



Daimler

HANDBOOK FOR

2 ½ LITRE

“CONSORT” SALOON

AND

“SPECIAL SPORTS” COUPE

THE **Daimler** 2  $\frac{1}{2}$  LITRE



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FOR THE

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AND

**“SPECIAL SPORTS” COUPE**

Published Price

**10/6**

NET.

THE DAIMLER COMPANY LIMITED  
COVENTRY

THE  2 ½ LITRE

Owners are particularly invited to make full use of the service organisation of the Company and its officially appointed Distributors and Dealers Repair Depots. Daimler Cars are thus serviced by mechanics who are in constant contact with the Company's works and with each development of progress.

**THE DAIMLER COMPANY LIMITED**

COVENTRY

# THE Daimler 2 ½ LITRE

## FOREWORD

This Handbook has been prepared with the object of giving all the information that is necessary for the Owner to obtain the greatest pleasure and satisfaction.

We would draw special attention to certain sections of the Handbook dealing with the operation of a new car, and the detailed recommendations as to the method of driving. These sections have been included in the Handbook in the hope that they will help the Owner to get the best out of the Car.

The whole resources of the Company are behind the Car, and if additional information on any point is desired by the Owner, application should be made to The Daimler Co. Ltd., Coventry.

This book, the first edition, is applicable to the following cars: -

"Special Sports"	....	No. 53750 to 53999
		No. 56136 to 56188
		No. 56700 to 56774
		No. 59010 to 59239
"Consort"	....	No. 55000 to 55999
		No. 56200 to 56699
		No. 57010 to 59009

It is specially important that the Car Number should be quoted in all correspondence and spares orders. The type is DB 18, and the Chassis Number will be found on a brass plate on the frame just below the steering column.

The Engine Number is stamped on the cylinder block above the Dynamo Bracket and to the right of the List Number Plate. This Engine Number should also be quoted in all correspondence and spares orders relating to Engine parts.

## INDEX TO CONTENTS

---

		Page
Foreword	....	3
Index	....	4
List of Illustrations	....	5
<b>Chapter I.</b>	<b>GENERAL INFORMATION</b>	7
Part 1	.... Taking over a new car	8
Part 2	.... Controls and Instruments	11
Part 3	.... Starting Instructions	16
Part 4	.... Driving- Recommended use of the controls	18
Part 5	.... Specification	23
<b>Chapter II.</b>	<b>THE POWER UNIT</b>	31
Part 1	.... Engine	32
Part 2	.... The Carburetors and Air Cleaner	36
Part 3	.... Fuel Supply	43
Part 4	.... Lubrication System	47
Part 5	.... Engine Cooling and Car Heating System	50
Part 6	.... Ignition	58
<b>Chapter III.</b>	<b>TRANSMISSION</b>	63
Part 1	.... Fluid Flywheel	64
Part 2	.... Gearbox	66
Part 3	.... Propeller Shaft	71
Part 4	.... Rear Axle	72
Part 5	.... Front and Rear Hubs	74
Part 6	.... Wheels and Tyres	76
<b>Chapter IV.</b>	<b>SUSPENSION</b>	77
Part 1	.... Front and Rear	78
Part 2	.... Suspension Dampers	79
<b>Chapter V.</b>	<b>STEERING</b>	81
<b>Chapter VI.</b>	<b>BRAKES</b>	84
<b>Chapter VII.</b>	<b>ELECTRICAL EQUIPMENT</b>	87
Part 1	.... Lighting	88
Part 2	.... The Starter Motor	93
Part 3	.... The Dynamo	95
Part 4	.... The Battery	99
Part 5	.... Accessories	100
<b>Chapter VIII.</b>	<b>BODY</b>	102
<b>Chapter IX.</b>	<b>CHASSIS</b>	103
Part 1	.... Chassis lubrication	105
Part 2	.... Jacking system	107
	<b>LUCAS SERVICE DEPOTS</b>	108
<b>Chapter X.</b>	<b>SUMMARY OF MAINTENANCE</b>	110
	<b>ALTERNATIVE LUBRICANTS</b>	112
	<b>THE WIRING DIAGRAMS</b>	Inside back cover

# THE Daimler 2 ½ LITRE

## LIST OF ILLUSTRATIONS

	Page
Fig. 1 .... The Controls and Instruments ("Consort" Saloon) ....	10
Fig. 2 .... The Controls and Instruments ("Special Sports") ....	13
Fig. 3 .... Identification of Controls. A simplified illustration of the actual driving controls	18
Fig. 4 .... The Tools	29
Fig. 5 .... Tappet Adjustment	33
Fig. 6 .... Ignition and Valve Timing	34
Fig. 7 .... Valve Timing-Aligning Camshaft Chainwheel	34
Fig. 8 .... The Carburettors ("Special Sports")	37
Fig. 9 .... Carburettor Jet Assembly, Piston, and Needle	39
Fig. 10 .... The Carburettor Controls ("Consort" Saloon)	40
Fig. 11 .... The Oil Bath, Air Cleaner, and Silencer	41
Fig. 12 .... The Petrol Pump Filter and Hand Priming Lever	43
Fig. 13 .... The Engine - Nearside and Offside ("Special Sports")	45
Fig. 14 .... The Engine - Nearside and Offside ("Consort" Saloon)	46
Fig. 15 .... Oil Filler	47
Fig. 16 .... Location of Sump Drain Plug and Dipstick	48
Fig. 17 .... Undoing the Filter	49
Fig. 18 .... Removing Filter Body	49
Fig. 19 .... Water Pump Grease Nipple	50
Fig. 20 .... Adjustment of Fan Belt	51
Fig. 21 .... Location of Cylinder Block Drain Tap	52
Fig. 22 .... The Heater Unit ("Special Sports")	55
Fig. 23 .... The Heater Unit ("Consort" Saloon)	56
Fig. 24 .... Distributor	58
Fig. 25 .... High-Tension Cable	59
Fig. 26 .... Setting Ignition Timing	61
Fig. 27 .... Removing Fluid Flywheel and Gearbox Cover	64
Fig. 28 .... Topping-up the Fluid Flywheel	65
Fig. 29 .... Filling the Gearbox, showing Drain Plug (access from beneath car)	66
Fig. 30 .... Gearbox Control Rods	67

# THE Daimler 2 ½ LITRE

## LIST OF ILLUSTRATIONS (contd.)

	Page
Fig. 31 .... Adjustment of Toggle Setting	69
Fig. 32 .... Speedometer Cable	70
Fig. 33 .... Propeller Shaft, showing the Grease Nipple	71
Fig. 34 .... Rear Axle Filler and Level Plug ("Special Sports")	72
Fig. 35 .... Rear Axle Filler Plug and Dipstick ("Consort" Saloon)	73
Fig. 36 .... Removal of Hub Cover Plate	74
Fig. 37 .... Removal of Hub Cap (Front Wheel)	75
Fig. 38 .... Rear Hub Grease Nipple	75
Fig. 39 .... Independent Front Suspension	78
Fig. 40 .... The Shock Absorber	79
Fig. 41 .... Adjustable Steering Column....	81
Fig. 42 .... Steering Box Filler and Level Plug	82
Fig. 43 .... The Setting of the Front Wheel Alignment	83
Fig. 44 .... Adjusting Brakes	84
Fig. 45 .... Bleeding Front Brakes	85
Fig. 46 .... Headlamp Wiring Connections	88
Fig. 47 .... Headlamp with Front Rim removed	89
Fig. 48 .... Headlamp with Light Unit removed	90
Fig. 49 .... Foglamp with Light Unit removed	91
Fig. 50 .... Setting Lamps	92
Fig. 51 .... Cleaning Commutator	93
Fig. 52 .... Turning Starter by Square Shaft Extension	94
Fig. 53 .... Dynamo Brushes	95
Fig. 54 .... The Rev. Counter Cable and Reduction Gear	96
Fig. 55 .... Control Box and Fuse Box	97
Fig. 56 .... Battery	98
Fig. 57 .... Lubricating Trafficator	100
Fig. 58 .... Replacing Bulb (Trafficator)	100
Fig. 59 .... Electric Horn	101
Fig. 60 .... Chassis Lubrication Operating Mechanism	104
Fig. 61 .... Topping up Chassis Lubrication System....	105
Fig. 62 .... Operating one of the two Rear Jacks	106
Fig. 63 .... Operating Front Jack	107

NOTE – Electrical Wiring diagrams will be found at the end of the book

THE **Daimler** 2 ½ LITRE

# Chapter I

## GENERAL INFORMATION

Part 1	....	Taking over a new car	....	....	Page 8
Part 2	....	The Controls and Instruments	....	....	Page 11
Part 3	....	Starting Instructions	....	....	Page 16
Part 4	....	Driving-Recommended use of the Controls			Page 18
Part 5	....	Specification	....	....	Page 23

# THE Daimler 2 ½ LITRE

## Part 1

### TAKING OVER A NEW CAR

#### Driving

An Owner who has not previously handled a car fitted with the Daimler Trans-mission will find all the information he requires on this subject in the remainder of this chapter. We feel that the recommendations will well repay study in the additional pleasure obtained.

#### Points to be Checked.

These will normally be checked before handing over, but assurance should be obtained from the supplier that such is the case. When taking over a new car, the following points should be checked :-

#### Oil

Check the oil level in

a. Engine	....	....	....	....	see page	47
b. Fluid flywheel	....	....	....	....	see page	64
c. Gearbox	....	....	....	....	see page	66
d. Rear axle	....	....	....	....	see page	72
e. Chassis lubrication system	....	....	....	....	see page	105

#### Brake Fluid

Check the fluid level in the master cylinder reservoir situated under the dash.

#### Water

Check the level of the water in the radiator. Fill up with clean water if necessary.

The use of anti-freeze mixture in winter is strongly recommended to avoid the draining of the water system in very cold weather.

**NOTE.** See page 50 for Frost Precautions.

#### Petrol

See that there is sufficient fuel in the tank. The tank capacity is 14 gallons including 1½ gallons reserve.

The reserve tap is operated by a knob on the dash panel. (See page 11).

# THE Daimler 2 ½ LITRE

## Running-In

The engine, gearbox, and rear axle are all run and bench tested before installation in the chassis, and the complete car is tested on the road.

Running-in at a fixed low speed is not therefore necessary or desirable.

It is important that during the **first 500 miles** running, prolonged bursts of high speed or prolonged full throttle operation in the lower gears should be avoided.

This procedure will avoid submitting the engine or transmission to anything approaching the degree of work which they are designed to do when all the bearing surfaces throughout the car are completely run in.

## Service

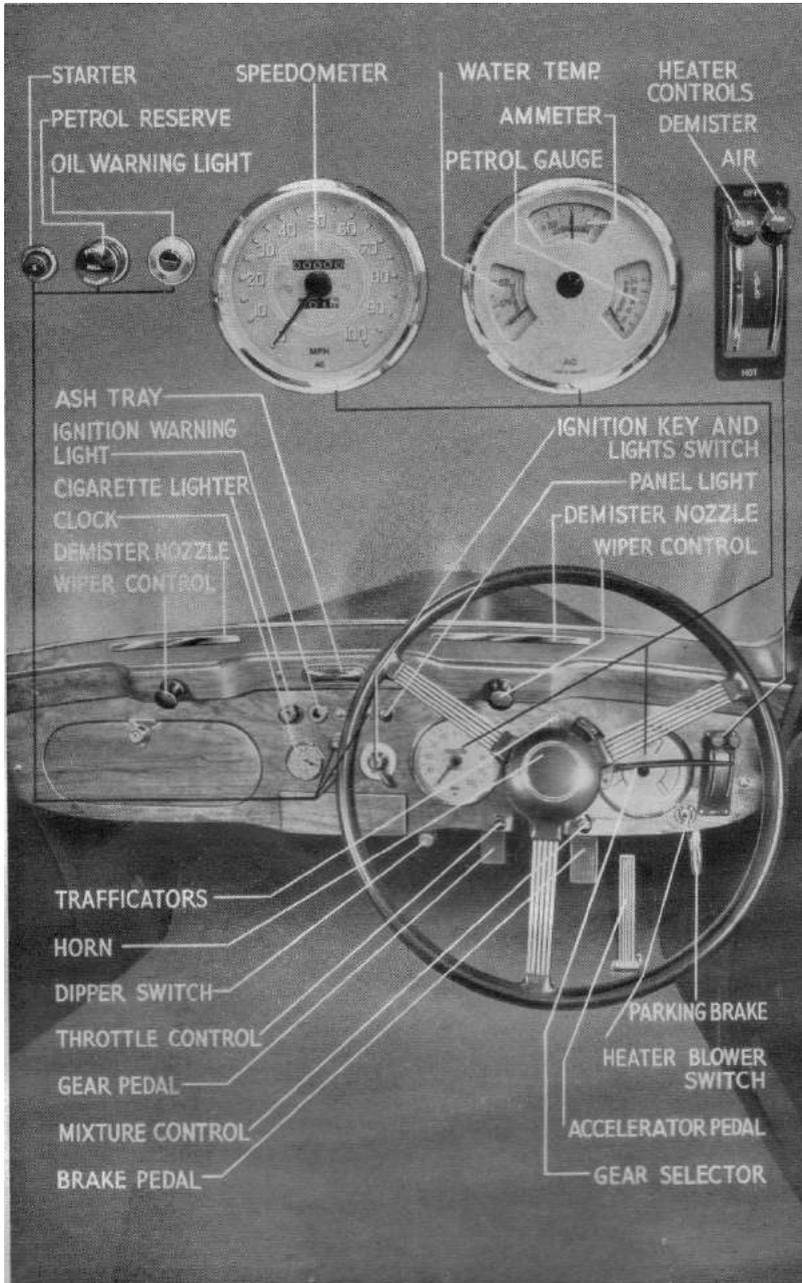
It is advisable to change the oil in the engine gearbox and rear axle after the completion of the **first 500 miles**.

At this mileage also the cylinder head nuts should be tightened down and the tappet clearances checked (see page 32). Plug and distributor points should be checked and the slow-running set. (See pages 38 and 59).

These points and any other necessary lubrication and adjustments, will be carried out by the Distributor or Agent from whom the car was purchased.

No charge, other than for materials, will be made.

# THE Daimler 2 ½ LITRE



**Fig 1**

The Controls and Instruments ("Consort" Saloon)

# THE Daimler 2 ½ LITRE

## Part 2

# THE CONTROLS AND INSTRUMENTS

The two photographs of the Driver's Controls and instruments fitted in the two models, give the relative positions of the respective controls.

Below we give their function and methods of operation.

## DRIVERS HAND CONTROLS

### Mixture Control

This control is only to be used for starting from cold. Pull out to operate.

### Hand Throttle

Pull out to open throttle.

### Petrol Reserve Control

Pull out to run on reserve supply of 1½ gallons. Push in AFTER filling the tank.

### Bonnet Locks – “Consort” Saloon

Beneath the facia panel at each end. Pull out to release N/s or O/s of bonnet. Press bonnet down to lock.

### Car Heater Controls

In the Sports model, the single switch is found to the extreme left of the controls, and governs the speed of the electric fan contained in the car heater. Twisting in a clockwise direction switches the fan motor full on, and further movement decreases the speed of the motor. Two flaps found on the front face of the heater can be opened to increase the flow of air to the occupants' feet, whereas closing the flaps ensures that most of the air passes through the demister tubes to the base of the windscreen.

The “Consort” is equipped with a Smith's Heating and Ventilating Unit. Air is taken in by a blower, led through a special radiator, and finally ducted to the interior of the car and the base of the windscreen.

There are three controls, found on the extreme right of the instrument panel :

1. An ON/OFF switch to operate the blower, which forces air from the exterior to the interior of the car.
2. A knob marked “AIR” controlling the temperature of air passed to the feet of the occupants.
3. A knob marked “DEMISTER” controlling the temperature of air passed to the windscreen. The last ¼“ movement of the “DEMISTER” knob gives extra heat for de-icing and should only be used when needed.

# THE Daimler 2 ½ LITRE

There are three main positions for the two control knobs marked "AIR" and "DEMISTER" :

1. "OFF" – The air supply is completely cut off.
2. "COLD" – The air by-passes the radiator and is fed directly into the compartment while still cold.
3. "HOT" – All air passes through the radiator and is warmed before being directed into the interior of the car.

Movement of the knobs between the positions marked "COLD" and "HOT" merely alters the proportion of cold air to hot air and does not alter the quantity of the air passed to the interior.

**Note.** Hot water is cut off from the radiator when the "AIR control is in the "COLD" position. Thus no hot air is available for demisting purposes. For every other position of the control however, hot water is circulating through the radiator.

### **Starter Button**

Press to start.

### **Instrument Panel Switch**

Light of variable intensity is obtained by turning the switch fitted to the "Special Sports" a normal ON/OFF switch is used in the "Consort" model.

### **Lighter**

Push in to heat up and pull out to light cigarette – DO NOT HOLD IN TOO LONG – a slight glow is sufficient. On replacing, do not push in too far.

### **Ignition and Light Switch**

One is fitted each side of the car in the roof, and the switches are at the top of the door pillars.

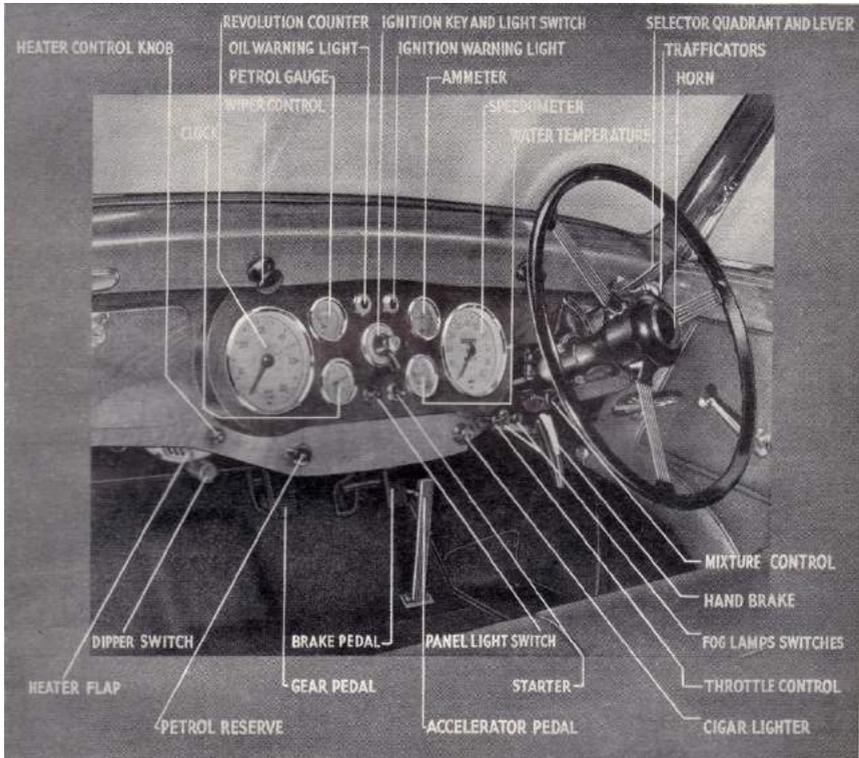
### **Screen Wipers**

Two knobs situated above either side of the instrument panel control each wiper. To operate; push and twist to the right. The wiper on the Driver's side must be operated before the wiper on the passenger's side can operate : and neither will operate unless the ignition is switched on.

### **Fog Lights**

The two fog lamps, fitted to the 2½ litre Special Sports, are independently operated by two push/pull switches on a bracket immediately below the steering column and can only work when the side lamps are on and the headlamps are off. They are unaffected by the action of the foot dip switch. They are only to be used when visibility has been reduced due to the presence of fog or falling snow.

# THE Daimler 2 ½ LITRE



**Fig 3**  
The Controls and Instruments ("Special-Sports")

### Trafficator Control

This is situated in the centre of the steering wheel above the horn button. The trafficators operate only when the ignition is on. They are self-cancelling after a turn, but return the lever by hand should a small movement of the wheel fail to return it automatically.

### Horn Button

Placed in the centre of the steering wheel, press to operate.

**Parking Brake**

Below the facia board on the right-hand side. Pull out to apply brake. To release, press catch and pull slightly to release trigger and then allow to move forward. Do not use this brake other than for holding car while parked.

**DRIVER'S HAND CONTROLS****Gear Selector**

Placed below steering wheel on right-hand side. Details for use are given in Part 4, page 16. To select reverse, push lever down to overcome stop. A reversing light is fitted and the switch is incorporated in the selector mechanism, so that the light is "ON" when the lever is in Reverse Gear position.

**Steering Wheel**

This is adjustable for position to suit the driver. The locking lever should be pulled up so that the wheel may be moved up or down as desired. When satisfactorily placed, push the locking lever back. The ease with which this lever is operated can be adjusted by means of the knurled nut at the other side of the column. It is recommended that this be set so that the lever is just sufficiently free to operate, but not slack.

It is important not to leave the wheel loose after adjusting in order to avoid damage to the splines.

**FOOT CONTROLS****Accelerator**

On the right.

**Brake**

Placed in the centre.

**Gear Change Pedal**

On the left. Note that this is referred to as the Gear Change Pedal and NOT the Clutch Pedal. The recommended method for use of this is given in the Driving Recommendations, page 18.

**Dipper Switch**

Placed to the left of the Gear Change Pedal. Press and release to change from both headlights on to only the nearside dipped, or from dipped to both on.

Note. On the 2½ litre Special Sports, separate switches are provided for the fog lamps

# THE Daimler 2 ½ LITRE

## INSTRUMENTS

1. **Speedometer.** To set the trip, which projects from the rear of the speedometer downwards, push upwards and turn. After setting pull down to make trip operative.
2. **Revolution Counter.** Fitted only to the 2½ litre Special Sports, this is on the left of the instrument panel. Figures on the dial indicate the engine speed in hundreds of revolutions per minute.
3. **Ammeter.** This Instrument indicates charge and discharge of the battery. As the dynamo output is controlled according to the state of the battery, the ammeter will show a heavy charge when the battery is in a low state, but the charging rate will become less as the battery reaches a state of full charge. Investigate any sudden or heavy discharge which would indicate that there is a short somewhere in the wiring system.
4. **Water Temperature Gauge.** This should, under normal conditions read 170°F.-190°F. Investigate any sudden rise or fall. If anti-freeze mixture is not used a high reading in extremely cold weather may indicate that the bottom of the radiator is freezing up.
5. **Petrol Gauge.** This operates only when the ignition is switched on and indicates the **total** amount of petrol in the tank.
6. **Clock.** The clock is electrically operated and set by a knob which projects downwards from the clock. To set, pull knob and twist.
7. **Ignition Warning Light.** When the ignition is switched on the bulb will light up but will go out as soon as the dynamo commences to charge. If it lights up while the engine is running at more than a tick-over it warns that the dynamo has ceased to charge. If light fails to illuminate when switched on, replace bulb.
8. **Oil warning Light.** A green light placed next to the Ignition Warning Light. This will light up when the ignition is switched on and should go out as soon as the engine is running. If the light comes on when the engine is running at more than tick over, then this will indicate that the oil pressure has failed, and the engine should be stopped **AT ONCE.**

**NOTE.** When the engine is hot, this light may tend to flicker slightly at tick-over.

If the light fails to illuminate when switched on, but not running, replace bulb and /or check wiring connections.

## Part 3

### STARTING INSTRUCTIONS

#### 1. Starting from Cold.

- a. Make sure that the parking brake is "ON."
- b. Make sure that neutral is engaged. This entails first checking that the gear selector lever is in the Neutral position, and then making a full stroke of the gear change pedal, i.e. depress and release.
- c. Pull out the mixture control fully.
- d. Pull out the hand throttle part way.
- e. Switch on the ignition and press the starter button. Release this as soon as the engine fires.
- f. If the engine does not fire almost immediately, release the button, pause a moment, and press again rather than keeping the button pressed for lengthy periods.
- g. The mixture control should be partially returned to the closed position almost at once.
- h. The car may be driven away without waiting to warm up, but should the Owner prefer to allow the engine to warm up before starting off, this should be done by running the engine at about quarter throttle.

**NOTE. It is not recommended that the engine should be allowed to tick over for long periods when it is cold.**

- i. Whether the car is driven straight off after starting or the engine allowed to warm up first, the mixture control should be fully closed as soon as possible.
- j. As soon as the engine is warm, close the hand throttle.

#### 2. Normal Start (Engine Warm)

Repeat as in 1 (b) above.

Switch on the ignition and press the starter button.

#### Special Information

Should the engine fail to start, it is possible to check quite simply whether there is any fault with the ignition or alternatively the fuel supply.

Normally, if petrol is reaching the carburettor and there is a spark at the plugs, the engine will start.

# THE Daimler 2 ½ LITRE

## To Check the Ignition

1. Switch on the ignition.
2. Pull out the high-tension wire from one of the plugs and hold it about 1/8 in. to ¼ in. away from the plug terminal.
3. Rotate the engine with the starter, i.e., by pressing the rubber covered portion of the solenoid switch, and see whether a spark jumps across the gap from the H.T. wire to the plug terminal. The solenoid switch is located on the scuttle below the horns.
4. Should there be no spark, examine the wiring from the coil to the distributor to make sure there are no loose connections.
5. See also Ignition, page 58.

## To Check that Petrol is reaching the Carburettors

1. Depress the carburettor float chamber "tickler" and at the same time work the hand priming lever on the pump.
2. The carburettor should then "flood." Do not overdo this as an excess of petrol may prevent the plugs from sparking, making it necessary to remove and dry them.
3. If the carburettor does not flood, check first that there is petrol in the tank and, if less than 1 ½ gallons, that the reserve tap has been pulled out.
4. See also Fuel Supply, Page 43.

# THE Daimler 2 ½ LITRE

## Part 4

### DRIVING – RECOMMENDED USE OF THE CONTROLS

#### The Daimler Transmission

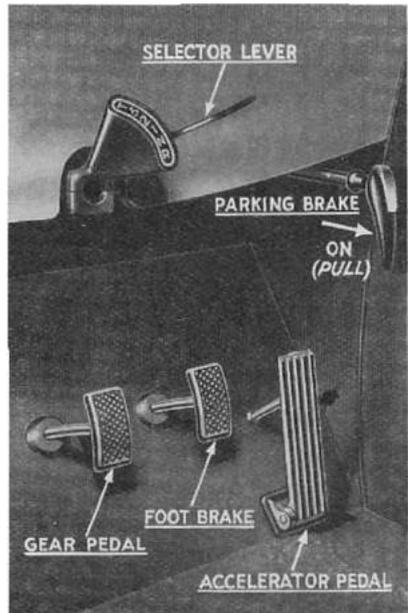
The Daimler Transmission, Incorporating the fluid flywheel and the self-change gearbox makes gear-changing exceedingly simple operation. The fluid flywheel provides entirely automatic clutch action, and all that is necessary to engage a gear is to select the required gear by means of the selector lever mounted on the steering column, and to engage that gear by depressing fully and releasing the gear change pedal.

It is therefore with some hesitation that we give here our detailed recommendations as to the method to be employed. The length of the instructions should not be taken as any indication the operations are in any way complicated, but we feel that Owners will be interested to have before them the fullest details of the method of operating this transmission, so that the skill so quickly attained will ensure that the full potentialities of the fluid flywheel and self-changing gearbox are realized.

It will be noted that the left pedal is referred to as the " Gear Change Pedal." We recommend that this should be regarded as a foot-operated gear lever and that under no circumstances should it be used as a clutch. The pedal should always be moved with a positive action whether depressing or releasing, as detailed in the instructions which follow.

It is important that the gear pedal is always operated to the full extent of its travel.

With the Daimler transmission it is unnecessary to engage neutral or to depress the gear pedal when coming to a stop or whilst temporarily stationary during traffic halts.



**Fig. 3**

Identification of Controls  
A simplified illustration of  
the actual driving controls.

# THE Daimler 2 $\frac{1}{2}$ LITRE

## RECOMMENDED USE OF THE CONTROLS

### Driving Away

The engine will be running and the controls in the neutral position with the parking brake "ON."

1. Move the selector lever to the first gear position.
2. Depress and release the gear change pedal.

**Note.** The pedal should be depressed and released in two positive movements. It is unnecessary for the pedal to be released by degrees as in the case of a normal clutch pedal.

3. Release the parking brake.
4. Accelerate.

### Special Conditions

1. Car standing on down gradient. No special action is necessary, but, of course, the car will begin to move forwards as soon as the parking brake is released. The start can be made in a higher gear.
2. Car standing on up gradient. To prevent the car rolling backwards, press the accelerator slightly before releasing the parking brake. The start should be made in first gear.

### Changing Up

1. Move the selector lever to the next higher gear.
2. Release the accelerator and depress the gear pedal. Hold the gear pedal right down until the engine "revs." have decreased. See Note below.
3. Release the gear pedal.
4. Accelerate.

**NOTE.** Providing the gear pedal is held down for the correct length of time, a perfectly smooth change will be effected. This can easily be ascertained by trial and error. Too short or too long a pause will not affect the actual engagement of the gear selected, but will reduce the smoothness with which the change is made.

At low speeds, the pause is very slight, but should be made longer the nearer the approach to the maximum speed in each gear.

### Changing Down

#### (a) *When climbing a hill.*

In climbing a steep hill a point will be reached when the fully open accelerator is insufficient to maintain speed, indicating that a lower gear is required. Keep the accelerator down and depress and release the gear pedal quickly.

(b) *Normal change-down*

The procedure is as follows: -

1. Select the next lower gear.
2. Depress the gear pedal and release, keeping the accelerator partly down.
3. Accelerate.

(c) *Descending steep hills.*

When descending very steep hills, it may be desired to use the braking effect of the engine on the overrun by changing into a lower gear. The recommended method of making this change down is similar to a normal change down, but increase engine revs, by quickly opening and closing the accelerator while gear pedal is held down.

### **Reversing**

To select reverse gear push the selector lever downwards to clear the reverse safety stop and then move the lever into the reverse position.

Engage reverse by depressing and releasing the gear pedal.

**Note.** The car should be at rest when changing from forward gear into reverse or vice versa, but it is not necessary to engage neutral in the course of the changeover.

### **Reversing in a Confined Space**

1. Move the selector lever to the reverse position.
2. Depress the brake pedal to apply the brakes.
3. Open the hand throttle slightly to set the engine speed to a fast tick-over.
4. Depress and release the gear pedal.
5. The car can now be manoeuvred gently by easing the brake pedal and allowing the fluid flywheel to take change.
6. When the car is in the required position, apply the parking brake. Close the hand throttle and then select and engage neutral.

### **Special Information**

If the gear pedal is operated at the same time as the selector lever is being moved, or the pedal is not fully depressed before release, a false neutral may be obtained and the pedal will stay well down and no gear be engaged. Be sure the selector lever is correctly positioned and then depress and release the pedal again, when the required gear will engage. Another effect of incorrect use of these two controls is that the pedal may come well back much further and stronger than normal. Again, make sure the selector lever is correctly positioned, and depress and release the pedal. This time the pedal may take considerable effort to depress it, but will return to normal at once if this procedure is carried out. It is emphasized that these happenings come about as a result of either indefinite selection or inadequate operation of the pedal or a combination of these two mistakes.

# THE Daimler 2 ½ LITRE

## Recommended use of Gear Ratios

- (a) In the 2 ½ Litre Special Sports model, a special assembly of gearbox is fitted, in which the two lower gears, a direct drive top gear and a further gear, in the form of an overdrive, are incorporated.
- (b) The overdrive is valuable as a high speed cruising gear. The top gear is slightly lower than normal, providing good acceleration. It is recommended that overdrive should only be used for medium and high speed work and that a change down to top gear should be made when necessary for accelerating and climbing moderate inclines. In average use it will be found that a change down to top gear is suitable for accelerating from speeds below 50 m.p.h., and a change down to second gear for speeds below 30 m.p.h.
- (c) For the guidance of the owner, a table is listed below showing the relationship between road speed, revolutions per minute as indicated on the rev. counter (for the 2 ½ litre Special Sports), and the gear to be used :

1. Speeds at which the changes should be made for maximum economy when maximum acceleration is not required.

### 2 ½ Litre Special Sports

<i>Gear Change</i>	<i>Revs./minute</i>	<i>Road Speed</i>
1st to 2nd	1600	8 m.p.h.
2nd to Top	1800	15 m.p.h.
Top to Overdrive	2000	30 m.p.h.

### Consort Saloon

<i>Gear Change</i>	<i>Road Speed</i>
1st to 2nd	5 m.p.h.
2nd to 3rd	15 m.p.h.
3rd to Top	25 m.p.h.

2. Maximum speed at which changes should be made for good acceleration.

### 2 ½ Litre Special Sports

<i>Gear Change</i>	<i>Revs./minute</i>	<i>Road Speed</i>
1st to 2nd	2700	17 m.p.h.
2nd to Top	3000	31 m.p.h.

### Consort Saloon

<i>Gear Change</i>	<i>Road Speed</i>
1st to 2nd	15 m.p.h.
2nd to 3rd	30 m.p.h.
3rd to Top	45 m.p.h.

THE **Daimler** 2  $\frac{1}{2}$  LITRE

3. Maximum speeds which should not be exceeded under any consideration

**2  $\frac{1}{2}$  Litre Special Sports**

<i>Gear</i>	<i>Revs./minute</i>	<i>Road Speed</i>
1st	4500	33 m.p.h.
2nd	4500	53 m.p.h.
Top	4500	80 m.p.h.

**Consort Saloon**

<i>Gear</i>	<i>Road Speed</i>
1st	19 m.p.h.
2nd	33 m.p.h.
3rd	49 m.p.h.

# THE Daimler 2 ½ LITRE

## Part 5

### SPECIFICATION

General	2 ½ litre Special Sports	Consort
---------	--------------------------	---------

#### 1. Dimensions.

Wheelbase ....	....	9 ft. 6 in.	9 ft. 6 in.
Track ....	....	4 ft. 4 in.	4 ft. 4 in.
Length overall ....	....	15 ft. 7 in.	15 ft. 1 ¾ in.
Width overall ....	....	5 ft. 4½ in.	5 ft. 4½ in.
Height (un-laden) ....	....	5 ft. 3 in.	5 ft. 3 in.
Ground clearance ....	....	6 in.	6 in.

#### 2. Weight

Chassis ....	....	1 ton 1 cwt. 1 qrs	19 cwt. 0 qrs
.....			
Six-light Saloon ....	....	1 ton 13cwt. 1½ qrs	1 ton 11 cwt. 2 qrs
.....			

#### The Engine Unit

##### 1. The Engine

Horse power (R.A.C. rating)	18.02	18.02
Number of cylinders....	6.	6.
Bore....	69.6 mm. (2.74 in.).	69.6 mm. (2.74 in.).
Stroke	110.49 mm. (4.35 in.).	110.49 mm. (4.35 in.).
Cubic capacity	2522 c.c.	2522 c.c.
Compression ratio	7:1	7:1
Firing order	1-5-3-6-2-4.	1-5-3-6-2-4.
Tappet clearance	.013 in.	.013 in.

##### 2. The Carburettors

Type	Twin S.U. Horizontal with ' Hydraulic Damping device	Single S.U. Horizontal with ' Hydraulic Damping device
Throttle diameter of each carburett	1 3/8 in.	1 ½ in.
Needle	C.E. Standard setting for economy C.P. Alternative setting for improved performance	E.O. for economy setting E.G. for improved performance

##### 3. Air Cleaner and Silencer

Type	Oil Bath Air Cleaner A.C. No. 1574995	Air Silencer
------	--	--------------

##### 4. Fuel Supply

(a) <i>Pump</i>	Type	A.C. " U. " Mechanical with hand priming lever	A.C. " U. " Mechanical with hand priming lever
	Drive	From eccentric on camshaft	From eccentric on camshaft
(b) <i>Petrol Tank</i>	Position	At rear	At rear
	Capacity	14 gallons including reserve of ½ gallons	14 gallons including reserve of 1 ½ gallons

**5. Lubrication**

Type	Full forced feed by gear pump driven from camshaft.	Full forced feed by gear pump driven from camshaft.
Sump capacity	11 pints	11 pints
Pressure	40 lb. per square inch.	40 lb. per square inch.
Filter	Tecalemit full pressure.	Tecalemit full pressure.

**6. Cooling System**

Type	Centrifugal pump and fan with large capacity radiator.	Centrifugal pump and fan with large capacity radiator.
Temperature control	Thermostat.	Thermostat.
Water capacity	3 gallons 2 pints.	3 gallons 2 pints.
Running temperature	170 degrees to 190 degrees Fahrenheit.	170 degrees to 190 degrees Fahrenheit.

**7. Ignition**

Type	Lucas 12 volt	Lucas 12 volt
(a) Coil. Type	L.O., Model B 12.	L.O., Model B 12.
(b) Distributer. Type	B.S.56, Model DZ 6A with automatic advance, and micro adjuster.	B.S.56, Model DZ 6A with automatic advance, and micro adjuster.
Drive	Skew gear from camshaft.	Skew gear from camshaft.
Contact-breaker setting	.012 in. (with points fully open).	.012 in. (with points fully open).
(c) Sparking Plugs. Type	Lodge CB 14, 3-point, 14mm.	Lodge CB 14, 3-point, 14mm.
Gap setting	.030 in.	.030 in.

**The Transmission****1. Fluid Flywheel**

Type	Open circuit	Open circuit
Oil capacity	8½ pints.	8½ pints.

**2. Gearbox.**

Type	Epicyclic pre-selective.		Epicyclic pre-selective.	
Oil capacity	5 pints		5 pints	
Gear ratios	Overdrive	0.73 : 1	Top gear	1.00 : 1
	Top gear	1.00 : 1	3rd gear	1.56 : 1
	2nd gear	1.64 : 1	2nd gear	2.32 : 1
	1st gear	3.0 : 1	1st gear	4.08 : 1
	Reverse	3.16 : 1	Reverse	5.40 : 1

**3. Propeller Shaft**

Type	Hardy Spicer with needle roller bearings	Hardy Spicer with needle roller bearings
------	--	--

**4. Rear Axle**

Type	Three-quarter floating Underslung worm.	Three-quarter floating Hypoid Gear.
Oil capacity	4 pints.	4 pints.
Reduction ratio	4.857 : 1	4.30 : 1

# THE Daimler 2 ½ LITRE

## 5. Overall Gear Ratios

Overdrive	3.550 : 1	
Top gear	4.857 : 1	4.30 : 1
3rd gear		6.708 : 1
2nd gear	7.97 : 1	9.976 : 1
1st gear	14.571 : 1	17.54 : 1
Reverse	13.380 : 1	23.20 : 1

## Suspension

### 1. Front

Type	Daimler Independent by means of coil springs and links.	Daimler Independent by means of coil springs and links.
------	---	---

### 2. Rear

Type	Semi-elliptic leaf springs.	Semi-elliptic leaf springs.
------	-----------------------------	-----------------------------

### 3. Shock Absorbers

Type	Front	Luvax Piston, PR 6/105.	Luvax Piston, PR 6/105.
	Rear	Luvax Piston, PR 6/12.	Luvax Piston, PR 6/12.

## Steering

### 1. Steering Box

Type	Marles worm and double roller.	Marles worm and double roller.
Ratio	15.75 : 1	15.75 : 1

### 2. Steering Wheel

Type	Thin Rim, Spring loaded. 18in. diameter with adjustable column.	Thin Rim, Spring loaded. 18in. diameter with adjustable column.
------	---	---

### 3. Turning Circle

Right Lock	41 feet.	41 feet.
Left Lock	41 feet.	41 feet.

## Brakes

### 1. Foot Brake

Type	Girling Hydro-mechanical.	Girling Hydro-mechanical.
Drums	11 in. Diameter.	11 in. Diameter.
Linings	Mintex N.M.T.	Mintex N.M.T.

### 2. Hand Brake

Type	Pistol grip lever acting on rear wheels only	Pistol grip lever acting on rear wheels only
------	--	--

# THE Daimler 2 ½ LITRE

## 2 ½ litre Special Sports

## Consort

### WHEELS AND TYRES

#### 3. Wheels

Type	Pressed steel spoked disc.	Pressed steel spoked disc.
Size	16 in. X 5 in.	16 in. X 5 in.

#### 4. Tyres

Type	Dunlop low-pressure.	Dunlop low-pressure.
Size	6.00 X 16.	6.00 X 16.
Pressures	Front: 28 lb. per square inch. Rear: 30 lb. per square inch (for normal loading conditions).	Front: 28 lb. per square inch. Rear: 30 lb. per square inch (for normal loading conditions).

### ELECTRICAL EQUIPMENT

Type	Lucas 12 volt.	Lucas 12 volt.
1. <b>Lighting</b>		
(a) Lamps.		
Headlamps	PF. 770	PF. 770
Sidelamps	Model 461/1	Model 461/1
Fog lamp	SFT. 75	
Rear light	} No.464	} No. 476
Brake lights		
Rear number plate lamp		
(b) Bulbs.		
Headlamps	Lucas No. 302 48/48 watt	Lucas No. 302 48/48 watt
Sidelamps	Lucas No. 207 6 watt	Lucas No. 207 6 watt
Fog lamp	Lucas No. 162 36 watt	
Rear light	} Lucas No. 189 6/24 watt	} Lucas No. 207 6 watt
Brake lights		
Rear number plate lamp		
Reversing light	Lucas No. 989 6 watt	Lucas No. 199 24 watt
	Lucas No. 199 24 watt	Lucas No. 199 24 watt
2. <b>Starter Motor</b>		
Type	L3 Model 418G	L3 Model 418G
Solenoid Switch	ST 950	ST 950
3. <b>Dynamo</b>		
Type	Voltage controlled and ventilated. BS. 56 Service No. 22436. Model C45 PV4 Single V-section belt RF 95/2. Type L2	Voltage controlled and ventilated. Despatch No. 22435A. Model C45 PV4 Single V-section belt RF 95/2. Type L4
Drive Regulator		
4. <b>The Battery</b>		
Type	Lucas Type SLTW. 13A	Lucas Type SLTW. 13A
Capacity	69 ampere-hours at 20-hour rate.	69 ampere-hours at 20-hour rate.
Dimensions	Height 7 ½ in., Width 6 ⅞ in., Length 16 ½ in., 17 ⅞ in. over lugs	Height 7 ½ in., Width 6 ⅞ in., Length 16 ½ in., 17 ⅞ in. over lugs
5. <b>Car Heater</b>		
Type	Clayton Dewandre CB7	Smith Type C.H.S. 1000 2k.w.

# THE Daimler 2 ½ LITRE

	2 ½ litre Special Sports	Consort
<b>6. Accessories.</b>		
(a) Trafficators.		
Type	Lucas SF 34N	Lucas SF 34/4/49
Bulbs	No. 256, 3 watt.	No. 256, 3 watt.
(b) Horns.		
Type	Lucas Windtone: W.T. 29 H.N. W.T. 29 L.N.	Lucas Windtone: W.T. 29 H.N. W.T. 29 L.N.
(c) Windscreen Wiper		
Type	Lucas C.R.2	Lucas C.R.2/BS. 60
(d) Cigarette Lighter	Smith's No. 48550	Smith's No. 48550
(e) Warning Lights (Ignition and Oil).		
Bulbs	A.C. No. 1570839 16-18 volts. 4 watt	A.C. No. 1570839 16-18 volts. 4 watt
(f) Instrument Panel Light		
Bulbs	A.C. No. 1570839 16-18 volts. 4 watt	A.C. No. 1570839 16-18 volts. 4 watt
(g) Interior Lights		
Bulbs	Festoon. Wilmot-Breeden. Type M.528	Festoon. Wilmot-Breeden. Type M.528
(h) Speedometer		
Type	A.C. E/S 926	A.C. E/S 926
(i) Revolution Counter		
Type	A.C. E/S 927	_____
(j) Clock		
Type	A.C. E/CL 269 Electrically operated	A.C. E/CL 284 Electrically operated
(k) Petrol Gauge		} Triple Instrument A.C. E/CI 1158
Type	A.C. E/PG 774	
(j) Ammeter		
Type	A.C. E/A 67	
(m) Thermometer		
Type	A.C. E/TG 138	
<b>Chassis Frame</b>		
Type	Box section underslung at rear, cruciform braced.	Box section underslung at rear, cruciform braced.
<b>Automatic Chassis Lubrication</b>		
Type	Luvax Thermal System.	Luvax Thermal System.
<b>Jacking System</b>		
Type	D.W.S. Mechanical, built-in. One at front, two at rear.	D.W.S. Mechanical, built-in. One at front, two at rear.

# THE Daimler 2 ½ LITRE

## TOOL KIT- "CONSORT" Saloon

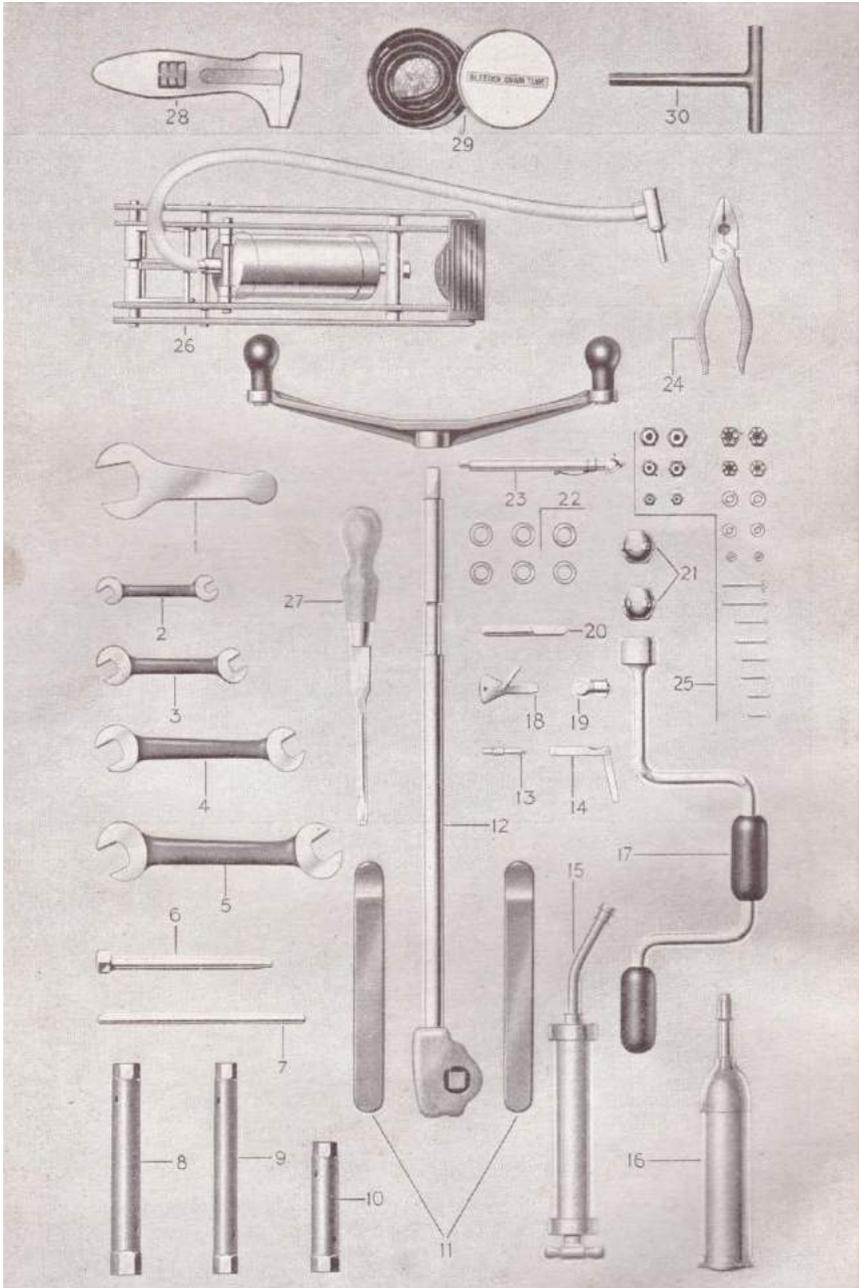
Ref. No.	Dwg. No.		No. per Set
1	264185	Spanner for Hub Cap ....	1
2	418263	Double-ended Spanner ( $\frac{1}{8}$ in. x $\frac{3}{16}$ in.) ....	1
3	418264	Double-ended Spanner ( $\frac{1}{4}$ in. x $\frac{5}{16}$ in.) ....	1
4	418265	Double-ended Spanner ( $\frac{3}{8}$ in. x $\frac{7}{16}$ in.) ....	1
5	418266	Double-ended Spanner ( $\frac{1}{2}$ in. x $\frac{9}{16}$ in.) ....	1
6	M.T. 25-7	Fluid Flywheel Oil Plug Extractor ....	1
7	M.T. 36-8	Box Spanner Tommy Bar ....	1
8	M.T. 22-6	Box Spanner for Sparking Plug ....	1
9	M.T. 33-3	Box Spanner ....	1
10	418258	Box Spanner ....	1
11	300638	Tyre Lever ....	2
12		Permanent Jack Handle (D.W.S. Single Gear Type)	1
13		Insert Removal Tool (Tyre Valve) ....	1
14	401058	Tappet Gauge ....	1
15	M.T. 23	Fluid Flywheel Oil Gun ....	1
16	301950	Grease Gun (Tecalemit Minor) ....	1
17	301577	Wheel Brace ....	1
18	276412A	Screwdriver and Feeler for Distributor ....	1
19		Lamp Bulb, Side (12 volt, 6 watt, S.P.) ....	1
20	418257	Contact-breaker File (Smooth Cut) ....	1
21	408057	Wheel Nut ....	2
22	88.12	Sparking Plug Washers ....	6
23	418352	Tyre Pressure Gauge (Clip-on Type) ....	1
24	418259	Pliers (6 in. Cutting) ....	1
25		Assorted Nuts, Washers, and Split Pins (in Box) ....	1
26	555A	Tyre Pump Complete (18 ". Prima) ....	1
27	300637	Screwdriver (8 in.) ....	1
	301375	Starting Handle ....	1
	404595	Force-Feed Oil Can (Wesco No. 3300) ....	1
28	418260	Adjustable Spanner ....	1
29	H. 2555	Bleeder Tube ....	1
	H. 2556	Bleeder Tube Container ....	1
	131020	Tool Bag ....	1

## TOOL KIT - "SPECIAL SPORTS"

The "Special Sports" Tool Kit contains the same equipment with the exception of the Grease Gun, and an Additional "T"-Key

16		Grease Gun (Tecalemit) ....	1
30		"T"-Key ....	1

# THE Daimler 2 ½ LITRE



THE  2 ½ LITRE

Use parts of genuine Daimler manufacture ONLY  
when making a replacement.

Daimler spare parts are stocked by Distributors and  
Dealers in most important centres.

Particulars of names and addresses of service and  
spare parts depots will be furnished on application to:-

The Service Department,  
The Daimler Company Ltd.,  
Coventry.

## Chapter II

### THE POWER UNIT

Part 1	....	The Engine	....	....	....	Page 32
Part 2	....	The Carburettors and Air Cleaner			....	Page 36
Part 3	....	Fuel Supply	....	....	....	Page 43
Part 4	....	Lubrication System	....	....	....	Page 47
Part 5	....	Engine Cooling and Car Heating System			....	Page 50
Part 6	....	Ignition	....	....	....	Page 58

# THE Daimler 2 ½ LITRE

## Part 1

### THE ENGINE

#### General Description

The "Special Sports" and the "Consort" have six cylinder engines with overhead valves operated by push rods. The R.A.C. rated horse power of each is 18.02. At 4200 revolutions per minute the "Special Sports" engine develops 85 b.h.p. and the "Consort" develops 70 b.h.p.

The crankshaft of both engines is statically and dynamically balanced runs in four large main bearings and, in addition, to give absolute smoothness at all engine speeds, a crankshaft vibration damper is fitted in addition to the counter balance weights on the shaft itself.

The pistons are " T " slotted enabling them to be fitted with extremely fine clearances, and this virtually eliminates all piston noise.

Overhead valves and a cylinder head of special design provide high performance without any sacrifice of smoothness. This is exemplified in the case of the "Special Sports" engine where the aluminium alloy cylinder head combines with the advantages gained from a twin carburettor layout to give an appreciably greater power output.

#### Maintenance

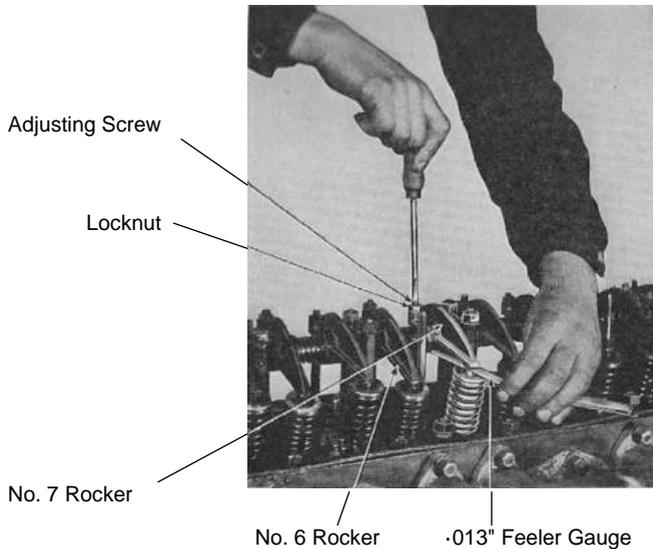
This is dealt with In Parts 2 to 7 of this chapter.

#### Adjustment

**Tappets.** Check and adjust clearances after the **first 500 miles**, and then **every 3000 miles**.

1. The engine must be at normal running temperature (170° F.).
2. Open bonnet.
3. Remove the air silencer.
  - (a) **Special Sports.** Slacken the three clamps at the base of the cleaner, undo the two breather pipe retaining bolts and loosen the top jubilee clip.
  - (b) **Consort.** Slacken the clip where the air intake elbow is fastened to the carburettor, and the two setscrews securing the air cleaner to the valve cover.
4. Remove the valve cover by undoing the three dome nuts, and lift off.
5. Turn the engine with the starting handle until No. 12 valve (**NOTE.-No. 12 valve is the one nearest the scuttle**) is fully open, i.e. the spring is fully compressed. No. 1 valve will now be closed and in the correct position for checking the clearance.
6. Insert a .013 in. feeler gauge which should just slide between the end of the rocker arm and the valve.

# THE Daimler 2 ½ LITRE



**Fig. 5**  
**Tappet Adjustment**

No. 6 Rocker is shown right down so that No. 7 Rocker is right up and in correct position for adjustment.

7. If the setting requires adjustment, loosen the locknut on the screw at the other end of the rocker arm and tighten or slacken the screw until the correct clearance is obtained. Hold the screw with a screwdriver to prevent it moving and tighten the locknut.
8. After tightening, check the clearance again in order to make sure that tightening the locknut has not altered the setting.
9. Adjust the tappets in the following order :-
 

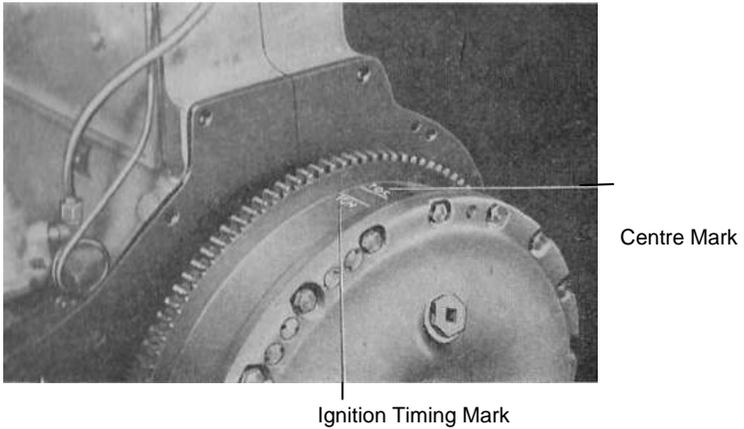
With No. 12 valve fully open adjust	No. 1.
With No. 11 valve fully open adjust	No. 2.
With No. 10 valve fully open adjust	No. 3.
With No. 9 valve fully open adjust	No. 4.
With No. 8 valve fully open adjust	No. 5.
With No. 7 valve fully open adjust	No. 6.
With No. 6 valve fully open adjust	No. 7.
With No. 5 valve fully open adjust	No. 8.
With No. 4 valve fully open adjust	No. 9.
With No. 3 valve fully open adjust	No. 10.
With No. 2 valve fully open adjust	No. 11.
With No. 1 valve fully open adjust	No. 12.
10. Replace the cork joint carefully.  
When the valve cover is replaced, tighten the three dome nuts until the rubber washers just bulge. Further tightening will merely result in distortion of the metal washers.
11. Replace the air silencer.

# THE Daimler 2 ½ LITRE

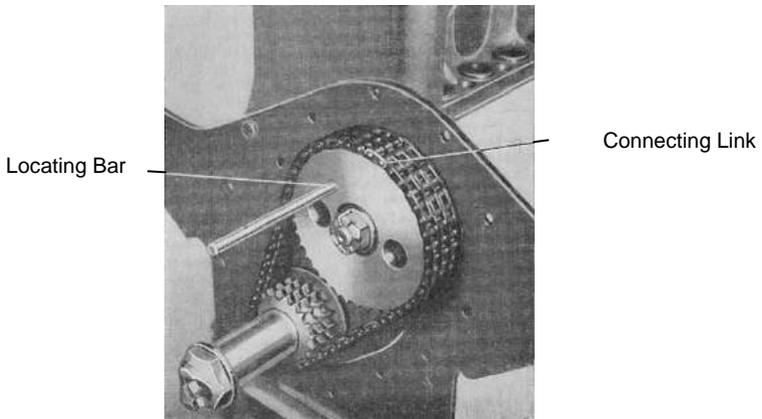
## Special Information

**Valve Timing.** If the valve timing has been disturbed for any reason, the correct method of re-setting is as follows :-

Turn the crankshaft until the T.D.C mark on the flywheel is at the top and opposite the peg in the flywheel casing, fig. 11. Now turn the camshaft until a suitable Tommy bar can be inserted in the hole in the camshaft chainwheel, so that it locates with the hole in the crankcase, Fig. 12. Replace the camshaft chain and connecting link.



**Fig. 6**  
Ignition and Valve Timing



**Fig. 7**  
Valve Timing-Aligning Camshaft Chainwheel

# THE Daimler 2 $\frac{1}{2}$ LITRE

**NOTE.** The chain link spring clip must be fitted with the rounded end facing the direction of rotation of the chain. When replacing the chain cover, tighten all setscrews lightly, then check that the crankshaft pulley will rotate without touching the cover. Centralize by lightly tapping cover until a clearance of .004 is obtained. Check this with a feeler gauge and then, finally, tighten all setscrews.

To check the valve timing without first removing the chain cover, proceed as follows:-

1. Remove the valve cover and set tappets to the correct clearance.
2. Remove flywheel cover plate and turn engine until the flywheel is at the T.D.C. position and firing on No. 1 cylinder.
3. Now check that the valves of No. 6 cylinder are both slightly open. This can be done by endeavouring to rotate the push rods. Both push rods should be slightly " up " or in the " open " position, indicating that the valves are open.

If the valve timing is out by one or more teeth, one valve will be in the fully closed position.

THE  2 ½ LITRE

## Part 2

## THE CARBURETTORS AND AIR CLEANER

S.U. horizontal carburettors, each with a controllable jet and hydraulic damping device, are fitted to the vehicles. The "Special Sports" uses twin carburettors in conjunction with an Oil Bath Air Cleaner. A single carburettor and air silencer is fitted to the "Consort".

**Maintenance - Every 3000 miles**

- (a) Remove the brass caps on top of the carburettors and top up the hydraulic piston dampers with thin oil to within approximately  $\frac{1}{2}$  in. of the top. Then replace the brass caps.
- (b) Remove the petrol pipes, banjo union bolts, take out the thimble gauze filters and wash in clean petrol.
- (c) Take off the float chamber and wash out any sediment with clean petrol.
- (d) Oil all control rod joints with oil can.

**Adjustment**

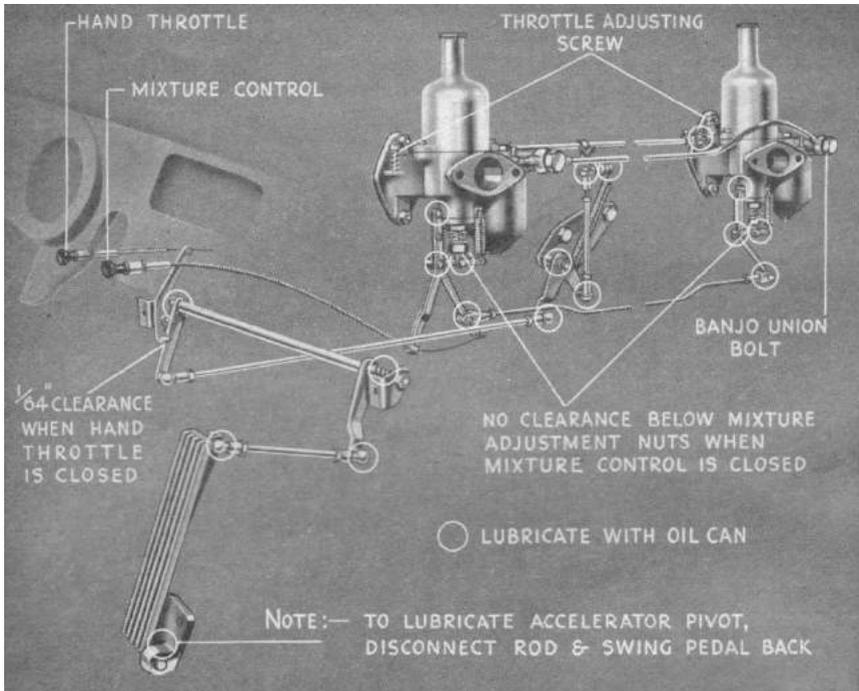
As each model is equipped with the same type of carburettor, the adjustment is the same for both. The paragraphs describing respectively the dismantling and synchronisation of the twin carburettors will only apply to the "Special Sports" layout, otherwise the paragraphs describing mixture and throttle adjustment remain applicable to both models.

**NOTE.** Before altering the adjustment of the carburettors, make certain that the settings of the tappets, plug points and ignition are correct, as these have a very marked effect on the slow running and general performance of the carburettor.

1. Slacken the mixture and throttle control linkages. (see Figs. 8 and 10). Slack off the nut securing the mixture control wire to the carburettor adjusting lever.

**Special Sports.** Loosen the clamping bolt on one of the universal connections between the throttle spindle, and disconnect the mixture control linkage by removing one of the fork swivel pins.

# THE Daimler 2 ½ LITRE



**Fig. 8**  
The Carburetors ("Special Sports")

2. Unscrew each throttle adjusting screw until a thin piece of paper can be just held between the screw and stop lug. Then screw in a quarter turn on each screw.
3. Adjust the mixture of each carburettor in turn by screwing up the jet adjusting nut until the engine begins to misfire, i.e., when the mixture is too weak. Screw back the adjusting nut until the engine runs with an even exhaust note.

**Special Sports.** To test for synchronisation, move each jet upwards independently. If movement of the first jet has no effect on the running of the engine, then the mixture of the second carburettor is richer than that of the first, and the jets must be adjusted accordingly.

4. Final adjustment on the throttle adjusting screws should now be made, by screwing or unscrewing the throttle adjusting screw of each carburettor an equal amount until a steady idling speed is obtained whilst the car is in neutral. A speed of 300 r.p.m. indicated on the rev. counter of the "Special Sports" will show that the idling speed is correct.

5. Adjust the mixture of each carburettor in turn by screwing up the jet adjusting nut until the engine begins to misfire, i.e., when the mixture is too weak. Screw back the adjusting nut until the engine runs with an even exhaust note.

**Note.** To test for synchronisation, move each jet upwards independently. If movement of the first jet has no effect on the running of the engine, then the mixture of the second carburettor is richer than that of the first, and the jets must be adjusted accordingly.

6. Adjustment the mixture control cable to that when the jet head is right up to the jet adjusting nut, the mixture control still has about  $\frac{1}{8}$  in. to go before reaching the fully-closed position. This ensures that the mixture is correct when the control is in the closed position.  
Once the carburettors have been adjusted to give the correct mixture for idling, then they will be correct throughout the speed range.

## SPECIAL INFORMATION

### Removal of the Needle

1. Remove the two screws that hold the suction chamber in position.
2. The suction chamber can now be lifted off and the piston and needle lifted out. Be careful to lift straight up to avoid bending the needle.
3. At the side of the piston is a setscrew. When this is slackened off, the needle can be withdrawn.
4. When replacing the needle it is correctly positioned when its shoulder is flush with the face of the piston. Then tighten the setscrew.
5. Take care when replacing the piston that the keyway registers with the key in the body.
6. All the parts, particularly the piston, suction chamber, and any flange faces, must be absolutely clean before assembling.

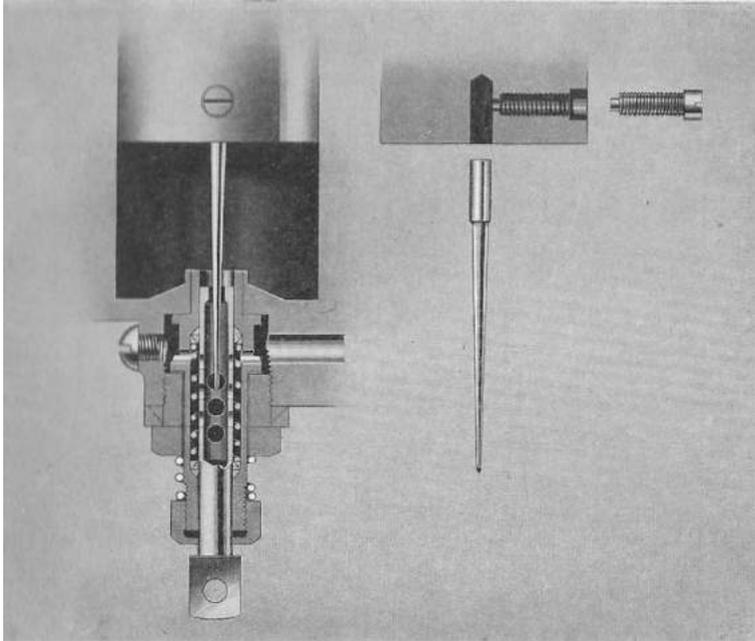
### Centring the Jet

If the jet assembly has been dismantled for replacement of washers, great care must be exercised on re-assembly to make quite sure that the jet is properly centred. If the jet is not centralized in relation to the needle, the needle will bind in the jet and prevent the easy rise or fall of the piston and needle. This will seriously upset the running of the engine by preventing the carburettor delivering the correct mixture to the engine.

It must be understood that the needle is very nearly as large as the hole in the jet, and yet it must not touch it.

In order to adjust the needles correctly, it is necessary to be able to move the pistons by hand, thus entailing the removal of the Air Cleaner and Air Cleaner Pipe

# THE Daimler 2 ½ LITRE



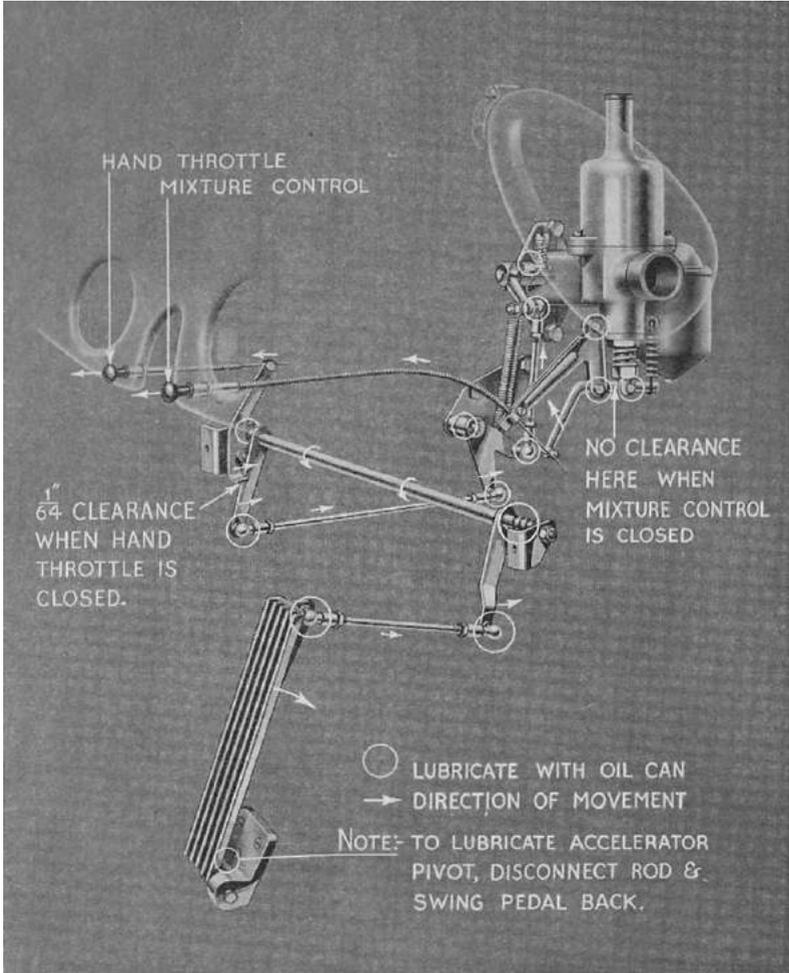
**Fig. 9**  
**Carburettor Jet Assembly,**  
**Piston, and Needle**

### To Re-assemble the Jet

- (a) First screw the jet adjusting nut to its top position and move the jet head right up until it is against the nut.
- (b) Check first that all the parts assembled in the correct order (see Fig. 16), then assemble the jet assembly to the carburettor.
- (c) When this has been done, feel if the piston is perfectly free by lifting it with one finger and then letting it fall.
- (d) If it is not free, slacken the jet holding screw (this is the large hexagon-headed screw which screws into the carburettor body above the jet adjusting nut).
- (e) It may be necessary to slacken and re-tighten the jet holding screw several times, each time lifting the piston and letting it fall before the piston falls perfectly freely. (See **Note** overleaf)
- (f) When the piston is free, unscrew the jet adjusting nut until it is approximately in its normal position.
- (g) Start the engine and adjust the jet adjusting nut until the idle is correct. See paragraph "Adjustment."

# THE Daimler 2 ½ LITRE

**NOTE.** If it seems impossible to centralize the jet, the difficulty may be caused by a bent needle. To test for this, remove the needle from the piston, and re-fit the piston without the needle and see if the piston moves freely. Should a replacement be needed, refer to page 23, "The Carburettors" to see what replacement needle is specified.



**Fig. 10**  
The Carburettor Controls  
("Consort" Saloon)

# THE Daimler 2 ½ LITRE

## Float Chamber Flooding

This can be seen by the petrol overflowing from the float chamber without the "tickler" being depressed. It is usually caused by a piece of grit getting into the float chamber needle guide. This can be overcome by depressing and releasing the tickler pin several times.

## The Air Cleaner

The "Special Sports" is equipped with an A.C. Sphinx combined Oil Bath Air Cleaner and Silencer which is fitted to the air intake. Dusty air enters the top of the cleaner around the sides, then moves down and picks up small drops of oil as it moves into the mesh. There the dirt is filtered out, and falls in the form of a sludge, into the oil well where it accumulates.



**Fig. 11**  
The Oil Bath Air Cleaner and Silencer ("Special Sports")

## Maintenance - Every 3000 miles

1. Loosen the three Air Cleaner Clamps.
2. Undo the two Air Breather Pipe retaining bolts.
3. Slacken the top jubilee clip situated at the base of the Air Cleaner.
4. Lift off the Air Cleaner. **Be sure to lift off vertically, taking great care NOT to spill the oil inside.**
5. Remove top cover and lift out filter assembly.

THE *Daimler* 2 ½ LITRE

6. Wash filter by swishing up and down in a bowl of paraffin and allow to drain thoroughly.
7. Empty the oil from the base and scrape out the mud.
8. Fill oil well to indicated level with engine oil (see page 112 for recommended lubricants).
9. Replace filter element assembly and cover, after making sure that the cover gasket is clean and in good condition.
10. Re-assemble the Air Cleaner.

# THE Daimler 2 ½ LITRE

## Part 3

### FUEL SUPPLY

#### General Description

Petrol is pumped into the carburettor from the fourteen-gallon tank which is at the rear of the car by an A.C. mechanical pump. This pump is operated by an eccentric on the camshaft. A hand-operating lever is incorporated for priming.

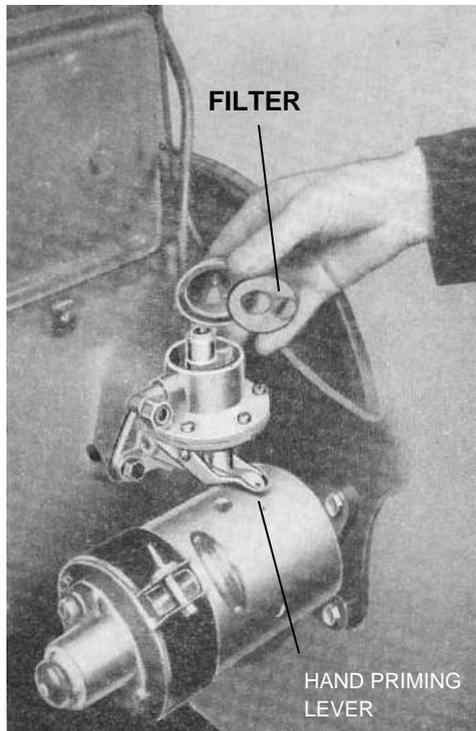
#### Maintenance

1. **Every 3000 miles**, remove the top of the A.C. pump (see Fig. 17), lift off the gauze filter, and wash in clean petrol.
2. If there is any sediment in the bottom of the pump body, wash out with petrol.
3. If the cork washer is damaged in any way, it is advisable to renew this. When refitting, tighten down firmly, but do not use excessive force.
4. Check that the unions of the pipes from the petrol tank to pump and from the pump to the carburettor are tight.

#### Adjustment

There is no adjustment to be made.

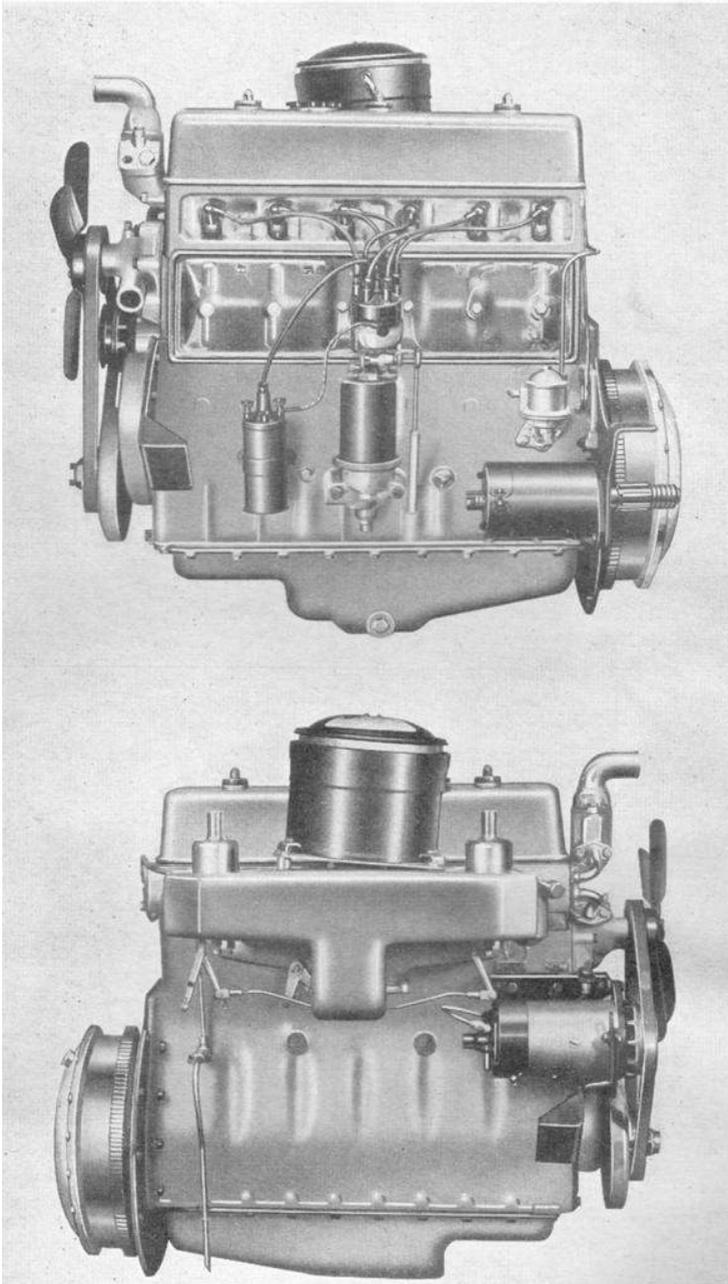
**Fig. 12**  
The Petrol Pump Filter and  
Hand Priming Lever



**Special Information**

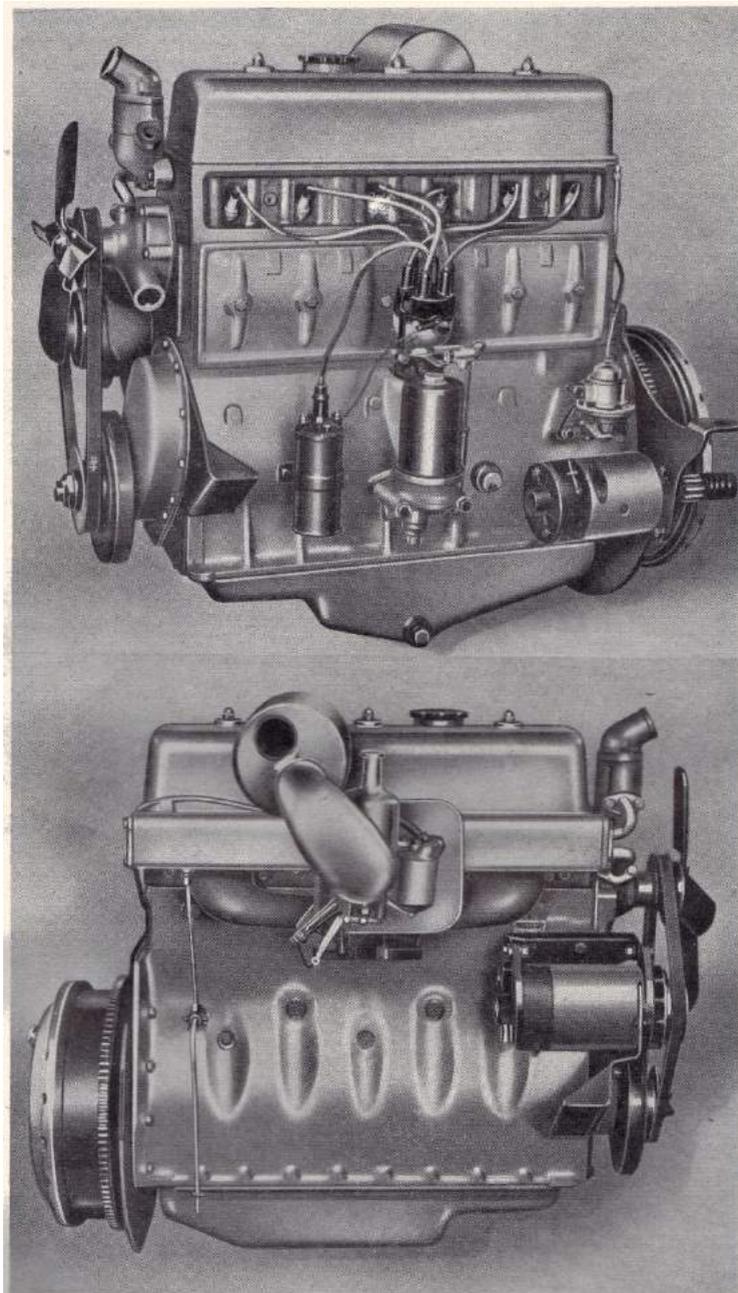
1. To check the operation of the pump, disconnect from the pump the pipe which leads to the carburettor and work the hand-priming lever.
2. If there is petrol in the tank, each stroke of the hand-priming lever should deliver about an eggcup full of petrol.
3. An air leak at any point between the pump and the petrol tank will seriously reduce the amount of petrol which the pump can supply to the carburettor. Check that all unions are tight on the pump, the reserve tap, and the tank.
4. To remove air locks or dirt from the petrol pipes, blow through them with the tyre pump.
5. Make sure that the screw which holds down the dome top of the pump and the screws which fasten the two halves of the pump together, are not loose. These should be screwed down firmly but without using excessive force.

## THE Daimler 2 ½ LITRE

**Fig. 13**

The Engine – Nearside and offside (“Special Sports”)

THE Daimler 2 ½ LITRE



**Fig. 14**  
The Engine – Nearside and offside (“Consort” Saloon)

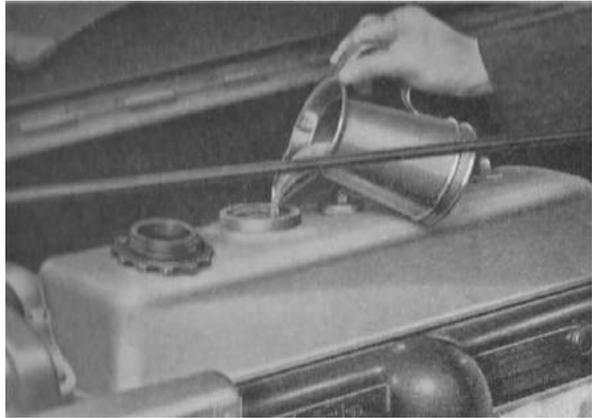
# THE Daimler 2 ½ LITRE

## Part 4

### LUBRICATION SYSTEM

#### General Description

The lubrication is of the wet sump fully forced feed type. The oil pump, driven from a gear on the camshaft, pumps the oil from the sump through a large capacity filter and then to the engine bearings. Should the pressure fall below 10 lb. per square inch, a green warning light on the instrument panel will be illuminated. The oil level should be checked immediately (for further details, see "Special Information," page 46). When the engine is running very slowly, the green light may flicker. This can be disregarded.



**Fig. 15**  
Oil Filler

#### Maintenance

**1. To check the oil level.**

The dipstick is located on the left-hand side of the engine. (see Fig. 20). This should be removed and wiped and then replaced and removed again to obtain a reading of the oil level. Do not allow the level to fall below the three-quarters full mark.

If it is necessary to top up the oil, remove the filler cap on top of the valve cover and pour in the required amount of oil. Recommended oil is Daimler Solvent Process Engine Oil.

**2. To change the oil.**

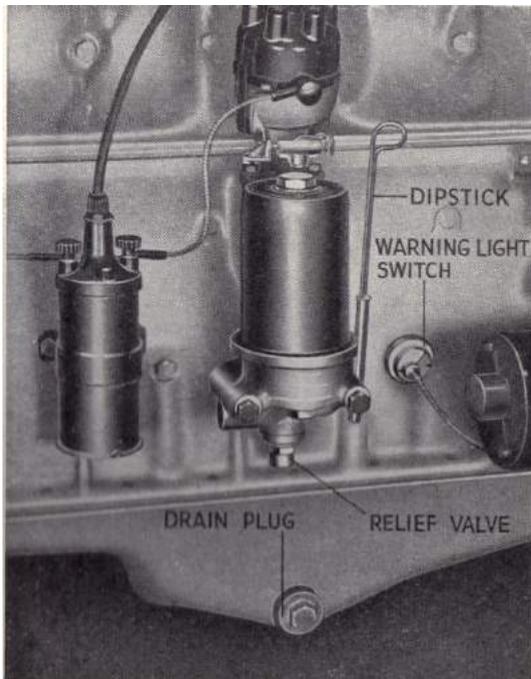
The oil in the engine should be changed after the **first 500 miles**, and subsequently **every 3000 miles**. The capacity of the sump is 11 pints.

- (a) It greatly facilitates the draining of the sump if the engine is warm when the operation is carried out.

# THE Daimler 2 ½ LITRE

- (b) The drain plug is located on the left hand side of the engine sump. Place a container (which should be large enough to hold approximately 1 ½ gallons) underneath and remove the plug.
- (c) Whilst the sump is draining into the container, unscrew the nut on top of the oil filter, slacken the distributor retaining screw (see Fig.17) raise distributor slightly, lift off cover, and remove the element. Wash the element in clean petrol. A new element should be fitted **every 20,000 miles**.

**Fig. 16**  
Location of the Sump  
Drain Plug and Dipstick



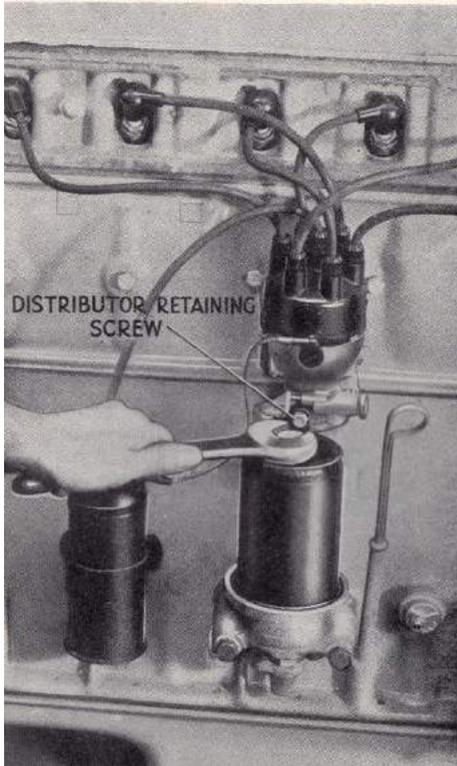
**Note.** When the filter cover is removed, a quantity of oil will be released and the container should be so placed as to catch this, in addition to the oil draining from the sump.

- (d) Replace the filter element and cover, making sure that the cork washer is in position and undamaged. Tighten the holding down bolt securely. Lower the distributor into position and tighten the retaining screw.
- (e) Replace the sump drain plug and tighten up. Fill up with fresh oil (11 pints).

### Adjustment

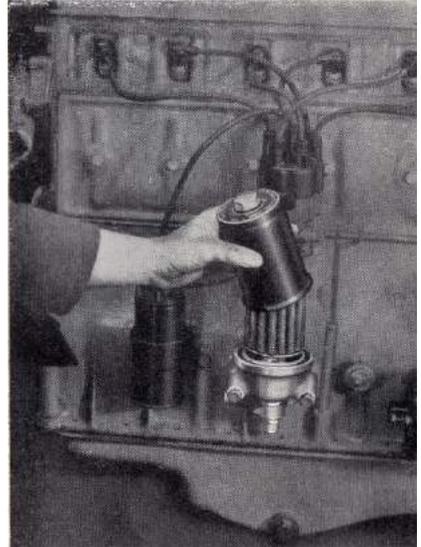
No adjustment is required.

# THE Daimler 2 ½ LITRE



**Fig. 17**  
Undoing the Filter

**Fig. 18**  
Removing Filter Body



## Special Information

**Oil Warning Light.** If this lights up whilst the car is being driven normally, the following is the procedure to adopt :-

1. Check the level of the oil in the sump and replenish if it is low.
2. A fault in either the oil light switch or the wiring may affect the operation of the warning light. To test, check circuit and /or fit another switch.
3. Low-pressure may be due to the relief valve sticking, but this is unlikely. See Pressure Relief Valve.
4. The pressure should be 40 lb. per square inch and can be checked by removing the oil light switch, and by means of a suitable adaptor, attaching a pressure gauge to this point. If the bearings are worn, the pressure will naturally be lower than 40 lb.

**Pressure Relief Valve.** This is of the 'thimble type' and is located beneath the oil filter. It is not adjustable, and the only attention that can be given is to remove it, clean thoroughly, and replace.

## Part 5

## ENGINE COOLING AND CAR HEATING SYSTEM

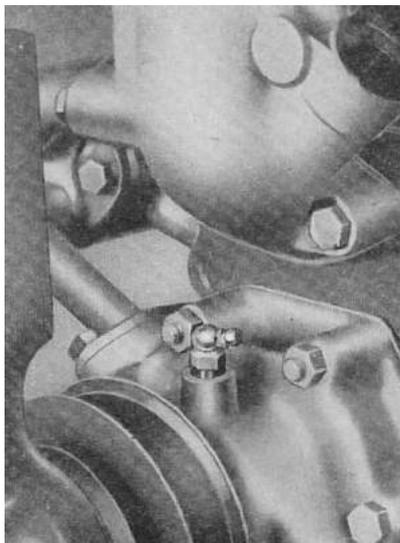
**General Description**

Cooling of the engine is carried out by means of a combined fan and water pump is driven from the crankshaft pulley by a V-section belt. The pump is sealed by a carbon gland. A thermostat is incorporated in the system. When the engine is cold the thermostat is closed and restricted circulation takes place round the engine and water-jacketed inlet manifold. This enables the engine to warm up rapidly to its proper working temperature at which point the thermostat opens and permits normal circulation through the radiator. The opening of the thermostat also closes the by-pass to the water-jacketed inlet manifold. In addition to the water cooling, a fan is fitted.

Normal running temperature is 170°F. to 190°F. and any persistent variation should be investigated.

**Maintenance**

There is one grease nipple on the water pump. This should be greased with R.B. Grease **every 3000 miles**. Continue to pump in grease until an excess is seen to exude from the small hole on top of the pump.



**Fig. 19**  
Water Pump Grease Nipple

**Adjustment**

**Fan Belt.** This is adjusted by swinging the dynamo after slackening the screw.. The belt tension is correct when it can be moved through approximately  $\frac{3}{4}$  in. at a point between two of the pulleys.

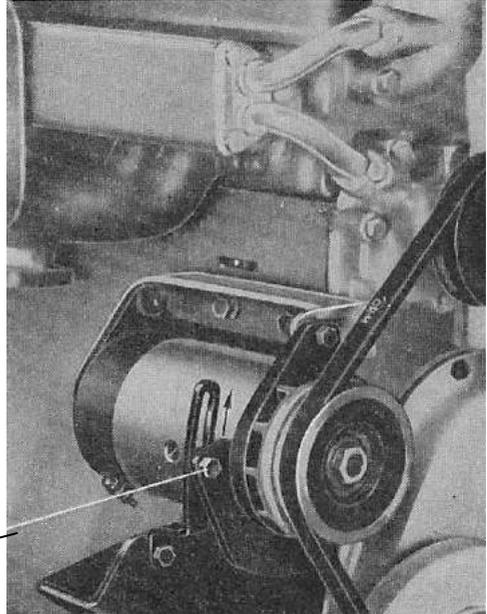
**SPECIAL INFORMATION****Frost Precautions.**

The use of Smith's Bluecol Antifreeze Mixture is strongly recommended in winter time. This obviates the need for draining and re-filling. As sold, most antifreeze compounds will protect the engine up to about 15° F. of frost, if it is anticipated that lower temperatures may be experienced when the car has to be left out all night, it is of course necessary to increase the strength of the mixture by using a greater quantity of compound in proportion

# THE Daimler 2 ½ LITRE

to water. Remember that topping up weakens the mixture so, over a long period, it will be necessary to add compound to retain protective strength.

**Fig. 20**  
Adjustment of Fan Belt

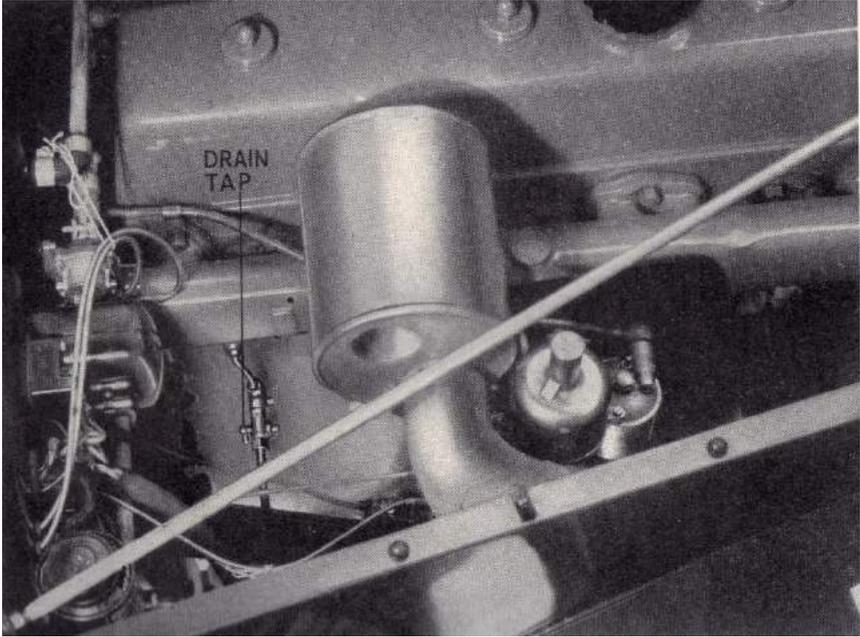


Slacken this Bolt and Swing  
Dynamo up as shown by  
Arrow

## Draining Instructions.

1. (a) **"Special Sports."** Use the adjustable spanner to open the two stopcocks adjacent to the thermostat and water pump respectively. The open position of the stopcock is indicated by the line on the square extension lying along the pipe.
  - (b) **"Consort."** Turn the air control on the instrument panel to off position. Open the drain cock on the inlet pipe.
2. Open the drain tap for the radiator – this is placed at the bottom of the radiator towards the near side. It is best reached from in front of the car, beneath the radiator grill.
3. Open the cylinder drain tap (See Fig. 21, overleaf).
4. Remove the radiator cap to speed up the draining.
5. When completely drained, close both taps. If these are left open, small drops of water will cause them to freeze up with resultant trouble when re-filling.

**Note.** As the "Special Sports" has an aluminium cylinder head, owners who wish to clean out the cooling and heating system should first ascertain whether or not the cleaning solution they wish to use is of an alkaline nature. These alkaline solutions or compounds react with the aluminium and would heavily corrode the cylinder head if used.



**Fig. 21**  
Location of Cylinder Block Drain Tap

### **Maintenance of Correct Running Temperature in Cold Weather.**

In very cold weather, it may be found that the engine does not reach its correct running temperature of 170-190° F. This is undesirable and the use of a radiator muff, by means of which part of the radiator can be blanked off, is strongly recommended. Alternatively, part of the radiator can be blanked off by a suitably shaped piece of sheet metal. The radiator muff, however is probably more satisfactory, as it can more easily be removed.

### **Thermostat.**

By restricting the water circulation when the engine is cold, the thermostat makes possible rapid warming up. If it is suspected that the thermostat is not functioning correctly, its operation can quite easily be checked. Drain the radiator and then remove the top water hose and water pipe by undoing the flange bolts. The thermostat can now be lifted out.

Place it in a pan of cold water and heat on a stove. As the temperature of the water rises the thermostat should gradually open. If it is faulty, replace it.

Check also that it closes gradually to the fully shut position when the water is allowed to cool down.

# THE Daimler 2 ½ LITRE

## THE CAR HEATER

### “Special Sports”

The compartment is heated by a single Clayton Dewandre Car Heater type C.B.7.

The Heater Unit consists of coiled water pipes supplied with water circulated from the engine cooling system. The pipes are surrounded by wire coils, around which air is blown by an electric fan contained in the unit. The air is taken from the compartment, warmed and re-circulated. A separate supply is directed to the base of the windscreen by rubber hoses.

A flow of water through the heater can be cut off by turning both stopcocks with the adjustable spanner so that the line marked on the square portion lies **across** the pipe. The stopcocks are on the heater pipes, near to the water pump and thermostat respectively.

### Dismantling the Heater

After every 20,000 miles it is advisable to dismantle and clean the heater and its motor. (See Fig. 22, page 55)

To remove the unit :

1. Drain the water via the radiator and cylinder drain taps. Open the heater pipes' stopcocks.
2. Loosen the clips on the rubber hoses and withdraw the hoses from the water supply tubes of the unit.
3. Loosen the clips on the air demister tubes and withdraw the tubes from the rear of the unit. Then undo the electrical snap connectors.
4. Undo the two clamping bolts from the engine side of the bulkhead and remove the whole unit.
5. Take off the front cover and cowl of the heater by removing the three spring clips.
6. Remove the two clamping bolts complete, thus releasing the two spring clips which hold the rear cover in position. Take off the cover to reveal the demister impeller.
7. Loosen the demisting sir impeller locking screw and slide the impeller off the motor shaft.
8. From the front of the unit remove the three motor clamping screws, located inside and at the rear of the unit.
9. Withdraw the motor complete with resilient mountings and main air impeller.

THE  2 ½ LITRE**Cleaning the Motor**

1. Undo the two motor casing retaining screws. Apply thin lubricating oil to the bushes.
2. Clean between the commutator segments with a sharpened matchstick, first removing the end cover and withdrawing the armature. Use a petrol soaked rag to clean off any grease or dirt that remains on the commutator. Should the brushes be worn excessively then they should be renewed. See that the new brushes move freely in their new holders.
3. Re-assemble the motor

**Cleaning the Heater Coils**

1. Apply a fine jet of compressed air, at the same time use a light brush to remove dirt and dust from the wire coils surrounding the pipes.
2. Inspect the pipes. If there are deposits of dirt or "fur" inside the pipes then fill the heater with hot soda water, and after leaving for a short while rinse out with clean water.
3. After re-assembling the heater, fit in place and connect up the water pipes and air demister pipes.
4. When completely reassembled, carry out the following procedure, after first making sure that the stopcocks are **open**.
  - (a) Close the radiator and Cylinder drain taps.
  - (b) Fill the radiator.
  - (c) Run the engine at a fairly high speed for a few moments to remove any air locks.
5. Top up the radiator.

# THE Daimler 2 1/2 LITRE

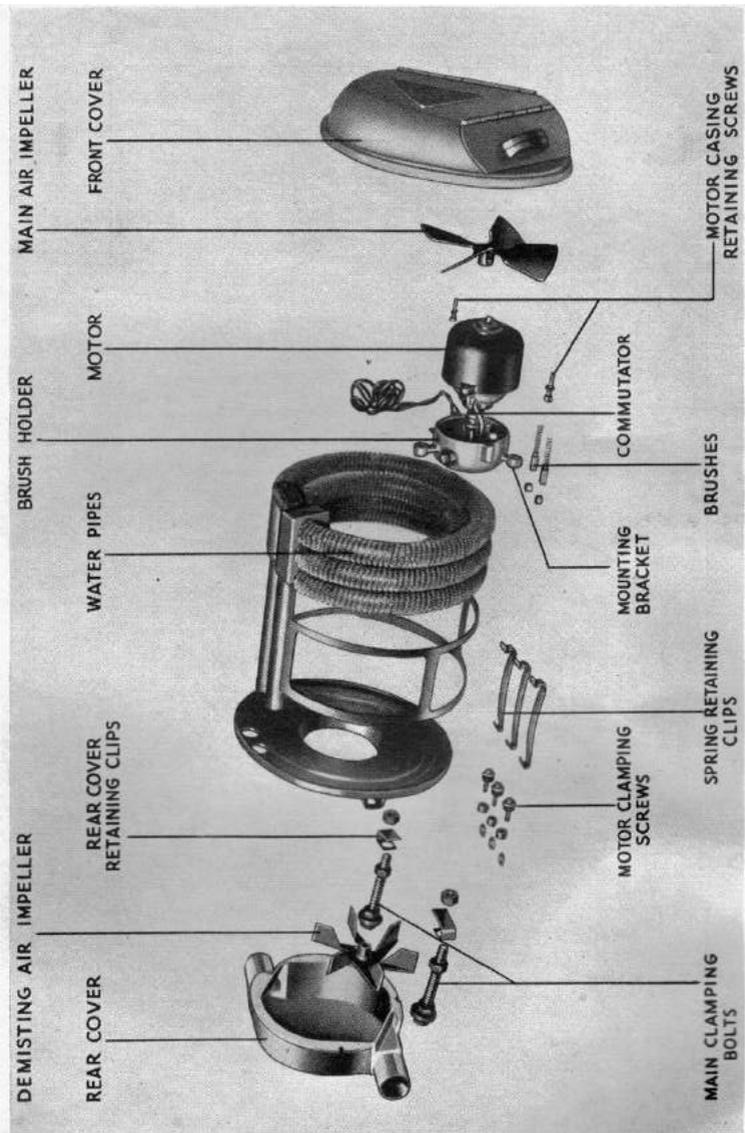


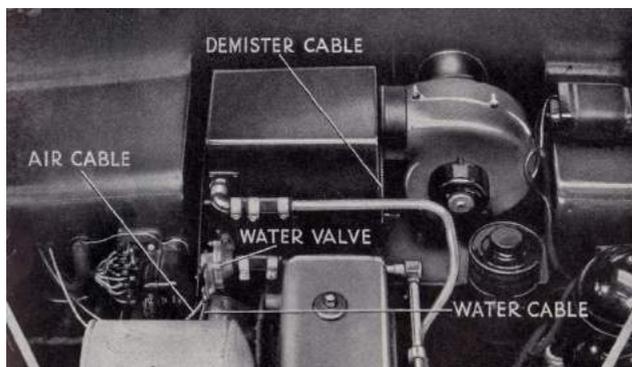
Fig. 22 The Heater Unit ("Special Sports")

## THE CAR HEATER

### “Consort” Saloon

The Interior of the car is supplied with fresh warmed air from a single Smith's 2 K.W. Heating and Ventilating Unit, situated on the engine side of the dash.

Fresh air is drawn through a vent in the scuttle by the blower which forces the air through a radiator supplied with water circulated from the engine cooling system. Separate controls enable regulated supplies of fresh air either hot or cold, to be directed to the region of the feet of the occupants and the base of the windscreen. At speeds of above 40 m.p.h. the blower can be switched off as air is forced into the interior by virtue of the forward movement of the car.



**Fig. 23**  
The Heater Unit (“Consort” Saloon)

### Maintenance

The blower motor is packed with grease on assembly and needs no maintenance. Occasionally check that all the controls are tight and working smoothly. No attempt should be made to adjust the control cables, as these are carefully adjusted before leaving the works.

Any leakage in the water control valve, found on the lower inlet pipe at the base of the unit, will be due to one, or a combination of, three faults :

- (a) Perished sealing diaphragm.
- (b) Maladjustment of diaphragm.
- (c) Operating lever not working freely.

Faults (b) and (c) can be rectified without dismantling the unit,

Disconnect control cable from operating lever.

THE  2 ½ LITRE

To adjust the sealing diaphragm correctly, the 2 B.A. nut and screw in the centre of the lever should be slackened off. Move lever to central position and turn centre screw clockwise until a slight resistance is felt to turning. Move lever to and fro; a resistance to movement should be felt in the centre position, but should not be sufficient to make this movement jerky or induce any effort to the lever movement. Only ¼ turn of the adjusting screw is usually required to get the pressure of the diaphragm just right.

Fault (c), sticky movement of the lever, may be due to maladjustment of the diaphragm as explained in the above paragraph, but it is more likely to be caused by dirt collecting in the guide recess of the lever. Remove the two cheese-headed guide screws from the castings and slacken off the adjusting screw and nut so as to expose the lever guide recess. Clean out with petrol or a light machine oil and re-adjust in the manner described above.

Should it be decided that the rubber diaphragm is faulty, the unit must be dismantled to effect replacement.

Remove lever guide screws and adjusting nut as above and then remove the four screws, nuts and lock washers retaining the two halves of the body together. Removal of the flange half exposes the diaphragm, which can be pulled of its locating ring without further disassembly of the unit. Clean the valve seating with emery paper before reassembly, which is a simple reversal of the above instructions for dismantling.

## THE Daimler 2 ½ LITRE

## Part 6

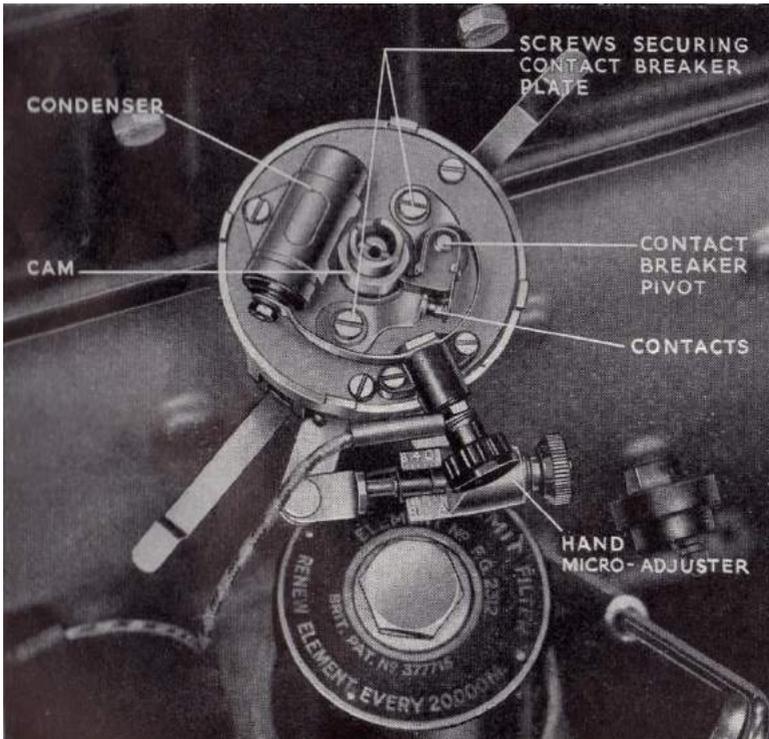
## IGNITION

**General Description**

The system uses a Lucas 12-volt coil ignition system. A fully automatic advance and retard mechanism is incorporated in the distributor, but an additional over-riding hand micro-adjustment is provided at the base of the distributor to enable the ignition timing to be altered slightly (2° Advance, 8° Retard), to suit fuels of varying octane rating. See Special Information.

**Maintenance****1. Cam and Contact Breaker Pivot**

**Every 3000 miles**, give the cam and the pivot on which the contact-breaker rocker arm works, a light smear of grease or clean engine oil.



**Fig. 24**  
Distributor

# THE Daimler 2 $\frac{1}{2}$ LITRE

## 2. Cam Bearing

**About every 3000 miles**, withdraw the moulded rotating arm from the top of the spindle by pulling it off, and add a few drops of thin machine oil. Do not remove the screw exposed to view, as there is a clearance between the screw and the inner face of the spindle through which the oil passes to lubricate cam bearing. Take care to re-fit the arm correctly and to push it on to the shaft as far as possible, otherwise there is a risk of tracking and burning of the moulding.

## 3. Automatic Timing Control

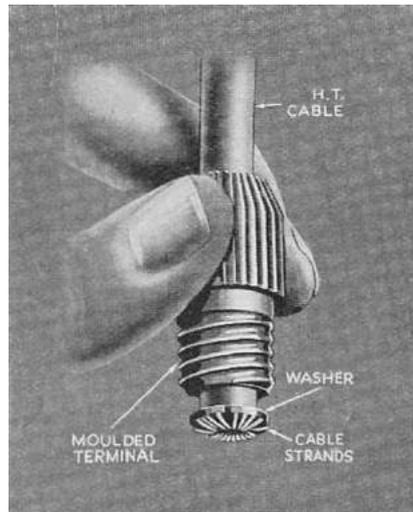
**About every 3000 miles**, add a few drops of thin machine oil to the oil reservoir through the hole in the contact-breaker base. Do not allow any oil to get on to the contacts.

## 4. Cleaning

Keep the outside of the distributor clean, particularly the spaces between the high-tension terminals. Very occasionally, remove the moulding by springing aside its two securing spring clips and wipe the inside with a dry cloth. See that the carbon brush is quite free in its holder. Clean the metal electrodes inside the moulding and also the rotating electrode on the distributor arm : if necessary, use a cloth moistened with a drop of petrol for this. Examine the contact-breaker : keep the contacts free from any grease or oil. If they are burned or blackened, clean them with fine carborundum stone, or if this is not available, use very fine emery cloth. Finish off with a cloth moistened with petrol, and remove all traces of dirt and metal dust. Misfiring is sometimes caused by dirty contacts.

## 5. Renewing the High-tension Cable

The high-tension cables are those connecting the coil to the distributor and the distributor to the sparking plugs. When these cables show signs of perishing or cracking, they must be replaced by 7 mm. rubber-covered ignition cable. The method of connecting the cable to the terminals is to thread the wire through the knurled moulded nut over the cable, bare the end of the cable for about  $\frac{1}{4}$  in., thread the wire through the brass washer provided, and bend back the strands. Finally screw the nut into its terminal.



**Fig. 25**  
High-Tension Cable

**6. The Coil.**

The coil requires no attention beyond keeping its exterior clean, particularly between the terminals, and occasionally checking that terminal connections are quite tight.

**7. Ignition switch and Warning Light.**

The ignition switch, besides forming a means of stopping the engine, is provided for the purpose of preventing the batteries being discharged by the current flowing through the coil windings when the engine is stopped. A warning lamp is provided in the instrument panel which gives a red light when the ignition is switched on and the vehicle is running very slowly or is stationary, thus reminding you to switch off. This also serves as an Indication as to whether the dynamo is charging or not. If the red warning light fails to go out when the engine is running above a tick-over, the dynamo is not charging. This can be confirmed by reference to the ammeter. Should the warning lamp bulb burn out, this will not in any way affect the ignition system, but it should be replaced as soon as possible in order to safeguard the battery.

**Adjustment****1. Cleaning and Adjusting the Contacts.**

The chief cause of variation in the gap is wear of the heel of the contact rocker arm which bears upon the actuating cam. Provided the cam is smeared with grease, however (see Lubrication Instructions), the wear on the heel will be negligible and the contact gap setting should only require adjustment at infrequent intervals.

To check the setting, turn the engine by hand until the contacts are fully open. Insert the gauge provided on the ignition screwdriver between the contacts: the gauge has a thickness of about 12 thousandths of an inch and it should be a sliding fit between the contacts when the gap is correct. We do not advise altering the setting unless there is quite an appreciable variation from the gauge. To make the adjustment, keep the engine in the position to give maximum opening of the contacts and slacken the two screws securing the contact plate. Then move the plate until the gap is set to the thickness of the gauge. After making the adjustment, care must be taken to tighten the locking screws. Recheck the gap after tightening the locking screws.

**2. Sparking Plugs.**

**Every 3000 miles**, clean the plugs and re-set the gaps to .020 in.

**3. Ignition Timing.**

To check and re-set ignition timing, remove the front carpets and the flywheel cover plate. Remove the flywheel inspection plate, and turn the engine by hand until the ignition timing mark on the flywheel is opposite the peg in the flywheel casing.

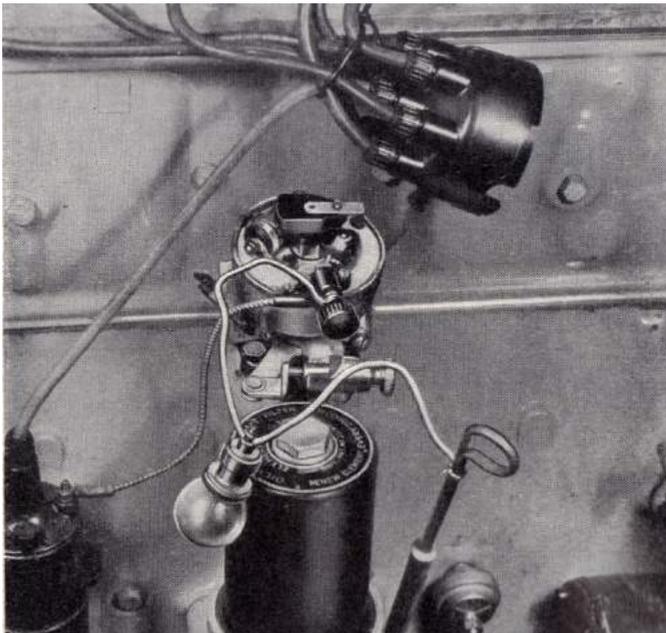
# THE Daimler 2 ½ LITRE

Remove the distributor top, loosen the pinch bolt of the micrometer adjuster. Turn the distributor body so that the contact breaker points are just breaking, then tighten the pinch bolt after setting the micro-adjustment to the zero position.

## SPECIAL INFORMATION

### Final Adjustment of the Ignition Setting

Take the car on the road and, when it is thoroughly warmed up, choose a suitable stretch of road which will make the car pull hard in top gear at full throttle. If necessary advance or retard the ignition by means of the micro-adjustment until the engine "pink," This point must be found by trial and error. When this position is found, retard the ignition just sufficiently to prevent the "pinking." This will give the best setting to suit the type of petrol which is being used.



**Fig. 26**  
Setting Ignition Timing.

**Test for determining exact moment when the Contact Breaker Points open (See Fig. 26).**

To set the ignition timing with real accuracy, connect a 12-volt lamp between the L.T. Terminal and earth as shown in Fig. 32 below. The light will be out when the points are closed, but will light up immediately the points open. This should coincide with the ignition marking on the flywheel reaching its correct position.

THE  2 ½ LITRE

**Note.** The ignition must be switched on. One lead of the lamp is connected to the low-tension lead on the distributor and the other to earth.

**The Condenser**

A faulty condenser usually causes a whitish deposit to form on the contact-breaker points, but more often than not, when a faulty condenser is diagnosed it is due to loose or bad condenser connections.

## Chapter III

### THE TRANSMISSION

Part 1	....	Fluid Flywheel	....	....	....	Page 64
Part 2	....	Gearbox	....	....	....	Page 66
Part 3	....	Propeller Shaft	....	....	....	Page 71
Part 4	....	Rear Axle	....	....	....	Page 72
Part 5	....	Front and Rear Hubs	....	....	....	Page 74
Part 6	....	Wheels and Tyres	....	....	....	Page 76

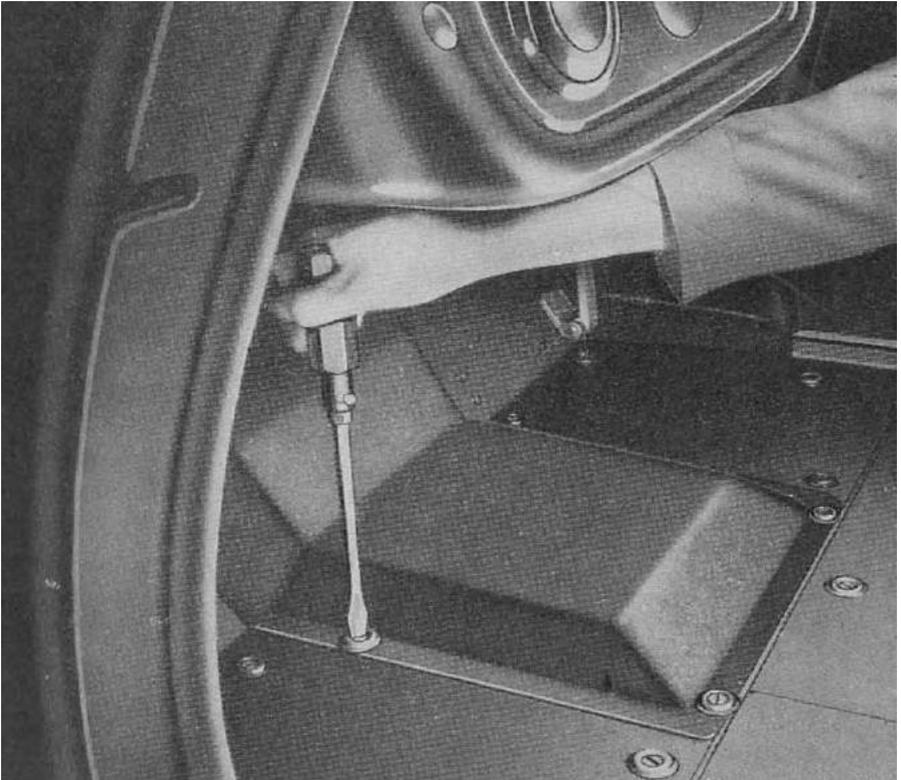
THE **Daimler** 2 ½ LITRE

## Part 1

## FLUID FLYWHEEL

**General Description**

The fluid flywheel is an entirely automatic coupling which takes the place of the normal clutch. The drive is transmitted hydraulically by means of oil.

**Fig. 27****Removing Fluid Flywheel and Gearbox Cover****Maintenance Every 3000 miles**

Check the oil level, **whilst the oil is cold.**

1. Remove the front mat and the cover.
2. Remove one setscrew and loosen the other and swing over the inspection cover.

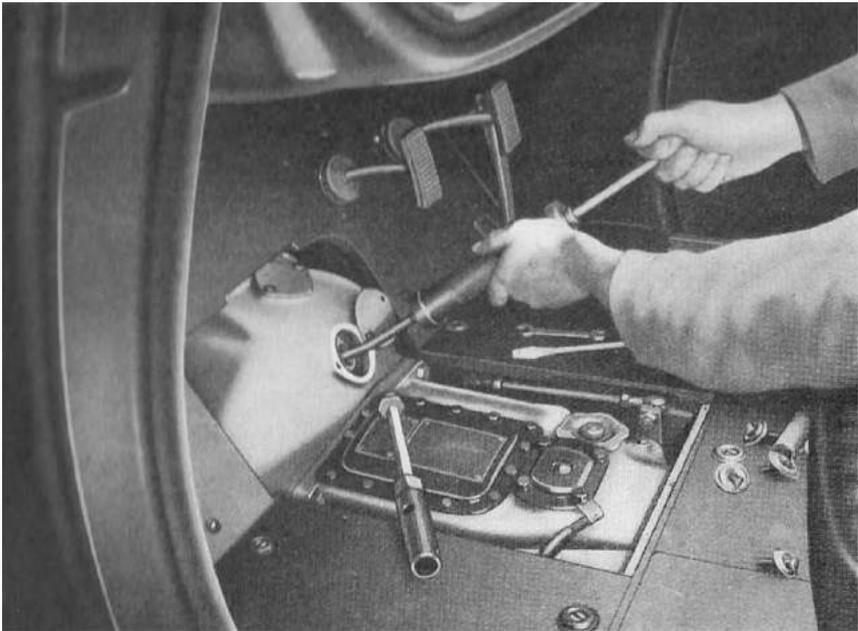
# THE Daimler 2 ½ LITRE

3. Turn the engine with the starting handle until one of the two filler plugs appear opposite the inspection hole.
4. Remove the plug with the special key provided.
5. Top up until it overflows, using the flywheel gun provided. For recommended oils, see page 112
6. Replace plug, inspection cover plates, and the front mat.

**Note.** The oil in the flywheel never needs changing.

## Adjustment

None required.



**Fig. 28**  
Topping up The Fluid Flywheel

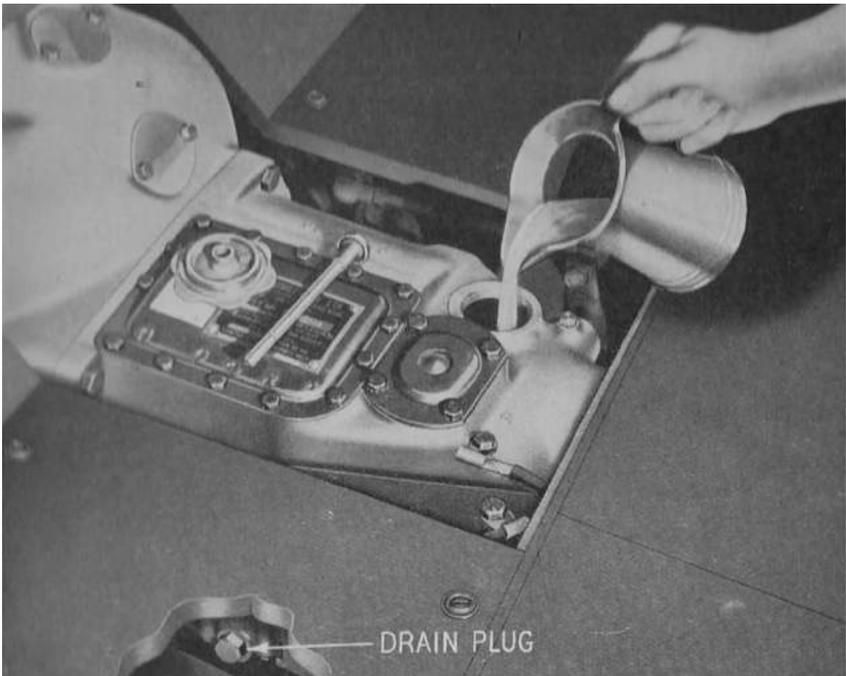
## THE Daimler 2 ½ LITRE

## Part 2

## GEARBOX

**Operation**

Both models are equipped with the pre-selective epicyclic type with four forward speeds and reverse speed. In the "Special Sports" model the forward gears are arranged to incorporate an overdrive gear, a direct top and two lower gears. The hand lever below the steering wheel selects the gear required, and the left-hand foot pedal, known as the gear pedal, when depressed and released, engages the gear selected. See Driving Instructions, page 18.



**Fig. 29 Filling The Gearbox, showing Drain Plug (access from beneath car)**

**Maintenance****1. Every 3000 miles.**

check the level of the oil.

- (a) Remove the front mat and cover.
- (b) Take the oil level of the gearbox by using the dipstick.

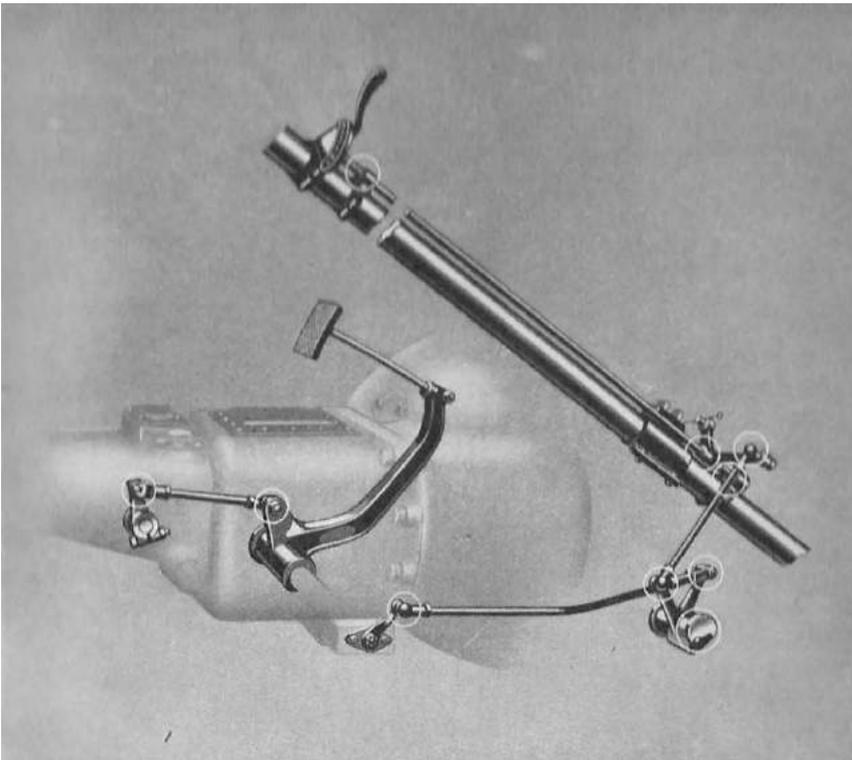
# THE Daimler 2 ½ LITRE

- (c) If level is below full mark, top up, after removing the filler plug.
- (d) Replace filler plug and dipstick.

## 2. Every 6000 miles.

Change the oil. This is best done when the gearbox and the oil is hot, that is, after running. For recommended lubricants, see page 112

- (a) Place a container under the drain plug.
  - (b) Remove the drain plug and, whilst the oil is draining off into the container, take out the front mat and floorboard.
  - (c) Replace the drain plug and re-fill with fresh oil.
3. When draining and whilst the floorboards are out, lubricate all control rod joints with the oil can. These points are indicated by rings.



**Fig. 30**

Gearbox Control Rods

Lubricate with oil can where indicated by rings

### Adjustment

1. Adjustment of the gearbox requires special experience and should not be attempted except by one with this experience (see Special Information).
2. The gears are automatically adjusted for possible wear. It is possible, however, to effect adjustment if it is thought that any gear is slipping, or unduly fierce.

### Adjustment for slip

- (a) Car should be stationary and engine switched off.
- (b) Select gear that it is desired to adjust.
- (c) Depress and release the gear pedal 12 to 20 times. It is essential that a full stroke is made.

## SPECIAL INFORMATION

### To test for Gear Slip

Should it be felt that any gear is slipping, which is unlikely owing to the automatic adjustment provided and if "pumping" has been carried out as recommended (see adjustment for slip above), first test the gear suspected as follows:

Start the engine, select and engage the gear suspected, and, whilst holding the footbrake firmly down with the left foot, depress the accelerator with the right foot. The car should be felt to be pulling against the brake and the engine should tend to reach a stalling speed. If the "revs." rise, it is an indication that the gear is slipping. (but note also 11 below)

### Manual Adjustment of Slipping Gear

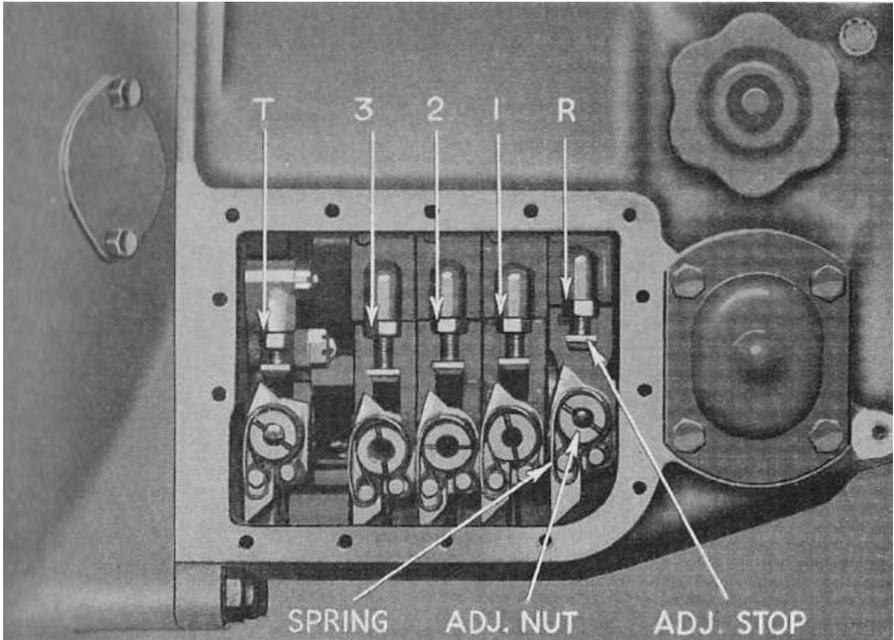
If it appears that all gears are slipping, check the level of the flywheel before altering the adjustment of the gearbox, as lack of oil in the flywheel will cause the stalling speed to be unduly high.

Assuming that the fluid flywheel is satisfactory, proceed as follows :

1. Remove the front mat and floorboards.
2. Remove the top cover of the gear box.
3. Select and engage the gear that is slipping. When the gear pedal is released one of the struts will rise.
4. Remove the spring which is wound round the adjusting nut.
5. Select and engage another gear.
6. Unscrew the round adjuster nut (of the gear to be adjusted) one full turn.
7. Loosen the locknut of the adjuster stop and screw in the adjuster screw half a turn. Tighten locknut.
8. Select and engage the gear to be adjusted and replace spring.
9. Mark the adjuster nut with a pencil or chalk and then depress and release the gear pedal continually until the nut ceases to rotate. It will need watching carefully as it only moves a very small amount each time the gear pedal is operated.

# THE Daimler 2 ½ LITRE

10. Replace the top cover of the gearbox and then repeat the test for slip. If there is no improvement, repeat the whole process once more.
11. If it appears that all gears are slipping, check the level in the flywheel before altering the adjustment of the gearbox, as lack of oil in the flywheel will cause it to slip under load.

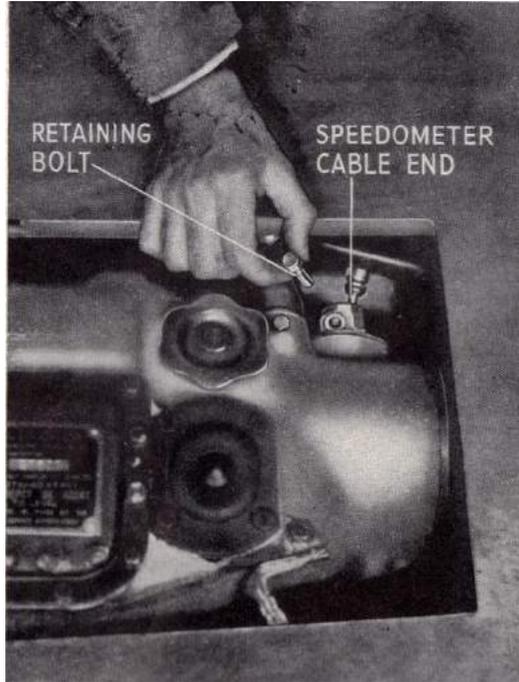


**Fig. 31**  
**Adjustment of Toggle Setting**

### Adjustment of Fierceness

**Note.** THE CAR SHOULD NOT BE OPERATED WITH EXCESSIVE TOGGLE SETTING AS THE RESULTANT FIERCENESS OF ENGAGEMENT ON GEARCHANGE MAY DAMAGE PARTS OF THE TRANSMISSION UNLESS CARE IS TAKEN.

1. Remove the top cover of the gear box.
2. Loosen the adjuster stop locknut and screw out the adjuster stop half a turn. Re-tighten the locknut.
3. Select and engage gear.
4. Mark the round adjuster nut with a pencil.
5. Pump the gear pedal until the adjuster nut ceases to rotate.
6. Replace the top cover and test



**Fig. 32**  
Speedometer Cable

**Every 20,000 miles**

**Grease the Speedometer Cable**

Undo the cable retaining bolt and remove the cable assembly. Pull out the inner cable by its square and dip in paraffin. After drying, give the cable a coating of R.B. Grease, together with some graphite grease, if available.

Twist the cable whilst threading it back and see the retaining shoulder of the gearbox cable end is flush with the end face of the cable ferrule. Finally, replace the cable and clamp by means of the retaining bolt, making sure the drive from the gearbox meshes with the cable end.

DAIMLER FLUID TRANSMISSION IS LICENSED UNDER VULCAN, SINCLAIR AND DAIMLER PATENTS AND IS STANDARD ON ALL DAIMLER AND LANCHESTER CARS IN CURRENT PRODUCTION.

# THE Daimler 2 ½ LITRE

## Part 3

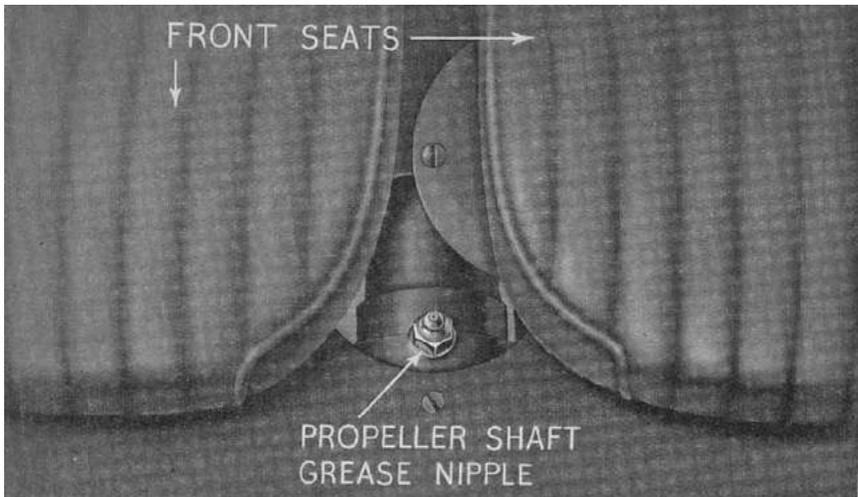
### PROPELLER SHAFT

#### General Description

A Hardy Spicer Shaft with needle roller bearings is used to connect the drive from the gearbox to the rear axle.

#### Maintenance

There are two grease nipples on the forward end of the propeller shaft. The forward one lubricates the universal joint. The rear one lubricates the spline shaft.



**Fig. 33**  
Propeller Shaft, showing the Grease Nipple

#### Every 3000 miles

Grease the spline shaft, after removing inspection plate.

#### Every 12,000 miles

Grease both universal joints, i.e., at the front and rear ends of the propeller shaft.

#### Adjustment

There is no adjustment required.

## THE Daimler 2 ½ LITRE

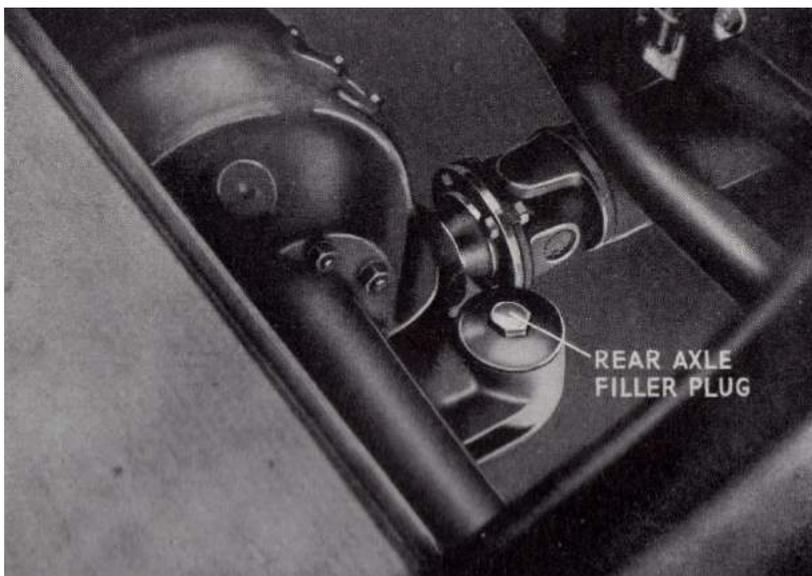
## Part 4

## REAR AXLE

**Operation**

The "Special Sports" uses the worm and wheel type of rear axle, incorporating the differential in a central housing. The ratio is 4.875 : 1.

The "Consort" is fitted with the hypoid bevel type of rear axle, whose ratio is 4.30 : 1.

**Fig. 34**

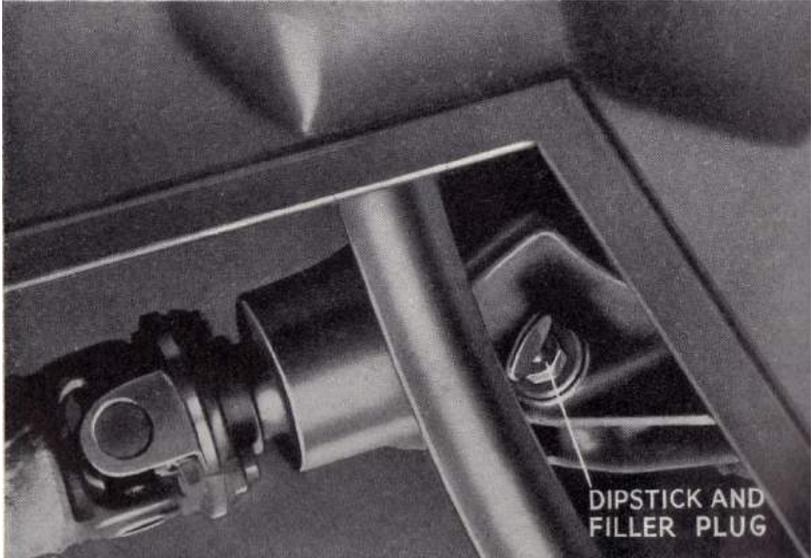
Rear Axle Filler and Level Plug ("Special Sports")

**Maintenance**

1. Check the level of the oil every 3000 miles. For recommended lubricants see page 112.

**"Special Sports"**

- (a) Lift up the boot floor.
- (b) **Remove** the four screws securing the trap situated in the far right-hand corner, i.e., on the offside of the car.
- (c) Lift up the trap.
- (d) Take out the plug and top up to plug if necessary.

THE Daimler 2  $\frac{1}{2}$  LITRE

**Fig. 35**  
**Rear Axle Filler and Level Plug ("Consort" Saloon)**

- (a) Take out the rear seat cushion.
  - (b) Open the trap door found underneath (on the nearside) and this will expose to view the axle casing.
  - (c) Take out the plug and top up to level on dipstick.
2. Change the oil after the **first 500 miles** and subsequently **every 6000 miles**.
- (a) This is best done after the car has been run and the oil is hot.
  - (b) Remove the drain plug. The "Consort" has a special extractor for this, found in the Tool Kit
  - (c) Replace the drain plug and tighten up. pour in the new oil. The capacity is four pints.

#### **Adjustment**

No adjustment is necessary.

## Part 5

### HUBS

#### General Description

The front hubs are mounted on twin taper roller bearings and the rear hubs on large journal bearings.

#### Maintenance. Every 3000 miles

Grease :

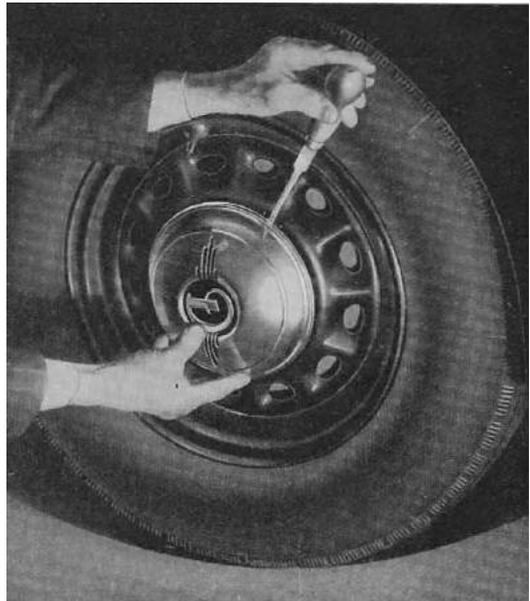
1. **Front Hubs.**

- (a) Remove the cover plates from the front wheels.
- (b) Remove the hub caps with the special spanner provided, and pack the cap half full with grease (see page 112 for Recommended Lubricants).
- (c) Replace the hub caps and tighten up. Replace cover plate.

2. **Rear Hubs.**

On the "Special Sports" rear wheel covers are fitted : these are removed by first turning the square ended key and pivoting the cover outwards, then pulling downwards and to the rear to disengage it entirely.

Remove the cover plates and give three or four pumps with the grease gun to each nipple.



**Fig. 36**  
Removal of Hub Cover  
Plate

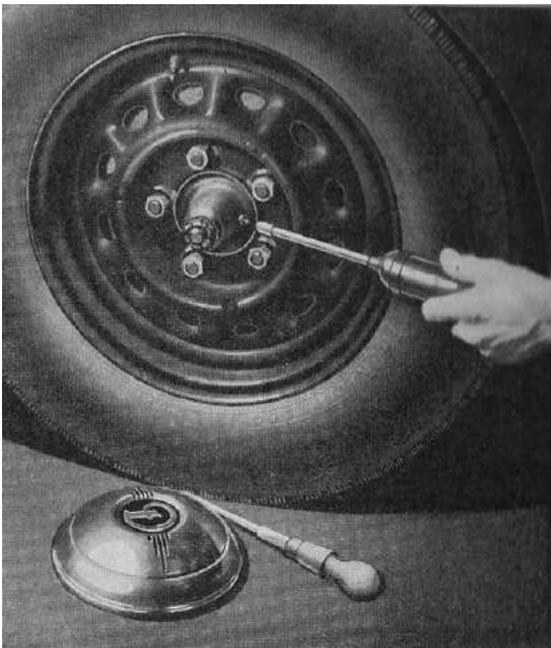
## THE Daimler 2 ½ LITRE

**Adjustment**

There is no adjustment required



**Fig. 37**  
Removal of Hub Cap  
(Front Wheel)



**Fig. 38**  
Rear Hub Grease Nipple

# THE Daimler 2 ½ LITRE

## Part 6

### WHEELS AND TYRES

#### General Description

Easy Clean disc wheels (16 in. X 5 in.), fitted with 6-00 in. X 16in. tyres. Spare wheel is housed under the rear luggage compartment.

The "Special Sports" is equipped with rear wheel covers and a key to unlock these is included in the Tool Kit. For removing these covers see page 107.

#### Maintenance

1. Keep at the following pressures :-
 

Front	....	....	28 lb. per square inch	}	Normal
Rear	....	....	30 lb. per square inch		
2. Examine for embedded flints, etc., remove these with a pocket knife.
3. Uneven wear of the tyres may be due to maladjustment of the track of the front wheels. Refer to Steering. page 82.

#### Care of Tyres

Precautions to be taken with all tyres-especially synthetic tyres.

Avoid under-inflation and over-inflation by checking pressure at least weekly and adjust pressure when necessary.

Avoid hitting kerbs and other causes of severe impact.

Do not allow flints. etc., to remain embedded in the tread.

Have damage repaired immediately.

Change tyres round regularly, including the spare.

Keep brakes in proper adjustment.

Have wheels checked frequently for misalignment and other mechanical irregularities.

THE **Daimler** 2  $\frac{1}{2}$  LITRE

## Chapter IV

### SUSPENSION

Part 1	....	Front and Rear Suspension	....	....	Page 78
Part 2	....	Suspension Dampers	....	....	Page 79

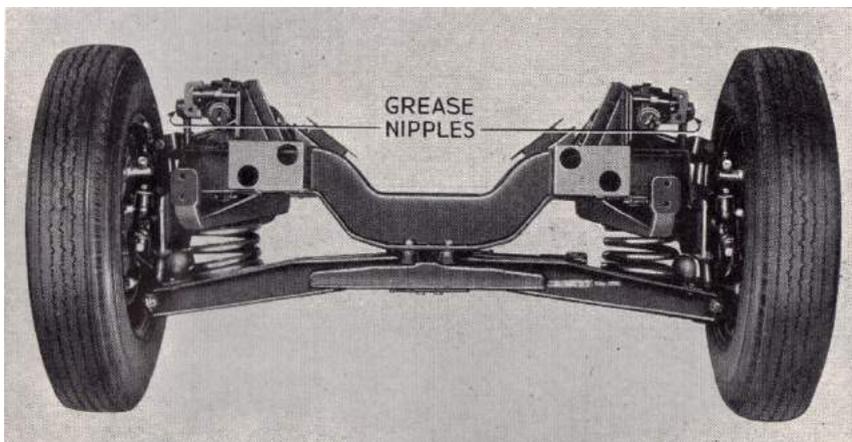
## THE Daimler 2 ½ LITRE

## Part 1

## FRONT AND REAR SUSPENSION

## General Description

1. Front. This is completely independent by means of swinging arms and coil springs.
2. Rear. Long flat leaf springs of normal semi-elliptic type are used. An anti-roll bar is used at the front.



**Fig. 39**  
Independent Front Suspension

## Maintenance

1. Front. Due to extensive use of Silentbloc bushes, which require no attention, and the automatic chassis lubrication, little maintenance is necessary, apart from the greasing of the traverse links.
2. Rear. The shackle pins are lubricated by the automatic chassis lubrication system.

The springs should be sprayed with penetrating oil **every 3000 miles**. It is advantageous to do this more frequently during the winter months.

## Adjustment

None required.

# THE Daimler 2 ½ LITRE

## Part 2

### SUSPENSION DAMPERS

#### General Description

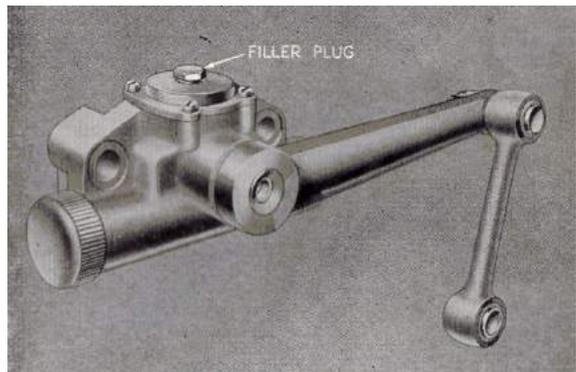
Double acting hydraulic dampers are used, different types P.R.6. and P.V.6. being used on the "Special Sports" and "Consort" Saloon respectively. Both types offer equal resistance being offered to the compression as to the recoil of the road springs.

The operating arms of the front pair of shock absorbers are joined by an anti-roll bar.

#### Maintenance. Every 12,000 miles

The only attention required is the occasional renewal of the connecting link bearings, and the topping up with fluid at the above mileage. It is necessary to remove the dampers from the chassis to fit new bearings, and it is recommended that the topping up with fluid is also carried out with the units removed from the car, as it is most important that no dirt or foreign matter enters the damper movement through the filler hole.

The maintenance of the dampers in position is confined to the periodical examination of the anchorage to the chassis, the fixing bolts being tightened as required.



**Fig. 47**  
Type P.R.6/12 Shock  
Absorber

#### To Top-up with Fluid

Remove the dampers from the chassis, place in vice (holding by the fixing lugs to avoid damage to the body).

Before removing the filler cap, completely clean the exterior of the damper to ensure that dirt cannot enter the filler hole.

THE  2 ½ LITRE

Use only Luvax Piston Type Shock Absorber Oil.

Fill up to the bottom of the filler plug hole.

While adding fluid, the lever arm must be worked throughout its full stroke to expel air from the pressure chamber.

When re-fitting the dampers to the chassis, after bolting in position, but before reconnecting links, work the arms throughout the complete stroke several times to make sure that no air is present.

### **Adjustment**

No adjustment to the damper is required or provided for, any attempt to dismantle the movement by removing the end caps will seriously affect the performance.

# THE Daimler 2 ½ LITRE

## Chapter V

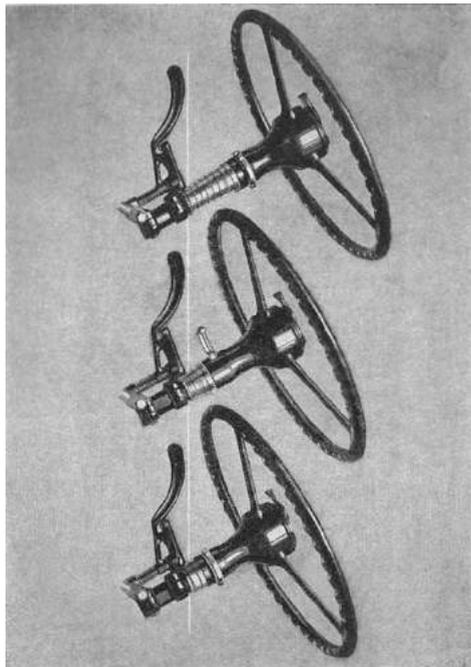
### THE STEERING

#### General Description

A Marles worm and double nut type of steering box is fitted and a track rod divided in the centre so to ensure maintenance of accurate steering qualities whilst allowing for the independent movement of the front wheels.

The 18in. diameter spring steering wheel is mounted on a telescopic column which is adjustable for length.

To alter the position of the steering wheel, pull the cam lever over, the wheel can be moved up or down until the most comfortable position is found. Then lock up the cam lever which should never be left in the open position.



**Fig. 41**  
Adjustable Steering Column

### Maintenance Every 3000 miles

1. The level of the steering box should be examined.
2. If the level is below the filler plug hole it should be topped up. Recommended oil is Daimler Worm Gear Oil.
3. All the steering rod joints are lubricated by the automatic chassis lubrication system and require no further attention.



**Fig. 42**  
**Steering Box Filler and Level Plug**  
**Using Oil Gun to Refill**

### Adjustment

1. Steering Column. The column is telescopic and can be locked in any position within its range of movement by the clamping lever.
2. An adjustment nut is provided for the clamping lever. This nut should be adjusted so that the lever can be closed with one hand, and lie closely round the wheel hub.

**Note.** This nut should be adjusted so that the lever is as tight as possible, allowing just sufficient movement to close the lever.

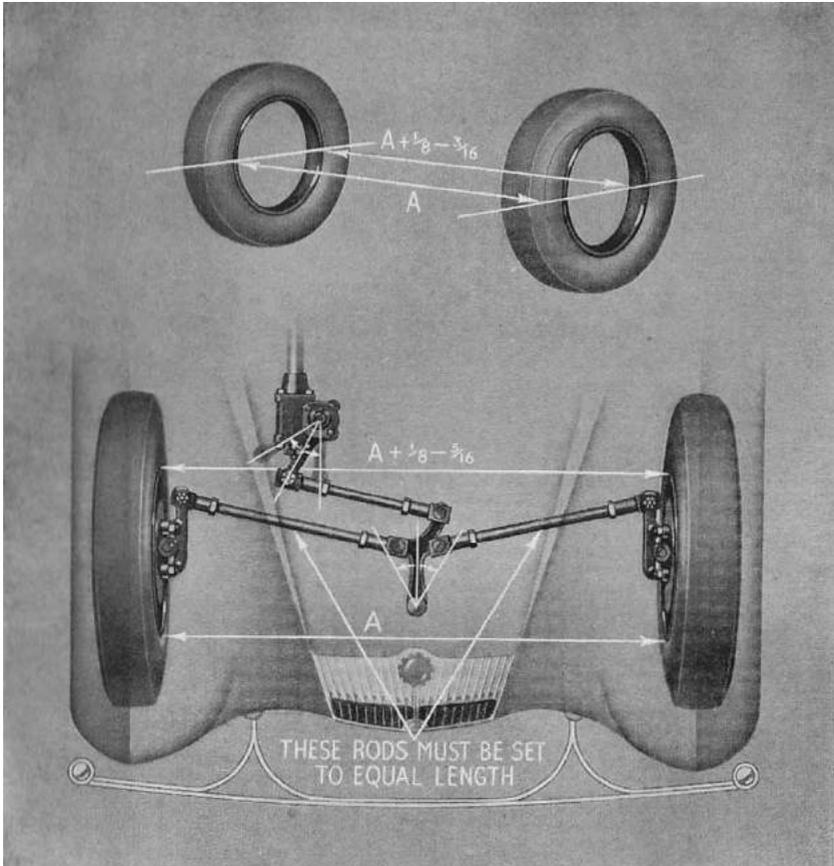
### Setting the track of the front wheels. (See Fig.43)

1. The "toe-in" should be  $\frac{1}{8}$  in. to  $\frac{3}{16}$  in., that is, the distance between the inner edges of the rim of the front wheels, measured at the height of the wheel centres should be less at the front than at the back by  $\frac{1}{8}$  in. to  $\frac{3}{16}$  in.

That is, if the measurement at the front is "A" the measurement at the back should be "A" +  $\frac{1}{8}$  in. to  $\frac{3}{16}$  in.

2. The car should be standing on its wheels when adjusting the track.
3. If it should be necessary to re-set the track-
  - (a) Undo locknuts at both ends of the track rods.
  - (b) Set steering pivot lever in the central position.
  - (c) Turn the rods until the correct toe-in is obtained.
  - (d) Tighten locknuts, making sure that the steering pivot lever is still in the central position.
  - (e) Re-check the track.

# THE Daimler 2 ½ LITRE



**Fig. 43**  
The Setting of the Front Wheel Alignment

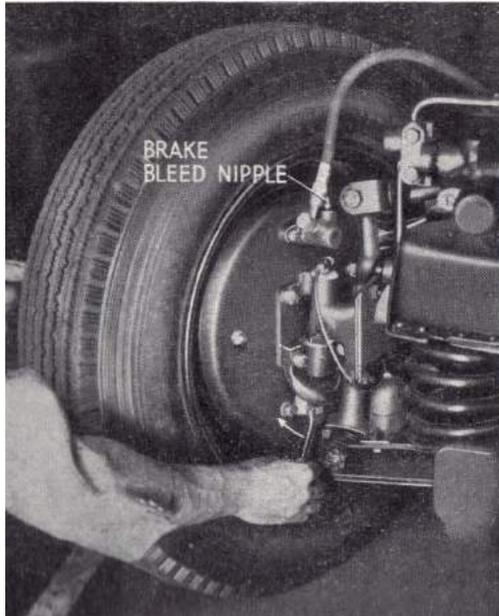
- (f) The length of the drag link should be adjusted to suit, remembering that the drop arm should also be in its midway position so that the movement on each lock is the same.
- (g) To set the drop arm in the midway position, disconnect the draglink and count the number of turns and fraction of a turn of the steering wheel to go from full lock one side to full lock the other side. Then turn it back from full lock position exactly half the number of turns it was found necessary to go from lock to lock.

## Chapter VI

### BRAKES

#### General Description

The braking system used is the Girling Hydro-mechanical type. The two leading type front brakes are operated hydraulically, the rear brakes of normal pattern are operated mechanically. Both systems are coupled to the foot pedal via the master cylinder. The hand brake operates the rear brakes only.



**Fig. 44**  
Adjusting Brakes

#### Maintenance.

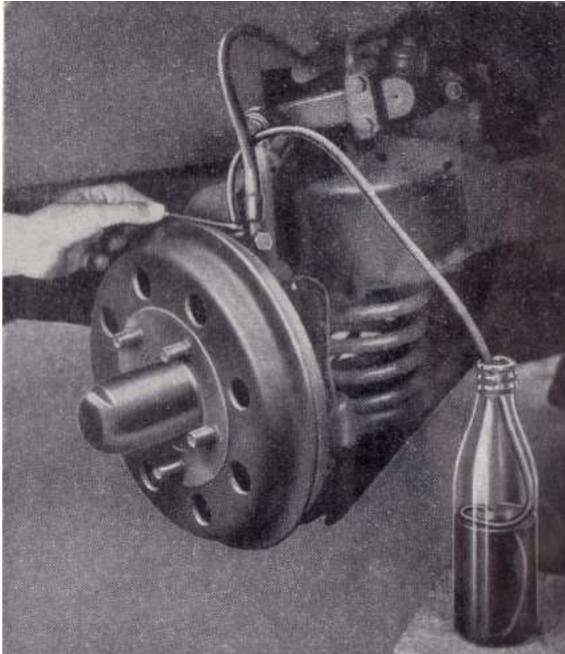
##### Every 3,000 miles.

1. The hydraulically operated front brakes need no lubrication and the balance levers of the rear wheel braking system have self-lubricating bushes. However, a few drops of oil on any joints in the linkage, at long intervals, will be of assistance. **Take great care that no oil reaches the brake master cylinder rubber cover or hose connections.**

# THE Daimler 2 $\frac{1}{2}$ LITRE

2. Check the level in the hydraulic reservoir and fill to three-quarters full mark if necessary. The reservoir is the one to the left of the cylinder head cover, looking from the radiator towards the dash.

**Warning.- On no account should fluid other than Wakefield Girling Brake Fluid be used.**



**Fig. 45**  
**Adjusting Brakes**

## **Adjustment**

### **1. Adjusting Brake shoes**

Adjustment for lining wear is made by the brake adjuster, located on the brake carrying plate.

To adjust the brake, rotate the wedge clockwise as far as it will go : then slack the wedge back two clicks, which can be felt and heard. All brakes should be treated in a similar manner.

### **2. Bleeding the Hydraulic System (front brakes)**

The process of bleeding is necessary only when a portion of the system has been disconnected, or when the level in the supply tank has been allowed to fall too low, thus permitting air to enter the fluid circuit.

The bleeding process removes any air which may have found its way into the system.

**Procedure**

Fill up the supply tank with fluid, exercising great care to prevent entry of dirt.

Take one brake at a time, remove the rubber cover from bleeder nipple of brake cylinder, fit a rubber bleeder tube in its place, and allow to hang in a clean container or glass jar. Unscrew the nipple about three-quarters of a turn with a suitable spanner, and operate the brake pedal up and down a few times. One or two stokes will cause the fluid to commence flowing, but pumping must be continued until the fluid appears entirely free from air. It is important that the reservoir is frequently replenished during this operation as should it be allowed to become empty more air will be drawn into the system. After expelling all traces of air, hold pedal right down and tighten nipple; then repeat procedure on the opposite front brake. On completion, make sure that the reservoir is topped up to the correct level, i.e., three-quarters full. For recommended fluid, see page 112.

## Chapter VII

### ELECTRICAL EQUIPMENT

Part 1	....	Lighting	....	....	....	Page 88
Part 2	....	Starter	....	....	....	Page 93
Part 3	....	Charging	....	....	....	Page 95
Part 4	....	Battery	....	....	....	Page 99
Part 5	....	Accessories	....	....	....	Page 100

Electrical wiring Diagrams will be found at the end of the handbook

## Part 1

### LIGHTING

#### General Description

Lucas 12 volt electric equipment is installed in the car. A single 12 volt battery has its **positive** side earthed to the chassis, and a single wire conveys the current from each item of equipment back to the negative side of the battery. It is therefore important to see that all earth connections such as battery to frame, etc., are clean and that a metal-to-metal connection is made. It is advisable to disconnect one of the battery terminals before removing any unit from the chassis, so preventing short-circuiting which may result in burnt-out wiring and equipment.

#### MAINTENANCE AND ADJUSTMENT

##### Headlamps

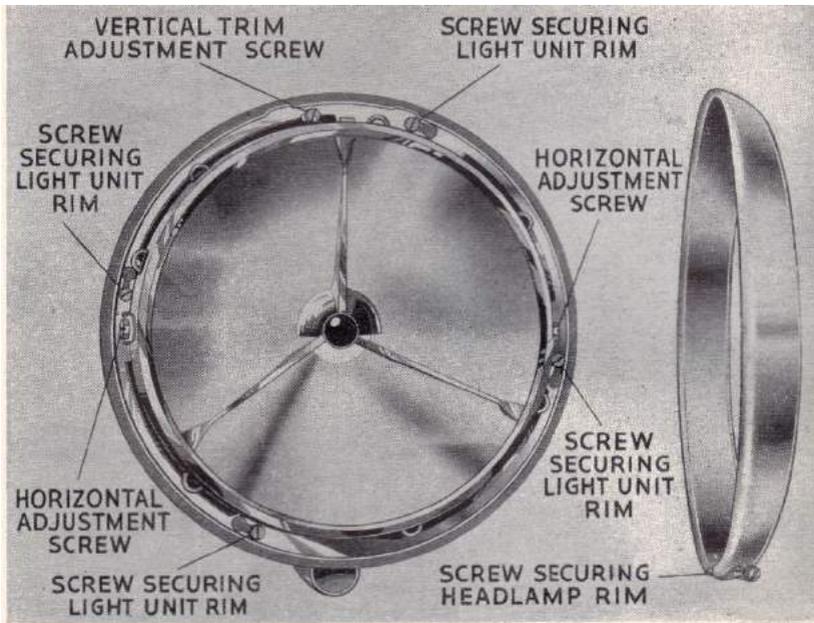
###### (a) Type

The headlamps are Lucas Model PF 770 Service No. 50852A. each lamp incorporates a Lucas Light Unit which consists essentially of a combined reflector and front glass assembly provided with a mounting flange by means of which it is secured in the body housing. The bulb, which is of a Lucas pre-focus type, is located accurately in the reflector and is secured by a bayonet fixed back shell which also provides the contact to the bulb. The design of the bulb and its holder is such that the bulb is correctly positioned in relation to the reflector and no focusing is required.



**Fig. 46**  
Headlamp Wiring Connections

# THE Daimler 2 ½ LITRE



**Fig. 47**  
Headlamp with Front Rim removed

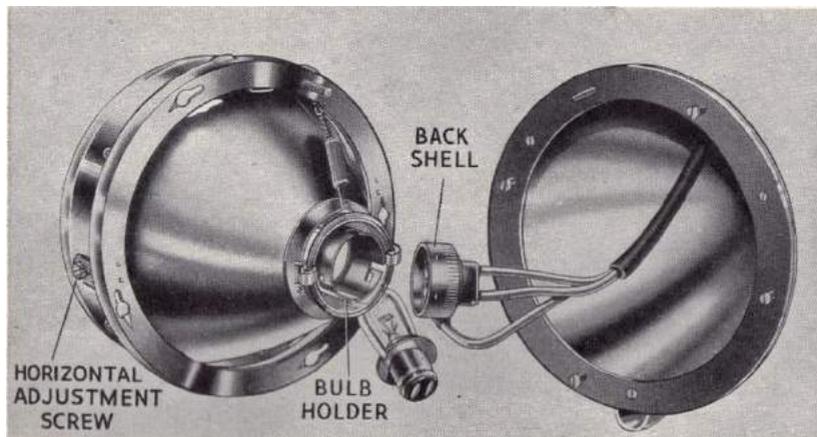
(b) **Anti-Dazzle Scheme**

Both headlamps are fitted with double filament bulbs. On models intended for use in Great Britain the dipper switch has been arranged to switch off the offside headlamp and dip the nearside headlamp. The O.S. dip filament is disconnected. If it is desired to arrange for both headlamps to dip simultaneously, as for use on the Continent, the **blue and red** cable supplying current to the O.S. dip filament can be connected. This connection should be made to the rubber protected snap connector, which is found near the base of the radiator on the O.S. and is linked to the dip switch by a **similar coloured cable**. (See Fig. 46).

(c) **To remove the Light Unit for bulb replacement. (See Figs. 47 and 48)**

Remove the front rim by unscrewing the rim securing screw and lifting off the rim, which is split to facilitate removal. Slacken the four screws which secure the flange of the Light Unit and turn it in an anti-clockwise direction and pull it off. The bulb can then be removed.

Place the replacement bulb in the holder, taking care to locate it correctly. Engage the projections on the inside of the back shell with the slots in the holder, press on and secure by twisting it to the right. Position the Light Unit in the lamp body so that the vertical trim adjusting screw locates in the slot in the body rim and the heads of the four fixing screws protrude through the holes, in the flange of the Light Unit. Twist the Light Unit in a clockwise direction and secure by tightening the four screws.



**Fig. 48**  
Headlamp with Light Unit removed

(d) **Setting**

The headlamps must be set so that the beams of light are directed straight ahead and are parallel with the ground and each other. Both headlamps should be dipped slightly to counteract the tendency of the headlamps to shine upwards when the car is fully loaded. (See Fig. 50)

Remove the front rim as described above. If vertical adjustment is required, set the Light Unit to the correct position by means of the vertical trim adjustment screw at the top of the reflector unit. Turn the screw in a clockwise direction to raise the beam or in an anti-clockwise direction to lower it.

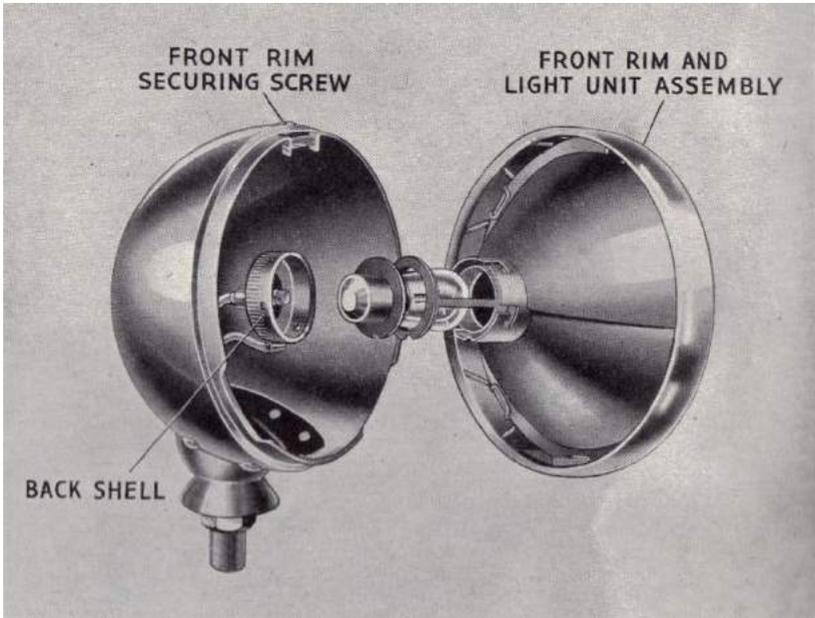
If horizontal adjustment is required, set by means of the two adjustment screws (one on each side of the Light Unit).

**Foglamps. "Special Sports"**

- (a) The Foglamps are Lucas Model SFT.575 Service No. 55029. These lamps are fitted with a Lucas Light Unit and a pre-focus bulb (as already described in headlamps).
- (b) **To remove the Light Unit for bulb replacement. (See Figs. 49)**

Slacken the screw at the top of the lamp body, remove the front rim and Light Unit assembly. Twist the back shell in an anti-clockwise direction and pull it off. The bulb can then be removed. Place the replacement bulb in the holder, taking care to locate it correctly. Engage the projections on the inside of the back shell with the slots in the holder, press on and secure by twisting it to the right.

# THE Daimler 2 ½ LITRE



**Fig. 49**  
Headlamp with Light Unit removed

### (c) Setting

The lamps must be set so that the beams do not rise above the horizontal when the car is standing on level ground. To adjust loosen the nut at the base of each lamp. The owner can set the fog lamps according to his own requirements, general practice being to use the nearside lamp for illuminating the kerb whilst the offside lamp throws the beam straight ahead.

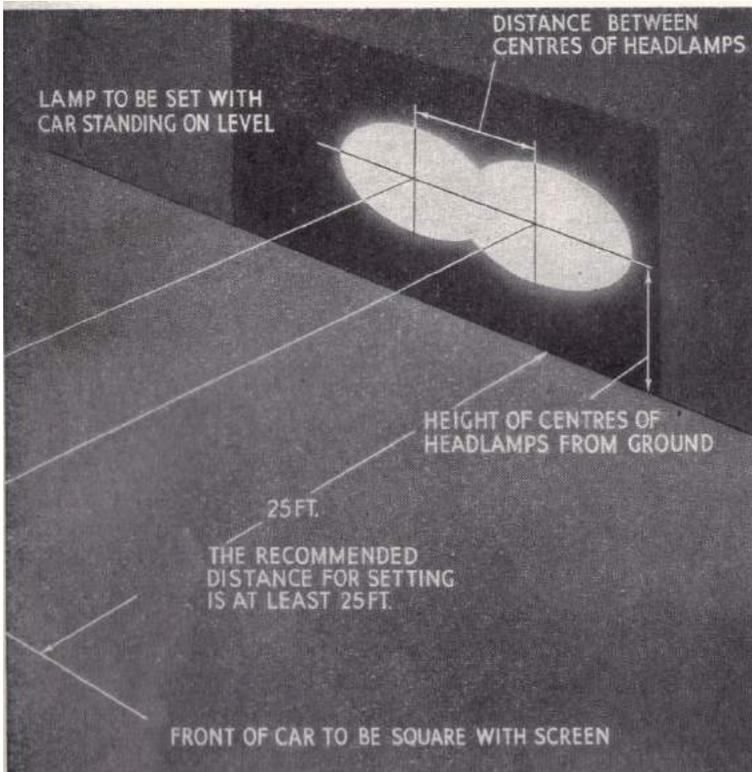
Check the setting of all the lamps by placing the car in front of a blank wall at the greatest possible distance, taking care of course that the surface on which the car is standing is not sloping relative to the wall.

### Sidelamps

The sidelamps are Lucas Model 461/1 Service No. 52120. To remove the lamp front and reflector, withdraw the small securing screw and pull out the lamp front and reflector moving the top of the lamp in a downwards direction. When replacing, locate the metal tag at the bottom of the lamp first, refit and replace the securing screw.

To remove the lamp from the reflector, twist it in either direction. This disengages a fixing clip, mounted on the reflector from slots in the lamp front, which can be pulled off. To replace the front, push it onto the reflector body and turn until the fixing clip re-engages the slots on the lamp front.

# THE Daimler 2 ½ LITRE



**Fig. 50**  
Setting Lamps

### Stop Tail Lamp. 2 ½ Litre "Special Sports"

The stop tail lamp is a Lucas Model 464. Service No. 53072. To gain access to the bulb remove the front and glass assembly by slackening the two securing screws. The bulb is double filament type (12 volt 6/24 watt) take care when replacing bulb to see that the bulb is fitted correctly, that is see that the small wattage is connected to the tail lamp circuit.

### Number Plate and Reverse Lamp. 2 ½ Litre "Special Sports"

This lamp is a Lucas Model 469 Service No. 53097. To gain access to the bulb remove the front assembly by slackening the two securing screws.

### Stop, Tail, Reverse, and Number Plate Lamps. "Consort"

These are housed in two fittings at either end of the Number Plate. The Tail and Stop lamp on the right, and the Tail and Reverse on the left.

Access to the bulbs is obtained by slackening the fixing screw and swinging the front part open. Care should be taken when removing bulbs to replace the specified bulb (see page 26) in the correct socket.

# THE Daimler 2 ½ LITRE

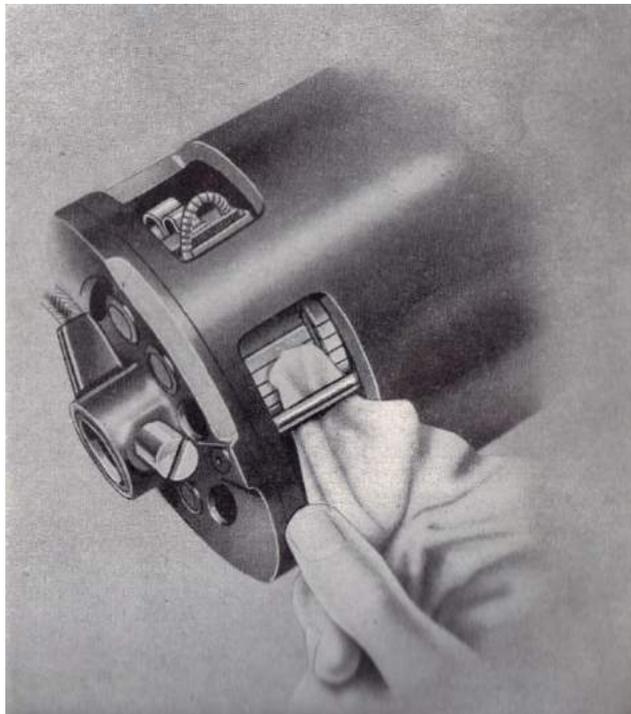
## Part 2

### STARTER

#### General Description

To obtain the longest life from the starter and the battery, the following points should be observed when starting :-

1. See that the controls are properly set – Refer to the starting instruction.
2. Operate the starter switch firmly and, of course release it as soon as the engine fires.
3. Never operate the starter while the engine is still running. If the engine will not fire at once, allow it to come to rest before operating the switch again.
4. Do not run the battery down by keeping the starter on when the engine will not start. See page 16.



**Fig. 51**  
Cleaning  
Commutator

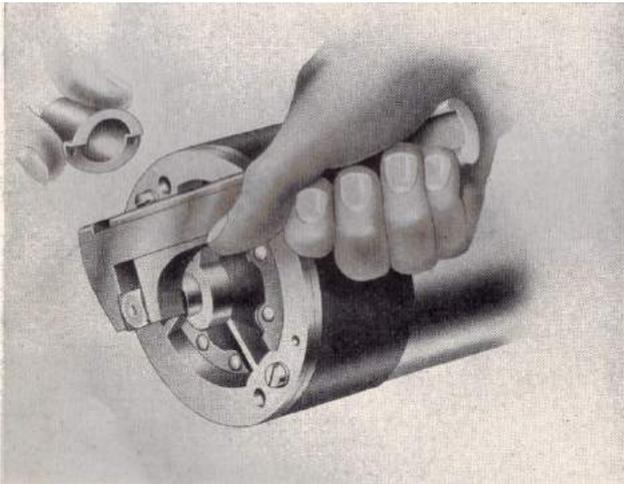
**Maintenance****Every 12,000 miles**

Remove the starter cover band in order to examine the brushes and commutator.

Check that the brushes move freely in their holders by holding back the brush springs and gently pulling the flexible connectors. If the movement is sluggish, remove the brush from its holder and clean its sides with a petrol moistened cloth.

The commutator should be clean and dirt-free and should have a polished appearance. If it is dirty, clean it by pressing a soft dry cloth against it while the started is turned by hand. The square shaft extension at the commutator end can be used to rotate the starter. If the commutator is very dirty, the cloth should be moistened with petrol. (See Fig. 51)

Replace brushes in their original positions in order to retain the correct "bedding." If the brushes are worn so that they do not bear properly on the commutator, they must be replaced by a Lucas Agent or Service Depot, and correctly "bedded" to the commutator.



**Fig. 52**  
**Cleaning Commutator**

Should the starter become jammed in mesh with the flywheel, then on removal of the end cap the starter can be rotated by turning the square shaft extension with a suitable spanner.

**Adjustment**

None is required.

# THE Daimler 2 ½ LITRE

## Part 3

### THE DYNAMO

#### General Description

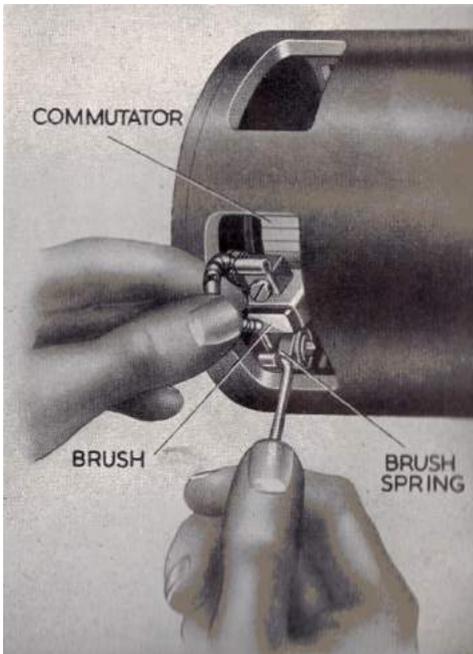
The dynamo is of the compensated voltage control type and works in conjunction with a regulator housed along with cut-out.

The regulator causes the dynamo to give an output which varies according to the lamp load and the state of charge of the battery. When the battery is discharged the dynamo gives a high output so that the battery receives a quick re-charge which brings it back to its normal state of charge in the minimum possible time.

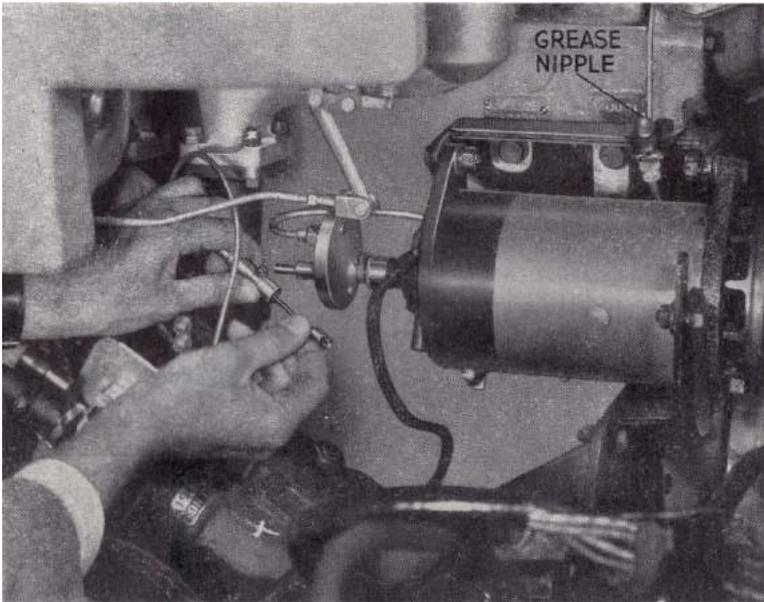
On the other hand, when the battery is fully charged, the dynamo is arranged to give only a trickle charge which is sufficient to keep it in good condition without any possibility of causing damage to the battery by overcharging.

In addition to controlling the output of the dynamo according to the condition of the battery, the regulator provides for an increase of output to balance the current taken by the lamps or other accessories whenever they are switched on.

The regulator incorporates a temperature compensation which causes the dynamo to give an increased output in cold weather when the load on the battery is greater and it also provides an increased charge at the beginning of a run so quickly replacing the energy used for starting.



**Fig. 53**  
Dynamo Brushes

**Fig. 54****The Rev. Counter Cable and Reduction Gear****Maintenance. Every 12,000 miles**

Unscrew the lubricator fitted at the commutator end, lift out the felt pad and spring, and about half fill the lubricator with Daimler R.B. Grease. Replace the spring and felt pad and screw the lubricator in position on the commutator end bracket.

Remove the cover band to inspect the brushes and commutator. Check that the brushes move freely in their holders by holding back the brush springs and pulling gently on the flexible connectors. (See Fig. 53). If a brush is inclined to stick, remove it from its holder and clean its sides with a petrol moistened cloth. Be careful to replace brushes in their original positions in order to retain the " bedding. " Brushes which have worn so that they will not bear correctly on the commutator must be replaced and properly bedded at a Lucas Agent or Service Depot.

The commutator should be clean, free from oil or dirt, and should have a polished appearance. If it is dirty, clean it by pressing against it, a fine dry duster while the engine is slowly turned over by hand. If the commutator is very dirty, moisten the cloth with petrol.

**Note.** Removal of the sparking plugs will make the job of turning the engine much easier.

**Adjustment**

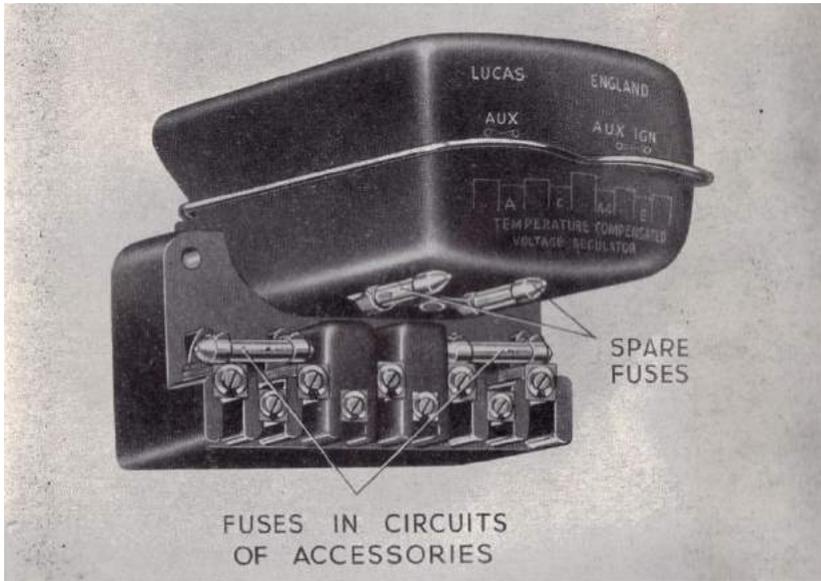
Inspect the driving belt and see that it is not too slack. A loose belt may prevent the dynamo giving its full output. The belt must not be over-tightened, and care must be taken to ensure that the dynamo is correctly aligned, otherwise undue strain may be thrown on

# THE Daimler 2 ½ LITRE

the dynamo bearings. When correctly tensioned, it should be possible to lift the belt up and down for a distance of about  $\frac{3}{4}$  in. at a point midway between two of the V pulleys.

## The Revolution Counter. "Special Sports"

The drive from the rear of the dynamo shaft to the revolution counter is transferred by means of a reduction gear and cable respectively. The cable is packed with grease on assembly, but removal of the inner cable and greasing at intervals of 20,000 miles will aid in maintaining smooth running. Removal is best accomplished by undoing the cable end at the reduction gear and pulling out the cable. After dipping and cleaning in paraffin the cable should be dried, then given a coating of R.B. Grease, together with some graphite grease, if available. Do not overdo this, as leaks may occur. Check that the engagement with the drive in the revolution counter, the end is  $\frac{3}{4}$  " within its cover. Lubrication of the Reduction Gear is made via a nipple mounted on the dynamo bracket, and connected to the gear by a lubrication pipe. (See Fig. 54).



**Fig. 55**  
Control Box and Fuse Box

### The Control Box.

The Control Box is mounted on the engine side of the dash and houses the cut-out, voltage regulator, and two fuses. (See Fig. 55).

## THE Daimler 2 ½ LITRE

The cut-out and regulator units are carefully and accurately set before leaving the Works and must not be tampered with.

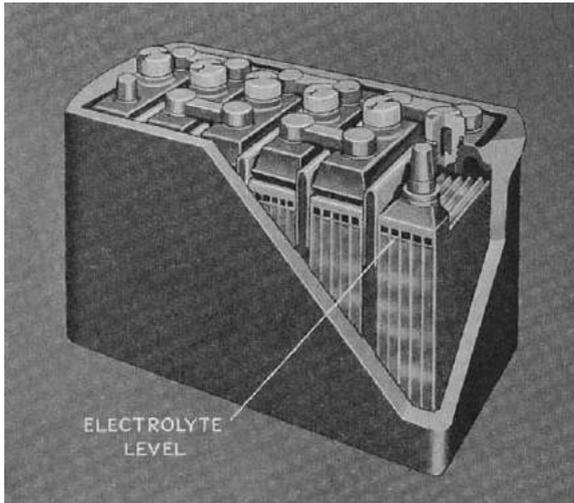
The fuses are of the cartridge type, consisting of a length of very fine wire enclosed in a glass tube with brass end caps to which are soldered the ends of the wire. To replace a fuse it is necessary only to withdraw it from the spring clips in which it fits and then insert the replacement fuse in its place.

Spare fuses are provided and it is important to use only the correct replacement fuse – the fusing value is marked on a coloured paper slip inside the fuse.

The fuses protect the head, side, fog and tail lamps and the accessories such as the horn, windscreen wiper, etc. The particular units protected by the different fuses can be identified by referring to the wiring diagram.

A blown fuse will be indicated by the failure of all the units protected by it, and is confirmed by examination of the fuse. If it has blown the broken ends of the wire will be visible inside the glass tube. Before replacing a blown fuse, inspect the wiring of the units that have failed for evidence of short circuits or other fault that may have caused the fuse to blow and remedy the cause of the trouble.

However, if the new fuse blows immediately and the cause of the trouble cannot be found, have the equipment examined by a Lucas Service Depot.



**Fig. 56**  
Battery

# THE Daimler 2 ½ LITRE

## Part 4

### THE BATTERY

About once every month, top up each cell with distilled water to bring the acid solution (electrolyte) level with the tops of the separators. Do not use tap water and do not use a naked light when examining the condition of the cells.

Keep the terminals clean. If they are corroded, scrape them clean and smear with Vaseline. Wipe away all dirt and moisture from the top of the battery and make sure that the connections and fixing bolts are clean and tight.

Occasionally check the battery's condition by taking hydrometer readings of the specific gravity of the electrolyte in each of the cells.

Specific gravity readings and their indications are as follows :-

1.280-1.300	....	....	Battery fully charged.
About 1.210	....	....	Battery about half discharged.
Below 1.150	....	....	Battery fully discharged.

The readings of all cells should be approximately the same. If one cell gives a very different reading from the rest, it may be that acid has been spilled or has leaked from this particular cell or there may be a short-circuit between the plates. In this case the battery should be examined by a Lucas Service Agent or Depot.

Never leave the battery in a discharged condition for any length of time. Have it fully charged and every fortnight give it a short refreshing charge.

The charging socket is place beneath the instrument panel near to the throttle control on the "Special Sports" and the mixture control on the "Consort" Saloon. As an alternative to using the socket as the medium for charging the battery, an inspection lamp can be connected.

# THE Daimler 2 ½ LITRE

## Part 5

### ACCESSORIES

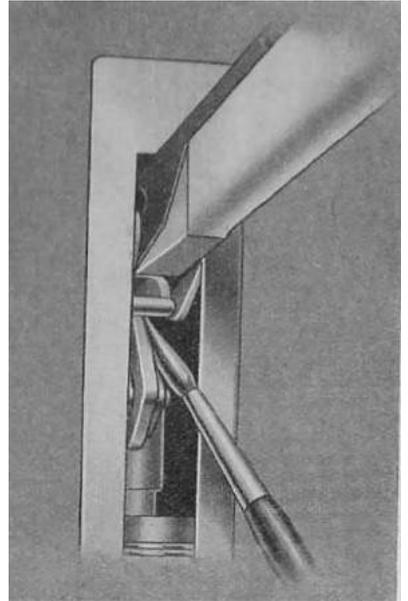
#### 1. The Trafficators. "

If the movement of the arms become stiff, raise each arm and apply, by means of a brush or other suitable article, a drop or thin machine oil. such as sewing machine oil, to the catch pin between the arm and the operating mechanism, Use only the merest trace of oil as any excess may affect the operating mechanism.

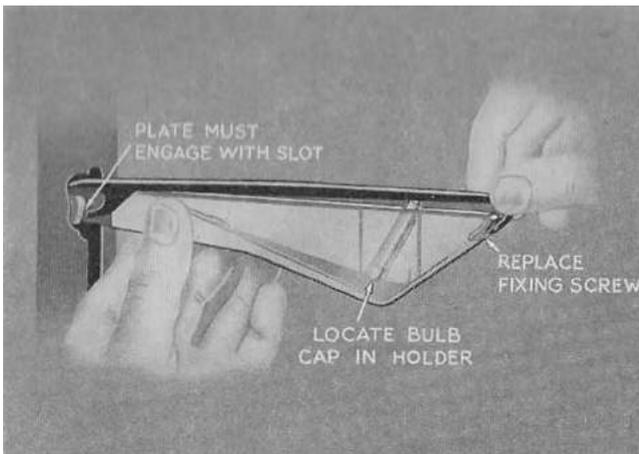
If any difficulty is experienced in raising the arms by hand, switch the trafficator on and then, supporting the arm in the raised position, move the switch to the off position.

Failure of the arm to light up usually indicates a blown fuse. The bulb can be replaced as follows (See Fig. 58)

Withdraw the screw on the underside of the arm and slide off the metal cover plate ; the burnt out bulb is then accessible. To replace the cover plate, slide it on in an upwards direction so that the side plates engage with the slots on the underside of the spindle bearing. Finally, secure the plate by means of its fixing screw.



**Fig. 57**  
Lubricating Trafficator



**Fig. 58**  
Replacing Bulb

# THE Daimler 2 ½ LITRE

## 1. Windscreen Wiper.

The switch is combined with the knob on the driver's side. To start, push in the knob, and turn it to disengage from the parking stop. Release the knob and then rotate it until the driving dogs engage.

Engage the drive to the arm on the passenger's side in a similar manner.

To switch off, push in the knob and turn it until the arm lies on the scuttle.

## 2. Electric Horns.

All horns, before being passed out of the Works are adjusted to give their best performance and will give a long period of service without any attention; no subsequent adjustment is required.

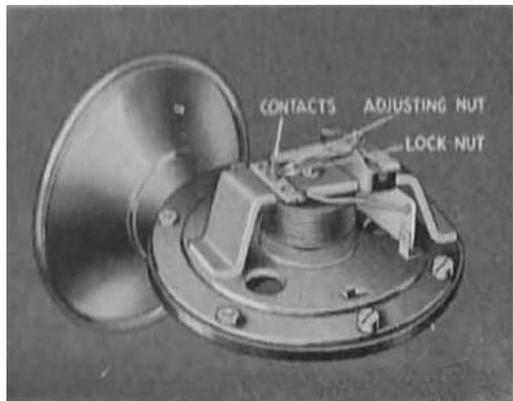
If one of the horns fails or becomes uncertain in its action, it does not follow that the horn has broken down. First ascertain that the trouble is not due to some outside source, e .g. a discharged battery, or loose connection, or short circuit in the wiring of the horn - a short circuit in the horn wiring will cause the fuse to blow. If both horns fail or become uncertain in action, the trouble is probably due to a discharged battery or blown fuse. If the fuse has blown, examine the wiring for the fault and replace with the spare fuse provided.

It is also possible that the performance of a horn may be upset by the fixing bolt working loose. If, after carrying out the above examination, the trouble is not rectified, the horn may need adjustment, but this should not be necessary until the horns have been in service for a long period.

Adjustment does not alter the pitch of the note, it merely takes up wear of moving parts. When adjusting the horns, short circuit the fuse, otherwise it is liable to blow. Again, if the horns do not sound on adjustment, release the push instantly.

### Adjustment

Remove the horn cover after withdrawing the fixing screw and detach the cover securing bracket by springing it from its fixing.



**Fig. 59**  
Electric Horn

Slacken the locknut on the fixed contact and rotate the adjusting nut until the contacts are just separated (indicated by horns failing to sound). Turn the adjusting nut half a turn in the opposite direction and secure in this position by tightening the locknut. Finally, if the note is still unsatisfactory, do not dismantle the horn, but return it for examination.

## Chapter VIII

### THE BODY

#### Care of the Paintwork

To avoid damage to the paintwork and the finish, always use plenty of water when washing. Swill freely with water and work off the dirt with a sponge or soft cloth. Dry off with a chamois leather.

**NOTE.-** When cleaning the windscreen and scuttle, do not move the windscreen wiper blades from the outside, but always operate by turning the knob inside the car.

The body may be polished, and for this it will be found that a wax polish will last longer and give a better finish, although perhaps harder to apply.

#### Care of the Chromium Plating

Water is the best medium for cleaning this plating, finishing off with a soft cloth. If the plating has become tarnished or dull, it can usually be revived by careful use of one or other of the special chromium cleaners marketed by reputable firms. Be careful not to use ordinary metal polish as this will damage the chromium.

#### Doors

Occasional lubrication of the hinges and catches will assist the easy operation of the doors. This will be needed more frequently in winter weather or if the car has to be left out in bad weather.

#### Rear Boot and Spare Wheel Locker

Occasional lubrication of the catches and the hinge of the boot door is recommended. Apply just a smear of oil, more frequently in wet weather.

#### Care of Interior Upholstery

The leather upholstery of the seats can be kept clean and soft if given a slight dressing with a good quality furniture polish. The frequency with which this is done will, of course, depend on the use to which it is put, but generally about every two months will be ample to keep it in good condition.

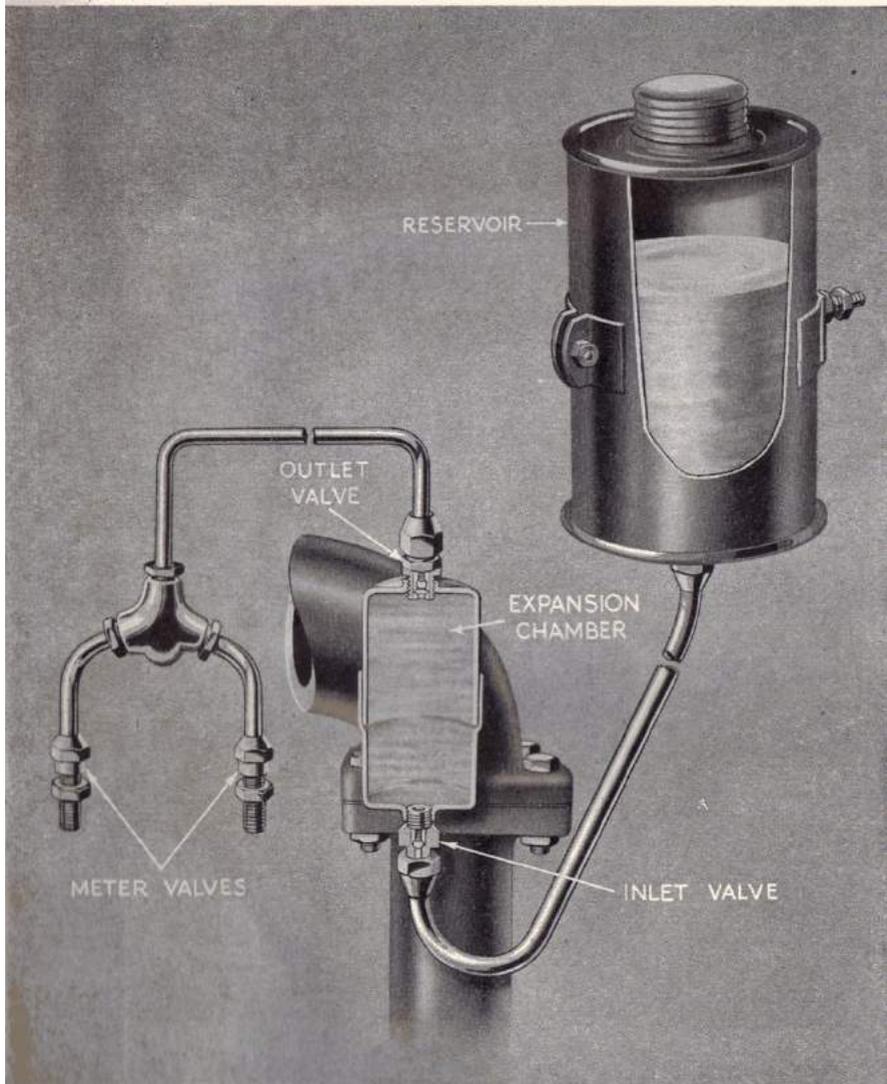
#### The Hood. 2 ½ Litre "Special Sports"

Little maintenance is required to save that of occasional oiling of the centre points, and ensuring that the hood is always dry before folding.

## Chapter IX

### CHASSIS

Part 1	....	Chassis Lubrication	....	....	....	Page 105
Part 2	....	Jacking System	....	....	....	Page 107



**Fig. 60**  
Chassis Lubrication Operating Mechanism

# THE Daimler 2 ½ LITRE

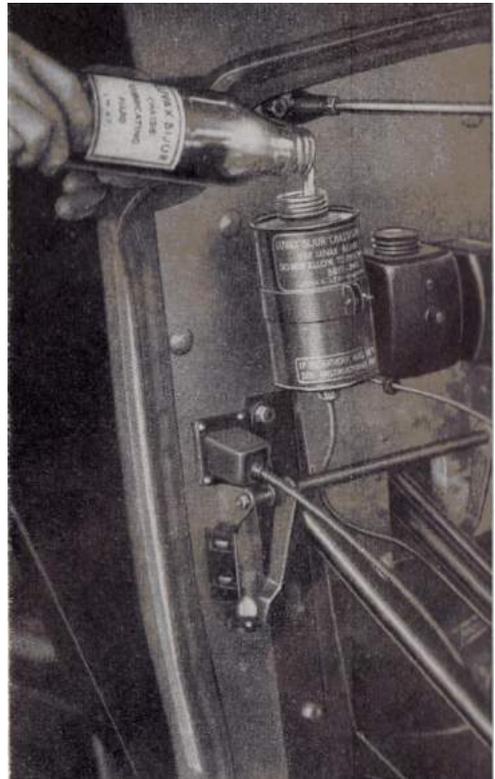
## Part 1

### CHASSIS LUBRICATION

#### General Description

The system, as illustrated, comprises an oil reservoir, which supplies oil to an expansion chamber, in the form of a closed cylinder with inlet and outlet valves, mounted adjacent to the exhaust manifold.

When the system is initially fitted it is primed and the reservoir filled so that all pipes and the expansion chamber are full of oil.



**Fig. 61**  
**Topping-up Chassis**  
**Lubrication System**

When the engine is started and the exhaust manifold gets hot, the oil in the expansion chamber heats up and expands and is forced through the outlet valve to the distributing line and meter valves. The meter valves are of various rates of flow arranged to cater for the amount of lubricant required by each bearing. When the temperature of the engine and the exhaust manifold falls, the oil in the expansion chamber cools and contracts and a

replenishment charge is automatically drawn through the inlet valve from the reservoir. This cycle occurs with every rise and fall of temperature in the expansion chamber.

The automatic system lubricates the rear spring shackle pins and all points of the steering linkage. Any remaining points not served by the automatic system on the suspension, have Silentbloc rubber bearings which require no attention, with the exception of the traverse links. (See Page 78).

### Maintenance

Replenish the reservoir, which is situated in the bulkhead, with Luvax Bijur Chassis Oil, **weekly**.

Do not allow the reservoir to become empty, as if this were allowed to happen, the system would require re-priming before replenishing.



**Fig. 62**  
Operating one of the two Rear Jacks

# THE Daimler 2 ½ LITRE

## Part 2

### JACKING SYSTEM

#### General Description

The system consists of three jacks operating on the toggle principle, permanently fixed to the axles of the car. One jack is fitted longitudinally under the front cross member (thus preserving correct axle balance) and the remaining two jacks are fitted one on each side of the back axle.

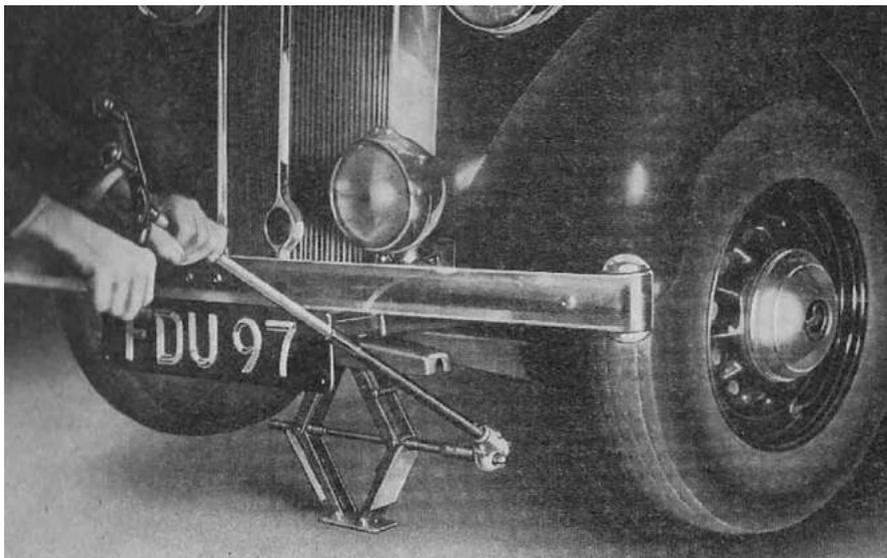
On the "Special Sports" it will be found an advantage to remove the rear wheel spats before jacking the car. This is done by lifting the small spring loaded cap at the rear of the cover and inserting the end of the T-key. Turn the key and pull out the rear corner, finally pulling the cover down and outwards at the same time.

The long operating lever, and cross bar, is found in the tool kit. The handle is then attached to the jack and turned until required height is obtained.

#### Maintenance

The Jacks are purely mechanical in operation and require no maintenance to retain efficiency. If however, they are rarely used, it is advisable to open the jacks about every 6 months and to oil the threads and close them up again.

**Adjustment.** None is required



**Fig. 63**  
Operating Front Jack

# THE Daimler 2 ½ LITRE

## LUCAS SERVICE DEPOTS

BELFAST	.....	.....	.....	.....	.....	.....	51 (55 Upper Library Street <i>Telegrams</i> : " SERVDEP, BELFAST"
	<i>Telephone</i> : BELFAST 2561 7						
BIRMINGHAM, 18	.....	.....	.....	.....	.....	.....	Great Hampton Street <i>Telegrams</i> : " LUCAS, TELEX, BIRMINGHAM "
	<i>Telephone</i> : CENTRAL 8401						
BRIGHTON, 4	.....	.....	.....	.....	.....	.....	85 Old Shoreham Road. Hove <i>Telegrams</i> : " LUSERV, BRIGHTON "
	<i>Telephone</i> : HOVE 1146						
BRISTOL, 4	.....	.....	.....	.....	.....	.....	345 Bath Road <i>Telegrams</i> : "KINGLY. BRISTOL"
	<i>Telephone</i> : BRISTOL 76001						
CARDIFF	.....	.....	.....	.....	.....	.....	54a Penarth Road <i>Telegrams</i> : " LUCAS, CARDIFF "
	<i>Telephone</i> : CARDIFF 4603						
DUBLIN	.....	.....	.....	.....	.....	.....	Portland St. North, North Circular Rd. <i>Telegrams</i> : " LUSERV,
	<i>Telephone</i> : DUBLIN 72601						
DUBLIN "							
EDINBURGH, 11	.....	.....	.....	.....	.....	.....	60 Stevenson Road, Gorgie <i>Telegrams</i> : " LUSERV, EDINBURGH "
	<i>Telephone</i> : EDINBURGH 62921						
GLASGOW, C.3	.....	.....	.....	.....	.....	.....	4/24 Grant Street (St. George's Rd.) <i>Telegram</i> : " LUCAS GLASGOW"
	<i>Telephone</i> : DOUGLAS 3075						
LEEDS, 8	.....	.....	.....	.....	.....	.....	64 Roseville Road <i>Telegrams</i> : " LUSERDEP, LEEDS"
	<i>Telephone</i> : LEEDS 28591						
LIVERPOOL, 13	.....	.....	.....	.....	.....	.....	450/456 Edge Lane <i>Telegrams</i> : " LUSERV, LIVERPOOL "
	<i>Telephone</i> : STONEYCROFT 4721						
LONDON	.....	.....	.....	.....	.....	.....	Dordrecht Road, Acton Vale, W.3 <i>Telegrams</i> : " DYNOMAGNA, EALUX. LONDON"
	<i>Telephone</i> : SHEPHERDS BUSH 3160						
LONDON	.....	.....	.....	.....	.....	.....	757/759 High Road, Leyton, E.10 <i>Telegrams</i> : " LUSERDEP, LEYSTONE, LONDON"
	<i>Telephone</i> : LEYTONSTONE 3361						
MANCHESTER	.....	.....	.....	.....	.....	.....	Talbot Road, Stretford <i>Telegrams</i> : " LUCAS, STRETFORD "
	<i>Telephone</i> : LONGFORD 1101						
NEWCASTLE-on-TYNE	.....	.....	.....	.....	.....	.....	64/68 St. Mary's Place <i>Telegrams</i> : "MOTOLITE. NEWCASTLE-ON-TYNE"
	<i>Telephone</i> : NEWCASTLE 25571						

In addition there are Lucas Official  
Battery Service Agents, spare stockists  
and dealers in important centres  
throughout the country.

THE **Daimler** 2  $\frac{1}{2}$  LITRE

## Chapter X

### SUMMARY OF MAINTENANCE

Summary of Maintenance	....	....	....	....	Page 110
Recommended Lubricants	....	....	....	....	Page 112

## SUMMARY OF MAINTENANCE

### Daily

1. Petrol. Check amount as indicated on gauge.

**Note.** If, for any reason, low grade petrol has to be used, for instance when abroad, the ignition control on the instrument panel should be retarded slightly to prevent "pinking."

2. Oil. Check the level in the sump by means of the dipstick. The level should not be allowed to fall below the three-quarters full mark.  
Recommended Oil: S.A.E.30, (See page 47).
3. Water. Check level. Top up if necessary to within 1 in. of the filler.  
At the beginning of the winter, drain the cooling system and re-fill with water containing anti-freeze solution. Smith's Bluecol is recommended.

### Weekly

1. Tyres. Check pressures: Front 28lb. per square inch, rear 30 lb. per square inch.
2. Battery. Check level of electrolyte and top up if required with distilled water (see page 99).
3. Automatic Chassis, Lubrication System. Check level of oil in the reservoir.  
Recommended oil: Luvax Bijur Chassis Oil (see page 105).

### Every 3000 Miles

#### 1. Fuel System.

- (a) Top up the carburettors' hydraulic piston dampers. Recommended oil, Thin oil (see page 36).
- (b) Clean thimble filters on the carburettors (see page 36).
- (c) Wash out float chambers (see page 36).
- (d) Oil control rod joints (see page 36).
- (e) Clean petrol pump filter and pump body (see page 43).
- (f) Check that unions have not worked loose (see page 43).
- (g) ("Special Sports") Clean air filter and refill cleaner with fresh engine oil. (see page 41).

#### 2. Engine.

- (a) Change oil and clean the filter (see page 47).
- (b) Grease water pump (see page 50).
- (c) Check the clearance of the tappets (see page 32).

# THE 2 ½ LITRE

### 3. Ignition.

- (a) Lubricate and clean distributor (see page 58).  
Check gap setting at 0.12" (see page 60).
- (b) Check that all ignition wiring terminals are tight and clean.
- (c) Clean the sparking plugs and re-set the gap of the points to .020 in.

### 4. Transmission.

- (a) Check fluid flywheel level (see page 64).  
Recommended oil : S.A.E. 30.
  - (b) Check gearbox level (see page 66).  
Recommended oil : Same as for engine and flywheel.
  - (c) Grease propeller shaft (see page 71).
  - (d) Check rear axle level (see page 72).  
Recommended lubricants for "Special Sports" and "Consort" are given on page 112..
5. Spray rear springs with penetrating oil.
  6. Check level in steering box (see page 82).  
For recommended lubricants, see page 112.
  7. Top up hydraulic brake reservoir  
Recommended oil : **Wakefield Girling Brake Fluid (Crimson)**.
  8. Grease traverse links (see page 78).

### Every 6000 Miles

1. Change oil in gearbox (see page 67).
2. Oil gearbox control rod joints (see page 67).
3. ("Special Sports"). Grease rev. Counter reduction gear (see page 97).
4. Change oil in rear axle (see page 73).

### Every 12,000 Miles

1. Top up shock absorbers (see page 71).  
Recommended fluid : **Wakefield Girling Damper Oil. (thin)**.  
**No Alternative.**
2. Examine and, if necessary, clean starter motor and dynamo, commutators, and brushes (see pages 94 and 96).
3. Grease the propeller shaft needle roller bearings (see page 71).
4. Lubricate the Trafficators (see page 100).
5. Grease the front and rear hubs. (see page 74).

### Every 20,000 Miles

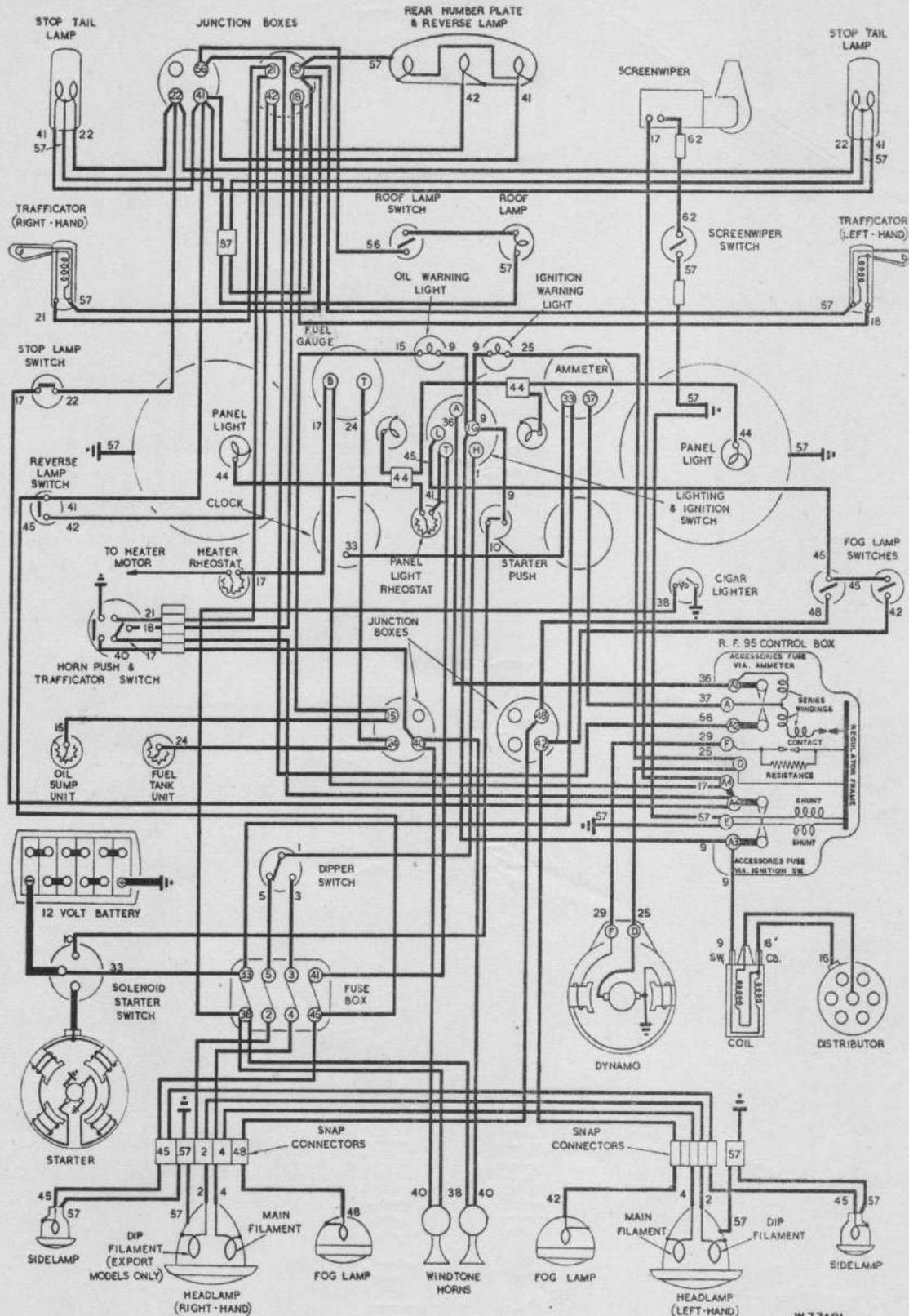
1. Fit new element to engine oil filter (see page 48).
2. ("Special Sports"). Clean motor and coils of car heater (see page 54).
3. ("Special Sports"). Grease rev. counter cable (see page 97).
4. Grease speedometer cable (see page 70).

## RECOMMENDED LUBRICANTS

	<b>Daimler</b>	<b>Wakefield</b>	<b>Vacuum</b>	<b>Shell-Mex</b>	<b>Esso</b>	<b>Price's</b>
Engine Fluid Flywheel Gearbox	Daimler Solvent Process Oil*	Castrol X.L.	Mobiloil A.	Double Shell	Essolube 30	Energol S.A.E. 30
Rear Axle	Daimler Heavy Gear Oil*	Castrol "D" Gear Oil	Mobilube C.	Shell Spirax C.	Esso Gear 140	Energol S.A.E. 140.
"Special Sports"		Castrol Hypoy	Mobilube G.X.90	Shell Spirax 90 E.P.	Expee Compound 90	Energol E.P. S.A.E. 30
"Consort"		Castrol Hypoy	Mobil Hub Grease	Retinax R.B.	Esso Grease	Belmoline C.
Hubs, Front & Rear, Water Pump, Propeller Shaft	Daimler R.B. Grease*	Castrol Heavy	Mobilube C.W.	Shell Spirax 140 E.P.*	Esso Gear Oil. 140	Energol E.P. S.A.E. 140
Steering Box	Luvax Bijur Chassis Oil*	Castrol S.T.	Mobilube C.W.	Shell Spirax 140 E.P.	Esso Gear Oil. 90 (Light)	Motorine Amber. A.
Chassis Lubrication	Penetrating Oil	Penetrating Oil	Mobil Spring Oil	Shell Donax P.	Penetrating Oil	Penetrating Oil
Rear Springs		Wakefield Brake Fluid (Crimson)				
Brake Fluid		Wakefield Girling Damper Oil (Thin)				
Suspension Dampers						

# LUCAS ELECTRICAL EQUIPMENT

DAIMLER 2½ LITRE  
SPECIAL SPORTS CARS (1949-50)  
HOME AND EXPORT MODELS



W 77481

### KEY TO CABLE COLOURS

1 BLUE	14 WHITE with PURPLE	27 YELLOW with BLUE	40 BROWN with BLACK	53 PURPLE with WHITE
2 BLUE with RED	15 WHITE with BROWN	28 YELLOW with WHITE	41 RED	54 PURPLE with GREEN
3 BLUE with YELLOW	16 WHITE with BLACK	29 YELLOW with GREEN	42 RED with YELLOW	55 PURPLE with BROWN
4 BLUE with WHITE	17 GREEN	30 YELLOW with PURPLE	43 RED with BLUE	56 PURPLE with BLACK
5 BLUE with GREEN	18 GREEN with RED	31 YELLOW with BROWN	44 RED with WHITE	57 BLACK
6 BLUE with PURPLE	19 GREEN with YELLOW	32 YELLOW with BLACK	45 RED with GREEN	58 BLACK with RED
7 BLUE with BROWN	20 GREEN with BLUE	33 BROWN	46 RED with PURPLE	59 BLACK with YELLOW
8 BLUE with BLACK	21 GREEN with WHITE	34 BROWN with RED	47 RED with BROWN	60 BLACK with BLUE
9 WHITE	22 GREEN with PURPLE	35 BROWN with YELLOW	48 RED with BLACK	61 BLACK with WHITE
10 WHITE with RED	23 GREEN with BROWN	36 BROWN with BLUE	49 PURPLE	62 BLACK with GREEN
11 WHITE with YELLOW	24 GREEN with BLACK	37 BROWN with WHITE	50 PURPLE with RED	63 BLACK with PURPLE
12 WHITE with BLUE	25 YELLOW	38 BROWN with GREEN	51 PURPLE with YELLOW	64 BLACK with BROWN
13 WHITE with GREEN	26 YELLOW with RED	39 BROWN with PURPLE	52 PURPLE with BLUE	

WIRING DIAGRAM

No. W77481

12 VOLT

ISSUED:

DECEMBER 1950

FD/1250/L

NUMBERS INDICATE CABLE IDENTIFICATION COLOURS, SEE KEY ABOVE.

Printed in England

