (see Fig. 2).

Engine and Transmission - To remove from sub-frame (Workshop Manual TSD 2476 - Chapter H - Section H1 - Page H6)

This procedure remains unchanged.

Engine and Transmission - To remove and re-fit in sub-frame (Workshop Manual TSD 2476 - Chapter H - Section H1 - Page H6)

This procedure remains unchanged.

Front Sub-frame 'Metalastick' mounts - To remove (sub-frame in position)

1. Place car on a ramp.
2. Apply the handbrake and chock rear wheels.
3. Remove the gear range selector cut-out (Workshop Manual TSD 2476 - Chapter M - Section M2 - Page M6).
4. Raise the bonnet and place protective covers on the wings.
5. Fit the road spring compressing tool (RH 7889) to whichever side the mounting is to be removed from, and tighten the nuts sufficiently to just start compressing the spring.

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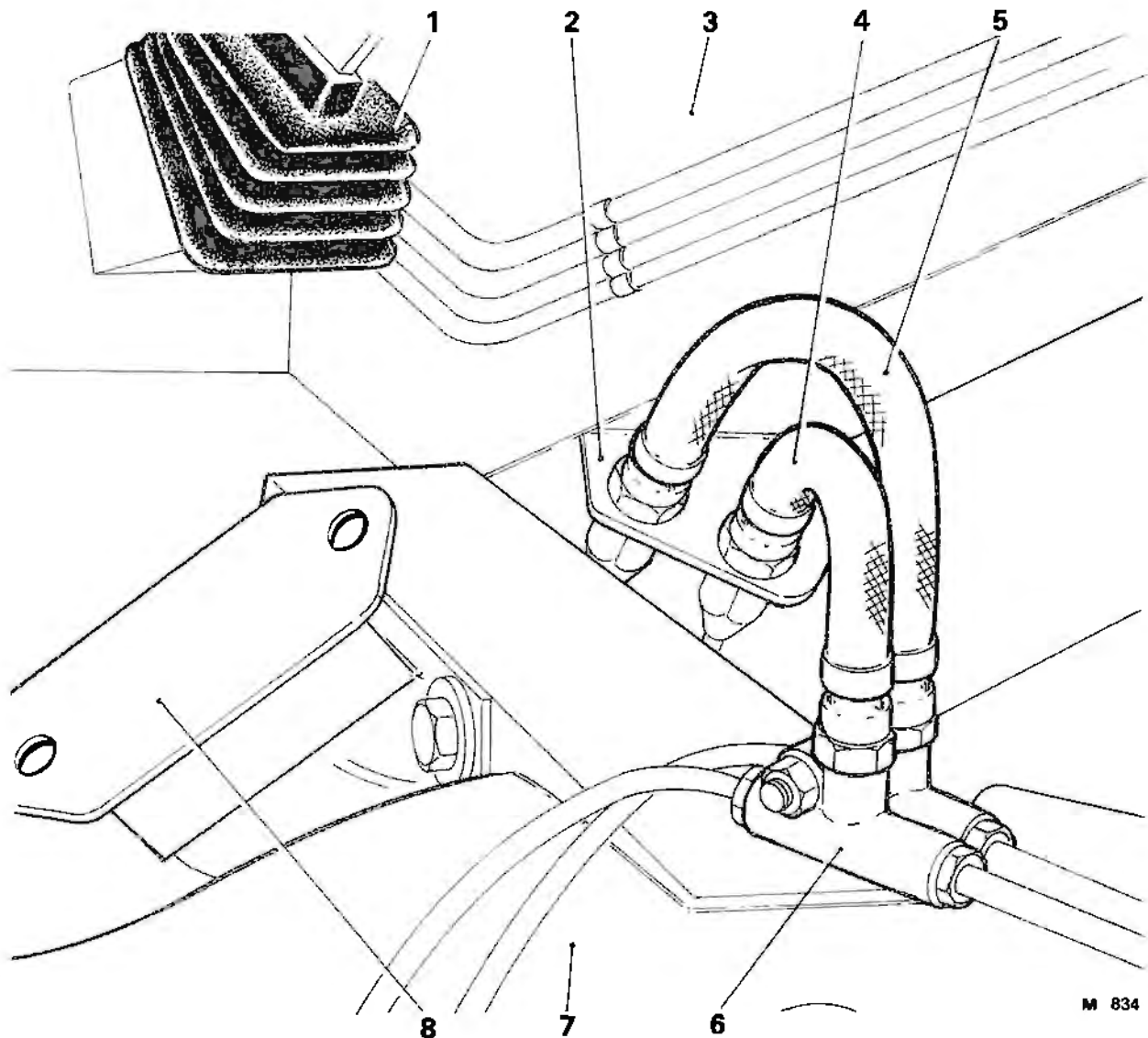


Fig. 1 Correct lay of hydraulic hoses (viewed from engine compartment).

1. Footbrake rubber boot.
2. Longeron bracket.
3. Left-hand longeron.
4. Purple hose.
5. Blue hose.
6. Union.
7. Sub-frame.
8. Left-hand engine foot.

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6. Place a jack and protective block under the sill of the same side of the car to support that side of the car but do not jack the car up.
7. Raise the ramp and place a jack and protective block under either the front mounting bracket (which carries the front bearing pins and washers), if a front mount is to be removed, or under the corresponding position at the rear of the sub-frame if a rear mounting is to be removed. Raise the jack sufficiently to support the sub-frame.
8. Remove the nuts and bolts, together with the washers and distance pieces, from the steady bracket mounting points on the body.
9. Unscrew and remove the centre bolt from the mount; collect the steady bracket and lower distance piece.
10. Carefully lower the jack supporting the sub-frame and release the spring compressor to lower the sub-frame sufficiently to be able to gain access to the top locking ring with the tube spanner RH 8576. Hold the top locking ring stationary and using tube spanner RH 7774 unscrew and remove the mounting.

Front sub-frame mounts - To fit

1. Ensure that the bores of the sub-frame, the threads of the locking ring and 'Metalastik' mount are clean.
2. Place the locking ring in position and hold it using the tube spanner RH 8576.
3. Place a 0.100 in. (0,254 mm.) spacer over the threaded end of the 'Metalastik' mount; insert into the sub-frame and screw up through the locking ring.
4. Adjust the locking ring such that when the 'Metalastik' mount is torque tightened to between 100 lb. ft. and 120 lb. ft. (13,82 kg.m. and 16,58 kg.m.) the reliefs in the rubber of the mounting are at right-angles to the car centre-line (see Fig. 2).

NOTE: It is imperative that the mountings are fitted such that the reliefs in the rubber are at right-angles to the car centre line in order to achieve the desired degree of flexibility in the fore-and-aft direction.

The first few cars to be fitted with compliant front suspension had 'Loctite' applied to the locking rings. In these instances it will be necessary to heat the locking rings with a blow torch or low Oxy-Acetylene flame. When carrying out this operation a sheet of asbestos should be placed between the sub-frame and the body mounting to protect the underside finish of the body.

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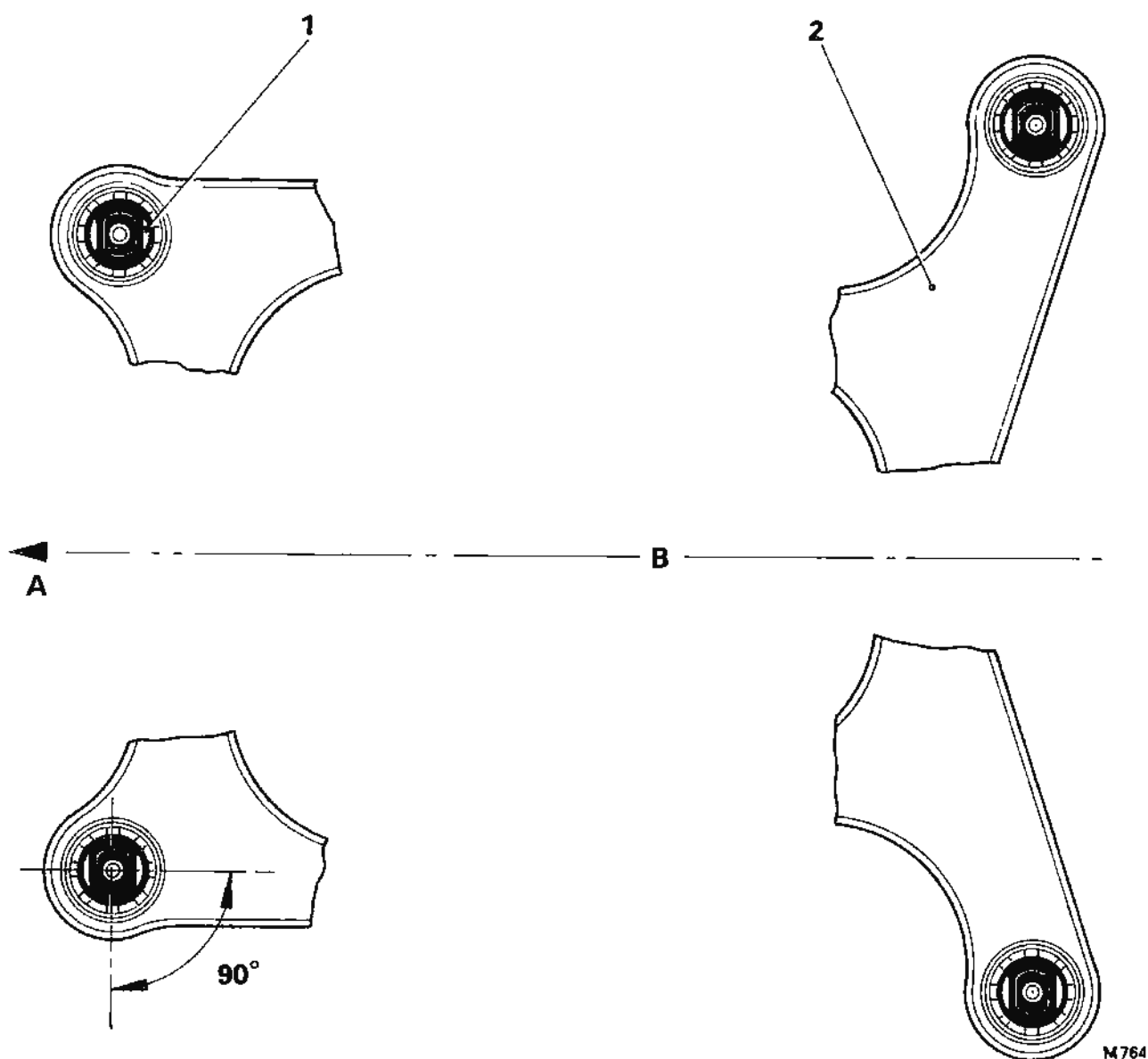


Fig.2 Correct position of mounts in sub-frame

- A To front of car
- B Car centre-line
- 1. 'Metalastik' mount
- 2. Front sub-frame

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5. Place the upper washer in position together with any additional packing washers previously removed and jack the sub-frame up to the body (it may be necessary to compress the road spring a small amount to ensure that the sub-frame abuts the body).
6. Fit the steady bracket together with the washers and distance pieces previously removed and fit the mount centre bolt; do not tighten at this point.
7. Fit and tighten the steady bracket nuts and bolts.
8. Torque tighten the mount centre bolt (Workshop Manual TSD 2476 - Chapter P - Torque Tightening Figures).
9. De-compress and remove the road spring compressing tool. Lower and remove both jacks.

UPPER AND LOWER TRIANGLE LEVERS AND BALL JOINTS

Lower triangle levers - To remove and fit (Workshop Manual TSD 2476 - Chapter H - Section H3 - Page H13)

This procedure remains unchanged, except that it should be noted that the lower triangle ball joint has been inverted.

Upper suspension lever arrangement - To remove

1. Place car on a ramp.
2. Firmly apply the handbrake and chock the rear wheels.
3. Remove the gear range selector thermal cut-out (Workshop Manual TSD 2476 - Chapter M - Section M2 - Page M6).
4. Jack up and support the appropriate side of the car using a block and sill board.
5. Remove the road wheel.
6. Fit the road spring compression tool RH 7889 and tighten sufficiently to raise the upper triangle lever off the suspension rebound stop.
7. Support the front hub assembly and remove the nut securing the upper triangle lever ball joint assembly to the stub axle.
8. Separate the seal between the stub axle yoke taper bore and taper pin of the upper triangle lever ball joint assembly, using the extractor RH 8100.

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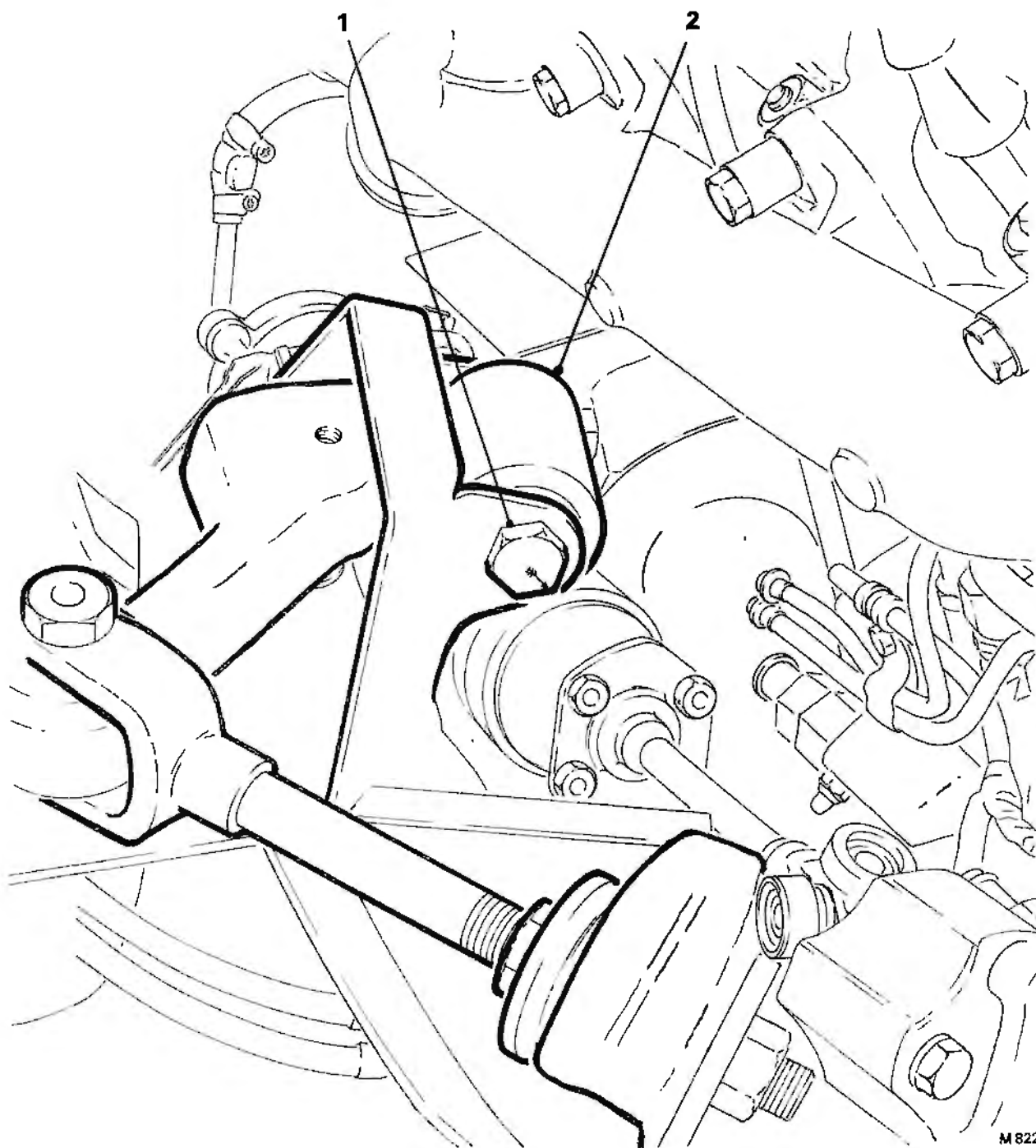


Fig. 5 Correct position of arrow inscribed on eccentric.

1. Eccentric - showing arrow inscribed; arrow must point below the horizontal.
2. Upper suspension lever.

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9. Support the upper suspension lever arrangement.

NOTE: The ball joint housing will remain attached to the stub axle yoke and to the hub unit.

10. Remove the nut, washer and rubber bush from the compliance rod.
11. Remove the nut, washers and eccentric bolt from the upper lever sub-frame pivot point.
12. Withdraw the upper lever clear of the front pivot point and slide the compliance rod out of its mounting.

Upper suspension lever arrangement - To fit

Reverse the procedure given for removal, noting the following points.

1. Ensure that the arrow on the camber adjusting eccentric bolt (see Fig. 3) points across or below the horizontal plane. On no account must the arrow point in the upward direction since this could result in suspension/steering fouls due to incorrect suspension geometry.
2. Ensure that the eccentric assembly is fitted as shown in Figure 4.
3. The spring compressing tool must not be loosened off or removed without the entire upper lever arrangement and rebound stop fitted, since suspension over-travel may occur which could result in suspension ball joint damage.
4. When assembling the upper suspension lever, the larger of the bushes should be pressed in from the side of the lever opposite to the crank in the lever.

UPPER AND LOWER SUSPENSION BALL JOINTS

Lower ball joint - To remove and fit (Workshop Manual TSD 2476 - Chapter H - Section H3 - Page H14)

This procedure remains unchanged, but it should be noted that the ball joint has been inverted.

Upper ball joint - To remove

1. Remove the upper suspension lever arrangement as described under Upper suspension lever - To remove.
2. Using special tool RH 7775 unscrew and remove the slotted nut.
3. Using special tool RH 7768 press out the ball joint assembly from the suspension lever.

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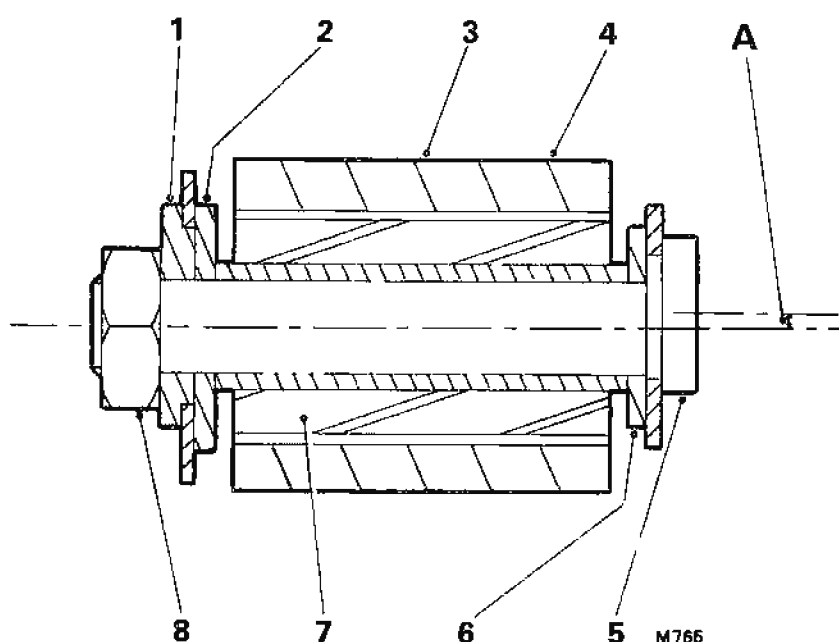


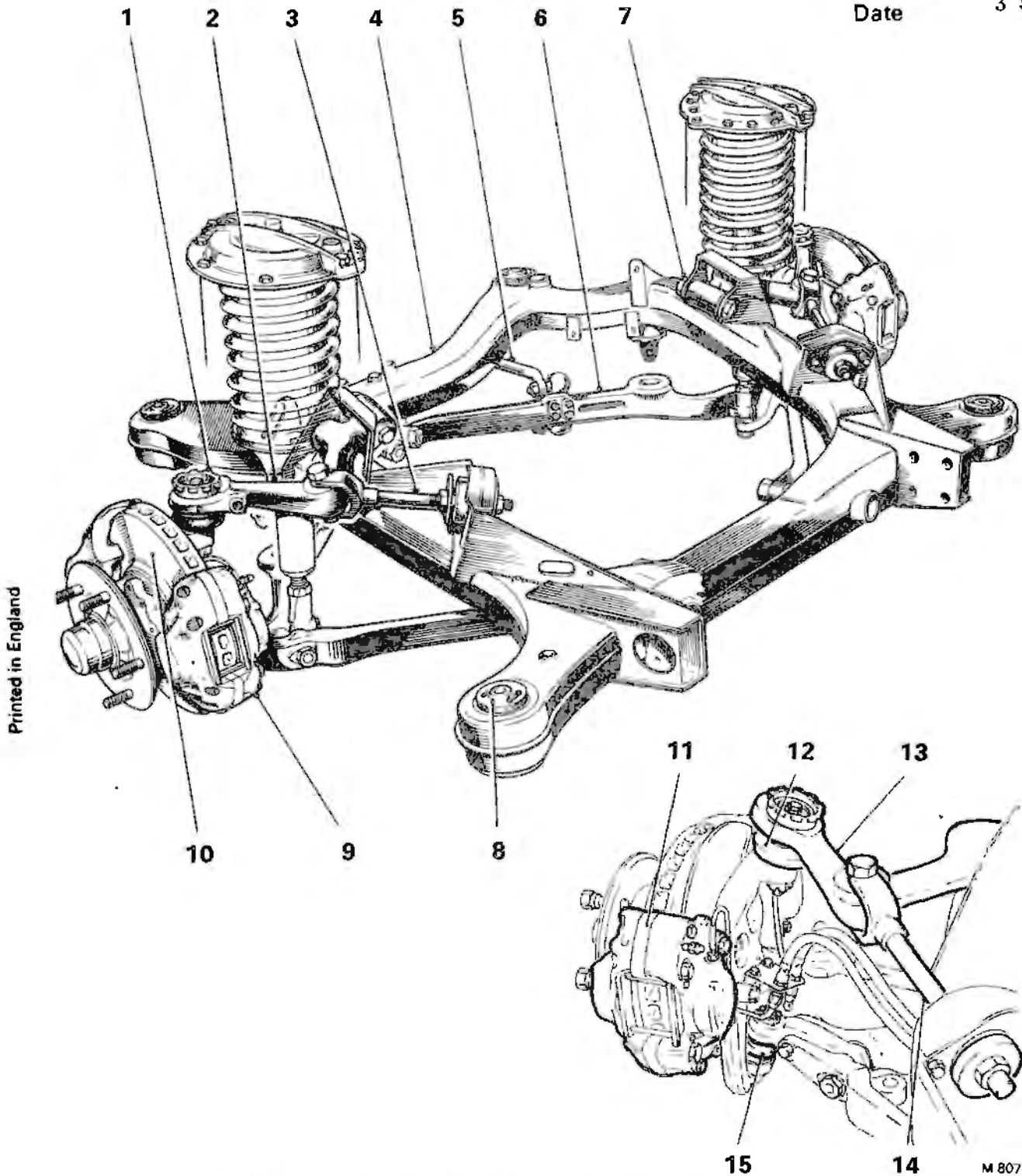
Fig. 4 Cut-away view of Eccentric assembly.

- A Degree of eccentricity
1. Eccentric washer
 2. Washer
 3. Upper suspension lever and bushes assembly
 4. Bush - upper suspension lever
 5. Pivot lever bolt
 6. Thrust washer
 7. Bush - upper suspension lever
 8. Nut

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Key to Fig. 5 on previous page.

1. Locking ring
2. Upper suspension lever
3. Compliance rod
4. Sub-frame
5. Stabiliser (anti-roll) bar
6. Triangle lever - lower
7. Eccentric assembly
8. 'Metalastik' mount
9. Brake caliper
10. Ventilated disc (Corniche cars only)
11. Brake disc caliper
12. Upper ball joint
13. Upper suspension lever
14. Compliance rod
15. Lower ball joint

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Upper ball joint - To fit

1. Using a new sealed ball joint assembly unit complete with seal and lubricant, fit the special tool RH 7768 around the ball joint and clamp together.
2. Fit the suspension lever to the ball joint, and using special tool RH 7768, press the triangle lever onto the ball joint until the suspension lever boss abuts the shoulder of the ball joint.
3. Remove the special tool and torque tighten the slotted nut to between 150 lb. ft. and 175 lb. ft. (20,74 kg.m. and 23,50 kg.m.).

NOTE: Care should be taken to avoid damaging the joint boot seal.

SUSPENSION SETTINGS

The procedure given in Workshop Manual TSD 2476 - Chapter H - Section H8 - Page H25 - for checking the suspension height and steering geometry remains unchanged.

Due to the new mounting arrangement of the upper wishbone assembly, the Camber and Castor are adjusted as described in the following paragraphs.

Camber - To set

1. The camber is adjusted by releasing the upper lever eccentric nut and turning the eccentric bolt until the correct camber figure is achieved.

Castor - To set

1. The castor is adjusted by moving the compliance rod backwards or forwards through its mounting rubbers, using the nuts on the rod until the correct castor is obtained.

- NOTE:**
- a) The Camber and Castor settings are inter related and both settings should be checked at the same time and if necessary, adjusted until the correct suspension settings are obtained.
 - b) The front wheel toe-in should be checked and if necessary corrected before any attempt is made to reset the front camber and castor settings.
 - c) The Camber, Castor and Toe-in settings remain unchanged.

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Lock-stop adjustment

Whilst the shape of the lock-stop shim and lower front triangle lever is changed, the method of adjustment using shims remains unchanged from that given in Workshop Manual TSD 2476 - Chapter H - Section H8 - Page H27.

The angles of full steering lock also remain unchanged.

Track rod ball joint relative height

The procedure given in Workshop Manual TSD 2476 - Chapter H - Section H8 - Page H27 for setting the track rod ball joint relative height remains unchanged. It should be remembered that if setting the track rod ball joint height results in the steering and idler boxes being below the middle of their range of adjustment a 0.125 in. (3.17 mm.) thick packing piece must be inserted between the engine mounting foot and the stop plate situated on the steering box and idler box torque arm.

New workshop tool

Tube spanner - sub-frame mount upper locking ring RH 8576.

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CATEGORY C

FRONT SUSPENSION BALL JOINTS

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars.

DESCRIPTION:

It is no longer possible to obtain replacement dust covers for front suspension ball joints. Thus for replacement purposes complete ball joint assemblies only will now be supplied. This Bulletin does not affect steering ball joints.

PARTS AFFECTED:

UR 13264	Assembly ball housing, upper lever.
UR 13269	Assembly ball housing, lower lever.
UR 13265	Assembly ball joint, shock damper.

The following parts are no longer supplied:

CD 4140	Dust cover
CD 4141	Retaining ring
CD 4142	Retaining ring
CD 4143	Dust cover
CD 4144	Retaining ring
CD 4145	Dust cover

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CATEGORY C

SUSPENSION SPECIFICATION

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars produced after SRH 15410 and delivered to Australia or New Zealand.

DESCRIPTION

Since the introduction of the Silver Shadow and Bentley T Series cars, various engineering improvements have been made to the suspension.

Following a re-assessment of the desirable suspension characteristics for cars to be delivered to Australia and New Zealand it has been decided that the present European suspension will meet those requirements.

In future therefore all cars intended for these territories produced after SRH 15410, will be fitted with European suspension instead of the heavier duty suspension previously used. In addition to the changes to the dampers and springs, the new specification will include the addition of a rear anti-roll bar and a thicker front anti-roll bar.

Whilst the workshop procedures for changing any of the suspension components remains unchanged it should be noted that under no circumstances should European and 'heavier duty' components be interchanged on any one car.

The heavier duty suspension components will still be supplied for spares purposes on cars to which they were fitted as original equipment.

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CATEGORY CCHECKING AND ADJUSTING STEERING GEOMETRYAPPLICABLE TO:

All Rolls-Royce and Bentley Corniche cars after serial number DRA 12734.

All Rolls-Royce Silver Shadow and Long Wheelbase cars after serial number LRX 13201 including LRH 13084.

All Rolls-Royce Silver Shadow and Bentley 'T' series 4-door saloon cars after serial number SRH 13485, including SRH 12586, SRX 12687, SRH 12853, SRH 13066.

DESCRIPTION:

An improved method of checking and adjusting the steering geometry on cars fitted with compliant front suspension has been developed. This gives greater ease of checking and accuracy of measurement.

Steering geometry should not normally require adjustment until a considerable mileage has been covered.

In the event of a complaint about tyre wear it is important to establish if the complaint is caused by the driver being unaware of what a normally worn tyre should look like. Figure 1 shows typical wear patterns.

Should it be established that the wear rate only is abnormal the effects on tyrewear of hard cornering should be explained.

In the event of the tyre wear pattern being abnormal e.g. the wear is highly localised on the shoulders the toe-in should be carefully checked. This is the only feature of the wheel geometry which is capable of causing noticeably abnormal wear pattern due to a relatively small error in setting.

Small errors in castor and/or camber angle, whilst slightly affecting the handling characteristics, will not result in an obviously abnormal wear pattern.

A complaint about handling should be checked carefully on the road and if there is doubt a service representative should be consulted.

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PROCEDURE:

When checking the steering geometry of cars fitted with compliant front suspension there are two essential rules which must be followed:

1. Since there is a large amount of elasticity designed into the system, measurements should never be taken immediately after lowering the car from a jack. The car should always be moved forwards for at least two revolutions of the wheels prior to taking any measurements.
2. The car should be loaded in a representative fashion (for example with two front passengers) before carrying out steering geometry checks. This rule applies equally to all cars whether fitted with compliant front suspension or not.

The procedure detailed below may require slight amendment depending on the type of alignment equipment used.

TO CHECK AND ADJUST TOE-IN:

1. Place the car on a level surface with the steering wheel in the straight-ahead position and move forward for two revolutions of the wheels.
2. With the gear range selector in the Neutral 'N' position, remove the gear range selector thermal cut-out as described in Workshop Manual Chapter M.
3. Take a reading using optical or other suitable alignment equipment.
4. If required by the equipment used, move the car forward for half a revolution of the wheels and take a second reading. The true toe-in is the average of the two readings.

NOTE: Moving the car backward instead of forward will give an incorrect reading.

The toe-in should be between 12 minutes and 18 minutes included angle, that is between 0.062 inch and 0.141 inch (1,57 mm. and 3,58 mm) at the wheel rim with the car in a correctly levelled condition.

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If the toe-in is incorrect, the following procedure should be used.

5. Disconnect a track rod outer ball joint from the side steering lever using the special extractor tool (RH 8080), then slacken the pinch bolt from the outer end of the track rod and screw the track rod inward or outward as necessary.

NOTE: If more than one complete turn of the track rod is necessary to obtain the desired adjustment, the number of turns must be divided between both track rod ends in order to retain the steering wheel straight ahead position.

6. When the adjustment is completed, re-tighten the pinch bolt, lock-nuts and track rod end.
7. Bounce the front of the car on the suspension and move the car forward for two revolutions of the wheels.
8. Re-check the toe-in as described in operations 3 and 4.

TO CHECK AND ADJUST CASTOR AND CAMBER ANGLES:

1. Move the car forwards for at least two revolutions of the wheels onto turntables for the front wheels and suitable turntables or blocks of the same height for the rear wheels.

NOTE: The car MUST NOT be lifted onto the turntables.

2. Fit suitable gauge equipment to the stub axle or wheel in accordance with the equipment manufacturer's instructions.
3. Following the instructions provided with the gauge, check the castor and camber angles.

For all cars with compliant front suspension the castor angle should be 3° positive (+ or $- \frac{1}{2}^{\circ}$) while the camber angle should be $\frac{1}{2}^{\circ}$ negative (+ or $- \frac{1}{2}^{\circ}$). The maximum difference allowed between both sides of the car for both castor and camber angle is $\frac{1}{2}^{\circ}$.

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If the castor or camber angles are incorrect, the following procedure should be adopted.

4. To adjust the camber angle, release the upper lever eccentric bolt securing nut (the eccentric bolt is identified by the arrow stamped onto the bolt head) and turn the eccentric bolt ensuring that the arrow on the bolt head points below the horizontal. This will also have a small effect on castor angle.
5. To adjust the castor angle move the compliance rod backwards or forwards through its mounting rubber, using the nuts on the rod. This will also have a small effect on camber angle.
6. Move the car backwards for at least two revolutions of the wheels, bounce the car on the suspension and move the car forwards again onto the turntables.
7. Re-check the castor and camber angles as described in operations 2 and 3.
8. Check the tightness of any displaced nuts or bolts.

The checking or adjusting of steering geometry is a normal service item and as such will not be considered under warranty.

TIMES ALLOWED:	HOURS
Toe-in, check only	0.50
Toe-in, check and adjust	1.00
Castor and camber angles, check only	1.50
Castor and camber angles, check and adjust	3.00

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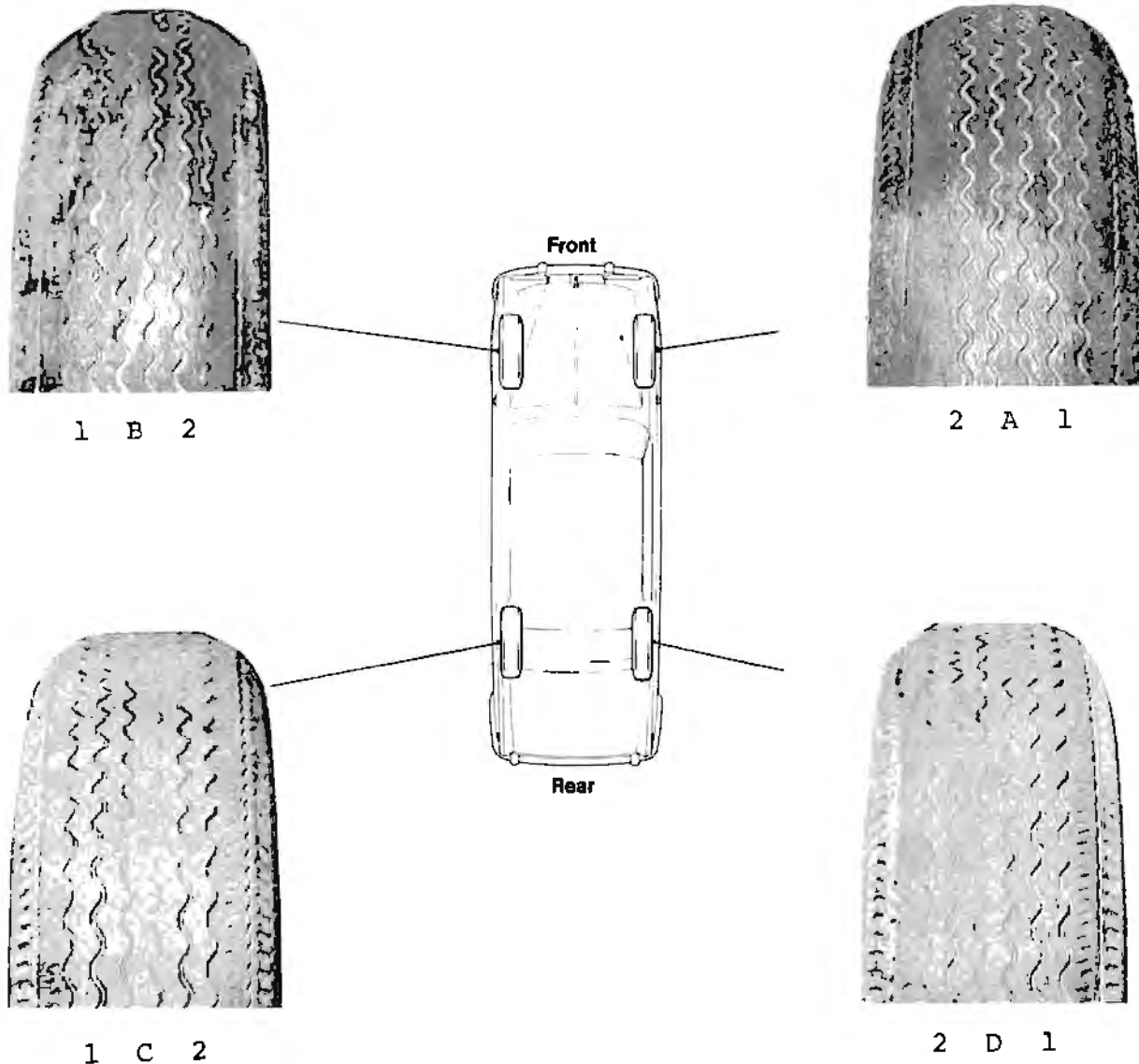


Fig. 1 Typical wear pattern of tyres

- 1 Tyre outside edge
- 2 Tyre inside edge
- A Right-hand front tyre
- B Left-hand front tyre
- C Left-hand rear tyre
- D Right-hand rear tyre

CHAPTER J

FINAL DRIVE

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CATEGORY C

THE FINAL DRIVE CASING

Applicable To

All Rolls-Royce Silver Shadow and Corniche cars

All Bentley T Series and Corniche cars

Description

The final drive casing has been slightly altered to increase its structural rigidity. This has been done to further ensure that the precision settings used when assembling the gears and various bearings, remain unchanged throughout the life of the final drive assembly.

The components which comprise this assembly and their method of renewal remain unchanged.

The exterior appearance of the final drive casing has been changed, and the new type of casing can be recognised by the dimensional changes to the stiffening webs in the region of the oil drain plug.

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CATEGORY C

CHANGE TO THE FINAL DRIVE PINION DATUM

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars.

DESCRIPTION:

On the left-hand side of the outer case of the final drive differential unit adjacent to the front is stamped the differential number. This consists of three letters and up to three numbers. The first two letters are 'SY' followed by a third letter which follows in alphabetical sequence.

All final drive differential units from SYS.1 are fitted with pinion UG 12740 which has a new datum position. This datum is the point from where one establishes the measurement to the pinion housing face, SEE FIG.1. The ground face adjacent to the pinion nose bearing has been extended in diameter and the pinion housing measurement datum is now on this face.

PROCEDURE:

When assembling the above final drive units, the pinion housing measurement should be taken from the ground face adjacent to the pinion nose bearing, not from the pinion gear as was the case with units prior to SYS.1. Otherwise, the method of assembly is exactly as that detailed in Chapter J of the Workshop Manual.

All service pinions with the wider ground face will have the dimension 'X' measured from that face, while those with the narrower face must be measured from the gear teeth as detailed in Chapter J of the Workshop Manual. There is no effect on interchangeability.

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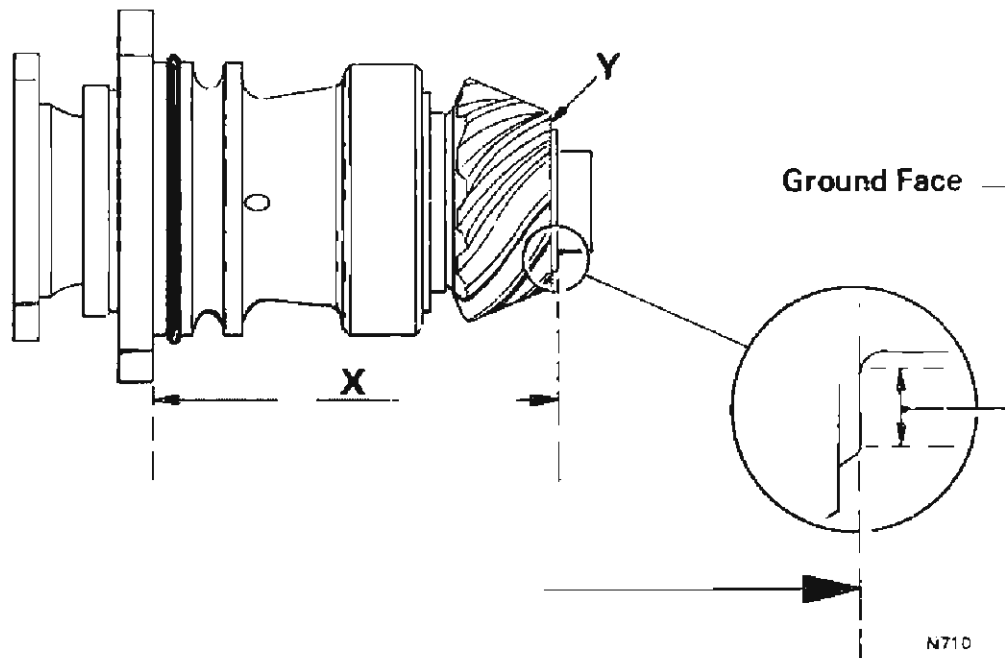


Figure 1. PINION HOUSING MEASUREMENT.

X Dimension between housing and ground face.

Y Dimension etched on pinion gear face.

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Page No 1 of 2CATEGORY CTHE FINAL DRIVE PINION OIL SEALAPPLICABLE TO:

All Rolls-Royce Silver Shadow^{II} and Corniche motor cars and all Bentley 'T' Series and Corniche motor cars.

DESCRIPTION:

The final drive pinion oil seal design has been changed although the part number, UG 10331 remains the same.

The new type of pinion seal can easily be identified as shown in Figure 1. The earlier seals are inter-changeable with the new design except that the new seal must be fitted 4.7mm (0.187 inches) deeper into the pinion housing as shown in Figure 2.

When renewing a pinion seal, first identify which type of seal has been provided. If the seal is of the early type, it should be pressed in until the metal back is flush with the end face of the housing.

If a later type of seal is to be fitted it is suggested that a metal guide disc is used. This disc should be of slightly smaller diameter than the seal and should be 4.7mm (0.187 inches) thick. The seal can then be fitted, using the disc, until the outer face of the disc is flush with the housing face. This will ensure that the seal is correctly positioned.

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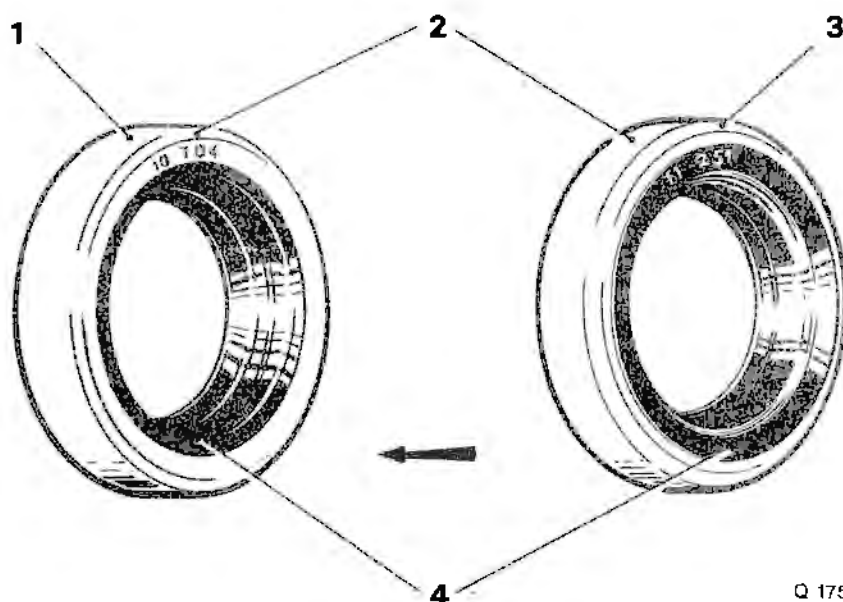


Fig 1

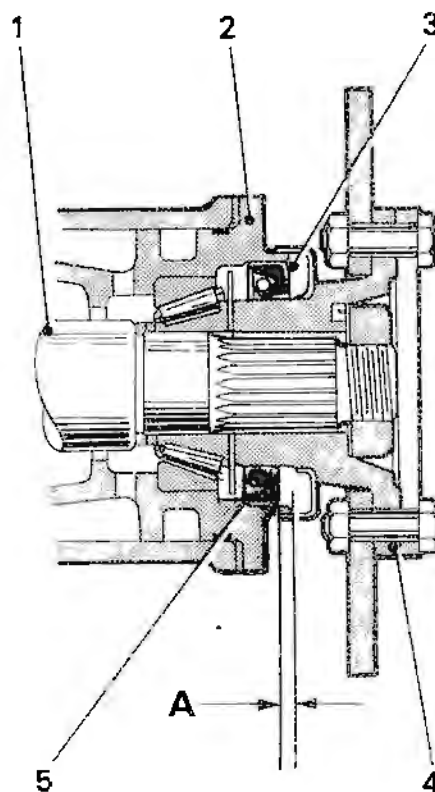
- 1. Old Seal
- 2. Metal component
- 3. New Seal
- 4. Rubber component

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Fig 2

A. 4,762 mm. (0.187 in.)

- 1. Pinion shaft
- 2. Pinion carrier
- 3. Earlier seal in position
- 4. Pinion flange
- 5. New seal in position



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CATEGORY C

EXCHANGE FINAL DRIVE UNITS

APPLICABLE TO:

All Silver Shadow, T Series, Corniche and Camargue motor cars.

DESCRIPTION:

Exchange final drive units are supplied with selected side bearing seal plates. It is essential for these plates to remain fitted with the final drive unit they have been supplied with. Additionally, your attention is drawn to the information contained on the label attached to the final drive.

Failure to comply with this Service Bulletin could cause future damage or wear to the final drive, and also invalidate any subsequent warranty claim.

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CHAPTER K

FUEL SYSTEM AND

CARBURETTORS

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Addendum 1

CATEGORY CECCENTRIC THROTTLE ADJUSTERAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley 'T' Series cars after car serial numbers :-

SRX 11107 (Four-door saloons)
LRX 11146 (Longwheelbase saloons)

All Rolls-Royce and Bentley Corniche cars after car serial numbers :-

CRX 11067 (Two-door saloons)
DRX 11151 (Two-door convertible cars)

DESCRIPTION:

All cars after the above car serial numbers have been fitted with eccentric throttle adjusters to facilitate more accurate synchronisation of the throttle butterflies.

Once the adjuster has been set in the factory it should not normally require re-adjustment. If, however, the throttle operating levers clamped to the butterfly spindles or the carburettor housings on the carburettor 'tee' piece are disturbed it will be necessary to re-synchronise the throttles.

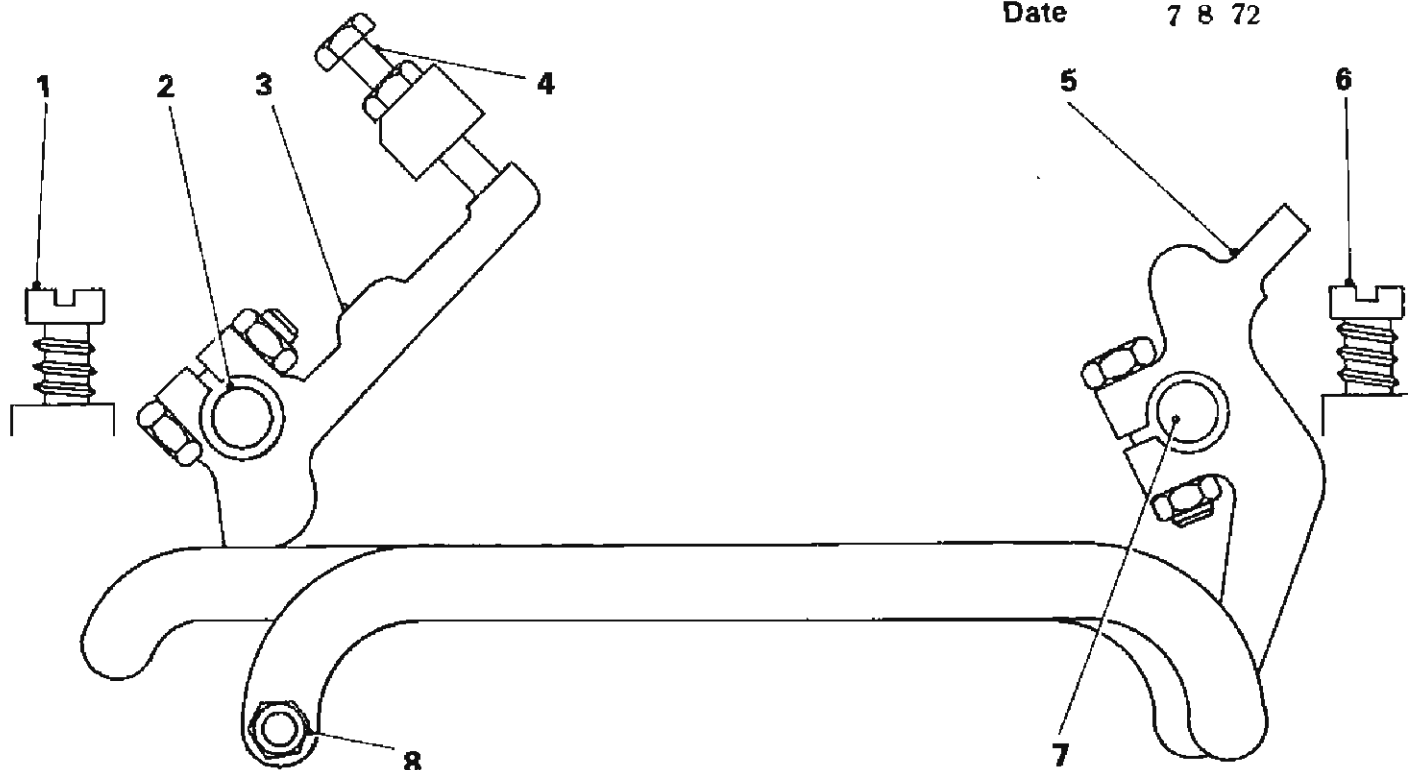
PROCEDURE:

1. Slacken off the eccentric adjuster locking nut and turn the adjuster such that the eccentric pin is in its lowest position.
(See Figs. 1 & 2).

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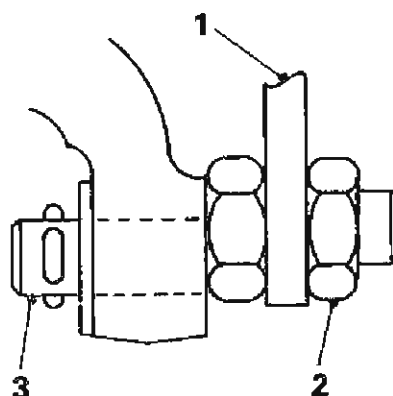
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1. 'A' bank volume screw
2. 'A' bank butterfly spindle
3. 'A' bank throttle lever
4. Idle adjusting screw
5. 'B' bank throttle lever
6. 'B' bank volume screw
7. 'B' bank butterfly spindle
8. Eccentric throttle adjuster

Carburettor Drive Link showing Eccentric adjuster



Enlarged view showing Eccentric adjuster

1. Carburettor drive link
2. Eccentric adjuster locknut
3. Eccentric pin (in lowest position)

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2. Close both the throttle butterflies, set the 'A' Bank carburettor throttle lever to the correct position (refer to Workshop Manual - Chapter K, Fig. K. 20C) and tighten both the throttle lever clamp pinch bolts.
3. Any more accurate synchronisation should be carried out using the eccentric adjuster by slackening off the adjuster nut and turning the adjuster until the correct synchronisation is obtained.

NOTE:

The carburettors of some of the first cars fitted with the eccentric adjuster were also fitted with carburettor volume screws, previously used for throttle synchronisation. These volume screws must no longer be used for throttle synchronisation and should normally be in the closed position, i.e. fully screwed in.

Under certain conditions it has been found that a whistle can occur at the idle bleed outlet when the volume screws are screwed fully in. Also that occasionally it can prove impossible to obtain the desired weakener characteristics without adjustment of the volume screws. If either of the two conditions described above are evident then it is permissible to correct them by adjustment of the volume screws provided both screws are opened by equal amounts and they are not left more than two turns open. The volume screws should, whenever possible, be left fully closed.

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CATEGORY CWAX CAPSULE OPERATED WEAKENER CUT OFF VALVEAPPLICABLE TO:

All Rolls-Royce and Bentley cars built in the following car serial number series:

- a) From SRX 6001 to SRA 12441 - cars built to comply with American Federal requirements and built for use in Japan.
- b) From SRH 8742 to SRH 12740 - Other cars.

DESCRIPTION:

The above cars were originally fitted with a fuel mixture weakening system which is thermally controlled by a wax capsule operated valve mounted in a unit on the choke housing - see Fig 1. These valve units are no longer available for replacement purposes.

Whenever it is found necessary to replace this valve the weakener system will have to be converted to the type fitted to later cars, utilising an electrical thermal switch and solenoid valve.

PROCEDURE:

- A.1 Disconnect the two metal pipes from the weakener cut off valve to 'B' Bank carburettor. (On early cars one of these pipes is connected to 'A' Bank carburettor).
 - 2 Unscrew the complete weakener cut-off valve assembly from the choke housing.
 - 3 Discard all the displaced parts.
 - B.1 Assemble the electrical weakener cut-off switch, joint and adaptor - see Fig 2.
- Tighten the three screws.

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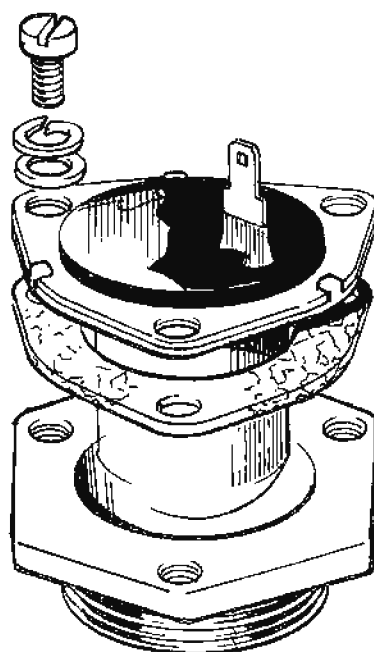
Fig 1

Showing existing weakener cut off system

- (1) Wax capsule operated weakener cut off valve
- (2) Carburettor signal tapping
- (3) Float chamber weakener device

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Fig 2
Showing thermal switch assembly

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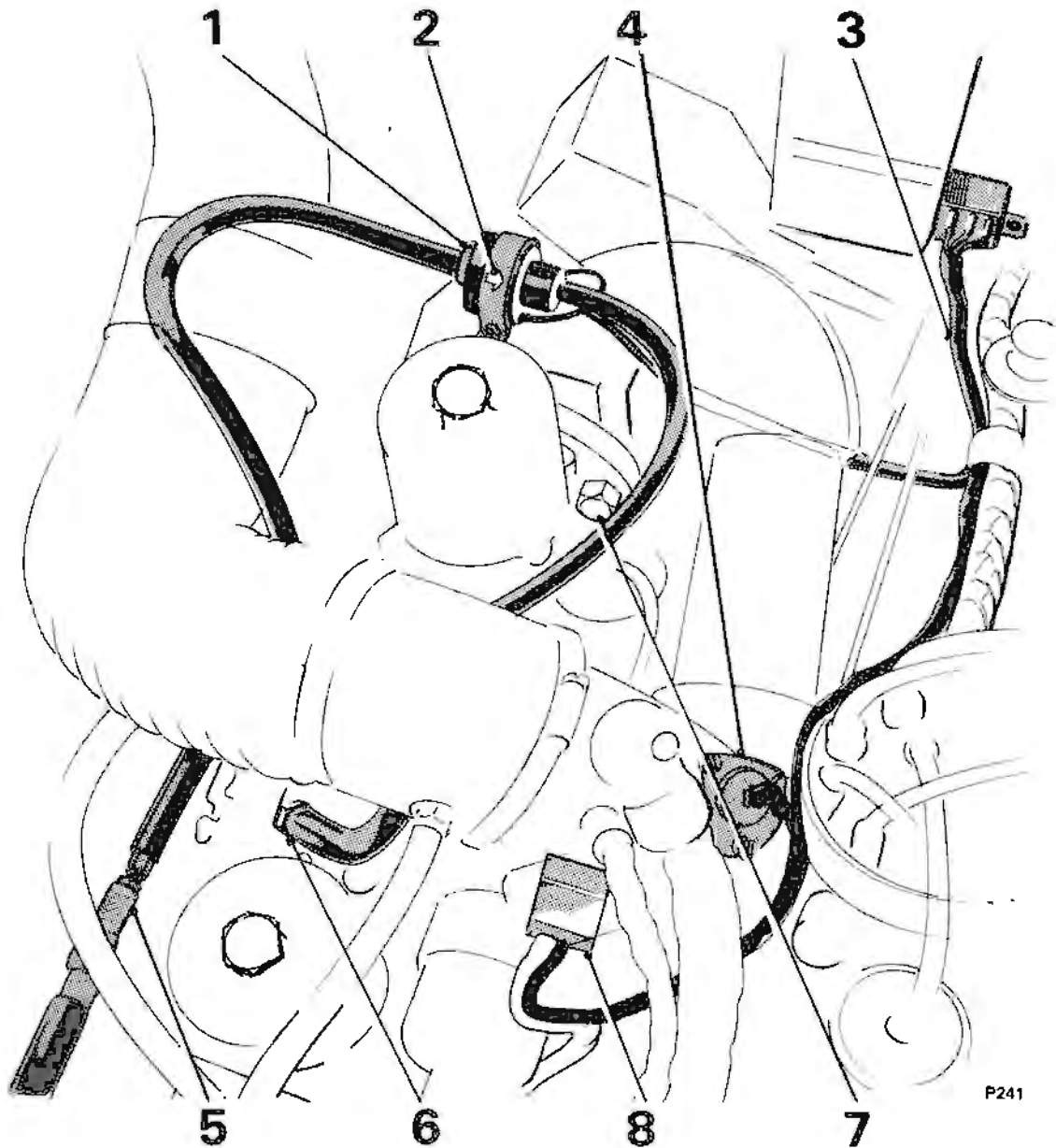
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- 2 Place the aluminium washer over the threads of the adaptor, screw the assembly into the choke housing and tighten.
 - 3 Remove the two 5/16in (7.94mm) dia bolts securing 'A' Bank air intake horn to the carburettor. Insert the longer bolts provided and tighten. (See Fig 3).
 - 4 Secure the W.C.O. solenoid, noting the direction of the arrow (see Fig 3), to the mounting bracket using the two screws and plain washers.
 - 5 Mount the assembly on 'A' Bank carburettor using the two 5/16in (7.94mm) plain washers and nuts.
 - 6 Attach the two nipples to the tappings on 'B' Bank carburettor previously occupied by the W.C.O.V. pipes using the nipple nuts. (On early cars one tapping is on 'A' Bank carburettor).
 - 7 Connect the forward facing tapping in the solenoid to 'B' Bank carburettor float chamber weakening device using the rubber hose (see Fig 3) (on early cars 'A' Bank carburettor - on these cars it will be necessary to shorten the hose).
 - 8 Connect the other tapping of the solenoid to the carburettor signal tapping on 'B' Bank carburettor body. When fitting these hoses note the hose runs shown in Fig 3.
- C. To fit loom:-
- C.1 Remove the cover from the choke solenoid.
 - 2 Attach the single white lead to the same terminal as the positive feed to the choke solenoid. This terminal has an existing white lead connected to it.
 - 3 Replace the choke solenoid cover.
 - 4 Connect the lucar, on the white/blue lead which emerges from the loom approximately 10ins from the end, to the thermal switch on the choke housing.
 - 5 Route the loom in front of the distributor and tape it to the main engine loom passing in front of the gearbox dipstick down to the starter solenoid, thence under the windscreen washer bottle (see Fig 4).

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Figure 3
 Showing Service Replacement Installation

- (1) Solenoid valve
- (2) Arrow denoting position of solenoid valve
- (3) New loom
- (4) Thermal switch
- (5) Float chamber weakener device
- (6) Carburettor signal tapping
- (7) Longer 5/16 in bolts
- (8) Choke solenoid cover

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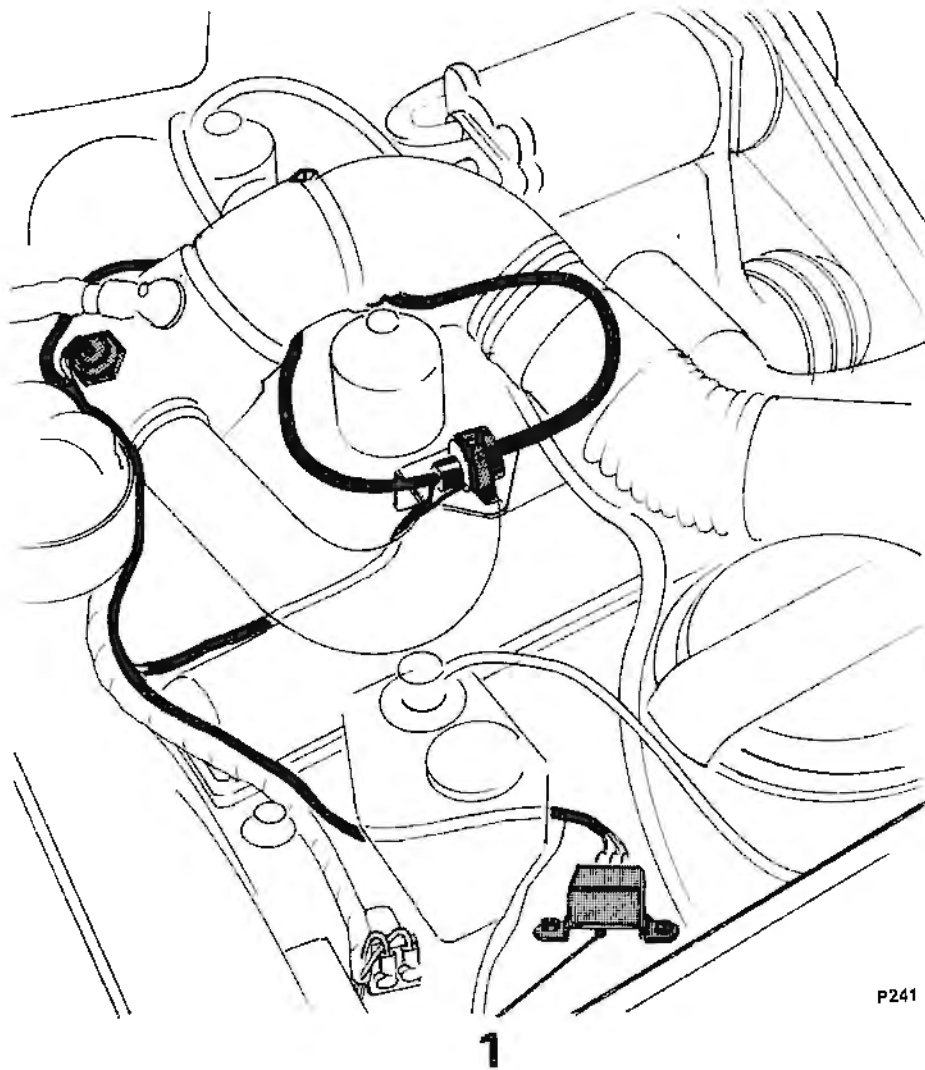


Fig 4

Showing position of relay in service replacement installation

(1) Relay

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- 6 Connect the two leads white/black and black emerging together from the loom rearward of 'A' Bank carburettor to the solenoid valve using lucar blades.
- 7 Connect the black lead emerging from the end of the loom to the RH spring pot earth point.
- 8 Position the relay as in Fig 4 on the RH valance. Ensure that the remaining leads in the loom reach the relay. Drill two holes to take the self tapping screws which secure the relay to the valance.
- 9 Connect the white/blue wire to the 'W1' terminal on the relay.
- 10 Connect the white/black wire to the 'C3' terminal on the relay.
- 11 Connect the white wire emerging from the loom to the 'W2' terminal on the relay.
- 12 Connect the short white link wire to the 'C2' terminal on the relay.

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CATEGORY C

CHOKE FAST IDLE ADJUSTMENT

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche Cars and
All Bentley 'T' series and Corniche Cars - fitted with a fuel
mixture weakener device except cars built to comply with the
North American Federal Safety Regulations.

DESCRIPTION:

There have been recent minor changes to the carburetter
systems on the above cars. These changes can result in choke
fast idle speed variations if the procedure described in
Chapter U of the Workshop Manual is used. More consistent
and slightly lower fast idle speeds can be obtained if the
fast idle speed is set using the following procedure on
those cars fitted with a fuel mixture weakening device.

PROCEDURE:

- 1 Warm up the engine to its normal working temperature,
then switch off the engine.
- 2 Remove the pressure tapping cap from 'A' bank carburetter.
('B' bank on earlier cars) (Refer Workshop Manual -
Chapter U).
- 3 Open the throttles and close the choke butterfly
against the bimetal coil tension, using the operating
lever. Release the throttles. The fast idle adjusting
screw will now be resting on the high stop of the
fast idle cam and the throttles will be in the cold
start position. (Refer Workshop Manual - Chapter U).
- 4 Start the engine, slacken the fast idle adjusting screw
locknut and turn the screw to obtain an engine speed
of 2000 r.p.m. This figure should be approached from
a higher speed. Tighten the locknut and recheck the
fast idle speed. (Refer Workshop Manual - Chapter U).

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5 Replace the float chamber pressure tapping cap.

NOTE: This procedure does not apply to cars built to comply with the North American Federal Safety Regulations. For these cars refer to the Workshop Manual Chapter U.

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CATEGORY C

CARBURETTER JET DROP

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche, and all Bentley T series and Corniche motor cars fitted with the 6½ litre engine.

DESCRIPTION:

Regulation ECE 15 governs exhaust carbon monoxide emissions at engine idle speed and became mandatory for cars produced after October 1973. ECE 15 requires that the engine idle carbon monoxide level at the exhaust tailpipe does not exceed 4.5%. All cars which have left the factory since October, have conformed with ECE 15.

The following procedure details operations necessary to adjust or set correctly the carbon monoxide readings and can be used in service for all cars fitted with the 6½ litre engine.

PROCEDURE:

1. On either 'A' or 'B' bank carburetter remove the carburetter damper.
2. Mark the carburetter suction chamber to facilitate fitting.
3. Unscrew and remove the four carburetter suction chamber securing screws.
4. Carefully remove the suction chamber.
5. Remove the piston spring and piston (take care not to damage the swing needle); empty the oil from the piston damper reservoir.

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6. Using a vernier gauge measure the existing jet drop as shown in Figure 1.
7. Release the carburettor mixture adjusting screw lock-nut using tool RH 8050.
8. Screw the mixture adjusting screw downwards (clockwise).
9. Unscrew (anti-clockwise) the mixture adjusting screw a small amount and measure the jet drop until the desired setting of 1,80 mm. to 1,90 mm. (0.070 in. to 0.075 in.) is achieved. It is imperative that the desired setting is obtained by unscrewing the mixture adjusting screw.

Secure the mixture adjusting screw lock-nut and re-check the jet drop.

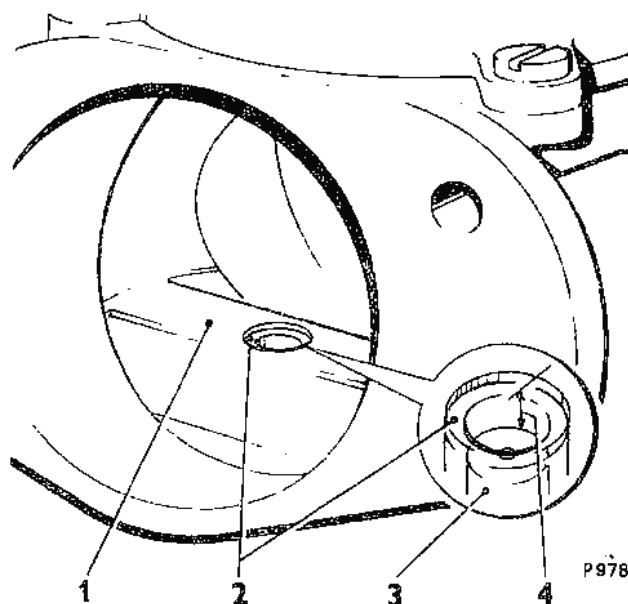


Figure 1 Checking the jet drop

- | | |
|-----------------------------|---|
| 1. Carburettor bridge piece | 3. Jet |
| 2. Jet bearing | 4. Jet drop, which should be between 1,80 mm and 1,90 mm (0.070 in and 0.075 in). |
10. Assemble the carburettor.
 11. Carry out Operations 2-9 on the remaining carburettor ensuring that the jet drop on each carburettor is identical with the other.

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Fill the carburetter piston damper reservoirs to the correct level.

12. With the engine warmed up, set the idle mixture adjusting screw on each carburetter to give the fastest idle speed commensurate with even firing. Adjust the throttle screw to give an engine idle speed of 600 rpm.
13. Check emission level using a suitable CO (carbon monoxide) meter.

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CATEGORY CAIR CLEANER/SILENCERAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche motor cars
All Bentley 'T' series and Corniche motor cars
All Rolls-Royce Camargue motor cars fitted with SU Carburetters.

DESCRIPTION:

The two piece wire mesh air cleaners and the two piece paper air cleaners have been discontinued. A new one piece paper element is now fitted and will be supplied for all replacement purposes when stocks of the two piece elements are exhausted.

PROCEDURE:

1. Unscrew the knurled nut and remove the air cleaner cover complete with the hose.
2. Remove the hexagonal nut from the centre stud and withdraw the air cleaner elements complete with the centre locating plate.
3. Discard the centre locating plate. Discard the rubber sealing rings that are fitted with the twin paper elements.
4. Re-assemble the air cleaners using the new single element without rubber sealing rings and using the existing inner and outer locating plates. Tighten the hexagonal nut and refit the air cleaner cover.

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CHAPTER L

ENGINE COOLING SYSTEM

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CATEGORY CENGINE COOLANT TEMPERATUREAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley 'T' Series cars fitted with air conditioning and refrigeration, built prior to car serial numbers :-

SRH 7834	-	Home Market Standard Saloons
SRX 7826	-	Export Market Standard Saloons
CRH 7886	-	Two-door Saloons
DBH 7883	-	Convertibles

DESCRIPTION:

This Bulletin is being re-issued to remind Service personnel of the improvements that can be made to early Silver Shadows suffering from overheating complaints.

During long periods of operation in high ambient temperatures and heavy, low speed traffic conditions with the refrigeration system operating, it is possible that the above cars may achieve a high coolant temperature. This causes the idling speed to become uneven, and before this occurs, owners may notice the coolant gauge needle moving beyond the white chaplet. These conditions are relieved if changes, already made on production cars after the above car serial numbers, are incorporated. The changes improve the operational performance of the cooling system and ensure that the engine idling speed is even at all ambient temperatures. These changes should be incorporated on cars in service in complaint cases only and at the nearest Service Schedule.

The changes that have been incorporated are as follows :-

- a) A fan cowl. To be secured to the radiator with self-tapping screws.
- b) 15 lb/sq.in (1,05 kg/sq.cm.) pressure relief valve. The relief valve, used in conjunction with a change in coolant specification to 50% anti-freeze, raises the coolant boiling point.
- c) A resistor. This is fitted to modify the coolant temperature gauge reading to bring it into line with the higher usable operating temperatures.

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- d) A hot idle compensating valve. This valve bleeds air in progressively increasing quantities, dependent upon under-bonnet temperature, into the petrol/air mixture in the inlet manifold. This overcomes the problem of a rich mixture formed at higher temperatures because of the decrease in air density.

As an additional precaution, a new type of thermostat is supplied with fusible plugs built into it. In the event of the thermostat failing in the closed position, the increase in coolant temperature will melt the plugs and allow the coolant to circulate before boiling point is reached.

The thermostats are interchangeable with those previously fitted to cars in service and, in addition to being supplied with the kits of parts, they are supplied for all service replacements.

After fitting these modifications, the idle speeds and ignition timing will need to be checked and if necessary, reset.

PROCEDURE:

Carry out the modifications and adjustments as follows :-

FAN COWL, PRESSURE RELIEF VALVE AND THERMOSTAT:

1. Remove the bonnet assembly as described in Chapter S - Body - Section S7 of the Workshop Manual.
2. Remove the radiator and fan assembly as described in Chapter L - Engine Cooling System - Section L3 of the Workshop Manual.
3. Position the cowl section (UR 16781) on the radiator matrix as shown in Figure 1.
4. Using the cowl assembly as a template, drill 12 holes in the radiator matrix side plate flanged edges to enable the cowl to be secured with the self-tapping screws provided.

NOTE: EXTREME care should be taken not to damage the radiator matrix tubes during this operation.

5. Fit the lower half of the cowl to the radiator and fit the radiator to the car.
6. Fit the fan and viscous coupling assembly.

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7. Fit the two upper sections of the cowl.
8. Remove the thermostat as described in Chapter L - Engine Cooling System - Section L4 of the Workshop Manual.

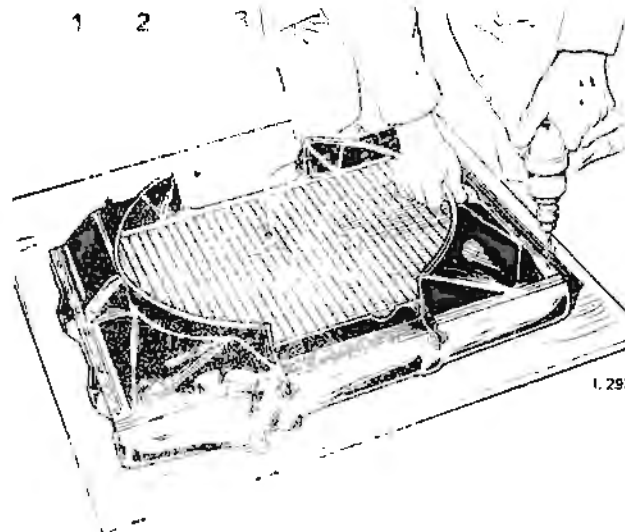


FIG. 1 - Radiator cowl used as a template

1. Radiator cowl
2. Wooden board (to protect the radiator)
3. Radiator assembly.

9. Fit the new thermostat (UE 36600) using a new gasket.
10. Fit the 15 lb/sq. in. (1,05 kg./sq. cm.) pressure relief valve (UR 16597 or UR 16730 dependent upon the type of header tank. Refer to the list of kits at the end of this Service Bulletin for the correct type of valve).
11. Fit the radiator header tank and hoses and fill the engine cooling system with a 50% anti-freeze/water mixture.

NOTE: When fitting the bottom hose, care must be taken to ensure that there is a clearance of approximately 0.125 in. (3,2 mm.) between the hose and the flange of the fan cowl and the upper triangle lever forward bracket.
In order to achieve adequate clearance, it may be necessary to trim a small amount of rubber off the bottom hose, allowing it to slip further onto the water pump connection.

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12. Run the engine and ensure that adequate clearance exists between the fan cowl and the fan blades. It may be necessary to adjust the position of the upper right-hand section of the cowl to prevent a foul under full torque conditions.
13. Check that the viscous fan drive cuts in as the under-bonnet temperature rises. This is best done by listening for the cut-in point as the temperature rises after starting the engine from cold.

Blanking off the radiator grille will speed engine warm-up.

14. Fit the bonnet.

COOLANT TEMPERATURE GAUGE MODIFICATION:

The coolant temperature gauge circuit is modified by removing one resistor and replacing the other with one of a larger value. This has the effect of altering the value of the centre point of the white chaplet from 90°C. (194°F) to approximately between 94°C and 95°C (201°F and 203°F).

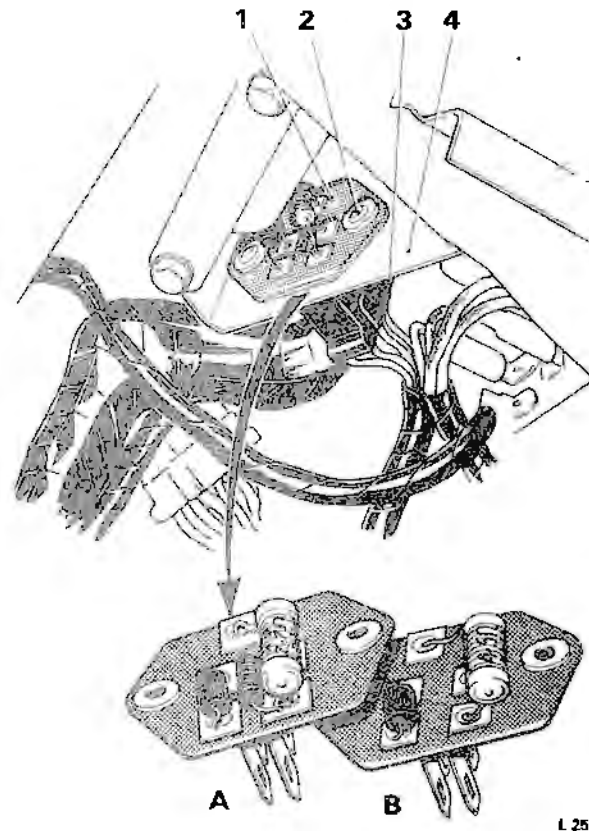
This modification should NOT be carried out unless all the other previously noted checks and modifications have been completed.

1. Disconnect the battery terminals.
2. Lower the fuseboard and remove the handbrake pocket trim.
3. Locate and remove the diode resistor (see Fig. 2). The diode resistor is secured with two screws to the dashboard stay above the handbrake barrel immediately to the right of the reverse gear lock relay.

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Fig. 2. Diode resistor modification.

1. Diode resistor assembly
2. Securing screws (remove from rear)
3. Terminal plug
4. Dashboard stay
- A. Diode resistor prior to removal.
- B. Diode resistor after modification.

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4. Remove the two resistors (see Fig. 2).
5. Carefully solder the 4.7 ohm. resistor (UD 17080) in the position shown in Fig. 2.

The theoretical circuit diagram for the modification is shown in Fig. 3.

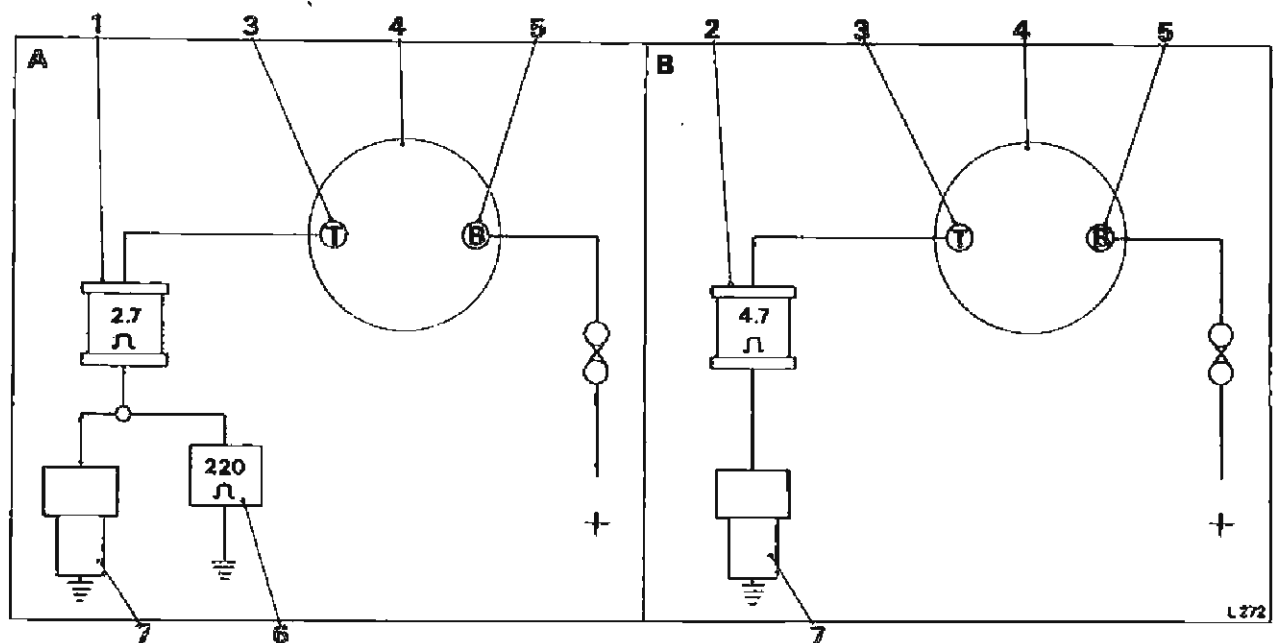


Fig.3 Theoretical wiring diagram.

- | | |
|---------------------------|----------------------------------|
| A. Prior to modification | 4. Coolant temperature indicator |
| B. After modification | 5. Feed terminal |
| 1. Resistor to be changed | 6. Resistor deleted |
| 2. New resistor | 7. Transmitter |
| 3. Transmitter terminal | |

6. Fit the diode resistor.
7. Fit the handbrake pocket trim and close the fuseboard.
8. Connect the battery terminal.

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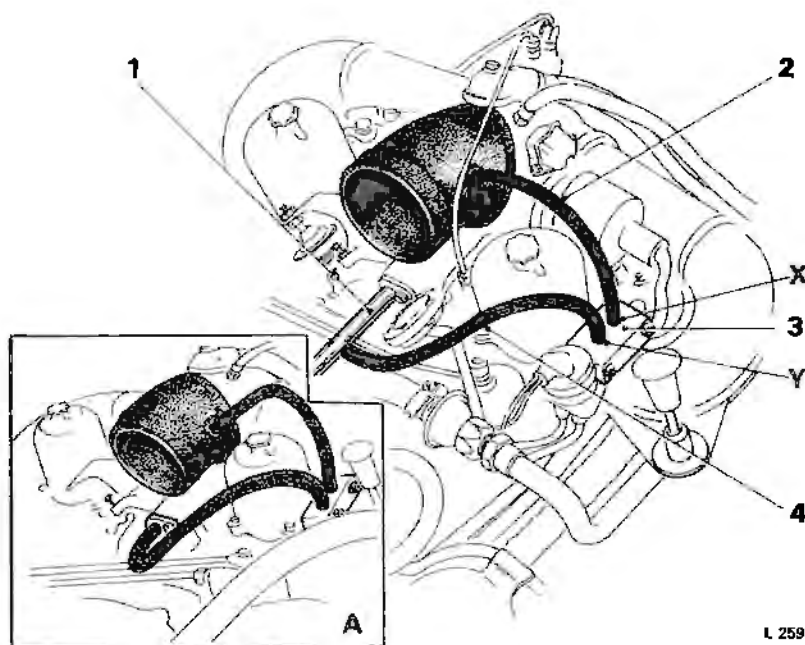
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HOT IDLE COMPENSATOR VALVE:(i) Cars fitted with the exhaust emission control system.

Fit the hot idle compensator valve (UE 36493) as follows :-

1. Mount the hot idle compensator valve (UE 36493) on the bracket secured to the 'B' Bank carburettor (see Figs. 4 & 5).
2. Remove the carburettor 'tee' piece to gulp valve pipe and fit the new pipe (UE 35617) provided).



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Fig. 4. Hot idle compensator valve and pipes.

1. Gulp valve to 'tee' piece pipe
2. Short rubber pipe
3. Hot idle compensator valve
4. Long rubber pipe

Inset A - showing the pipes when fitted to cars not fitted with exhaust emission control

- X. In
Y. Out

/continued..

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3. Remove the rubber elbow from the choke butterfly housing and modify it by cutting a 0.500 in. (12,70 mm.) diameter hole in the left-hand side just above the centre line approximately 1.250 in. to 1.375 in. (3,175 cm. to 3,492 cm.) from the rear edge of the elbow (see Fig. 6).

The hole may be cut using a piece of 0.500 in. (12,70 mm). outside diameter tubing with the outer edge sharpened to cut through the rubber. Hold a block of wood inside the elbow whilst cutting the hole.

4. Fit the short pipe (UE 36423) and shouldered washer (UE 36447) into the hole from the inside of the elbow and secure with a washer (UA 1253) and nut (RE 22430) from the outside.
5. Fit the rubber elbow.

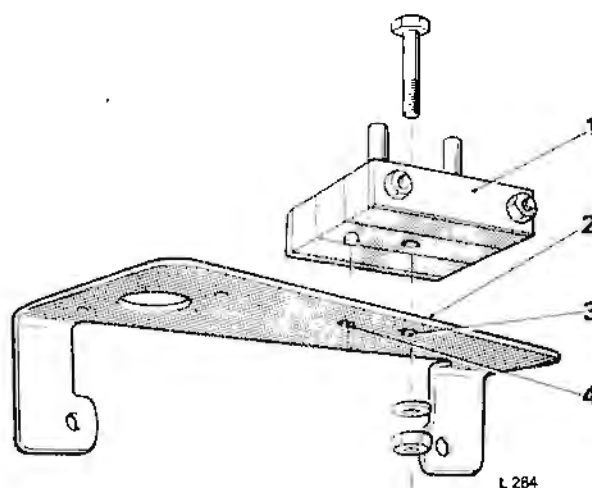


Fig. 5. Fitting the hot idle compensator valve to the bracket.

1. Compensator valve
 2. Bracket
 3. Bolt hole
 4. Dowel hole

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6. Connect the longer length of rubber hose (UE 36463) between the gulp valve pipe and the connection marked 'OUT' on the hot idle compensator valve body. Connect the shorter length of rubber hose (UE 36572) between the elbow and the connection marked 'IN' on the hot idle compensator valve body. (see Fig. 4).
7. Test the operation of the valve. This can be done by blanking off the radiator grille and allowing the engine to run at idle speed. At approximately 100°C (212°F) coolant temperature the valve should open; this can be detected by a soft 'hiss', followed by a louder 'hiss' as the valve opens fully.

(ii) Cars not fitted with the exhaust emission control system.

Fit the hot idle compensator valve as follows :

1. Mount the hot idle compensator valve (UE 36493) on the bracket secured to 'B' Bank carburettor (see Figs. 4 & 5).
2. Remove the carburettor assembly as described in Chapter K4 of the Workshop Manual and fit the new 'tee' piece (UE 35700) using new gaskets.
3. Remove the rubber elbow from the choke butterfly housing and modify it by cutting a 0.500 in. (12,70 mm) diameter hole in the left-hand side just above the centre line approximately 1.250 in. to 1.375 in. (3,175 cm to 3,492 cm) from the rear edge of the elbow (see Fig. 6).

The hole may be cut using a piece of 0.500 in. (12,70 mm). outside diameter tubing with the outer edge sharpened to cut through the rubber. Hold a block of wood inside the elbow whilst cutting the hole.

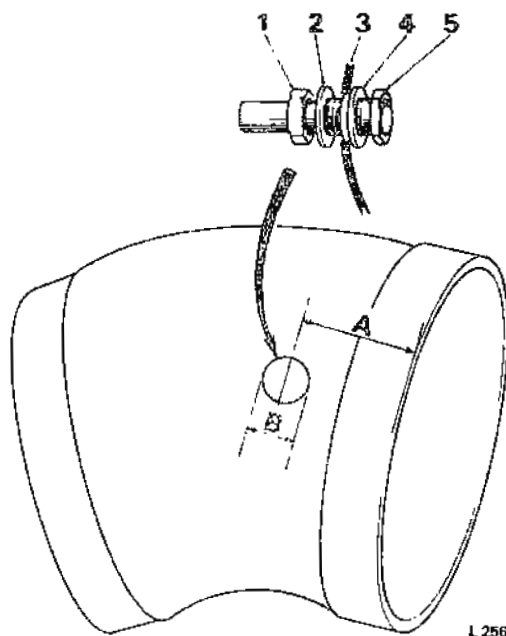
4. Fit the short pipe (UE 36423) and shouldered washer (UE 36447) into the hole from the inside of the elbow and secure with a washer (UA 1253) and nut (RE 22430) from the outside.
5. Fit the rubber elbow.

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Fig. 6. Elbow after modification

1. Nut
2. Flat washer
3. Rubber elbow
4. Shouldered washer
5. Short pipe
- A. 1.250 in. to 1.375 in. (3,175 cm. to 3,492 cm)
- B. 0.500 in. (12,70 mm.).

6. Bolt the 'tee' piece connector (UE 35620) to the 'tee' piece and connect the longer length of rubber hose (UE 36463) between the 'tee' piece connector and the connector marked 'OUT' on the hot idle compensator valve body.

Connect the shorter length of rubber hose (UE 36572) between the elbow and the connection marked 'IN' on the hot idle compensator valve body.

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7. Test the operation of the valve. This can be done by blanking off the radiator grille and allowing the engine to run at idle speed. At approximately 100°C (212°F) coolant temperature, the valve should open; this can be detected by a soft 'hiss' at first followed by a louder 'hiss' as the valve opens fully.

ENGINE ADJUSTMENTS:

1. Check that the ignition timing is correct.

On cars not fitted with the exhaust emission control system the ignition timing should be 3° B.T.D.C. Set the timing at idle speed using a stroboscopic lamp.

ON CARS FITTED WITH THE EXHAUST EMISSION CONTROL SYSTEM THE IGNITION TIMING MUST BE SET AT T.D.C.

2. On cars not fitted with the exhaust emission control system, set the mixture as weak as possible to give smooth, consistent running at idle speed. If equipment is available the mixture should be set to give an exhaust emission of 4.5% C.O. at normal ambient temperatures.

ON CARS FITTED WITH THE EXHAUST EMISSION CONTROL SYSTEM THE MIXTURE STRENGTH MUST NOT BE ALTERED.

3. Set the idle speed in neutral with the refrigeration system switched off to 600 rpm, at the local high ambient, after running the engine for the equivalent of 20 miles (32 km) followed by five minutes at idle speed.

After setting the idle speed, check and adjust the refrigeration on fast idle speed as follows. The engine should be thoroughly warm when doing this check and if it is not checked at the same time as the normal idle speed adjustment, the car should again be run for the equivalent of 20 miles (32 km) followed by five minutes at idle speed.

1. With the engine running at idle speed and Neutral or Park selected, switch the air conditioning system to the full COLD position, with maximum blower speed.

Open the circular fascia outlets and the rectangular outlet.

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3. Allow the car to run in this manner for a minimum period of two minutes. Measure the ambient temperature outside the car and from the table below select the appropriate idle speed.

Set the engine to run at this speed by adjusting the screw in the 'B' Bank carburettor lever.

AMBIENT AIR TEMPERATURE:FAST IDLE SPEED

^o F	^o C	R. P. M.
50	10	1280
55	12.7	1250
60	15.5	1210
65	18.2	1170
70	21	1140
75	23.7	1100
80	26.6	1060
85	29.1	1020
90	32	990
95	34.7	950
100	37.7	920

MATERIAL REQUIRED:

Kit 8A	Cars not fitted with exhaust emission control	)
		) Early cars
Kit 8B	Cars fitted with exhaust emission control	)
Kit 8C	Cars not fitted with exhaust emission control	)
		) Late cars
Kit 8D	Cars fitted with exhaust emission control	)

The difference between the Kits for early and late cars is a different type of pressure relief valve, so care should be taken when ordering to ensure that the correct Kit is ordered.

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Early cars refers to those built prior to the following car serial numbers :-

SRH 7333
LRX 7320
CRH 7374
DRX 7299

The later group of cars are those built from and including the above car serial numbers and up to the car serial numbers quoted on the front page.

TIME ALLOWED:

Carrying out the full modification :-

Cars fitted with exhaust emission control:	10.25 hours
Cars not fitted with exhaust emission control:	13.50 hours.

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CATEGORY C

ANTI-FREEZE

APPLICABLE TO

All Rolls-Royce Silver Shadow and Corniche cars, and all Bentley T Series and Corniche cars.

DESCRIPTION

It is known that 'Prestone' anti-freeze containing anti-leak additive can, under adverse conditions, prove detrimental to the engine cooling system over a prolonged period of time. Whilst there is little likelihood of such damage occurring, provided the directions of use are strictly adhered to, it has been decided that this anti-freeze should not be used in Rolls-Royce or Bentley cars as a precaution against damage being incurred through inadvertent misuse.

It is also known that for maximum protection against corrosion the only suitable anti-freeze containing the correct inhibitors for Rolls-Royce and Bentley cars is one which conforms to BS 3150. It is again stressed that only such an anti-freeze should be used in Rolls-Royce and Bentley cars and for maximum protection against corrosion must be used in a 50% solution. This strength of anti-freeze solution must be used all the year round since it also significantly raises the boiling point of the coolant.

In one or two of the more remote territories it might not be possible to obtain an anti-freeze to BS 3150 specification. If every possible attempt to obtain such an anti-freeze proves negative then in such instances, and only such instances, it is permissible to use the General Motors Anti-freeze to the 1899 M performance specification or 6048 M anti-freeze (which also conforms to the 1899 M performance). It is imperative however that the anti-freeze concentration is never allowed to fall below 50%.

Every 12 months the radiator and crankcase should be drained and re-filled with the correct anti-freeze solution.

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Whilst most service personnel realise that ordinary Smiths 'Bluecol' anti-freeze is not suitable for use in aluminium engines, some are not aware that 'Bluecol AA' conforms to BS 3150 and is suitable for use in Rolls-Royce and Bentley cars and is available throughout Europe.

IMPORTANT:

Anti-freeze containing anti-leak properties must never, under any circumstances, be used in the cooling systems of Rolls-Royce and Bentley cars.

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CATEGORY CGEARBOX HEAT EXCHANGERAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley 'T' Series cars after car serial numbers :-

SRH 13619 (Four-door saloons)
LRA 13464 (Longwheelbase saloons)

All Rolls-Royce and Bentley Corniche cars after car serial numbers :-

CRH 13454 (Two-door saloons)
DRA 13413 (Convertible cars)

DESCRIPTION:

An improved efficiency gearbox oil cooler has been incorporated in the base of the radiator matrix and replaces the heat exchanger previously mounted on the gearbox bell housing.

The oil from the gearbox passes through a flexible hose to a steel pipe which runs along the right-hand longeron. This pipe passes down the rear face of the fan cowl to the base of the radiator matrix. The oil returns through a second steel pipe and flexible hose running adjacent to the feed to the matrix.

The speedometer cable was previously clipped to the oil cooler. It is now supported by a bracket and clip bolted to the right-hand mounting bracket on the gearbox bell housing.

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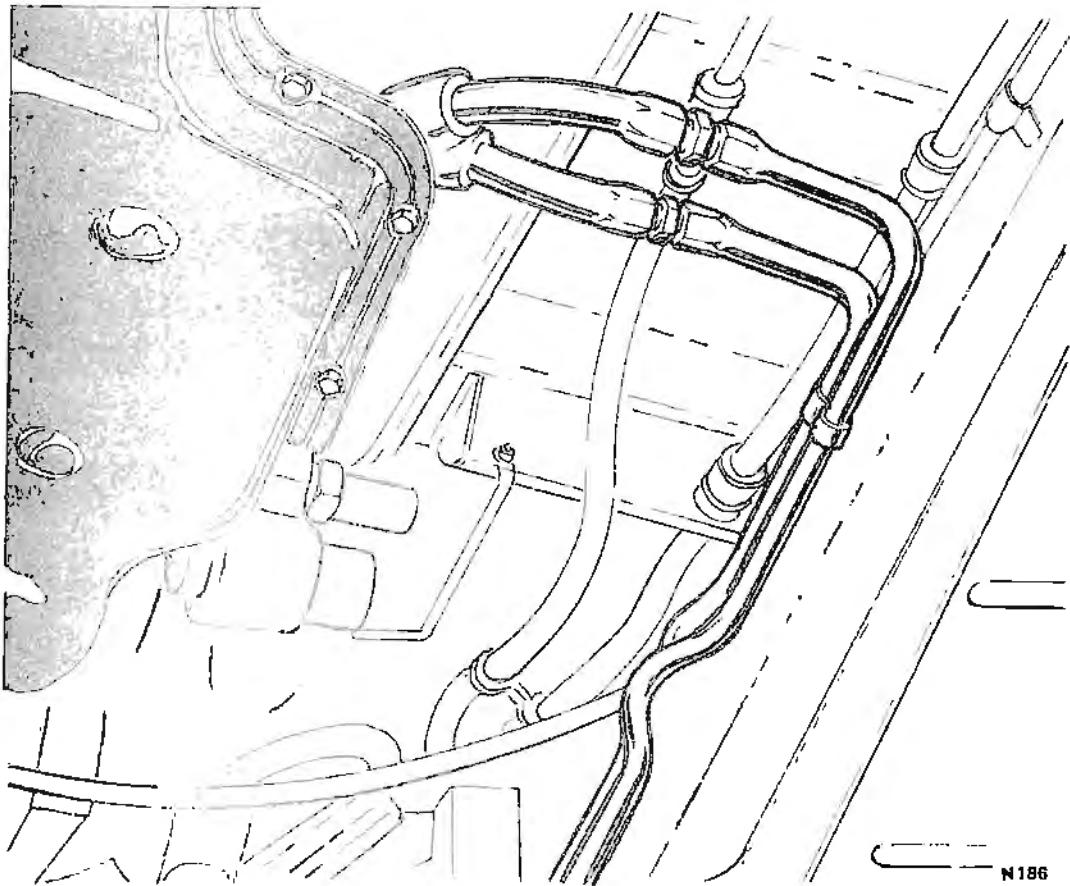
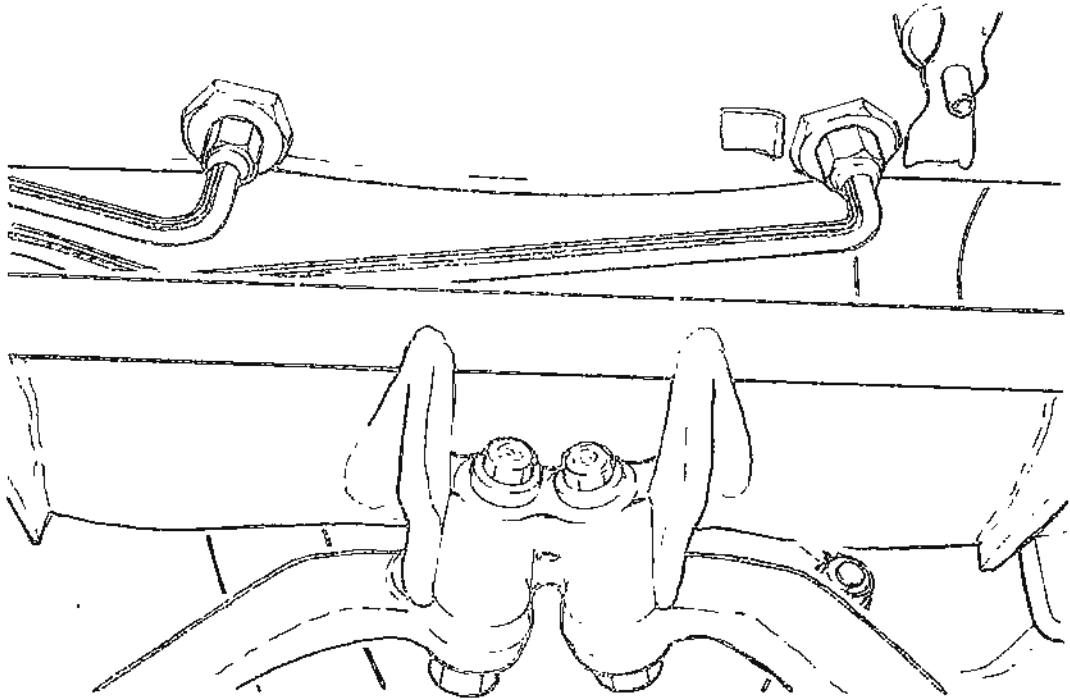


FIG.1 Showing flexible pipes from gearbox to solid pipes mounted on longeron.

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FIG. 2 Showing connections from solid pipes into radiator matrix.

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Date 15.1.73CATEGORY CHEATER HOSES.APPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley 'T' Series cars prior to SRH 14472 and all Rolls-Royce and Bentley Corniche cars prior to CRX 14492.

DESCRIPTION:

All cars now leaving the factory are fitted with revised heater hoses which have reversed the flow of coolant through the heater tap. This modification improves the internal and external sealing capabilities of the tap.

It has therefore been decided to supply these hoses for all future replacement purposes on the above cars.

When the heater feed hose (cylinder head to heater tap) is replaced at the 24,000 miles service, both of the earlier type of hoses should be replaced with a pair of hoses of the new type.

PARTS REQUIRED:

<u>DISPLACED:</u>	<u>DESCRIPTION:</u>	<u>NEW:</u>
UD 12957	Hose-tap to heater	UE 38224
UR 17764	Hose-engine to tap	UE 38223

Apr/JC1/Hly

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CATEGORY C

THE ENGINE COOLING FAN

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars fitted with 1973 Emission Control systems and produced after the following car serial numbers:

SRB 14945, DRB 14991, CRB 15052 and LRB 15056.

DESCRIPTION:

To maintain the coolant system efficiency with the introduction of the 1973 Emission Control system, the diameter of the engine cooling fan has been increased to 20 inches (50.8 cm).

This alteration has necessitated small changes in both radiator hoses, the radiator upper hose connection, the coolant expansion tank and the radiator fan cowl.

The radiator hoses have been changed to maintain the clearance from the fan blades, and the fan cowl has been increased in diameter to accommodate the fan.

The lower half of the coolant expansion tank has also been re-shaped to clear the fan.

None of the above mentioned parts are interchangeable with those fitted to cars produced before the above car serial number.

The method of removing any of these parts from the car remains unchanged and the part numbers of all the new components are given in Spares Information Sheet 4 D 26 issued on 16 1 73.

It should be noted that the coolant pump bottom hose elbow part number UE 32638 which is used on all cars fitted with a 17 inch (43.2 cm) diameter fan can be used for any car fitted with a 20 inch (50.8 cm) diameter fan. However, the new coolant pump elbow, part number UE 37865 must only be used on right-hand drive cars fitted with the 20 inch (50.8 cm) diameter fan.

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CATEGORY C

THE HEATER TAP

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Coachbuilt Cars and all Bentley T Series and Coachbuilt Cars specified for use in the United Kingdom and not fitted with a refrigeration system.

DESCRIPTION:

The heater tap fitted to the above range of cars is different to that fitted to later cars.

The main differences are in the actual mounting of the tap to the reservoir mounting bracket and in the size of the outlet pipe of the tap.

The early type of tap is mounted to a small bracket which protrudes from the inner edge of the reservoir mounting bracket. The later type of tap is mounted to a plate which is secured across a triangular hole in the reservoir mounting bracket.

It has now become impossible to obtain new supplies of new heater taps of the earlier design. In the event of one of these taps needing replacement therefore it will be necessary to change the mounting bracket and the heater tap. The necessary instructions are given in this Service Bulletin.

PROCEDURE:

1. Drain the coolant from the engine.
2. Disconnect both hoses from the heater tap.
3. Remove the three screws which secure the reservoir to the mounting bracket which carries the water tap.
4. Remove the bolts from the lower edge of the mounting bracket.
5. Disconnect the plug from the actuator and remove the mounting bracket.
6. Remove and discard the water tap and the mounting bracket.
7. Fit the new tap bracket to the new main bracket.

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8. Fit the new pipe adaptor, sealing ring and water tap provided to the mounting bracket.
9. Refit the mounting bracket to the car.
10. Replace the existing water pipe and flange assembly on the cylinder head with the new one provided.
11. Connect the existing hose to the pipe adaptor of the water tap.
12. Connect the actuator linkage to the heater tap as described in Chapter C page C9 of the Workshop Manual.
13. Refill the cooling system, run the engine and check all disturbed hoses and the water tap for leaks.

TIME ALLOWED:

2.00 HOURS

PARTS REQUIRED:

RH 2580 HEATER TAP KIT

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CATEGORY CPRESTONE II ANTI-FREEZEAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars.

All Bentley 'T' Series and Corniche cars.

DESCRIPTION:

Prestone II Anti-freeze has been added to the list of anti-freezes recommended for use in the above cars.

All cars built to comply with the North American Federal Safety Regulations from car serial number SRB 16134 are filled with a 50% solution of water and Prestone II before leaving the factory. This new anti-freeze has a green-golden phosphorescent appearance.

The 50% solution must be used throughout the year since in addition to providing protection against the coolant freezing the solution protects internal passages against corrosion; it also safeguards against erosion and provides a higher coolant boiling point than weaker solutions or water alone.

As with all brands of anti-freeze, Prestone II must not be mixed with any other anti-freeze.

The currently recommended coolant solution for the above cars therefore is one of 50% water and anti-freeze to BS 3150 or, where such anti-freeze is unobtainable, Prestone II.

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CATEGORY CHEATER HOSE REPLACEMENTAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche Cars.
All Bentley 'T' Series and Corniche cars.

DESCRIPTION:

The heater feed hose (cylinder head to heater tap) operates under conditions of high temperature and pressure. As such it is recommended that this hose be changed every 24,000 miles or two years, whichever is the earlier. Failure to comply with this service requirement could result in the hose rupturing with the subsequent risk of engine overheating and failure. Therefore, in line with Rolls-Royce Motors policy, any damage caused by failure to comply with the service recommendations will not be accepted under warranty.

PROCEDURE:

The following guidelines are laid down for the replacement of heater hoses.

- 1 The heater feed hose (cylinder head to heater tap) should be changed at 24,000 miles or 2 years, whichever is the earlier.
- 2 On four-door cars prior to SRH 14472 and on Corniche cars prior to CRX 14492 the heater hoses must both be changed if this has not been done previously. This is because a revised type of hose which was not originally fitted to these cars is supplied for all replacements.
- 3 In the event of a replacement engine being fitted, all of the coolant hoses and the thermostat should be changed. If the removed engine is the subject of a warranty claim, displaced hoses and thermostat should be returned to Rolls-Royce Motors Limited marked for the attention of the Service Engineering Department. THIS IS MOST IMPORTANT.

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PARTS REQUIRED FOR HOSE CHANGE:

UE 38223 - Hose, cylinder head to heater tap

Also on those cars detailed in 2 above

UE 38224 - Hose, heater tap to heater

Printed in England

JC1/GF

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CATEGORY CPRESTONE UT-184 ANTI-FREEZE AND SUMMER COOLANTAPPLICATION:

All Rolls-Royce Silver Shadow standard and long wheelbase, Rolls-Royce Corniche and Rolls-Royce Camargue, Bentley T Series standard and long wheelbase and Bentley Corniche motor cars built after car serial number SRX 22088 and including the following:

SRH 21008	SRX 21705	SRX 21760	LRH 21923
LRX 21927	LRX 21933	SRH 21955	SRH 21959
SRH 21964	SRH 21965	SRH 21966	SRH 21968
SRH 21969	SRH 21971	SRH 21972	SRH 21974
SBX 21975	SRH 21977	SRH 21978	SRH 21979
* SRH 21980	SRH 21981	SRH 22002	SRX 22005
SRH 22006	SRX 22009	SRH 22010	SRH 22012
SRX 22013	SRH 22014	SRH 22017	SRX 22019
SRH 22020	SRH 22021	SRH 22023	SRH 22024
SRH 22025	SRX 22026	SRH 22027	SRH 22029
SRH 22031	SRX 22033	SRX 22037	SRH 22038
SRH 22040	SRX 22042	SRH 22043	SRX 22044
SRH 22076	SRX 22078	SRH 22079	SRX 22084

DESCRIPTION:

Prestone UT-184 anti-freeze and Summer Coolant will be used in all motor cars built after the above car serial numbers excluding cars destined for North America and Canada which will, for the present, continue to be filled with Prestone II.

Eventually cars destined for North America and Canada will also be filled with Prestone UT-184.

Prestone II and Prestone UT-184 are basically similar and can be mixed with each other for "topping-up" purposes.

BS3150 anti-freeze which was previously used on other than American cars should not be "topped-up" with Prestone UT-184 (or any other anti-freeze) under any circumstances as the two have totally different inhibiting fluids which are not miscible.

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If BS3150 anti-freeze is not available for "topping-up" purposes, it will be necessary to completely drain and flush the cooling system and refill with a 50% mix of Prestone UT-184 and water.

Prestone UT-184 is for both Winter and Summer protection and should be used all year round.

Every 12 months the complete system should be drained and flushed and the system refilled with a 50% mix of Prestone UT-184 and water.

As a visual aid to identifying the types of anti-freeze the following should be of assistance.

BS3150 is Lime Green in colour.
Prestone UT-184 is Turquoise Blue in colour.
Prestone II is Fluorescent Green in colour.

ECK/DC

CHAPTER M

ELECTRICAL SYSTEM

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CATEGORY C

THE LUCAS MODEL 16W WIPER MOTOR

APPLICABLE TO

All Rolls-Royce Silver Shadow and Bentley T Series cars, and all Rolls-Royce and Bentley Corniche cars fitted with the model 16W permanent magnet wiper motor.

DESCRIPTION

On occasions in the past, it has been necessary to change the complete wiper motor assembly, including the drive rack, because of a problem which has occurred in any one part of the assembly.

In order to remove this necessity and thus allow only the affected part to be renewed, the wiper motor assembly has been broken down into three main parts as listed in the following paragraphs.

<u>Part Number</u>	<u>Description</u>
CD 5612	Motor and Gearbox - this comprises of the electric motor, the gearbox casing, the worm shaft, the parking switch and a new circlip for the output gear.
CD 5609 (RHD) CD 5610 (LHD)	The Friction Drive - this is made up of the output gear, circlip, the connecting rod and the friction drive assembly.
CD 5395	The Drive Rack - this consists of the drive rack alone.

In the event of a problem occurring with a wiper motor therefore, only the part which contains the affected component need be changed.

The necessary instructions for replacing any one of these three parts is given in this Service Bulletin.

PROCEDURE

The following seven operations are common whichever of the three components is being renewed.

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1. Disconnect the loom socket from the wiper motor plug.
2. Remove both wiper blades.
3. Release the nut which secures the rack tubing to the wiper motor.
4. Slacken the clip which secures the motor and withdraw the motor and rack from the car.
5. Remove the circlip and washer from the outer end of the drive gear shaft (see Fig. 1). Discard the circlip.
6. Remove the plastic cover and the cover plate from the wiper motor. It should be noted that care must be taken not to introduce dirt into the gearbox assembly.
7. Withdraw the gear and parking device assembly from the motor, ensuring that any burrs around the circlip groove of the gearshaft are removed before withdrawal.

Note One of the following procedures should now be followed dependant on which part requires renewal.

Replacement of Gear and Parking Device Assembly, or Renewal of Motor

1. Fit the gear and parking device assembly into the motor, locating the drive rack on the peg of the connecting rod and ensuring that the parking switch slide is fitted to the drive rack and is facing the correct way, as shown in Figure 1.
2. Using grease from the motor gearbox, lubricate the gear teeth.
3. Fit the dished washer, plain washer and circlip to the outer end of the gear shaft.
4. Fit the plastic cover and the cover plate to the wiper motor.
5. Fit the motor and rack assembly to the car by reversing the procedure given for removal. Ensure that when the motor securing clip is tightened, the alignment between the motor and the rack tubing is not destroyed.
6. Connect the loom socket to the wiper motor and operate the wiper motor for a few seconds and then switch off. This will ensure that the wiper wheel-boxes are in the parked position.
7. Fit the wiper blades in the parked position to the wheelboxes.

Renewal of Drive Rack

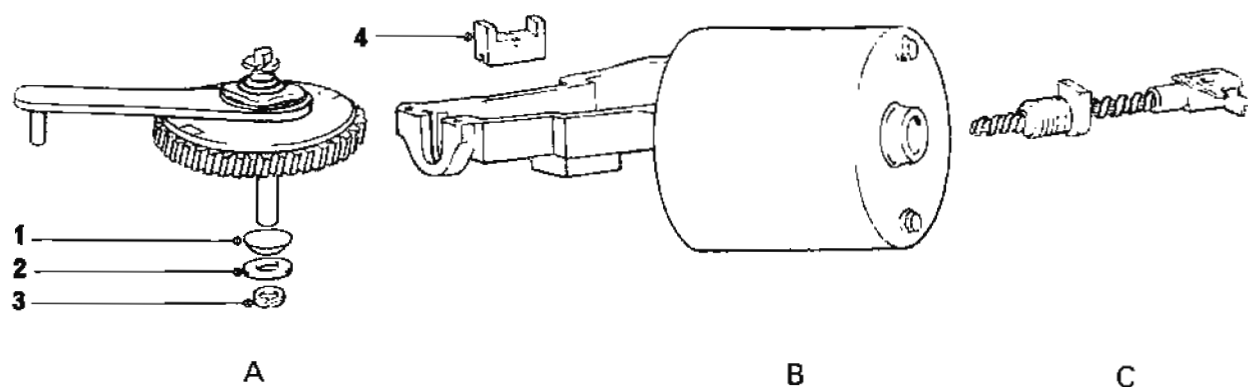
1. Withdraw the rack from the motor.
2. Fit the new rack, and replace the drive gear, fitting the dished

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washer, plain washer and using the new circlip provided. Ensure that the plastic parking switch operating slide is correctly located by the arm on the rack, and that the slide is fitted the correct way around as shown in Figure 1.



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Figure 1 - Wiper motor components

- A. Friction drive
- B. Motor and gearbox
- C. Drive rack
- 1. Cup washer
- 2. Plain washer
- 3. Circlip
- 4. Parking switch slide

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3. Replace the motor covers and fit the motor and drive rack to the car by reversing the procedure given for removal. Ensure that when the motor securing clip is tightened, the alignment between the motor and the rack tubing is not destroyed.
4. Connect the loom socket to the wiper motor and operate the wiper motor for a few seconds and then switch off. This will ensure that the wiper wheel-boxes are in the parked position.
5. Fit the wiper blades in the parked position to the wheel-boxes.

TIME ALLOWED

To renew any one of the three sub-assemblies - 1.75 hours.

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Date 5.11.71CATEGORY CSPEEDOMETER FLEXIBLE DRIVEAPPLICABLE TO

All Rolls-Royce Silver Shadow and Bentley T Series cars prior to Car Serial Number SRH 9404.

DESCRIPTION

The same type speedometer cable was fitted to both Left-hand and Right-hand drive cars in the above series, however, the use of this cable on Right-hand drive cars fitted with the Torque Converter Transmission necessitated the use of a right-angled drive adaptor.

A new type speedometer cable has been introduced which no longer requires the use of the right-angled drive adaptor. The cable now fits directly onto the gearbox.

In the event of it being necessary to replace either the speedometer cable or the right-angled drive adaptor on early Right-hand drive cars with Torque Converter Transmission, the adaptor should be discarded and a new type speedometer cable fitted.

A second new cable has been introduced for use on Left-hand drive cars, and also Right-hand drive cars fitted with the Four Speed Automatic Gearbox.

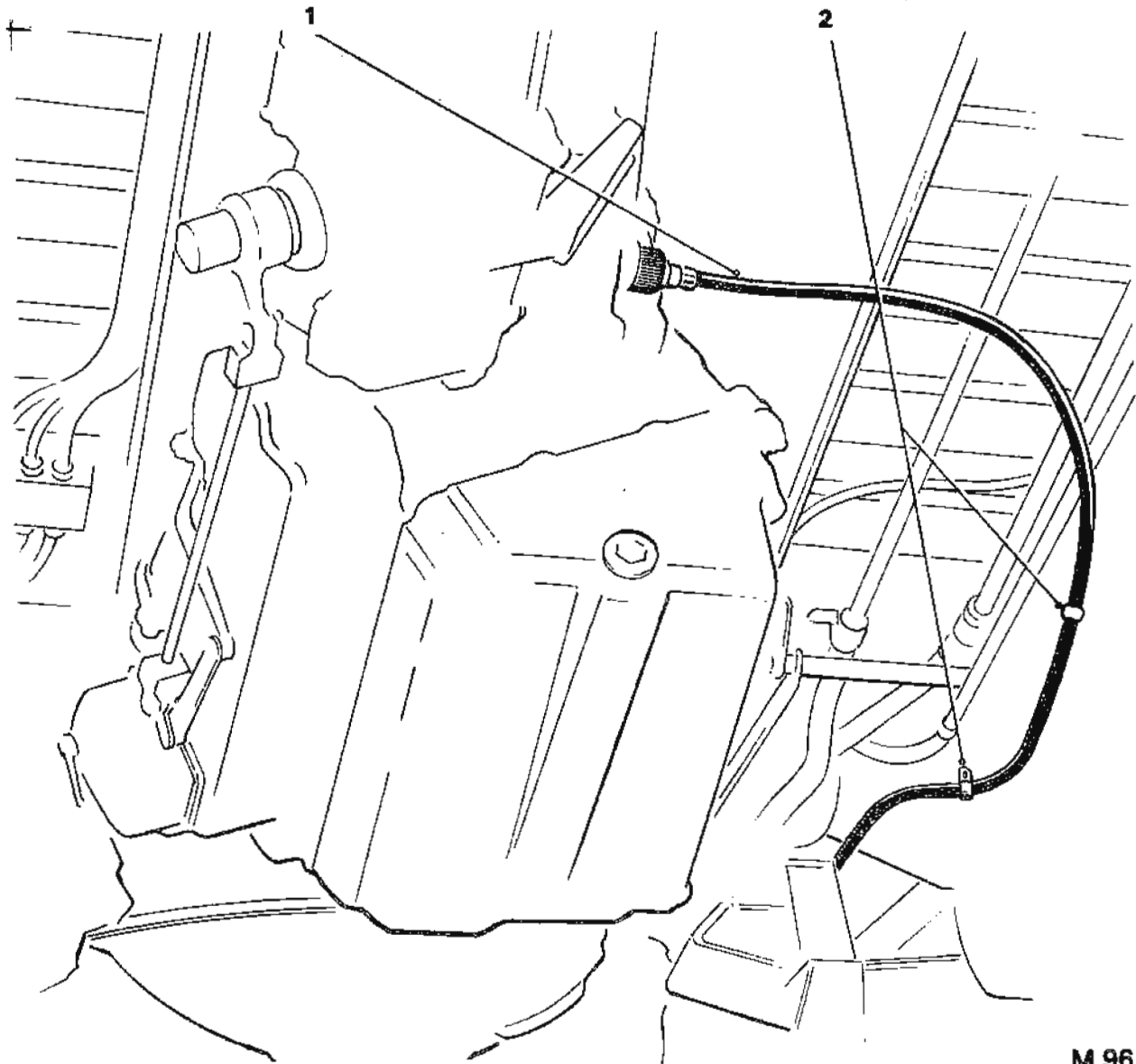
Listed below are the new parts required.

<u>Displaced</u>	<u>Description</u>	<u>New</u>
-	Assy. - Flexible drive - Speedometer - Right-hand drive cars fitted with Torque Converter Transmission.	UD 17256
UD 15459	Assy. - Flexible drive - Speedometer - Left-hand drive cars fitted with Torque Converter Transmission and Right-hand drive cars fitted with 4-Speed Automatic Gearbox.	UD 17257
UD 12526	Clip - Speedometer cable to undersheet - Left-hand drive cars with Torque Converter Transmission.	UD 12527
UD 14020	Clip - Speedometer cable to bracket.	UD 16515

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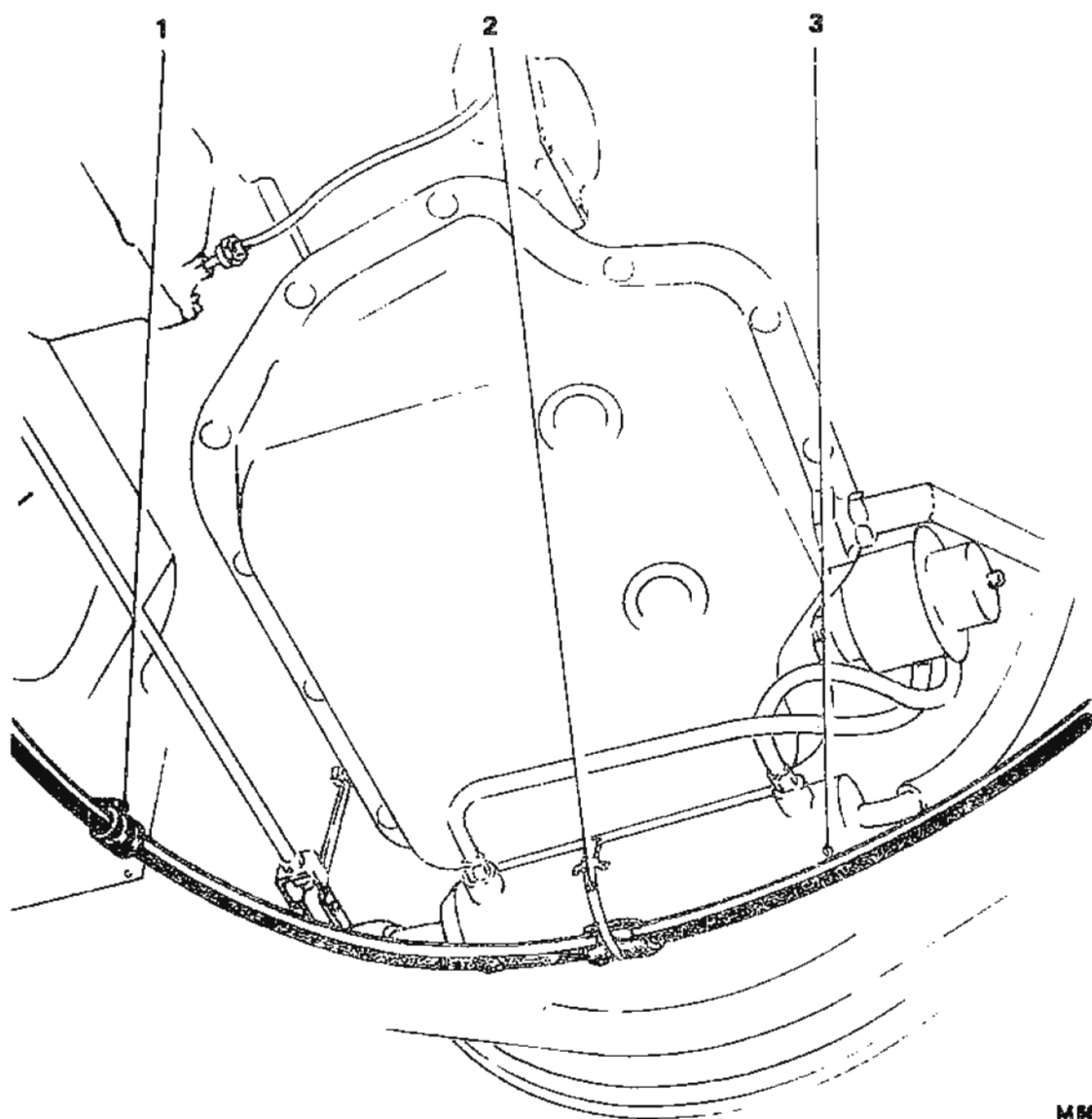
Fig. 1 Cars fitted with 4-Speed Automatic Gearbox

- 1. Cable UD 17257
- 2. Clips UD 16515

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Fig. 2 Left-hand drive cars fitted with
Torque Converter Transmission

1. Clip UD 12527
2. Clip UG 3555
3. Cable UD 17257

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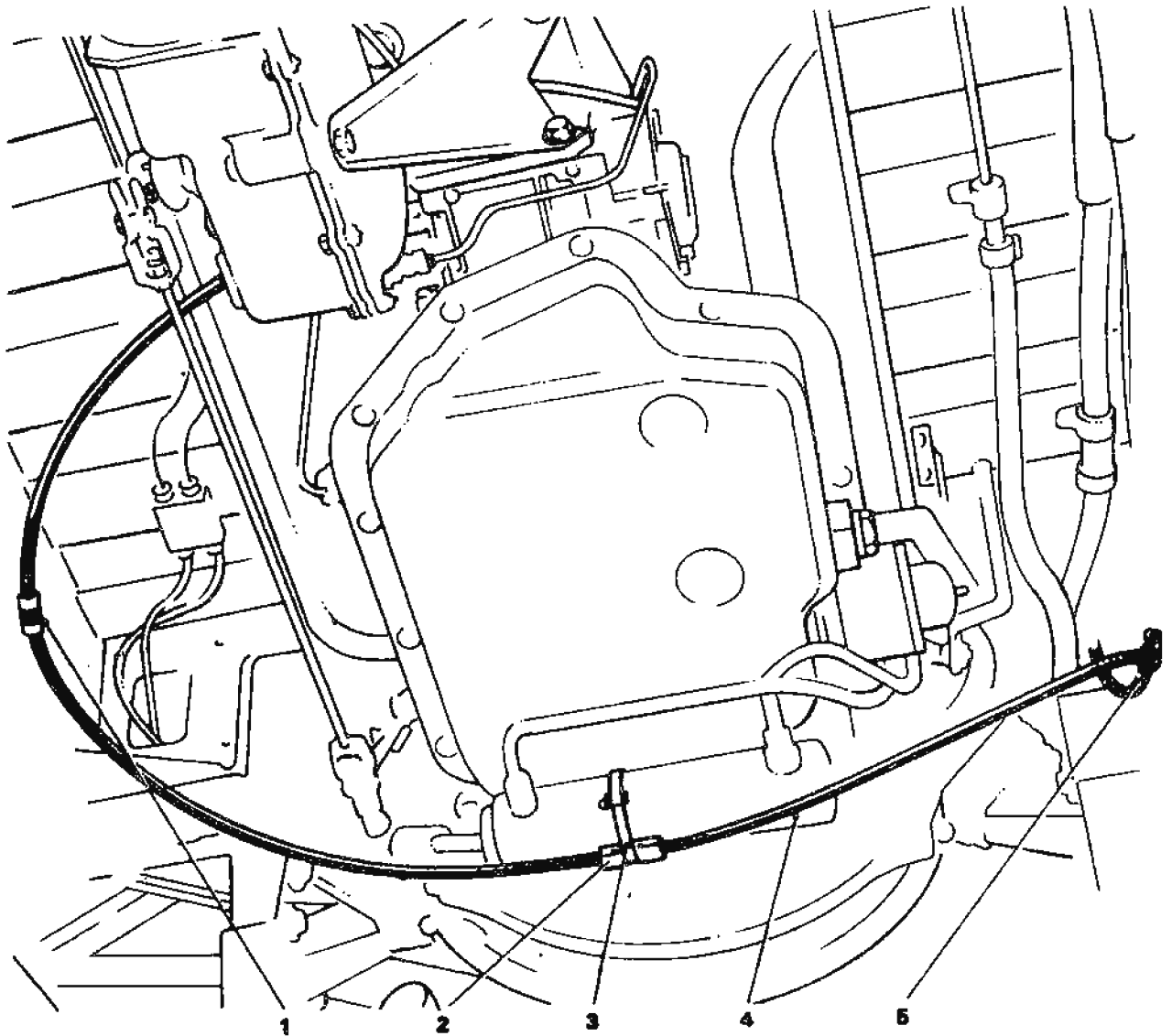


Fig. 3 Right-hand drive cars fitted with
Torque Converter Transmission

1. Clip RE 25667
2. Insulator UR 16639
3. Clip UG 3555
4. Cable UD 17256
5. Clip RE 25667

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CATEGORY C

THE DAGENITE 'AUTOFIL' BATTERY

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley T Series and Corniche cars.

DESCRIPTION

The Dagenite 'Easifil' battery has been superseded by the Dagenite 'Autofil' battery on all cars produced from the second week of January 1972. The new 'Autofil' battery can be easily identified by the white trough cover, as opposed to the yellow one fitted to the now superseded 'Easifil' battery.

The 'Autofil' battery features a revised method of topping-up the electrolyte and it is most important that the revised topping-up procedure is only carried out at six monthly or 6 000 mile (10 000 km.) intervals as detailed in this Service Bulletin, otherwise over-filling may occur. This reduction in service requirements has been brought about by internal battery improvements which result in a large reduction in the rate of electrolyte loss. Whenever convenient this procedure should be brought to the attention of Owners and Chauffeurs.

The case size of the new battery is the same as the 'Easifil' model and it can therefore be used for all replacement purposes. However, it is suggested that in this eventuality, the label on the battery cover should be removed as the information relates to the 'Easifil' battery only. Labels for the 'Autofil' battery are available from Rolls-Royce Motors, the Part Number being UD.18484.

The rating of the 'Autofil' battery is 71 ampere hours at the 20 hour rate, and when fully charged the battery weighs 53 pounds (24 kilogrammes).

The recommended charge rate for the initial charge is 7 amps. for 12 hours. The normal charge rate is also 7 amps. It should be noted that due to the topping-up system employed the trough cover should always be in position whenever the battery is being charged, otherwise the gas produced by the electrolyte will be unable to escape from the chamber. This will result in an air-lock in the chamber and further gassing will cause a rise in the level of the electrolyte, with the risk of flooding the battery.

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The specific gravity values for the 'Autofil' battery are as follows:

CLIMATE	BATTERY CONDITION	SPECIFIC GRAVITY
Air temperature generally below 32°C. (89.6°F.)	Fully charged	1.270 to 1.290
	Half discharged	1.180 to 1.200
	Fully discharged	1.090 to 1.110
Air temperature frequently above 32°C. (89.6°F.)	Fully charged	1.220 to 1.240
	Half discharged	1.150 to 1.170
	Fully discharged	1.070 to 1.090

Should it be necessary to give the battery a boost charge, the battery should be removed from the car and care taken to ensure that the battery trough cover is in place whilst charging. Should it be required to immerse a thermostat in the electrolyte during charging it will be necessary to remove the balls from the trough. Ensure that these are replaced after charging.

Topping-up procedure - Every 6 000 miles or 6 months

1. Remove the trim panel, tool tray and battery box covers situated in the luggage compartment.
2. Using a hydrometer ensure that the battery is fully charged because if topping-up is carried out whilst discharged the electrolyte will rise during subsequent charging and may flood the battery. Withdraw the battery and remove the vent chamber cover, noting the level of the electrolyte.

IMPORTANT

The electrolyte should only be topped-up if the levels are below the bottoms of the filling tubes as shown in Figure 1.

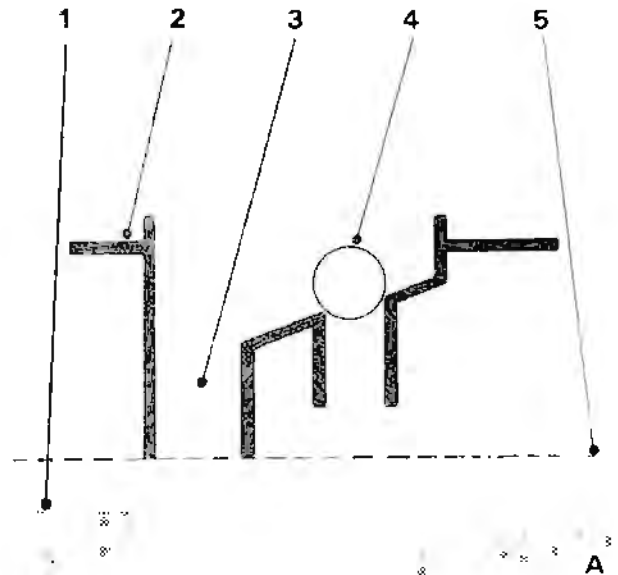
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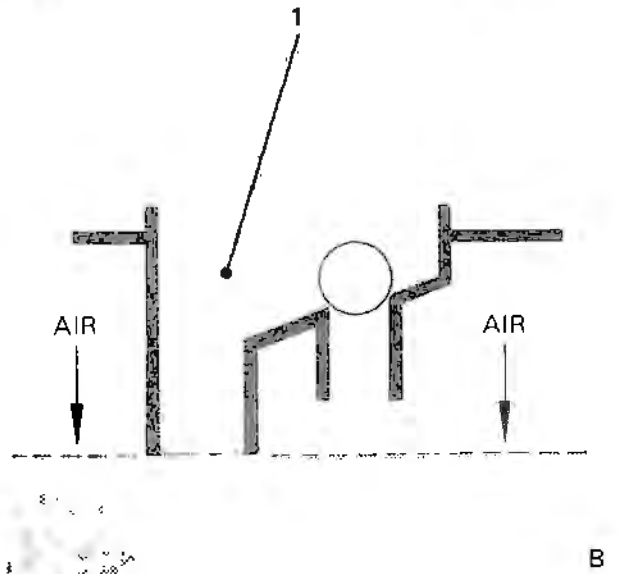
1. Low level of acid
2. Battery outer case
3. Filling tube
4. Ball valve
5. Correct acid level

View of battery with trough cover removed and low acid level. The cell vent hole is sealed by the ball.

B

1. Pour in distilled water until this level is reached.

During topping-up an air lock is formed when the acid has risen to the base of the filling tube. The level in each cell can then rise no further. As more distilled water is added this fills each tube and then begins to fill the trough around each ball.

C

1. Trough cover
2. Correct acid level

Fitting the trough cover momentarily disturbs the ball from its seat, thus releasing the air-lock and allowing the electrolyte to enter the cell. Each cell will then be filled to the correct level.

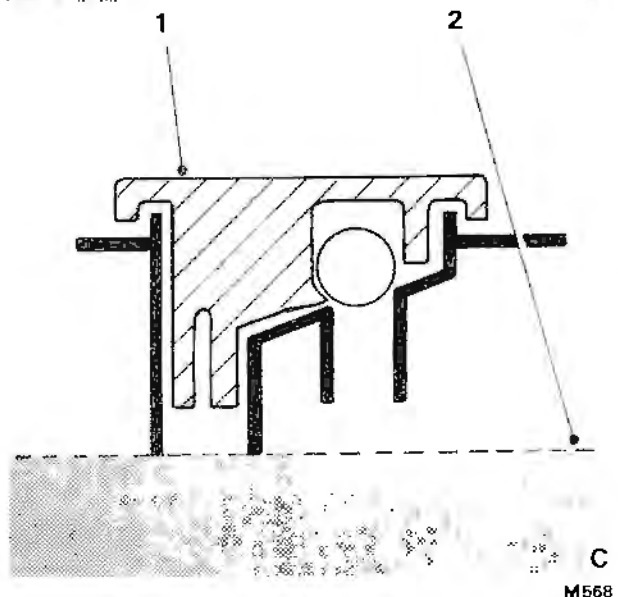


Fig. 1 Battery topping-up procedure

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CATEGORY CTHE LUCAS 'PACEMAKER' BATTERYAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley T Series and all Rolls-Royce and Bentley Corniche.

DESCRIPTION

The Dagenite 'Easifil' battery has been superseded by the Lucas 'Pacemaker' type CP 13/11 battery on all cars produced after the first week of January 1972. The new 'Pacemaker' Battery can easily be identified by the red trough cover as opposed to the yellow cover of the Dagenite battery.

The 'Pacemaker' battery features a revised method of topping-up the electrolyte and it is most important that the revised topping-up procedure (see Fig. 1) is only carried out as necessary at the 6 000 miles or six monthly scheduled service as detailed in this Service Bulletin, otherwise over-filling may occur. This reduction in service requirements has been achieved by internal battery improvements which result in a large reduction in the rate of electrolyte loss.

Whenever convenient the revised topping-up requirements should be brought to the attention of Owners and Chauffeurs.

The rating of the 'Pacemaker' battery is 68 ampere hours at 20 hour rating and when fully charged the battery weighs 47 lb. (21,5 kg.).

The normal charge rate is 7 amps. It should also be noted that due to the topping-up system employed, the trough cover should be in position when the battery is being charged, otherwise the gas produced by the electrolyte will be unable to escape from the battery. This will result in an air lock in the battery and further gassing will cause a rise in the level of electrolyte with the risk of flooding of the battery.

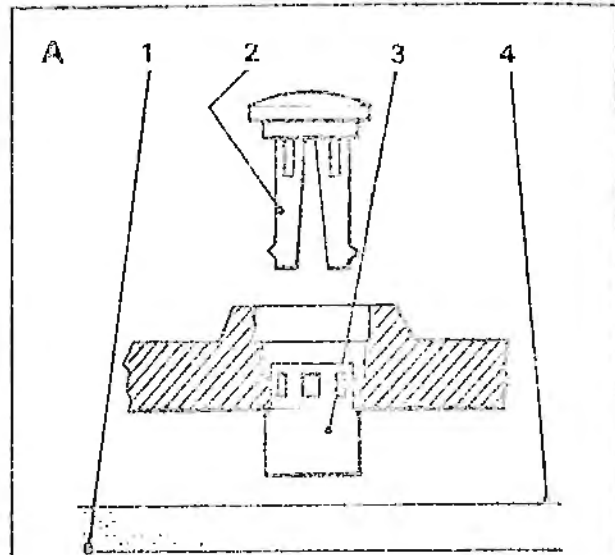
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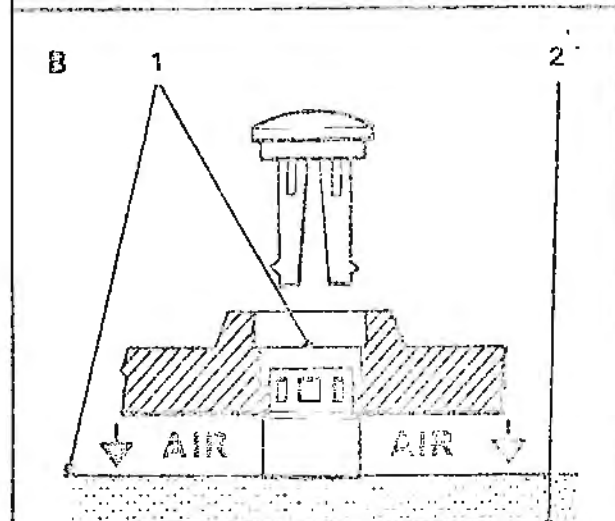
- A Showing battery with low acid level and vent cover removed. The action of removing the vent cover has raised all the sleeves.

1. Low acid level
2. Vent cover
3. Sleeve
4. Required acid level



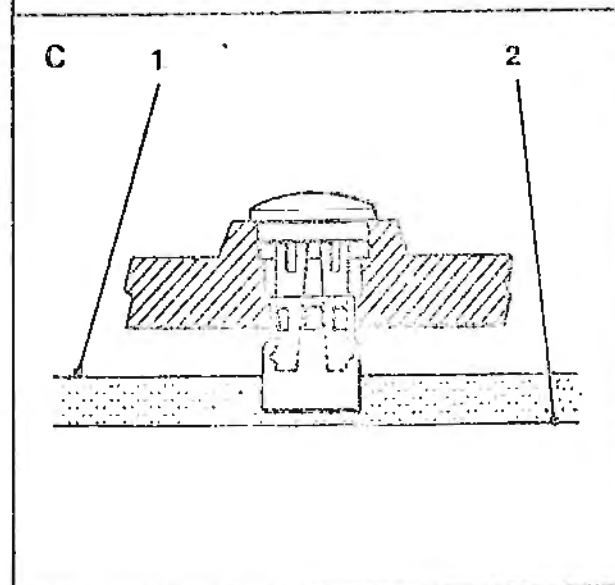
- B During topping-up an air lock is formed when the acid level has risen to the base of the sleeves; topping-up should be continued until the acid level reaches the bottom of the filling channel.

1. Acid level
2. Top of separators



- C Replacing the vent cover lowers the sleeves thus releasing the air lock and allowing the electrolyte to enter the cell. Each cell will then be filled to the correct level.

1. Correct acid level
2. Top of separators



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The case size of the 'Pacemaker' battery is different from the superceded Dagenite 'Easifil', being 2.5 in. (6.35 cm.) shorter and 1.0 in. (2.54 cm.) lower. It is therefore not possible to fit the 'Pacemaker' battery on an older car without using a new battery clamping plate and the fitting of two wooden spacer pieces to the battery box to compensate for the reduced case size of battery. It should also be noted that if the 'Pacemaker' battery is used, the label on the battery box referring to servicing the 'Easifil' battery should be removed.

The specific gravity values for the Lucas 'Pacemaker' battery are given in the table following.

CLIMATE	BATTERY CONDITION	SPECIFIC GRAVITY
Air temperature generally below 27°C. (80°F.)	Fully charged	1.270 - 1.290
	Half charged	1.130 - 1.200
	Fully discharged	1.090 - 1.110
Air temperature generally above 27°C. (80°F.)	Fully charged	1.220 - 1.240
	Half discharged	1.130 - 1.200
	Fully discharged	1.010 - 1.090

Should it be necessary to give the battery a 'boost' charge, the battery should be removed from the car and care taken to ensure that the battery trough cover is in place while charging.

Should it be required to immerse a thermostat in the electrolyte during charging it will be necessary to manually depress all the sleeves.

Battery - To top-up - (Every 6000 miles or 6 months)

- 1) Remove the trim panel, tool tray and battery box cover.
- 2) Using a hydrometer, ensure that the battery is fully charged; if topping-up is carried out whilst the battery is discharged the electrolyte level will rise during charging and may flood the battery. Withdraw the battery and remove the trough cover and note the level of the electrolyte.

Note The electrolyte should only be topped-up if the levels are below the minimum mark on the battery case which corresponds to the tops of the separators.

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CATEGORY C

STEREO TAPE PLAYERS

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche Cars and all Bentley T Series and Corniche cars which are fitted with a stereo tape player.

DESCRIPTION:

With normal service it is likely that an accumulation of foreign matter and oxide will be deposited on the face of the play-back heads, resulting in a reduction of the quality of the sound reproduction. This foreign matter can also cause permanent damage to the recording tape.

Special appliances are now available which, if used regularly, will keep the play-back head clean on either a cartridge or cassette tape player. These appliances take the form of a cleaning pen or a cleaning tape inserted into the player.

It is therefore recommended that a cleaning appliance preferably of the tape variety should be used regularly, for instance, after the playing of ten cassettes or ten cartridges. Whenever appropriate this information should be brought to the attention of Owners and Chauffeurs.

Cleaning appliances can be purchased from most suppliers of stereo tape playing equipment.

It should also be noted that in the event of a customer complaint of poor sound reproduction, the play-back head should be cleaned before taking any further corrective action.

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CATEGORY CTHE SPEEDOMETER CABLEAPPLICABLE TO:

All left-hand drive Rolls-Royce Silver Shadow and Corniche cars and all left-hand drive Bentley T Series and Corniche cars fitted with Automatic Speed Control.

DESCRIPTION

On the first few cars fitted with Automatic Speed Control, the cable connecting the Automatic Speed Control regulator to the speedometer was routed across the rear of the instrument board and connected to the speedometer using a right-angle drive adaptor.

This Service Bulletin has been issued to advise that the right-angle drive adaptor is not used on current cars. The cable now emerges from the speedometer, then follows a gentle curve before passing along the rear of the instrument board to the right-hand side of the car (see Fig.1).

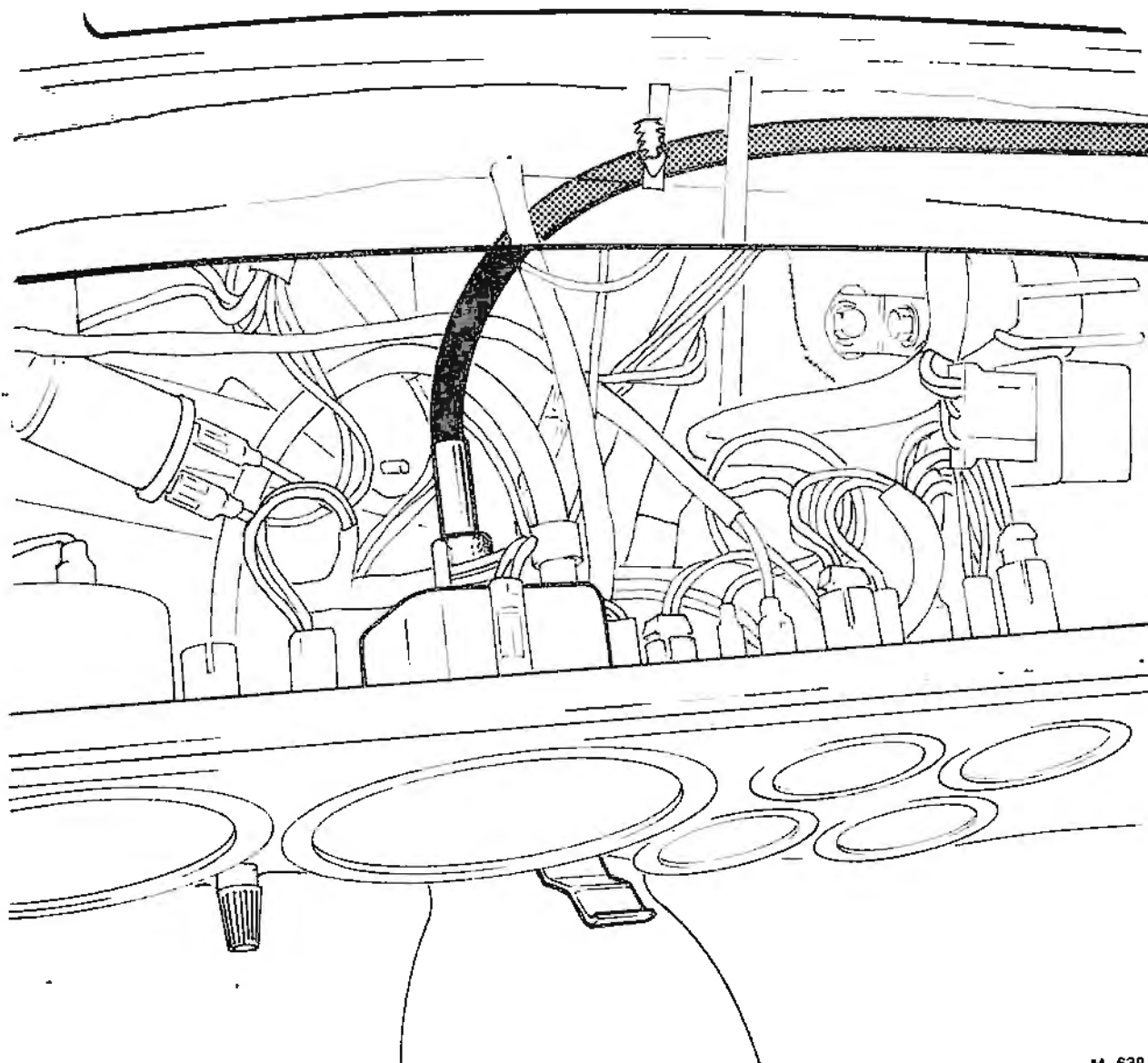
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The curvature of the speedometer cable, adjacent to the speedometer, is secured by two clips (see Fig. 1).



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CATEGORY C

THE 'TRICO' WINDSCREEN WASHER

APPLICABLE TO :

All Rolls-Royce Silver Shadow Corniche cars, and all Bentley T Series, and Corniche cars produced after Car Serial Number SRH 9898.

DESCRIPTION

There have been a number of reported instances of the 'Trico' windscreen washer bottle splitting. It has been found that this is caused by lack of support from the bottle mounting bracket.

The bottle mounting bracket has therefore improved and the purpose of this Service Bulletin is to advise that in the case of a 'Trico' windscreen washer bottle splitting, the mounting bracket be changed for one of the improved type in addition to renewing the bottle.

PARTS REQUIRED

<u>Description</u>	<u>Part No.</u>
'Trico' washer bottle	CD 5494
Improved mounting bracket	UD 18482

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CATEGORY C

OPERATION OF THE AUTOMATIC SPEED CONTROL

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley T Series cars, and all Rolls-Royce and Bentley Corniche cars, fitted with Automatic Speed Control.

DESCRIPTION

A condition exists whereby if the 'Decrease' button is allowed to return to its normal position very quickly, the automatic speed control regulator will not have time to re-engage and the speed of the car will consequently continue to decrease.

By allowing the button to return 'very quickly' it is meant that the button is allowed to return with no, or very little, restriction from the operators finger.

This condition is normal and corrective action is not required. However, should any other condition become apparent corrective action should be taken.

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CATEGORY C

WINDSCREEN WASHER FLUIDS

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley T Series cars and all Rolls-Royce and Bentley Corniche cars.

DESCRIPTION

There are a large number of proprietary brands of fluids which, when added to the windscreen washer bottle water, enhance the cleaning and anti-freeze properties.

It has been noticed however, that a number of these fluids will attack the surface finish of the car paintwork. Should any undiluted fluid be allowed to come into contact with the surface finish of the car paintwork, damage may occur.

It is emphasised therefore, that care must be taken to ensure that undiluted fluids for use in the windscreen washer bottle do not come into contact with the car paintwork.

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CATEGORY CLUCAS 35 D8 IGNITION DISTRIBUTORAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars fitted with a 'Lucas' 35 D8 ignition distributor having a felt lubricating pad.

DESCRIPTION:

Essential Maintenance procedures for the above ignition distributors have been revised and are now as follows:-

PROCEDURE:

Every 12,000 miles or 12 months, whichever is the earlier.

1. Remove the distributor cap.
2. Fit a new set of contact breaker points.
3. Fit a new distributor cam lubricating pad. DO NOT smear any lubricant directly onto the cam.

NOTE:

Over lubrication of the distributor cam will cause premature failure of the points.

4. Withdraw the rotor arm and add a few drops of engine oil to the felt pad in the spindle. Fit the rotor arm.
5. Lubricate the centrifugal advance mechanism by injecting a few drops of engine oil through the cam spindle hole in the contact breaker base plate.
6. Clean all surfaces of the distributor cap then fit the cap.
7. Set the dwell angle. It is important that when setting the dwell angle that the final setting is approached from a higher setting of more than 32° and not from a setting below that specified of 26° to 28° .
8. Set the ignition timing to 5° B.T.D.C. at 800 engine r.p.m. The vacuum retard (if fitted) must be disconnected by removing the tube from the distributor and plugging the tube whilst setting takes place.

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LUCAS 35 DS IGNITION DISTRIBUTORPARTS REQUIRED

<u>Part Number:</u>	<u>Component:</u>
CD 5663	Lubricating pad
CD 5627	Contact breaker points

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Date 13.4.72CATEGORY AGEAR SELECTOR SWITCH CONTACTSAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley T series and Corniche cars built from Serial Number SRX 11500 to SRH 13101 - 4 Door saloons
LRA 13026 - Long Wheelbase cars
DRX 13138 - Corniche cars

DESCRIPTION

The gearchange mechanism on Silver Shadow motor cars is operated by an electric actuator mounted on the gearbox. It is controlled by a selector switch on the steering column which consists of a moving contact attached to the hand control lever and fixed contacts recessed in an insulating plate. There is a fixed contact for each of the control lever positions (see Fig. 1).

When set correctly, the contact pressure between the moving and fixed contacts is sufficient to accommodate all the normal build tolerances in the assembly of the switch.

However, it has been found that a number of cars built recently have insufficient contact pressure. When this is so, under adverse tolerance condition a malfunction of the switch could occur early in the car's life in service.

This malfunction, if it occurred, would arise when the selector lever was moved to a new position where there was insufficient contact pressure to pass a signal to the gearbox actuator. As a result, the gearbox actuator would remain stationary and would not select the new position. Any malfunction of this type is only likely to occur when the car is being manoeuvred at low speed.

The Serial Number range of cars which could be affected are given under the heading Applicable To. These cars must be checked using the procedure given in the following pages.

These checks are to be carried out on a Category A recall basis and it is the responsibility of the Distributor or Retailer to contact each owner of a Silver Shadow or T Series car in his territory to arrange a suitable programme to check all these cars.

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NOTE: Of these 1,600 cars 376 have already been checked at the factory. A list of the Serial Numbers is attached.

When the switch is assembled on the production line the moving contact is shaped such that fitting the fixed contact insulating plate against its machined stops deflects the moving contact by between 0.050 in. and 0.100 in. (1,27 mm. and 2,54 mm.). This produces the correct pressure between the two contacts and is checked in the following procedure using a 0.001 in. (0,025 mm.) thick piece of paper (e.g. cigarette paper or typists carbon paper). The pressure is correct when the paper is 'nipped' by the contacts. What constitutes sufficient degree of 'nip' can be established by assessment on a car that has had its contacts correctly set.

PROCEDURE

1. Ensure the handbrake is applied and the ignition switch turned to the 'Lock' position.
2. Remove the top half of the steering column cowl.

NOTE: On Corniche cars it may be found necessary to slacken the two screws retaining the lower half of the cowl in order that the top half be removed without damage.

3. Operate the selector lever and ensure that when the lever is in its detent for all of the P R N D I L positions, the moving contact is positioned on the relevant fixed contact.

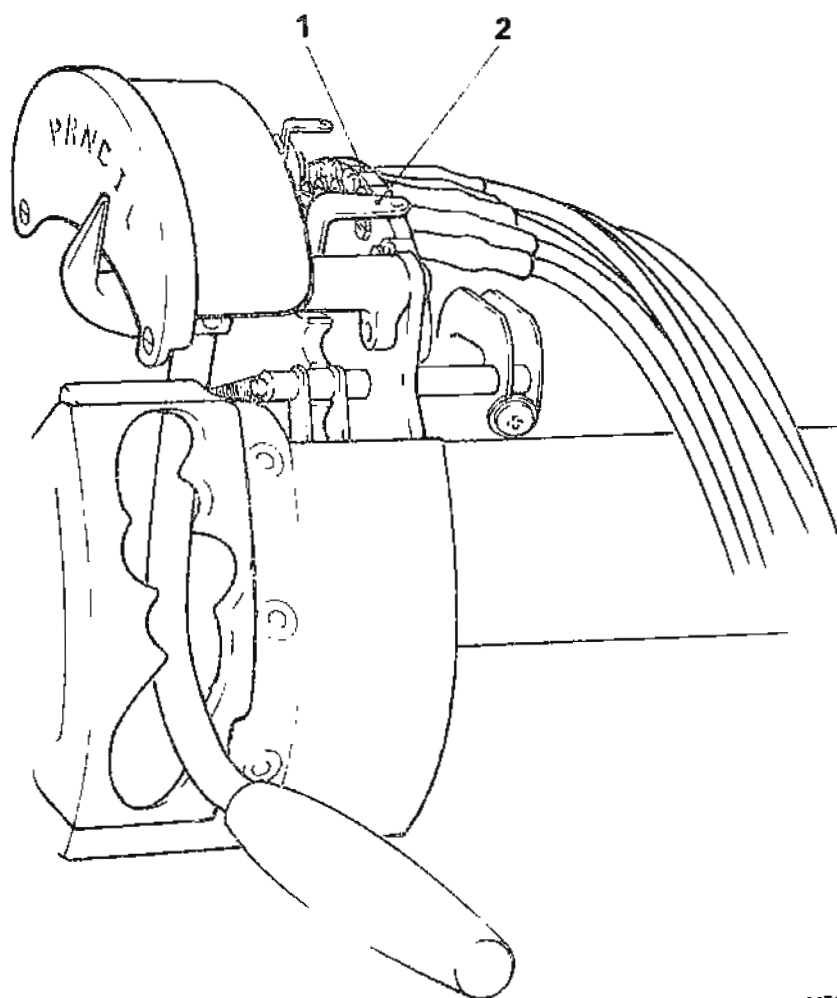
NOTE: Radial adjustment of the fixed contact insulating plate is provided by elongated holes used to attach it to the casting (see Fig. 2).

4. Check that the moving contact is exerting sufficient pressure on each of the fixed contacts by feeling the amount of 'nip' on a 0.001 in. (0,025 mm.) thick piece of paper placed between the contacts.
5. Carefully remove the paper without lifting the moving contact.
6. If this check reveals insufficient contact pressure on any of the fixed contacts ensure that the insulating plate is in its uppermost position. This is when the plate end stops are touching the machined lugs as shown in Figure 2.
7. When adjustment is necessary the contact pressure should be rechecked after this has been carried out.

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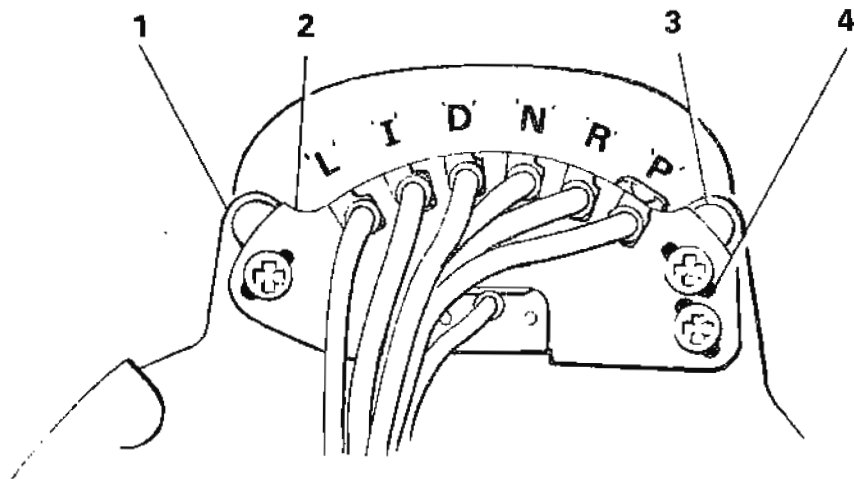
Fig. 1 Pictorial view of stationary and moving contacts

- 1. Stationary contacts
- 2. Moving contact

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Fig. 2 Stationary contacts when viewed from rear of gear range selector

1. Casting
2. Insulating plate
3. Stop, to which insulating plate (2) must abut
4. Elongated hole

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8. If the contact pressure is still too low it will be necessary to reshape the moving contact such that the deflection produced when fitting the fixed contact insulating plate against its stops is between 0.050 in. and 0.100 in. (1,27 mm. and 2,54 mm.).

NOTE: The fixed contact insulating plate MUST be removed when reshaping the moving contact.

9. Ensure that the moving contact is not running on the edge of the fixed contacts.
10. To identify that the previous operations have been carried out, the upper surface of the moving contact should be marked with a small Red paint spot.

FUNCTIONAL CHECK

1. Switch on the ignition with the gear range selector in P.
2. Move selector slowly to R N D I L ensuring that gearbox responds correctly by listening for its operation at each position.
3. Select P and N in turn and check that engine will start.
4. Switch off engine and select R D I L and at each position ensure that engine will NOT start.
5. Refit top half of steering column cowl.
6. With CARE ensure that car:

Reverses when R is selected.

Parks when P is selected.

Drives forward when D I L are selected.

These checks to be done first by slow deliberate selection of gear position and secondly by fast operation of gear selector.

TIME ALLOWED

Check, and any necessary adjustment, 0.5 hr.

Road test of car not necessary.

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WARRANTY CLAIMS

All claims for work done in this campaign must be submitted on Warranty Claims forms which are devoid of all other work, i.e. the claim must apply to S.B. SY/M59 only. It is recommended that wherever possible the Serial Numbers of those cars that have been checked are consolidated in batches on one Warranty Claim form. It is suggested that the Warranty Claim forms are returned once a fortnight.

LIST OF SERIAL NUMBERS OF CARS WHICH HAVE BEEN CHECKED

LRX 11600	CRH 12476	CRX 12732	LRA 12913	CRX 12866	SRH 12936
DRX 11653	LRX 12577	SRX 12747	DRH 12743	DRA 12864	SRA 12937
SBH 11709	DRH 12572	SRH 12725	SRX 12820	SRH 12879	SBA 12941
SRH 11580	DRX 12569	LRH 12862	SRH 12822	SRX 12880	SRH 12938
SBH 11764	LRH 12524	SBH 12727	SRA 12824	SRH 12881	SRH 12939
SRH 11713	DRH 12480	SRX 12750	SRH 12826	SRA 12882	SRH 12940
SRH 11727	DRA 12478	DRA 12731	SRX 12827	DRH 12865	SRH 12903
CRH 11763	DRA 12573	SRH 12755	SRH 12828	SRH 12883	SRH 12942
CRH 11806	CRX 12481	SRX 12757	SRH 12829	SRH 12884	SBH 12972
LRH 11851	DRA 12570	SRH 12758	DRH 12803	SRH 12885	SBH 12973
DRH 11836	CRH 12571	DRH 12733	SRH 12830	CRH 12918	SRA 12974
LRH 11859	SRH 12557	SBX 12762	LRH 12915	LRA 12961	SRH 12975
SRH 11835	DRA 12482	SRH 12763	LRH 12914	SBH 12869	SRH 12976
CRX 12025	DRA 12576	DRA 12734	SRA 12831	SRH 12887	SRA 12977
SRH 12060	CRH 12568	LRA 12860	SRH 12832	SRH 12888	SRH 12978
DRX 12026	CRA 12635	CRH 12735	SRH 12833	SRX 12889	LRA 13009
CRH 12069	SRH 12595	SRH 12767	CRA 12802	LRH 12960	CRH 12943
DBX 12072	DRH 12637	DRX 12736	DRX 12805	SRH 12890	SRH 12979
SBH 12156	CRH 12574	SRH 12768	SRX 12834	SRH 12891	SRH 12981
SRH 12229	SRH 12600	SRH 12770	SRH 12836	DRX 12867	SRA 12980
LRX 12243	CRH 12633	SRH 12774	LRA 12953	SRA 12892	LRA 12011
SBH 12249	SRH 12608	DBH 12737	SRH 12837	SRH 12893	SRH 12983
SRH 12258	DRA 12639	CRH 12740	SRH 12835	SRH 12896	DRA 12947
LRH 12246	CRH 12689	SRH 12779	SRA 12838	DRA 12919	SRH 12984
SRH 12268	DRA 12690	LRX 12909	DRH 12806	LRH 12964	SRH 12985
CRH 12234	DRH 12692	CRA 12738	SRH 12839	SRH 12897	SRA 12986
SRH 12273	CRH 12640	SRH 12780	SRX 12840	SRH 12898	LRA 13013
DRA 12179	LRX 12647	SRH 12771	CRX 12807	SRH 12899	SRH 12987
DRA 12288	CRA 12691	SRH 12783	CRH 12804	LRA 12967	SRH 12988
SRH 12319	DRA 12705	DRH 12739	SRH 12785	SRH 12900	LRH 12917
SRH 12320	DRA 12694	SRH 12789	SRH 12845	SRA 12904	SRA 12989
CRA 12239	CRH 12693	SBH 12797	SRH 12847	SRH 12905	SRH 12990
CBX 12289	CRA 12702	SBH 12798	SRA 12848	SRH 12923	LRX 13012
SRH 12325	CRX 12695	LRH 12911	SRH 12849	SRH 12924	DRH 12951
DRA 12292	DRX 12696	LRA 12813	SRH 12850	SRH 12927	SRA 12992
DRA 12346	CRH 12704	LRA 12908	SRH 12851	SRH 12902	SRH 12993
DRA 12402	SRH 12675	CRH 12742	SBH 12852	SRA 12925	SRH 12995
SRH 12433	CRH 12706	SRH 12791	CRA 12809	CRA 12921	CRA 12950
SRX 12438	DRH 12707	SRH 12792	SRH 12853	SRA 12928	CRH 12948
DRA 12471	DRH 12703	SRX 12799	SRA 12868	LRH 12963	SRH 12997
CRA 12465	CRH 12709	DRA 12741	LRA 12957	SRH 12930	SRH 12996
DRA 12467	DRA 12708	CRH 12745	DRH 12808	SRX 12901	SRH 12998
SRH 12454	SBH 12688	SRA 12801	DRH 12810	SRH 12929	DRH 12970
CRA 12401	DRX 12710	LRA 12910	SRX 12871	SRA 12931	SRH 13001
SRH 12494	CRA 12729	SRH 12800	SBH 12870	SRH 12932	SBX 13003
DRH 12348	DRH 12730	SBH 12816	SRH 12873	SRH 12933	SRH 13005
SRH 12460	SRH 12718	SRX 12817	SBH 12872	DRA 12922	SRH 13004
CRH 12406	LRH 12697	SRH 12818	SRH 12875	SRH 12934	SRH 13007
SRH 12489	LRA 12698	LRH 12912	CRH 12863	SRH 12894	SRH 13002
SRH 12501	SRH 12721	SRH 12819	CRX 12959	LRH 12966	SRH 13008
DRA 12475	DRA 12711	DBH 12746	SRH 12876	DRA 12944	SRA 13030
DRH 12477	SRH 12722	SRH 12773	SRA 12877	DRX 12945	SRA 13033
CRA 12474	SRA 12723	SRH 12823	SRH 12878	SRH 12935	SBH 13029

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SRH 13031	SBX 13125
CRH 13071	SRH 13126
SRH 13034	SRH 13127
LRA 13017	SRH 13128
SRH 13036	
SRH 13037	
SRH 13042	
DRA 13073	
DRH 12949	
DRH 12971	
SRH 13045	
SRH 13048	
CRH 13072	
CRH 13074	
SRH 13032	
LRA 13019	
DBH 13075	
LRH 13021	
DRA 13076	
DRX 13077	
LRH 13024	
CRA 13130	
SBH 13088	
DRH 13078	
CRX 13132	
DRH 13133	
DRH 13136	
SRH 13102	
SRH 13104	
SRH 13105	
DRA 13135	
SRH 13107	
SRH 13108	
SRH 13061	
SRH 13109	
SRH 13110	
SRA 13111	
SRH 13112	
CRH 13137	
SRH 13113	
SRH 13114	
LRA 13079	
SRH 13068	
SRH 13115	
CRH 13134	
LRH 13087	
SRH 13116	
SRA 13117	
SRH 13118	
SRX 13119	
LRH 13083	
SRH 13120	
SRA 13122	
SRH 13123	
SRH 13124	

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CATEGORY C

THE FUSES

APPLICABLE TO:-

All Rolls-Royce Silver Shadow and Corniche cars.
All Bentley 'T' Series and Corniche cars.

DESCRIPTION:-

A number of instances have recently been reported where fuses have 'blown' for no apparent reason. In all these cases the fuses have been of the plastic repairable type.

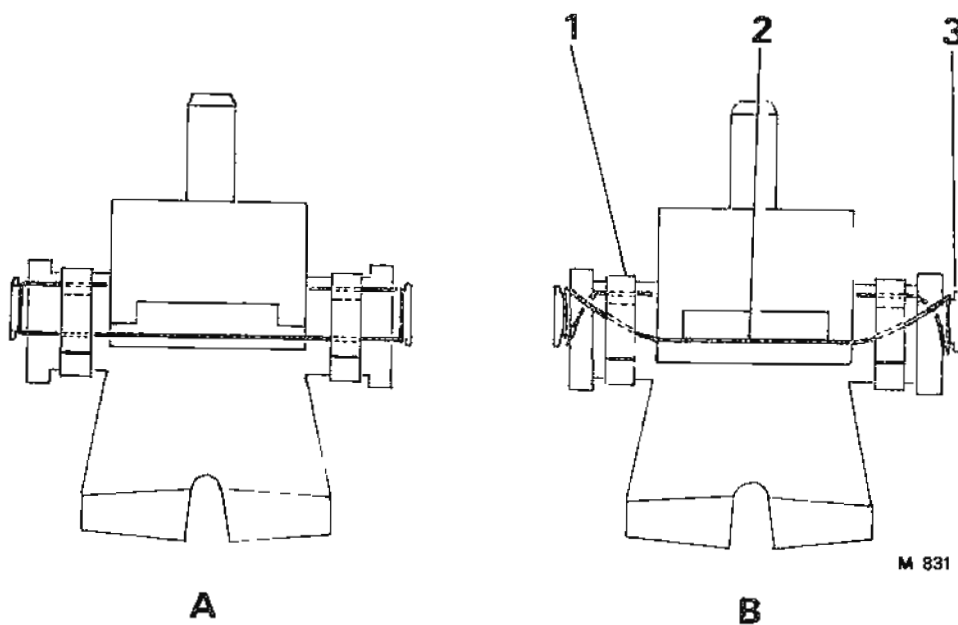
It has since been found that on many of the above fuse holders, the fuse wire had been incorrectly routed between the two securing strips. This had the effect of producing excessive heat in the fuse wire, such that the wire would break, even though the amount of current flowing through it was not in excess of fuse capacity.

In the event of a repairable type of fuse 'blowing' it should first be ensured that the fuse has been correctly wired (as shown in Fig.1) before undertaking any further checks.

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Fig. 1.

- A - Incorrectly wired fuse.
- B - Correctly wired fuse.
- 1 - Contact strip.
- 2 - Fuse wire.
- 3 - Securing lug.

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CATEGORY C

RADIO/STEREO TAPE PLAY UNITAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley T Series, Rolls-Royce Corniche and Bentley Corniche cars.

DESCRIPTION

The early type of Radiomobile Cartridge Tape Play Unit (UD 18687), as fitted to a limited number of the above cars, has the speaker cut-out relay energised by operation of the radio on/off switch and not by insertion of the cartridge. On cars fitted with these units therefore, the radio over-rides the stereo tape play unit.

The later type stereo tape play unit now fitted to production cars differs in that provision is made for the relay to be connected to the tape play unit. This arrangement automatically allows the tape play unit to over-ride the radio whenever a cartridge is inserted.

Replacement tape play units of the later type, can be modified to suit the early arrangement or to satisfy the specific request of a customer. In this case, it is necessary to ensure that the replacement tape play unit is fitted with the relay connection in addition to the 12 volt supply and speaker-feed flying leads. The relay connection has a BROWN plastic insulated lead which must be connected to Terminal 4 on the relay cut-out printed circuit board (UD 17565). The existing lead from the radio should be disconnected at Terminal 4 and taped back.

It is also necessary to reverse the 12 volt supply connections at Terminals 11 and 12 on the relay board so that the system reverts to disconnecting the supply from the radio on operation of the relay.

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APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars from car serial number SRH.13754 onwards.

INTRODUCTION:

A number of electrical features have been changed on cars produced after the above car serial number. The purpose of this Bulletin is to advise of the changes which are likely to affect service personnel.

DESCRIPTION:CENTRALISED BOOT LOCKING:

This consists of two electrical solenoids built into the boot locking mechanism and similar to the solenoids used in the centralised door locking application.

One solenoid is connected to the 'Locking' side of the door lock switches, and locking the doors with either of the two door switches will automatically lock the boot. See Fig.1 for theoretical wiring diagram.

The second solenoid is divorced from the door locking circuit and is connected only to a switch which is located in the fascia glove compartment. The boot can be unlocked electrically by using this switch only. The car's master key can still be used to lock or unlock the boot.

INTERMITTENT WIPING:

This consists of an electrical delay circuit wired into the wiper circuit. It is contained in a black box mounted under the top roll adjacent to the wash/wipe box.

The windscreen wiper switch has also been changed and incorporates one anti-clockwise position. On turning to this position, one wiping stroke will be described every 5-7 seconds. When the wiper switch is in the intermittent wipe position the wiper blades will park at the end of each stroke on the windscreen and not in the normal park position. Wash/wipe is still achieved by depressing the indicator stalk.

The two control boxes are marked Screen Wiper Control. The intermittent wipe box has four terminals, whilst the wash wipe control unit has five terminals and four flying leads. A theoretical wiring diagram is shown in Figure 2.

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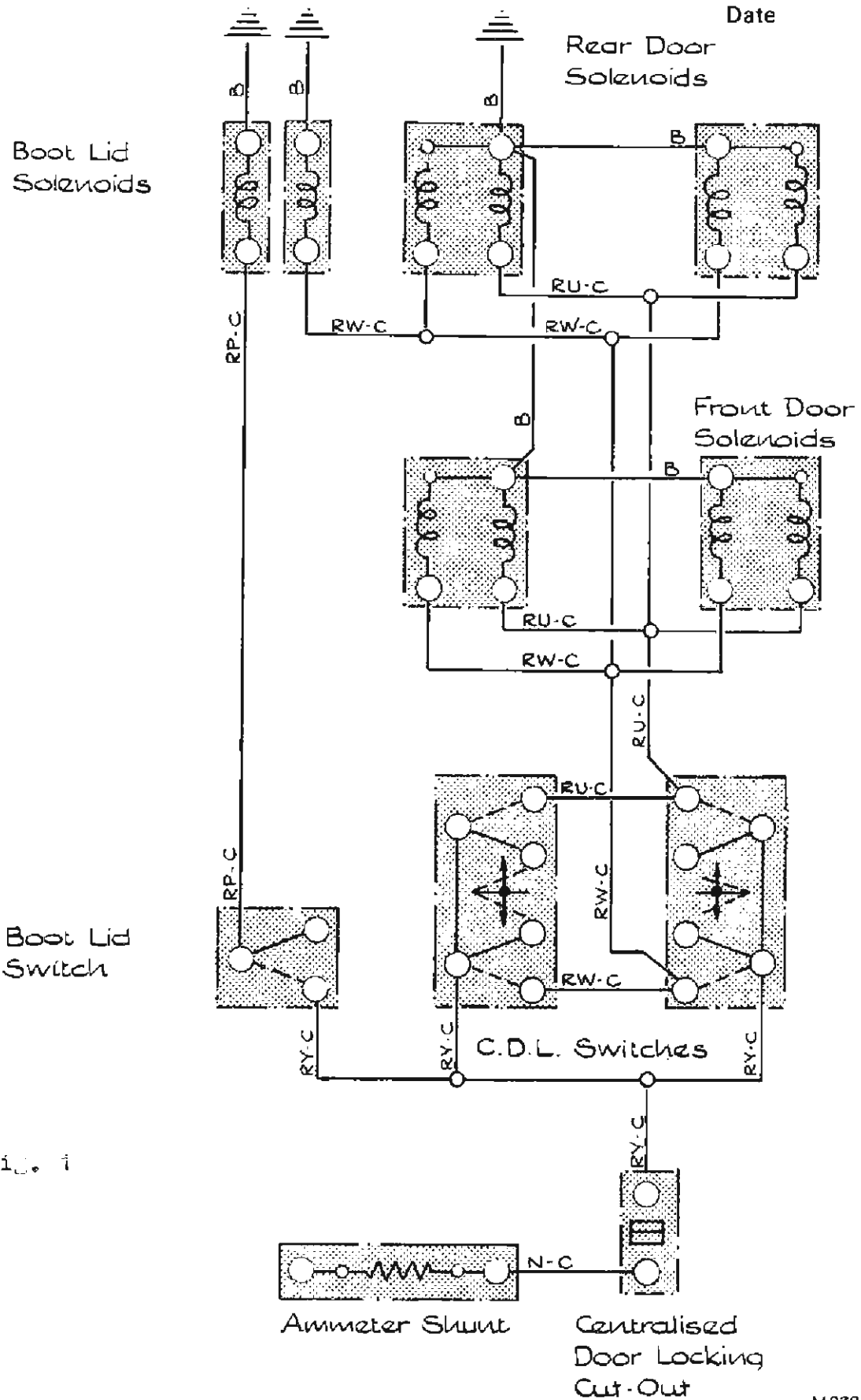


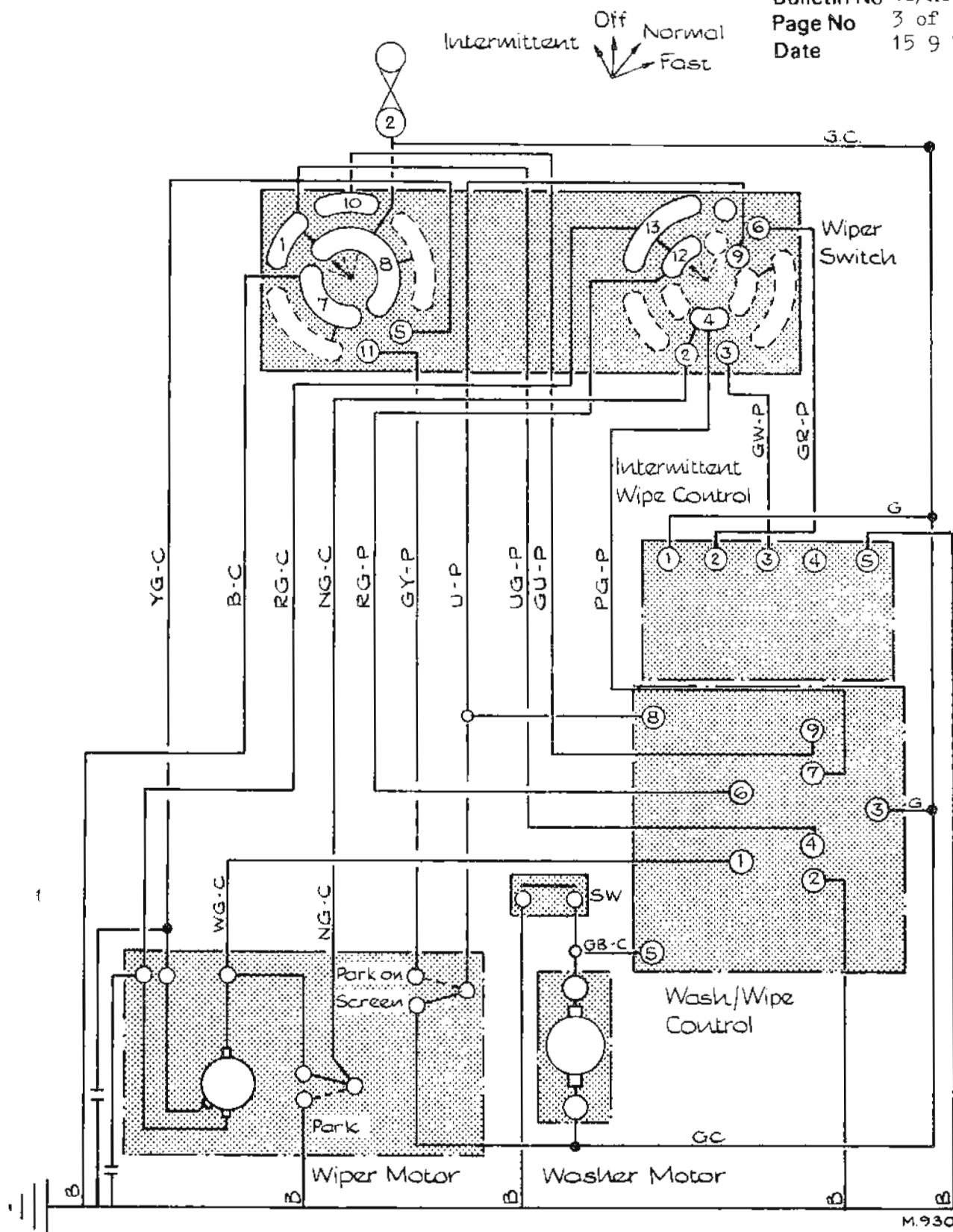
Fig. 1

Theoretical Wiring Diagram
 Centralised Door and Boot Lid Locking

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Theoretical Wiring Diagram
 Windscreen Wiper and Washer and Intermittent Wipe Control

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CHANGES TO THE ELECTRICAL SPECIFICATIONELECTRIC WINDOW LIFT:

These have been modified by the introduction of permanent magnet type motors similar to the ones used in the wiper installation. All left-hand drive cars are now fitted with the two position electric window lift isolating switch, previously only fitted to cars destined for North America. The electric window lift thermal cut-out has now been replaced by a 'four in one' thermal cut-out which is mounted in and above the knee roll glove compartment.

COURTESY LIGHT DELAY:

This consists of a small electronic time delay circuit contained in a plastic box similar to that housing the coolant warning light amplifier unit. It is situated on the bracket inside and above the passenger knee roll glove compartment on all four-door and longwheelbase saloons. On Corniche cars it is mounted on the dash-board mounting bracket under the top roll.

It is connected into the interior light circuit such that after the doors are closed the courtesy lights will remain illuminated for approximately seven seconds before automatically going out. A theoretical wiring diagram is shown in Fig. 3.

The relay for the interior light delay is on the instrument board mounting bracket on four-door cars and adjacent to the delay unit on Corniche cars.

There is no longer an interior light relay situated in the relay box. There is no longer any need for the height control relay with this system and it has therefore been deleted.

KEY OPERATED SWITCH FOR SELECTING 'PARK' POSITION:

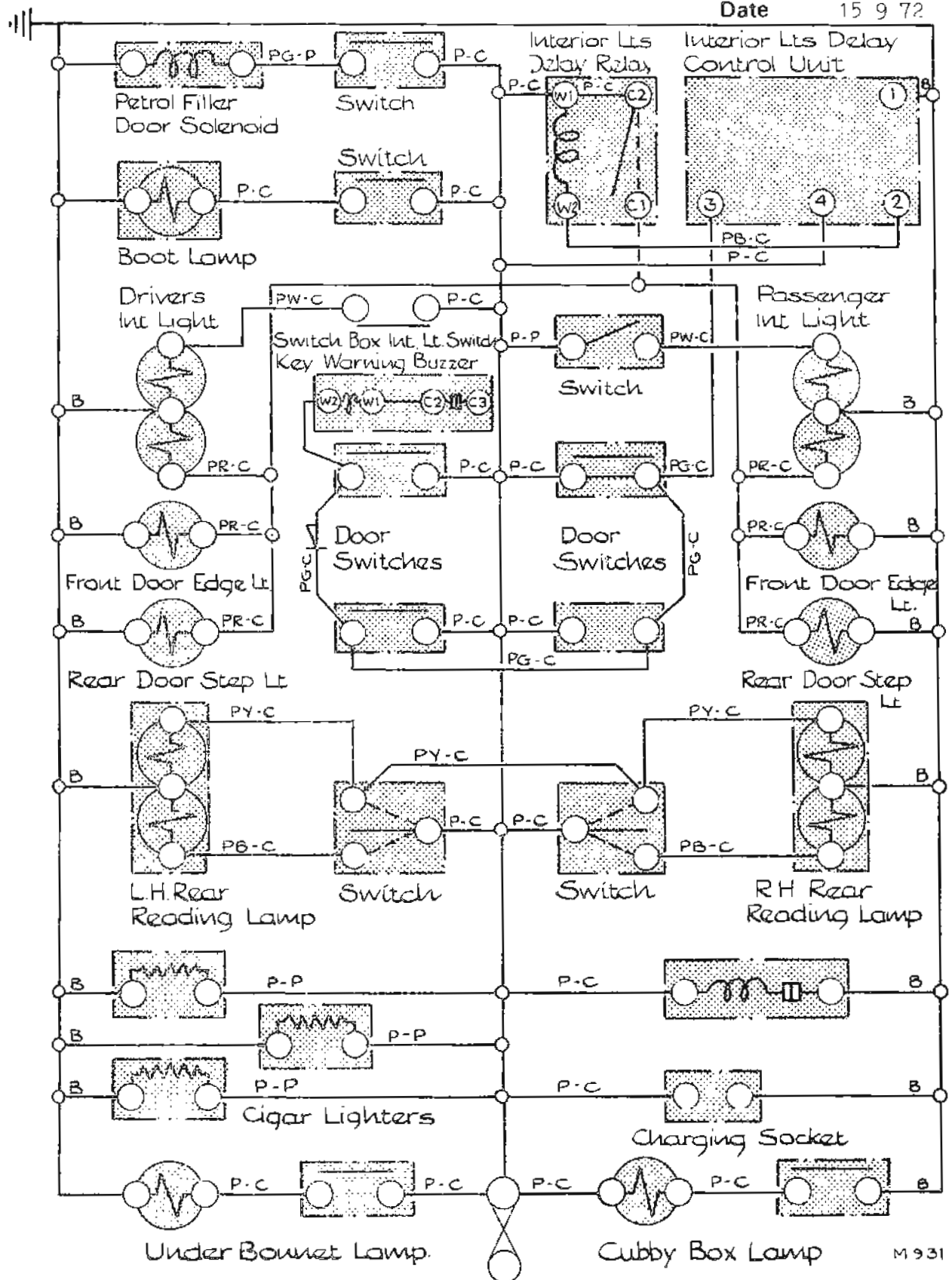
On present cars it is necessary for the gearbox to be in the 'Park' position before it is possible to withdraw the ignition key from the switch box. This has been modified so that withdrawing the ignition key automatically results in the gearbox actuator selecting 'Park', although of course this will not be indicated on the steering column indicator.

On replacing the key into the switch box the gearbox will remain in the 'Park' position until the ignition is switched on. There is now a warning buzzer fitted to all cars which is activated when the driver's door is opened whilst the ignition key is still in the switch box thus reminding the driver to remove the key before leaving the vehicle. This feature was previously fitted to cars destined for North America only.

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Fig.3

Theoretical Wiring Diagram
 Interior Light Delay Circuit

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CHANGES TO THE ELECTRICAL SPECIFICATIONTOEBOARD KICKDOWN SWITCH:

This consists of a re-designed spring loaded kickdown stop incorporating a micro-switch which replaces the switch previously mounted on the carburettor linkage. If the micro switch is disturbed it is essential when refitting, to ensure that the micro switch contacts break .015" to .035" before the kickdown operating plunger reaches the fully released position.

INSTRUMENT SWITCH PANEL ILLUMINATION:

Here there are two changes. The minor change is slightly altered lettering on the picture plates. The major change is that the controls are now illuminated by edge lighting. This is achieved by sandwiching a perspex sheet between the fascia and instrument board and allowing the light to diffuse through the perspex surround the picture plates and switches thus illuminating the legends. The switch areas on the centre console are illuminated in a similar manner.

All cars destined for North America are now wired so that whenever the headlamps are switched on the instruments will be illuminated at a dim level. There are two levels of brilliance controlled by the panel light switch. All cars have an OFF DIM BRIGHT position panel light switch.

WARNING LIGHT MODULE:

This consists of a re-designed warning light cluster which also incorporates additional warning lights.

As may be seen in Fig.4 it comprises of :-

1. Two accumulator low pressure warning lights which illuminate when there is a loss of pressure in either accumulator and replace the two previous brake warning lights which served the same purpose.
2. A low fluid warning light which illuminates if there is a low fluid level in either section of the brake fluid reservoir. It is operated by a level sensor in each reservoir.

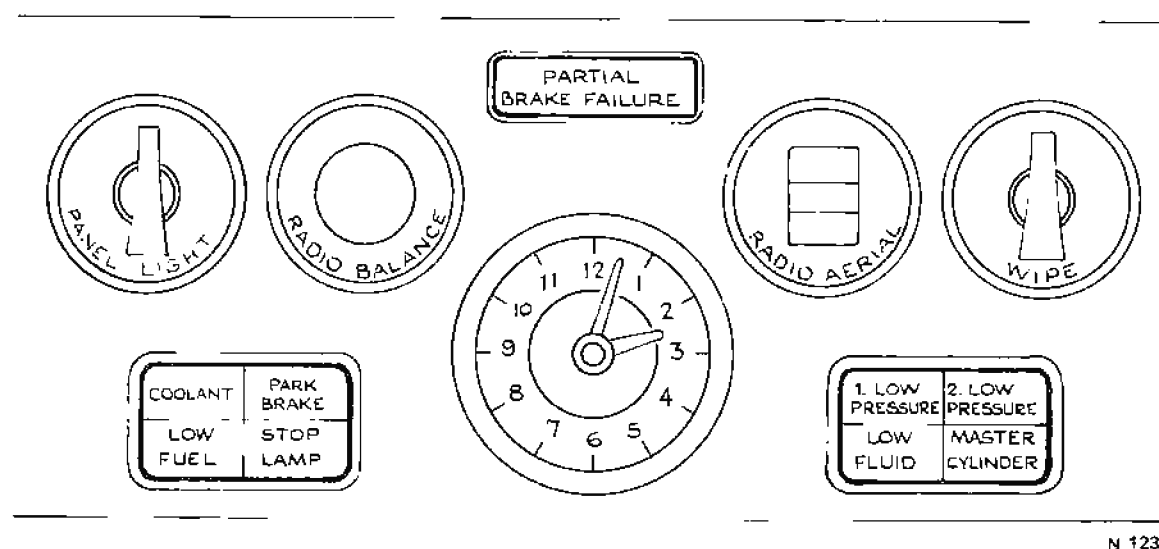
A delay unit is fitted into the circuit to prevent the light flashing as a result of fluid level surge due to rapid cornering, acceleration and braking.

3. A master cylinder warning light which illuminates when there is a loss of pressure in the master cylinder brake line such that the master cylinder operating lever contacts on the 'on stop'. It is operated by a micro switch bolted to the actuation box framework.

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CHANGES TO THE ELECTRICAL SPECIFICATION.

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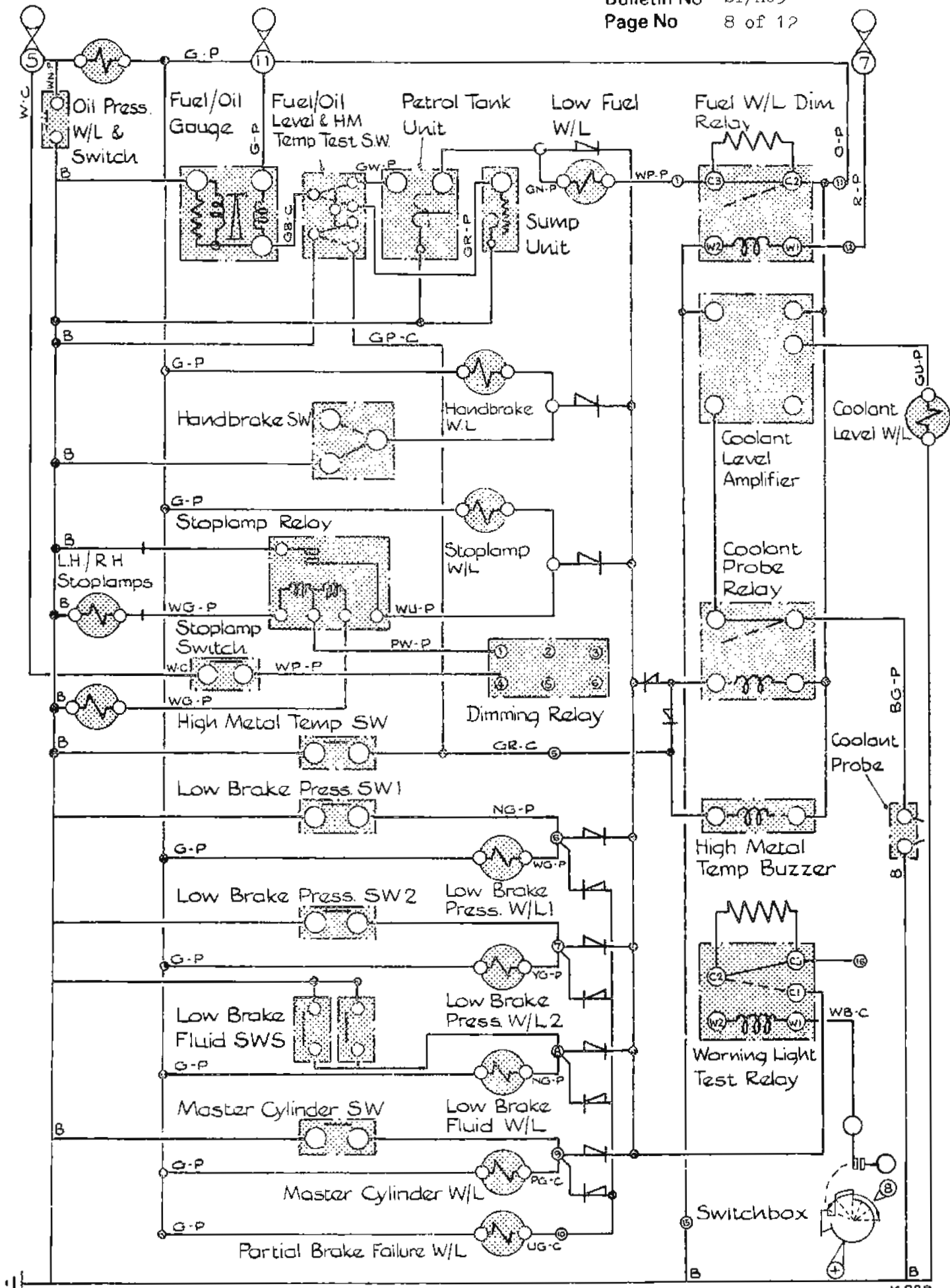
FIG. 4. The Warning Lamp Cluster.

4. The partial brake failure warning light illuminates whenever any one of the above warning lights is operated.
5. The coolant warning light replaces the existing one and operates on the same principle, i.e. it is illuminated by either a low coolant level or by the high metal temperature switch which also operates the warning buzzer in the event of the engine overheating.
6. The low fuel level light replaces the existing one and operates on the same principle.
7. The 'Park' brake warning light illuminates when the handbrake is applied and operates on the same principle as the existing one.
8. The stop lamp failure warning light has been isolated from the handbrake warning light circuit. It operates if any one of the rear brake lights fail when the brake pedal is depressed.
 NOTE. It does not operate in the unlikely event of both stop lamp bulbs failing.
 This new rear brake light system employs a differential relay which replaces the previous type of relay and is situated in the top left hand corner of the boot between the spring pot and the outer skin as shown in Fig. 7.

All the warning lights should operate when the engine is being started and cease to function immediately the key is released. When the facia test button is depressed it should activate the overheating warning buzzer and only the coolant warning light. The fuel gauge should also show the engine oil level when the test button is depressed. See Fig. 5 for a theoretical wiring diagram.

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Theoretical Wiring Diagram
Instrument Warning Light Circuits

Fig.5

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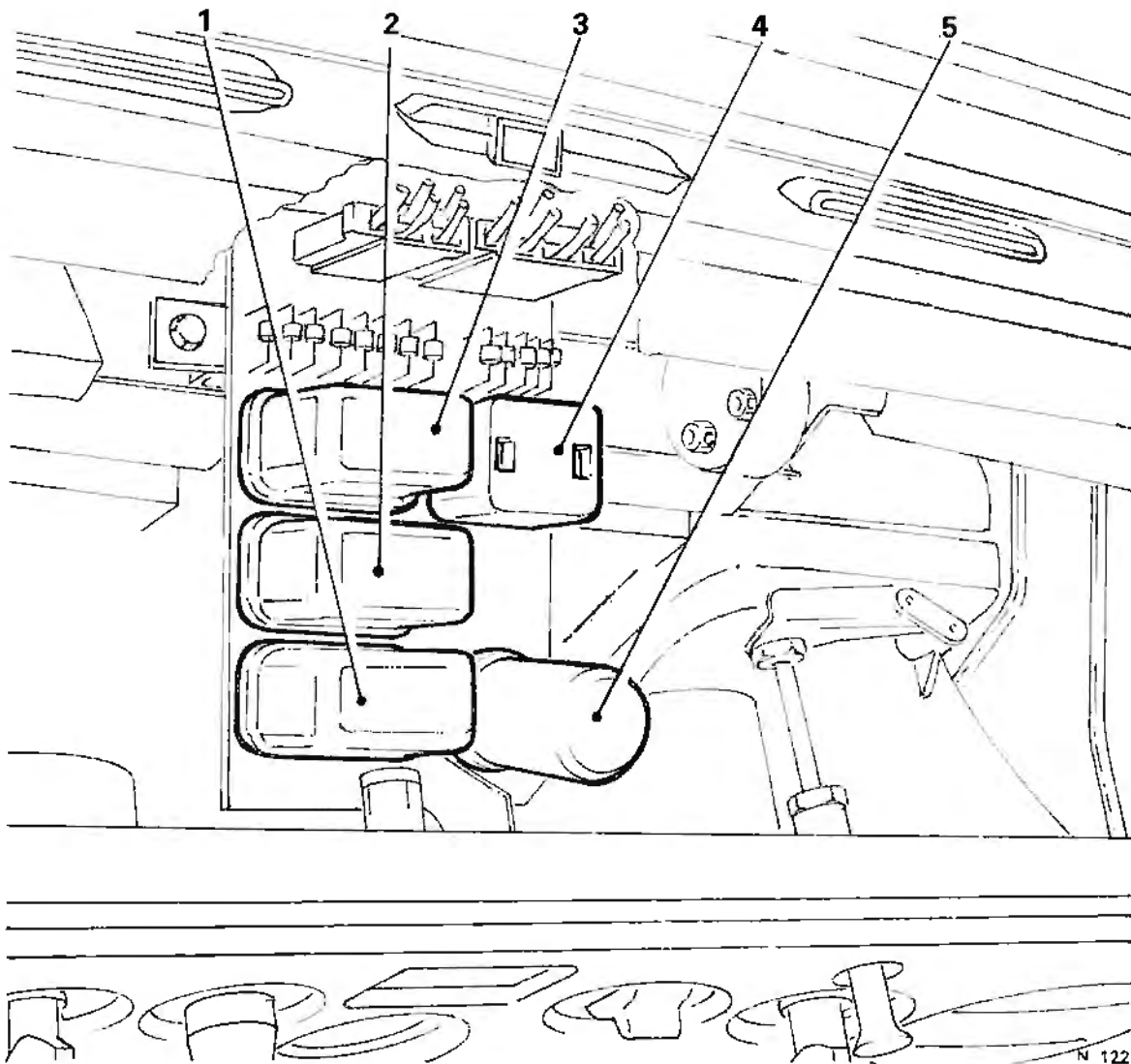


FIG. 6. Warning Light Test Printed Circuit Board.

1. Coolant Probe relay.
2. Fuel Warning Light Dimming Relay.
3. Test Relay.
4. Coolant Level Amplifier.
5. High Metal Temperature Buzzer.

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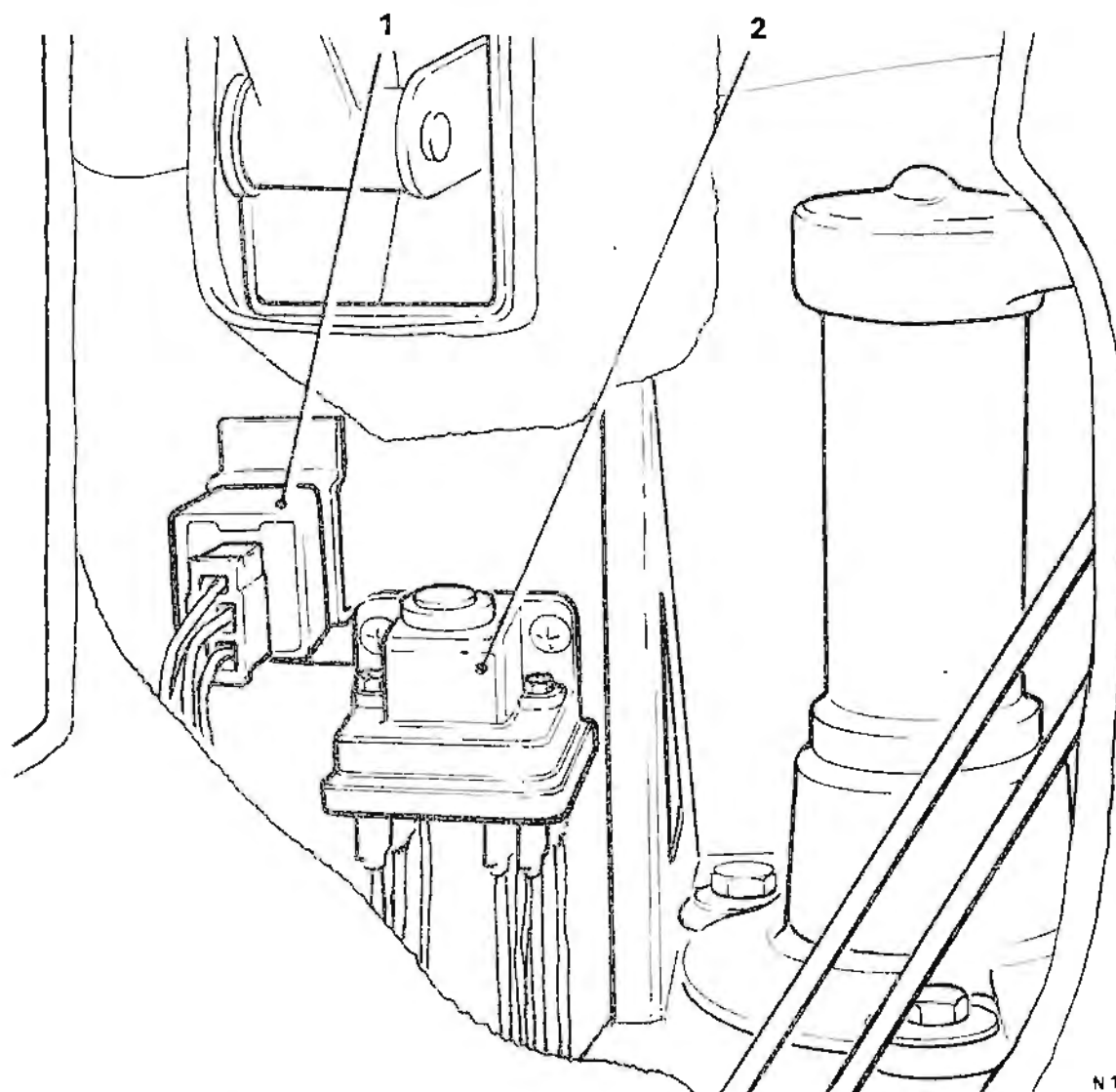
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All the warning lights are connected through the warning light test printed circuit board mounted in the centre of the fascia beneath the top roll as shown in Fig. 6. This board also contains the coolant level amplifier unit, the fuel warning light dimming relay, the coolant probe relay, the test relay and the high engine temperature warning buzzer.

DUAL INTENSITY STOP AND REAR TURN SIGNAL LIGHTS.

Fitted to cars other than those destined for North America.

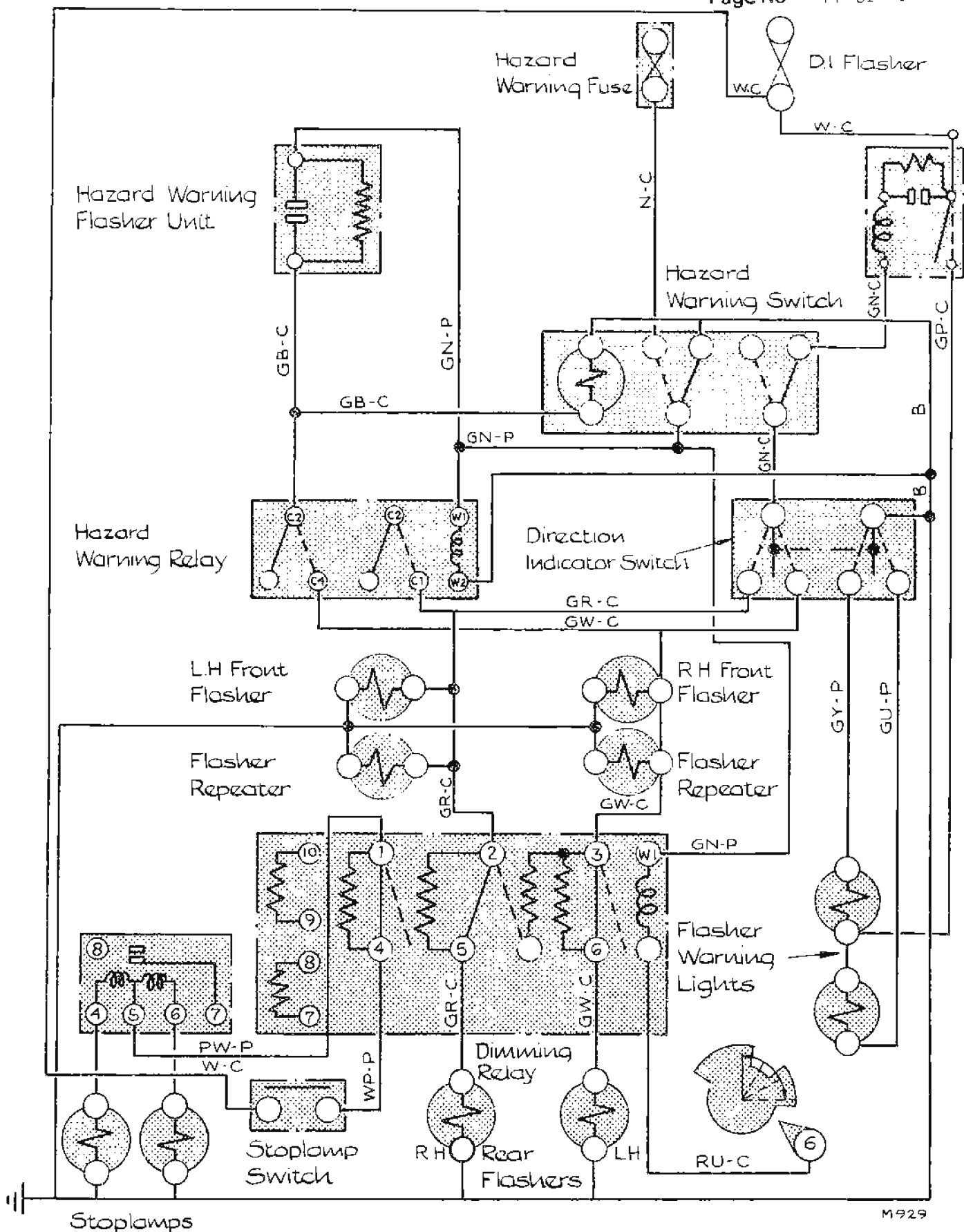
This is a rear lamp dimming system similar to that used on early Silver Shadow and Bentley 'T' Series motor cars. When the switchbox is turned to the 'Park' or 'Head' position the rear turn signal and stop lamps operate at reduced intensity. However, turning the switchbox to the 'Fog' position will return these rear lights to full intensity. When fog lamps are not fitted and the 'Fog' position is selected, the headlamps will remain on and function normally. The relay for this system is mounted in the boot adjacent to the new stop lamp dimming relay. Operating the hazard warning switch will also return the stop and rear indicator lights to full intensity. A theoretical wiring diagram is shown in Fig. 8.



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Fig. 7. Relays In The Boot.

1. Stop lamp warning relay.
2. Rear lamp dimming relay.

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Theoretical Wiring Diagram

Double Intensity Stop and Rear Turn Signal Lamp Circuits

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FOG LAMPS:

When fog lamps are fitted at customer request, they will now be fused separately, each lamp having its own fuse, whereas previously both lamps were fed by one fuse.

CRUISE CONTROL:

Whilst the location and appearance of the cruise control and its associated components remains unchanged, the mode of operation is significantly different. The control panel which is now illuminated still contains three switches, the ON-OFF switch serving the same function as it did previously. However, the increase and decrease buttons have been replaced by two labelled 'Engage' and 'Resume'.

The cruise control is brought into operation first by switching on the ON-OFF switch.

The car must then be brought up to the desired cruising speed using the accelerator. On reaching this speed, depressing the 'Engage' button will ensure that the cruise control system holds this speed. Once the speed control system has been de-activated by braking, depressing the 'Resume' button will bring the car back to its original cruising speed. However, once the speed control unit has been de-activated by switching off at the switch panel the 'Resume' button will be rendered inoperative until the ON-OFF switch has been switched on again and a cruising speed has been re-selected by depressing the 'Engage' button.

The cruise control switch panel is now illuminated, the intensity being controlled by the instrument panel illumination switch.

REAR NUMBER PLATE ILLUMINATION:

On cars destined for North America the two illumination lights behind the rear bumper have been replaced by two lights mounted either side of the number plate.

REVERSING LIGHTS:

The two lights previously mounted on the boot lid have been replaced by lights incorporated in the rear light clusters. The stop lamp reflector has also been updated. It should also be noted that the reversing light micro switch has been removed from the steering column and is now situated in the gearbox actuator. This of course means that earlier gearbox actuators cannot be used on these new cars unless they are modified by incorporating this switch.

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CATEGORY C

THE SPEEDOMETER HEAD AND CABLE

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars.

DESCRIPTION:

Over the past few weeks we have received a number of complaints regarding speedometer cable or speedometer head noises.

Two common features of all these complaints are that they are primarily occurring on cars produced within the last twelve months and that the problems are not caused by one basic fault.

The purpose of this Service Bulletin is to acquaint you with the various problems which are known to occur and to advise of the correct remedial action.

SPEEDOMETER HEAD CLICKS.

The method of transmitting the drive between the display drums in the speedometer head is affected by means of ratchet plates. Due to a mechanical overload condition which may occur, these plates can become deformed. Once this has happened the speedometer head will emit a regular series of sharp clicking noises similar to a train passing over a set of points.

The only method of rectifying this problem is to fit a replacement speedometer head. These replacements are of an improved design which are not susceptible to this problem.

It should be noted that Rolls-Royce cars built since car serial number 11600 have had this speedometer fitted as original equipment. It is not as yet fitted to Bentley or Phantom VI cars.

TRIP MECHANISM.

A number of cases have occurred where operating the speedometer trip cable has failed to zero the trip display drums. This is caused by the length of the trip inner cable being too short relative to the outer cable. This problem has been overcome by increasing the length of the inner trip cable and therefore replacing the cable is the correct way to overcome this complaint.

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THE SPEEDOMETER HEAD AND CABLEDISCONNECTING AND CONNECTING OF REGULATOR DRIVE CABLE

On cars fitted with automatic speed control the cable which transmits the drive between the gearbox and the speed control regulator is quite stiff. Immediately before being connected to the regulator, the cable route follows a curved path which imparts a force to the cable connecting nut. Should this nut be unscrewed from the regulator this force will be imparted to the speedo inner drive cable resulting in the cable becoming bent.

This bending of the inner cable will cause a grating noise to be audible in the car as if the cable is not lubricated. If the cable is operated for any length of time after being bent, it is likely that the cable will break, causing complete failure of the speedometer head.

It is therefore important that if it is necessary to remove the cable from the speed control regulator, the regulator should first be removed from its mounting bracket thus relieving any strain and preventing damage to the inner cable. Similarly when fitting a new cable the regulator unit should be aligned with the natural cable run whilst the cable is screwed to it. Only then should the regulator be refitted in position.

If it is necessary to remove the lower speedometer cable from the speed control regulator for any reason before refitting, the regulator should be fitted with a UE 38080 adaptor.

This adaptor will ensure that any eccentricity which exists in the regulator or the speedometer cable will not cause noise or needle flutter. The adaptor is available from Rolls-Royce Motors Limited.

LOSS OF SPEEDO DRIVE:

The depth of engagement of the inner drive cable in the back of the speedometer head is controlled by a nylon sleeve which is pressed onto the inner cable.

In a number of recent cases this nylon sleeve has slipped on the inner cable with the result that the cable has been able to slowly come out of engagement with the speedometer head. This slipping will initially result in a harsh grating noise from the speedometer head accompanied by a 'hunting' motion of the instrument needle. Eventually the inner cable may disengage completely, causing speedometer failure.

Speedometer cables now used are fitted with a nylon sleeve having a much greater interference on the cable, thus preventing slip. The correct action in cases of complaint therefore is to fit a new cable ensuring that the routing and clipping are correct.

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THE SPEEDOMETER HEAD AND CABLE:SPEEDOMETER HEAD DRIVE SHAFT:

The speedometer cable fits into a drive shaft at the back of the speedometer head, this drive shaft carrying a gear originally made of brass which operates the mechanism. The end float of this shaft is controlled by a steel thrust plate.

It has been found that the friction between the brass gear and the steel thrust plate can generate metallic debris which might find its way into the drive shaft bearing. Should this occur, the speedometer head will emit a dry grating noise, and in extreme cases, the drive shaft may completely seize, causing cable breakage.

Both new speedometer heads and those issued for replacement purposes now incorporate a special plastic gear in place of the brass gear such that the generation of metallic debris is prevented. These heads are also fitted with a machined bush to carry the drive shaft thus further improving the operating conditions.

In the event of speedometer head seizure or noise, a new head should be fitted.

CABLE GREASING:

It is possible that a number of cases of speedometer cable noise have been due to inadequate greasing of the cable when it was originally fitted to the car.

The usual result of lack of lubrication is a "whirring" noise from behind the dashboard, and if this occurs, the inner cable should be withdrawn and lubricated using Walkers Century 40/71 or Vischem 180.

CABLE ROUTE:

It should be ensured that the speedometer cable includes no unnecessary bends and that all bends assume as great a radii as possible. Where the cable passes close to the manifold, ensure that it is properly clipped and as far from the manifold as possible.

SPEEDOMETER CABLE ADAPTOR:

A certain number of left-hand drive cars equipped with automatic speed control had the speedometer cable fitted to the rear of the speedometer head by means of a right-angle drive adaptor.

In the event of any problem with this adaptor, it can be removed and discarded. The cable should then be clipped and routed as described in Service Bulletin SY/M.54.

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CATEGORY CDOUBLE FILAMENT LAMP UNITSAPPLICABLE TO:

All Silver Shadow and Corniche cars. All Bentley 'T' Series and Corniche cars.

DESCRIPTION:

Since leaving the factory a number of cars have been fitted with Quartz iodine or Quartz Halogen outer headlamp units having single filament light units. To enable these units to be fitted, it was necessary to conduct a modification to the headlamp circuit as described in Service Bulletin SY/M.24.

At a later date it may be required to fit Quartz Halogen or conventional Tungsten light units having double filaments, to cars having the single filament units described above. In this event the procedure given in this Service Bulletin should be adopted to ensure that the advantages of the headlamp safety circuit are retained.

PROCEDURE:

1. Disconnect the battery and remove the existing light units.
2. Locate the Blue/White cable which is taped back into the loom inside the light unit backshells.
3. Using suitable terminals, connect the Blue/White cables to the new lamp units in addition to the Blue/Red and Black cables.
4. Withdraw the relay printed circuit board from the engine compartment as described in Section M.10 of the Workshop Manual and remove the 28 Blue/Red cable which connects two cavities. Socket U is the centre socket of the group of three.
5. Plug a UD 11471 relay into the socket provided on the relay board printed circuit.
6. Refit the relay printed circuit board.
7. Reset the headlamps as described in Section M.9 of the Workshop Manual.

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CATEGORY CTHE SPEED CONTROL REGULATORAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars.

All Bentley 'T' Series and Corniche cars produced after :-

SRH 13754, DRA 13413, CRA 13459, LRA 13921, SBH 13755, DRH 13861, CRH 13984 and LRX 13971.

DESCRIPTION:

The above cars are fitted with the latest type of speed control system. The control switch panel of this system bears the words 'Engage' and 'Resume'. The system regulator can be identified from the previous type by a threaded stud which protrudes from the regulator casing immediately above the electrical connection socket. A Purple/Red cable should be connected to this threaded stud.

In a number of recent cases, this Purple/Red cable has come adrift from the stud, resulting in the speed control system allowing the car to slowly accelerate, even though it has been correctly set at a specific speed.

In order to improve the efficiency of this electrical connection, cars now being produced are equipped with a special link cable which connects into the end of the Purple/Red cable via a normal 'bullet' type of connector and bears a special terminal at the other end more suited to connecting to the threaded plug.

In cases of complaint therefore the connection should be re-made using one of these new links. The special terminal of the link cable should be fitted to the threaded stud first using a screwing action. The other end of the cable may then be connected to the Purple/Red cable. This link cable is available from Rolls-Royce Motors Limited.

It must also be noted that the latest regulator fitted on the above cars and the regulator previously used are NOT interchangeable. Care should therefore be exercised when effecting replacements.

PARTS REQUIRED:

Speed control regulator link cable - UD 19758.

Arr/JCL/Eck.

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Category C

THE WARNING LAMP MODULESAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars. All Bentley 'T' Series and Corniche cars produced after the following car serial numbers:-

SRH 13754 and onwards - Standard cars
CRH 13984, CRA 13459 and onwards - Corniche saloon cars
DRH 13861, DRA 13413 and onwards - Corniche cars
LRX 13973, LRA 13921 and onwards - Long Wheelbase Saloon cars

DESCRIPTION:

All cars produced after the above car serial numbers have instrument board warning lamp modules for the following lamps made of Grey coloured plastic :-

Coolant level, Stoplamp failure, Parking brake, Low Fuel level, Brake pressure 1 and 2, Fluid level, Master cylinder and the Partial brake failure warning lamps. Modules constructed of Grey coloured plastic are fitted with bulbs of 2.2 Watt capacity.

Later cars produced after SRH 15400 and LRB 15210 are fitted with the above warning lamp modules constructed of an improved plastic which is beige in colour.

The modules will all be fitted with bulbs of 3 Watts capacity.

It is important that 3 Watt bulbs are not fitted to the earlier Grey coloured plastic modules, otherwise prolonged illumination of the bulb may result in deformation of the bulb holder in the module.

The Rolls-Royce part number of the 3 Watt bulb is UD 15188.
The part number of the 2.2 Watt bulb is UD 15280.

Arr/JC1/Eck

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CATEGORY C

THE RADIOMOBILE RADIO

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars.
All Bentley 'T' Series and Corniche cars.

DESCRIPTION:

The specification of the Radiomobile radios fitted as original equipment to the above cars has been changed.

This change is denoted by a change in the model number:

Model 1085T VRR is replaced by Model 1087X VRR
Model 1087T VRR is replaced by Model 1087X VRR

These changes include an improved radio tuner circuit and an improved selector button shaft, to locate the buttons more rigidly and prevent rattles.

On the two new models the small blue lamps which were fitted in the centre of the tuning scale are deleted, leaving the main illumination unchanged.

The method of fitting of the new radios, and their electrical connections, remain unaltered.

Arr/JC1/Eck

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CATEGORY C

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REPAIRABLE FUSES

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche Cars.
All Bentley 'T' Series and Corniche cars.

DESCRIPTION:

Over the past months there have been a number of cases of the Rolls-Royce repairable fuses blowing although none of the electrical components have been faulty.

In these cases, the cause of the fuse blowing has been the incorrect mounting of the fuse wire onto the fuse holder as shown in Figure 1, or inadequate clamping of the fuse wire when the fuse is assembled onto the printed circuit as shown in Figure 2.

For the correct operation of the repairable type of fuse it is imperative that when the fuse is assembled onto the fuse-board, the fuse wire must be tightly gripped by the securing clips. If this does not occur a poor connection will result causing the fuse wire to be heated.

This heat, when added to the heat normally produced by correct current flow, can cause the fuse to melt.

In the event of a repairable type of fuse blowing for no apparent reason the following procedures should be carried out.

PROCEDURE:

1. Withdraw the faulty fuse and ensure that the fuse wire, after passing over the bridge of the fuseholder, is pulled down before being secured around the fuseholder lug.

The correct and incorrect routes for the fuse wire are shown in figure 1.

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2. If the blown fuse is wound incorrectly, it should be properly repaired as shown in figure 1. The remaining repairable fuses should also be inspected and corrected if necessary.
3. Remove all six repairable fuses from the fuseboard and disconnect the battery.
4. Using a suitable pair of pliers, squeeze each one of the twelve fuse holders.
5. The holders should be squeezed until the two innermost legs contact each other and then begin to open at the lower end as shown in figure 3.

Do not squeeze the holders beyond this point.

6. Fit a correctly wound fuse into each fuse holder in turn, then remove the fuse and examine the bedding mark on the copper strips of the fuse.
7. If the bedding mark extends up to the position of the fuse wire, the fuseholders are correct. If however a short mark is found as shown in figure 1, the operation described in 5 above should be repeated until correct bedding marks are achieved.
8. Repeat these procedures for each of the six sets of fuse-holders.
9. Ensure that when replacing fuses that they are pushed down squarely.
10. Reconnect the battery.

On cars fitted with 75 watt headlamps, under certain adverse conditions, even though the above procedure has been carried out, number five fuse can be made to fail. It is therefore recommended that the car be tested using the brake lights, indicators and headlamp flasher simultaneously, with the dipswitch in the main beam position. In the event of number five fuse failure, this fuse may be wired with fuse wire part number CD 1598.

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NOTE:

1. FUSE WIRE CD 1598 MUST NOT BE USED UNLESS THE PROCEDURES DETAILED ABOVE HAVE ALL BEEN CARRIED OUT WITHOUT SUCCESS.
2. BEFORE CD 1598 IS USED, THE CIRCUITS SUPPLIED BY FUSE NUMBER FIVE SHOULD BE CHECKED TO ENSURE THAT NO SHORT CIRCUIT EXISTS.
3. CD 1598 MUST ONLY BE USED ON FUSE NUMBER FIVE. IT MUST NOT BE USED ON ANY OTHER FUSE.
4. THE BOBBIN SHOULD BE WOUND WITH FUSE WIRE RH 2378 ONLY.
5. THE LOAD ON EACH FUSE HAS BEEN CAREFULLY EVALUATED AND, AS SUCH, AUXILIARIES SHOULD ONLY BE CONNECTED TO FUSES 13 AND 14, WHICH ARE PROVIDED SPECIFICALLY FOR THIS PURPOSE. SEE SERVICE BULLETIN M73.

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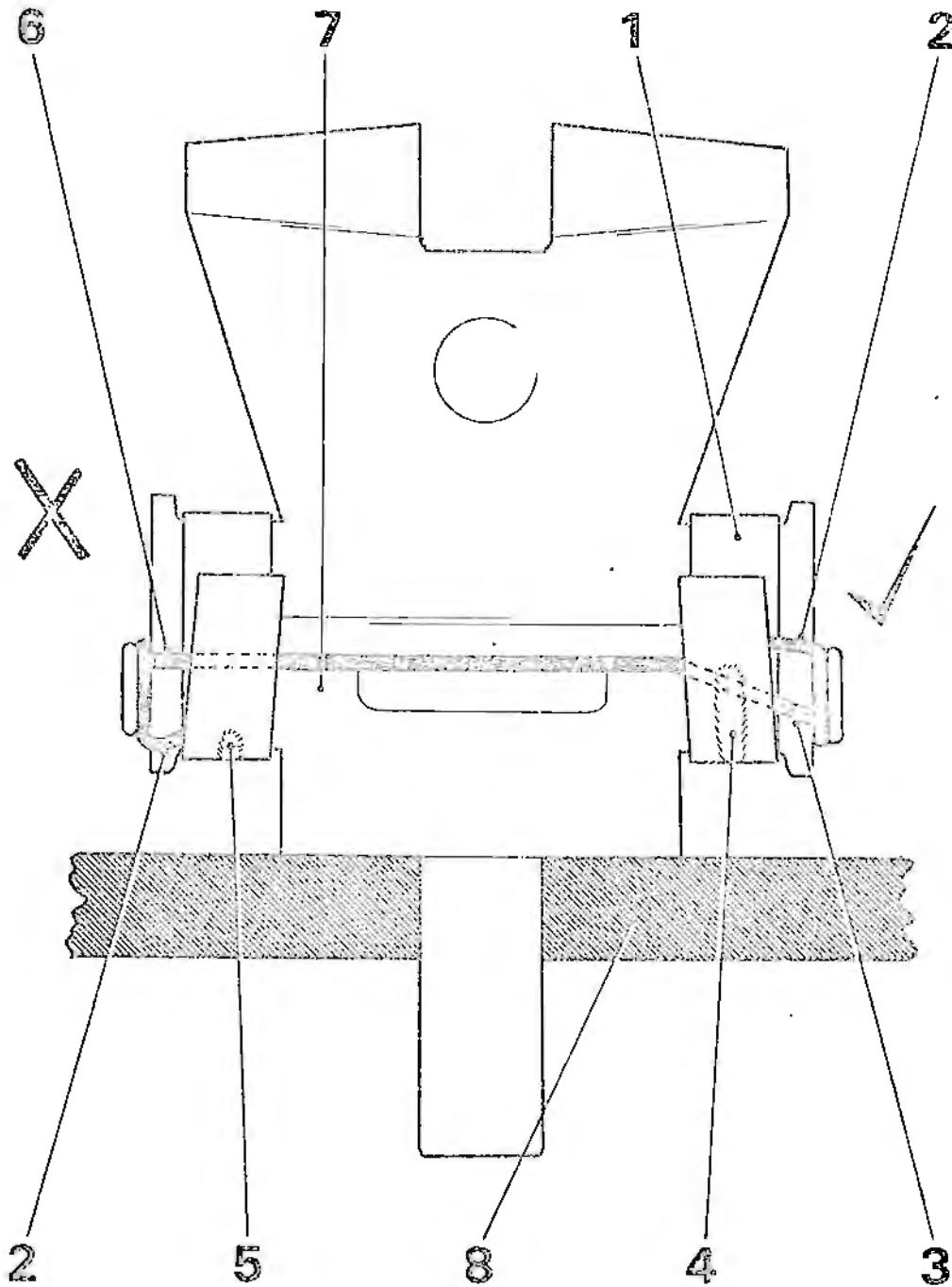


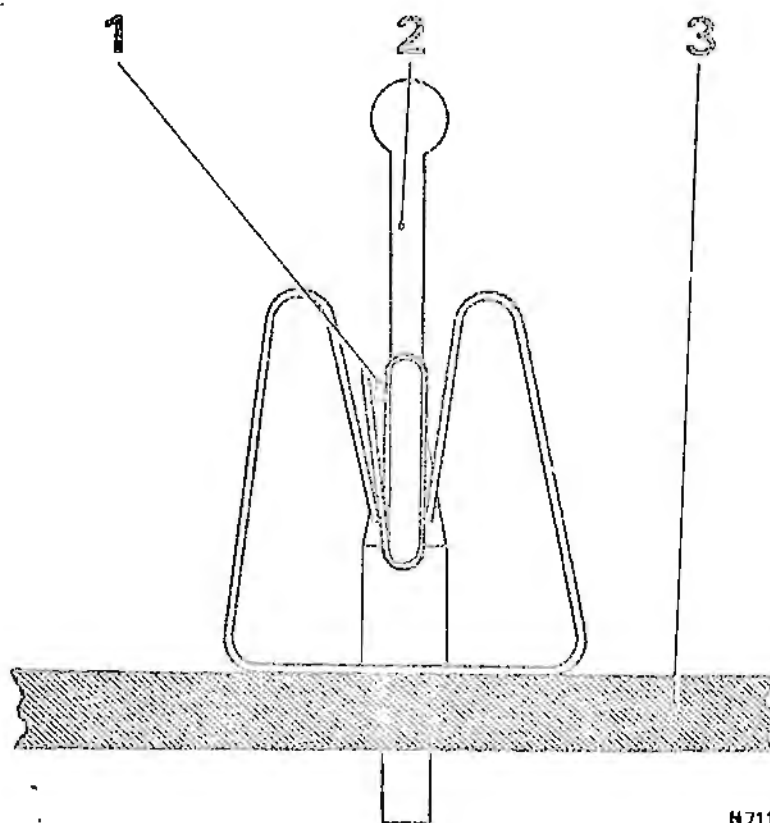
FIGURE 1. FUSE ASSEMBLY

N711

- | | |
|--------------------------------|-----------------------------------|
| 1. Copper contact strips. | 5. Incorrect bedding mark. |
| 2. Cut end of fuse wire. | 6. Incorrect route of fuse wire.. |
| 3. Correct route of fuse wire. | 7. Fuseholder bridge |
| 4. Correct bedding mark. | 8. Fuse board. |

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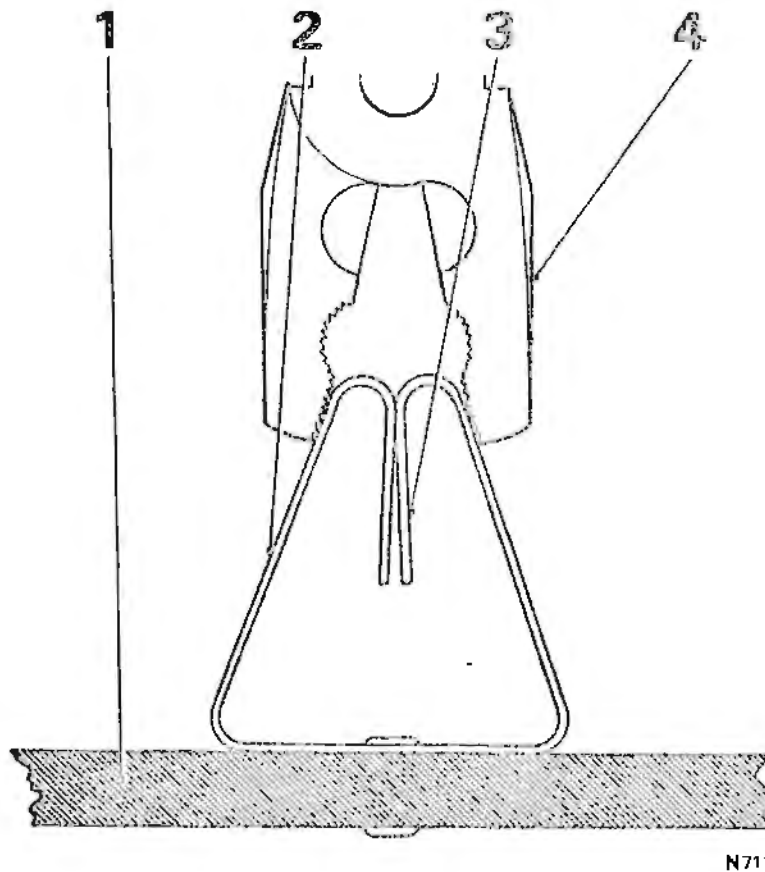
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FIGURE 2. INADEQUATE CLAMPING OF FUSE WIRE

1. Fuse wire not clamped.
2. Fuse holder.
3. Fuse board.

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FIGURE 3. SQUEEZING THE FUSE HOLDER.

1. Fuse board.
2. Fuse holder.
3. Fuse holder legs.
4. Pliers.

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FOG LAMPS

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars from SRH 13754 onwards.

DESCRIPTION:

Irrespective of whether the car is fitted with fog lamps or not, all cars produced after the above car serial number are equipped with a lighting control switch having a Foglamp position, marked 'FOG' on all cars except those destined for the USA and Canada.

When these cars are built without foglamps, the lighting control switch in the switchbox is connected so that if the switch is turned to the 'Fog' position, the headlamps and sidelamps will remain illuminated.

All cars are equipped with fuses and cables for connecting fog lamps. However these cables terminate at the toeboard sockets.

If foglamps are fitted to a car in service, care must be taken in connecting to the switchbox, otherwise it is possible that both the foglamps and headlamps will be illuminated when the lighting switch is turned to the 'Fog' or 'Head' positions. In many countries this would contravene the Lighting Regulations and it is therefore important that you ensure that the relevant Regulations are complied with.

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The correct procedure for fitting foglamps is detailed as follows:-

PROCEDURE:

1. Fit the foglamps to the car as desired.
2. Remove the top roll from the instrument board as described in Chapter S Section S10 of the Workshop Manual.
3. Disconnect the battery.
4. Remove the three nuts from the aluminium cowl at the back of the switchbox and slide the cowl up the wiring loom.
5. Locate the Brown/Blue link cable which connects terminals 4 and 7 together. Remove this cable from terminal 7 and tape it back to the loom, so that it is insulated.
6. Locate the Red cotton covered cable which is taped into the loom adjacent to the back of the switchbox, as shown in Figure 1.
7. Using a suitable terminal connect this Red cable to terminal number 7 of the switchbox.

NOTE:

The wiring from the switchbox, through the foglamp fuses to the toeboard is now completed.

8. Locate the Red/Yellow plastic covered cables connected to toeboard sockets C and K as shown in Figure 1.
9. Using suitable terminals connect two lengths of Red/Yellow cable to the engine compartment side of the toeboard sockets C and K.
10. Route the cables down each valance.
11. Connect each cable to a foglamp.
12. Connect the earth cable of each foglamp to a suitable earth point.

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13. Connect the battery.
14. Carefully check for correct operation of all exterior lamps in each of the lighting control switch positions.
15. Replace the top roll.

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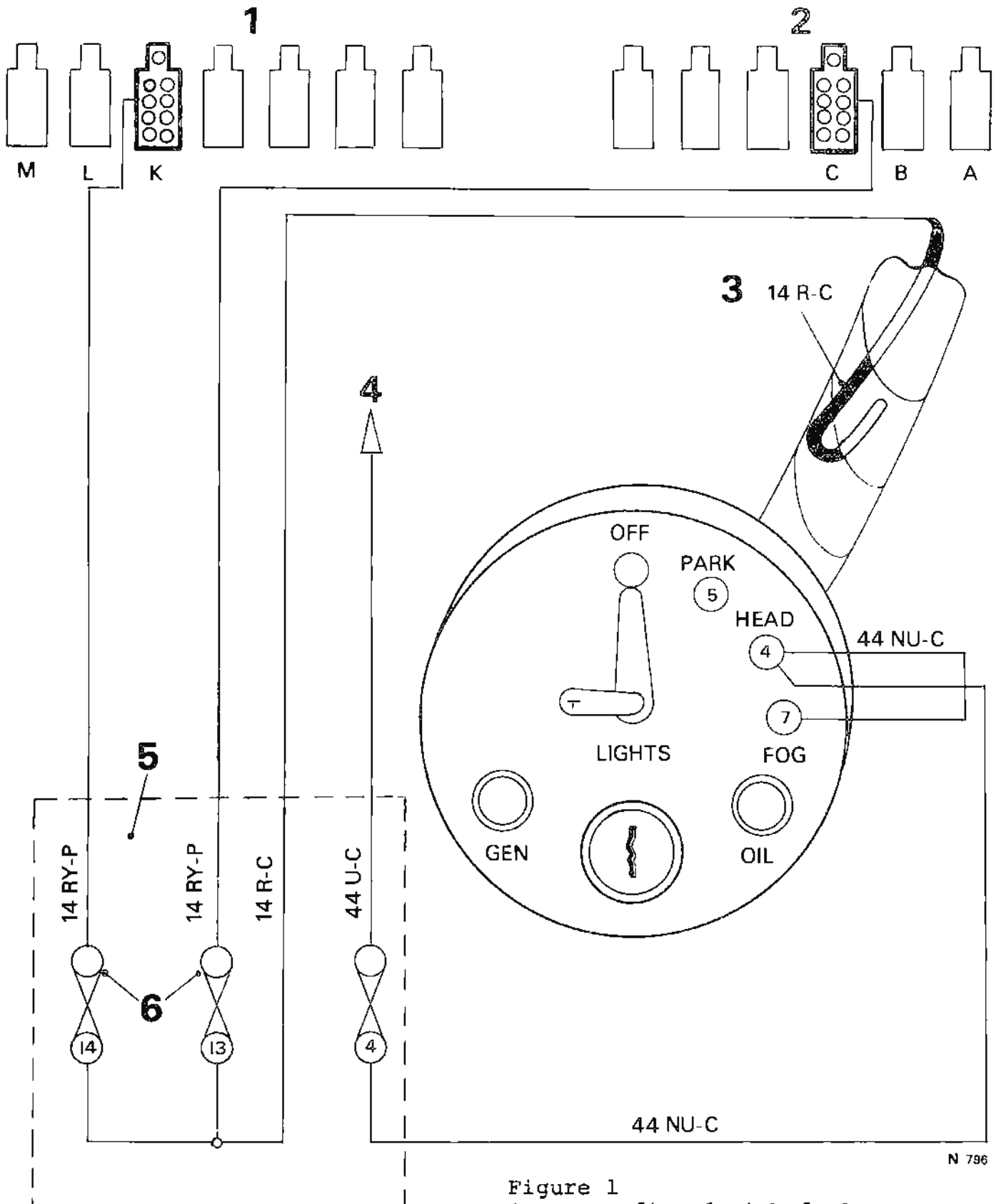


Figure 1
Cars not fitted with foglamps

Key

1. Left hand toeboard sockets
2. Right hand toeboard sockets
3. Red cable taped into loom

4. Feed to headlamp dipswitch
5. Fuseboard
6. Foglamp fuses

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CATEGORY CFUSES FOR ADDITIONAL EQUIPMENTAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars.

All Bentley 'T' Series and Corniche cars.

DESCRIPTION:

Electrical failures have been caused by connecting additional equipment to circuits not designed to take the additional load. This Bulletin details the procedure to be followed if additional electrical equipment is required on the above cars.

PROCEDURE:1. CARS PRIOR TO SRH 13754, NOT FITTED WITH FOGLAMPS

Additional equipment should be connected to fuses 13 and 14. The feed to these fuses should be taken from the brown-purple cable which leads from the switchbox - See Illustration.

If fuses 13 and 14 are already used for additional equipment - See procedure 3.

2. CARS AFTER SRH 13754, NOT FITTED WITH FOGLAMPS

If the additional equipment is to be fitted within the passenger compartment, the procedure as detailed in 1 above should be adopted. It will also be necessary to disconnect the red-yellow and red cables from fuses 13 and 14 and tape them back into the loom. See illustration for connection positions.

If the additional equipment is to be in front of the engine bulkhead, it may be found expedient to use the red-yellow cables which connect fuses 13 and 14 to the toeboard sockets. However, the feed should still be taken from the brown-purple cable from the switchbox, and the red cables must be disconnected and taped back.

If fuses 13 and 14 are already used for additional equipment, see procedure 3.

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3. CARS FITTED WITH FOGLAMPS

Where foglamps are fitted, fuses 13 and 14 will already be in use. In this case a separate line fuse should be used, connected at the fuseboard end of the brown-purple cable from the switchbox. A suitable line fuse carrier is part number UD 8929.

NOTE: In cases where any doubt remains concerning the wiring of additional equipment please contact the Service Promotion Department of Rolls-Royce Motors Limited.

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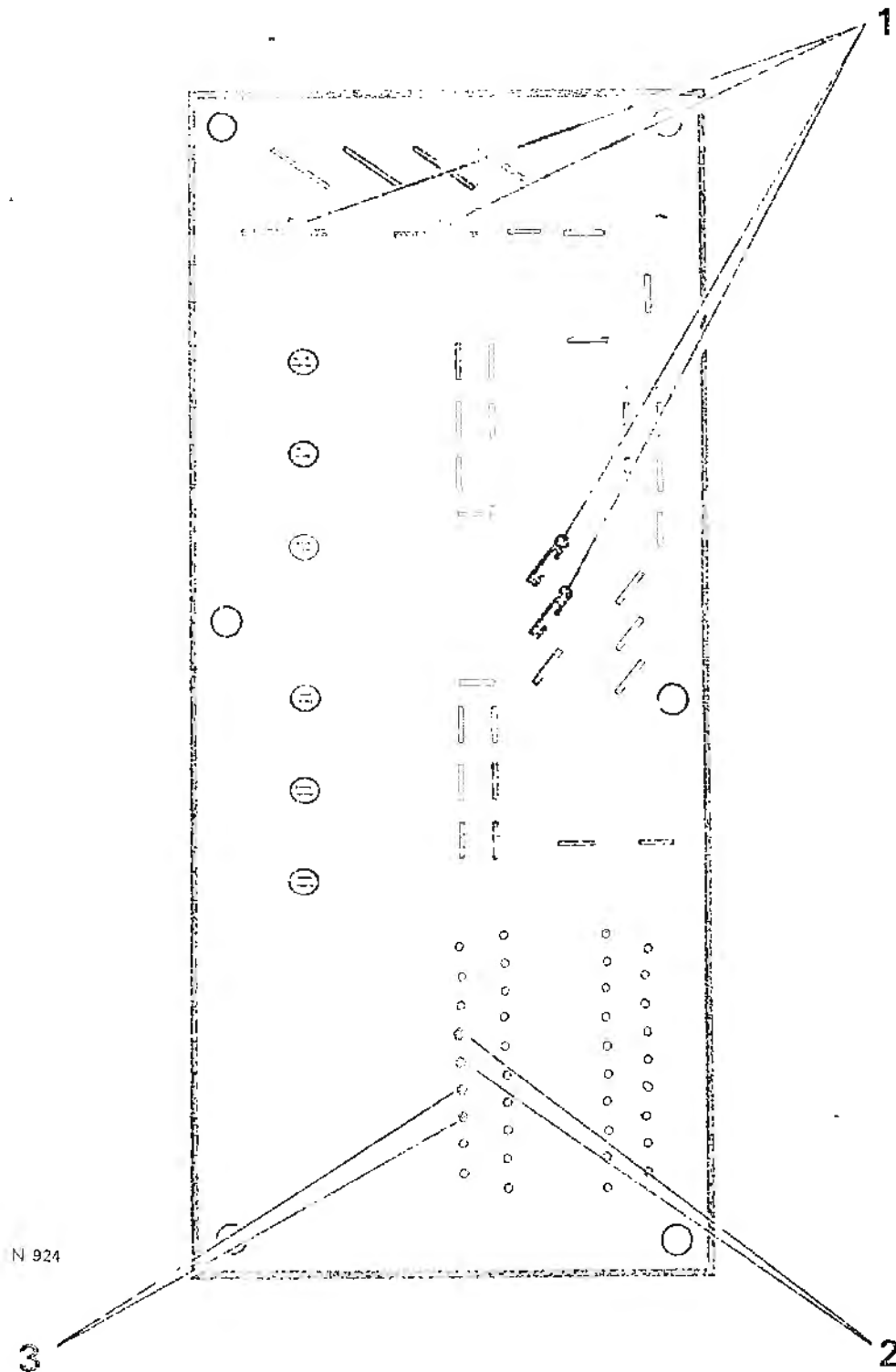


Illustration showing connections at back of fuseboard.

1. Feed from switchbox (brown-purple cable)
2. Connections to fuse 13.
3. Connections to fuse 14.

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CATEGORY C

THE FLASHER UNIT

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars produced after car serial numbers:
SRB 14954 DRB 14991 LRB 15056 CRB 15052

DESCRIPTION:

The flasher units fitted to all cars produced after the above car serial numbers are different to those previously used.

The new units are oblong in shape and have two connecting terminals as opposed to the three terminals of the old units.

A new type flasher unit is also available for use on all earlier cars which are equipped with fuseboards designed to accept a three terminal type of flasher unit.

It should also be noted that because of the regulations which exist in the German Federal Republic, cars destined for use in that territory will be fitted with a special two terminal flasher unit.

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FLASHER UNIT APPLICATION

Flasher Unit	Manufacturers Part Number	Rolls-Royce Part Number	Number of Terminals	Application
Lucas 8FL	36/35048	UD 19431	2	All cars produced after SRB 14954 DRB 14991 LRB 15056 CRB 15052 not fitted with flasher repeater lamps.
Lucas 8FL	41/35049	UD 19256	2	All cars produced after SRB 14954 DRB 14991 LRB 15056 CRB 15052 fitted with repeater lamps.
Lucas FL5	35028	UD 20068	2	All cars produced after SRB 14954 DRB 14991 LRB 15056 CRB 15052 destined for use in the German Federal Republic only.
Klamix	M5	RH 8740	3	All cars produced prior to SRB 14954 DRB 14991 LRB 15056 CRB 15052

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CATEGORY C

THE SPEEDOMETER CABLE

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars fitted with Automatic Speed Control and produced after the following car serial numbers:

SRB 16460, CRH 16578, LRB 16459, DRB 16576.

DESCRIPTION:

All the cars produced after the above serial numbers are fitted with an improved design of speedometer cable.

The new cables, whilst being mechanically as strong as the earlier design, are of reduced diameter and therefore more flexible. Also, the design of the cable end fittings has been improved. This means that the cable is held firmly in the driving position but is better able to accommodate the slight eccentricity which occurs between the drive shafts and outer cable attachment bosses of the gearbox, speed control regulator and speedometer head.

The change in cable diameter has necessitated the use of new smaller cable clips. The new cables, have already been fitted to a number of cars and have proved successful in overcoming cable noise and breakage problems.

In the event of a complaint of cable noise or cable breakage on an earlier car, the following procedure should be followed:

PROCEDURE:

1. Locate the noisy or broken cable.
2. Remove the cable and fit a new cable of the improved type.

Ensure that the routing of the new cable is similar to the original, avoiding sharp bends in the cable, and ensuring that the lower cable is clear of the exhaust.

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CATEGORY C

NOTE:

A number of speed control regulators will be fitted with an adaptor piece on the lower cable attachment boss. This adaptor should be removed and discarded when fitting a new type of gearbox to regulator speedometer cable.

It is also important that the speed control regulator is removed from the car before attaching the gearbox to regulator cable. Failure to observe this will almost certainly result in the upper end of the inner cable being bent, causing cable noise and speedometer needle waver.

In the past, cable breakage has often been attributed to seizure of the speed control regulator. However examination of regulators returned for warranty consideration have revealed no faults. The breakage is more likely to be caused by the eccentricity mentioned above or by the inner cable being bent during fitting.

Speedometer cables should be lubricated with either Vischem 180, Walkers Century 40/71 or Shell Retinex A grease.

The part numbers of the speedometer cables are as follows:

EARLIER	COMPONENT	APPLICATION	NEW:
UE 36522	Cable	Gearbox to regulator All cars	UD 19951
UE 36658	Cable	Regulator to head Right-hand drive cars	UD 19948
UE 36523	Cable	Regulator to head Left-hand drive cars	UD 19949
RE 16256	Clip	Gearbox to regulator (Three required)	RE 16256
RE 14174	Clip	Gearbox to regulator (One required)	UG 13183

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RADIO AND TAPE PLAYER SPEAKERS

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars.

All Bentley 'T' Series and Corniche cars.

DESCRIPTION:

Complaints of speaker 'rattle' or 'bounce' have been received for some time and a number of allegedly faulty speakers have been returned to Rolls-Royce Motors.

Investigation of a number of these speakers has failed to indicate any fault and it is therefore possible that the fault could have been caused by the manner in which the speaker is mounted in the door panel.

This Service Bulletin lists some of the installation problems which have been known to cause speaker rattle. In the case of a complaint of speaker rattle these features should be examined before deciding the speaker requires replacing.

PROCEDURE:

1. Remove the door trim pad and carefully examine the speaker grille and surrounding area. Test the radio to ascertain if the rattle is still present.

Ensure that the grille is not deformed or creased as this can cause it to rattle in sympathy with speaker cone movement.

Also, ensure that the sections of leather which are stapled to the rear surface of the trim pad have insufficient free length to touch either the grille or the speaker. If necessary cut the leather sections off immediately above the staples.

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2. Radio speakers are very delicate components and deforming the frame of the speaker can easily cause the internal moving parts to touch the outer body, causing rattles. Therefore, the screws which secure the speaker to the mounting board should be only 'nipped' and not tightened such that the speaker is deformed.
3. Remove the speaker and board from the door panel and ensure that there is nothing in the mounting area which can come into contact with any part of the speaker.

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CATEGORY C

DUAL INTENSITY REAR LAMPS

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series cars produced between car serial number SRH 13754 and car serial number SRH 17754 excluding those built to comply with North American specifications.

DESCRIPTION:

The above cars are fitted with a special relay which increases the intensity of the rear stop lamps and rear direction indicator lamps whenever the lighting control switch is turned to the 'FOG' position.

This relay is fitted in the boot, adjacent to the left hand hydraulic ram and is housed in a yellow plastic case.

To cater for the two light intensities these cars are fitted with special rear flasher lenses.

Cars produced after car serial number SRH 17754 are not fitted with a dual intensity rear lamps system. Therefore the special relay has been deleted and the rear lamps fitted with normal lenses.

If a dual intensity relay failure is experienced and a replacement is not readily available the rear lamps can be made to function normally, but without the dual intensity feature, by using the following procedure:

PROCEDURE:

- 1 Disconnect the battery
- 2 Locate and remove the faulty relay
- 3 Connect the relay feed cables together using connector blades UD6074 in accordance with the following chart.

Purple/White to White/Purple

Green/Red to Green/Red

Green/White to Green/White

The Green/Brown and Red/Blue cables will no longer

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- be required and can be taped into the loom.
- 4 Replace both rear flasher lamp lenses with new lenses part number CD5741.
 - 5 Reconnect the battery and check the function of the rear lamps.

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CATEGORY C

THE BATTERY CHARGING PLUG

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars, produced after the following car serial numbers:

Silver Shadow: SYE SRX 17869, SYE SRX 17871, SRC 17826, SRC 17833, SRH 17861, SRH 17878, SRC 17879, SRH 17882, SRH 17883, SRH 17884, SRH 17885 and all subsequent cars.

Corniche Convertible: DRH 17785, DRC 17787, DRC 17788 and all subsequent cars.

Corniche Saloon: CRX 17784, CBH 17786 and all subsequent cars.

DESCRIPTION:

The battery charging plug, which was fitted in the side of the boot to the rear of the battery, has been deleted. The charging socket has also been deleted from the tool kit.

Charging of the battery on these cars should be accomplished by connecting the charger leads directly to the battery, ensuring that polarity is observed.

When using a charge rate greater than 7 amps, or when using a 'boost' charger, the negative battery lead should be disconnected at the quick release screw, and the charger leads connected directly to the battery terminals.

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CATEGORY C

DAGENITE "DEMON" BATTERY

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars.
All Bentley 'T' Series and Corniche cars.

DESCRIPTION:

The Dagenite "Vanguard" Battery is now replaced by the Dagenite "Demon" Battery. The battery label referring to the "Vanguard" Battery will continue to be fitted to the "Demon" Battery until a new label is available. This new label will not specifically refer to battery type.

The two types of battery are interchangeable.

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CATEGORY C

DELETION OF KEY WARNING BUZZER

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and
All Bentley 'T' Series and Corniche cars after the
following serial numbers:

Four door saloon and long wheelbase : SRH 17672
Corniche : CRH 17567

except those cars destined for North America.

DESCRIPTION:

In respect of those of the above cars not destined for
North America, the key warning buzzer has been deleted
and the wires are taped back onto the loom. The buzzer
will continue to be fitted to cars destined for North
America.

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CATEGORY CTUDOR WINDSCREEN WASHER DELIVERY TUBEAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars fitted with a Tudor Windscreen Washer Unit after car serial number SRH 12566.

DESCRIPTION:

A small number of instances have been reported of the windscreen washer unit on the above cars failing to operate in service.

It has been found that this can be caused by the washer pump delivery tube becoming detached from the stub pipe within the washer bottle.

To prevent the fault re-occurring the motor/pump assembly should be removed from the bottle and the delivery pipe should be re-fitted to the stub pipe using an adhesive such as Loctite.

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CATEGORY CSPEEDOMETER CABLE ALIGNMENTAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars.
All Bentley 'T' Series and Corniche cars.

DESCRIPTION:

There have recently been reported a number of instances of speedometer cable noise or lack of speedometer drive. This can be caused by inadequate engagement of the top of the squared inner cable in the speedometer head. Investigation has shown that the nylon bush at the top of the inner cable behind the speedometer can be moved forward if the squared end of the inner cable is slightly out of alignment when engaging in the speedometer. This can happen because, even if the inner cable is not correctly engaged in the speedometer head, the knurled sleeve can be started on the threads of the speedometer head. Further tightening of the knurled sleeve causes the nylon bush to be pushed along the inner cable by the knurled sleeve. This results in only partial engagement of the squared inner cable in the speedometer head. Eventually a noise is created as the corners of the squared cable become rounded and ultimately the cable fails to drive.

When fitting a speedometer cable it is essential that the squared end of the inner cable is correctly aligned and fully engaged in the speedometer head before the knurled sleeve is tightened. It is suggested that this can best be achieved by rotating the inner cable as it is entered into the speedometer head, which will involve dismantling the opposite end of the cable.

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ENGINE METAL TEMPERATURE WARNING SYSTEMAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche and all Bentley T Series and Corniche motor cars, produced prior to the following serial number.

Four Door Saloon	SRX 11882
Long Wheelbase motor cars	LRH 11867
Corniche motor cars	CRH 11878

DESCRIPTION:

All motor cars produced after the above serial numbers are fitted with a device which indicates, by means of a high pitched buzzer and illumination of the Coolant level warning lamp, whenever the temperature of the cylinder head is approaching an abnormal level.

The operation of the buzzer and the Coolant level lamp bulb can be checked by operating the Warning Lamp Test Switch.

Experience has shown that this warning device is a valuable improvement to the specification and we have therefore devised a scheme which allows this device to be fitted to earlier cars.

The necessary components and fitting instructions are detailed in this Service Bulletin.

PROCEDURE FOR FITTING THE SENSOR SWITCH

The switch is fitted immediately forward of A4 exhaust port, adjacent to the air injection boss where such a boss is incorporated (see Fig 1).

Continued...

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- 1 Unbolt and move aside the air injection manifold on the right hand side (A bank) of the engine. This procedure only applies to cars fitted with emission control equipment.
- 2 Unfasten and move aside A bank ignition harness.
- 3 Remove the upper bolt from the rearmost flange of A bank exhaust manifold and utilise this bolt to locate the drilling fixture, as shown in Fig 1. Note the position of the distance piece.
- 4 Using a 0.390 inch (9.92mm) drill carefully drill a hole not more than 0.500 inches (12.7mm) in depth.
- 5 Using a 0.375 inch UNF Helicoil tap, tap out the hole and fit a Helicoil. This operation may be made easier by first spot facing the hole.
- 6 Fit the thermal switch, taking care not to exceed 10 lbs ft (1.38 kgm).

NOTE

Provided these instructions are followed with reasonable care, there is no danger of drilling into a water way or the exhaust port.

For Engineering reasons the switch must only be fitted adjacent to A4 exhaust port in the position dictated by the drilling jig. Fitting the switch in any other location will render the system inaccurate.

FITTING THE BUZZER AND ASSOCIATED WIRING

- 1 Disconnect the battery.
- 2 Remove the trim from above the parking brake handle.
- 3 Bolt the buzzer to the inside of the trim panel.

NOTE A wiring diagram is included at the back of this Service Bulletin.

- 4 Locate the fuel warning light relay which is bolted to the steering column support bracket. This relay will have the following cables connected to it.

White/Purple	:	Plastic
Green	:	Plastic

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Red/Brown : Plastic
 Black : Plastic

- 5 Remove the Green cable from the fuel lamp relay. Fit a double connector with a length of Green cable to the empty relay terminal and refit the original cable to the double terminal.
- 6 Connect the new Green cable to the + terminal of the buzzer.
- 7 Connect a length of GP-P cable to the negative terminal of the buzzer. The cable should be routed through the empty receptacle in toeboard socket A. The cable should then be routed up to the coolant probe relay in the relay box. This relay is bolted to the cover of the relay box and carries the following cables.

Green : Plastic
 Green/Purple : Plastic
 Black/Green : Plastic
 Black/Green : Plastic

- 8 Locate and remove the Green/Purple cable from the coolant probe relay, and using the small terminal provided connect it to the smaller terminal of the diode.
- 9 Using the terminals provided connect
 - a) The larger diode terminal
 - b) A length of Green/Purple cable
 - c) The Green/Purple cable from the buzzer

to the empty terminal of the coolant probe relay.

- 10 Route the Green/Purple cable from the coolant probe relay along the valence and then down the valence loom to the starter relay. From here the cable should follow the route of the engine loom and should finally be taped along the length of the loom which runs along the tappet cover to the kick-down switch.
- 11 Connect the cable to the thermal switch
- 12 Reconnect the battery.

TEST PROCEDURE

- 1 Remove the Green/Purple cable from the thermal switch and connect it directly to a clean earth point. Switch

Continued ...

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on the ignition and check that both the coolant warning lamp and the engine warning buzzer are operating.

Reconnect the switch cable.

- 2 With the ignition switched on, operate the warning lamp test switch and check that
 - a) The fuel gauge indicates engine sump oil level.
 - b) The coolant lamp illuminates.
 - c) The engine warning buzzer operates.

RECOMMENDED TIME

3.5 Hours

MATERIAL REQUIRED

PART NUMBER	DESCRIPTION	QUANTITY
UD 17772	Buzzer	1
UD 13632	Diode	1
UE 37357	Thermal switch	1
UD 8888	Sleeve	1
UD 11875	Terminal	1
UD 11298	Terminal	2
UD 2100	Sleeve	1
UD 12235	Terminal	1
UD 6119	Sleeve	4
UD 5406	Terminal	4
UD 8981	Terminal	2
RH 8826	Drilling jig	1

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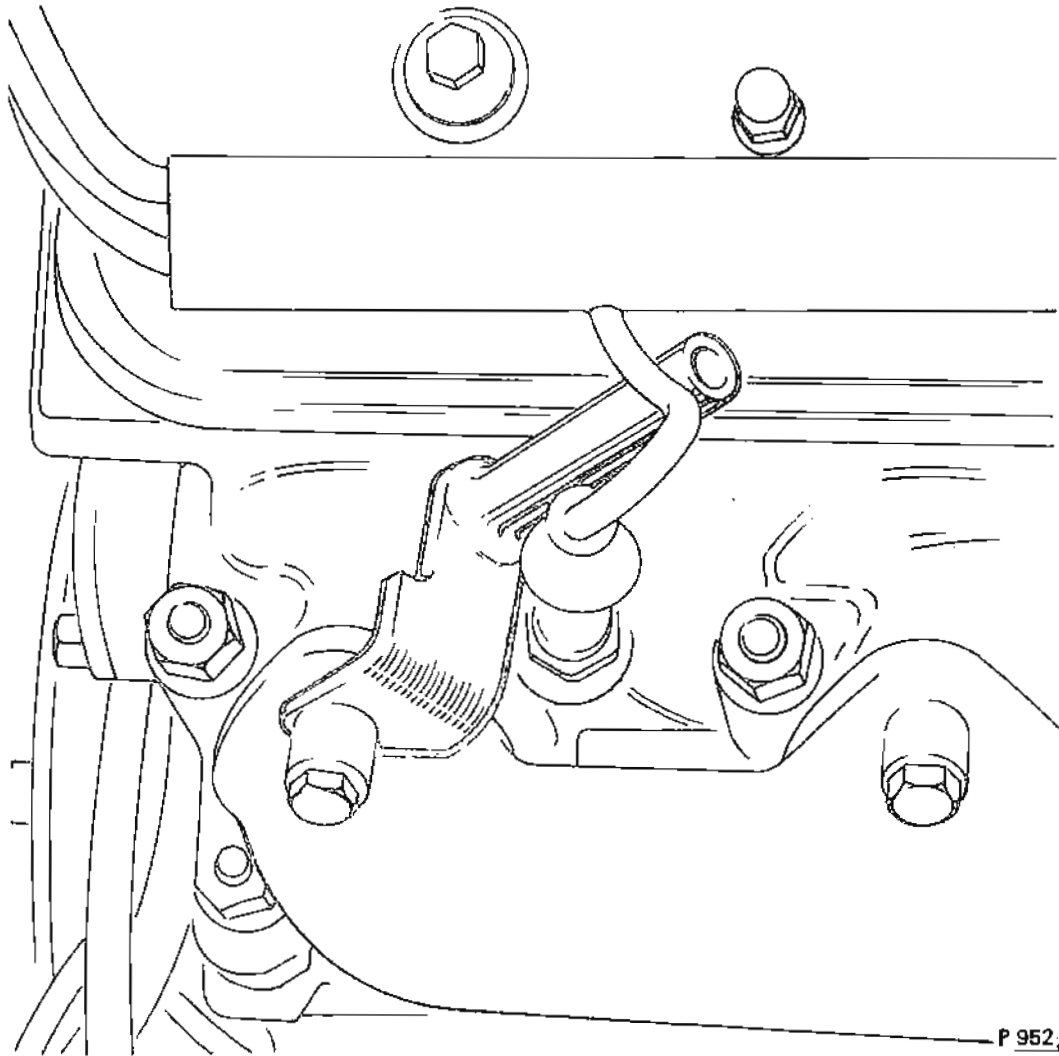
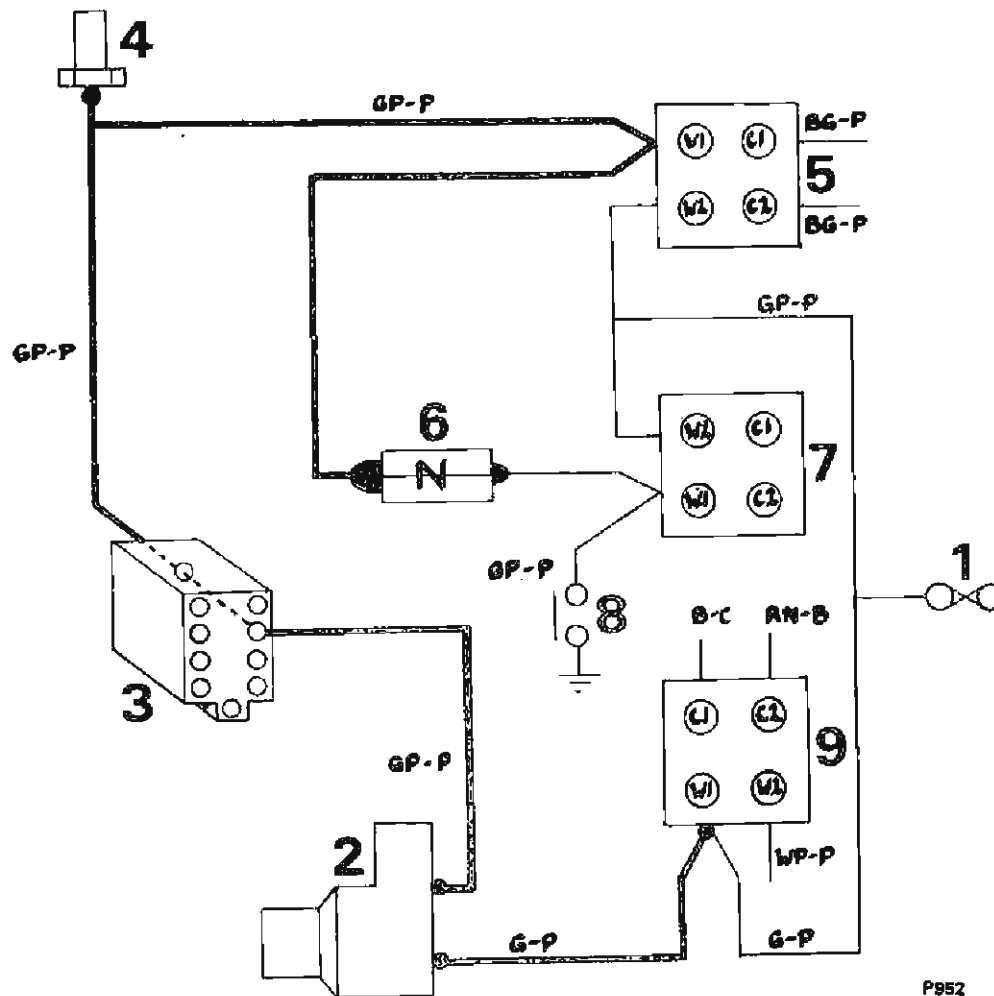


Fig 1. Drilling jig in position on 'A' bank exhaust manifold

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Fig 2.

- 1 Fuse
- 2 High metal temperature warning buzzer
- 3 Right hand toeboard socket 'A'
- 4 High metal temperature warning switch
- 5 Coolant probe relay
- 6 Diode
- 7 Brake warning lamp relay
- 8 Warning lamp test relay
- 9 Fuel warning lamp relay

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TSD 2933

CATEGORY CFUSE NUMBER FIVEAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche and all Bentley 'T' Series and Corniche motor cars produced after the following serial numbers:

Right Hand Drive Motor Cars: SRH 18485

Left Hand Drive Motor Cars: SRX 18525

DESCRIPTION:

As described in Service Bulletin SY/M69 any failure of fuse number 5, on motor cars fitted with 75 watt headlamps, may be corrected by using special fuse wire part number CD 1598, after ensuring that there is no short circuit.

All motor cars produced after the above serial numbers have a re-designed headlamp circuit which ensures that the normal fuse wire in fuse number 5 will only fail if a short circuit occurs.

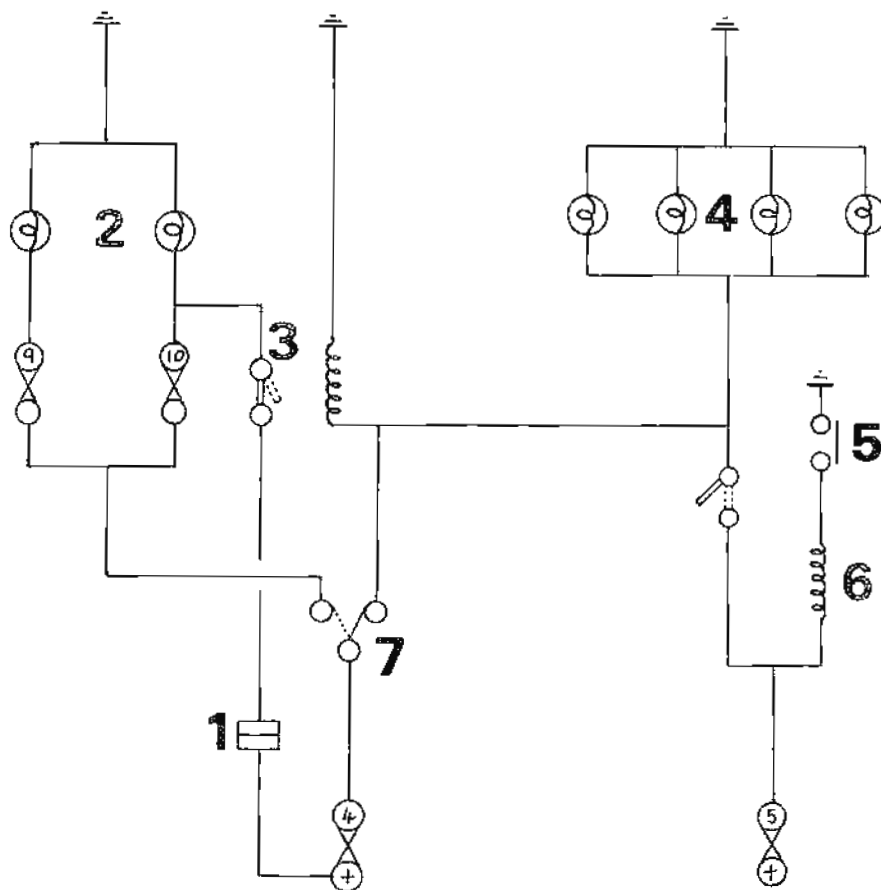
It is therefore important that following a fuse failure on these later cars, the cause is traced. Special fuse wire CD 1598 must not be used.

The early and revised headlamp circuits are shown in Figure 1. It should be noted that with the revised circuit the headlamp flasher relay is bolted to the cover of the relay box.

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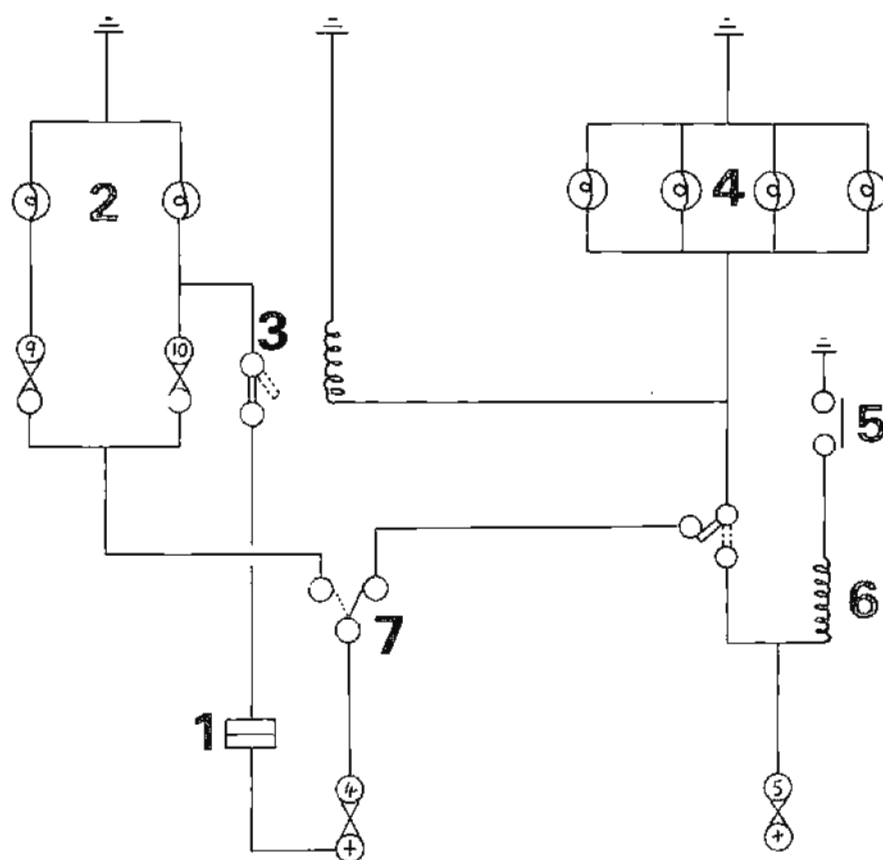
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Headlamp circuit - Early cars

- | | |
|--------------------------|----------------------------|
| 1. Safety thermal switch | 4. Main beam units |
| 2. Dip beam units | 5. Headlamp flasher switch |
| 3. Safety relay | 6. Headlamp flasher relay |
| 7. Dipswitch | |

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Headlamp circuit - Redesigned

- | | |
|--------------------------|----------------------------|
| 1. Safety thermal switch | 4. Main beam units |
| 2. Dip beam units | 5. Headlamp flasher switch |
| 3. Safety relay | 6. Headlamp flasher relay |
| 7. Dipswitch | |

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ELECTRICAL CABLESAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche, Bentley T Series and Corniche motor cars.

DESCRIPTION:

The electrical cables used on the above motor cars have previously been made to Imperial (inch) sizes. All cables are now being made to a Metric standard and new cable to the Imperial standard will no longer be available.

The different sizes of cable are as follows:

IMPERIAL CABLES

METRIC EQUIVALENT

14/010in.	14/0.3mm.
28/012in.	28/0.3mm.
44/012in.	44/0.3mm.
65/012in.	64/0.3mm.
120/012in.	120/0.3mm.

The first set of figures, in both columns, refer to the number of strands in the cable, and the last numbers refer to the size of each strand. For instance 44/012in. cable indicates one constructed of 44 strands of wire each 0.012 inches in diameter.

Should the need arise to replace a length of Imperial cable on an older car it will be necessary to use the equivalent size of Metric cable.

However, there have been occasions in the past when we have used identically coloured Imperial sized cables, both plastic and cotton covered, in the same loom; this had been possible because of the obvious difference in texture of the cable coverings. Unfortunately cotton covered cables, are not available in metric sizes.

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In such a case it is recommended that two identical plastic covered metric cables be used, one of these being identified by the addition at each end of a black Helsyn cable sleeve HT 20 x $\frac{1}{2}$ " No 150, marked 'C'. Stocks of these will be available from Rolls-Royce Motors, piece number RH 8821, or they can be obtained from the manufacturer:

Hellerman Electric Limited
Gatwick Road
Crawley
Sussex

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TSD 2933CATEGORY CDELETION OF 0.25mF SUPPRESSORS
FITTED TO TWIN FUEL PUMPSAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley T Series and Corniche cars built from January 1974.

DESCRIPTION:

In the past the twin fuel pumps had ONE 0.25mF suppressor fitted to each fuel pump half feed cable.

Cars built from 1st January 1974 have a single 0.5mF suppressor fitted to the right-hand (viewed from car rear) half pump main feed cable terminal; this terminal being fed from the toeboard socket. Refer to the appropriate wiring diagram for the car being worked upon.

It is imperative that if the later type 0.5mF suppressor is renewed, the correct type and value is fitted. On no account should a suppressor exceeding 0.5mF be attached.

The new 0.5mF suppressor can be used as a replacement to pre-January 1974 cars, providing BOTH 0.25mF suppressors are removed and only ONE 0.5mF suppressor is fitted to the right-hand fuel pump half main feed cable. Refer to the appropriate wiring diagram for the car being worked upon.

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THE WIPER MOTOR - FAULT DIAGNOSIS

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche and all Bentley 'T' Series and Corniche motor cars produced after serial number SRH 11882.

DESCRIPTION:

Diagnosis of faults, in the wiper motor and washer motor circuits, has become more difficult since the introduction of the Wash/Wipe and Intermittent Wipe Systems.

This Service Bulletin is intended to assist in locating and diagnosing faults in these circuits.

In the interests of clarity the information is divided into sections.

Section 1 is a description of all the functions the wiper motor is expected to fulfil. In the event of a wiper motor only being suspect, this section should be consulted.

The remaining five sections include diagrams and information on the circuits which exist in the different control switch positions, as indicated.

Section 2 The Wash/Wipe Switch in the ON position

Section 3 The wiper switch in the OFF (PARK) position

Section 4 The wiper switch in the SLOW position

Section 5 The wiper switch in the FAST position

Section 6 The wiper switch in the INTERMITTENT position

Notes

- 1 Testing of the wiper motor will be eased if a spare wiper motor plug and terminals are available. This will enable the plug to be fitted with fly leads such that the connections shown on the diagrams can be easily made.

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- 2 To view the operation of the motor anti-streak device remove the plastic cover. UNDER NO CIRCUMSTANCES OPERATE THE MOTOR WITH THE METAL COVER REMOVED AS THIS WILL CAUSE DAMAGE TO THE ANTI-STREAK DEVICE.

Section 1 - Operation of the Wiper Motor

Although the wiper motor is connected to every component in the system at some time or other, it is only capable of performing three different functions. These are:

Function 1 - Motor is driving the main gear in an anti-clockwise direction. When it reaches the Park position it should switch off.

This function occurs when:

- a) The wiper switch is turned to OFF from any other position
- b) The Wash/Wipe operation is completed and the Wash/Wipe unit de-energises.

Therefore if a motor will park in condition (a) but not in (b) the fault will not be in the motor.

Function 2 - The motor is driving the main gear in a clockwise direction at SLOW speed. This function occurs when:

- a) The wiper switch is turned to SLOW
- b) The Wash/Wipe unit is energised
- c) The intermittent wipe unit is energised

Therefore a motor having an internal fault on the slow speed, can be identified by the fact that it will not operate under any of the above conditions.

Function 3 - The motor is driving the main gear in a clockwise direction at FAST speed. The motor only operates thus when the wiper switch is turned to FAST.

No matter what the complaint is, testing all the functions

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of the wiper and washer systems can give valuable evidence as to the actual cause of any particular problem.

For example, should the complaint be failure to operate when the wiper switch is turned to the SLOW position, test the operation of the motor in the intermittent or wash/wipe conditions.

If the motor operates in these conditions then the original fault is unlikely to be caused by the wiper motor because the electrical signals to the motor are the same for all three conditions.

Section 2 - The WASH/WIPE System

Operation

Pressing the Wash/Wipe stalk switch should cause the washer motor and wiper motor to operate. Releasing the switch stops the washer motor but the electronics in the wash/wipe unit will maintain wiper motor operation for approximately 10 seconds. Following this the wash/wipe unit will disengage and the wiper motor should then park.

The Circuit

Operation of the Wash/Wipe switch causes two actions:

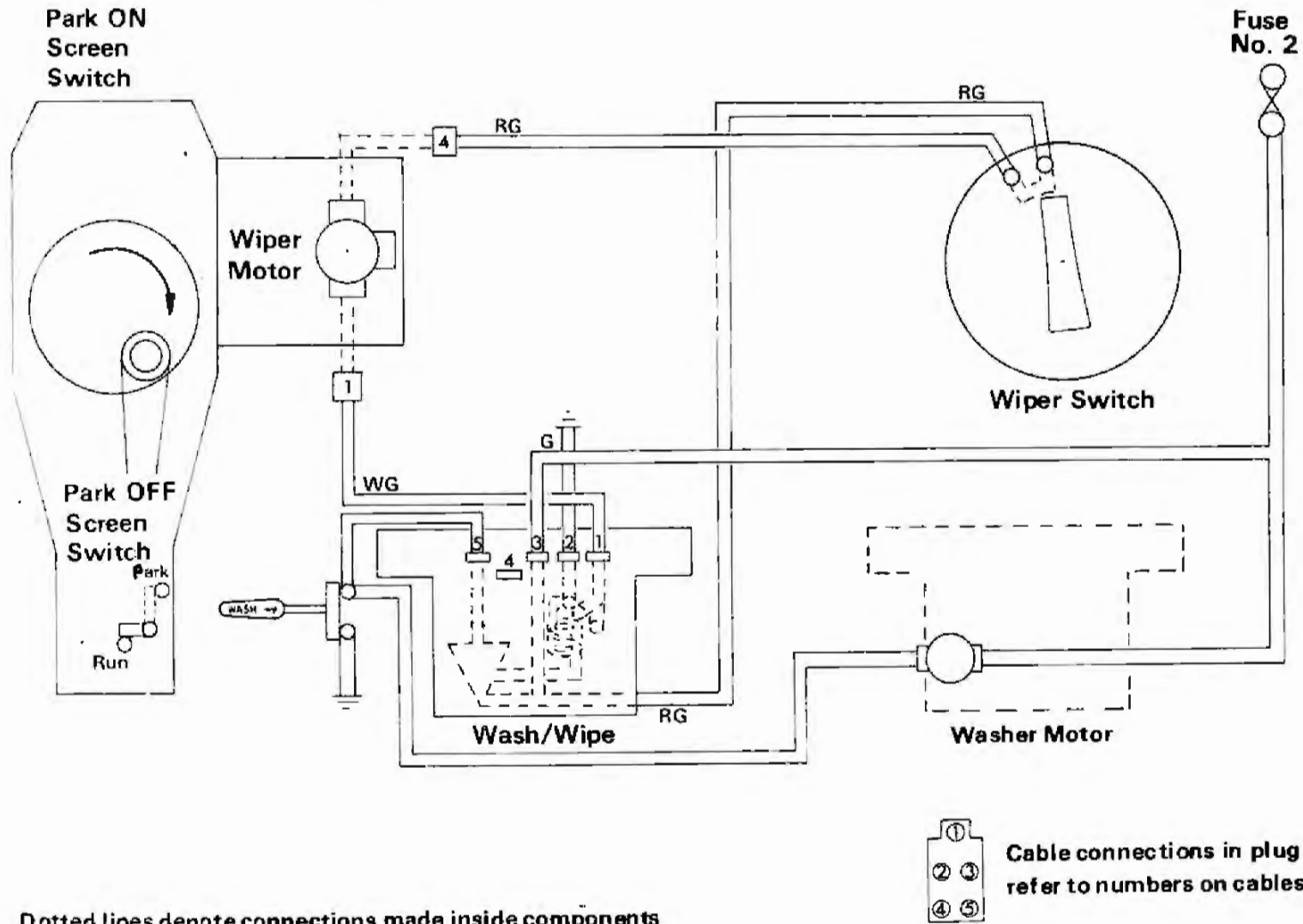
- 1) It provides the washer motor, which is connected directly to the fuse, with an earth. Therefore as long as the switch is pressed, the washer motor will operate.
- 2) The coil of the relay inside the Wash/Wipe unit is energised by an electronic circuit which is shown connected to terminal 5 of the unit.

With the relay energised, terminal 1 is connected to terminal 2, thus linking the white/green cable of the wiper motor to earth. The relay also connects the red/green and green cables together resulting in the red/green cable of the motor being fed. The motor will now operate. Releasing the Wash/Wipe switch will immediately stop the washer motor. However the electronic circuit in the Wash/Wipe unit will remain energised for approximately 10 seconds. This means that the relay remains energised and the wiper motor continues to operate.

After approximately 10 seconds when the electronic circuit

Operation of wash/wipe system

Figure 1



Dotted lines denote connections made inside components

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is exhausted the relay will de-energise and the wiper motor circuit will then be as shown in Figure 2.

This will cause the motor to reverse and stop when the park switch is operated by the rack.

Section 3 - Wiper Circuit - OFF Position

Operation

Turning the switch to the OFF position should cause the motor to reverse, i.e. the main gear should rotate in an anti-clockwise direction. This direction of rotation will cause the anti-streak mechanism to extend the connecting rod. The extended connecting rod can now reach the parking switch, and the motor will then be halted.

The Circuit

The Intermittent Wipe unit is not connected in this switch position.

The Wash/Wipe unit is not energised, however the normally closed contacts of the relay connect the two pairs of cables together; shown in Figure 2.

It will be seen from the circuit diagram that the feed from the fuse is connected to the lower brush of the motor via the white/green cable. The upper motor brush is connected to the park switch via the brown/green cable. At the moment of turning the switch to the OFF position, the Park switch will connect the brown/green cable to earth. Therefore the motor has a live feed and earth, and will therefore operate.

During the operation the connecting rod will be extended by the anti-streak device. When this rod reaches the position shown in Figure 2, the rod will operate the Park switch, breaking the connection between the brown/green cable from the motor and earth causing the motor to stop. The wiper blades should now be in the parked position.

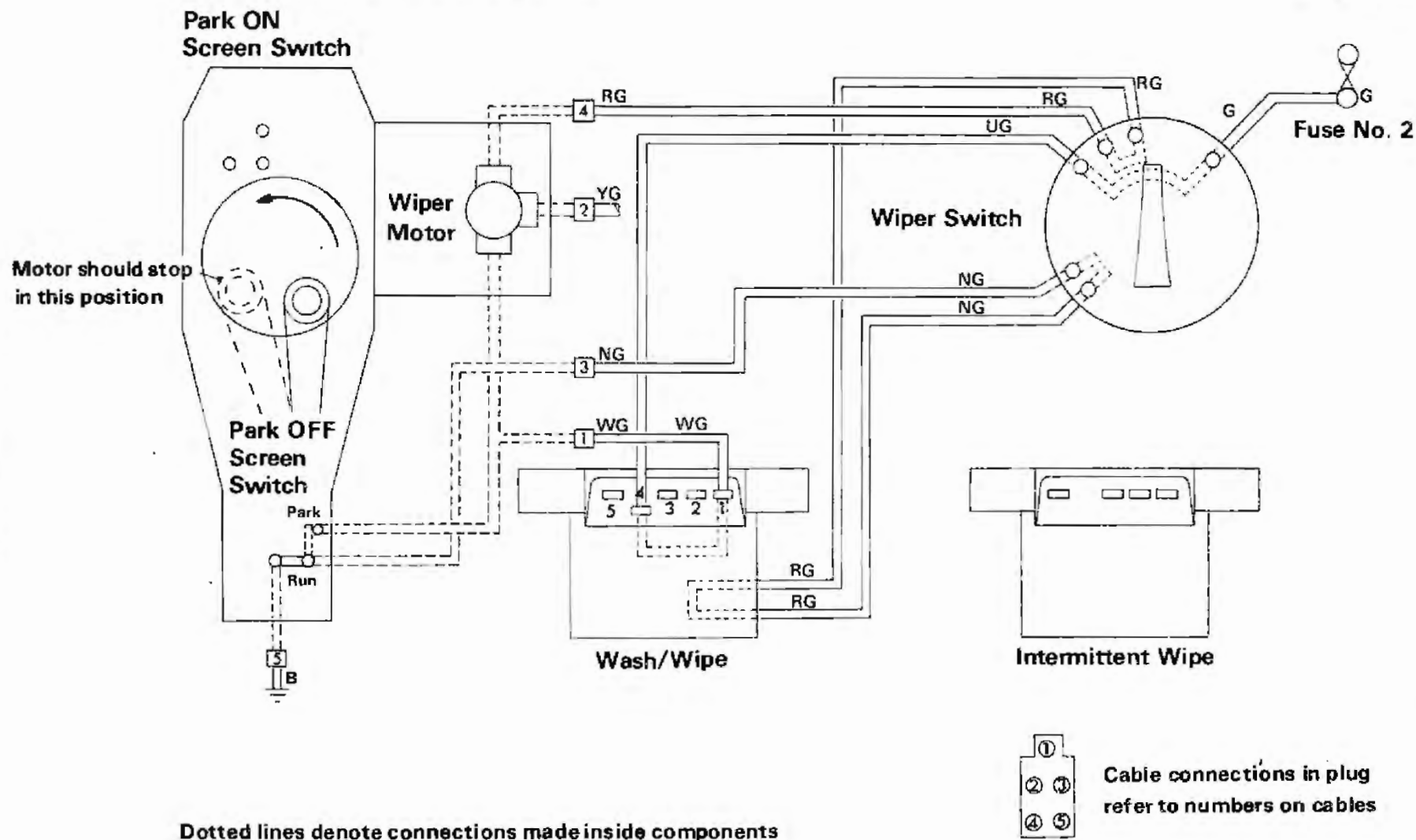
Section 4 - Wiper Circuit - SLOW Position

Operation

Turning the switch to the SLOW position will cause the wiper

Wiper circuit off switch position

Figure 2



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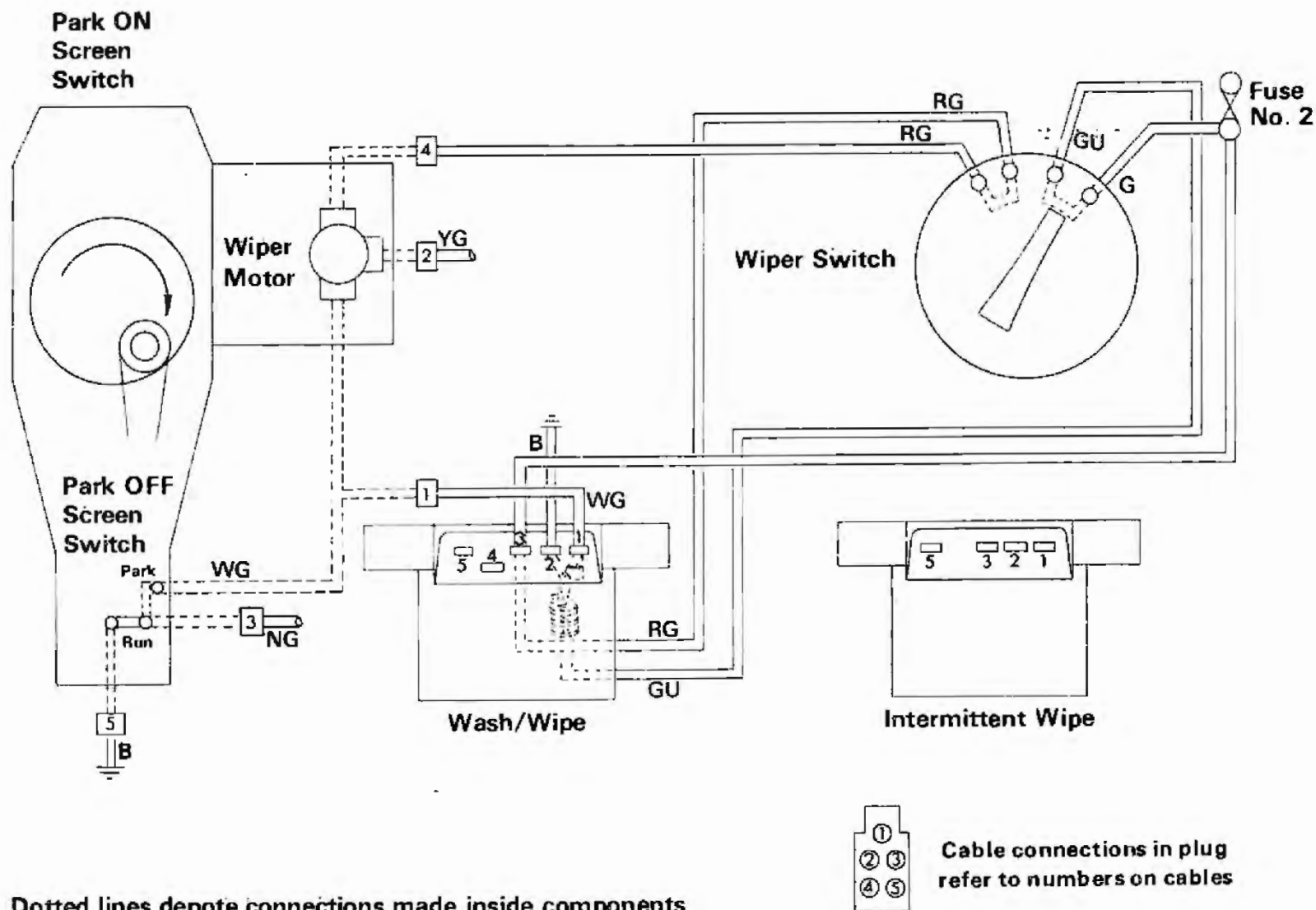
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Wiper circuit slow switch position

Figure 3



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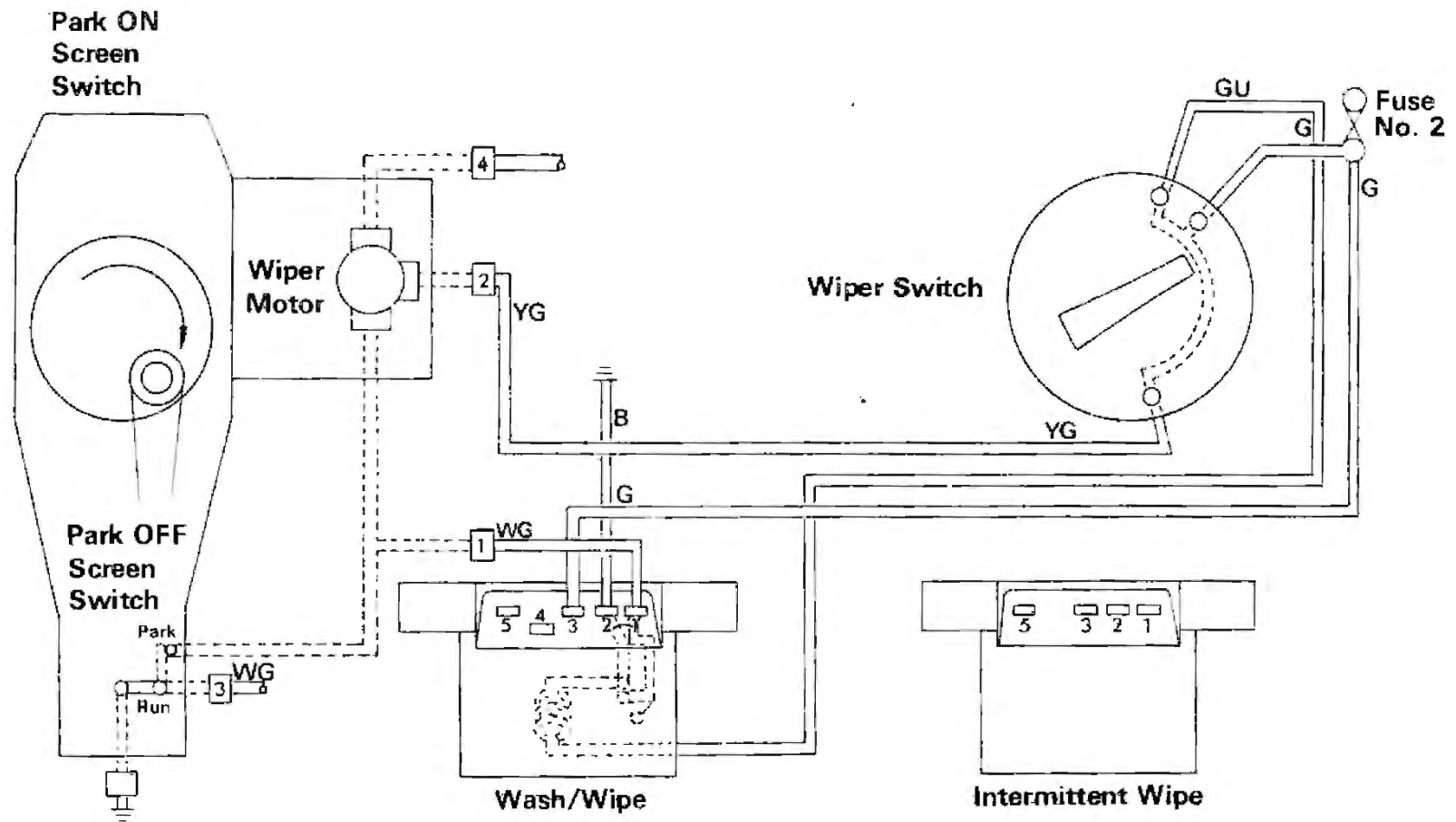
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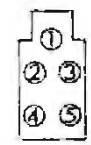
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Wiper circuit fast position

Figure 4



Dotted lines denote connections made inside components



Cable connections in plug refer to numbers on cables

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motor to drive the main gear in a clockwise direction. In this condition the connecting rod is not extended and therefore does not operate the Park switch. The Wash/Wipe unit is energised in this switch position. The Intermittent Wipe control unit is not connected.

The Circuit

Turning the switch to the SLOW position connects a feed from the fuse to the relay of the wash/wipe unit via the green/blue cable. This causes the relay to energise and the contacts to connect the white/green cable to earth and the red/green cable to the live feed at terminal 3.

The feed on the red/green cable is connected to the top brush of the motor. The bottom brush is connected to earth via the white/green cable and the relay contacts.

Therefore the motor will operate in a clockwise direction at SLOW speed.

Section 5 - Wiper Circuit - FAST Operation

Operation

Turning the switch to the FAST position should cause the wiper motor to drive the main gear in a clockwise direction. In this direction the connecting rod is not extended and therefore does not operate the park switch. The Wash/Wipe unit is energised in this switch position. The Intermittent Wipe control unit is not connected.

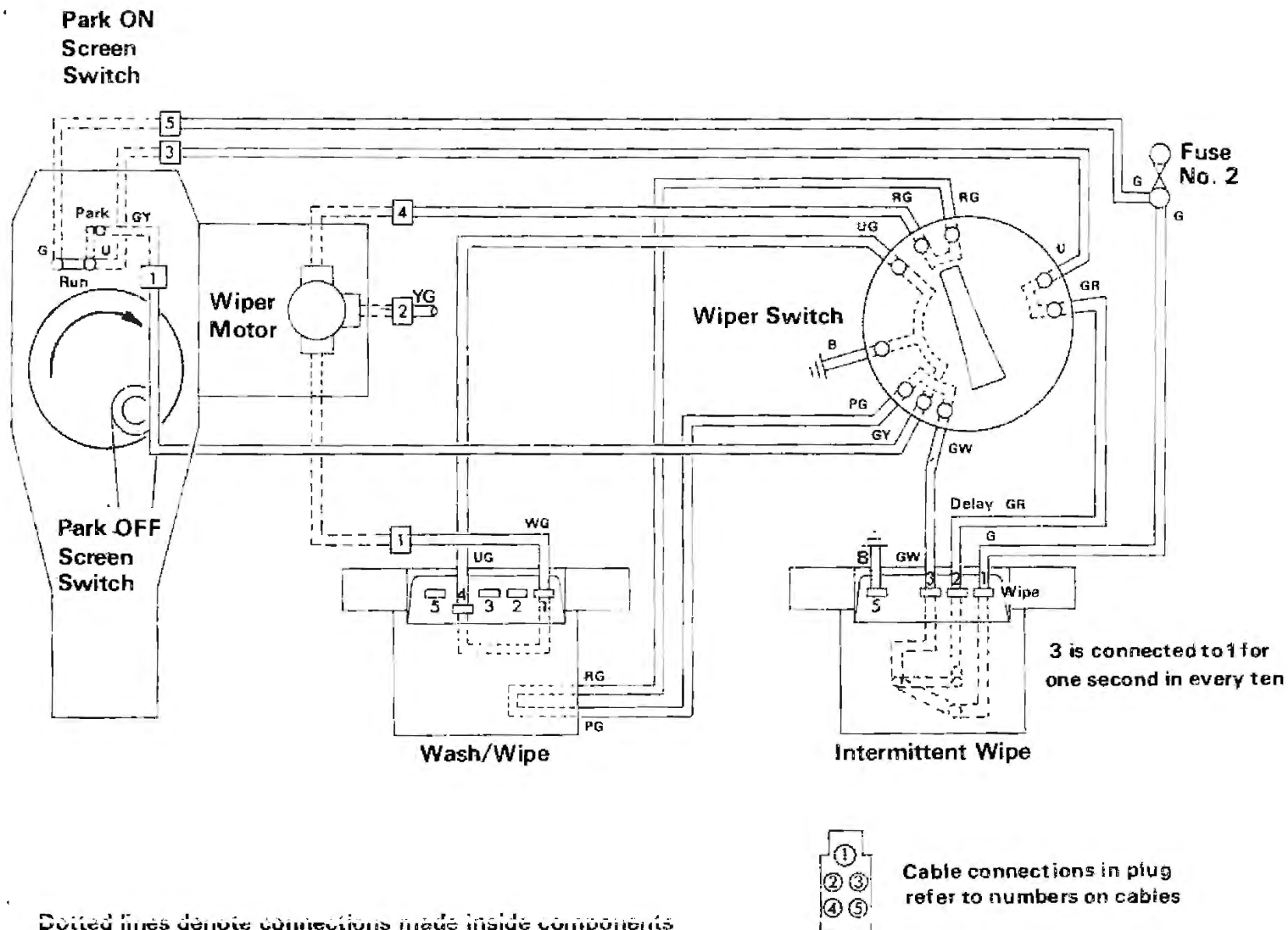
The Circuit

Except for the fact that the wiper switch transfers the feed from the SLOW brush of the motor to the FAST brush, this circuit is identical to the SLOW circuit.

Turning the switch to the FAST position connects a feed from the fuse to the relay of the Wash/Wipe unit via the green/blue cable. This causes the relay to energise and the contacts to connect the white/green cable to earth. The wiper switch connects the yellow/green cable to the fuse, thus providing a feed to the FAST brush of the motor. As the bottom brush is earthed via the Wash/Wipe relay, the motor will operate at FAST speed.

Wiper circuit intermittent switch position

Figure 5



Dotted lines denote connections made inside components

Cable connections in plug refer to numbers on cables

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Section 6 - INTERMITTENT WIPE Circuit

Operation

When switching to intermittent the wiper blades should move from the Park position, describe one full sweep and then come to rest at a point on the screen, above the normal Park position. This position is known as the 'park on screen' position.

The wiper blades will rest on this position for approximately 7 seconds and will then complete one full sweep, stopping at the same position on the screen.

When on intermittent operation, the wiper motor will drive the main gear in a clockwise direction at SLOW speed. The connecting rod is not extended and therefore the Park switch is not operated.

This cycle will continue until the wiper switch is moved to the OFF position.

The Circuit

It will be seen from Figure 5 that the Intermittent Wipe unit contains a relay, which is controlled by an internal electronic circuit. When the wiper switch is turned to Intermittent the electronics cause the relay to close contacts 3 and 1 for one second. The relay then disengages for 10 seconds during which time contacts 2 and 3 close. The relay follows this cycle as long as the wiper switch is in the Intermittent position.

When the relay closes contacts 3 and 1 (that is green/white linked to green) for one second it can be seen that this is connecting the fuse to the top brush of the motor. The bottom brush of the motor is earthed at the switch via the white/green and blue/green cables. Therefore for a period of one second the motor will operate from the feed provided by the Intermittent relay.

It will be seen in Figure 5 that beneath the main driving gear is a special 'park on screen' switch. This switch is operated by a cam on the underside of the main drive gear. It is so positioned that the operating point of the switch coincides with the 'park on screen' position of the wiper blades.

By studying Figure 5 it can be seen that if the Park switch

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is moved to the RUN position the blue cable is connected to the fuse. The blue cable is connected to the top brush of the motor via the connections in the control units and the switch. The wiper switch earths the bottom brush of the motor via the white/green and blue/green cable.

Therefore by moving the drive gear of the motor sufficiently to allow the Park switch to move from PARK to RUN, the motor will operate for one sweep until the gear moves the switch again to PARK and the motor will stop.

The slight movement of the gear necessary to operate the 'park on screen' switch, and thus allow the motor to complete one full sweep, is provided by the feed of one second duration from the intermittent relay.

When the motor has completed one sweep, it will operate the 'park on screen' switch and thus break the feed. At this time the intermittent relay is de-energised and therefore is not providing a feed from the fuse.

Therefore the motor will rest until, after 7 seconds, the intermittent relay provides another one second feed, to re-start the cycle.

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CATEGORY C

PIONEER MODEL QP444 QUADRAPHONIC 4-CHANNEL TAPE
PLAY UNIT

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley T Series, and all Rolls-Royce and Bentley Corniche motor cars, built from the following car serial numbers:

Rolls-Royce and Bentley Corniche - DRH 19731
Rolls-Royce Silver Shadow and Bentley T Series Long Wheelbase - LRH 19754
Rolls-Royce Silver Shadow and Bentley T Series - SRH 20058.

DESCRIPTION:

The Pioneer Model QP444 Quadraphonic 4-channel tape play unit is now fitted as standard and supersedes the Radiomobile Stereo 8 2-channel stereo tape play unit.

A full instruction booklet is given in the Handbook pack.

The main basic differences between the Pioneer 4-channel system and the Radiomobile 2-channel system are as follows:

1. Pioneer 4-channel - 4 distinct separate signals (channels) are played simultaneously, each signal (channel) playing through a separate loudspeaker.
2. Radiomobile 2-channel - 2 separate signals (channels) are played simultaneously, one signal through the two LH loudspeakers and one signal through the two RH loudspeakers.

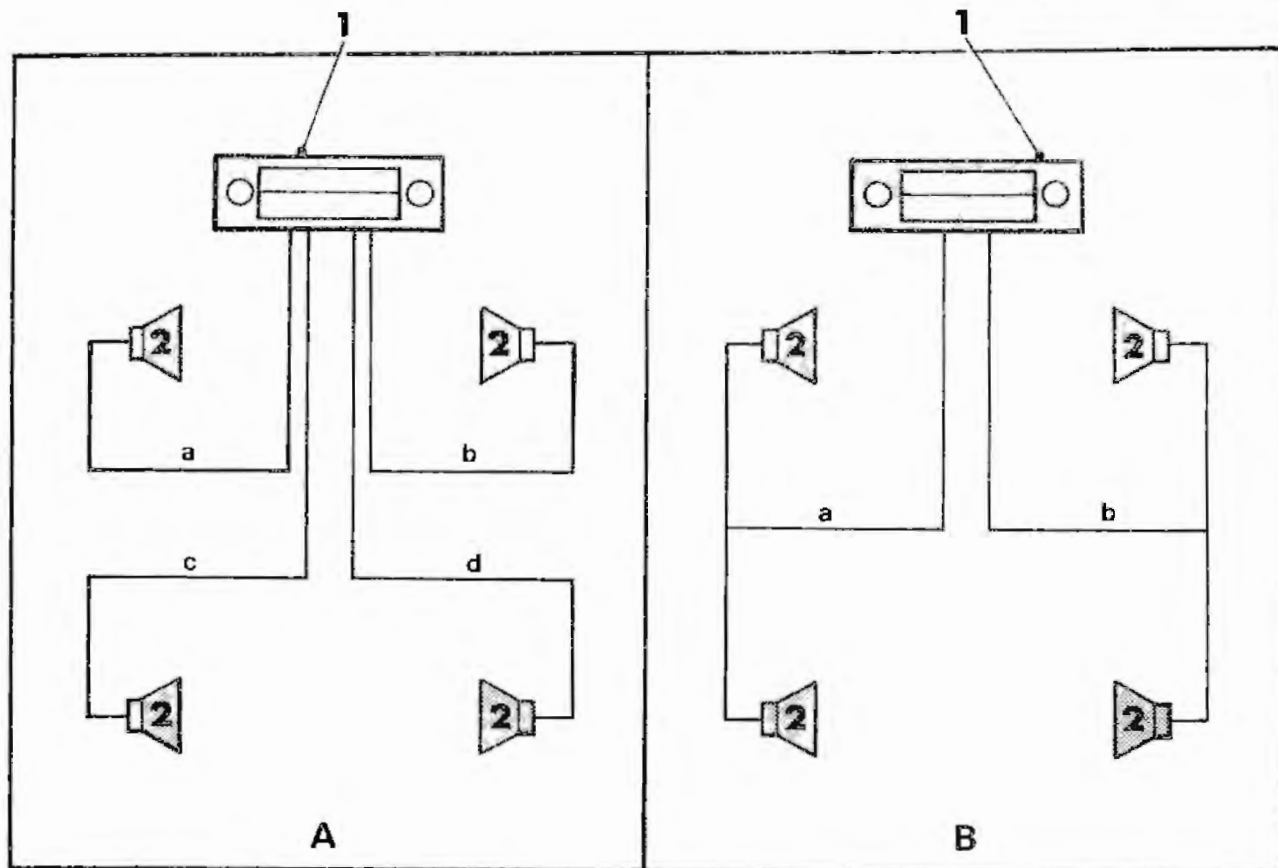
Figure 1 explains.

The tape unit only operates in the switchbox 'accessories' or 'ignition on' positions. The tape unit is brought into operation by inserting a cartridge.

NOTE When the tape unit is operating the radio cannot be used. A Quadraphonic 4-channel cartridge will give up to 40 minutes of quadraphonic music and has two programmes, whereas the stereo 2-channel cartridge plays up to 1 hour 20 minutes of stereo music and has four programmes.

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Figure 1 Basic differences between 4-channel quadraphonic and 2-channel stereo systems.

A - 4-channel quadraphonic

1 - Pioneer unit

2 - Loudspeakers (4)

A - 1 distinct signal (channel))

B - 1 distinct signal (channel))

C - 1 distinct signal (channel))

D - 1 distinct signal (channel))

4 channels

B - 2-channel stereo system

1 - Radiomobile 2-channel system

2 - Loudspeakers (4)

A - 1 distinct signal (channel))

B - 1 distinct signal (channel))

2 channels

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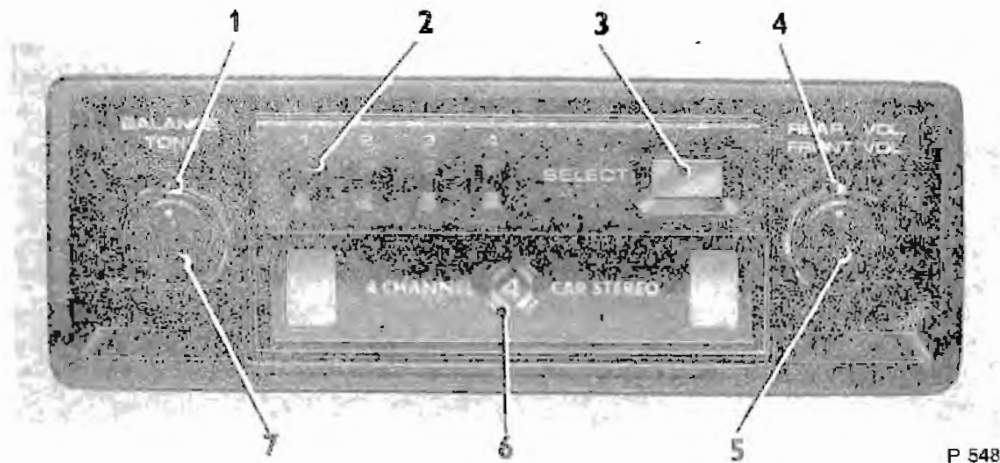
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When a quadraphonic 4-channel cartridge is inserted, programme 1 will illuminate indicator lamps 1 and 3 of the tape unit; programme 2 will illuminate indicator lamps 2 and 4. The programmes will change automatically or, if the 'select' button is pressed, change manually. Pulling the cartridge out one inch (approx.) switches off the unit (thus restoring the radio circuit).

The tape unit will also play 2-channel 8 track stereo cartridges each indicator lamp showing the appropriate programme.

NOTE Quadraphonic 4-channel tapes should not be used in a 2-channel stereo tape play unit.

Two pairs of concentric controls are situated on the tape unit, one pair controlling balance and tone, the remaining pair controlling the volumes of the two front and two rear loudspeakers. Figure 2 explains.



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Figure 2. Pioneer Model QP444 quadraphonic tape unit controls.

1. Balance control
2. Programme indicators
3. Programme button (select)
4. Rear loudspeakers volume (raised knurl denotes balanced loudspeakers - equal volume)
5. Front loudspeakers volume (white spot denotes balanced loudspeakers - equal volume)
6. Cartridge door
7. Tone control

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SERVICE REQUIREMENTS:

Cleaning

The tape unit should be cleaned and lubricated every 12 months or 500 hours of use by a qualified audio technician. It is also advisable to occasionally clean the tape head with one of the special tape unit cleaning cartridges available; the instructions of which should be carefully followed.

When attempting to diagnose a tape unit problem a special quadraphonic test tape should be obtained locally.

Wiring diagrams

Figures 3, 4, 5 and 6 show the wiring circuits. It is advisable to use this Service Bulletin in conjunction with Service Bulletin SY/M90 - The Bosch Frankfurt Stereo Radio.

Warranty

On no account should a faulty tape unit be sent to Rolls-Royce Motors Limited, it should be forwarded to the nearest Pioneer agent (see following lists) who will carry out the necessary rectification.

The warranty period given by Pioneer is for 12 months.

Advise owner to read the instruction booklet supplied with his car and to fill in and send the completed Warranty card to the address given.

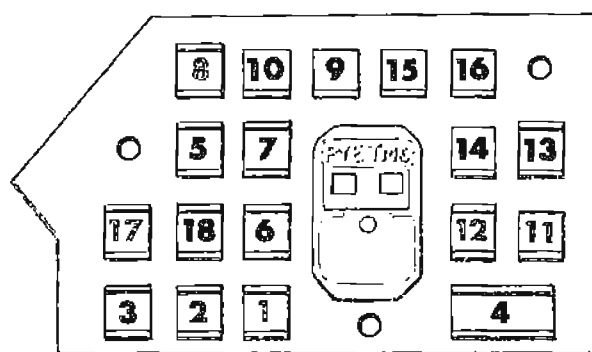
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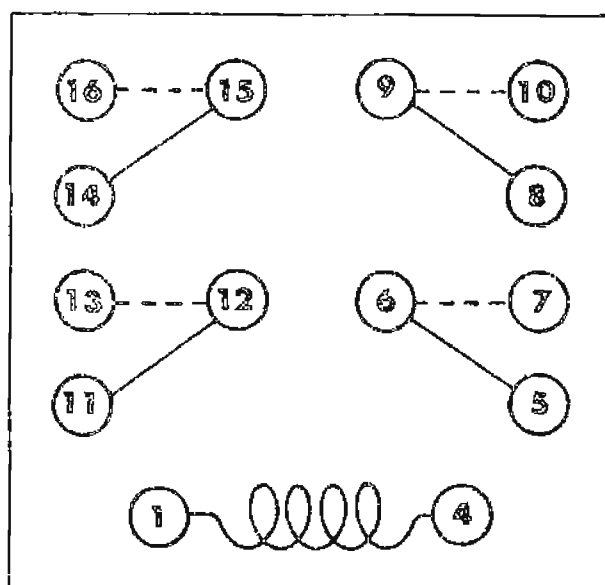
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Figure 3 - Printed circuit assembly terminals
(to be used in conjunction with Figs 5 and 6)



Q 239

Figure 4 - Change-over relay connections to terminals

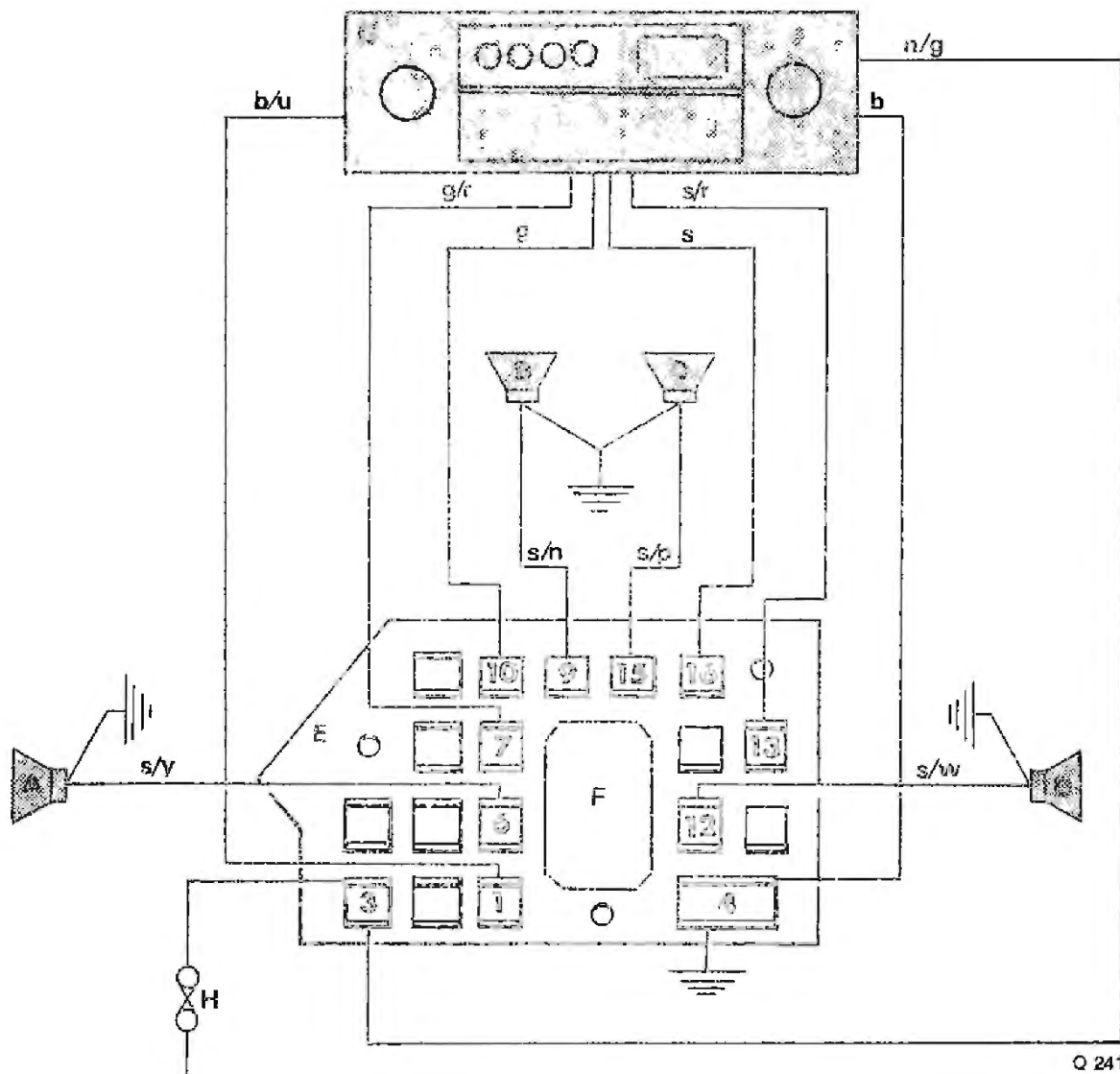
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Figure 5 - Practical Wiring Diagram

A - left rear speaker

B - left front speaker

C - right front speaker

D - right front speaker

E - change-over relay board

F - change-over relay

G - Pioneer tape player

H - Radio/Tape fuse

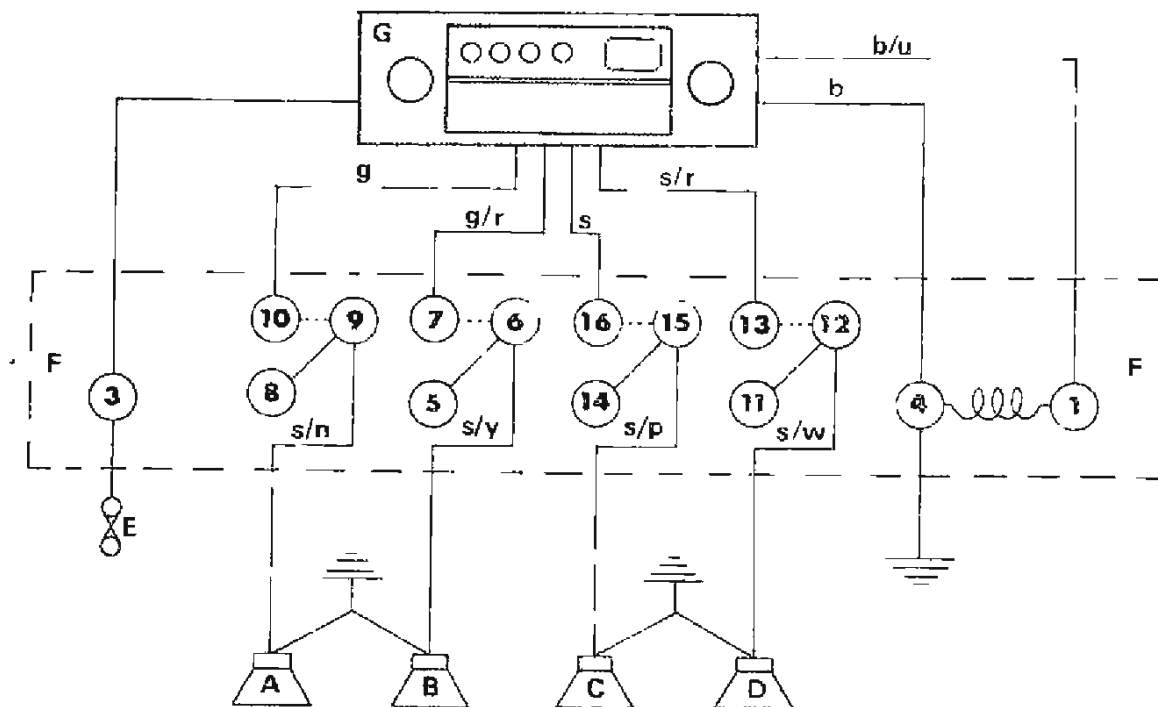
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Figure 6 - Theoretical Wiring Diagram

A - left front speaker
 C - right front speaker
 E - Radio/Tape fuse
 G - Pioneer tape player

B - left rear speaker
 D - right rear speaker
 F - change-over relay assembly

ECK/MB

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 Preston

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 7 Pembridge Villas
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 Northampton

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 York

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 67 Lesmill Road
 Don Mills
 Ontario

USA

PIONEER ELECTRONICS OF AMERICA
 1555 East Del Amo Blvd
 Carson
 California 90746

EUROPE**AUSTRIA**

HANS LURF
 Reichsratsstrasse 17
 A-1010

BELGIUM

HIFILEC
 Avenue Louise 419
 B-1050 Brussels

FRANCE

MUSIQUE DIFFUSION FRANCAISE
 45 Rue de Villeneuve
 Zone Industrielle SILIC
 F94533 Rungis-Cidex L179

GERMANY

C MELCHERS & CO
 Schlachte 39/40
 D-28 Bremen 1

GREECE

COSTAS CLOTSAS
 Pianola Co Ltd
 Lioslon Street
 147 Athens T201

ITALY

AUDEL SAS
 Via Ximenes 3
 I-20125 Milano

TRE NETHERLANDS

WUST EN ZOON NV
 De Flinnestratt 26
 NL-Amsterdam

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RUALDO LDA
 Rua de S Jose 9-15
 P-Lisbon 2

SPAIN

ATAIO INGENIEROS SA
 Enrique Larreta 10-12
 E-Madrid 16

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SACOM SA
 PO Box 218
 CH-2501 Bienne

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ORTOFON A/S
 Mosedalvej 11B
 DK-2500 Valby
 Copenhagen

FINLAND

ULKOAUPAT OY
 Kutojatie 4
 PO Box 30
 SF-02611 Kilo

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BJARNI STEFANSSON
 Hrauntunga 9
 Is-Kopavogur

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 Sentrum
 Oslo 1

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 Lumavagen 6-10
 Box 20069
 S-10460 Stockholm

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South Melbourne
Victoria 3205
Australia

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161-173 Sturt Street
South Melbourne
Victoria 3205
Australia
Tel: 69 0300

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BRIJLAL & COMPANY
GPO Box 362
Suva
Fiji Islands
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Lae
New Guinea
Tel: 2718

HAGEMEYER (AUSTRALASIA) NV
PO Box 63
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New Guinea
Tel: 2633

HAGEMEYER (AUSTRALASIA) NV
PO Box 1428
Boroko
Port Moresby
New Guinea
Tel: 5784

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PO Box 673
Madang
TPNG
Tel: 2445

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New Zealand
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Nauru Island
Central Pacific

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South Pacific

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ETS PERFECT
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Papeete
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 Tel: 22468

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 Republic of South Africa
 Tel: 724-1801

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 Khartoum
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 Tel: 73559

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 Tel: 4.11.93

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 Tel: H-252242 (5)

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 Kuala Lumpur
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 Tel: 84590

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THE BLAUPUNKT FRANKFURT STEREO RADIO

APPLICABLE TO:

All Rolls Royce Silver Shadow and Corniche and all Bentley T Series and Corniche motor cars, produced after car serial numbers

DRH 19731 LRH 19754 SRH 20058

DESCRIPTION:

All cars produced after the above car serial numbers are fitted with a Blaupunkt Frankfurt Stereo radio.

This radio is fitted immediately behind the front ashtray. Full operating instructions are included in a document pack supplied with each car.

These radios are subject to the manufacturer's warranty covering a period of one year. In the event of a service problem, it should be ascertained if the fault is in the car circuits, using the wiring diagrams and information in this Service Bulletin. Should the radio have an internal fault, it should be taken to a Blaupunkt Franchise Holder. An international list of these Franchise Holders is included in the radio handbook. However there have been some recent changes to the United Kingdom section of this book, and therefore a revised list of these Franchise Holders is included with this Service Bulletin.

Displaced radios should not be returned to Rolls Royce Motors Limited.

Owners should be advised to read the radio handbook, to complete the radio Warranty Card and return it to the given address.

OPERATION:

The Frankfurt radio will receive stereo broadcasts when tuned to a stereo programme on the FM wavelengths.

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This means that the radio, when tuned to a stereo broadcast, will produce two separate channels. These pass through the balance control fitted to the radio, such that the relative volume between the left-hand door speakers and the right-hand door speakers, can be adjusted.

The two separate channels are then connected to the Balance Control on the instrument board, such that the relative volume between the front door speakers and the rear door speakers, can be adjusted.

The two channels are then passed to the changeover relay which is mounted on the left hand side of the centre console. The purpose of this relay is to disconnect the speakers from the radio and connect them to the tape-player when a cartridge is inserted. From this relay each channel is connected to one pair of speakers.

Adjacent to the changeover relay is a second relay. This is controlled by a feed in the black/blue cable shown at H in Fig 1, whenever a cartridge is inserted into the tape-player. The purpose of this relay is to break the feed to the radio and to energise the changeover relay, thus connecting the four speakers to the four output channels of the tape-player.

RADIO PERFORMANCE

It should be noted that the Frankfurt radio, when tuned to a mono FM or stereo FM station has many advantages and some limitations which should be explained to Owners who are not familiar with FM units.

The frequencies at which FM stations operate create much shorter wave lengths than those produced in AM broadcasting. Unlike AM signals, FM signals do not 'bend around' the horizon. This limits the distance at which FM signals can be received and the dependable range of FM reception in a motor car is a radius of approximately twenty miles from the transmitting antenna.

When the FM radio receiver moves out of range of the FM transmitter, it enters what is referred to as the 'fringe area'. In the fringe area, the strength of the FM signal may vary rapidly, causing a 'flutter' or a series of noise bursts as the car moves between high and low level signal points.

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A second effect found in the fringe area is the presence of ignition interference from adjacent vehicles. In both instances, it may be possible to improve reception by re-tuning; however, it may be necessary to change to a different station, if reception still is not good.

Re-tuning should be necessary only in those few instances when reception becomes slightly noisy while driving through areas such as the centre of a large city and a weak signal is being received from a station located away from the centre of the city. The interference can be reduced by adjusting the tone control to give more bass and by adjusting the balance control such that more output is gained from the rear speaker.

While these adjustments will slightly diminish stereo effect on cars so equipped, they will substantially reduce background noise interference.

An FM radio installation therefore has advantages and limitations and these limitations should be considered before deciding what action should be taken in the event of customer complaint.

ECK

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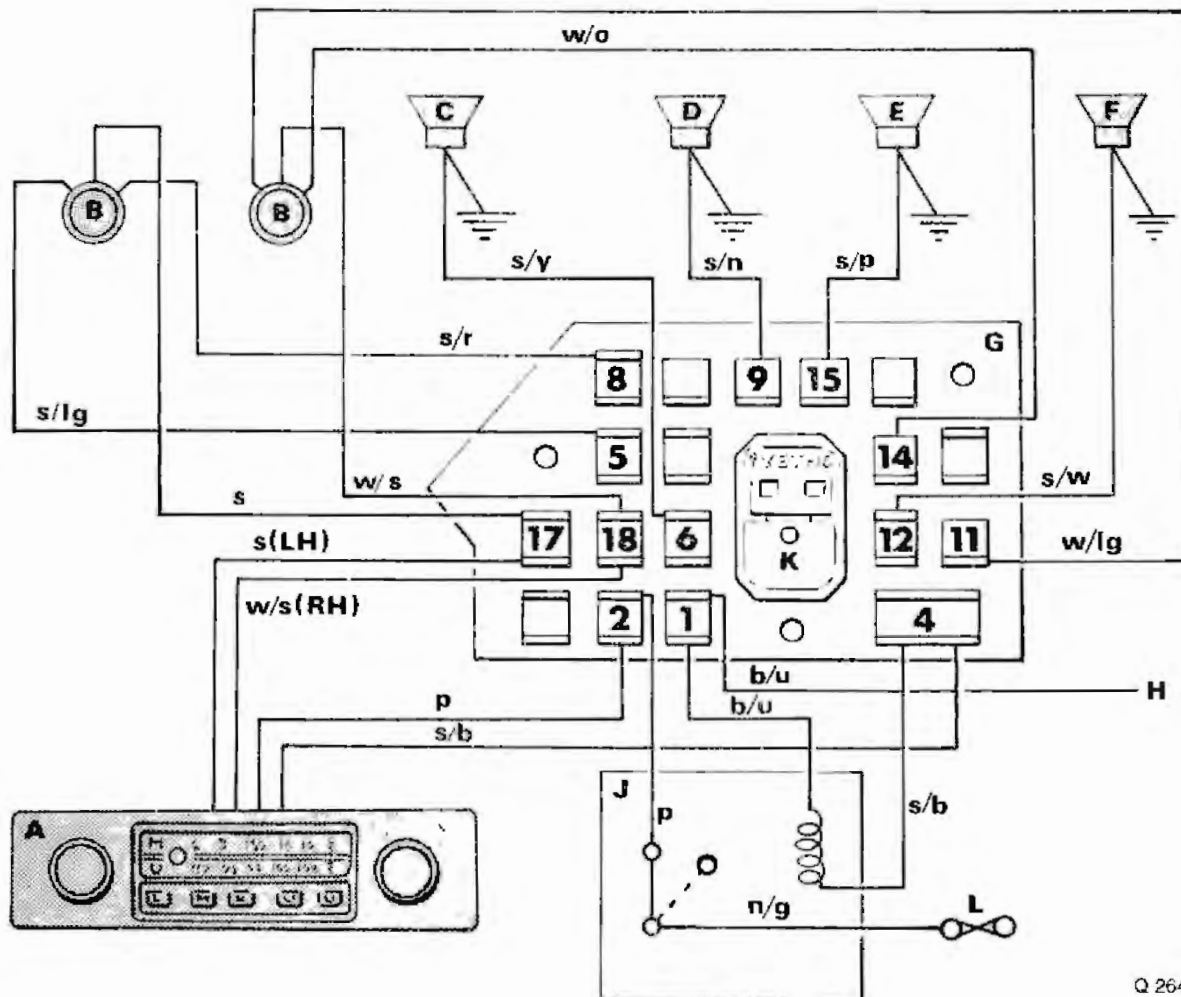
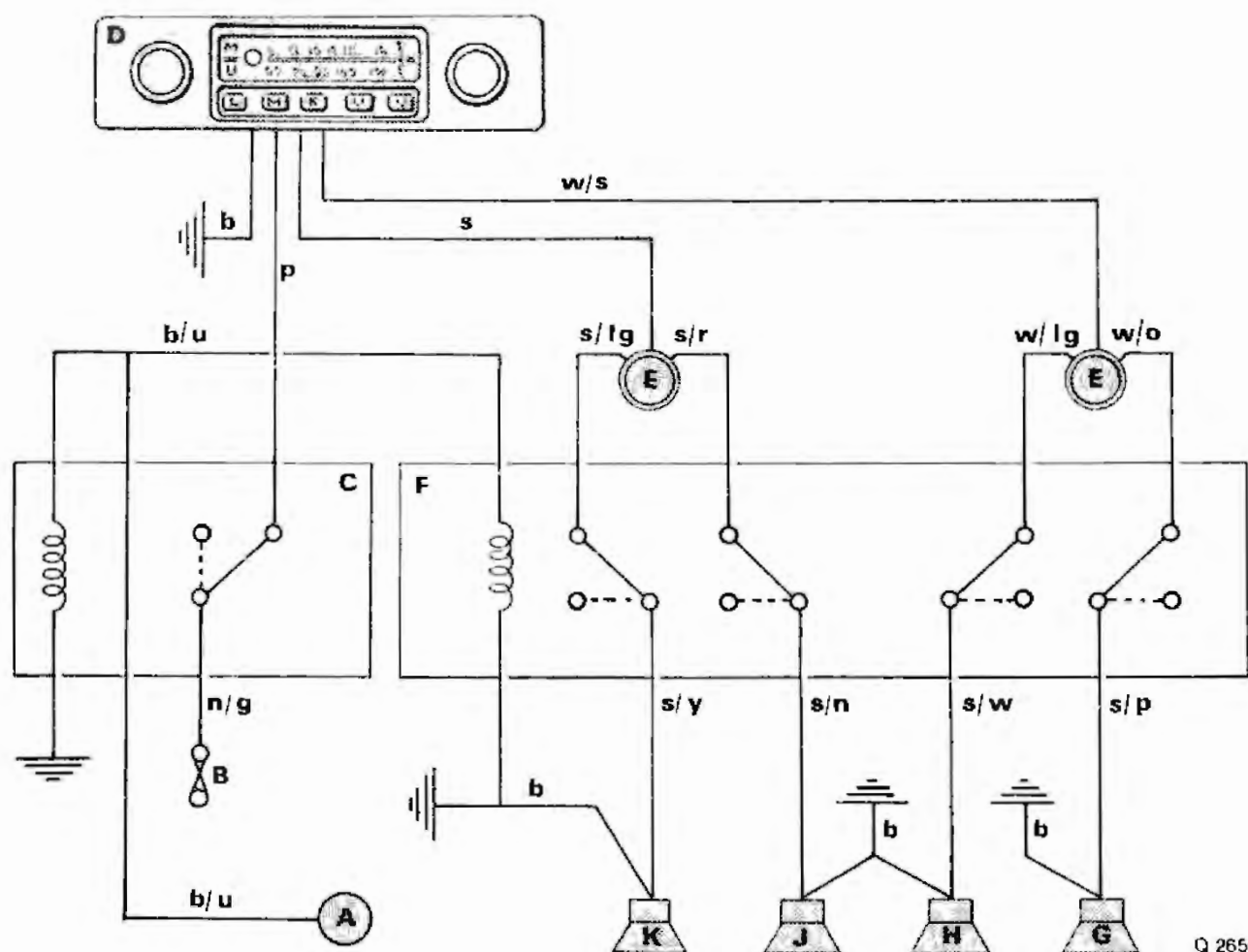


Figure 1. Practical Wiring Diagram - Frankfurt Stereo Radio

- A. Radio unit
- B. Front/Rear balance control
- C. Left hand rear speaker
- D. Left hand front speaker
- E. Right hand front speaker
- F. Right hand rear speaker
- G. Change-over relay printed circuit board
- H. Key cable - live when Tape player is in use
- J. Radio override relay
- K. Change-over relay
- L. Radio/Tape player fuse

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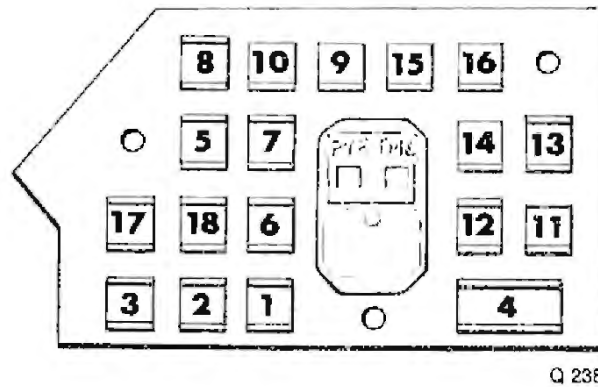
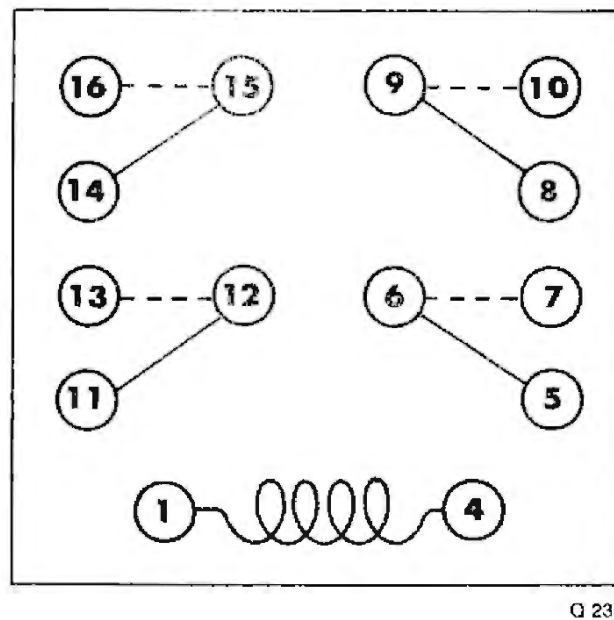
Q 265

Figure 2. Theoretical Wiring Diagram - Frankfurt Stereo Radio

- A. Key cable - live when Tape player is in use
- B. Radio/Tape player fuse
- C. Radio override relay
- D. Frankfurt Radio
- E. Front/Rear balance control
- F. Change-over relay
- G. Right hand front speaker
- H. Right hand rear speaker
- J. Left hand front speaker
- K. Left hand rear speaker

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Fig. 3. Printed Circuit Assembly TerminalsFig. 4. Relay connections to Terminals

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UNITED KINGDOM FRANCHISE HOLDERS
 BLAUPUNKT CAR RADIO

A

Roy Thomson Ltd
 130 Great Western Road
 Aberdeen
 Tel: Aberdeen 52391

F B Sherry Limited
 74 English Street
 Armagh
 Tel: Armagh 6842

Auto Electrical Services
 (Bedford) Limited
 66-70 Cauldwell Street
 Bedford
 Tel: Bedford 50601

John Robertson (Belfast) Ltd
 46 May Street
 Belfast
 Tel: Belfast 32066

Car Radio Bolton
 108 Chorley Old Road
 Bolton
 Tel: 024 38218

B

Car Radio & Sound Services Ltd
 21 North Bar Street
 Banbury
 Tel: Banbury 53093

Musicar Services Ltd
 Royal Street
 Barnsley
 Tel: Barnsley 87227

Kitchin & Calvert Limited
 Lawson Street
 Barrow-in-Furness
 Tel: Barrow-in-Furness 21724

Norman Richardson Car Radio Ltd
 193 May Street
 Basingstoke
 Tel: Basingstoke 3445/5277

Autoradio VRS Ltd
 106 Castle Lane West
 Bournemouth
 Tel: Bournemouth 511221

Gaedor Limited
 4 Bloomfield Ave
 Winton
 Bournemouth
 Tel: Bournemouth 52523

Car Lighting Services
 Moseley Road
 Birmingham 12
 Tel: 021-440-3663

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Continental Motor Spares
& Acc Ltd
27 The Green
Kings Norton
Birmingham 32
Tel: 021-458-2385

Applied Electronic Services
1 Jewry Lane
Canterbury
Tel: Canterbury 69741

Smithfield Garage Limited
Digbeth
Birmingham 5
Tel: 021-643-7341

Autoelectric (Cardiff) Ltd
Ipswich Road
(off Colchester Ave)
Cardiff
Tel: Cardiff 26313

Autoradio VRS Ltd
35 Higher Eanam
Blackburn
Tel: Blackburn 50252

Lex Mead (Cardiff) Ltd
Penarth Road
Cardiff
Tel: Cardiff 40251

Car Radio Services of Otley Ltd
15/17 Spring Gardens
Manningham
Bradford
Tel: Bradford 32669

Rickerby Limited
Currock Road
Carlisle
Tel: Carlisle 27521

Sonic Car Radios Limited
71-75 Beaconsfield Road
Brighton
Tel: Brighton 688972/502664

Lex Motor Co (Cheltenham) Ltd
Tewkesbury Road
Cheltenham
Tel: Cheltenham 25781

Bristol Auto Electrical Co Ltd
45/46 Feeder Road
Bristol 2
Tel: Bristol 74671

Moto-Music Centre
153 Broughton
Chester
Tel: 0244-316146

Auto Electrical Engineers Ltd
24/25 Storforth Lane Trading Est
Chesterfield
Tel: Chesterfield 79181

Cambridge Battery Service Ltd
Barnwell House
Newmarket Road
Cambridge
Tel: Cambridge 66701/4

Essex Electrical Services Ltd
Alresford
Nr Colchester
Tel: Wivenhoe 2345

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European Auto Electrical
Services Ltd
Europa House
Greenfield Road
Colwyn Bay
Tel: Colwyn Bay 38834

East Riding Mobile Entertainments
George Street
Driffield
Tel: Driffield 42624

E

Gordon March Ltd
Progress Way
Binley
Coventry

Bospec Limited
Unit 8
Hawthorn Road
Lottbridge Drove
Eastbourne
Tel: Eastbourne 37224/8

Mobile Electrics (Coventry) Ltd
Grange Ave
Binley
Coventry
Tel: Coventry 453049

GC Brakes Limited
18/19 Haddington Place
Edinburgh 7
Tel: 031-556-6841

Crook Auto Electrical Services
Ltd
Rear High Hope Street
Crook
Tel: Crook 2630

Eastern Car Radio Ltd
1-3 Corstorphine Road
Edinburgh
Tel: 031-337-7794

Turners (Croydon) Ltd
95 Windmill Road
W Croydon
Tel: 01-684-9287

G

D

Higgs Electrical Engineers Ltd
15-17 Kent Road
Glasgow C3
Tel: 041-221-3456/7

G R Hughes & Co
Stoney Cross
Nottingham Road
Derby
Tel: Derby 62098

Motor Sound
1 Leslie Street
Glasgow S1
Tel: 041-429-6398/9

Autoradio VRS Ltd
The Old Assembly Rooms
North Square
Dorchester
Tel: Dorchester 5012

Turner & Co (Auto Serv) Ltd
59 Brown Street
Glasgow C2
Tel: 041-221-9211

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Moons of Gloucester Limited
 In-Car Entertainment Centre
 Eastern Ave
 Gloucester
 Tel: Gloucester 33930

S K Radio & TV Services Ltd
 3 New Broadway
 Uxbridge Road
 Hillingdon
 Tel: Uxbridge 38592

S P Commercials Ltd
 Hurberbridge Road
 Fish Docks
 Grimsby
 Tel: Grimsby 8791

N D Haigh
 Thistle Street
 Leeds Road
 Huddersfield
 Yorks
 Tel: Huddersfield 26479

Norman Richardson
 Slyfield Industrial Est
 Woking Road
 Guildford
 Tel: Guildford 3411

I

Essex Electrical Services Ltd
 538/540 Woodbridge Road
 Ipswich
 Tel: Ipswich 73333

H

Andrew Page & Co Ltd
 15 Cheltenham Mount
 Harrogate
 Tel: Harrogate 67548/9

K

Andrew Brown Ltd
 Wildman Street
 Kendal
 Tel: Kendal 24455

Edor Car Radio Services Ltd
 22 Montrose Road
 Wealdstone
 Harrow
 Tel: 01-863-2044

L

Sound on Wheels
 340 Pinner Road
 North Harrow
 Middlesex
 Tel: 01-863-5749

Clarendon Motor Services
 95 Clarendon Street
 Leamington Spa
 Tel: Leamington Spa 21891

University Electrics Limited
 Pasadena Close
 Hayes Trading Estate
 Hayes
 Tel: 01-573-1941

Andrew Page & Co Ltd
 Apson House
 53/59 Mabgate
 Leeds 9
 Tel: Leeds 31951

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Car Radio Services of Otley Ltd
 11a Cherry Row
 Leeds 9
 Tel: Leeds 21695

LONDON

Anglo-American Electrical & Carb
 Service Limited
 134 Norwood Road
 London SE 24
 Tel: 01-674-4477

Autolec Limited
 285/7 Welford Road
 Leicester
 Tel: Leicester 707431

Atkinson Battery Service Ltd
 7 Pembridge Villas
 London W11
 Tel: 01-727-0691/4

Castles Motor Co Ltd
 91 Abbey Lane
 Leicester
 Tel: Leicester 61501

Atkinson Battery Service Ltd
 82/84 New Kings Road
 London SW6
 Tel: 01-731-2333

Minerva-Globe Ltd
 9 New Henry Street
 Leicester
 Tel: Leicester 28699

Auto Needs Limited
 125 Cherry Orchard Road
 E Croydon London
 Tel: 01-688-0023/4

G F Hardwick (Lincoln) Ltd
 Dixon Way
 Dixon Street
 Lincoln
 Tel: Lincoln 28376

Car Radio Services (Finchley) Ltd
 905/925 High Road
 London N12
 Tel: 01-445-1022

F & N Services Ltd
 164 Earle Road
 Liverpool 7
 Tel: 051-733-8491

Connaught Electrical Services Ltd
 95-99 Shernhall Street
 London E17
 Tel: 01-520-1015/6

Liverpool Mobile Radio Limited
 1-3 Warrenhouse Road
 Waterloo
 Liverpool 22
 Tel: 051-924-2332

Hamilton Radio Services Ltd
 25-31 Taunton Place
 London NW1
 Tel: 01-262-3012

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Hunter Electrics
 2 Colindale Ave
 London NW9
 Tel: 01-205-6714

M

MLG Ltd
 1-4 Prince of Wales Terrace
 London W4
 Tel: 01-994-6706

Turners (Croydon) Ltd
 31 Albert Street
 Maidstone
 Tel: Maidstone 51686

Paragon Auto Electric Ltd
 280a Richmond Road
 Hackney
 London E8
 Tel: 01-985-3656

William Arnold Limited
 Southmoor Road
 Wythenshawe
 Manchester
 M23 9GA
 Tel: 061-273-4361

R's Electrics
 815 High Road
 Tottenham
 London N17
 Tel: 01-808-1498

Autoradio VRS Ltd
 18 Upper Chorlton Road
 Brookes Bar
 Manchester 16
 Tel: 061-226-3304

S G Smith Motors (Forest Hill)
 Ltd
 1 Waldram Park Road
 London SE23
 Tel: 01-693-3333

The Car Radio Centre
 Boundary Street
 Gorton
 Manchester 12
 Tel: 061-223-3861

S K Radio & TV Services Ltd
 146 Horn Lane
 Acton
 London W3
 Tel: 01-992-6060

Car Radio Services of Otley Ltd
 708 Chester Road
 Stretford
 Manchester
 Tel: Manchester 872-6888

University Electrics Limited
 209 Balham High Road
 London SW17
 Tel: 01-675-0241

NAES Limited
 Knoll Street
 Bury New Road
 High Broughton
 Manchester 7
 Tel: 061-792-2213

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Ronnie Parkinson Ltd
Eastbourne Road Garage
Middlesbrough
Tel: Middlesbrough 86658

O

Car Radio Services of Otley Ltd
Walkergate Works
Otley
Tel: Otley 3492

N

Auto Electrical Services
(Newcastle) Limited
212 Rothbury Terrace
Heaton
Newcastle 6
Tel: Newcastle 656805

A E Malins
Osney Mead Ind Est
Ferry Hinksey Road
Oxford
Tel: Oxford 40301

P

Tyneside Accessories Ltd
259-305 Scotswood Road
Newcastle 1
Tel: Newcastle 30271

J Calderwood Limited
9 Foundry Lane
Perth
Tel: Perth 22416

Tyne Car Radios Limited
Fern Garage
Fern Ave
Jesmond
Newcastle
Tel: Newcastle 814895

Peterborough Diesel Equipment Ltd
Chapel Street
Peterborough
Tel: Peterborough 65727

Renwicks Motors
57 Chepstow Road
Newport
Mon
Tel: 58411

Car Radio (Plymouth)
St Lawrence Road
North Hill
Plymouth
Tel: Plymouth 69097

Express Ignition Co Ltd
Vulcan Road South
Mile Cross Lane
Norwich
Tel: Norwich 45670

Hunt & Co Ltd
Old Wareham Road
Fleetbridge
Poole
Tel: Poole 2513/2584

Minerva-Globe Limited
97 Manvers Street
Nottingham
Tel: Nottingham 54468

Wadham Stringer (S/sea) Ltd
Portsmouth Car Radio Centre
Waverley Road
Southsea
Tel: Portsmouth 32565

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Car Radio (Preston)
 Blackpool Road
 Preston
 Tel: Preston 716262

Contact Electrical (Wholesale)
 88 Southampton Road
 Salisbury
 Tel: Salisbury 4954

Mobile Radio (Preston)
 177 Rippon Street
 Preston
 Tel: Preston 58275

Reliance (Sheffield) Ltd
 Fitzwilliam Street
 Sheffield
 Tel: Sheffield 77826

R

Southern Car Radios (Kent) Ltd
 151 Frindisbury Road
 Strood
 Rochester
 Tel: Medway 76549

Senior Electronic Services Ltd
 429 Staniforth Road
 Sheffield
 Tel: Sheffield 40681

GP Auto Electrics
 119 Victoria Road
 Romford
 Tel: 6708 22913

G H Smallwood & Co Ltd
 Ennerdale Road
 Harlescott Ind Estate
 Shrewsbury
 Tel: Shrewsbury 56381/4

Auto Electrical Services
 (Rushden) Limited
 100 High street South
 Rushden
 Tel: Rushden 2369

Continental Electrics (Slough) Ltd
 Kelpatrick Road
 Cippenham
 Slough
 Tel: Burnham 2011

S

Russells Auto Electric Co Ltd
 Hedlea Works
 Hedley Road
 St Albans
 Tel: St Albans 50517

Magneto Dynamo & Ign Services Ltd
 114 Lodge Road
 Southampton
 Tel: Southampton 26804/5

Mid-Cornwall Electrical Services Ltd
 Bridge Road
 St Austell
 Tel: St Austell 3271/2/3

Shoreside Elec
 660 Liverpool Road
 Ainsdale
 Southport
 Tel: Southport 76527

TSA Services
 33 Greek Street
 Stockport
 Tel: Stockport 3558

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Smithson Auto Supply
 Chelson Street
 Longton
 Stoke-on-Trent
 Tel: Stoke-on-Trent 35123/4

Garage Equipment Service Ltd
 10 St Johns Road
 Tunbridge Wells
 Kent
 Tel: Tunbridge Wells 32341

Mill Garages (Sunderland) Ltd
 Bluebell Corner
 Station Road
 Sunderland
 Tel: Sunderland 40215

In-Car Entertainment Limited
 24 London Road
 Tunbridge Wells
 Kent
 Tel: Tunbridge Wells 34207

Shorts Auto Electrical Services
 Limited
 43/47 Station Road
 Landore
 Swansea
 Tel: Swansea 42724

Transcar Radio Ltd
 71 Heath Road
 Twickenham
 Tel: 01-892-6655

U

T

George Fitt Motors Limited
 141 Tankerton Road
 Tankerton
 Tel: Whitstable 4775

Denham Motor Sales Ltd
 Oxford Road
 Denham
 Uxbridge
 Middlesex
 Tel: Denham 2345

W

Taunton Auto Electrical &
 Diesel Co Ltd
 58 Station Road
 Taunton
 Tel: Taunton 87274

F Nettleton Ltd
 17 Dewsbury Road
 Wakefield
 Tel: Wakefield 76233/4

Douglas Cameron Motor Service
 The Armoury
 Old Airfield
 Thornaby-on-Tees
 Tel: Stockton 63986

Andrew Page & Co Ltd
 63 George Street
 Wakefield
 Tel: Wakefield 71205/6

Auto & General Electrics
 (Torquay)
 Alexandra Road
 Ellacombe
 Torquay
 Tel: Torquay 24204

Electrical & Radio Co
 Queen Street
 Walsall
 Tel: Walsall 20016

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Russells Auto Electric Co
Loates Lane
Watford
Tel: Watford 28383

Southern Car Radios Ltd
73 Haydens Road
Wimbledon
London SW 19
Tel: 01-540-5738

Charles Clark & Son Ltd
Car Radio Centre
51 Chapel Ash
Wolverhampton
Tel: Wolverhampton 26781

Lambs of Woodford Limited
Standard House
Southend Road
Woodford Green
Tel: 01-550-8866

Mobile Electric (Sales) Ltd
Gregory Mill Street
Gregory Mill
Worcester
Tel: Worcester 27051

Y

Car Radio Services of Otley Ltd
Toft Green
York
Tel: York 58987

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CATEGORY C

MASCOT ALARM FOR SILVER SHADOW AND CORNICHE CARS
KIT NO RH 2637

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Rolls-Royce Corniche motor cars.

DESCRIPTION:

A mascot alarm has been designed to operate the car horns whenever the mascot is tilted.

An additional feature is a built-in delay which causes the horns to blow for 5-7 seconds after the mascot has been released.

The Kit:- The kit comprises three major components, the delay unit, the relay and the switch.

1. UD 18370 wash/wipe delay unit with fly leads and insulating card UD 17688.
2. RH 8871 switch. The switch being secured with an integral spring clip.
3. UD 11654 relay (electric window lift).

FITTING INSTRUCTIONS:

1. Disconnect battery.
2. Remove radiator shell from car.
3. Remove mascot assembly from radiator.
4. Remove shutter assembly.
5. Drill hole and form cut-out in the upper horizontal bracket as shown in Figure 1..
6. Produce a bracket as Figure 2.

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7. Fit 'Linread' switch to bracket and solder switch body to bracket as shown in Figure 3. Treat bracket to prevent corrosion e.g. Matt black paint after Operation 7.
8. Bolt the bracket and switch to shutter assembly as shown in Figure 3.
9. Assemble radiator shell.
10. Adjust switch such that the plunger is fully depressed when mascot is in upright (normal) position. Smear base of mascot and the switch with Vaseline.
11. Fit UD 18370 wash/wipe unit to engine valance as shown in Figure 4. The insulating card UD 17688 should be fitted between the valance and delay unit. Fit relay UD 11654 adjacent to the UD 18370 wash/wipe unit.
12. Using the wiring diagram given in Figure 5, follow existing wiring runs and complete the electrical circuit as follows:
 - a) Connect a 14 strand cable between mascot switch and 'W2' terminal of relay.
 - b) Connect a 14 strand Black plastic covered cable between the delay unit terminal 2 and the right-hand spring pot earth. Connect a 14 strand Black cable between 'C2' terminal of relay and the right-hand spring pot earth.
 - c) Connect a 14 strand cable between delay unit terminal 3 and the live side of the bonnet lamp switch with a 3-way Lucar electrical connector.
 - d) Connect a 28 strand cable between delay unit Red/Green fly lead cable and the horn feed terminal on the right-hand horn on cars from car serial number 16214 and on the right-hand horn of the pair situated under the left-hand front wing on cars prior to car serial number 16214. Tape back the remaining flying leads.
 - e) Connect a 14 strand cable between terminal 5 of delay unit and 'C1' terminal of the relay.
 - f) Connect a 14 strand cable between 'W1' terminal of the relay and live side of bonnet lamp switch.
13. Fit the radiator shell.

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14. Connect the battery.
15. Try the mascot alarm system. If the mascot is pulled and then released, the horns will blow for five to seven seconds. If the mascot is pulled and held, the horns will continue to blow for as long as the mascot is held, but on release, will still continue to blow for five to seven seconds.

NOTE The mascot alarm system does not guarantee the mascot cannot be stolen, but acts as a deterrent.

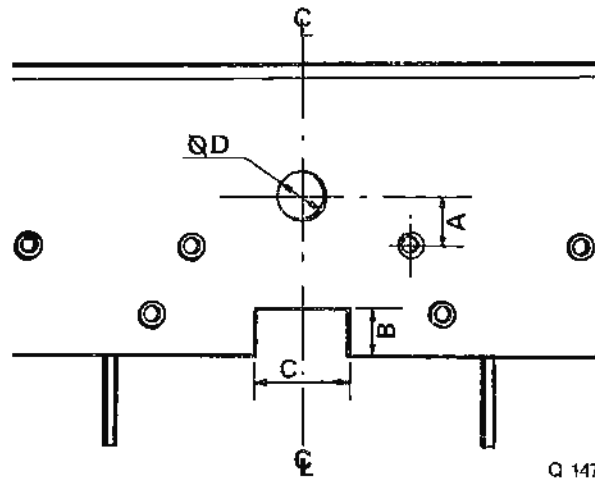
16. Inform the owner to test the system once a week.

TIME ALLOWED Fitting complete kit - 4.5 hours to be charged to the customer.

* This page re-issued to contain time allowance for work.

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Q 147

Figure 1 Hole and cut-out in top bracket of radiator shutters

- A - 0.25 in (6,35 mm)
- B - 0.25 in (6,35 mm)
- C - 0.50 in (12,70 mm)
- D - 0.25 in (6,35 mm) diameter hole

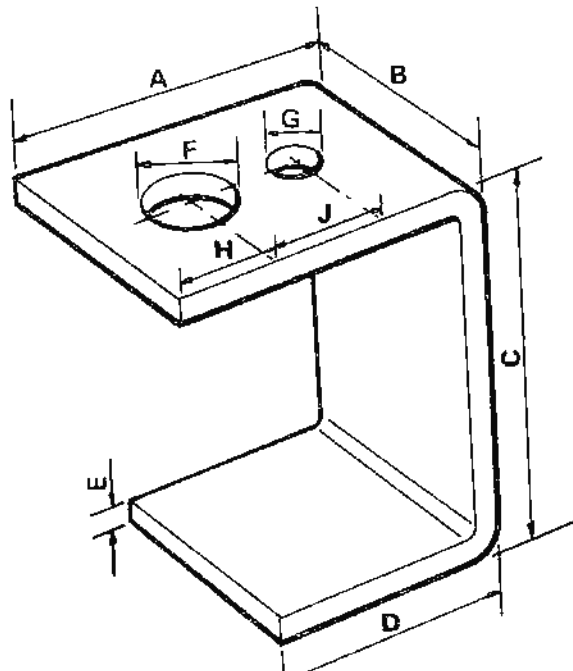


Figure 2 Bracket dimensions

- A - 1.50 in (38,1 mm)
- B - 1.00 in (25,4 mm)
- C - 1.75 in (44,4 mm)
- D - 1.50 in (38,1 mm)
- E - 22 gauge steel
- F - 0.437 in (11,11 mm) diameter hole
- G - 0.25 in (6,35 mm)
- H - 0.50 in (12,7 mm)
- J - 0.625 in (15,8 mm)

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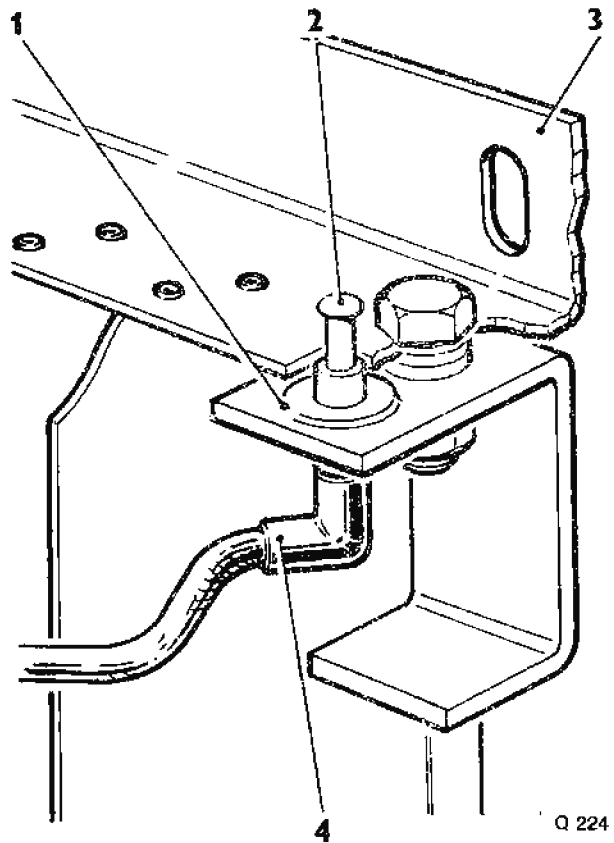


Figure 3 Mounting switch and bracket to radiator shutter bracket

1. Soldered - in switch in bracket
2. Switch plunger
3. Radiator shutter bracket
4. Electrical connection

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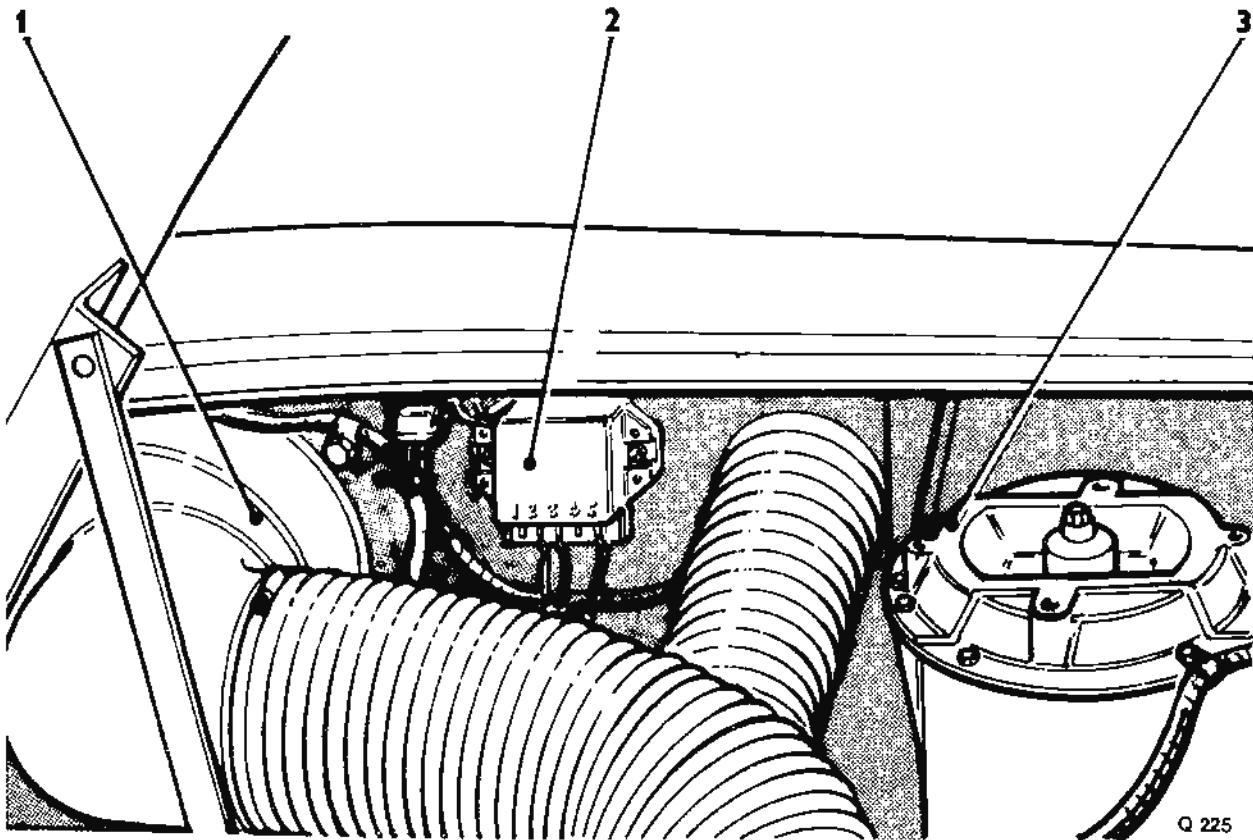


Figure 4 Mounting delay unit and relay

1. Air filter/Silencer cover
2. Delay unit
3. Right-hand spring pot earth

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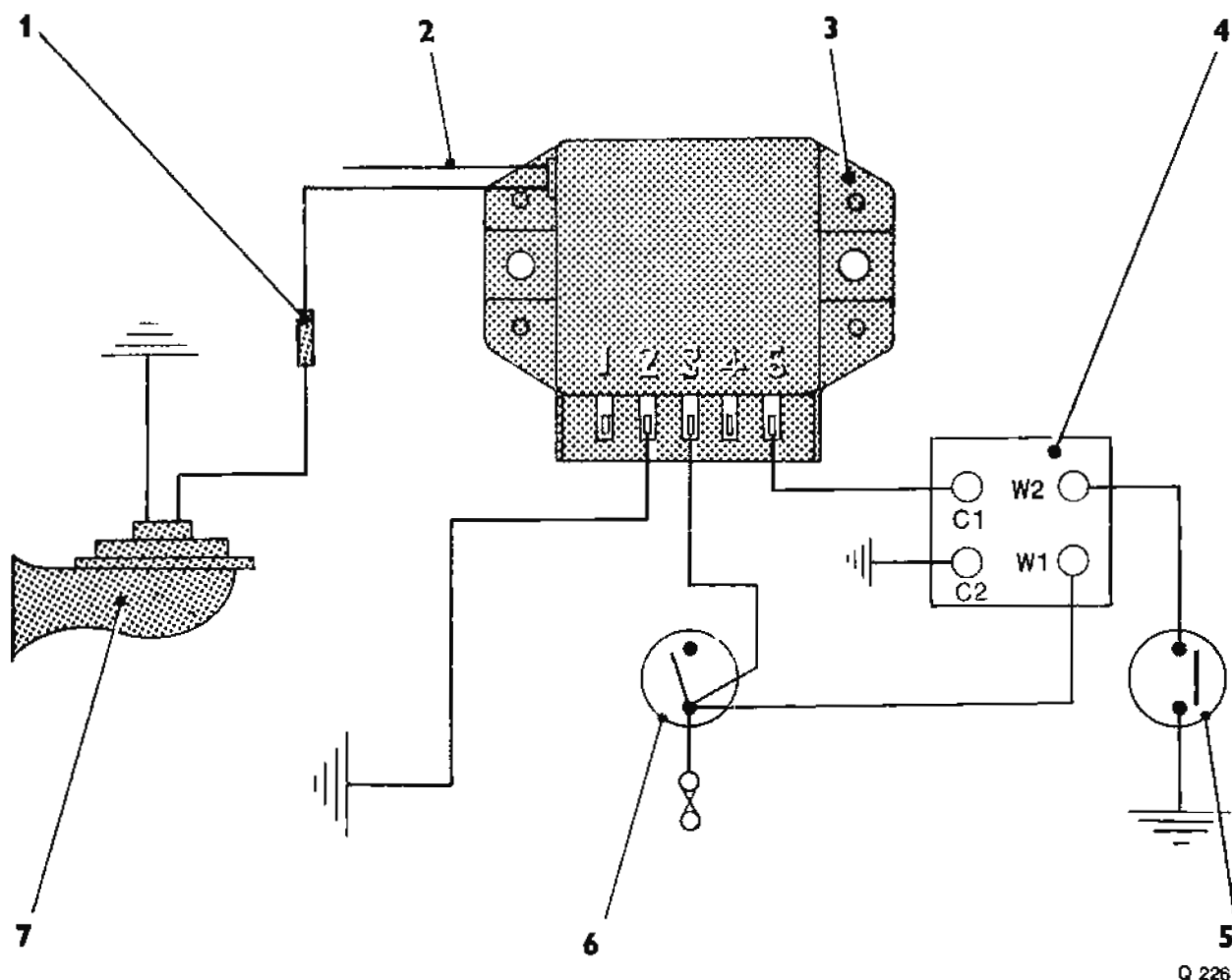


Figure 5 Wiring diagram

1. Lucar in-line connector (from end of fly lead)
Red/Green cable
2. Tape back remaining cables
3. Delay unit
4. Relay
5. Mascot switch
6. Bonnet lamp switch
7. Appropriate horn

Eck/MB

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CATEGORY C

THE COOLANT LEVEL AMPLIFIER

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley T Series cars, including Coachbuilt cars, produced prior to car serial numbers:

SRH 6004
CRH 6003
LRH 6599

DESCRIPTION:

The above cars are fitted with an integral coolant level amplifier and warning lamp, part number UD 11836.

When stocks of this type of amplifier assembly are exhausted the later type of amplifier, part number UD 14927 will be supplied for all replacement purposes.

The work necessary to utilise a later type of amplifier is simple, and full instructions being given below.

PROCEDURE

1. Remove the existing amplifier/warning lamp assembly from the facia.
2. Carefully remove the amplifier circuit board from the end of the amplifier housing.
3. This will expose a black cable and a blue cable. Cut through these cables close to the circuit board.
4. Fit the new UD 14927 coolant level amplifier in a convenient position adjacent to the original amplifier.
5. Remove the Black/Green cable from the amplifier terminals and connect this cable to terminal C of the new amplifier.

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6. Remove the Green cable from the amplifier terminals and connect this cable to terminal D of the new amplifier.

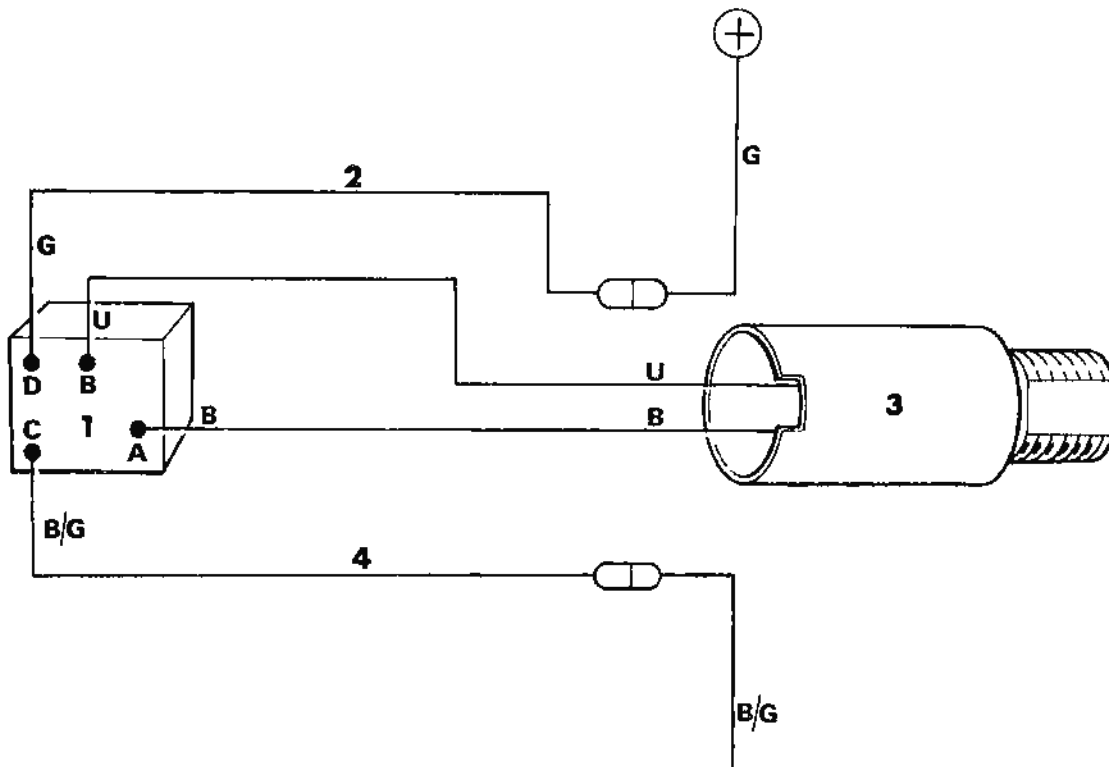


Figure 1 Revised Circuit

1. New coolant level amplifier
2. Original Green cable to amplifier
3. Original amplifier
4. Original Black/Green cable to amplifier

7. Connect the Black and the Blue cables from the original amplifier to terminals A and B respectively as shown in Figure 1.

TESTING

1. Switch on the ignition and check that the coolant level warning lamp is not illuminated (providing that the coolant level is correct).

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2. Remove the Black/Green cable from the amplifier. This should cause the coolant level warning lamp to illuminate.
3. Replace the cable and ensure that the warning lamp is extinguished.
4. Switch off the ignition.

PARTS REQUIRED

Coolant level amplifier UD 14927.

TIME ALLOWED

2.0 hours.

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CATEGORY C:

OTTER MOTORGUARD - THERMAL SWITCH (ELECTRIC GEARCHANGE)

APPLICABLE TO:

All Rolls-Royce Silver Shadow, Bentley 'T' Series and Corniche motor cars produced prior to the following car serial numbers SRX 9001 DRX 9040.

DESCRIPTION:

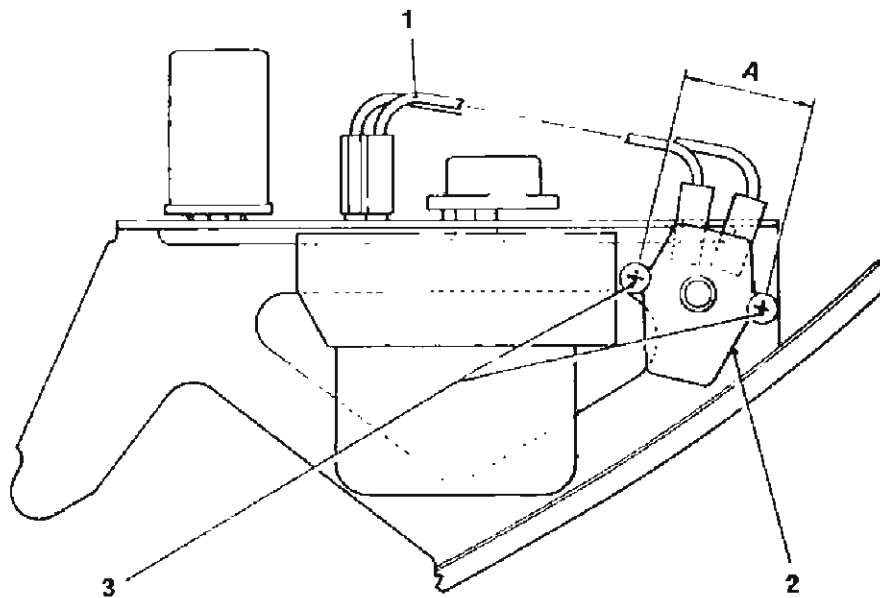
The otter motorguard thermal cut out switch UD 11674 is no longer available.

Thermal switch RH 8924 is suitable for replacement purposes.

The switch is fitted to the side of the distribution board bracket and is connected to the original terminals by a link loom.

1. For right-hand drive motor cars the correct link loom is RH 8930 (Refer to Fig 1).
2. For left-hand drive motor cars the correct link loom is RH 8931 (Refer to Fig 2).

ECK/MH



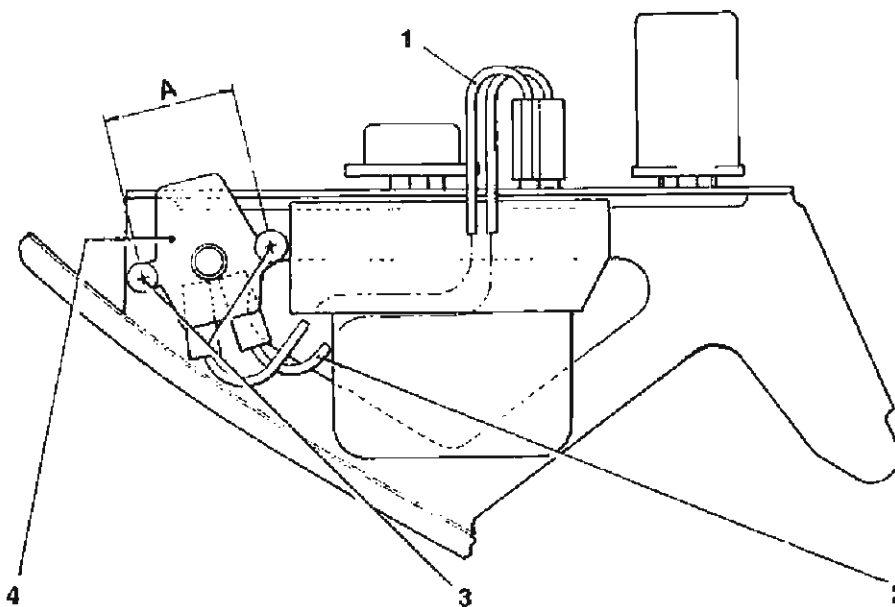
A 3,937 cm. (1.55 ins)

q930

- 1 RH 8930 Assy - Cable. Otter switch to fuseboard (2 off).
- 2 RH 8924 Otter switch.
- 3 Drill 2 holes 4 mm. (0.156 ins.) diameter in mounting bracket.

Fig. 1

Alternative otter switch and connections to distribution board - right hand drive motor cars.



A 3,937 cm. (1.55 in.)

q931

- 1 RH 8931 Assy-Cable. Otter switch to fuseboard (2 off).
- 2 Feed the cables from the switch under the distribution board.
- 3 RH 8924 Otter switch.
- 4 Drill 2 holes 4 mm. (0.156 in.) diameter in mounting bracket.

Fig. 2

Alternative otter switch and connections to distribution board - left hand drive motor cars.

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CATEGORY C:

TAPE PLAYER INTERFERENCE

APPLICABLE TO:

All Silver Shadow, 'T' Series, Corniche and Camargue motor cars produced after the following car serial numbers:

LRH 19754
SRH 20058
DRH 19731
JRH 16847

DESCRIPTION:

Voltage fluctuation can produce background noise when the Pioneer QP 444 tape play unit is being used.

In the event of a complaint about background noise when the tape player unit is in use, a suppressor choke should be fitted in the supply cable to the tape player unit.

This will smooth out the voltage fluctuation and prevent unwanted background noise.

The recommended suppressor choke to use is UD 13873 which should be fitted in the red supply cable to the tape player.

ECK/MH

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CATEGORY CTHE BLAUPUNKT FRANKFURT STEREO RADIOAPPLICABLE TO:

All Silver Shadow, T Series, Corniche and Camargue motor cars.

DESCRIPTION:

A Blaupunkt Frankfurt stereo radio having dual function push buttons is now being phased into production.

This new radio can be recognised by the two letters on each push button and has an integral automatic suppression unit as opposed to the 'plug-in' ASU unit fitted to earlier radios.

Unlike the earlier radio where switching between AM (for long, medium and short wave) and U (for VHF) was achieved by the five push buttons, AM and U switching is controlled only by the small lever beneath the manual tuning knob on the right hand side of the radio.

This means that each of the four push buttons on the new radio can be used to tune pre-selected stations on either AM or U as dictated by the right hand control switch.

Switching from VHF mono to VHF stereo broadcasts was achieved by the switch beneath the right hand knob. On the new radio this is controlled by a small switch adjacent to the long wave push button.

Detailed operating instructions are contained in the vehicle document pack and service facilities for these radios are detailed in Service Bulletin SY/M90.

ECK/MH

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CATEGORY C

EXTERIOR ELECTRICAL SENSORS

APPLICABLE TO:

All Rolls-Royce Camargue cars.

DESCRIPTION:

Immediately behind the upper part of the radiator grille are mounted two electrical sensor units.

One sensor is supported on a plastic block and controls the ice alert lamp, and the other is contained in a metal housing and controls the ambient temperature gauge.

Should it be necessary to replace either of these sensor units, it is important that the following points are noted.

Ambient Temperature Sensor

These sensors are individually matched to each gauge, therefore if a sensor is damaged it will be necessary to fit a new gauge and sensor unit.

Ice Warning Sensor

Each sensor unit carries a figure which indicates the electrical resistance of the sensor. When replacing a sensor the replacement unit should have a figure which is within 0.20 K ohms of the original.

For instance a damaged sensor which is marked 6K66 (6660 ohms) can be replaced by any sensor within the 6.46 to 6.86 range.

The part numbers of the various ranges are shown in the chart below.

Existing Sensor Value (K)	Replacement Part Number
5.00 to 5.20	RH 8984
5.30 to 5.50	RH 8985
5.60 to 5.80	RH 8986
5.90 to 6.10	RH 8987
6.20 to 6.40	RH 8988
6.50 to 6.70	RH 8989
6.80 to 7.00	RH 8990
7.10 to 7.30	RH 8991
7.40 to 7.60	RH 8992
7.70 to 8.00	RH 8993

CHAPTER N

POWER ASSISTED STEERING

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CATEGORY C

THE STEERING BOXAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley T Series and Corniche cars.

DESCRIPTION:

The top cover of the steering box is retained by four setscrews. These screws have a special thread which has a locking effect when initially assembled.

Over the past few months we have received a number of complaints of oil leakage past the top cover seal. All of these complaints have occurred on steering boxes of the latest type, part numbers UR17109 for left hand drive cars and UR17108 for right hand drive cars. These boxes can be identified by the shoulder which is formed on the outside of the box housing adjacent to the front end. Earlier boxes did not have this shoulder.

Because of the special threads on the bolts retightening the bolts only or replacing them will not effect a satisfactory cure, as they will not retain their torque locking properties.

The correct procedure is detailed in this Service Bulletin.

PROCEDURE:

1. Ensure that the leak is coming from the steering box cover plate seal.
2. Remove one bolt from the steering box cover plate and remove all traces of oil from the threads of the bolt and the threads of the steering box. This should be done using a proprietary de-greasing agent and a high pressure air-line.
3. When the threads are thoroughly clean treat with a thread locking compound, such as 'Loctite Stud-Lock' or 'Casco MLF 13'. The compound should be applied according to the manufacturers instructions.

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NOTE:

This treatment will not be successful if any trace of oil or grease remains on the threads, either on the setscrew or in the Steering box.

4. Fit the bolt to the steering box and tighten to 30 lbs ft (4.148 Kg.m).
5. Repeat the above procedure on the remaining three bolts.

IMPORTANT NOTE:

If the top cover is removed from the steering box this will necessitate resetting the rocker shaft clearance as described in Section N5 of the Workshop Manual.

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CATEGORY CTHE STEERING COLUMN DETROIT JOINTAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche Cars.
All Bentley 'T' Series and Corniche Cars.

DESCRIPTION:

Distributors have asked what is the allowable clearance in the steering column detroit joint. Since a specific design clearance exists in this joint, it is essential that this should not be confused with wear. The mode of operation of this joint is such that wear is unlikely and therefore excessive clearance should not exist.

PROCEDURE:

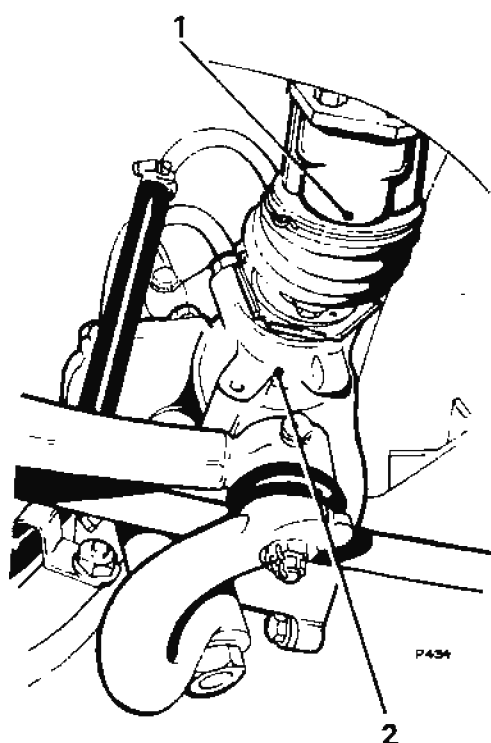
If it proves necessary to check the clearance the following procedure should be adopted:

1. Place the car on a ramp
2. Viewing from underneath the car, ensure that one of the two diametrically opposed protrusions on the joint housing is visible (see Figure 1).
3. Check that the transverse clearance, between the two halves of the joint in the plane of the two protrusions, does not exceed 3,17 mm (0.125 inch).
4. If the clearance exceeds this value, the joint should be checked in accordance with section N1 of the Workshop Manual (TSD 2476).

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- 1 Protrusion on detroit joint housing
- 2 Steering box

Figure 1
The Steering Column Detroit Joint viewed
from beneath

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CATEGORY A

STEERING COLUMN DETROIT JOINT

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche Cars and all Bentley 'T' Series and Corniche Cars from Car Serial Number:

SRH 16497 to SRH 17392 inclusive.

DESCRIPTION:

During normal factory testing procedures it recently was found that part of a batch of castings used in the manufacture of steering detroit joint end buttons did not meet Rolls-Royce Motors standards. Under certain circumstances it is possible that this could cause stiffness in normal steering joint articulation.

Although no such fault has been recorded in any car in service anywhere in the world, Rolls-Royce Motors, who have always regarded the safety of their motor cars as paramount, are instructing all distributors and retailers to contact owners of those cars in the above chassis number range in order that new parts may be fitted.

Service Managers are therefore asked to ensure that the owners of all those cars in the above chassis number range which are serviced by their service station are contacted IMMEDIATELY in writing, and asked to bring their car to the service station for replacement of the buttons.

Satisfactory completion of this work is identified on the car by two paint spots on the epaulette on the top right hand corner of the radiator top tank and on the lower steering column. Cars which are marked with two green spots, or two white spots as used by the factory, need not have the exercise repeated in service.

The procedure for this work is as follows:

PROCEDURE:

1. Place the car on a ramp.
2. Unscrew the two nuts from the in-line joint at the top of the lower steering column noting that only the upper nut has a washer.

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3. Remove the pinch bolt from the splined clamp connecting the column to the steering box input shaft and ease the clamp off the shaft splines.
4. Remove the lower column from the car, taking care that the detroit joint is held to avoid excessive strain.
5. With the shaft of the lower column held in a vice, slacken and remove the clip from the upper end of the convoluted rubber boot, nearest the detroit joint housing. Ease back the rubber boot.
6. Using a small screwdriver, remove the circlip from the universal joint and ease the trunnion assembly out of the housing. Alternatively, deflect the joint as far as possible in the line of the cross pin and carefully pull apart over the circlip which need not be removed.
7. Remove the trunnion buttons and belleville washers.
8. Fit the new buttons into the cross pin holes without the belleville washers and ensure that the back face of the button abuts the end of the cross pin. Remove the buttons from the cross pin.
9. Fit the belleville washers to the new trunnion buttons in the manner shown in figure 1 and insert these into the ends of the cross pin. Check that the buttons are fitted with their long dimension in line with the column.
10. Ensuring that the bearings are located towards the outer ends of the cross pin, ease the assembly back into the housing in the same way as it was removed. Care should be taken to ensure that the machined flat of the in-line joint is on the same side as the machined flat for the pinch bolt as shown in figure 2. Replace the circlip if it was removed.
11. Ease back the convoluted rubber boot. A new wire clip should be fitted if necessary.
12. Holding the detroit joint to avoid excessive strain, replace the lower steering column in the car noting that the splined clamp has a flat machined in the bore to correspond with a flat on the steering box input shaft.
13. Replace the pinch bolt and torque tighten to between 16 lb.ft. and 18 lb.ft (2.21 kg.m. and 2.48 kg.m.)

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14. Replace the bolts and nuts to the in-line joint, fitting the washer to the upper bolt. Torque tighten to between 16 lb.ft. and 18 lb.ft. (2.21 kg.m. and 2.48 kg.m.)
15. Apply two spots of green paint to the lower steering column and two spots of green paint to the right hand side of the radiator top tank as shown in Figures 2 and 3.
16. Clean the displaced buttons and return to Rolls-Royce Motors Limited for the attention of the Service Engineering Department, marked clearly with the car chassis number and mileage.

MATERIAL REQUIRED:

Steering Detroit Joint End Buttons - UR 17412 - 2 off.

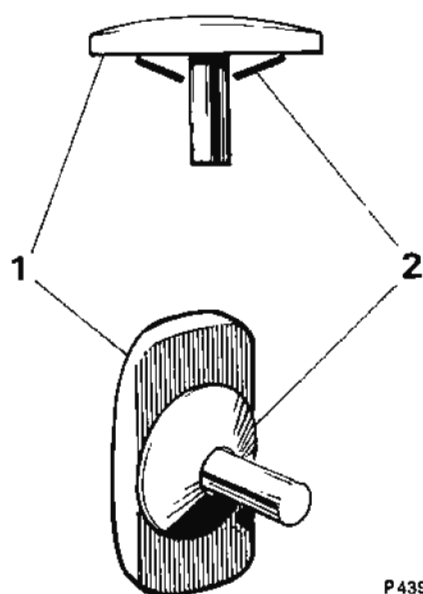
TIME ALLOWED:

Right Hand Drive Cars - 1 hour
Left Hand Drive Cars - 1.25 hours.

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Figure 1. Method of fitting belleville washer.

1. Trunnion button.
2. Belleville washer.

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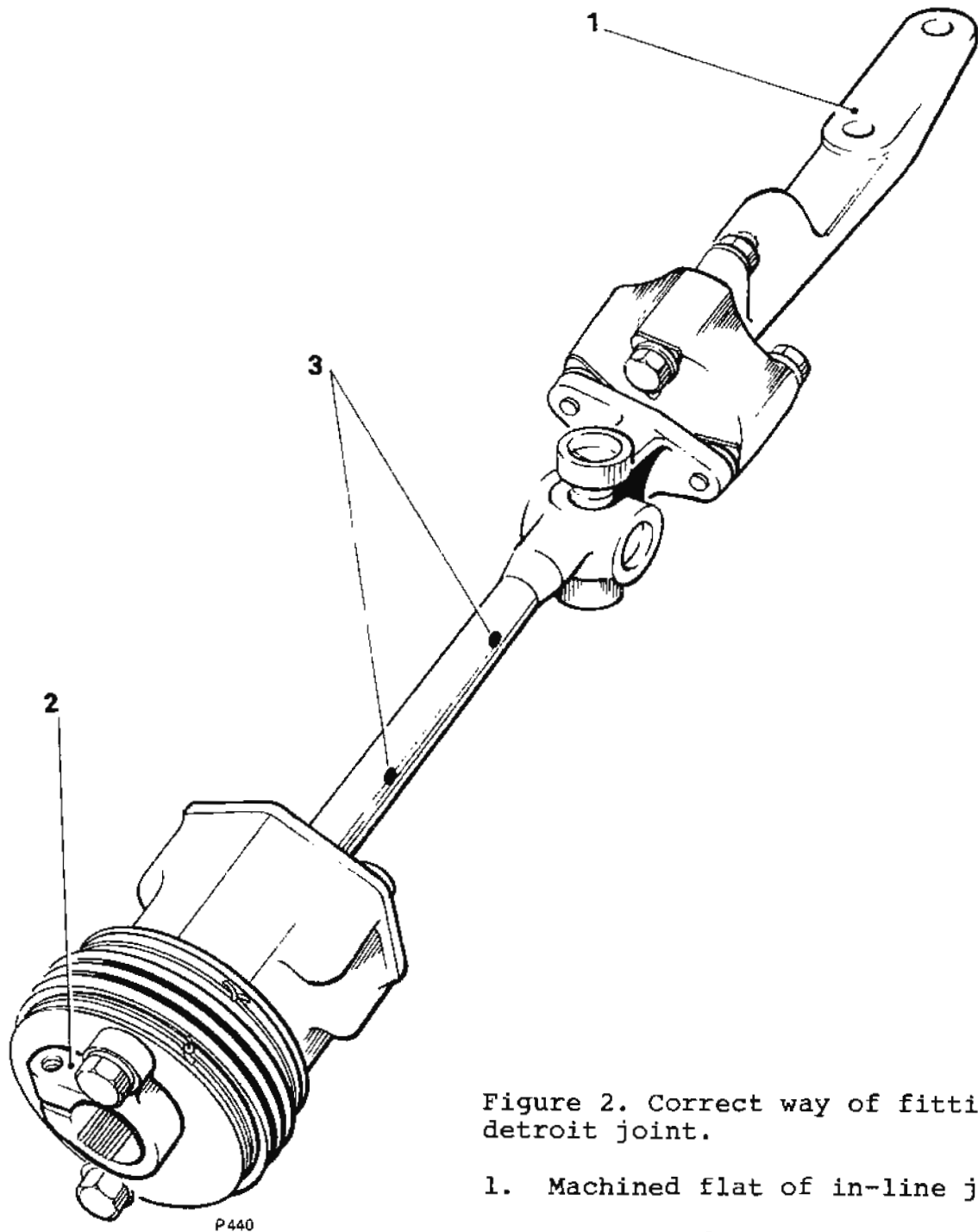
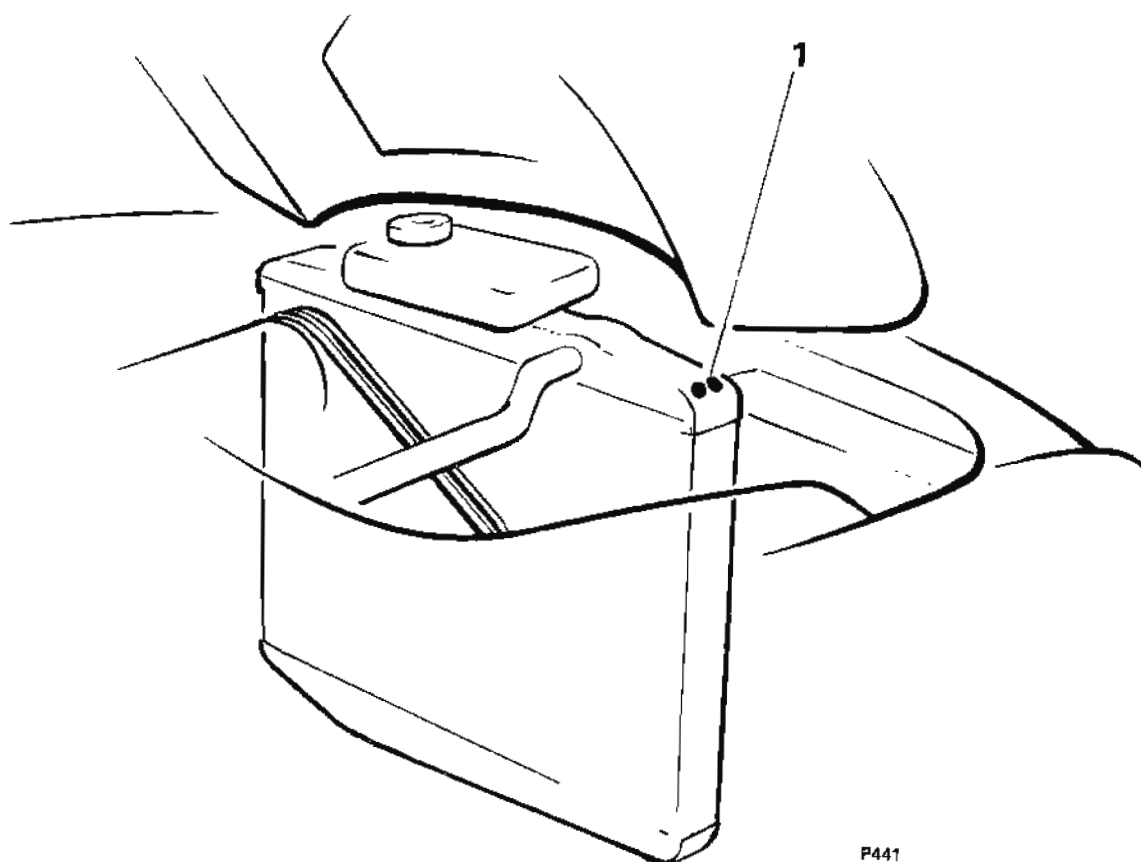


Figure 2. Correct way of fitting detroit joint.

1. Machined flat of in-line joint.
2. Machined flat for pinch bolt.
3. Two green identification spots.

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Figure 3. Position of identification spots on radiator.

1. Two green identification spots.

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CATEGORY CRE-DESIGNED STEERING PUMP PULLEYAPPLICABLE TO:

All Silver Shadow, T Series, Corniche and Camargue cars produced after the following car serial numbers:-

SRX 22858	SRH 22961
SRX 22867	SRE 22962
SRH 22896	SRH 22963
SRH 22924	SRX 22967
SRH 22930	SRH 22993
SRH 22931	SRH 22994
SRH 22934	SRE 22995
SRH 22936	SRH 22996
SRH 22937	SRE 22998
SRE 22938	SRH 22999
SRH 22940	SRE 23001
SRX 22941	SRH 23002
SRH 22942	SRX 23004
SRH 22943	SRH 23005
SRH 22946	SRH 23006
SRE 22947	SRH 23009
SRH 22949	SRE 23010
SRX 22950	SRH 23012
SRH 22951	SRE 23013
SRE 22953	SRX 23016
SRH 22954	SRH 23018
SRH 22955	SPH 23021
SRE 22956	SRH 23024
SRX 22959	
SRH 22960	and all subsequent cars
LRE 23037	LRE 23050
LRX 23041	LRE 23051
LRE 23042	LRH 23105
LRE 23046	
LRH 23047	
LRH 23048	and all subsequent cars

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DRH 22920

CRX 22986 and all subsequent cars

JRX 22587 and all subsequent cars

DESCRIPTION:

The design of the steering pump pulley has recently changed.

The previous pulley was retained by a nut and located on the shaft by a woodruff key. The present design has deleted the retaining nut and woodruff key and now relies on a high interference fit for its retention.

When ordering spares consult Spares Information Sheet 4 J 44 as the latest design pump unlike the earlier pump will be supplied with the pulley fitted. Apart from these features the two pumps are interchangeable.

If for any reason it is found necessary to remove the pulley, it is essential that service tool RH 9008 is used, this tool also incorporates an installation device to ensure square location of the pulley to shaft. On no account should the pulley be pressed or hammered on.

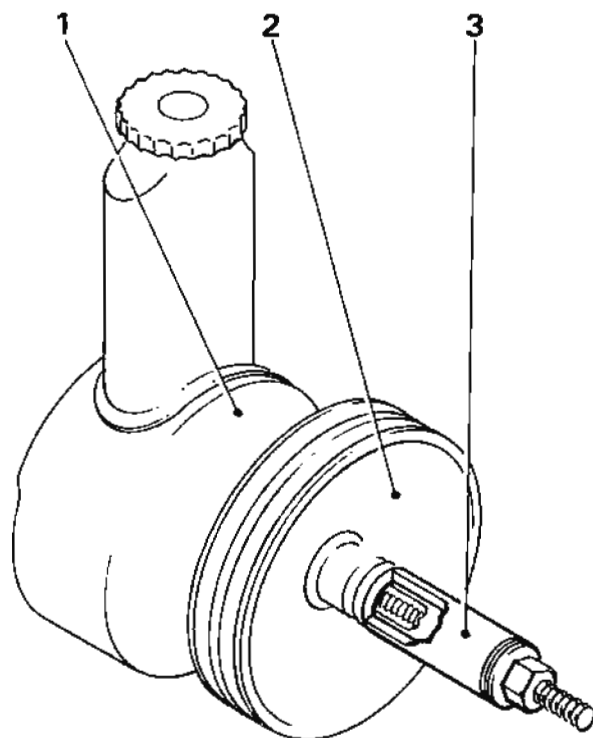
The diagram at the end of this Service Bulletin shows the method of removal and installation of the steering pump pulley using Service tool RH 9008.

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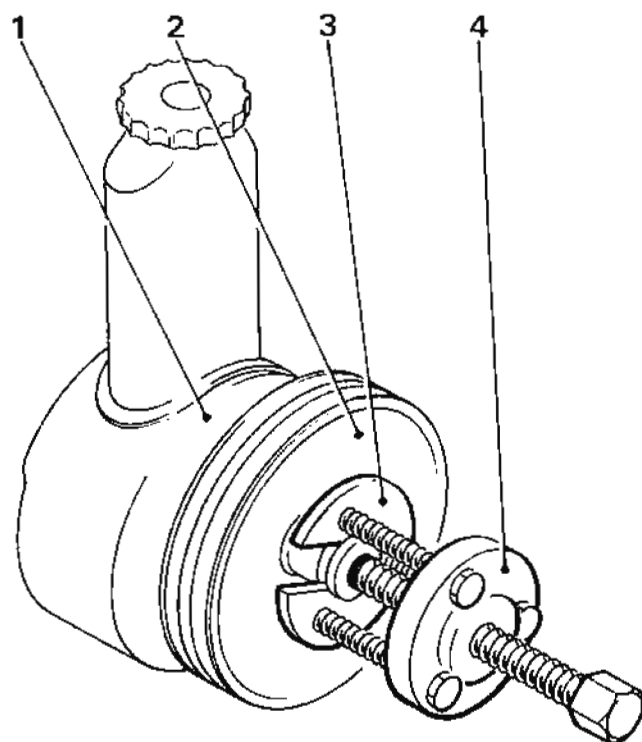
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Pulley installation using
tool RH 9008

1. Steering Pump
2. Pulley
3. Installation tool

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Pulley extraction using tool
RH 9008

1. Steering Pump
2. Pulley
3. Slotted Plate
4. Extractor

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CHAPTER P

TORQUE TIGHTENING

FIGURES

Service Bulletin issued for

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CATEGORY C

TORQUE TIGHTENING - CYLINDER HEAD NUTS

APPLICABLE TO

All Rolls-Royce Silver Shadow and Corniche cars, and all Bentley T Series and Corniche cars.

DESCRIPTION

When a cylinder head has been removed and is subsequently fitted, the following torque figures should be used.

Initially tighten the nuts to between 20 lb ft and 25 lb ft
(2,75 kg.m and 3,5 kg.m).

Finally tighten the nuts to between 50 lb ft and 55 lb ft
(7,0 kg.m and 7,6 kg.m).

This Service Bulletin should be read in conjunction with Service Bulletins SY/E13 and SY/E14.

CHAPTER Q

EXHAUST SYSTEM

CHAPTER R

WHEELS AND TYRES

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CATEGORY CCURRENTLY APPROVED TYRESAPPLICABLE TO:

All Rolls-Royce Silver Shadow, Rolls-Royce Corniche and
 Rolls-Royce Phantom VI, Bentley 'T' Series and Bentley
 Corniche motor cars.

DESCRIPTION:

Cars prior to the following Car Serial Numbers.

Silver Shadow saloon	SRC 18269
Bentley 'T' Series saloon	SBH 18225
Corniche saloon	CRH 18564
Corniche convertible	DRH 18563
Long Wheelbase saloons	Not yet available

<u>SIZE</u>	<u>MAKE</u>	<u>TYPE</u>	<u>COLOUR</u>
8.15H15	Dunlop	Road Speed RS 5C Nylon Cross-ply	Black
8.15H15	Firestone	ORB De-luxe Nylon Cross-ply	Black/White
8.15V15	Avon	Turbo-speed RR/B Nylon Cross-ply	Black/White
*205-15	Firestone	100 Radial Rayon Radial-ply	Black
205VR15	Avon	Radial T Rayon Radial-ply	Black
205HR15	Dunlop	SP68 Rayon Radial-ply	Black/White
205-15	Dunlop	Weathermaster SP44 Rayon Radial-ply	Black

* Not suitable for use in West Germany

Cars from the following Car Serial Numbers.

Silver Shadow saloon	SRC 18269
Bentley 'T' Series saloon	SBH 18225
Corniche saloon	CRH 18564
Corniche convertible	DRH 18563
Long Wheelbase saloon	Not yet available

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<u>MAKE</u>	<u>TYPE</u>	<u>COLOUR</u>
Avon	Radial T HR70HR15	Black/White
Firestone	Cavallino Wide Oval	Black/White
	Radial HR70HR15	
Dunlop	SP Sport Dunlop Formula	Black/White
	70 Radial HR70HR15	

* Firestone tyres are not fitted to cars for Australia.

IMPORTANT NOTES

1. Radial-ply tyres should only be fitted in sets of 5 when changing from cross-ply.
2. When fitting radial-ply tyres to non-flat ledge rim wheels, tubes must be used. With flat ledge rim wheels inner tubes are not necessary. The two types of wheel are described in Service Bulletin SY/R17.
3. Winter tyres for cars fitted with 205x15 radial-ply tyres as standard (Dunlop Weathermaster radial-ply) are not intended for high speed motoring - see the following table.

<u>MAKE</u>	<u>TYRE PRESSURE</u>	<u>MAXIMUM SPEED</u>
Dunlop Weathermaster radial-ply	1,97kg/sq.cm. (28lb/sq.in.) front and rear wheels	136 k.p.h. (85mph)
	2,25kg/sq.cm. (32lb/sq.in.) front and rear wheels	152 k.p.h. (95mph)

Dunlop Weathermaster radial-ply tyres should be fitted to the rear wheels or to all four wheels. These tyres are also drilled to accept tyre studs. Should tyre studs be required Secomet P2-140 studs are recommended. They have a protrusion of between 1,5mm. and 2,00mm. when fitted to the tyre. These studs are not available from Rolls-Royce Motors Limited and therefore your local tyre dealer should be consulted.

In addition, when fitting a set of four Dunlop Weathermaster radial-ply tyres a small portion of the front wing undersheet will need to be removed as described in Service Bulletin SY/R5.

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4. When fitting new tyres to a car, new valves should also be fitted and the wheels balanced. In addition a period of tyre running-in is recommended as follows:
 - a) For the first 800 km. (500 miles) sustained speeds of 112 k.p.h. (70 mph) or over should not be undertaken.
 - b) Avoid harsh cornering, hard braking or harsh acceleration.
5. SNOW CHAINS: for cars fitted with (205x15 radial-ply tyres) refer to Workshop Manual TSD 2476 Chapter R for details.

For cars fitted with HR70HR15 radial-ply tyres: details to follow.

6. When fitting tyres, use only a tyre fitting lubricant recommended, manufactured or marketed by one of the Rolls-Royce Motors approved tyre manufacturers. Under no circumstances should the tyre be lubricated with soft or liquid soap since these liquids contain quantities of caustic potash which has a paint stripping quality and subsequently allowing corrosion to take place.

TYRE PRESSURES

1. All cars except those domiciled in USA, Canada, Federal Republic of Germany fitted with 8.15x15 cross-ply.
 - a) Cars other than long wheelbase - front and rear
 1,83 kg/sq.cm. (26 lb/sq.in.)
 For continuous high speed motorway driving the tyre pressures should be increased by 0,14 kg/sq.cm. (2 lb/sq.in.).
 - b) Long Wheelbase cars

1-3 occupants	1,97 kg/sq.cm. (28 lb/sq.in.)	Front
	2,11 kg/sq.cm. (30 lb/sq.in.)	Rear
4-5 occupants	1,97 kg/sq.cm. (28 lb/sq.in.)	Front
	2,25 kg/sq.cm. (32 lb/sq.in.)	Rear
5 occupants	1,97 kg/sq.cm. (28 lb/sq.in.)	Front
and luggage	2,397 kg/sq.cm. (34 lb/sq.in.)	Rear

All pressures set cold.

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2. All cars, including the USA and Canada fitted with 205x15 radial-ply tyres and all cars domiciled in USA and Canada fitted with 8.15x15 cross-ply tyres.

FOUR DOOR SALOON

1-5 occupants.	1,97 kg/sq.cm. (28 lb/sq.in.)	Front and Rear
5 occupants	1,97 kg/sq.cm. (28 lb/sq.in.)	Front
and luggage	2,25 kg/sq.cm. (32 lb/sq.in.)	Rear

TWO DOOR COUPÉ AND CONVERTIBLE

1-4 occupants.	1,97 kg/sq.cm. (28 lb/sq.in.)	Front and Rear
4 occupants and	1,97 kg/sq.cm. (28 lb/sq.in.)	Front
luggage	2,25 kg/sq.cm. (32 lb/sq.in.)	Rear

LONG WHEELBASE SALOON

1-3 occupants	1,97 kg/sq.cm. (28 lb/sq.in.)	Front
	2,11 kg/sq.cm. (30 lb/sq.in.)	Rear
4-5 occupants	1,97 kg/sq.cm. (28 lb/sq.in.)	Front
	2,25 kg/sq.cm. (32 lb/sq.in.)	Rear
5 occupants	1,97 kg/sq.cm. (28 lb/sq.in.)	Front
and luggage	2,39 kg/sq.cm. (34 lb/sq.in.)	Rear

All the above pressures set cold.

3. ALL CARS FITTED WITH HR70HR15 TYRES

Refer to charts on pages 6 and 7.

4. All cars in the Federal Republic of Germany fitted with 8.15x15 cross-ply or 205x15 radial-ply tyres.

ALL CARS OTHER THAN LONG WHEELBASE SALOONS

1,97 kg/sq.cm. (28 lb/sq.in.) Front and Rear

LONG WHEELBASE SALOON

1,97 kg/sq.cm. (28 lb/sq.in.)	Front
2,39 kg/sq.cm. (34 lb/sq.in.)	Rear

All above pressures set cold.

PHANTOM VI LIMOUSINES

The recommended tyre for the Phantom VI is the Dunlop 8.90H15 Fort C 8 Ply nylon WH4 cross-ply tubeless.

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A running-in period of 804 km. (500 miles) is recommended. During this period, hard cornering or sustained speeds of 136 k.p.h. (85 mph) should be avoided.

TYRES PRESSURES

1 - 4 occupants	1,69 kg/sq.cm. (24 lb/sq.in.)	Front
	2,11 kg/sq.cm. (30 lb/sq.in.)	Rear
5 - 7 occupants	2,11 kg/sq.cm. (30 lb/sq.in.)	Front
	2,53 kg/sq.cm. (36 lb/sq.in.)	Rear

All above pressures set cold.

A special Winter equipment tyre is available, Phantom V and VI cars the details are as follows:

Jetzon 8.90 x 15 8-Ply rating cross-ply,
Premium Traction Heavy Duty Tyre.

The tyre is subject to the following speed restrictions -
70 mph sustained.

The tyre is available from:

Jetzon International Corp.
Route 309
Hartman Road
Montgomeryville
PA 18936
USA

ALL TERRITORIES OTHER THAN NORTH AMERICA AND AUSTRALIA

COLD TYRE PRESSURES FOR CARS FITTED WITH HR70 HR15 TYRES

For all loading conditions up to 5 occupants in four-door cars or 4 occupants in two-door cars and 250 lbs of luggage.

	For speeds up to 180 kph (110 mph)		For speeds in excess of 180 kph (110 mph)	
	FRONT	REAR	FRONT	REAR
Four-door saloon				
Long Wheelbase without division	1.69kg/sq.cm. (24 psi)	1.97kg/sq.cm. (28 psi)	2.11kg/sq.cm. (30 psi)	2.39kg/sq.cm. (34 psi)
Corniche Saloon				
Corniche Convertible				
Long Wheelbase with division.	1.69kg/sq.cm. (24 psi)	2.11kg/sq.cm. (30 psi)	2.11kg/sq.cm. (30 psi)	2.53kg/sq.cm. (36 psi)

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NORTH AMERICA AND AUSTRALIA ONLY

COLD TYRE PRESSURES FOR CARS FITTED WITH HR70 HR15 TYRES

For all loading conditions up to 5 occupants in four-door cars or 4 occupants in two-door cars and 250 lbs of luggage.

	For speeds up to 180 kph (110 mph)		For speeds in excess of 180 kph (110 mph)	
	FRONT	REAR	FRONT	REAR
Four door saloon				
Long Wheelbase without division	1,69 Kg/sq cm (24 psi)	1,97 Kg/sq cm (28 psi)	1,97 Kg/sq cm (28 psi)	2,25 Kg/sq cm (32 psi)
Long Wheelbase with division for North America and Australia	1,83 Kg/sq cm (26 psi)	2,25 Kg/sq cm (32 psi)	2,11 Kg/sq cm (30 psi)	2,53 Kg/sq cm (36 psi)
Corniche Saloon				
Corniche Convertible	1,69 Kg/sq cm (24 psi)	1,97 Kg/sq cm (28 psi)	2,11 Kg/sq cm (30 psi)	2,39 Kg/sq cm (34 psi)

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REPLACEMENT TYRE MARKINGSAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche and all Bentley 'T' Series and Corniche motor cars.

DESCRIPTION:

For some time now, the tyre sidewall marking have included a code letter which indicates the speed capability of the tyre. More recently, a system of grading tyres has been introduced. It is most important that when ordering or fitting replacement tyres to the above cars, these sidewall markings and ratings, are understood such that the correct tyres of the type approved by Rolls-Royce Motors are specified. In cases where replacement tyres are supplied and fitted by a tyre dealer this Service Bulletin should be brought to his attention.

On both cross ply and radial ply tyres, the speed capability code is interposed between the two sets of figures which indicate the dimensions of the tyre. Radial ply tyres are further identified by the letter R.

The following chart shows the speed capabilities and the equivalent code letter.

TYRE CONSTRUCTION	SPEED MARKING	MAXIMUM SUSTAINED SPEED km/h mph
Diagonal (cross ply)	None	150 95
	S	175 110
	H	200 125
	V	200+ 125+
Radial	SR	180 113
	SR Reinforced	170 105
	HR	210 130
	VR	210+ 130+
Winter Radial	SR	160 100
	SR Reinforced	150 95

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NOTE:

This chart only applies to tyres fitted on wheels of 33 cm. (13 inches) diameter or greater.

From the chart it can be seen that the only tyres which should be fitted to a Silver Shadow or Bentley 'T' Series are those which are marked:

CROSSPLY TYRES

8-15 H 15 or 8-15 V 15

RADIAL PLY TYRES (EARLIER CARS)

205 HR 15 or 205 VR 15

RADIAL PLY TYRES (LATER CARS)

HR 70 HR 15 or HR 70 VR 15

In cases where new tyres fail to meet the overall quality standards laid down by the manufacturers, but remain structurally sound and capable of fulfilling the indicated speed ratings, they will be branded 'Regraded Quality'. In these cases the appropriate size and speed rating markings on the sidewall will be retained.

Tyres which fail to meet the requirements of 'Regraded Quality' types, will be branded 'seconds' and the speed marking removed. These tyres must not be used for speeds in excess of 120 km.h. (75 m.p.h.).

It is important that tyres which are branded 'Regraded Quality', or 'seconds', or those which have had the speed rating removed or altered, are not used on Rolls-Royce or Bentley cars.

PROCEDURE WHEN FITTING NEW TYRES

1. Examine the tyre sidewall markings and ensure that there are no markings which indicate an incorrect restriction in speed or use. In the case of radial ply tyres, only those with an HR or VR suffix should be used.

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- E Examine the tyre for damage and ensure that the indicated size is the correct one for the car. Consult Service Bulletins SY/R24 and SY/R28.
2. Do not mix radial and cross ply tyres. Always check that the spare wheel assembly is of the correct type and is serviceable.
 3. If the road wheels are not of the flat edge type and radial ply tyres are to be used, suitable inner tubes must be fitted.
 4. Ensure that the wheel is not damaged.
 5. When fitting new tyres, always fit new tyre valves.
 6. Fit the tyre such that the red spot on the sidewall is adjacent to the H mark on the wheel rim.
 7. Use only a tyre bead lubricant recommended by the tyre manufacturer. Do NOT use soft soap.
 8. Balance the wheel and tyre assembly noting that spigoted road wheels must be correctly located on the balancing machine.
 9. See Service Bulletins SY/R24 and SY/R28 for the recommended tyre inflation pressure.

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CATEGORY CHR 70 HR 15 TYRESAPPLICABLE TO:

All Rolls-Royce and Bentley cars as follows:

Silver Shadow Saloon	SRC 18269 and onwards
Bentley T Series Saloon	SBH 18225 and onwards
Corniche Saloon	CRH 18564 and onwards
Corniche Convertible	DRH 18563 and onwards

Car serial numbers for long wheelbase cars will follow when they are available.

DESCRIPTION:

The above cars are fitted with, as original equipment, tyres which have a larger section than the 205 x 15 tyres fitted previously. These new tyres bear the type code HR70 HR15. This code indicates the following:

HR	the load carrying capacity of the tyre.
70	the aspect ratio of the tyre, ie., ratio of section height to section width.
H	the speed rating of the tyre, H meaning suitable for continuous operation at speeds between 113 and 130 mph.
R	tyre construction - Radial 'ply'.
15	the wheel size - 15 inches.

The reasons for moving to this type of tyre are:

- 1 Improved cornering capability due to reduced slip angles,
- 2 Increased directional stability,
- 3 More responsive handling,
- 4 An improvement in tyre life potential,

but with no change in the overall gearing of the car.

These are considered to outweigh the minor disadvantage of some slight increase in road noise under certain road and speed conditions.

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In order to accommodate these tyres a number of other changes have been made to the car. The most visually apparent of these is an increase in the size of the flares over the front and rear wheel arches.

Other changes are:-

- 1) The sill strips between the front and rear wheel arches have been shortened.
- 2) New rear hubs are used to increase the rear track.
- 3) New front lower triangle levers and ball pin carriers are fitted to increase front track.
- 4) New front suspension upper levers are introduced to increase front track.
- 5) New cross steering tubes and lockstop packings are incorporated.
- 6) New front wing undersheets are used to accommodate the increased track.
- 7) There is a revised horn mounting with horns mounted one each side of the car.

These parts are not interchangeable with equivalent parts on cars prior to the chassis numbers given.

The wheels themselves have not changed.

The front and rear wheel geometry settings have not been changed and remain as given in the workshop manual TSD Publication 2476.

The fitting of these tyres has made a difference to other measurements of the car as follows:

	<u>Current Silver Shadow</u>	<u>Previous Silver Shadow</u>
1) Overall car width	1,818 m (5 ft 11.7 in)	1,800 m (5 ft 11 in)
2) Wheelbase	3,060 m (10 ft)	3,035 m (9 ft 11.50 in)
3) Front track	1,522 m (5 ft)	1,507 m (4 ft 11.5 in)
4) Rear track	1,513 m (4 ft 11.625 in)	1,460 m (4 ft 8.75 in)

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TYRE PRESSURES

With the introduction of these tyres the recommended inflation pressures have been revised. With the tyres cold these should be as shown in the attached table.

NB The 'cold' condition is considered to be after the car has been stationary in the shade for a period of twelve hours.

ALL TERRITORIES OTHER THAN NORTH AMERICA AND AUSTRALIA

COLD TYRE PRESSURES FOR CARS FITTED WITH HR70 HR15 TYRES

For all loading conditions up to 5 occupants in four-door cars or 4 occupants in two-door cars and 250 lbs of luggage.

	For speeds up to 180 kph (110 mph)		For speeds in excess of 180 kph (110 mph)	
	FRONT	REAR	FRONT	REAR
Four-door saloon Long Wheelbase without division Corniche Saloon Corniche Convertible	1,69 Kg/sq cm (24 psi)	1,97 Kg/sq cm (28 psi)	2,11 Kg/sq cm (30 psi)	2,39 Kg/sq cm (34 psi)
Long Wheelbase with division for all territories other than North America and Australia	1,69 Kg/sq cm (24 psi)	2,11 Kg/sq cm (30 psi)	2,11 Kg/sq cm (30 psi)	2,53 Kg/sq cm (36 psi)

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NORTH AMERICA AND AUSTRALIA ONLY

COLD TYRE PRESSURES FOR CARS FITTED WITH HR70 HR15 TYRES

For all loading conditions up to 5 occupants in four-door cars or 4 occupants in two-door cars and 250 lbs of luggage.

	For speeds up to 180 kph (110 mph)		For speeds in excess of 180 kph (110 mph)	
	FRONT	REAR	FRONT	REAR
Four door saloon Long Wheelbase without division	1,69 Kg/sq cm (24 psi)	1,97 Kg/sq cm (28 psi)	1,97 Kg/sq cm (28 psi)	2,25 Kg/sq cm (32 psi)
Long Wheelbase with division for North America and Australia	1,83 Kg/sq cm (26 psi)	2,25 Kg/sq cm (32 psi)	2,11 Kg/sq cm (30 psi)	2,53 Kg/sq cm (36 psi)
Corniche Saloon Corniche Convertible	1,69 Kg/sq cm (24 psi)	1,97 Kg/sq cm (28 psi)	2,11 Kg/sq cm (30 psi)	2,39 Kg/sq cm (34 psi)

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CATEGORY C

HR70 HR15 RADIAL PLY TYRES
LONG WHEELBASE CARS

APPLICABLE TO:

Rolls-Royce Silver Shadow Long Wheelbase cars, produced
after car serial number:

LRH 19640 - Cars with Division
LRH 19577 - Cars without Division

DESCRIPTION:

All Long Wheelbase cars produced after the above car serial
numbers are fitted with HR70 HR15 Radial Ply Tyres.

For all information regarding tyre pressures, wheels and
tyre side-wall markings, Service Bulletins SY/R24 and
SY/R28 should be consulted.

Eck

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CATEGORY C:SNOW CHAINS AND SNOW TYRES FOR CARS
FITTED WITH HR70 HR15 RADIAL PLY TYRESAPPLICABLE TO:

All Silver Shadow, T Series, Corniche and Camargue motor cars from the following car serial numbers:

Silver Shadow Saloon	SRC 18269
T Series Saloon	SBH 18225
Corniche Saloon	CRH 18564
Corniche Convertible	DRH 18563
Long Wheelbase Saloon	LRH 19577
Long Wheelbase Division	LRH 19640
Camargue	JRH 14674

DESCRIPTION:Snow tyres - all cars

Dunlop Weathermaster 205-15 radial ply SP44 tyres are recommended for use on the rear wheels (with HR70 HR15 left on front) or, to all four wheels.

A speed limit of 136,8 k.p.h. (85 m.p.h.) must not be exceeded.

Snow chains - all cars other than Camargue

Snow chains cannot be fitted to the rear HR70 HR15 tyres, but can be fitted to the front HR70 HR15 tyres and the 205-15 Weathermaster tyres when fitted to the rear wheels.

Snow chains can be fitted to wheels which have had the 205-15 Weathermaster tyre fitted.

The chains recommended are:

- a) Kantenspur 07-745 for HR70 HR15 tyres
 - b) Union S2 3082 for HR70 HR15 tyres when (a) are not available
 - c) Union S2 3081 for 205-15 Weathermaster tyre
- (a) and (b) to be used on front tyres only.

Snow chains - Camargue

The chains recommended are:

- a) Kantenspur 07-745 for HR70 HR15 tyres
- b) Union S2 3082 for HR70 HR15 tyres when (a) are not available
- c) Union S2 3081 for 205-15 Weathermaster tyre

Snow chains - general

A speed limit of 50 k.p.h. (31 m.p.h.) must not be exceeded on roads without snow when chains are fitted.

Tyre Pressures - set cold with or without chains

All cars other than Long Wheelbase Division cars

- a) 205-15 Weathermaster all wheels - 1,97 kg/sq cm (28 lb/sq in)
- b) HR70 HR15 to front wheels - 1,69 kg/Sq cm (24 lb/sq in)
205-15 Weathermaster to rear wheel - 2,25 kg/sq cm (32 lb/sq in)
- c) HR70 HR15 to all wheels - As Service Bulletin SY/R24

Long Wheelbase Division cars

- a) 205-15 Weathermaster all wheels - 1,97 kg/sq cm (28 lb/sq in)
- b) HR70 HR15 to front wheels - 1,69 kg/sq cm (24 lb/sq in)
205-15 Weathermaster to rear wheels - 2,25 kg/sq cm (32 lb/sq in)

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CATEGORY CTYRE SIDEWALL MARKINGSAPPLICABLE TO:

All Silver Shadow, T Series, Corniche and Camargue cars produced after the following car serial numbers:

JRH 16648	CRH 18564
SRC 18269	DRH 18563
SBH 18225	LRH 19577

DESCRIPTION:

In the past the tyres recommended for use on the above cars have been identified by a sidewall marking of HR 70 HR 15.

The initial HR indicated that the tyre was of size H and was radial ply in construction.

To further clarify the size, certain manufacturers are also marking the sidewall with the metric dimension of 235 mm.

An approved tyre may therefore bear a complete sidewall marking of 235 70 HR15 - HR 70 HR 15.

Tyres which are slightly flawed, but are suitable for sale as an equivalent to a remoulded tyre, will bear a sidewall marking of 'Regraded Quality', 'Remould Quality' or 'Seconds'. In addition the speed rating of the tyre (the H in HR 15) will be obliterated.

Under no circumstances should any tyres which have had the speed rating removed be used on the above cars.

For details of approved tyres suitable for fitting to any Silver Shadow, T Series, Corniche or Camargue cars, Service Bulletin SY/R24 should be consulted.

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CATEGORY C

JACKING PROCEDURE

APPLICABLE TO:

All Rolls-Royce Camargue cars.

DESCRIPTION:

Changing a wheel involving removal of the spare wheel on the above cars, will be greatly eased if the following points are noted.

FRONT WHEEL CHANGE

Access to the spare wheel is unrestricted when the front of the car is not raised on the jack. The spare wheel should therefore be removed prior to jacking the front of the car and the punctured wheel placed in the carrier when the jack has been removed.

REAR WHEEL CHANGE

The spare wheel can be removed with ease either before or after the rear of the car is raised on the jack.

CHAPTER S

BODY

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CATEGORY CPAINTWORK MAINTENANCEAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars.
All Bentley 'T' Series and Corniche cars

INTRODUCTION:

The object of this Service Bulletin is to acquaint Distributors and Retailers with

1. the changes which happen to the paintwork of a car under normal service conditions and
2. the maintenance which it should receive.

This Service Bulletin has been re-issued in order to update the information contained therein.

DESCRIPTION:

The paint which is used on all Rolls-Royce and Bentley cars is of the highest quality, but even so it is unable to withstand 'weathering' indefinitely without some care and attention.

Weathering, which occurs gradually, manifests itself in the form of a bloom or reduction of gloss and a tendency to show rain spot marks. This can be overcome and the paintwork restored by suitable maintenance polishing.

Before polishing the paintwork should be thoroughly washed with clean, cold water, preferably when the bodywork is cool. Paintwork should never be washed in bright sunlight. Apply the water liberally with a sponge to remove mud and dirt and dry the paintwork with a chamois leather. Mud and dirt must not be removed while dry. Automatic car washes should not be used since the detergents used may stain the paintwork and the washing action will cause scratching on the paintwork and the stainless steel and chrome plated parts.

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The acrylic modified cellulose or the full thermoplastic acrylic paints which are used on Rolls-Royce and Bentley cars readily respond to friction polishing. The period of time during which the polished paintwork will remain in good condition will vary according to the type of exposure to which it is subjected. Polishing the paintwork every three months should be sufficient for the average British climate. Under more severe conditions or in those areas which enjoy more sunshine, more frequent polishing may be necessary.

NOTE: Polishing should not be carried out in bright sunlight or when the bodywork is warm.

Do not polish the car in a dusty or gritty atmosphere.

Merely polishing with a wax polish is not sufficient since the excessive build-up of wax can induce its own type of rain spotting or discolouration. Instead, the paintwork should periodically be polished with a suitable friction emulsion cleaner polish such as Autobrite Liquid Pink Polish. A slight discolouration on the polishing cloth when carrying out this process should cause no concern. This is the weathered product of the paint and is no longer an essential part of the paint film. After polishing with a friction emulsion polish, a good quality siliconised wax polish, such as Autobrite Detergent - proof wax, should be applied to provide a waterproof lustre.

If regular maintenance polishing is not carried out in the manner described above the original gloss will become obscured and rain spotting may reach objectionable proportions. Therefore, paintwork should be polished as soon as the gloss begins to fade, not when the paintwork has become very dull.

JC1/GF

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CATEGORY C

STEERING COLUMN COWL TO DASHBOARD FAIRING

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley T Series motor cars from Car Serial Number SRH 11675 and onwards.

DESCRIPTION

On present production motor cars the method of retaining the fairing which fits between the steering column cowl and the dashboard veneer has been revised. The present method of attachment utilises a clip which is fitted to the steering column cowl and onto which the fairing is push fitted.

On cars from Car Serial Number 6000 to 11674 the fairing retaining clip was secured to the lower edge of the dashboard by 3 wood screws. This interfered with the assembly of the steering column cowl. Cowls on these earlier cars had part of their leading edge machined away to clear the bracket.

The revised attachment for the clip overcomes the need for the cowl to be modified in this way.

However, it has been found possible to fit a later type of cowl without machining to an earlier car which has the earlier bracket attachment, as follows:

Note Prior to the introduction of the new clipping arrangement a group of over 1000 cars were built in this way.

PROCEDURE

Replacement of a steering column cowl on an earlier car with a cowl of the latest type.

1. Remove the steering column cowl to dashboard fairing by pulling upwards.

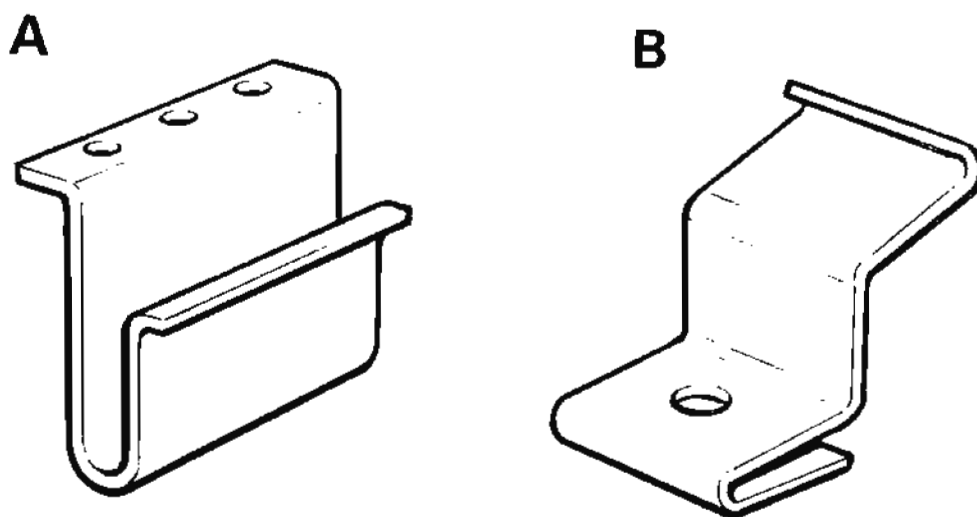
Note On cars fitted with unmachined cowls Operation 2 should be carried out after Operation 3.

2. Unscrew the four outer 'Phillips' headed retaining screws from beneath the cowl and carefully remove the upper half of the cowl. By unscrewing the two remaining screws the lower half of the cowl will fall clear.

Continued...

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M 641

Fig. 1 New and displaced fairing clips
A. Displaced clip
B. New clip

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3. Unscrew and remove the three 'Phillips' headed wood screws retaining the clip to the underside of the dashboard and remove the clip.
4. It is now possible to fit the new unmachined steering column fairing by reversing the procedure given in Operation 2. Care must be taken not to overtighten the screws or damage to the cowl will result.
5. The fairing clip should now be located on the dashboard and the woodscrews fitted. This is achieved by feeding the fixing screws into their holes on the end of a screwdriver. To facilitate this, the screws may be attached to the screwdriver using a non-hardening adhesive such as 'Seelastic'. Care must be taken to apply the adhesive very sparingly so that it does not find its way onto the threads or underside of the head of the screw or in any other undesirable place. Only the two outer screws need to be fitted.
6. The fairing can now be replaced on the clip and adjusted to suit the attitude of the steering column cowl.

MATERIAL REQUIRED

<u>Description</u>	<u>Part No.</u>
Steering column cowl - unmachined	UR 13612

TIME ALLOWED

1.00 hours

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CATEGORY C

FULL THERMO-PLASTIC ACRYLIC PAINTS

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley 'T' Series motor cars.

All Corniche motor cars domiciled in the UK.

DESCRIPTION:

Since the issue of Service Bulletin SY/S19 addendum 2 on the 16 February 1973, there have been three further additions to the range of full thermo-plastic (FTA) paints and their thinners.

These further additions are:

OXFORD BLUE - L67BVO07 (9510392)

BREWSTER GREEN - L67GVO09 (9510393)

GARNET - L67RVO06 (9510394)

The following paints have been deleted:

GARNET - MO82-4201 (9500606)

LARCH GREEN - M151-3502 (9510139)

BREWSTER GREEN - MO62-4299 (950056)

The viscosity time figures for the three new FTA paints are given in the following table together with the fully updated table of all FTA paints available

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TABLE 1

PAINT MATERIAL	THINNERS	AIR DRYING	REF NO	FORCE DRYING
NUGGET GOLD (9510196)	9503953	28 secs	L18CV005	30 secs
CARDINAL RED (9510235)	9503953	37 secs	L18CV005	30 secs
OXFORD BLUE (9510392)	9503953	31 to 34 secs	L18CV005	31 to 34 secs
BREWSTER GREEN (9510393)	9503953	31 to 34 secs	L18CV005	31 to 34 secs
GARNET (9510394)	9503953	31 to 34 secs	L18CV005	31 to 34 secs
ACRYLIC WHITE (9510235)	9503953	31 secs	L18CV005	30 secs
REPAIR PRIMER (9503919)	9503953	37 secs	L18CV005	30 secs
SUPER SURFACER (9502918)	9503953	As required	L18CV005	As required
REPAIR PUTTY (9507108)	Not applicable			Not applicable

For air drying where a drying booth is not available the vehicle should be left for a minimum time of 48 hours.

All the above viscosity time figures are given for use with a B3 viscosity cup.

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NOTE:

In the event that any paint rectification work is sub-contracted, the information contained in this Service Bulletin must be brought to the attention of the operators concerned. Prior to any paintwork rectification the underbonnet label should be consulted for the correct paint numbers.

It should be noted that when employing force drying techniques a "flash off" or delay period of at least fifteen minutes should be allowed after spraying and before the car is placed in the drying booth. Failure to allow this delay may result in a condition where the solvent erupts through the paint film causing pin holes or craters.

ECK/MH

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CATEGORY C

THE FRONT SEAT BELTS

APPLICABLE TO

All Rolls-Royce Silver Shadow and Corniche cars, and all Bentley T Series and Corniche cars from Car Serial Numbers:

Four-door saloon	SRX 11882 and onwards
Long Wheelbase cars	LRH 11867 and onwards
Corniche cars	CRH 11878 and onwards, but including CBX 11837

DESCRIPTION

All the above cars are fitted with a device which draws the front seat occupants attention to the need to fasten their seat belts before the car moves off.

The front passenger seat cushion incorporates a sensor switch which completes an electrical circuit whenever the front passenger's seat is occupied. Fastening the seat belt has the effect of breaking the circuit.

The switch is connected into a circuit which includes a warning lamp on the centre console and a warning 'buzzer'. The circuit is such that if either front seat is occupied, unless the occupant fastens the seat belt, when the gear lever is moved to any of the drive positions the warning lamp will illuminate and the buzzer will sound. A theoretical wiring diagram is shown in Figure 1.

The warning 'buzzer' is fitted behind the facia board above the steering column and fulfils the dual role of ignition key warning and seat belt warning.

The sensor switch is held in a fabric envelope which is sewn to the interior frame of the seat. Access to the switch can be gained, if necessary, by carefully lifting one side of the Jute sheet which is sewn to the base of the seat cushion.

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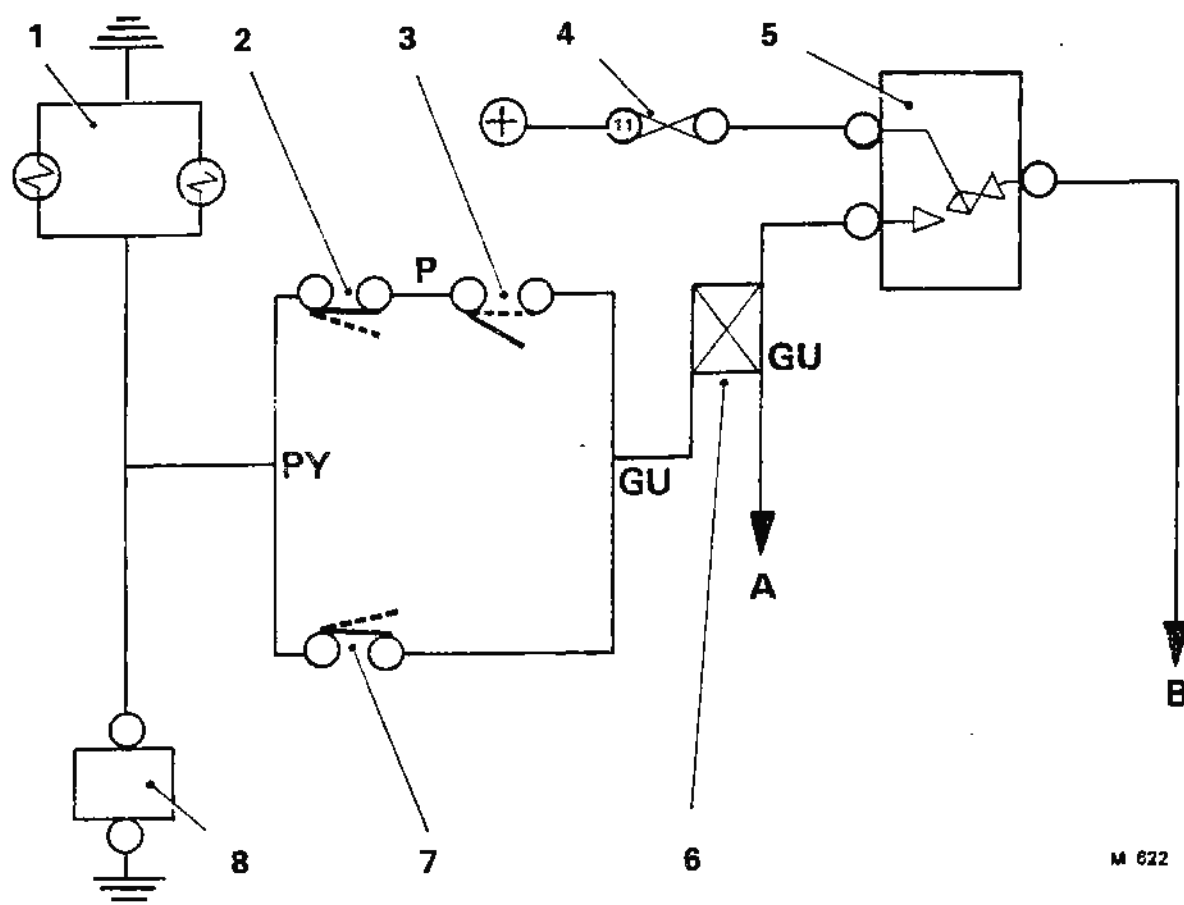


Fig.1 Theoretical wiring diagram

- 1 Console seat belt warning lamp
- 2 Passenger's seat belt switch
- 3 Passenger's seat switch
- 4 Fuse Number 11
- 5 Height control micro-switch in Park or Neutral position
- 6 Snap connector
- 7 Driver's seat belt switch
- 8 Key warning buzzer
- A To Automatic Speed Control (if fitted)
- B To height control relay

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CATEGORY CEVERFLEX ROOF PROTECTIONAPPLICABLE TO:

All Rolls-Royce and Bentley Motor Cars fitted with a Vinyl (or Everflex) roof.

DESCRIPTION:

A special preparation known as "Vinyl Top Dressing" has been applied to the roof of all Rolls-Royce Silver Shadow and Bentley 'T' Series cars fitted with a Vinyl (or Everflex) roof from car serial number LRC 16877.

The purpose of this preparation is to improve the appearance of the roof and make it easier to clean. "Vinyl Top Dressing" can also be used in service on any car fitted with a vinyl roof.

Before it is applied the roof of the car must be thoroughly cleaned. It is suggested that this can be best done using an upholstery cleaner such as "Decosol". However, care must be taken to ensure that the cleaner does not come into contact with the paintwork of the car.

Once the roof is cleaned, the "Vinyl Top Dressing" should be applied in accordance with the manufacturer's instructions as marked on the container. The roof will then be provided with a protective coating which should last for 18 months to 2 years before renewal is necessary.

MATERIAL PEQUIRED

Supplies of "Vinyl Top Dressing" can be obtained from Rolls-Royce Motors Parts Department in US Quart capacity containers, a quart being sufficient to cover a number of roofs.

Part Number - UB 32059

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CATEGORY C

REPLACEMENT FRONT WINGS

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley T Series motor cars fitted with energy absorbing bumpers.

DESCRIPTION:

In the unlikely event of a correct replacement wing panel for the above cars not being available, arrangements have been made to supply a front wing panel with an integral apron.

This type of wing panel can be utilised if the following procedure is carried out.

PROCEDURE:

1. The standard type wing fairing should be removed leaving a 1,90 cm (0.75 in) (maximum) neat flange.
2. A horizontal line should be marked 3,106 cm (1.187 in) ABOVE the original fairing.
3. Obtain an energy absorbing type bumper wing apron. This apron has five holes. The apron should be offered-up to the wing so that four inner holes of the apron should lie centrally on the line marked on Operation 2. Mark the location of the holes on the line, then drill each hole to between 3,05 and 3,11 mm (0.120 in and 0.123 in) diameter.
4. When apron has been painted, a strip seal (Rolls-Royce Motors Part Number UB 31709) should be bonded to the underside of the forward edge, and the apron then secured to the wing with stainless steel screws (Rolls-Royce Motors Part Number UA 7912/SS) and cadmium plated washers (Rolls-Royce Motors Part Number X4404/Z).

NOTE The two mating surfaces and screw threads should be coated with Tensulac 20 (Rolls-Royce Motors Part Number UB 30876) prior to assembly.

ECK/MB

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CATEGORY C

CLEANING LAMBSWOOL RUGS

APPLICABLE TO:

All Rolls-Royce and Bentley motor cars fitted with lambswool rugs as standard.

DESCRIPTION:

Requests have been received for information on cleaning the above rugs. The procedure is as follows:

- 1 Remove rugs from car and remove all loose dirt.
- 2 Other dirt, such as caked mud, should be removed with a solution of warm water and light domestic pure soap flakes applied with a sponge. Do not over wet the rugs.
- 3 Dry the rugs prior to placing back in the car.
- 4 If the rugs have oil or grease marks they should be returned to the following company who operate a full cleaning service.

Martin Rice Limited
61 Grange Road
London
SE1 38H

Eck/MB

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CATEGORY C

REMOVING AND FITTING AN INERTIA REEL SEAT BELT

APPLICABLE TO:

All Rolls-Royce Silver Shadow Long Wheelbase cars with Division.

DESCRIPTION:

This Service Bulletin provides the necessary instructions to fit or to replace inertia reel seat belts.

Seat belts of any type should be regularly inspected for signs of damage, and the locking action checked. The Owner should be advised immediately if the belts are not in good working order.

In the event of a car being involved in an accident, any seat belts which were in use at the time of the accident must be renewed.

Seat Belt - To remove

- 1 Disconnect the battery.
- 2 Remove the appropriate front seat.
- 3 Remove the rear compartment carpets with the exception of the tunnel carpet.
- 4 Remove the four Philips headed screws and cup washers securing the division side trim to division frame (see Fig. 1); remove the trim.
- 5 Remove the three screws securing the BC post lower trim panel (located adjacent to the foot rest in the rear compartment); remove the trim panel. (See Fig. 2).
- 6 Remove the seat belt webbing anchorage point setscrews. Remove the short length of seat belt or stalk from the tunnel.
- 7 Peel back the black tape covering the wiring loom protector running from the BC post to the D post (see Fig. 2).

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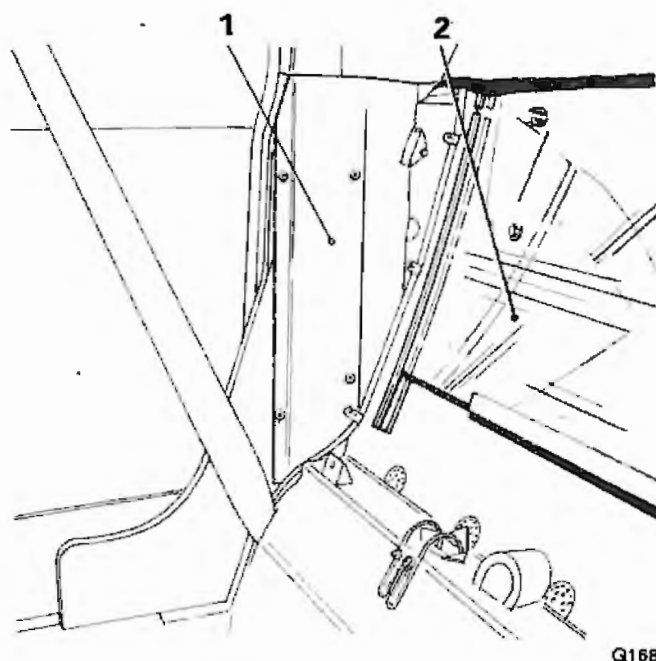
- 8 Carefully protect the looms at the base of the division at the BC post and remove sufficient division side panel wood to gain access to the forward outboard sill plate mounting setscrew.
- 9 Remove the ten sill plate mounting setscrews.
- 10 Tie a piece of cord to the seat belt tongue and remove the seat belt webbing through the aperture in the division. When the tongue and seat belt webbing are through into the rear compartment untie the string and leave in place.
- 11 Remove the seat belt mechanism and reel from within the sill. Remove the sill plate from the webbing.

Seat Belt - To fit

- 1 Insert and secure the seat belt mechanism into the sill.
- 2 Attach the sill plate to the belt then fit to the sill securing with the ten setscrews to between 2,2 kg.m. and 2,5 kg.m. (16 lb. ft. and 18 lb. ft.) torque.
- 3 Tie the cord to the seat belt tongue and carefully pull the tongue and webbing through the division. Remove the cord.
- 4 Ensure the webbing is free from twists, then fit and secure the seat belt anchorage setscrews to between 2,9 kg.m. and 3,2 kg.m. (21 lb. ft. and 23 lb. ft.) torque.
- 5 Fit the short length of seat belt to the tunnel and torque tighten the setscrew to the figures given in Operation 4.
- 6 Carefully position the looms and fit the protector and black tape.
- 7 Check the operation of the seat belt, (refer to Workshop Manual TSD 2476 - page S105 - items 1-5), together with seat belt retraction.
- 8 Connect the battery and check the electrical operation of the division components. Disconnect the battery.
- 9 Fit the trim panels and seat.
- 10 Connect the battery.

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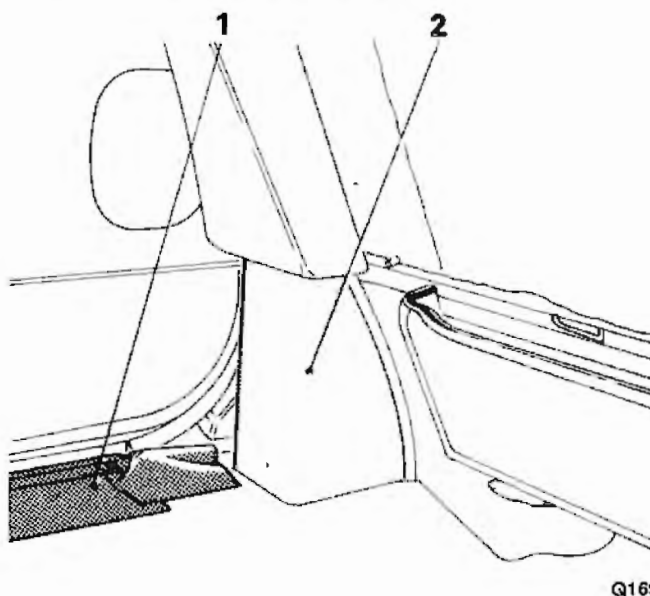
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Figure 1 - Division side trim panel removal

1. Side panel to be removed.
2. Division glass.



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Figure 2 - B.C. post lower trim panel

1. Tape to be peeled back.
2. B.C. post lower trim panel.

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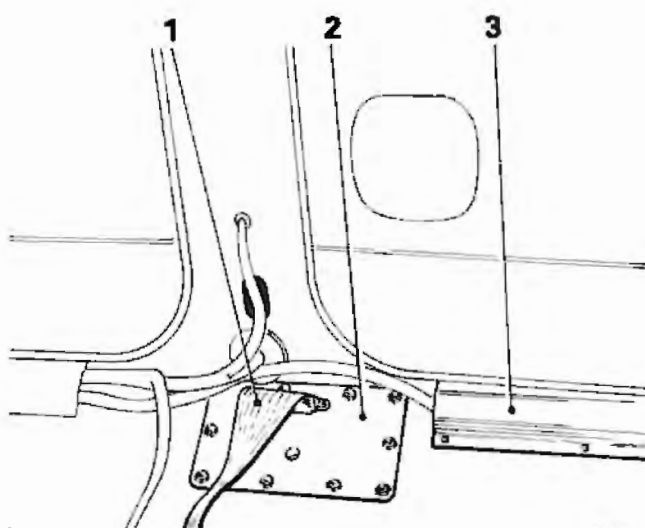


Figure 3 - Sill plate and loom protector

Note: The above illustration shows the division removed for clarity purposes only

1. Seat belt webbing.
2. Sill plate.
3. Loom protector.

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CATEGORY C

BODY PANEL WELDING

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche and all Bentley T Series and Corniche motor cars.

DESCRIPTION

The door, luggage compartment and bonnet panels of the above cars are constructed of either Burma-Bright or AUG2 aluminium alloy.

During the course of accident repair work in service it is often necessary to perform welding operations on these panels. This Service Bulletin contains recommendations concerning welding using Oxy-acetylene or Argon Arc equipment.

GENERAL RECOMMENDATIONS

- 1 Clean the metal around the joint to be welded with a clean wire brush. If possible clean both sides of the panels.
- 2 Observe the usual precautions to localise heat damage to the panel, and ensure that fire risks are minimised.

OXY-ACETYLENE EQUIPMENT

A number 3 tip should be used in conjunction with a number 3 Burma-Bright aluminium welding rod. BOC Aluminium Bronzing Flux (Saffire Flux) or a suitable alternative should be used. The flux should be mixed into a manageable paste with water, and then smeared onto the weld area using the welding rod.

The welding torch should be adjusted to give a 'soft' flame.

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NOTE:

It is vitally important that, on completion of welding, the panel is thoroughly washed with clean hot water to neutralize and remove all traces of flux. If this is not done and paint is subsequently applied onto flux, problems with the paint will occur.

ARGON ARC EQUIPMENT

With this method of welding, no flux is necessary and the correct rod is a number 3 Burma-Bright aluminium welding rod.

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CATEGORY CINTERIOR UPHOLSTERY CLEANINGAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche, and all Bentley 'T' series and Corniche motor cars.

DESCRIPTION:

This Service Bulletin is issued to explain the correct method of cleaning for the following interior trim materials:

PARKERTEX DRALON VELVET

PVC COATED 'AMBLA'

CLOTH

PARKERTEX DRALON VELVET

1. It is essential that the upholstery is first vacuum cleaned to remove any loose dust or foreign deposits.
2. A dry cleaning foam should then be mixed in accordance with the makers instructions.
3. Using a large pored synthetic sponge apply foam to the material, stroking in the direction of the pile. Particular attention must be paid to applying only foam so that no moisture penetrates to the back of the cover or to the interior of the trimmed parts.
4. Remove the foam with a clean lint free cloth or as instructed by the maker.
5. Dralon Velvet fabrics can be dry cleaned but the drying temperature must not exceed 50°C (112°F).
6. If liquid is dropped on Dralon Velvet it should be removed carefully with blotting paper, taking care not to rub the liquid into the backing of the cloth. Any remaining stain on the pile can then be removed as previously described.

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'AMBLA' PVC COATED MATERIAL

1. Most soiling on 'Ambla' can be removed with warm soapy water containing a mild non abrasive detergent applied with a soft cloth, or if soiling still persists, with a soft brush. DECOSOL can be used for particularly bad stains applied with a clean paint brush and left to stand for 5 minutes before wiping off with a damp cloth.
2. For particularly bad cases of soiling a 50/50 solution of methylated spirits and water is recommended. On no account must solvents such as thinners be used since this could break down the material surface.

CLOTH

1. The stain on the cloth must first be brushed vigorously to remove any loose particles of dirt.
2. A carpet shampoo should be used or a solution of a synthetic detergent.
3. The effected area should be wiped with a clean cloth and then left to dry off naturally.
4. DECOSOL is again recommended.

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CATEGORY CPAINTS AVAILABLE FOR CAMARGUEAPPLICABLE TO

All Rolls-Royce Camargue motor cars.

DESCRIPTION

This Service Bulletin is issued to inform you of the full range of paints available for the above motor cars.

NOTE

In the event of any paint rectification work being sub-contracted, the information contained in this Service Bulletin must be brought to the attention of the operators concerned.

MANUFACTURER	COLOUR	RRM CODE	MANUFACTURER CODE
ICI	Paprika	9510275	M151-4735
ICI	Sepia	9510276	M151-4510
J Mason	Crown	9510277	LB66/2c
J Mason	Laurel	9510278	LB66/2B
J Mason	Mistletoe	9510279	LB67/2
ICI	Cobalt	9510280	M151-4511
ICI	Larkspur	9510282	M151-3819
ICI	Richmond Blue	9510302	MO62-5270
ICI	Ascot Green	9510303	MO62-5269
ICI	Fenland Sedge	9510304	M150-7953
J Mason	Tudor Red	9510305	LB199/2

The above paints viscosity time figures are given in the following table which also includes their thinners.

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TABLE 1

PAINT MATERIAL	THINNERS PART NO	AIR DRYING
Paprika (9510275)	9503135	33 secs
Sepia (9510276)	9503135	33 secs
Crown (9510277)	9503954	33 secs
Laurel (9510278)	9503954	33 secs
Mistletoe (9510279)	9503954	33 secs
Cobalt (9510280)	9503135	33 secs
Larkspur (9510282)	9503135	33 secs
Richmond Blue (9510302)	9503135	35 secs
Ascot Green (9510303)	9503135	35 secs
Fenland Sedge (9510304)	9503135	35 secs
Tudor Red (9510305)	9503937	35 secs
Repair Primer (9502919)		34 secs
Super Surfacer (9502918) using B4 cup		45 secs

For force drying a minimum time of 30 mins at 83°C (180°F).

All the above viscosity time figures are given for use with a B3 viscosity cup unless otherwise stated.

For air drying where a drying booth is not available the vehicle should be left for a minimum period of 48 hrs.

NOTE

ICI Thinners 851-1141 RR Code 9503135 and Inmont Thinners L18CVO05 RR Code 950953 can be used as direct replacements for each other, and either of the two can replace the Joseph Masons Thinners LB308/9 RR Code 9503937 and LB84/2 RR Code 9503954 should the need arise.

It should be noted that when employing force drying techniques a 'flash off' or delay period of at least fifteen minutes should be allowed after spraying, before the car is placed in the drying booth.

Failure to allow this delay may result in a condition where the solvent erupts through the paint film causing pin holes or craters.

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CATEGORY C

THE REMOVAL OF INTERIOR AND EXTERIOR BODY FITTINGS

APPLICABLE TO:

All Rolls-Royce Camargue motor cars.

DESCRIPTION:

This Service Bulletin has been issued as an interim measure to provide you with service information pending the issue of the Camargue Workshop Manual.

INDEXSECTIONDOORS AND FITTINGS

1. Door Removal
2. Door Trim Removal
3. Door Hinges
4. Interior Handles
5. EWL Removal Electric Window Lift
6. Window Counter Balance Mechanism
7. Glass Removal
8. Window Frame Removal
9. Quarter Light Glass
10. Door Lock and Linkage
11. Centralised Door Locking Solenoid and Linkage
12. Exterior Door Handle
13. Private Lock
14. Door Seals
15. Waist Rail Seal
16. Window Outer Seal
17. Window Channel
18. Quarter Seals
19. Chrome Styling Strips Front Door
20. Chrome Styling Strips Rear Panel

FACIA AND TOP ROLL

21. Drivers Section of Facia Removal
22. Centre Section of Facia Removal
23. End Section of Facia Removal
24. Facia Stowage Compartment Removal
25. Facia Top Roll Removal
26. Knee Roll Removal
27. Demister Grille Panel Removal
28. Knee Trim Panels Removal

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SECTION 1 - DOOR TO REMOVEPROCEDURE:

- 1 Disconnect the battery.
- 2 Remove the four screws securing the trim panel to the side scuttle wall below the facia and carefully detach the loose trim of the panel from the footwell and remove the panel from the scuttle wall.
- 3 Disconnect the door loom plugs and sockets and also remove the 2BA setscrew securing the earth cable of the door loom to the body.
- 4 Remove the four Pozidrive screws securing the door loom guide channel to the door hinge pillar ('A' post).
- 5 Support the door then remove the four 1/2 in. A/F setscrews securing each door hinge to the car body, (the four setscrews securing the upper hinge are plainly visible when the door is opened, the four setscrews securing the lower hinges, however, are located through an aperture in the side scuttle wall inside the car and a suitable box spanner or socket will be required in order to reach them).
- 6 Disconnect the wiring loom from the plugs so as to enable each individual wire to be threaded through the aperture in the door pillar ('A' post). When removing the wires from the loom plug, the colours and position of the wires should be noted.

DOOR TO FITPROCEDURE:

To fit the door reverse the procedure given in SECTION 1 noting the following points.

- 1 The position of the door in the body aperture should be moved on its hinges whilst the hinge securing screws are slightly more than finger tight. When positioning the door, the body waist lines must also be taken in account to ensure that they align satisfactorily with each other.

If the door is only partly assembled when carrying out this operation the remaining parts that comprise the door assembly should be weighed and the corresponding weight added to the bottom of the door. This allows for the possibility of the door dropping slightly when parts are added after the door position has been set.

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- 2 Adjust the door striker plate so that the door is not raised by the striker plate when closed, and the rear edge of the door is level with the car body. (When positioning the striker plate it is necessary to 'feel' that the serrations on the striker plate shim(s) if fitted and the door posts are properly engaged with each other). If difficulty is encountered in obtaining the precise setting due to the pitch of the serrations, adjust the striker plate so that the door does not drop by more than 1,59mm (0.062in.) when closed and the rear edge of the door protrudes the minimum amount.
- 3 Check the action of the door catches and adjust if necessary.
- 4 Check the position of the window frame and adjust if necessary.

SECTION 2 - DOOR TRIM TO REMOVE

PROCEDURE:

- 1 Disconnect the battery.
- 2 Remove the small plush-trimmed panel from each side of the document/magazine pocket on the door, these panels are secured by spring clips.
- 3 Remove the screws securing the document/magazine pocket panel to the door, remove the panel from the door bowing it inward slightly during removal to enable the sides of the panel to separate from the retaining channels on the door.
- 4 Remove the two screws securing the step lamp to the door pull/armrest; remove the lamp lens and chromed surround, detach the electrical leads from the lamp and remove the lamp. Note the position and colour of the leads to ensure correct assembly.
- 5 Detach the plastic waterproof curtain from the door inner panel sufficiently to gain access to the apertures in the inner panel.
- 6 Remove the 2BA nuts, bolts and washers securing the rear handle mounting bracket to the door.

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- 7 Using a 7/16in. A/F spanner, remove the four nuts and washers securing the armrest/door pull to the door, access to these can be gained through the adjacent aperture in the door inner panel.
- 8 Draw the armrest/pull away from the door sufficiently to gain access to the link connecting the interior handle mechanism to the door lock mechanism. Slacken the 2BA locknut on the link rod clamping bolt disconnect the link and remove the armrest/door pull. (Retain any spacing washers fitted between the armrest and door panel with it's own fixing stud to ensure correct assembly.)
- 9 Remove the escutcheon covers from the window lift switch(es) and the centralised door locking switch (there are two window lift switches on a driver's door, one on a passenger's door.)
- 10 Remove the escutcheon from each switch by unscrewing the two screws securing each escutcheon and removing the escutcheon.
- 11 Free the door upper trim panel from its location behind the lower edge of the door sill wood finisher, then remove the trim panel from the door, bow the panel inward slightly during removal to free the sides of the panel from the retaining channels on the door.
- 12 To remove the door waist rail finisher remove the two screws from the rear edge of the finisher assembly and the screw from the front edge. Support the finisher and using a 7/16in. A/F spanner remove the nut and washer securing the finisher to the door panel.
- 13 Remove the sill finisher assembly complete with, in the case of a driver's door, the built-in ashtray. Take care to avoid damage to the wood finisher and the controls on the door when removing the waist rail finisher assembly.

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DOOR TRIM TO FITPROCEDURE:

Reverse the procedure given in SECTION 2 noting the following:

- 1 After fitting the waist rail finisher assembly, ensure that the adjustable door mirror (if fitted) can be operated satisfactorily by the control lever in the car.
- 2 Before fitting the lower trim panels, ensure that any particles of metal, fragments of glass, loose nuts etc are removed from the bottom of the door, otherwise they are likely to rattle when the car is mobile and cause annoyance to occupants.
- 3 Finally check that the switches on the door are performing their various functions correctly.

SECTION 3 - DOOR HINGES TO REMOVEPROCEDURE:

- 1 Remove the door as described in SECTION 1.
- 2 Remove the door trim as described in SECTION 2.
- 3 Locate the four $\frac{1}{4}$ " A/F setscrews securing each door hinge to the door (these can be seen by looking through the box section in the door).

DOOR HINGES TO FITPROCEDURE:

Fit the door hinges by reversing the procedures described in SECTION 3.

SECTION 4 - INTERIOR DOOR HANDLES TO REMOVEPROCEDURE:

- 1 Disconnect the battery leads.
- 2 Remove the armrest from the door, refer to SECTION 2 item 7.

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To remove the handles from the armrests proceed as follows:

- 3 Remove the 7/16in. A/F setscrew securing the mounting bracket to the rear handle; remove the bracket and collect the distance piece.
- 4 Disconnect the handle connecting link from the front handle by pulling the angled end of the link out of the handle.
- 5 Remove the two 2BA nuts washers and 'U' shaped clamps securing the rear handle to the armrest; remove the handle, complete with the connecting link from the armrest.
- 6 To detach the connecting link from the rear handle first remove the circlip retaining the swivel pin to the handle and withdraw the swivel pin from the handle noting the waved washer fitted between the connecting rod and the collar of the link pin.
- 7 Remove the 1/4" UNF stud from the front door handle then remove the two 2BA nuts washers and the 'U' shaped clamps securing the handle to the armrest. Remove the front handle.

INTERIOR DOOR HANDLE TO FIT

PROCEDURE:

- 1 Prior to fitting ensure that both handles will pivot freely in their surrounds.
- 2 Fit the connecting link to the rear handle with the swivel pin and secure with the circlip. Ensure that the waved washer is fitted between the link and the swivel pin collar.
- 3 Remove the 1/4" UNF stud from the front handle then fit both handles to the armrest. Secure the handles in position with the clamps and the 2BA nuts and washers.

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- 4 Refit the $\frac{1}{4}$ " UNF stud to the front handle.
- 5 Check the handles for backlash and remove any backlash by adjusting the length of the connecting rod. To adjust the length of the link, slacken the 2BA lock-nut at the front end of the Link and screw the threaded rod in or out of the link as required, when the length of the link is adjusted satisfactorily, tighten the locknut.
- 6 Fit the bracket and distance piece to the rear handle with the setscrew and washer.
- 7 Locate the distance piece on the front stud of the armrest/door pull assembly and fit the assembly to the door. Ensure that any spacing washers are fitted to the other three studs but do not tighten the armrest/door pull securing nuts at this stage.
- 8 Slide the link rod from the door lock lever into the clamping bolt and sleeve on the swivel pin, torque tighten the clamping bolt locknut to between 714 gms. cm. and 893 gms. cm. (4lb. in. and 5lb. in.).
- 9 Hold the armrest/door pull assembly firmly in position and check the release operation of both handles.
- 10 Tighten the four nuts securing the armrest/door pull to the door and secure the rear mounting bracket with the two 2BA nut bolts and washers.
- 11 Fit the lower door panels by reversing the procedure given in SECTION 2.

SECTION 5 - ELECTRIC WINDOW LIFT MECHANISM TO REMOVE

PROCEDURE:

- 1 Disconnect the battery leads.
- 2 Remove the door trim panels and waist rail finisher assembly; refer to SECTION 2.
- 3 Remove the two 7/16 in. A/F bolts, nuts and washers securing the chain channel upper bracket to the door; collect any distance pieces and note their position to assist alignment of the window mechanism should the same lifts and glasses be refitted.

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- 4 Disconnect the electrical leads to the window lift motor at the Lucar connections; note the colour code of the leads to ensure correct assembly.
- 5 Support the window glass and remove the two 7/16in. A/F bolts, nuts and washers which secure the arm and backplate assembly to the window pick-up plate. Detach the arm of the backplate from the roller of the chain channel slides bracket then remove the arm and backplate assembly.

NOTE:

Whilst carrying out this operation the window glass should be supported then upon detachment from the lift mechanism moved to the fully closed position. The glass should then be secured in this position with masking tape. If the same window lift mechanism being removed is to be replaced, scribe correction marks on the pick-up plate and backplate prior to slackening the securing bolts to assist alignment.

- 6 Remove the two rubber grommets from the holes in the bottom face of the door.
- 7 Using a suitable 7/16in. A/F box or socket spanner remove the two setscrews securing the window lift mechanism to the two rubber mounts in the base of the door.
- 8 Remove the electrically operated window lift mechanism by manoeuvring it through the large aperture in the door inner panel.

ELECTRIC WINDOW LIFT MECHANISM TO FIT

PROCEDURE:

To fit the Electric Window Lift mechanism reverse the procedure given in SECTION 5 noting the following points:

- 1 Lubricate the mounting bolts with Retinax 'A' grease or its equivalent during assembly, ensure that none of the lubricant encroaches on the glass or channel seats.
- 2 Check the condition of the two rubber mounts and change if necessary.

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- 3 The two setscrews securing the lift mechanism to the base of the door should not be tightened until the two bolts at the upper mounting points and any distance washers have been fitted.
- 4 Energise the Electric Window Lift mechanism to ensure the glass moves smoothly up and down in its channel, and also that the lift mechanism is operating satisfactorily.
- 5 Adjust the window by means of the elongated holes of the pick-up plate so that when it reaches its maximum upward travel the top edge of the glass is evenly located against the top face of the upper seal channel.

SECTION 6 - WINDOW COUNTERBALANCE MECHANISM TO REMOVE

PROCEDURE:

- 1 Ensure that the window is fully raised before disconnecting the battery leads.
- 2 Remove the door trim panels and waist rail finisher as given in SECTION 2.
- 3 Detach the two counterbalance extension springs from the hooks on the window pick-up plate extension beam.
- 4 Remove the two 2BA nuts and washers securing the counterbalance reel mounting bracket assembly to the door garnish rail; remove the assembly from the door.
- 5 To remove the reels from the mounting bracket, first remove the circlip on the end of each reel spindle then slide the reel off the spindle.

WINDOW COUNTERBALANCE MECHANISM TO REFIT

PROCEDURE:

To fit the above reverse the procedure given in SECTION 6 noting the following point.

- 1 Before fitting the reels to the mounting bracket apply Retinax 'A' grease or its equivalent to the reel spindles.

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SECTION 7 - ELECTRICALLY OPERATED WINDOW GLASS TO REMOVEPROCEDURE:

- 1 Remove the Electric Window Lift assembly as described in SECTION 5.
- 2 Ensure that the glass is fully raised before removing the counterbalance weights as described in SECTION 6.
- 3 Using a soft pencil or felt tipped marker scribe correlation marks around the washers which fit under the leads of the two setscrews securing the window guide roller carrier plate to the extension bracket on the window pick-up plate; these marks are to assist alignment during assembly. Remove the two $\frac{1}{2}$ in. A/F setscrews then remove the carrier plate and rollers by sliding the rollers out of their channel.
- 4 Remove the 2BA screws securing the garnish rail closing panel to the door inner panel then withdraw the closing panel sufficiently to enable the lock link rod to be pulled out of the nylon bush in the manual locking switch lever; remove the closing panel.
- 5 Slide the glass down through the frame until it is free of the channel.
- 6 Remove the glass from the door by lifting it up through the space between the window frame and the door inner panel.

ELECTRICALLY OPERATED WINDOW GLASS TO FITPROCEDURE:

To fit the above reverse the procedure given in SECTION 7 noting the following:

- 1 Ensure that the window seals and channel seals are in good condition and free of foreign deposits, fit new seals if necessary.
- 2 Cars are fitted with either plain or tinted (Sundym) glass; therefore before fitting a new window glass compare the replacement glass with the glass already fitted to the car to establish correct type.

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SECTION 8 - WINDOW FRAME TO REMOVEPROCEDURE:

- 1 Disconnect the battery leads.
- 2 Remove the door trim panels and waist rail finishers as described in SECTION 2.
- 3 Remove the window glass as described in SECTION 7.
- 4 Remove the door to body seal as described in SECTION 14.
- 5 Remove the two setscrews securing the lower closing plate of the fixed quarter lights to the door.
- 6 If the sill cross rail and window glass outer seal carrier is part of the window frame remove the two screws securing the frame cross rail/seal carrier to the door. (On early cars the sill cross rail/seal carrier was not attached to the window frame and therefore it is not necessary to remove the two retaining screws when removing the window frame on these cars).
- 7 Carefully lift the window frame out of the door.

WINDOW FRAME TO FITPROCEDURE:

To fit the above reverse the procedure given in SECTION 8 noting the following points:

- 1 Before fitting the window frame to the door check the position of the door in the body aperture.
- 2 Check the condition of the glass seals in the cross rail and the window channel.
- 3 Ensure that before fitting the door that the fixed quarter panel is fitted correctly in the window frame.

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- 4 If the original window frame is being fitted ensure that any spacing washers are in position and that the correlation marks are aligned before tightening the frame securing bolts.

SECTION 9 - FIXED QUARTER WINDOW GLASS TO REMOVE

PROCEDURE:

- 1 Disconnect the battery leads.
- 2 Remove the window frame from the door as described in SECTION 8.
- 3 Remove the quarter glass from the frame by gripping the glass between the palms of the hand and pulling downwards until the glass is free of its sealing rubbers, take care to avoid damage to the glass and frame.

FIXED QUARTER WINDOW GLASS TO FIT

PROCEDURE:

To fit the above reverse the procedure given in SECTION 9 noting the following:

- 1 Check the condition of the seal in the outer waist moulding before fitting the glass into position.

SECTION 10 - DOOR LOCK AND LINKAGE TO REMOVE

PROCEDURE:

- 1 Disconnect the battery leads.
- 2 Remove the door trim panels and waist rail finisher as described in SECTION 2.
- 3 Disconnect the link rods from the door lock balance lever to the lower cross-shaft lever by pulling the lower end of the rod and the swivel link pin at the other end of the rod, out of the nylon bushes.
- 5 Remove the return spring from the lock balance lever and remove the connecting link.

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- 6 Disconnect the upper cross-shaft lever from the angled lever by removing the 2BA nut and washer.
- 7 Remove the lever from the shaft by removing the pinch bolt securing the lever to the upper cross-shaft.
- 8 Remove the two 7/16in. A/F setscrews securing the cross-shaft bracket to the lock.
- 9 Remove the split pin which secures the roller to the lock bolt.
- 10 Remove the lock from the door after undoing the three countersunk headed screws which secure the lock to the door.

SECTION 11 - CENTRALISED DOOR LOCKING SOLENOID AND LINKAGE TO REMOVE

PROCEDURE:

- 1 Disconnect the battery.
- 2 Remove the door trim panels and armrest, refer to SECTION 2.
- 3 Disconnect the Lucar connections of the solenoid noting the colour code of the leads to assist when reassembling.
- 4 Disconnect the solenoid spring link from the pivot lever by pulling the link out of the nylon bush.
- 5 Remove the solenoid complete with mounting bracket after first removing the four 7/16in. A/F setscrews and washers.
- 6 Remove the relay bracket and pivot lever assembly by removing the control rod, which connects the pivot lever to the lock by pulling the ends of the rods out of the nylon bushes and then removing the two 7/16in. A/F setscrews. (The relay bracket is detached from the pivot lever by removing the lever spindle out of the nylon bush).

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- 7 Remove the waist rail finisher assembly to enable the removal of the manual locking lever from the door.
- 8 Remove the window lift chain channel from the door after removing the 7/16in. A/F nuts, bolts and washers.
- 9 Disconnect the manual lock control rod from the lock by pulling the swivel block out of the nylon bush.
- 10 Remove the closing panel complete with the manual control lever by removing the ten 2BA screws.
- 11 To remove the control lever from the panel, extract the control rod from the nylon bush, and remove the two Pozidrive screws securing the lever to the panel.

CENTRALISED DOOR LOCKING SOLENOID AND LINKAGE TO FIT

PROCEDURE:

To fit the above reverse the procedure given in SECTION 11 noting the following points:

- 1 Lubricate the lock control lever pivots with Molytone 265 grease or its equivalent during assembly.
- 2 Set the solenoid spring link to 11,684cm. (4.600in.) before fitting the solenoid to the door.

SECTION 12 - EXTERIOR DOOR HANDLE TO REMOVE

PROCEDURE:

- 1 Disconnect the battery leads.
- 2 Remove the door trim panels and waist rail finisher refer to SECTION 2 for procedure.
- 3 Remove the two bolts and their washers which secure the window lift channel to the top of the door.
- 4 Detach the closing plate from the door by removing the ten 2BA screws.

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- 5 Disconnect the control link from the private lock by removing the circlip.
- 6 Remove the control rod connecting the exterior door handle to the cross-shaft lever by pulling the swivel block out of the nylon bush in the cross-shaft lever, and manoeuvring the rod outwards and rearwards until the cranked upper end is free.
- 7 Remove the handle from the door by removing the two 7/16in. A/F nuts and washers.

EXTERIOR DOOR HANDLE TO FIT

PROCEDURE:

To fit the above reverse the procedure given in SECTION 12 noting the following:

- 1 Ensure that the gasket between the handle surround and the door is in good condition.

SECTION 13 - PRIVATE LOCK TO REMOVE

PROCEDURE:

- 1 Disconnect the battery leads.
- 2 Remove the exterior handle and surround as described in SECTION 12.
- 3 Remove the 4BA screw securing the private lock to the handle surround.
- 4 Remove the private lock with the weathershield and spring attached.

PRIVATE LOCK TO FIT

PROCEDURE:

To fit the above reverse the procedure given in SECTION 12 noting the following points:

- 1 Lubricate the private lock weathershield and spring also the link rod pivot springs with Molytone 265 grease or its equivalent.

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- 2 Ensure the private lock is centrally located in the handle surround before tightening the 4BA locking screw.

SECTION 14 - DOORS TO BODY SEAL TO REMOVE

PROCEDURE:

- 1 Where the window frame leaves the door insert a screwdriver under the lip of the door seal and lift the seal until it can be gripped by the fingers, run the fingers under and along the seal until it comes away from the door. (Care should be taken to prevent any damage to paintwork.)

DOOR TO BODY SEAL TO FIT

PROCEDURE:

- 1 Check the dimension from the window frame outer face to the seal face on the body and adjust if necessary.
- 2 Ensure that the seal channel is free of any obstructions.
- 3 Manipulate the seal into the channel and when it has entered satisfactorily tap it in a short length at a time with the use of a wooden wedge which must have smooth edges so as not to cause any damage.

SECTION 15 - DOOR GLASS TO WAIST RAIL FINISHER SEAL TO REMOVE

PROCEDURE:

- 1 Remove the waist rail finisher assembly as described in SECTION 2.
- 2 Using a small screwdriver remove the seal from the waist rail finisher, care should be taken not to cause any damage to the finisher.

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DOOR GLASS TO WAIST RAIL FINISHER SEAL TO FITPROCEDURE:

- 1 Ensure the seal retainer channel is free of obstruction.
- 2 Fit the seal into the channel as described in SECTION 14.
- 3 Fit the waist rail finisher by reversing the procedure for its removal as given in SECTION 2.

SECTION 16 - WINDOW GLASS OUTER SEAL TO REMOVEPROCEDURE:

- 1 Remove the window glass, refer to SECTION 7.
- 2 Remove the seal from the channel by inserting a small screwdriver blade under one end of the seal, (on early cars the waist cross-rail to which the channel is attached is fitted to the door whilst on later cars the cross-rail is attached to the window frame.)

WINDOW GLASS OUTER SEAL TO FITPROCEDURE:

- 1 Ensure the seal channel is free of obstruction.
- 2 Fit the seal into the channel as described in SECTION 14.
- 3 Fit the window glass by reversing the procedure given in SECTION 7.

SECTION 17 - WINDOW CHANNEL SEAL TO REMOVEPROCEDURE:

- 1 Remove the window glass; refer to SECTION 7.

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- 2 Remove the seal by inserting a small screwdriver blade under one end of the seal and extracting the seal.

WINDOW CHANNEL SEAL TO FIT

PROCEDURE:

- 1 Ensure the channel is free of obstruction.
- 2 Fit the seal to the channel ensuring the seal edge having the four moulded ribs is fitted inboard.
- 3 Fit the glass as described in SECTION 7, ensuring that the glass will move smoothly up and down the new seal.

SECTION 18 - FIXED QUARTER SEALS TO REMOVE

PROCEDURE:

- 1 Remove window frame as described in SECTION 8 and the quarter window glass as described in SECTION 9.
- 2 Remove the two remaining sections of the periphery seal from the window frame.
- 3 By inserting a small screwdriver under one end of the seal lift the seal out of its channel.

FIXED QUARTER SEALS TO FIT

PROCEDURE:

To fit the above, reverse the procedures given in SECTION 18 noting the following point:

- 1 Ensure that the seal channels are free of obstruction.

SECTION 19 - CHROME STYLING TRIM TO REMOVE (DOOR PANEL) .

PROCEDURE:

- 1 Disconnect the battery.

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- 2 Remove the door trim, interior door handles and window glass as described in SECTIONS 2 - 4 and 7.
- 3 Remove the 3BA bolt securing the chrome styling trim to the front door panel, this is found in the door aperture, the other 3BA bolt can be seen through the hole in the door panel on the leading edge of the door, the chrome strip can be removed by pushing the 8 nylon drive pins from the interior of the door panel outwards so as to enable the chrome styling trim to be removed.
- 4 Remove the chrome styling trim and discard the 8 nylon drive pins.

CHROME STYLING TRIM TO FIT (DOOR PANEL)

PROCEDURE:

- 1 Disconnect the battery.
- 2 Position the chrome styling strip on the door panel and finger tighten the two 3BA bolts, renew the 8 nylon drive pins and knock the 8 nylon drive pins through, proceed to tighten the two 3BA bolts.
- 3 Reassemble the Body fittings as described in SECTIONS 2 - 4 and 7.

SECTION 20 - CHROME STYLING TRIM TO REMOVE (REAR PANEL)

PROCEDURE:

- 1 Disconnect the battery.
- 2 Remove the rear side trim pad.
- 3 Remove the boot side trim pad from the same side as that of step 2 given above.
- 4 A 3BA bolt can then be seen which is holding the chrome styling trim to the rear body panel, undo this 3BA bolt.
- 5 Unscrew the Philips head self tapping screw securing the chrome styling strip to the door aperture, and push out the 7 drive pins securing the chrome styling strip to the body, detach the chrome styling strip from the body.

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CHROME STYLING TRIM TO FIT (REAR PANEL)

PROCEDURE:

- 1 Disconnect the battery.
- 2 Position the chrome styling strip on the rear body panel, finger tighten the 3BA bolt located in the boot, and the Philips head self tapping screw in the door aperture, knock in the renewed 7 nylon drive pins.
- 3 Reassemble the rear side trim pad and the boot side trim panel.

SECTION 21 - DRIVERS SECTION OF FACIA TO REMOVE

PROCEDURE:

- 1 Disconnect the battery leads.
- 2 Lift off the small trim fairing located between the facia and the steering column cowling.
- 3 Remove the two screws securing the upper section of the cowling to the lower section, the screws are located in the underside of the lower section of the cowling.
- 4 Lift off the upper section of the steering column cowling.
- 5 Remove the screw exposed by removal of the upper cowling which secures the lower corner of the facia adjacent to the steering column.
- 6 Grip the knob of the panel lamps switch and pull from the spindle.
- 7 Using a suitable screwdriver, remove the small locking screw securing the knob of the 'HAZARD' warning switch and pull the knob from the spindle; the locking screw is locked in a small recess in the knob.

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- 8 Using a suitable pin spanner, remove the chrome bezel from around the 'HAZARD' warning switch spindle, unscrew the threaded bezel in an anti-clockwise direction.
- 9 Remove the drivers section of the facia by carefully easing it away from the instrument panel sufficiently for the two leads to the fuel door release switch to be disconnected at their LUCAR connections, note the position of the leads to ensure correct assembly.

Take care during this operation to avoid damaging the upper and lower roll trim panels as there is negligible clearance between the roll trim and facia panel.

DRIVERS SIDE FACIA TO FIT

PROCEDURE:

Reverse the procedure described in SECTION 21 noting the following point:

- 1 Ensure that the two leads are correctly connected to the fuel door release switch before the panel is finally in position.

SECTION 22 - CENTRE SECTION OF FACIA TO REMOVE

PROCEDURE:

- 1 Carry out operations 1, 2, 3, as described in SECTION 21 and proceed as follows:
- 2 Remove the screw securing the lower corner of the centre facia adjacent to the steering column.
- 3 Open the facia compartment door and remove the two screws located in the side face of the door inner pivot plate.
- 4 Remove the control knobs from the radio by firmly gripping each knob and pulling from the spindle, then remove the control levers from the spindles.

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- 5 Remove the control knobs from the tape player unit, following the same procedure as mentioned above, unscrew and remove the locknuts from the control spindles collect the legend plate from under each locknut keeping the plates separate to ensure correct assembly.
- 6 Remove the control knobs marked 'AIR CONDITIONER', 'UPPER TEMP', 'LOWER TEMP', 'WIPERS', 'AERIAL' and 'SPEAKER BALANCE'. To remove one of the above mentioned knobs, grip the centre portion of the knob with a pair of pliers the jaws of which have been covered with leather or similar dense material to protect the knob from damage, then pull the knob from the spindle, (the control knobs should be labelled when removed so that they can be fitted to the same control spindle when reassembled to eliminate binding).
- 7 Bend back the tabs of the lock washers securing the locknuts on the controls marked 'AIR CONDITIONER', 'LOWER TEMP', 'WIPERS', and 'SPEAKER BALANCE', then unscrew and remove the four locknuts.
- 8 Remove the chromed knobs from the two air outlet controls as follows:
 - a Release the retaining clip by inserting a small screwdriver blade into the slot in the side of the knob and remove the knob from the spindle.
 - b Using a suitable pin spanner, remove the chromed bezel from each of the two circular air outlet controls. Insert the prongs of the tool into the holes in the bezel and unscrew the bezel in an anti-clockwise direction.
 - c Carefully ease the centre facia panel away from the instrument panel sufficiently for the switch illumination lamps to be detached from the rear face of the panel.
 - d Remove the panel taking care to avoid damage to the upper and lower trims as there is negligible clearance between the roll trim and the facia panels.

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CENTRE SECTION OF FACIA TO FIT

PROCEDURE:

Reverse the procedure given for removal as described in SECTION 22 noting the following points:

- 1 a Ensure that the switch illumination lamps are secured to the retaining brackets on the rear face of the panel.
- b Before securing the four locknuts with their lock washers the following procedures must be carried out.
- 2 a Finger tighten the locknuts onto their spindles.
- b Fit the control knobs onto their spindles and check that the knobs can be operated without binding.
- c Slacken the chromed bezel on the two air outlet controls using a suitable pin spanner, adjust the position of the facia panel until all knobs can be operated without binding, tighten the chromed bezel with the facia in this position.
- d Remove the control knobs from the control spindles to which the four locknuts are fitted, tighten the locknuts and secure with the lock washers.

SECTION 23 - END SECTION (PASSENGERS SIDE) OF FACIA TO REMOVE

PROCEDURE:

- 1 Disconnect the battery.
- 2 Remove the two screws located in the side face of the facia compartment door on the outer pivot plate.
- 3 Pull the inner edge of the panel forward sufficiently to clear the pivot plate and remove the panel by easing it towards the centre of the car until the retaining plate on the outer edge is disengaged from the roll trim panel.

END SECTION (PASSENGERS SIDE) OF FACIA TO FIT

PROCEDURE:

To fit the end section of the facia reverse the procedure described in SECTION 23.

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SECTION 24 - FACIA STOWAGE COMPARTMENT DOOR TO REMOVE

PROCEDURE:

- 1 Disconnect the battery.
- 2 Remove the end section of the facia described in SECTION 23.
- 3 With the door open remove the two screws securing the door check strap plate to the stowage compartment.
- 4 Support the door and remove the three screws securing each door pivot plate to the outer edges of the door, and remove the door.

FACIA STOWAGE COMPARTMENT DOOR TO FIT

PROCEDURE:

To fit the facia stowage compartment door reverse the procedure given in SECTION 24.

SECTION 25 - FACIA TOP ROLL - TO REMOVE

PROCEDURE:

- 1 Disconnect the battery.
- 2 Remove the three facias described in SECTIONS 21, 22 and 23; open the facia compartment door.
- 3 Using a Pozidrive screwdriver remove the seven screws securing the top roll attachment brackets to the instrument panel.
- 4 Remove the screw located in each outer end of the roll trim.
- 5 Lift the front edge of the top roll sufficiently to clear the upper temperature sensor for the automatic air conditioning system; pull the roll forward (ie away from the windscreen) until the rear edge of the roll is free of its location in the demister grille panel and remove the top roll.

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NOTE

Care must be taken when carrying out this operation otherwise damage to the air conditioning temperature sensor which is mounted on the top edge of the instrument panel could occur.

FACIA TOP ROLL TO FITPROCEDURE:

To fit the top roll reverse the procedure described in SECTION 25 noting the following points:

- 1 Prior to fitting the top roll check that the battery leads are still disconnected.

This precaution is to avoid an accidental 'short' between the top roll and the temperature sensor when fitting the roll into position; take care to avoid damaging the sensor.

SECTION 26 - KNEE ROLL TO REMOVEPROCEDURE:

- 1 Disconnect the battery.
- 2 Remove the three facia panels and the facia stowage compartment door as described in SECTIONS 21, 22, 23 and 24.
- 3 Remove the knee trim panels as described in SECTION 28.
- 4 Remove the seven screws securing the lower roll to the instrument panel; remove the lower roll.

KNEE ROLL TO FITPROCEDURE:

To fit the facia lower roll reverse the procedure given in SECTION 26.

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SECTION 27 - DEMISTER GRILLE PANEL TO REMOVEPROCEDURE:

- 1 Disconnect the battery.
- 2 Remove the top roll as described in SECTION 25.
- 3 Remove the two 7/16 in. A/F setscrews securing the demister grille to the brackets.

DEMISTER GRILLE PANEL TO FITPROCEDURE:

To fit the demister grille panel reverse the procedure described in SECTION 27 noting the following points:

- 1 Ensure that the three pegs on the rear face of the panel locate correctly into the rubber bushes.

SECTION 28 - KNEE TRIM PANELS (DRIVERS SIDE) TO REMOVEPROCEDURE:

- 1 Disconnect the battery.
- 2 Remove the screw located in the rear face of the trim surrounding the handbrake (Right Hand Drive cars) or the parking brake (Left Hand Drive cars) lever.
- 3 Remove the three setscrews securing the lower edge of the panel to the support bracket.
- 4 Remove the screw located in the outer end of the facia top roll panel; this screw secures the outer edge of both the top roll and the knee trim panel.
- 5 Using a screwdriver carefully prise out the three small insert panels located in position by spring clips, (take care during this operation to avoid damaging the trim).

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- 6 Using a Pozidrive screwdriver remove the three setscrews exposed by removal of the three small insert panels; remove the knee trim panel.

KNEE TRIM PANELS (PASSENGER'S SIDE) TO REMOVE

PROCEDURE:

- 1 Remove the two 2BA screws and nuts securing the lower edge of the panel to the support brackets.
- 2 Remove the screw located in the outer end of the facia top roll panel; this screw secures the outer edge of the top roll panel and also the knee trim panel.
- 3 Open the facia compartment door, pull the tabs on the sides of the compartment walls inward and secure the floor of the compartment in the raised position with the retaining strap.
- 4 Remove the fuseboard identification from its location, then remove the three Pozidrive screws securing the top edge of the knee panel to the facia. (These screws are difficult to see but they are located along the ledge that supports the fuseboard illumination lamp, the centre one of the three screws being adjacent to the lamp).
- 5 Remove the knee trim panel complete with the document/magazine compartment taking care to avoid damaging the automatic air conditioning temperature sensor which is mounted behind the lower edge of the panel.

KNEE TRIM PANELS TO FIT

PROCEDURE:

To fit the knee trim panels reverse the procedures given in SECTION 28 noting the following points:

- 1 When fitting either of the panels ensure that the panel being fitted is correctly located behind the outer edge of the roll panel.
- 2 When fitting the knee trim panel complete with the document/magazine compartment to the passenger's side of the car, take care to avoid damaging the lower temperature sensor of the automatic air conditioning system.

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- 3 Before fitting the leads to the battery, ensure that any foreign object which may have found its way into the fuseboard compartment is removed, then secure the fascia compartment floor in position with the retaining clip.

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 TSD 2933

FLOOR INSULATION PADAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars from the following Car Serial Numbers.

Silver Shadow saloon - SRD 20378 to 22427
 Long Wheelbase saloon - LRD 20592 to 22437
 Corniche - CRD 20171 to 22385
 - DRD 20176 to 22322

For full details refer to rear of this Bulletin.

PROCEDURE

1. Disconnect battery.
2. Remove the three carpet clips from floor (see Fig. 1).
3. Securely staple or stitch the Velcro to carpets (see Fig. 1).
4. Raise car on hydraulic ramp (hoist).
5. In order to enable the floor insulation pad to be fitted correctly on cars prior to Car Serial Numbers SRD 22118 and LRD 22073 the brake pipe connector block must be slightly repositioned. Figure 2 gives details of the re-location of this block. DO NOT DISCONNECT THE BRAKE PIPES since this will result in the need to bleed the system.
6. Remove the exhaust clamp and modify as Figure 2.
7. Offer up to the floor the thick insulation pad, the thin insulation pad and the alloy cover. Ensure that the insulation pads are encapsulated in the cover and that the cover-forward-flange abuts the crossmember. Figure 2 shows the cover in position.
8. Drill and secure the cover with the screws provided. It may be found necessary to slacken and move the grass shield round whilst drilling the floor.
9. Fit the clamp previously removed.
10. Fit the carpets to the car and connect the battery.

TIME ALLOWED

Total time allowed - 1.5 hours.

The kit RH 2649 contains the following items:

1 off	Alloy shield	-	UR 19830
1 off	Insulator	-	UR 19831
1 off	Insulator	-	UR 19832
10 off	Screw	-	UA 9487/2
1 off	Velcro 'hook'	-	UW 15497
1 off	Velcro 'loop'	-	UW 15498
		-	

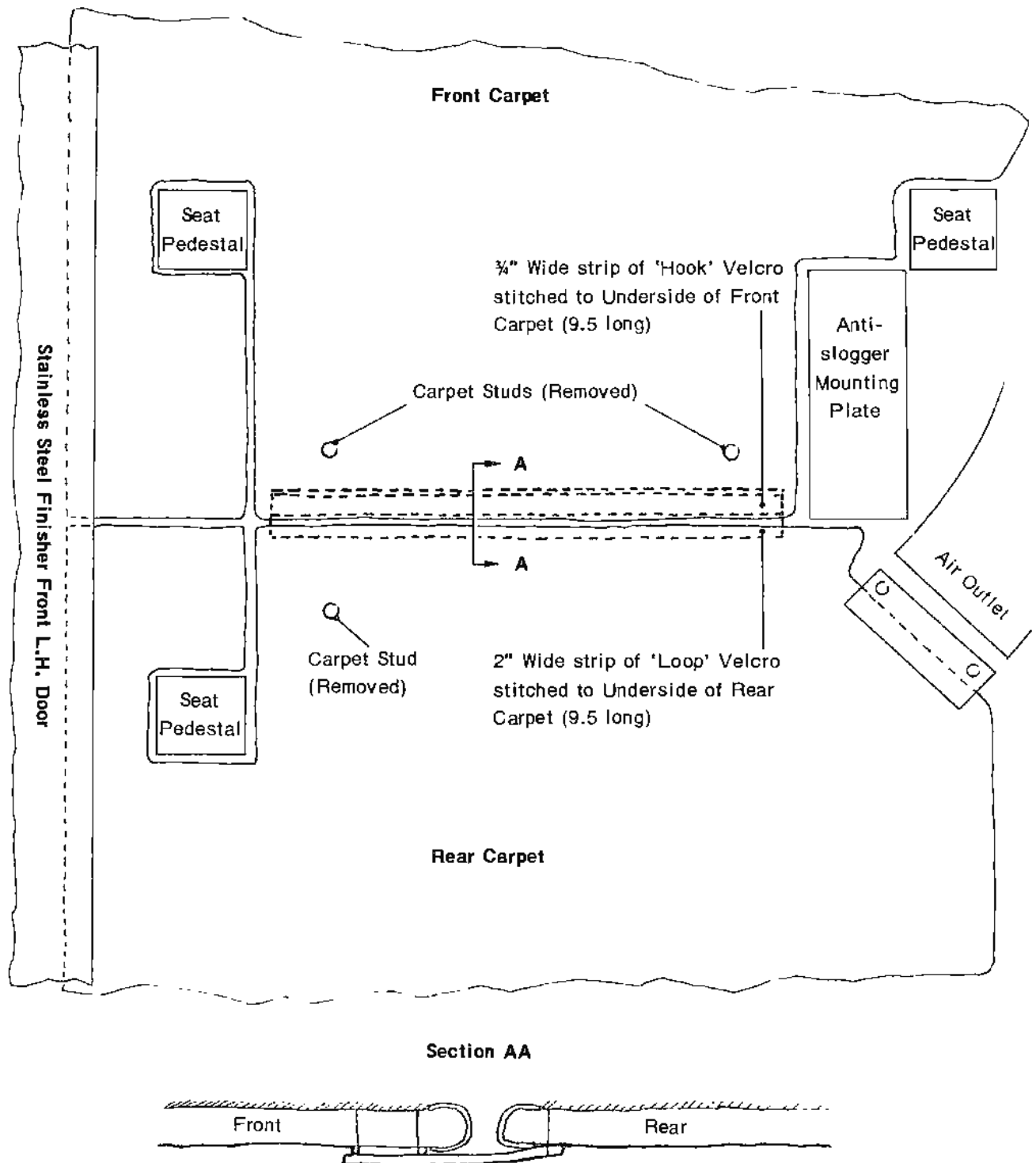
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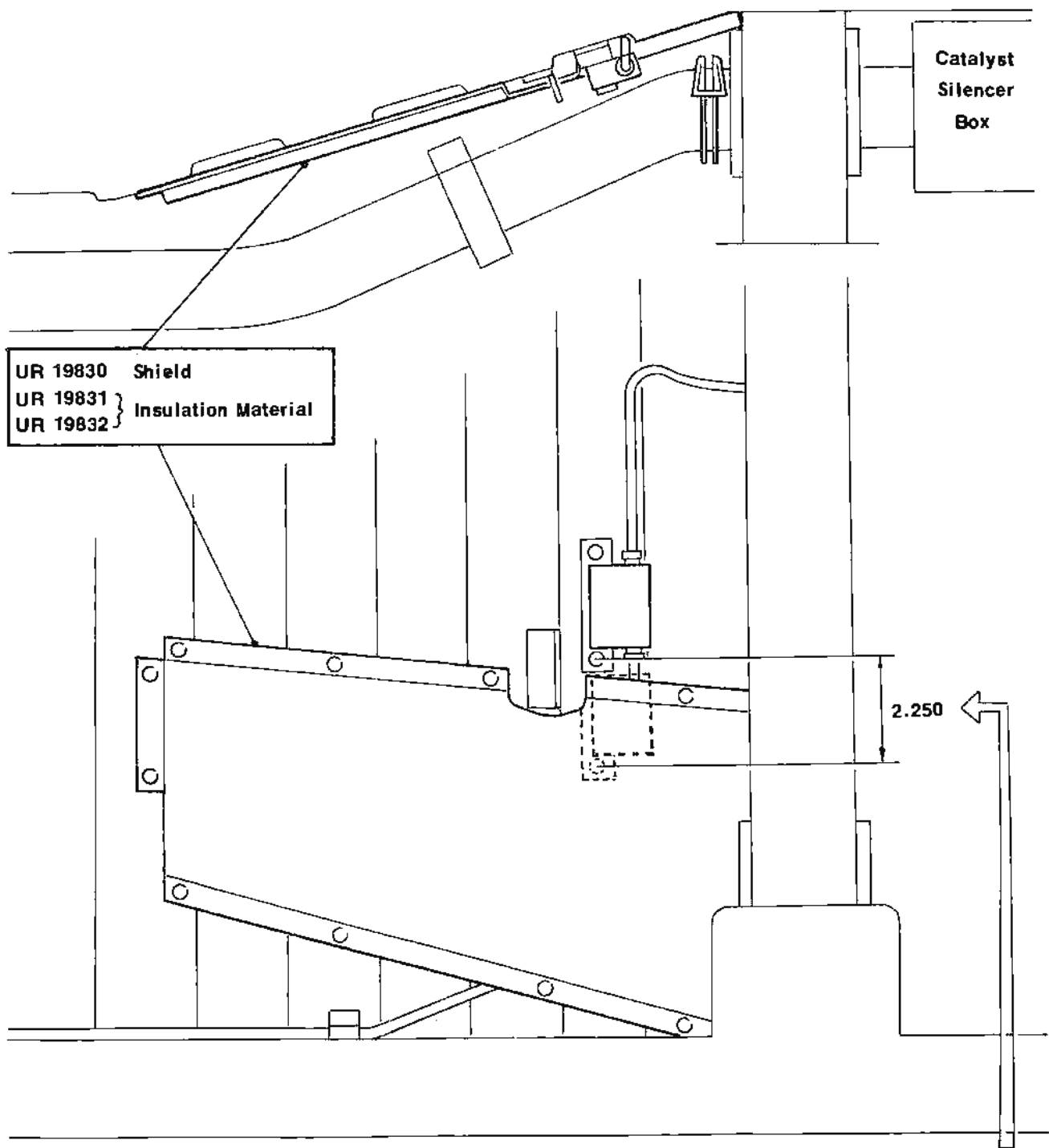


*Hook Velcro stitched to Front Carpet *Loop Velcro stitched to Rear Carpet

* (May be stapled)

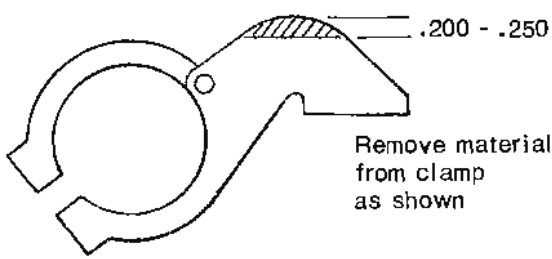
Q 803

Figure 1



UR 19830 Shield
UR 19831 } Insulation Material
UR 19832 }

2.250



Brake connector block moved
hole pitch of mounting bracket
towards centre of car

Forward Exhaust Mount

Q 802

Figure 2

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SILVER SHADOW SALOON
REQUIRING FLOOR INSULATION PAD

SRD 20378	20671	20899
20386	20672	20924
20392	20673	20930
20416	20674	20957
20421	20675	20964
20436	20676	20970
20450	20677	20973
20465	20678	20981
20493	20679	20995
20510	20680	21019
20517	20681	21028
20525	20682	21034
20533	20683	21041
20537	20684	21050
20540	20685	21058
20543	20686	21061
20547	20687	21068
20548	20688	21074
20552	20689	21080
20557	20690	21086
20560	20755	21092
20563	20756	21100
20566	20758	21151
20570	20759	21157
20573	20761	21159
20575	20763	21161
20578	20766	21162
20582	20768	21165
20587	20770	21166
20589	20771	21168
20592	20773	21170
20597	20777	21172
20601	20778	21173
20652	20780	21175
20656	20782	21177
20658	20787	21187
20660	20791	21197
20663	20794	21206
20664	20804	21215
20665	20808	21216
20666	20825	21226
20667	20828	21236
20668	20831	21238
20669	20834	21250
20670	20891	21256

SRD 21258	21549	21803
21262	21553	21805
21264	21555	21807
21269	21558	21809
21271	21561	21812
21276	21564	21827
21282	21567	21870
21285	21570	21872
21289	21573	21876
21291	21576	21881
21296	21609	21886
21298	21617	21892
21303	21625	21897
21305	21633	21900
21309	21639	21904
21312	21645	21910
21316	21673	21938
21317	21676	21943
21318	21679	21946
21321	21683	21951
21407	21686	21954
21418	21690	21960
21431	21697	21963
21433	21700	21967
21436	21704	21970
21441	21710	21973
21445	21734	21976
21448	21736	22003
21452	21738	22007
21472	21743	22011
21478	21746	22015
21484	21749	22018
21488	21751	22022
21492	21754	22028
21496	21756	22031
21502	21759	22032
21508	21761	22035
21514	21764	22041
21516	21766	22074
21532	21769	22075
21535	21772	22077
21537	21774	22080
21540	21776	22083
21544	21777	22087
21546	21801	22091

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SRD 22097	22286
22101	22289
22104	22292
22106	22295
22110	22303
22112	22307
22117	22327
22118	22330
22130	22333
22135	22336
22139	22339
22148	22342
22152	22345
22155	22348
22158	22351
22163	22354
22167	22357
22197	22360
22200	22363
22202	22366
22205	22369
22208	22390
22210	22393
22213	22396
22216	22399
22218	22402
22219	22406
22221	22409
22224	22412
22226	22414
22230	22417
22233	22419
22237	22422
22262	22424
22265	22427
22268	
22271	
22274	
22277	
22280	
22283	

CAR SERIAL NUMBERS
ROLLS-ROYCE CORNICHE SALOON
REQUIRING FLOOR INSULATION PAD

CRD 20171	21799
20173	21860
20175	21862
20285	21864
20340	21916
20345	21920
20470	21922
20475	21999
20715	22000
20871	22001
20941	22121
21324	22122
21402	22188
21405	22189
21522	22253
21523	22258
21595	22326
21661	22382
21732	22385
21794	

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 ROLLS-ROYCE CORNICHE CONVERTIBLE
 REQUIRING FLOOR INSULATION PAD

DRD 20176	21465
20177	21467
20178	21469
20179	21470
20284	21524
20287	21597
20288	21600
20290	21660
20342	21662
20344	21663
20347	21665
20400	21666
20404	21727
20405	21728
20467	21730
20468	21731
20604	21792
20607	21793
20608	21795
20712	21863
20713	21915
20716	21918
20717	21919
20718	21921
20868	21995
20869	21997
20873	22199
20874	22120
20937	22123
20938	22124
20940	22184
20942	22185
21003	22187
21005	22191
21251	22254
21252	22255
21255	22257
21325	22259
21327	22319
21404	22321
21406	22322
21408	

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SILVER SHADOW LONG WHEELBASE
REQUIRING FLOOR INSULATION PAD

LRD	20592	20883	21457
	20628	20885	21459
	20633	20886	21458
	20634	20887	21460
	20636	20889	21462
	20637	20890	21517
	20640	20944	21518
	20641	20945	21519
	20644	20946	21520
	20645	20947	21521
	20647	20948	21577
	20648	20950	21578
	20650	20953	21579
	20701	20955	21580
	20703	21366	21582
	20704	21369	21583
	20706	21370	21584
	20708	21371	21585
	20719	21374	21587
	20721	21375	21589
	20722	21378	21590
	20724	21381	21591
	20726	21382	21592
	20727	21383	21647
	20729	21384	21648
	20800	21385	21649
	20809	21386	21651
	20811	21387	21652
	20812	21388	21653
	20814	21389	21655
	20816	21390	21656
	20817	21391	21657
	20818	21392	21658
	20820	21393	21659
	20821	21395	21713
	20822	21396	21714
	20879	21397	21715
	20880	21398	21716
	20881	21455	21718
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21782	21992	22249
21783	21993	22251
21784	21994	22252
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21789	22050	22311
21790	22051	22312
21791	22052	22313
21845	22054	22316
21846	22055	22318
21847	22056	22372
21848	22057	22373
21849	22059	22374
21850	22061	22375
21851	22062	22376
21852	22063	22377
21853	22064	22378
21854	22065	22379
21855	22067	22380
21856	22068	22436
21857	22069	22437
21924	22070	
21925	22071	
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Section S

Date 15 10 75

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CATEGORY CBODY FITTINGS - CAMARGUEAPPLICABLE TO:

All Rolls-Royce Camargue motor cars.

DESCRIPTION:

This Service Bulletin is issued to inform you of the procedure to follow when either removing or adjusting the exterior adjustable door mirror.

SECTION 1

DRIVER'S DOOR MIRROR TO REMOVE

- 1) Ensure that the driver's door window is in its uppermost position.
- 2) Disconnect the battery.
- 3) Remove the small plush-trimmed panel from each side of the document/magazine pocket on the door, these panels are secured by spring clips.
- 4) Remove the screws securing the document/magazine pocket panel to the door, remove the panel from the door bowing it inward slightly during removal to enable the sides of the panel to separate from the retaining channels on the door.
- 5) Remove the two screws securing the step lamp to the door pull/armrest; remove the lamp lens and chromed surround, detach the electrical leads from the lamp and remove the lamp. (Note the position and colour of the leads to ensure correct assembly).
- 6) Detach the plastic waterproof curtain from the door inner panel sufficiently to gain access to the apertures in the inner panels.
- 7) Remove the 7/16 in. A/F nuts, bolts and washers securing the rear handle mounting bracket to the door.

- 8) Using a 7/16 in. A/F spanner remove the three nuts and washers securing the armrest/door pull to the door, access to these can be gained through the adjacent aperture in the door inner panel.
- 9) Remove the escutcheon covers from the window lift switch and the centralised door locking switch (there are two window lift switches on the driver's door).
- 10) Remove the escutcheon from each switch by unscrewing the two screws securing each escutcheon and remove the escutcheon.
- 11) Free the door upper trim panel from its location behind the lower edge of the door sill wood finisher and remove the trim pad from the door; the panel should be bowed slightly inwards during removal so as to free the sides of the panel from the retaining channels on the door.
- 12) To remove the door waist rail finisher remove the two screws from the rear edge of the finisher assembly and the screw from the front edge. Support the finisher and using a 7/16 in. A/F spanner remove the nut and washer securing the finisher to the door panel.
- 13) Remove the sill finisher assembly complete with the built-in ashtray. Take care to avoid damage to the wood finisher and the controls on the door when removing the waistrail finisher assembly.
- 14) Detach the exterior driver's door mirror adjustment rod from the door mirror spline by removing the 7/16 in. A/F bolt.
- 15) Dismantle the limiting plate by removing the two PK screws noting the position of the plate.
- 16) Remove the two 7/16 in. A/F bolts and the one 2 BA bolt from the mirror bracket.
- 17) Remove the two 9/16 in. A/F locknuts from the door mirror spline and draw off the tension spring and spacers.
- 18) The door mirror can now be removed by drawing the door mirror spline through the door body from the exterior of the car.

SECTION 2

DRIVER'S DOOR MIRROR TO FIT

- 1) Reverse the procedures given in Section 1 items 1 to 18.
- 2) For the operation of tightening the driver's exterior door mirror refer to item 2 Section 3.

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SECTION 3

ADJUSTMENT

- 1) Carry out operations 1 to 16 as described in Section 1.
- 2) The driver's door mirror can be tightened by adjusting the two 9/16 in. A/F locknuts, thus applying pressure onto the mirror spline spring, which will eliminate any free movement.

NOTE:

The exterior driver's door mirror spline is pegged with a roll pin which when subjected to a force of more than 4 lb. ft. causes the spline to snap off. This is to minimise damage in the event of an accident.

SECTION 4

ADJUSTMENT - REFITTING

- 1) Reverse the operations described in Section 1 items 1 to 16 inclusive.

TIME ALLOWED:

Removing and fitting door mirror 4.00 hrs.

Adjusting door mirror 3.50 hrs.

ECK/MH

Circulation: ALL DISTRIBUTORS AND RETAILERS

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Section S

Date 31 12 75

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CATEGORY CSUGGESTED COLOURS FOR CORNICHE CARSAPPLICABLE TO:

All Rolls-Royce Corniche and Bentley Corniche cars.

DESCRIPTION:

This Service Bulletin is issued to inform you of the full range of paints available for the above motor cars.

NOTE In the event of any paint rectification work being sub-contracted, the information contained in this Service Bulletin must be brought to the attention of the operators concerned.

MANUFACTURER	COLOUR	RRM CODE	MANUFACTURER CODE
I.C.I.	SILVER CHALICE	9510037	M151-2300
I.C.I.	CARRIBE AQUA	9510102	M151-3435
I.C.I.	DARK OLIVE	9510121	M151-3467
I.C.I.	CHROME YELLOW	9510128	M062-5098
I.C.I.	ATHENIAN BLUE	9510140	M151-3492
I.C.I.	NUTMEG BROWN	9510155	M151-3611
I.C.I.	WILLOW GOLD	9510180	M151-3621
I.C.I.	LE MANS BLUE	9510211	M151-3803
I.C.I.	HIGHLAND GREEN	9510222	M151-2376
I.C.I.	IVORY IV	9510228	M150-8862
I.C.I.	SILVER SAND	9510179	M151-3454

The viscosity time figures for the paints shown on page 1 are given in the following table.

TABLE 1

PAINT MATERIAL	THINNERS PART NUMBER	VISCOSITY @ 20°C AIR DRYING
SILVER CHALICE (9510037)	9503135	33 secs
CARRIBE AQUA (9510102)	9503135	33 secs
DARK OLIVE (9510121)	9503135	33 secs
CHROME YELLOW (9510128)		
ATHENIAN BLUE (9510140)	9503135	33 secs
NUTMEG BROWN (9510155)	9503135	33 secs
WILLOW GOLD (9510180)	9503135	33 secs
LE MANS BLUE (9510211)	9503135	33 secs
HIGHLAND GREEN (9510222)	9503135	33 secs
IVORY IV (9510228)	9503135	35 secs
SILVER SAND (9510179)	9503135	33 secs

For force drying a minimum time of 30 mins at 83°C (180°F) as necessary.

All the above viscosity time figures are given for use with a B3 viscosity cup unless otherwise stated.

For air drying where a drying booth is not available the vehicle should be left for a minimum period of 48 hours.

NOTE ICI Thinners 851-1141 RR Code 9503135 and Inmont Thinners L18CV005 RR Code 950953 can be used as direct replacements for each other, and either of the two can replace the Joseph Masons Thinners LB 30819 RR Code 9503937 and LB84/2 RR Code 9503954 should the need arise.

It should be noted that when employing force drying techniques a 'flash off' or delay period of at least fifteen minutes should be allowed after spraying, before the car is placed in the drying booth.

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Failure to allow this delay may result in a condition where the solvent erupts through the paint film causing pin holes or craters.

ECK/MH

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CATEGORY CSUGGESTED COLOURS FOR SILVER SHADOW CARSAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Bentley 'T' Series motor cars.

DESCRIPTION:

This Service Bulletin is issued to inform you of the full range of paints available for the above motor cars.

NOTE In the event of any paint rectification work being sub-contracted, the information contained in this Service Bulletin must be brought to the attention of the operators concerned.

MANUFACTURER	COLOUR	RRM CODE	MANUFACTURER CODE
ICI	Shell Grey	9500434	M151-2582
ICI	Porcelain White	9500439	M150-101
ICI	Scots Pine	9500640	M151-2926
ICI	Caribbean Blue	9500683	M151-2242
ICI	Silver Mink	9500691	M151-2429
J Mason	Black	9500701	LB 318/9
ICI	Seychelles Blue	9510071	M151-3310
Inmont	Cardinal Red	9510192	L68RV006
ICI	Peacock Blue	9510234	M151-3864
Inmont	Acrylic White	9510235	L67WV004
ICI	Regency Bronze	9510248	M151-3898
ICI	Walnut	9510261	M151-3998
Inmont	Moorland	9510370	L68GV005
Inmont	Pewter	9510371	L68ZV001
Inmont	Oxford Blue	9510392	L67BV007
Inmont	Brewster Green	9510393	L67GV009
Inmont	Garnet	9510394	L67RV006

The above paints viscosity time figures are given in the following table which also includes their thinners.

PAINT MATERIAL	THINNERS PART NUMBER	VISCOSITY @ 20°C AIR DRYING
Shell Grey (9500434)	9503135	33 secs
Porcelain White (9500439)	9503135	35 secs
Scots Pine (9500640)	9503135	33 secs
Caribbean Blue (9500683)	9503135	33 secs
Silver Mink (9500691)	9503135	33 secs
Black (9500701)	Supplied ready for use	38 secs
Seychelles Blue (9510071)	9503135	33 secs
Cardinal Red (9510192)	9503953	29 secs
Peacock Blue (9510234)	9503135	33 secs
Acrylic White (9510235)	9503953	29 secs
Regency Bronze (9510248)	9503135	33 secs
Walnut (9510261)	9503135	33 secs
Moorland (9510370)	9503953	33 secs
Pewter (9510371)	9503953	33 secs
Oxford Blue (9510392)	9503953	33 secs
Brewster Green (9510393)	9503953	33 secs
Garnet (9510394)	9503953	33 secs

For force drying a minimum time of 30 minutes at 83°C (180°F).

All the above viscosity time figures are given for use with a B3 viscosity cup unless otherwise stated.

For air drying where a drying booth is not available the vehicle should be left for a minimum period of 48 hours.

NOTE ICI Thinners 851-1141 RRM Code 9503135 and Inmont Thinners L18CV005 RRM Code 9503953 can be used as direct replacements for each other, and either of the two can replace the Joseph Masons Thinners LB 30819 RRM Code 9503937 and LB 84/2 RRM Code 9503954 should the need arise.

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It should be noted that when employing force drying techniques a 'flash off' or delay period of at least fifteen minutes should be allowed after spraying, before the car is placed in the drying booth.

Failure to allow this delay may result in a condition where the solvent erupts through the paint film causing pin holes or craters.

ECK/MH

CHAPTER T (RRT)
TRANSMISSION (PART 1)
4-SPEED AUTOMATIC
GEARBOX

CHAPTER T (GM)
TRANSMISSION (PART 2)
TORQUE CONVERTER

Torque Converter Transmission

Service Bulletin issued for
Circulation All Distributors
and Retailers

Bulletin No. SY/GM34
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CATEGORY C

CONTROL VALVE ASSEMBLY TO
SPACER PLATE GASKET REINSTATED

APPLICABLE TO

All Rolls-Royce Silver Shadow and Corniche cars, and all Bentley T Series and Corniche cars.

DESCRIPTION

The Control Valve Assembly to Spacer Plate Gasket, Part No. 8623561, has been reinstated in the Torque Converter Transmission both for Production and Service use.

Torque Converter Transmission

Service Bulletin issued for
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ALL DISTRIBUTORS AND RETAILERS

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CATEGORY CGOVERNOR LUBRICATIONAPPLICABLE TO:

All Rolls-Royce Silver Shadow, Bentley 'T' Series and all Rolls-Royce and Bentley Corniche cars fitted with Torque Converter Transmission having a serial number after 72 RR 2268.

DESCRIPTION

All transmissions produced prior to the above serial numbers were fitted with an output shaft having an axial lubrication passage which takes lubricant to a point rearwards of the speedometer drive gear. From this point the lubricant would pass through a radial drilling to the governor sleeve, thereby providing lubrication for the governor.

On transmissions produced after serial number 72 RR 2268 the governor lubrication is provided by a flat on the governor sleeve which allows oil to pass to the moving parts of the governor. The output shaft of these transmissions is not provided with any lubricating passages.

In view of these changes it is most important that the new shaft without the oil passage and the governor with the lubrication flat are used only on later transmissions.

Fitting the incorrect part may result in damage due to lack of lubrication.

Arr/JC1/ECK

Circulation: All Distributors & Retailers

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CATEGORY C

THE GEARBOX ACTUATOR

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars.

DESCRIPTION:

In the past there have been a number of internal alterations to the gearbox actuator and as there are no external means of identification it is possible that confusion may arise in identifying the various types of actuators.

This Service Bulletin is therefore intended to provide definite identification of each actuator type, to indicate which cars the various types will fit, and where applicable to detail slight changes which will enable one type to replace another.

The chart on the following pages gives details on application of actuators.

For checking and reconditioning procedures - Service Bulletins SY/GM31 and SY/GM38 should be consulted.

Circulation: All Distributors and Retailers

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Date 5 3 73

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ACTUATOR APPLICATION CHART

Left-hand drive cars

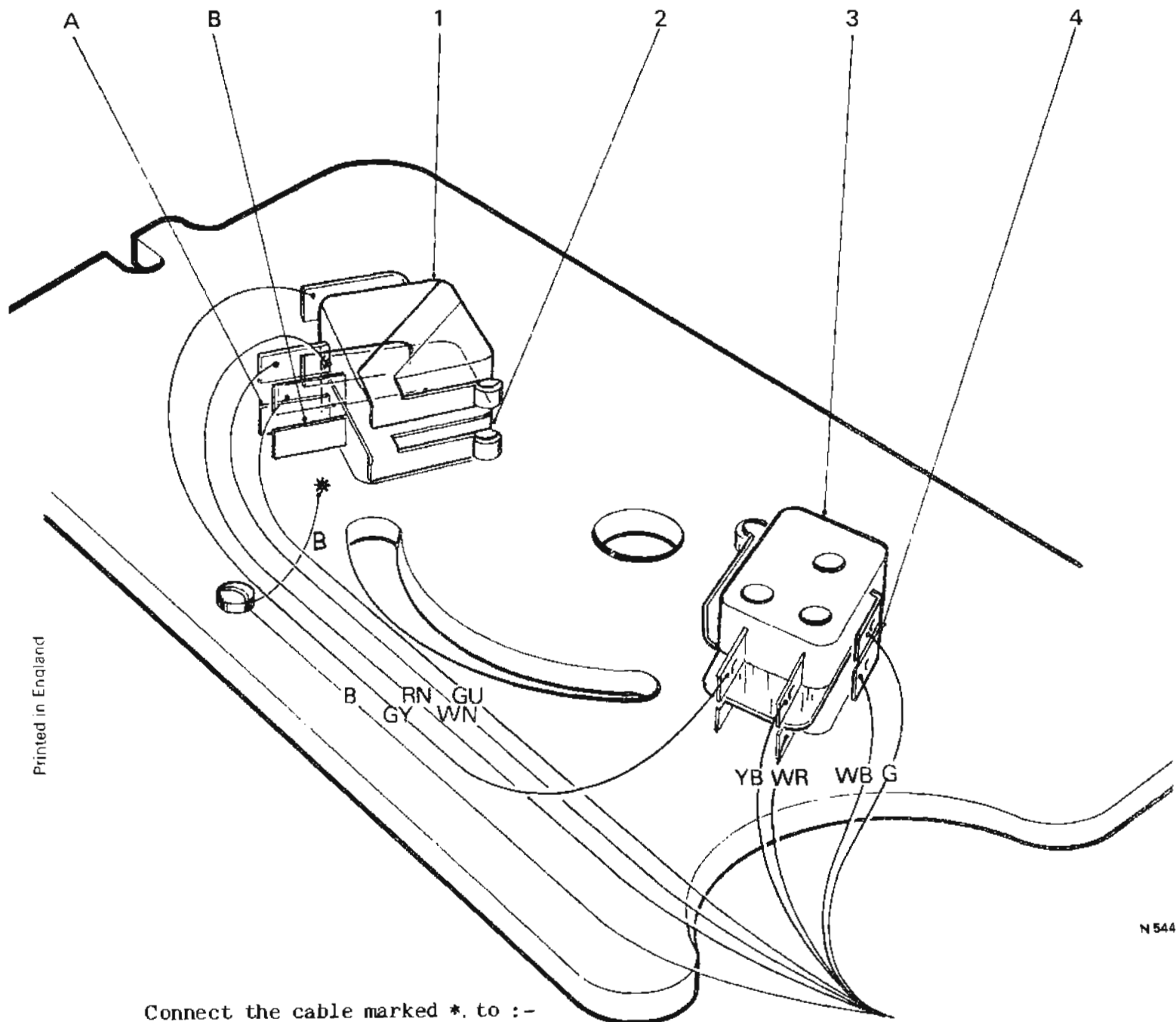
Right hand drive cars

		2000	
		3000	
		4000	
Actuator		5000	Actuator
UG 12234			UG 11338
		6000	
		7000	
		8000	
8839		9000	4483
Actuator UG 13492			
8861		10000	Actuator
			UG 12234
Actuator RH 2550 cars		11000	
without speed control			
Actuator RH 2552		12000	
cars with speed control			
		13000	
13754		14000	8839
Actuator RH 2551			886T
		15000	Actuator UG 13492

NOTE:

On no account should an RH 2550 actuator be fitted to any car which is equipped with speed control or Kangol seat belts.

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Connect the cable marked *, to :-

Terminal B on cars after SRH 13754
Terminal A on cars before SRH 13754

See text for full range of car serial numbers.

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ACTUATOR INTERCHANGEABILITY

Whilst the chart gives the correct actuator part number for each different car specification, in a number of cases interchangeability can be effected quite simply.

Details are as follows :-

1. Actuator RH 2552 can also be used on any car produced between car serial numbers 8861 and 13754 which were originally fitted with actuator RH 2550. Fitting RH 2552 will mean that the new actuator will have a speed control switch that is surplus to requirements, and in all other details the actuators are identical.
2. Actuator RH 2551 is fitted to all cars after SRH 13754. It should be noted that this car serial number is only an approximate number, the full list of numbers being as follows :-

All Standard saloons - left and right-hand drive - SRH 13754 onwards.

Coachbuilt saloons for North America - CRA 13459 onwards.

Coachbuilt saloons other than for North America - CRH 13984.

Convertible cars for North America - DRA 13413 onwards.

Convertible cars other than for North America - DRH 13861 onwards.

Long Wheelbase cars for North America - LRA 13921 onwards.

Long Wheelbase cars other than for North America LRX 13973 onwards.

Actuator RH 2551 can also be fitted to any car produced between car serial number 8861 and 13754 providing that a simple alteration to the internal wiring is effected.

/continued..

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The alteration consists of :-

1. Remove the side cover plate from the actuator.
2. Locate the park anti-theft micro switch which is the one bolted directly to the base plate and carries a Black cable and a Red/Brown cable, as shown in Fig.1.
3. Remove the Black cable from the switch terminal and connect it to the remaining empty terminal of the same switch.
4. Replace the actuator side cover plate using a new gasket, part number UG 11279.

Arr/JC1/Eck.

Circulation: ALL DISTRIBUTORS & RETAILERS
IN JAPAN AND NORTH AMERICA

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CATEGORY C

GEARBOX IDENTIFICATION

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars fitted with 1973 Emission Control systems and produced after the following car serial numbers :-

SRB 14954 DRB 14991

CRB 15052 LRB 15056

DESCRIPTION:

The torque converter gearboxes are identified by a nameplate which is rivetted to the right-hand side of the gearbox casing. On this nameplate is the year of manufacture followed by the letters 'RR' and an individual gearbox serial number.

The gearboxes fitted to cars produced after the above car serial numbers are equipped with modulator valves which are internally different from those previously used. To denote this change the letters stamped on the gearbox identification plate have been changed from R.R. to R.S. The Rolls-Royce part number of the gearbox assembly has also been changed and is now UG 13822.

It is important that only gearboxes having the letters R.S. on the identification plate are fitted to cars produced after the above car serial numbers. It should also be noted that these later gearbox assemblies or their modulator valves, must not be fitted to earlier cars or the transmission gearchange pattern will be affected.

Arr/JC1/ECK

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CATEGORY C

GEARBOX IDENTIFICATIONAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars.

All Bentley 'T' Series and Corniche cars.

DESCRIPTION:

The torque converter gearboxes fitted to the above cars are identified by a nameplate which is rivetted to the right-hand side of the gearbox casing. On this nameplate is the year of manufacture followed by the letters R.R. and an individual gearbox serial number.

The gearboxes fitted to all cars equipped with 1973 Emission Control systems produced after car serial numbers:

SRB 14954 DRB 14991

CRB 15052 LRB 15056

are fitted with a modulator valve which is internally different from those previously used. To denote this change, the letters stamped on the gearbox identification plate have been changed from R.R. to R.S. The part number of the new modulator valve is 3027842.

The modulator fitted to cars not equipped with Emission Control systems remains unchanged - the part number being 8625976.

The new gearbox assembly, part number UG 13832 can be fitted to both cars not having Emission Control systems and earlier cars, providing that the modulator is replaced by the one from the displaced gearbox and the instructions given in Spares Information Sheets 4.G.41 and 4.G.48 are carried out as required.

It is important that all cars equipped with 1973 Emission Control systems are fitted with the new modulator.

Fitting the incorrect type of modulator valve to any car will result in the transmission gearchange pattern being affected.

Arr/JC1/ECK

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CATEGORY C

THE GEARBOX ACTUATOR BREATHER PIPE

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars produced after the following car serial numbers

SRH 15279	DRB 15204
CRH 15205	LRB 15265

DESCRIPTION:

In order to improve the ventilation of the gearbox actuator, the material and point of termination of the breather pipe have been changed.

The new breather pipe terminates in the lower skin of the drive-shaft tunnel as opposed to the old breather pipe which terminated in the crossmember at the rear of the gearbox. This new arrangement allows the actuator to breathe into the dry atmosphere of the passenger compartment of the car.

The material of the breather pipe has been changed from the white soft plastic of the old pipe to a black rubber material.

Arr/JC1/Eck

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CATEGORY CTHE GEARBOX KICK-DOWN SWITCHAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley T Series and Corniche cars produced from car serial number SRH 13754 onwards.

DESCRIPTION:

On the above cars, the gearbox kick-down switch is mounted in a steel container which is fitted on the underside of the toeboard beneath the accelerator pedal.

The container is sealed to the toeboard with a neoprene seal.

In a small number of cases, this seal has been incorrectly fitted resulting in water ingress which may cause the kick-down switch to stick.

Should the switch stick, the gear change pattern will be affected as the upward changes will be delayed and the downward changes will occur sooner.

If the gearbox of one of the above cars exhibits these symptoms, the kick-down switch should be inspected for signs of water ingress and if this has occurred, the corrective action detailed in this Service Bulletin should be followed:

PROCEDURE:

- 1 Disconnect the battery.
- 2 Locate and remove the kick-down switch cover.
- 3 Inspect the switch body and the inside of the cover for any signs of water ingress. If the switch has suffered damage, proceed as follows:
- 4 Renew the kick-down switch.

Continued ...

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- 5 Place the switch cover on the toeboard and ensure that the sealing area of the toeboard is free from underseal or damage which may prevent an efficient seal.
- 6 Fit a new seal to the switch cover. The seal should be adhered using a suitable adhesive such as Bostik 1261.
- 7 If there is any indication of water ingress to the cover via the wiring loom seal, carefully clean the area and seal the joint inside and out using a suitable adhesive.
- 8 Depress the secondary plunger fully and swing the micro-switch against the base of the plunger until a clearance of 0.005 in (0.127 mm) exists between the plunger and the micro-switch body.
- 9 Tighten the two switch mounting screws.
- 10 Check the operation of the switch by fully depressing the plunger and then slowly releasing it until an audible click is heard which indicates that the switch contacts have opened. At this point there should be between 0.015 and 0.035 in (0.38 to 0.89 mm) of remaining plunger travel.
- 11 Fit the switch cover.
- 12 Liberally paint the sealing area of the cover and the loom seal with underseal.

TIME ALLOWED:

To fit a new switch and reseal cover - 0.6 hours.

JCL/ECK

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	TSD 2933

CATEGORY CPOOR GEARCHANGES AND GEARBOX NOISEAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars fitted with a three-speed torque converter gearbox.

DESCRIPTION:

There have been a number of instances of poor gearchanges or gearbox noise following the rebuild of three-speed torque converter gearboxes.

In the case of poor gearchanges it is often found that the gearbox has been rebuilt using clutch plates which are not approved by Rolls-Royce Motors or General Motors. While such non-approved clutch plates may appear to be suitable, they do not demonstrate the same friction characteristics as the specified plates. Since the gearbox is designed and calibrated to match the gearchanges to the engine output, if the friction of the clutches is not correct, rough or slipping gearchanges and possible overheated clutch plates may result.

Noises from the gearbox often occur when the gearbox filter is not an approved Rolls-Royce Motors or General Motors part. Certain types of filter have been found to cause a high restriction to oil flow. This results in noise from the gearbox oil pumps and sometimes prevents the correct oil pressure from being provided under all conditions.

JC1/GF

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TSD 2933

CATEGORY C

VACUUM MODULATOR WITH SCREW OMITTED

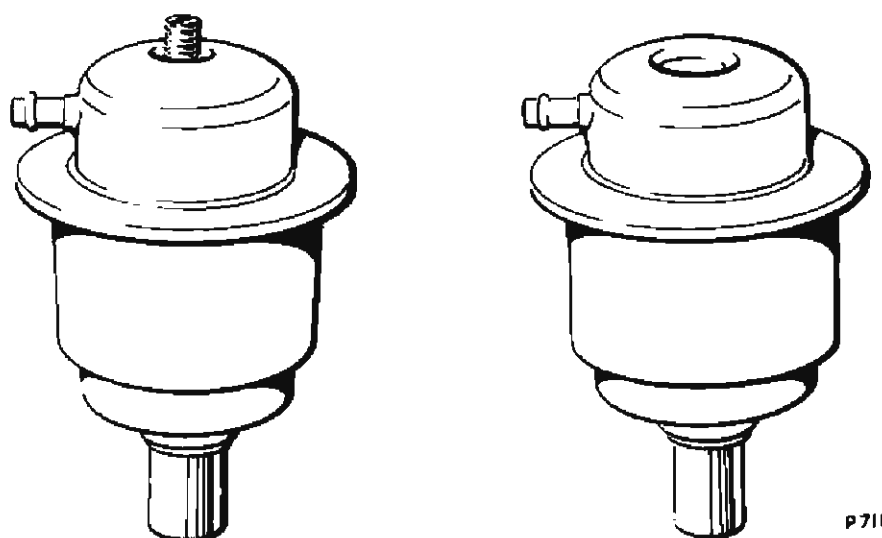
APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars fitted with a three-speed torque converter gearbox.

DESCRIPTION:

All three-speed torque converter gearboxes are now being built using vacuum modulators without the screw as shown in Figure 1. An improved manufacturing method has made it possible to eliminate the screw.

Since vacuum modulators with or without the screw are interchangeable, there will be no part number changes as a result of this design change.



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Figure 1. Vacuum modulator with screw omitted.

JC1/GF

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CATEGORY CCONVERTER REPLACEMENT IN SERVICEAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars, and all Bentley 'T' Series and Corniche cars fitted with Torque Converter Transmission.

DESCRIPTION:

Inspection of converters returned for rebuild indicate that a large number of them are in good serviceable condition and did not require replacement.

In the GM400 transmissions that use the late type, flat transmission oil filter, the converter should be replaced only if:

- 1 Converter has malfunctioned or leaks.
- 2 Transmission oil pump gears damaged or broken creating chips and metal particles which will enter the converter.
- 3 Transmission cooler leaks allowing anti-freeze to get into the transmission.

Transmissions using the early type oil filter assemblies (GM400 models prior to 1968) should have the converter replaced for the above listed three reasons and in addition:

- 4 When the malfunction has resulted in a great amount of metal particles and/or clutch plate material in the transmission.

It is still recommended that the transmission be properly cleaned, the filter replaced and the transmission oil cooler lines flushed out after a transmission malfunction that resulted in sludge or dirt.

JCL/MB

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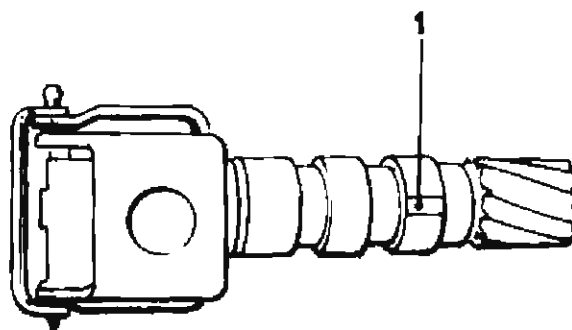
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CATEGORY CGOVERNOR REVISIONAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars and all Bentley 'T' Series and Corniche cars fitted with Torque Converter Transmission.

DESCRIPTION:

Tests have proven that sufficient lubrication is provided to the case extension area without the flat on the governor sleeve; therefore, all GM400 governors are again being manufactured without the flat. There will be no governor part number change as a result of this revision.



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FIGURE 1

1. Flat area removed

First or second type output shafts can be used with governors with or without the flat.

Upon depletion of service output shafts with the lubrication passage, current production shafts without the passage will be released for service.

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CATEGORY CREACTION CARRIER - OPTIONAL DESIGNAPPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars, and all Bentley 'T' Series and Corniche cars fitted with Torque Converter Transmission.

DESCRIPTION:

A reaction carrier with the roller cam cast as a part of the reaction drum and a spacer ring have been released as an option for production (See Fig 1). Use of the one piece reaction carrier and spacer ring started in production in April 1974.

The new assembly requires a relief cut under the cam to provide clearance for the machining of the cam ramps. The resultant gap of the undercut requires the use of a spacer ring to position the roller assembly in alignment with the cam ramps (See Fig 1). The spacer ring locates in the machined undercut, but does not bottom in the ID of the undercut (See Fig 2). The ring must support the roller assembly and prevent it from bottoming in the drum.

The one piece reaction carrier and spacer ring are interchangeable with the current reaction carrier assembly which has a separate cam attached to it with two (2) dowel pins (See Fig 3).

The new reaction carriers and ring will be released for service. The part numbers are 8627893 for 375 and 400 models; 8627895 for the 425 model and 8627846 for the 475 model. The ring, part number 8627657 will also be released separately.

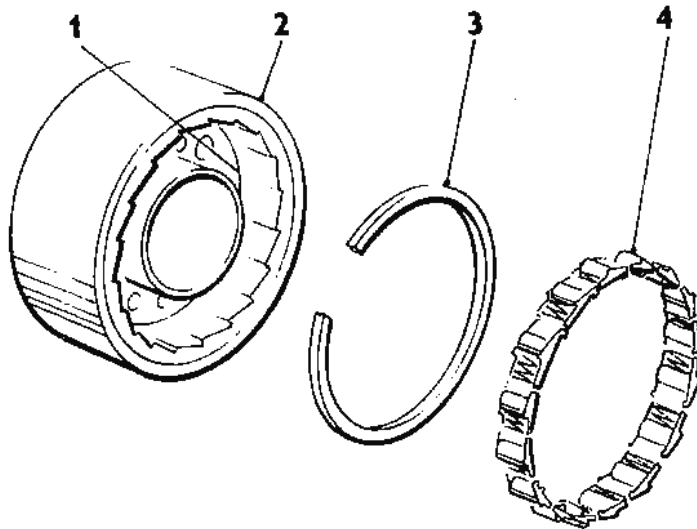
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FIGURE 1

- 1 Undercut
- 2 Reaction carrier
- 3 Ring
- 4 Roller assembly



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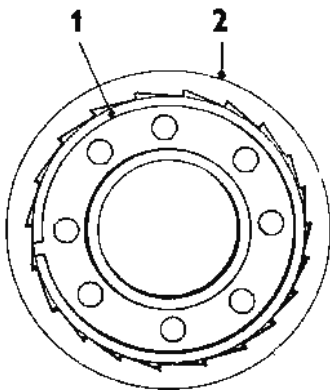


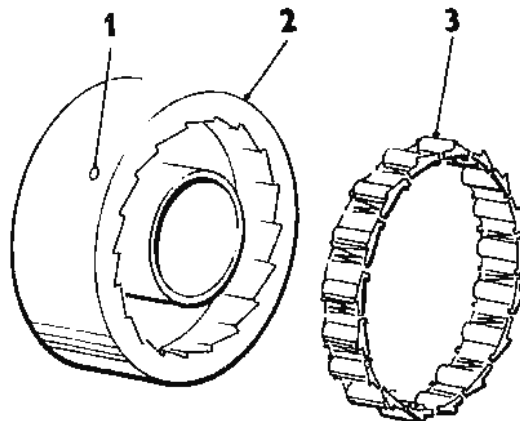
FIGURE 2

- 1 Ring installed
- 2 Reaction carrier

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FIGURE 3

- 1 2 dowel pins located 180° apart
- 2 Reaction carrier
- 3 Roller assembly



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CATEGORY C

TEFLON OIL SEAL RINGS

APPLICABLE TO: All Rolls-Royce Silver Shadow, Bentley T Series and all Rolls-Royce and Bentley Corniche motor cars fitted with Torque Converter Transmission.

DESCRIPTION:

When the stocks of the cast iron hook-type oil sealing ring Part No GM 8623148 are used up, these will be superseded by a Teflon oil sealing ring Part No GM 8626356.

When fitting the Teflon rings, ensure that the ring grooves are free from burrs and foreign matter and that the rings are fitted as shown in the left hand view of Fig. 1.

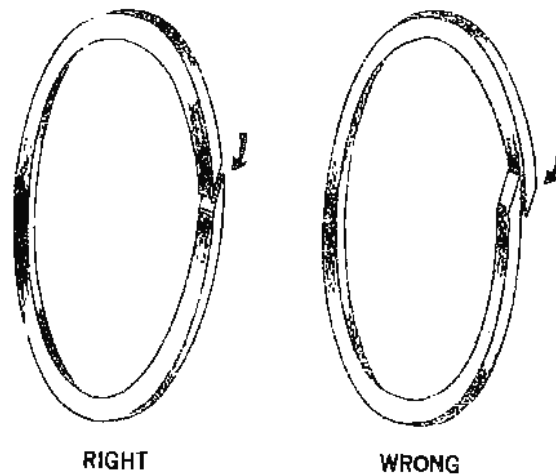


Figure 1 - Teflon Oil Seal Ring.

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CATEGORY C

RETURN OF TORQUE CONVERTER TRANSMISSIONS
TO FACTORY

APPLICABLE TO:

All Rolls-Royce Silver Shadow and Corniche cars, and all Bentley T Series and Corniche cars fitted with Torque Converter Transmission (GM400).

DESCRIPTION:

When returning above transmissions to Factory for replacement or Warranty purposes please ensure the following is carried out.

Transmission is completely drained of fluid.

1. Ensure converter and converter transporting strap are fitted.

Place the transportation blanks from the new gearbox to the one being returned.

2. Ensure transmission serial number is quoted on all paperwork and also ensure that the serial number plate attached to the transmission casing is not removed or damaged.

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CATEGORY CRENEWAL OF INTAKE FILTERSAPPLICABLE TO:

All Rolls-Royce Silver Shadow, Bentley T Series, Rolls-Royce and Bentley Corniche and Rolls-Royce Camargue motor cars fitted with Torque Converter Transmission (GM400).

DESCRIPTION:

The Service Schedule literature for the above motor cars calls for the renewal of the fluid intake filter at the 40 000 km (24 000 miles) and 80 000 km (48 000 miles) service intervals.

In addition we now recommend the renewal of the 'O' Ring part number GM 1363951 which fits the intake pipe neck to pump intake aperture.

This operation has a time allowance of 0.1 hrs.

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CATEGORY C

DIRECT CLUTCH EXHAUST CHECK BALL

APPLICABLE TO:

All Rolls-Royce Silver Shadow, Bentley T Series, Rolls-Royce and Bentley Corniche, and Rolls-Royce Camargue motor cars fitted with Torque Converter Transmission (GM400).

DESCRIPTION:

If renewal of the direct clutch housing is required in the GM400 transmission and the new housing or the original direct clutch piston does not contain an exhaust check ball, then a new direct clutch service piston containing a check ball must be used.

Service reports indicate that some GM400 transmissions are being rebuilt without an exhaust check ball in either the housing or the piston - this causes the direct clutch to burn.

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Page No 1 of 2THE FORWARD CLUTCH SNAP RINGAPPLICABLE TO:

All Silver Shadow, T Series, Corniche and Camargue motor cars.

DESCRIPTION:

It is now known that a small number of GM400 gearboxes, manufactured in two specific batches are fitted with forward clutch housings which have malformed snap ring grooves.

This error may allow the forward clutch snap ring to escape from its groove. Due to the nature of this fault, this is most likely to occur within the first few hundred miles.

If the snap ring comes out of its groove, all forward drive will be lost and only reverse gear will be available. Should this occur Rolls-Royce Motors should be advised of the symptoms of the failure and Warranty authorisation requested before any corrective action is taken.

NOTE

Under NO circumstances should any attempt be made to replace the snap ring or otherwise repair a failed gearbox, as this will result in a further failure. Any such units should be returned to Rolls-Royce Motors as promptly as possible.

Gearboxes can be individually identified by a serial number which is marked on a plate mounted on the right hand side of the gearbox casing. The serial numbers of the two batches of gearboxes are:

Gearboxes for North America and Japanese cars	75 RS 1340 to 75 RS 1613
Gearboxes for other cars	75 RR 1770 to 75 RR 2448

Any gearboxes in Distributors stock whose serial number falls within the quoted ranges should be returned to Rolls-Royce Motors for replacement. However any gearbox which has the letter M stamped on the identification plate has been checked and should not be returned. These boxes should be clearly labelled 'Returned in accordance with Service Bulletin SY/GM55'.

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PHANTOM VI BULLETINS

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CATEGORY CCRANKSHAFT PINION GEAR SLOTTED NUTAPPLICABLE TO:

All Rolls-Royce Phantom V and Phantom VI motor cars.

DESCRIPTION:

The torque figure to which this nut should be tightened has been increased from 27,65 kg.m. (200 lb.ft.) to between 38,7 kg.m. and 44,2 kg.m. (280 lb.ft. and 320 lb.ft.). If the slotted nut retaining the crankshaft pinion gear is removed, it must be discarded and a new one should be fitted, tightened to the revised torque figure.

When fitting the pinion gear, spacer and oil flingers, check to ensure that they are free from burrs. The mating surfaces should be polished to a smooth finish using fine emery cloth.

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CATEGORY C

FUEL MIXTURE WEAKENER SYSTEM

APPLICABLE TO:

All Rolls-Royce Phantom VI cars leaving the factory after chassis number PRH 4779.

DESCRIPTION:

The above cars are now fitted with a fuel mixture weakener device similar to that fitted to present Rolls-Royce Silver Shadow and Bentley 'T' Series cars. In addition Rolls-Royce Phantom VI cars have a vacuum retard mechanism fitted to the ignition distributor.

The carburetters fitted to these cars are set at the factory using special equipment to ensure accurate synchronisation and settings. Under normal circumstances the carburetters should not require adjustment in service. If however adjustment is found necessary due to inadvertent disturbance or replacement of a component the following procedure should be adopted.

PROCEDURE:

1. PRELIMINARY CHECKS:

Before commencing tuning the following points should be checked.

1.1 Automatic choke:

Ensure that the flow through the choke stove pipes is satisfactory.

If it is suspected that the pipes are partially or totally obstructed then the flow should be checked as follows:

1. Run the engine until the full working temperature is reached.
2. Disconnect the air trunking at the choke butterfly housing.
3. Connect a flowmeter to the choke stove pipe (see Fig 5) using a piece of rubber tubing. Using a

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calibrated orifice (RH 8095) and a water manometer capable of reading up to 25 in (625 mms) check the flow rate at 600 rpm. The correct flow rate will give a reading of 16 in to 20 in (405 mm to 510 mm) of water.

4. If the manometer reading is below 16 in (405 mm) remove the choke stove pipes as necessary and clear any obstructions.
5. Refit the pipes and recheck to manometer reading.
6. Refit the air trunking to the choke butterfly housing.

1.2 Check the induction system for air leaks.

2. IGNITION TIMING:

The ignition is timed on A1 cylinder (left hand front cylinder when viewed from the front of the engine).

1. Clean or, if necessary, replace the contact breaker points.
2. Run the engine until the normal operating temperature is reached and the choke fast idle is off. Stop engine.
3. Disconnect the distributor vacuum pipe from the vacuum retard tap (see Fig 2) and blank off the connection on the tap.
4. Connect an impulse tachometer in accordance with the manufacturers instructions.
5. Start the engine and set the speed to 800 rpm by means of the throttle stop (see Fig 3). The speed should be set by approaching 800 rpm from a higher speed.
6. Using a dwell meter set the dwell angle to 26° to 28° by means of the adjusting screw (see Fig 6). To ensure that all backlash is removed from the mechanism it is important that this setting is obtained by decreasing the dwell from a minimum of 32° . Stop the engine.
7. From underneath the vehicle remove the flywheel cover plate and rotate the engine in a clockwise direction (viewed from front of engine) until the pointer (see Fig 4) indicates 2° BTDC on the flywheel for A1 cylinder.

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8. Remove the distributor cap checking that the rotor arm contact is pointing towards the A1 ignition lead position in the distributor cap. Connect a bulb across the points and switch on the ignition.
9. Slacken the distributor clamp bolt (see Fig 6). If the bulb is not illuminated rotate the distributor in a clockwise direction until the bulb just lights. If the bulb is illuminated rotate the distributor in an anti-clockwise direction until it goes out and then clockwise until the bulb just lights. Re-tighten the distributor clamp bolt.

Re-check the timing by rotating the engine in an anticlockwise direction (viewed from front of engine) for approx 20° then clockwise until the bulb just lights. The pointer should indicate 2° BTDC on the flywheel and the rotor arm contact in the distributor should point towards A1 ignition lead position in the distributor cap.

10. Replace the flywheel cover and the distributor cap.
11. Check the ignition timing dynamically using the marking on the crankshaft damper. The setting should be 5° BTDC at 700 rpm.
12. Reconnect the vacuum pipe to the vacuum retard tap.
13. Start engine and adjust idle speed to 600 rpm using the adjusting screw and tighten locknut.
14. Disconnect the vacuum line at the distributor retard capsule (see Fig 6) and tee in a vacuum gauge (0-30 ins (0-762 mm) of mercury) to the line retaining the connection to distributor.
15. Set the vacuum retard tap (see Fig 7) by means of the adjusting screw so that the tap closes at the minimum throttle opening consistent with maintaining 14 ins (356 mm) of mercury minimum at the distributor at idle.
16. Reconnect the vacuum line to the distributor, check and readjust the idle speed if necessary using the adjusting screw.

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3. CARBURETTER TUNING:

- 3.1 Connect an impulse tachometer in accordance with the manufacturers instructions.
- 3.2 Run the engine at fast idle until the normal operating temperature is reached. The engine should be run for not less than 5 mins after the thermostat has opened. Opening of the thermostat can be detected by a sudden rise in temperature of the thermostat elbow pipe.
NB - It is important that the engine tuning is carried out after the engine temperature has stabilised and at an ambient temperature between 60°F and 80°F.
- 3.3 Ensure that air conditioning unit is switched off.
- 3.4 Check that the choke butterfly valve is fully open by depressing the lever (see Fig 7) against the bi-metal coil tension. On releasing the lever the valve will be heard to strike the stop in the fully open position.
- 3.5 Check float chamber depression as follows:
 1. Disconnect the weakener device to fuel receiver hose at the weakener end (see Fig 1) and connect a manometer capable of measuring 0-6 in (0-152 mm) of water.
 2. Run the engine at 2000 rpm in neutral until a steady reading is obtained on the manometer. The correct reading is 3-3.5 in (76-89 mm) of water depression.

A low or zero reading could be caused by:

- a) A blockage in the weakener venturi (see Fig 3).

A high reading may be caused by:

- a) An obstruction in the weakener bleed orifice (see Fig 3) or the weakener hoses.
- b) A fouled weakener filter.
3. If the float chamber depression is still incorrect after carrying out all the above checks then the correct depression of 3.25 in water may be set by turning the socket head weakener adjusting screw (see Fig 3) until the correct depression is obtained on the manometer. Turning the screw clockwise increases the depression. NOTE - The screw is locked with

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"Casco" on assembly and if it is adjusted it will have to be relocked by applying "Casco" to the threads.

4. Reconnect the weakener to vent canister hose at the weakener (see Fig 1). Remove the cap from the pressure tapping on 'A' Bank carburetter (see Fig 3) and connect a manometer measuring 0-6 in (0-150 mm) water.
5. Run the engine at 2000 rpm in neutral until a steady reading is obtained on the manometer. The correct reading is 3-3.5 in (76-89 mm) water depression.

A low or zero reading may be caused by:

- a) A blockage in the hose from the weakener to vent canister fuel receiver (see Fig 1).
 - b) A blockage in the hoses from the float chambers to the fuel receiver.
 - c) An air leak at the float chamber lid joint, float chamber vent, drain pipes, hoses, weakener solenoid hose connections or weakener tapping flange on 'B' bank carburetter.
 - d) A dirty or faulty float chamber vent valve (see Fig 1) or float chamber drain valve (see Fig 1).
 - e) Low engine temperature (below 60°F), a faulty weakener solenoid valve (Fig 1) or thermal switch (Fig 1).
6. Screw the volume screw on each carburetter (Fig 3) fully in then back out $\frac{1}{2}$ turn.
 7. Raise the engine speed slowly noting the manometer and tachometer readings. The maximum steady manometer reading should be obtained between 1500-1900 rpm. If the maximum depression occurs below 1500 rpm it is permissible to screw out the volume screws (Fig 3) by equal amounts (2 $\frac{1}{2}$ turns maximum from fully in position) to obtain this speed.
 8. Ensure that adequate clearance 0.25 in (6.4 mm) exists around 'B' bank float chamber weakener hose where it passes the ignition coil. If insufficient clearance exists bend the fuel receiver towards the distributor until sufficient clearance is obtained.

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3.6 Setting carburettor balance and mixture strength. The following tuning operations should be carried out in the shortest possible time. If the time for setting exceeds 3 mins run the engine at 2000 rpm for $\frac{1}{2}$ min, then resume running. Repeat this purging operation if further periods of 3 mins are exceeded. After each purging operation to eliminate carburettor piston hysteresis gently tap all round the neck of the suction chamber using a lightweight non-metallic object eg the wooden handle of a small screwdriver.

1. Remove the air trunking and blank off the hot idle mixture compensator feed using suitable tape (see Fig 5) and replace the air trunking.
2. Disconnect distributor vacuum pipe from vacuum retard tap (see Fig 2) and blank off connection on tap.
3. Remove air valve dampers from carburettors and top up with approved engine oil. Oil level should be approx 0.5 in (12.7 mm) below the top of the piston rod.
4. Set engine idle speed to 600 rpm using the adjusting screw (see Fig 3).
5. Balance carburettors by adjusting the eccentric pivot (see Fig 3). The carburettors are balanced when the hiss from the small drilling in the neck of each suction chamber is of equal intensity. A rubber or plastic tube 0.125 in (3.2 mm) bore 2 ft (610 mm) long may be used as a listening aid. Replace the air valve dampers.
6. Slacken both the jet adjusting screw locknuts using spanner RH 8050.
7. Turn both the jet adjusting screws (see Fig 3) equal amounts in the same direction ($\frac{1}{8}$ turn at a time) until the maximum rpm is obtained. NB - Turning the screws clockwise richens the mixture and turning anti-clockwise weakens the mixture.
8. Set the mixture balance by adjusting mixture screws (see Fig 3) individually by approx $\frac{1}{8}$ turn at a time in either direction until the maximum rpm is obtained.

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9. Turn the jet adjusting screws (see Fig 3) by equal amounts anti-clockwise (weaker mixture) until the engine speed just begins to fall, then turn both the screws $1/8$ of a turn clockwise and tighten the locknuts.
10. Check the idle speed and if necessary readjust to 600 rpm using the adjusting screw (see Fig 3).
11. Check the carburettor mixture balance by raising each piston lift pin (see Fig 3) in turn. If the mixture balance is correct the response will be the same for each carburettor. If not repeat operations 6 to 10 until a satisfactory balance is obtained.
12. Purge engine at 2000 rpm for $\frac{1}{2}$ min (Refer to section 3.6).
13. Ensure that the engine has run for at least 25 mins after opening of thermostat (Refer to Section 3.2). Fit the probe of CO meter into the exhaust pipe in accordance with the manufacturers instructions. A suitable CO meter is Horiba Mexa 200 or the Bosch model Efaw 109.
14. Disconnect the weakener to vent canister hose at the weakener end (see Fig 1). Allow the engine to idle until a steady CO reading is obtained (minimum $\frac{1}{2}$ min). The correct reading is 4-4.5% using reference fuel ERF G1 (3-3 $\frac{1}{2}$ % normal tank fuel). If the CO reading is not within limits it is permissible to unlock the jet adjusting screws (see Fig 3) to set the mixture strength richer or weaker up to a maximum of $\frac{1}{4}$ turn of the adjusting screws (clockwise or anti-clockwise) - both screws must be returned in the same direction. Tighten the locknuts after adjustment.
15. Remove the CO Meter, disconnect the manometer and refit the cap to the pressure tapping, replacing the washer if necessary. Refit the weakener to vent canister hose to the weakener (see Fig 1). Reconnect the distributor vacuum pipe to the vacuum retard tap B (Fig 2).
16. Check the idle speed and if necessary reset to 600 rpm using the adjusting screw (see Fig 3). Remove the air trunking and unblank the hot idle compensator feed (see Fig 5). Replace the air trunking.

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3.7 Setting the automatic cold start fast idle mechanism.

1. Remove pressure tapping cap from 'A' bank carburettor (see Fig 3).
2. Switch off the engine, open the throttles and close the choke butterfly against the bi-metal coil tension by means of the choke butterfly operating lever (see Fig 7). Release the throttles. The fast idle adjusting screw (see Fig 7) will now be resting on the high step of the fast idle cam and the throttles will be in the cold start position.
3. Start the engine, slacken the locknut and turn the adjusting screw (see Fig 7) to obtain 2000 rpm.
4. Tighten locknut and re-check fast idle speed. If correct open throttles to release fast idle cam mechanism.
5. Replace pressure tapping cap.

3.8 Setting Throttle Damper.

1. Switch off the engine.
2. Slacken the nuts securing the throttle damper (see Fig 2) to the mounting bracket.
3. Press the damper towards the lever until the damper is fully compressed and the lever is just clear of throttle stop screw (see Fig 3). Screw the lower fixing nut until it is .050 clear of underside of bracket. Release the damper and tighten the upper locknut. Ensure that after setting, the damper spindle is resting on the centre of the throttle lever pad.

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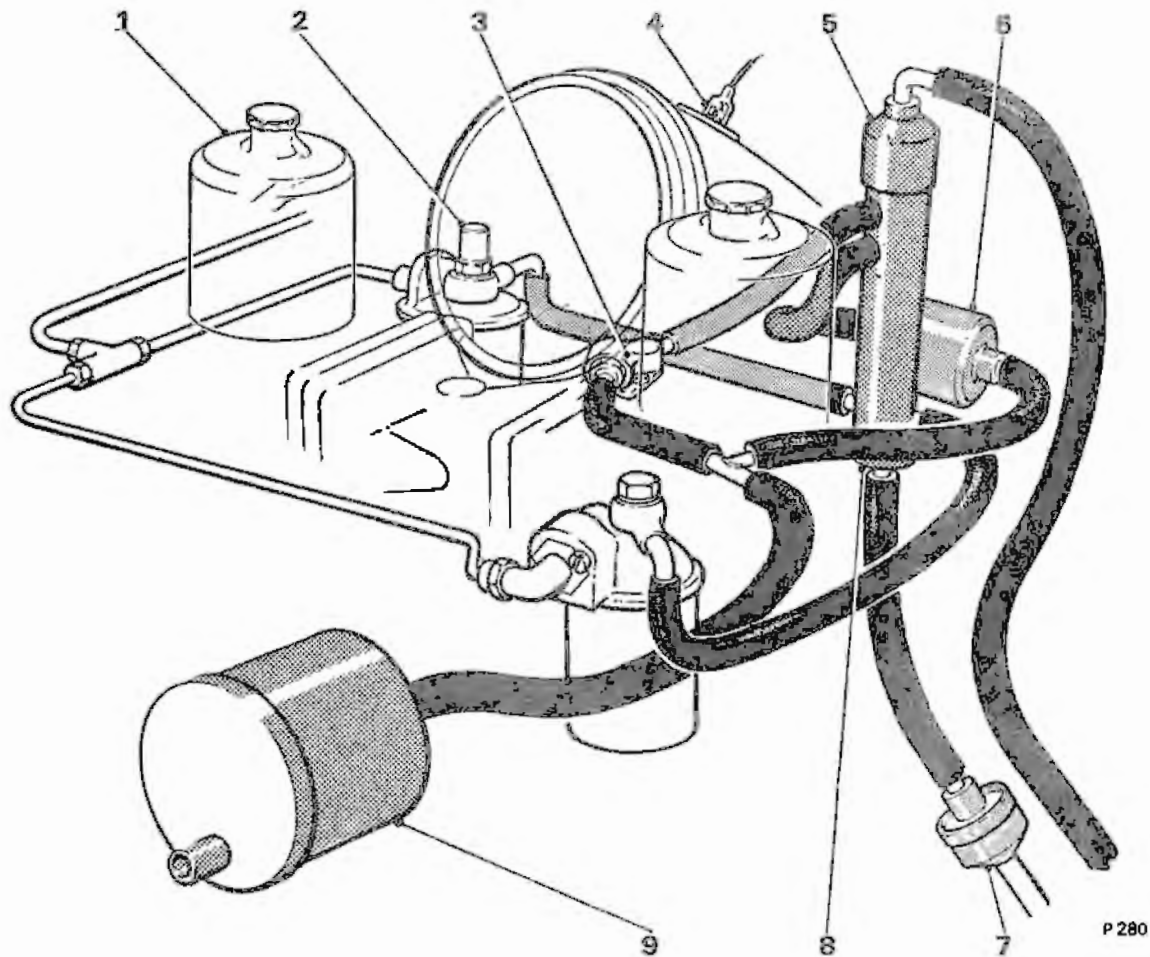
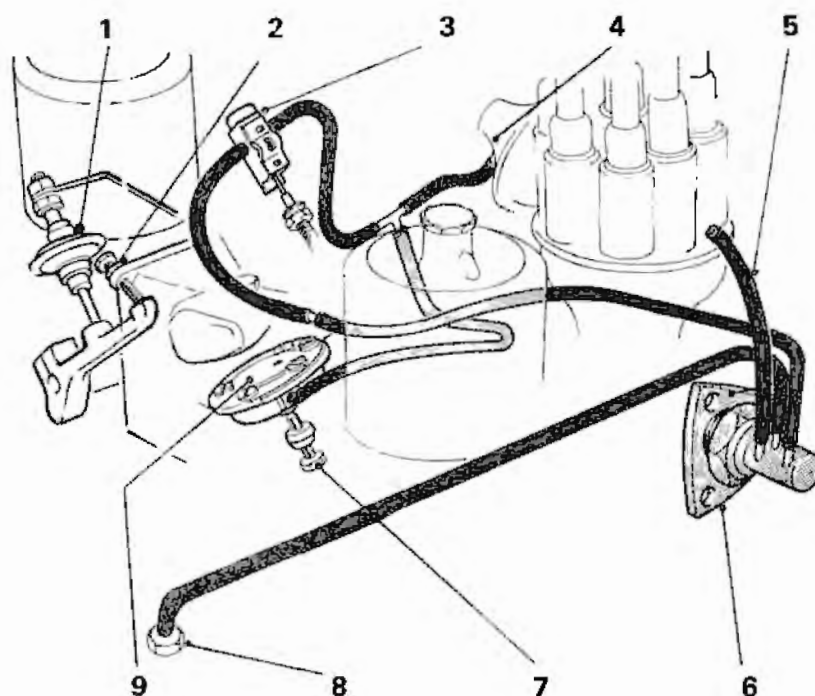


Figure 1 CARBURETTER WEAKENING DEVICE

1. 'A' bank carburettor.
2. Float chamber pressure tapping.
3. Weakening device.
4. Bi-metal switch.
5. Float chamber vent valve.
6. Weakening device cut-off valve.
7. Float chamber drain valve.
8. Fuel receiver.
9. Weakener filter.

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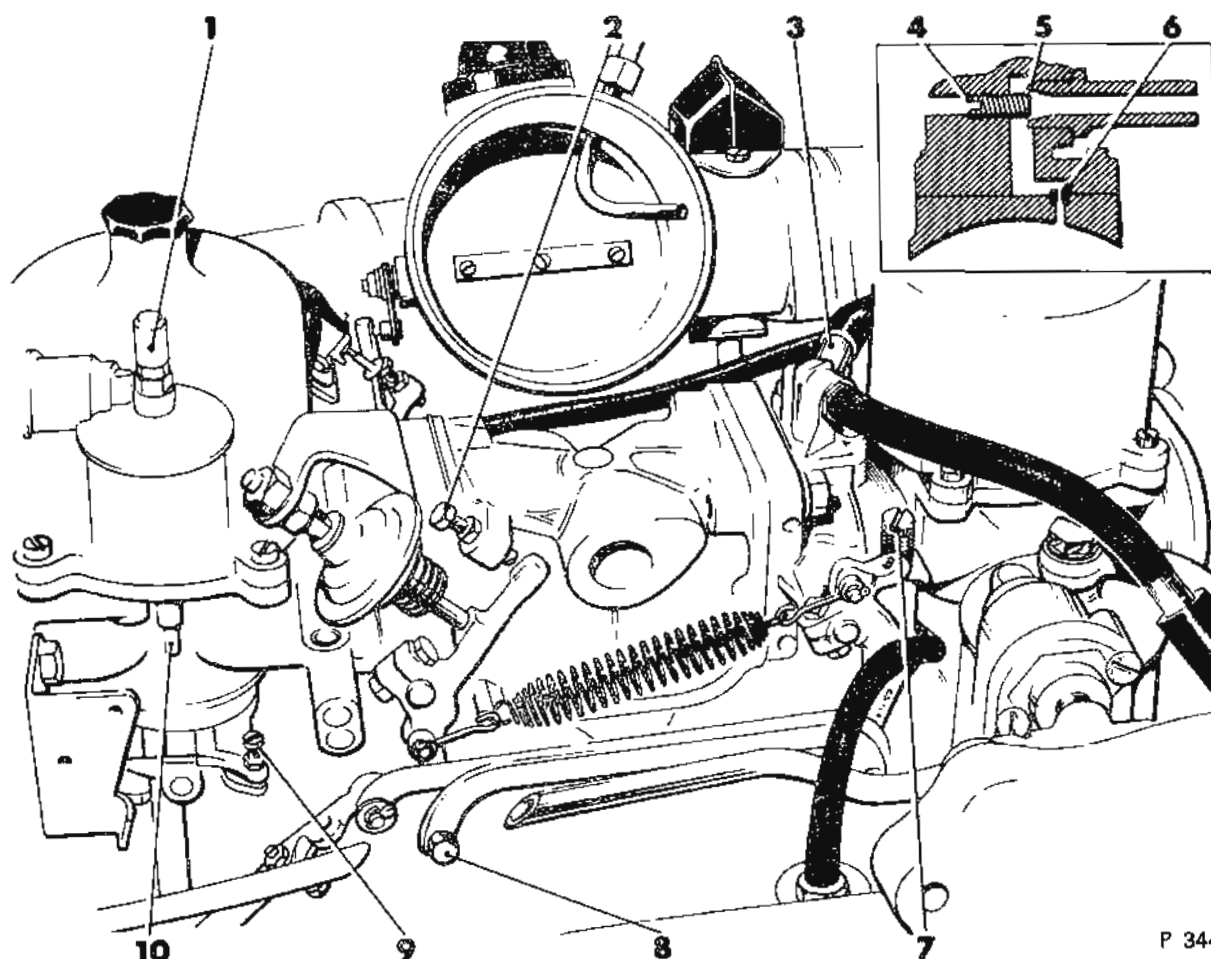
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Figure 2 IGNITION CONTROL SYSTEM

1. Throttle damper.
2. Fixed throttle stop screw.
3. Vacuum retard tap.
4. Distributor retard capsule.
5. Vent to air trunking.
6. Thermal vacuum switch.
7. Vacuum throttle stop screw.
8. Inlet manifold vacuum tapping.
9. Throttle stop vacuum actuator.

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Figure 3

1. 'A' Bank carburettor weakener tapping.
2. Fixed throttle stop screw.
3. Weakener device.
4. Venturi adjusting screw.
5. Weakener venturi.
6. Weakener bleed orifice.
7. Volume adjusting screw.
8. Eccentric throttle adjuster.
9. Mixture adjusting screw.
10. Carburettor piston lift pin.

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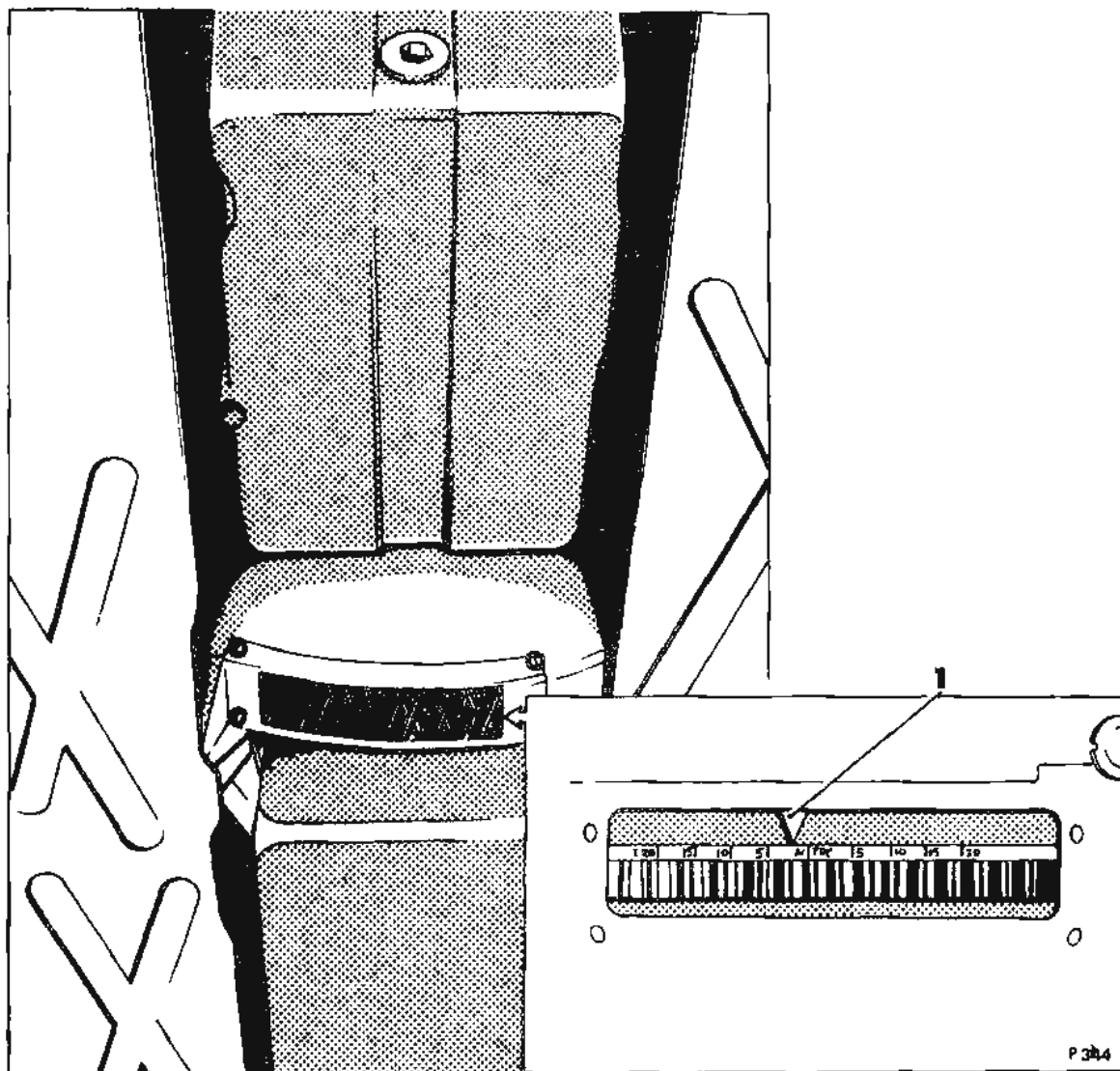


Figure 4 Timing Pointer and Markings

1. Timing pointer.

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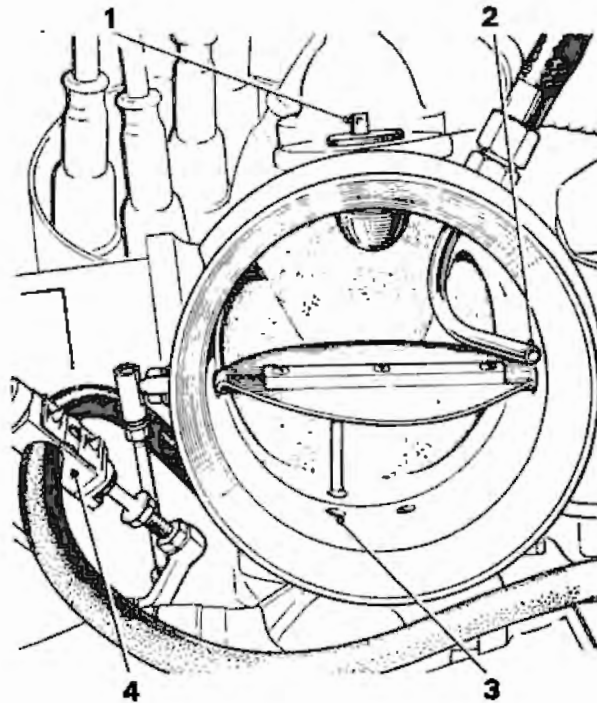


Figure 5

1. Thermal switch.
2. Choke store pipe.
3. Hot idle compensator air bleed.
4. Vacuum tap.

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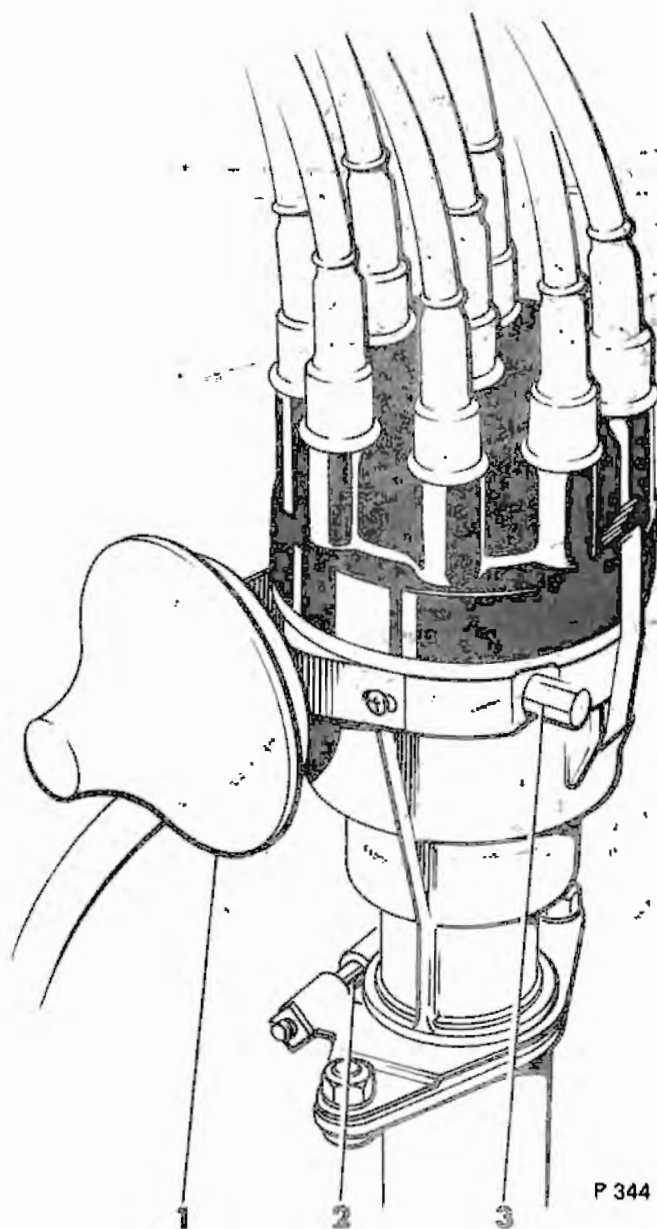


Figure 6 'Distributor

1. Vacuum capsule.
2. Clamp bolt.
3. Dwell adjusting screw.

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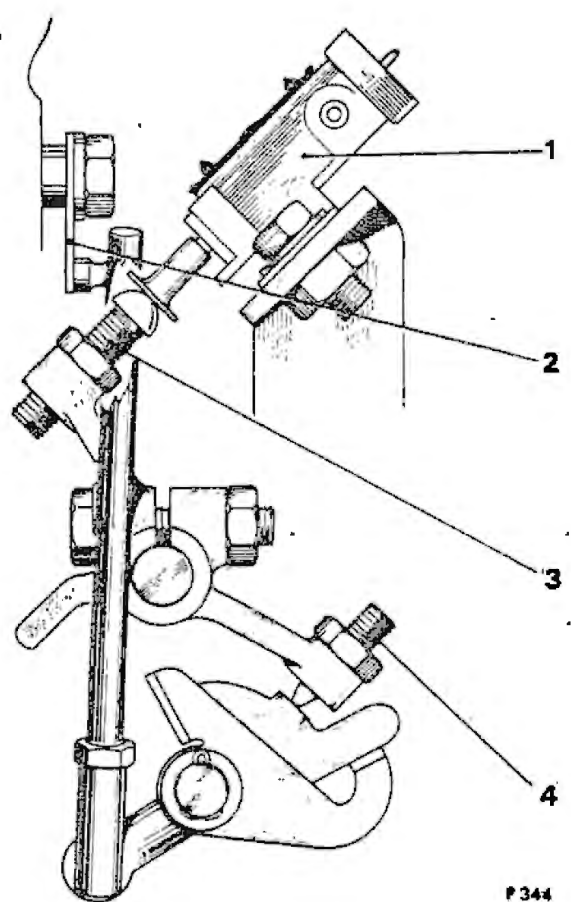


Figure 7

1. Vacuum Tap.
2. Choke operating lever.
3. Vacuum tap adjusting screw.
4. Fast idle adjusting screw.