



TRIUMPH

*Mayflower*

INSTRUCTION BOOK

FIVE SHILLINGS

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# INSTRUCTION BOOK

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## TRIUMPH "MAYFLOWER" SALOON

### 1951-2

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MANUFACTURED BY  
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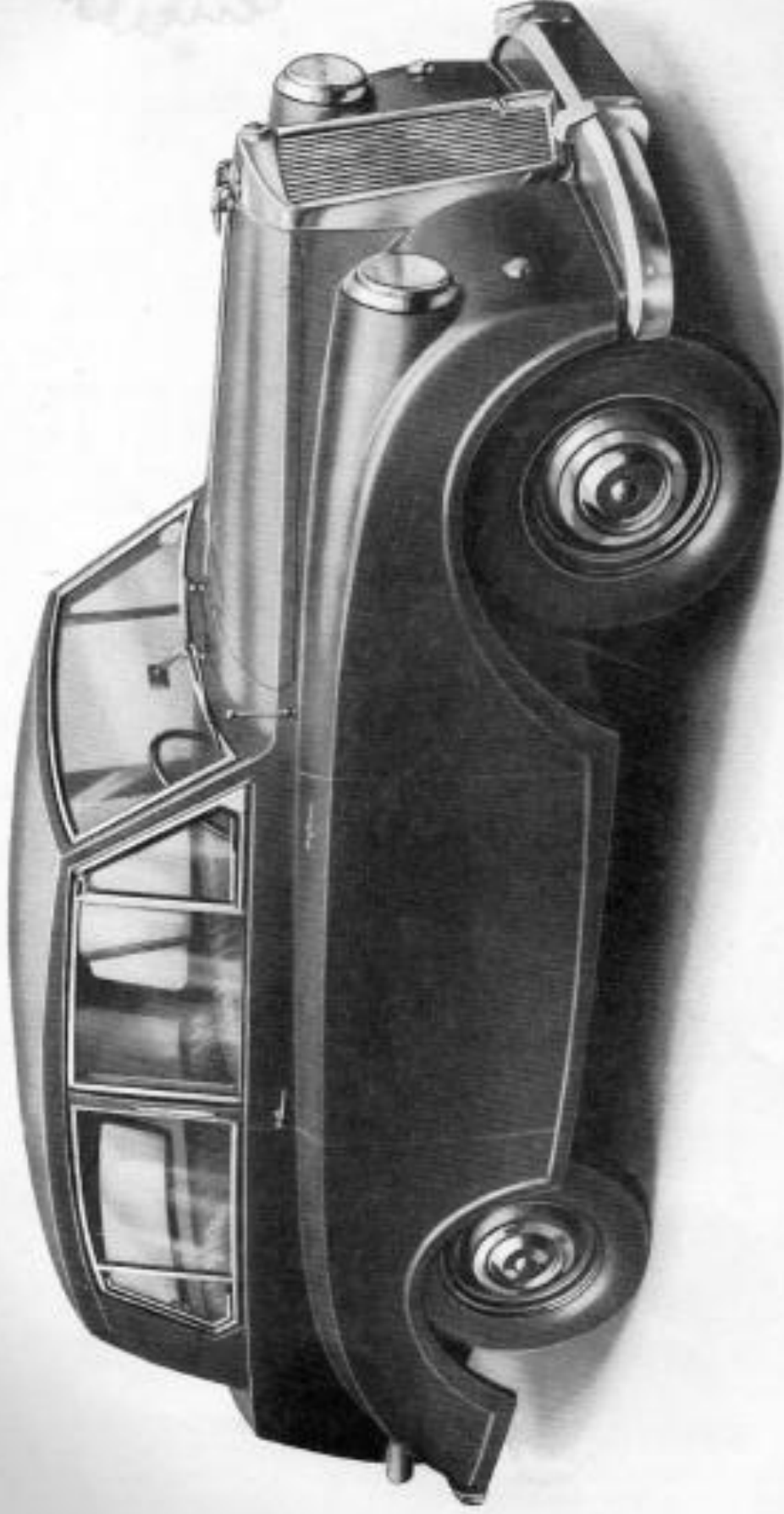
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THE TRIUMPH "MAYFLOWER"

## FOREWORD

The service, life and satisfaction which you derive from your new Triumph car depends upon the care and attention it receives, especially during the early life of the car. Every endeavour has been made in the design to limit the adjustments necessary and render them easy and accessible. We earnestly recommend that careful attention be paid to the following instructions, particularly to the section on general upkeep and lubrication.

The book is divided into a number of sections, each being indicated by page headings as follows:—

**Management of Car.**

**General Upkeep**, covering lubrication, care of tyres and bodywork.

**Running Adjustments.**

**Electrical Wiring and Lighting System.**

**Service.**

There is an index at the end of the book.

When reference is made to the left-hand or right-hand side of the car, this is as viewed from the driver's seat.

This instruction book does not in any way vary or extend the liability of the company, which is limited to the warranty provided with the car. Illustrations may not be strictly correct in detail but will serve as a useful guide.

## LICENCE DATA

Car number (Commission number)	Plate on dash
Engine number	On cylinder block
	(Both numbers are to be seen by lifting the bonnet.)
Cubic capacity	76.1 cu. in. (1247 c.c.)

## GENERAL SPECIFICATION

Number of cylinders	4
Bore of cylinders	2.48 in. (63 mm.)
Stroke of crank	3.94 in. (100 mm.)
Compression ratio	6.8
Firing order	1, 3, 4, 2
Brake horse power	38 at 4,200 R.P.M.

### Oil Capacity.

Engine	6 pints (3.4 litres)
Gearbox	1¼ pints (0.7 litres)
Rear axle	1½ pints (0.85 litres)

<b>Water Capacity</b> of cooling system only	12 pints (6.8 litres)
if heater fitted	13 pints (7.4 litres)

<b>Fuel Capacity</b>	10 galls. (45 litres)
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### Dimensions

Wheelbase	7' 0" (2.13 m.)
Track— Front	3' 10" (1.17 m.)
Rear	4' 1" (1.25 m.)
Ground clearance (under axle)	8" (20.3 cm.)
Turning circle (between kerbs)	34' 0" (10.4 m.)
Tyre size	5.50"—15"

### Overall Dimensions

Length	12' 10" (3.91m.)
Width	5' 2" (1.57 m.)
Height unladen	5' 2" (1.57 m.)

## GENERAL SPECIFICATION

### WEIGHTS. *Excluding extra equipment.*

	cwts	qrs	lbs	Kg
Complete with tools and tank full of petrol	18	2	21	950
Shipping weight	17	3	14	909

### VALVE TIMING. With valve-tappet clearance set at 0.020" (0.5 mm.)

Inlet valve opens 10° before top dead centre.

Inlet valve closes 50° after bottom dead centre.

Exhaust valve opens 50° before bottom dead centre.

Exhaust valve closes 10° after top dead centre.

The equivalent distances measured round the flywheel adjacent to the starter teeth:

10° ... 31/32" (2.46 cm.)

50° ... 4 13/16" (12.125cm.)

### VALVE-TAPPET CLEARANCES

(measured with engine cold).

Inlet 0.015" (0.37 mm.)

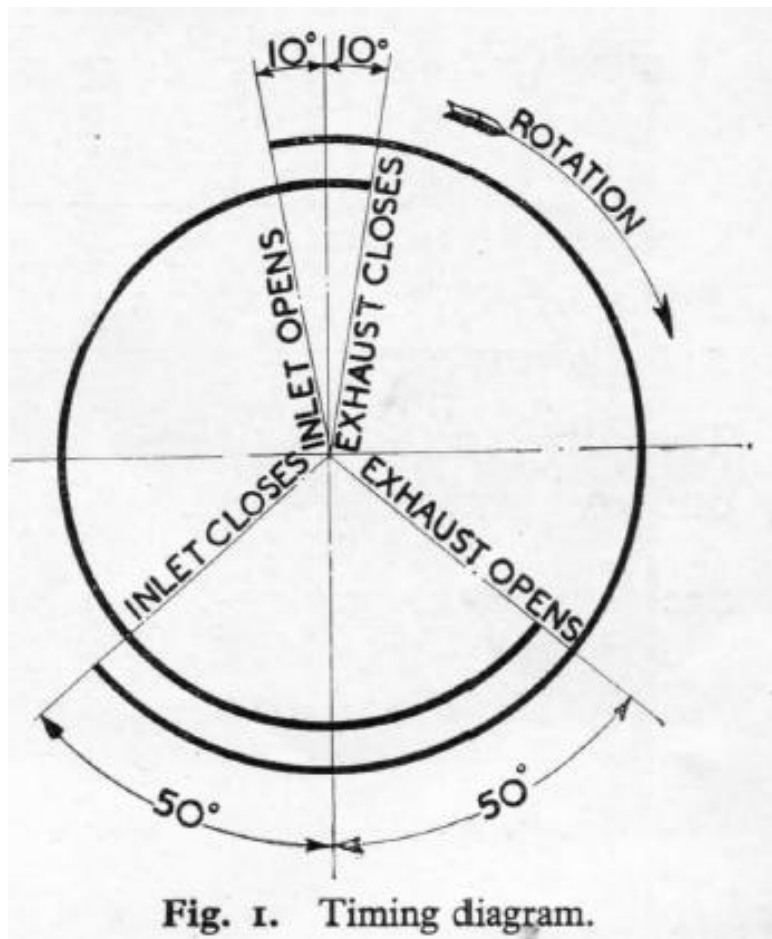
Exhaust 0.015" (0.37 mm.)

### IGNITION TIMING

Set to fire 2° before top dead centre (distributor contact points just opening).

As the advance is entirely automatic, the setting is at full retard.

Contact breaker gap should be set at 0.015" (0.4 mm.).



### ROAD SPEED DATA

		Top 1	2nd 1.67	1st 3.54	Reverse 4.11
Gearbox ratios					
Overall ratios		5.125	8.56	18.14	21.06
Engine Speeds (Approximately)	10 m.p.h.	690	1160	2450	2850
	10 km./hr.	430	725	1530	1780

NOTE:- Engine speeds at other car speeds are, for all practical purposes, directly proportional to those given above.

## GENERAL SPECIFICATION—Road Speed Data

### DESIRABLE ENGINE SPEED LIMITS (Particularly in gears lower than top)

The engine is capable of "revving" very fast, yet the driver should avoid continued "over-revving," which is most likely to occur in the lower gears. We strongly recommend that the driver shall not **continually** exceed the car speeds given below which correspond to approximately 4,000 engine r.p.m.

#### ROAD SPEED IN M.P.H. AT 4,000 R.P.M.

Top	Second	First
60 m.p.h. (95 km/hr.)	35 m.p.h. (55 km/hr.)	15 m.p.h. (25 km/hr.)

The above speeds are given in round figures so that the owner can easily remember them.

See page 16 for running-in speeds recommended.

# MANAGEMENT OF THE CAR

## CONTROLS, SWITCHES AND INSTRUMENTS

The position of the controls, switches and instruments will readily be understood by reference to Fig. 2.

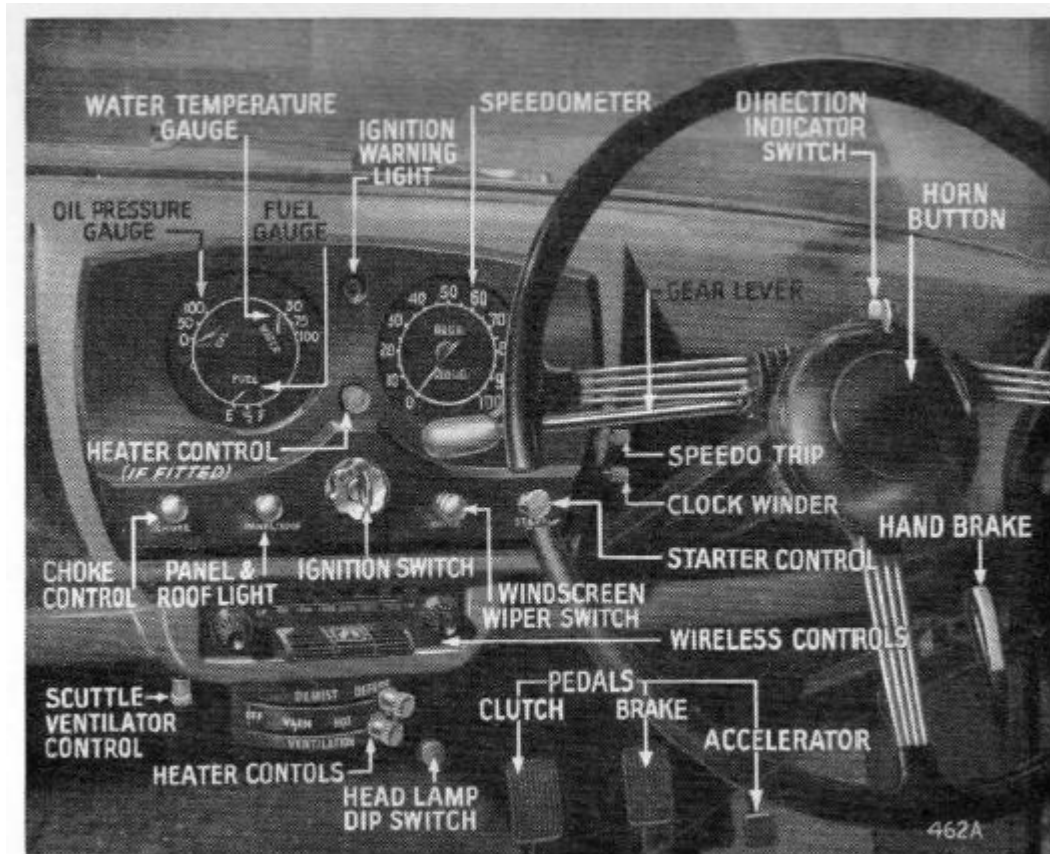


Fig. 2. Controls, switches and instruments.

### FOOT OPERATED CONTROLS

**Accelerator.** The pedal is connected by a short Bowden cable to the carburettor throttle. Do not depress pedal when starting engine from cold.

**Brake.** Operating four wheel hydraulic brakes.

**Clutch.** Press pedal to disengage drive from engine to gearbox. **Do not rest your foot on the pedal when driving, or hold clutch out to free wheel, as this will cause unnecessary wear to the carbon thrust pad.**



## MANAGEMENT OF CAR—Controls, Switches and Instruments

### HAND OPERATED CONTROLS

**Choke Control** (Carburettor easy start). Pull out when starting engine from cold (see page 12 for full instructions.)

**Gear Lever.** For selecting the gears, see Figs. 3 or 4.

**Always select neutral position before starting the engine.**

**Handbrake.** Pull to operate rear wheel brakes. The lever will be held in any position by the ratchet. To release ratchet, first pull lever and press trigger.

**Heater Controls,** see page 67.

**Radio Controls,** see page 65.

**Scuttle Ventilator.** With heater fitted—pull knob to open ventilator.  
Without heater fitted—push knob to open ventilator.

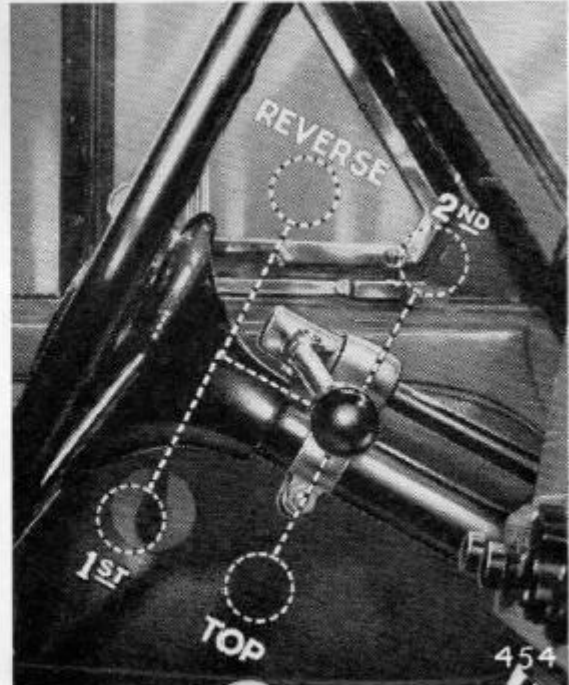
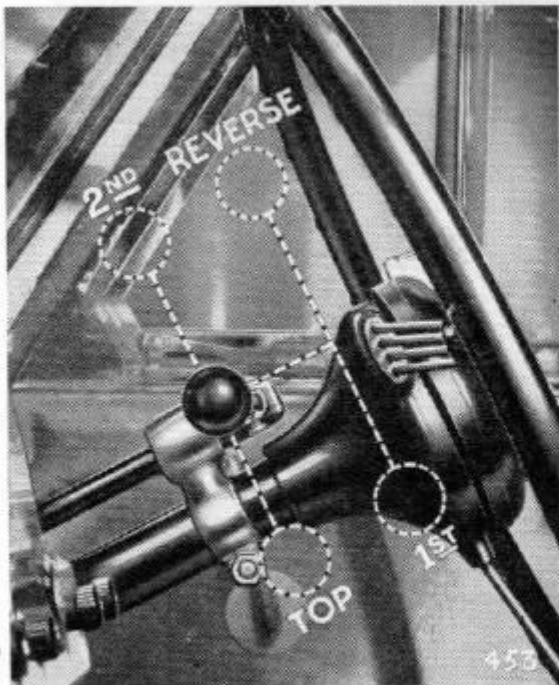


Fig. 3. Right-hand drive.

Fig. 4. Left-hand drive.

Gear positions.

## MANAGEMENT OF CAR—Controls, Switches and Instruments

### SWITCHES

**Brake Light.** The switch is connected to the brake pedal mechanism, but will operate the red rear lights only with the ignition switched on.

**Direction Indicator.** This switch will automatically be returned to "off" as the steering wheel is being brought back to the straight ahead position. The indicator will only operate with the ignition switched on.

**Head, Tail and Parking Lamps.** Turn clockwise to switch on parking lights. A further clockwise movement will switch on the head lights. Press foot operated switch to dip head light, press again for "straight ahead" position.

**Horn.** Press button in centre of steering wheel to operate horns.

**Ignition.** Turn clockwise to switch on. Do not leave the switch "on" when engine is stationary, to avoid the battery being discharged by the current flowing through the coil windings.

**Panel and Interior Lights.** Pull knob to switch on panel light, turn slightly clockwise and pull again to switch on interior light. These lights will only operate when the parking lights are switched on.

**Starter Motor.** Pull to operate engine starter (see page 12 for full instructions).

**Windscreen Wiper.** Pull to operate wipers, they will only function when the ignition is switched on. Push to stop when arms are in the desired parking position.

## MANAGEMENT OF CAR—Controls, Switches and Instruments

### INSTRUMENTS

**Fuel Gauge.** Registers the amount of fuel in the tank. It operates automatically when the ignition is switched on.

**Oil Pressure Gauge.** Indicates pressure of oil being pumped to the bearings. It does not show the amount of oil in the sump (excepting that if the oil level is very low the pressure usually falls due to overheating).

A habit should be made of occasionally reading the oil pressure during the course of a run, to see that the oil pump is functioning correctly. **The oil pressure gauge should read between 40 and 60 lbs./sq. in. (2.8—4.2 Kg./sq. cm.) when the car is travelling at normal speeds and the oil is hot.** Of course, only a low oil pressure will be registered when the engine is idling or running at low speeds, this is quite normal.

**Speedometer.** Registers vehicle's speed and total distance covered, and is fitted with a trip which is cancelled by pushing the serrated knob (which is situated at the right of the instrument panel) and turning anti-clockwise.

**Warning Light.** Glows red when ignition is switched on with the engine idling or stopped. It is an indication that current is being drawn from the battery for the ignition circuit, or other purposes that are controlled by the ignition switch.

**Water Temperature Gauge.** The gauge shows the temperature of the cooling water at the thermostat. With the engine warmed up the gauge should register a temperature of between 70° and 80°C during normal running.

## MANAGEMENT OF CAR—Regular Inspection

### REGULAR INSPECTION

Maintain the oil level in the engine sump at the top mark on the dipstick. Wipe the stick before taking a reading (see Fig. 5). Dipstick is on right side of engine.

The water level in the radiator should occasionally be examined, and if necessary replenished. It is advisable to use clean rain water when replenishing the radiator as the use of hard water results in a deposit on the inner side of the cooling surfaces, thus reducing efficiency.

Tyre pressures should be checked weekly by application of a gauge directly to the valve. The correct pressures are given on page 33. It is usually a good plan to have the spare tyre inflated to a slightly higher pressure than that recommended for the rears, *i.e.*, approximately 30 lb./sq. in. (2.11 kg./sq. cm.). It will be a simple matter to adjust the pressure, should the tyre be required for use.

The acid level in the battery should be examined fortnightly and maintained so that it is just **level** with the top of the separators. A mirror will be found useful when checking the acid level. Use only distilled water when replenishing (obtainable from the local chemist or garage). Do not overfill or the acid may splash out and do damage. Keep the filler plugs screwed tight to prevent leakage of acid.

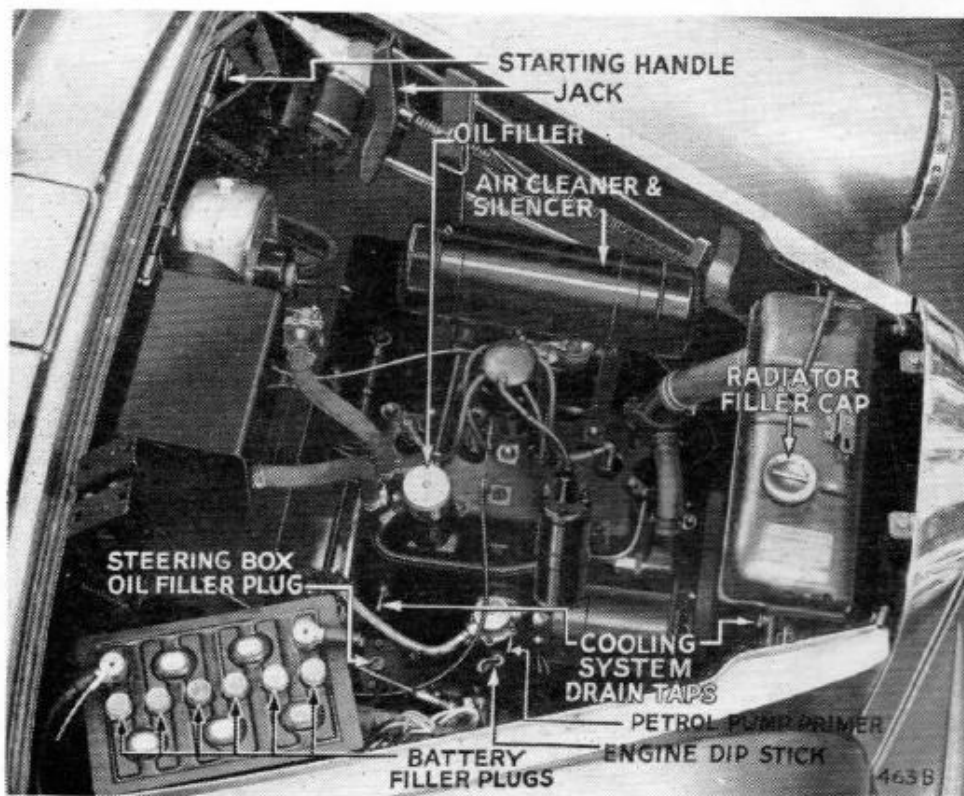


Fig. 5.

View under bonnet.

# THE ENGINE

## TO START THE ENGINE

### **IMPORTANT—When Starting the Engine at any time:**

If the engine does not start when the starter is operated **Do not re-operate until starter motor and engine have come to rest.** This is to avoid damage to the starter pinion.

### **Starting when Engine is cold**

Place the gear lever in the neutral position and see that the handbrake is on. Pull the carburettor choke control out to the stop, switch on the ignition and pull the starter switch button. When the engine has become sufficiently warmed up, push the choke control back to the **half-out** position. After one or two minutes driving, as the engine warms up, it will be possible to push the control right in without causing the engine to run with undue hesitation.

Difficulty is sometimes experienced in starting if the atmosphere is very damp, causing moisture to collect on the exposed porcelain portions of the sparking plugs. Caps are provided on the plugs to minimise this trouble.

If the battery has been allowed to get into a run-down condition it is best to use the starting handle.

When the engine fails to start do not keep the choke control out too long or the sparking plugs will become wet with petrol and it will be necessary to remove and dry them. **It is important that the accelerator pedal should not be depressed when starting the engine from cold** as the effect of the carburettor choke device is upset when the throttle is open.

It will usually be found possible to reverse out of the garage on the choke control alone, usually in the intermediate position, without using the accelerator.

### **Starting in very cold conditions**

In very cold weather the oil in the engine and gearbox becomes thick when the car has been standing for some hours. Thick oil causes the engine to be "stiff" and an unusual effort is required to turn the crankshaft. This can be reduced to a minimum by using the recommended oils. It is advisable to free the engine, giving the crankshaft a few turns, using the starting handle. This relieves the load on the

## MANAGEMENT OF CAR—**The Engine**

starter. Under these conditions the clutch pedal may be depressed when operating the starter, to relieve the motor of the considerable drag in the gearbox. Intelligent use of the starter, as described, will greatly prolong the life of the battery.

It is also advisable to add 1 ½ % of engine oil to the fuel in very cold weather. This is at the rate of quarter of a pint of oil to each two gallons of fuel. However, this practice should not be continued excepting under these very cold conditions. The addition of oil to the petrol will improve the lubrication of the cylinder bores, which is desirable when the engine is working in exceptionally cold weather.

### **Starting with Engine warm or hot**

When restarting the engine while it is still hot the accelerator pedal should be depressed to about one third of its travel before pulling the starter control. If difficulty is experienced in starting, due to the use of the choke device when the engine is hot, the mixture may be momentarily too rich, in which case depress the accelerator to the full extent whilst operating the starter with the choke control pushed right in.

### **Warming up**

In order to minimise cylinder wear the engine should be warmed up quickly, when starting from cold in winter, the engine may be "idled" for a minute to let the oil circulate but it should not be allowed to idle for long periods, neither should the engine be raced up to high speeds.

To accomplish rapid warming up, the engine should not be started from cold until it is desired to drive the car away. After starting, the choke control should be pushed back to the half-way position. A speed of approx. 30 m.p.h. in top gear may be regarded as a desirable warming up speed. Do not forget to push the control right in as soon as the engine will allow, and do not give full throttle until the engine has warmed up. An automatic thermostat is fitted in the cooling system, incorporating a by-pass, which greatly assists in quick warming up.

### COOLING SYSTEM

In frosty weather some steps must be taken to prevent the cooling water freezing, as water expands when freezing thus causing a great bursting pressure, with considerable risk of a cracked cylinder block or radiator and consequent leaks. If the garage is not heated the water may be drained, but it is desirable to use an anti-freeze mixture. As the cooling system is fitted with a thermostat there is a risk of the radiator block freezing while the engine is running during the warming up period when the thermostat is shut, even though the car has been left in a warm garage and water is not frozen at the start of the run.

#### **Draining**

For the purpose of draining, taps are provided in the radiator bottom tank and at the rear of the cylinder block on the right-hand side. If a heater is fitted, see also page 68.

#### **Filling**

When filling the radiator it is advisable to re-check the water level after the engine has been warmed. All the air may not have been forced out until the valve in the thermostat has been opened.

#### **Anti-Freeze Mixtures**

We recommend owners to use Smith's "Bluecol" noncorrosive anti-freeze (inhibited Glycol base compound) in order to protect the cooling system during frosty weather and reduce corrosion to a minimum. Drain sufficient water away and replace by "Bluecol". If this is attended to, particularly when the car is new, corrosion will be checked and result in a clean cooling system.

If the anti-freeze is added when the weather has already become cold, then it is advisable to drain all the water away and mix the anti-freeze with water in a watering can. If the anti-freeze is put directly into the radiator it may take some time to mix with the cylinder jacket water, due to the thermostat preventing circulation until the jacket water is hot.

## MANAGEMENT OF CAR - The Engine

The recommended "Bluecol" proportions for your car are given below. With this anti-freeze in the cooling water it is unnecessary to drain the system, even in the coldest weather, and one filling lasts the whole winter. "Bluecol" does not evaporate; therefore it is only necessary to top up with water in the usual manner.

### Recommended "Bluecol" proportions for protection from various degrees of frost.

Degrees of Frost, °F. ....	15	25	35
Proportion ..... ..	10%	15%	20%
Amount of " Bluecol " .....	1¼ pints	2 pints	2½ pints

NOTE.—We recommend that you provide for the cooling system, ample protection against sudden fall in temperature, by using in your car the 20% proportion of "Bluecol".

### Caution

Before adding the anti-freeze preparation make sure that the water hose clips are securely fitted and the cylinder head nuts are tight. If the solution is able to escape through a leaking gasket into the cylinders it may be burnt into a tacky substance capable of doing harm to the engine. However, this could only happen in the rare event of a faulty gasket.

If the car is taken to a garage for any repair which involves draining the radiator it is advisable to state that the radiator contains an anti-freeze, so that the cooling water can be preserved and used again.



## MANAGEMENT OF CAR—The Engine

### NEW ENGINES

When the car is new, the engine may seem to be somewhat lacking in power due to the working surfaces not having become fully bedded down. This will continue for the first 200 or 300 miles (300-500 km.) during which time the engine will become gradually "run-in" (with proper use). The power will then improve as the car is used for the first 1,000 miles (1,600 km.), and this will be accompanied by a corresponding improvement in petrol consumption. The engine sump should be drained and refilled with new oil at the completion of the first 1,000 miles (see page 20).

At approximately 5,000 miles much benefit is gained by having the valves ground in, although this involves some slight inconvenience in giving attention to a new engine, the trouble is well repaid by the results obtained.

It is inadvisable to drive a new car fast or to run the engine at high speed in the low gears. The good and lasting bearing surfaces obtainable by careful running-in are well worth the patience required to drive the car at only moderate speeds for at least the first 500 miles (800 km.).

We do not recommend that the engine should be religiously driven at the specified speeds for the first 500 miles (800 km.), but suggest that "running-in" should be progressive and that no harm is done if the engine is allowed to "rev" fairly fast so long as it is thoroughly warm, providing it is not **pulling hard**. Also do not let the engine pull hard at low speeds, always select a lower gear.

The following table gives the maximum permissible speeds in top gear:

During the first 250 miles or 400 km.	35 M.P.H. or 55 km/hr.
During the following 150 miles or 250 km.	40 M.P.H. or 65 km/hr.
During the following 100 miles or 150 km.	45 M.P.H. or 70 km/hr.

## MANAGEMENT OF CAR—The Engine

During the first 500 miles (800 km.) it is inadvisable to exceed the following speeds in the gears:

In first gear	.....	.....	.....	10 M.P.H. or 15 km/hr.
In second gear	.....	.....	.....	20 M.P.H. or 30 km/hr.

We have found the use of an upper cylinder lubricant to be of advantage, particularly in new engines, and recommend the use of such a lubricant, particularly until the engine is thoroughly "run-in." The lubricant should be mixed with the fuel in the proportions given on the container. Such lubricants may be used with advantage throughout the life of the car particularly during wintry weather.

Running-in compounds containing Acheson's colloidal graphite are available. They are prepared in a form suitable for addition to the oil in the engine sump. These should only be used during the running-in period for new or reconditioned engines. [First 500 miles (800 km.)].

### DRIVING THE CAR

To obtain a minimum of clutch wear, always start away in first gear unless facing downhill, in which case second gear may be engaged. If the driver engages a higher gear in order to save a gear change the clutch will have to be slipped unduly, resulting in unnecessary wear.

#### Gear Changing

The gear lever, situated on the steering column, operates through the system of a sliding rod, connecting rods and levers to the gearbox, and a minimum of effort is required to change from one gear to another. The position of the lever for selection of the various gears is given on page 8. When in the neutral position, the gear lever is spring loaded downwards and rests between top and second gears. The synchromesh gearbox provides a synchronised easy gear change for the three forward gears.

When changing into a synchronised gear the movement should be slow and deliberate. **DO NOT HURRY.** Upon its first movement the gear lever will encounter a slight resistance from the synchronising cones. The continuance

## MANAGEMENT OF CAR—**The Engine**

of a steady pressure will synchronise the gears and the resistance will be overcome as the driving dogs slide into engagement.

The gear lever must always be moved right home to secure full engagement.

Do not attempt to engage reverse gear whilst the car is travelling forward.

### **Using the Brakes**

The four wheel hydraulic brakes are very powerful and require only a small effort to slow down the car. Do not apply the brakes harshly except in emergency as this only causes undue tyre wear and discomfort to passengers.

### **Engine as a Brake**

When travelling downhill using the engine as a brake, *i.e.*, with gear engaged, **do not switch off the ignition.** This would allow unburnt mixture to accumulate in the exhaust system, and when switching on again, there is a likelihood of an explosion with consequent damage to the system.

# GENERAL UPKEEP

## LUBRICATION

This is one of the most important subjects in connection with the upkeep of a car and careful attention to the following instruction will be amply repaid by the results obtained.

**For the recommended periods of lubrication see the lubrication chart folded inside rear cover of this book. The correct lubricants to be used are given on pages 79 and 80.**

### Grease Gun

One grease gun is supplied in the tool kit and should be filled with the grease recommended for wheel hubs and engine water-pump. This grease can be used for general chassis lubrication as well as for hub bearings. We also specify an alternative grease which is recommended as being superior for general chassis lubrication but is unsuitable for wheel hub lubrication, because, due to its oily nature, it may escape from the hub bearing on to the brake linings. Thus any car owner desiring to use this type of lubricant would require an additional grease gun for general chassis lubrication, retaining the other gun for wheel hub lubrication only.

Whilst the above applies to the owner desiring to attend to the lubrication of his car personally, most owners will prefer to have these operations carried out by a Triumph Agent.

### THE NECESSITY FOR HIGH QUALITY OIL

There are many reputable oils on the market and many more "cheap" oils of indifferent quality. The use of high quality lubricant is an essential safeguard. It has to be sufficiently fluid to give immediate lubrication when starting from cold and to maintain sufficient body during a fast run on a hot day. A first class oil can withstand the combustion flames playing on the cylinder walls and it will not form an undue amount of carbon in the combustion heads. It will keep down the rate of cylinder and bearing wear so that the engine will maintain its performance over many years. In this way, the money spent on high quality oil represents a valuable insurance against premature old age and unnecessary

## GENERAL UPKEEP—Engine Lubrication

breakdowns. The lubricants which we recommend are obtainable everywhere and have maintained a uniform high standard of quality over many years. They can be trusted to withstand all demands made upon them and possess a margin of safety which is completely adequate.

### Obtaining the correct Grade

In ordering your oil be careful to state the make as well as the grade. For example, never ask for XL , A, " Double " or " **30**," but always use the correct wording as given in the columns on page 75 or 76 according to the brand chosen and see that the oil is drawn from a container bearing the well known trade mark.

### Draining

To drain the engine, gearbox or rear axle, remove the plug provided beneath each unit, this process is assisted by opening the filler to allow ingress of air, and by draining when the oil is warm after a run of at least **10** miles or **15** km. Under these conditions impurities in the oil will be well mixed and will flow away with the oil during the draining process.

### Flushing Oils (see recommended Lubricants, page 75 or 76).

We advocate the occasional use of flushing oil during the draining and refilling operation of the engine sump. The normal procedure is as follows:

Drain the sump while the engine is hot, screw in the drain plug and pour four pints of flushing oil into the oil filler.

Start the engine and adjust the throttle so that a fairly fast idling speed is obtained.

Occasional short bursts of acceleration should be given to distribute the oil throughout the engine and then after ten minutes running drain the sump and repeat the operation with a fresh charge.

With very dirty engines, it may be necessary to lengthen the period somewhat or even to use a third charge of flushing oil.

Refill the sump with new engine oil.

## GENERAL UPKEEP—Engine Lubrication

### ENGINE

We recommend low viscosity oils for use in the engine sump. These oils, whilst maintaining sufficient body when hot are fluid enough to give early lubrication to cylinder walls, etc., when starting the engine from " cold," a quality not possessed by the " heavier " oils in sufficient degree for use in modern engines. They are each of the correct viscosity and character to afford complete lubrication protection. Additives which dilute the oil or otherwise impair this protection must NOT be used.

We therefore stress the value of using only the recommended oils. After many thousands of miles running the rate of oil consumption will increase. When the rate becomes higher than one gallon per 1,000 miles (1 litre per 400 km.), it will be desirable to use the next heavier grade of the brand of oil you normally employ.

The working parts of the engine are lubricated by oil contained in the sump, drawn through a filter by the gear type pump and delivered under pressure to the crankshaft journals, crankpins, camshaft bearings and tappet guides. Oil thrown from the connecting rod bearings lubricates the pistons which in turn lubricates the connecting rod little ends, and the timing chain is fed with oil from the camshaft bearing. Suitable oil seals are embodied at the front and rear ends of the crankshaft which effectively prevent oil leaking along the shaft.

**Every 200 miles** or 300 km. the oil level should be checked and topped up if necessary. Withdraw dipstick and wipe clean, then insert and push fully home before withdrawing for reading (see Fig. 5). Should the level be at the lower mark on the dipstick 2 pints (1.1 litres) of oil will be required for topping up.

The regular addition of oil not only maintains the correct level, but also tends to keep up the quality of the lubricant. However, gradual deterioration takes place until it becomes advisable occasionally to drain the sump and refill with fresh oil. If the engine is found to require very little oil for replenishment, then it is desirable to drain the oil every 2,500 miles (4,000 km.) and refill with fresh oil.

Once every year, if flushing oils have not been used, it is advisable to remove the sump and thoroughly clean out with petrol.

## GENERAL UPKEEP—Lubrication

Dry off with a smooth rag or good quality brush, taking care not to let any fluff or hairs remain, and leave for a quarter of an hour whilst the remaining film evaporates before replacing the sump.

In the meantime, brush with fuel the gauze intake filter. Do not forget to refill with clean oil when the sump is replaced.

### Caution

Do not attempt to clean out the sump with paraffin or petrol unless it is removed from the engine, as any remaining liquid will tend to dilute the oil.

### Ignition Distributor see (Fig. 6)

Every 5,000 miles (8,000 km.), the cam should be smeared lightly with engine oil. A pronounced squeak occurs when the cam is quite dry. Withdraw the moulded rotor arm from the top of the spindle (care should be taken because this part is made of a brittle material) but do not remove the screw exposed to view. Apply, by means of oil-can, a few drops of thin machine oil around the edge of the screw and down the hole in the centre, to lubricate the cam bearings and distributor spindle respectively. At the same time, place a single drop of clean engine oil on the contact breaker arm pivot.

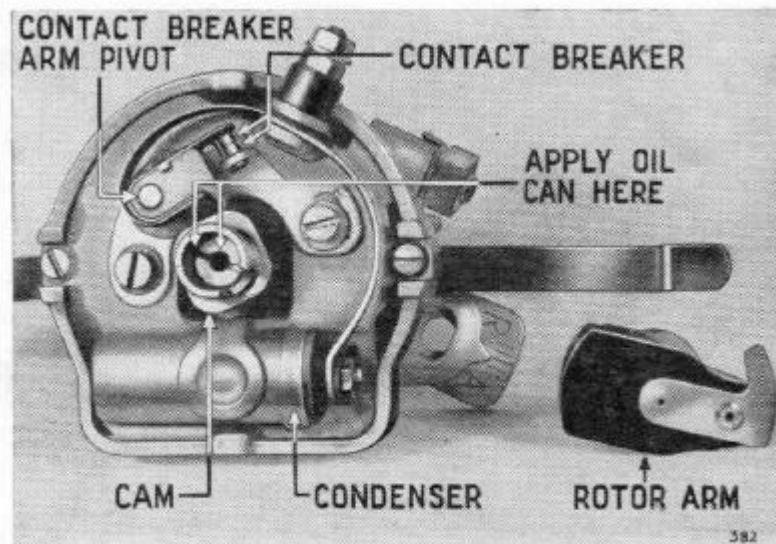


Fig. 6.

Ignition distributor.

When replacing the rotor arm make sure that it is pushed on as far as possible.

The moving parts of the automatic advance mechanism should be lubricated with winter grade engine oil. This can be squirted through the gap between the cam and

## GENERAL UPKEEP—Lubrication

the base plate. Take great care not to allow any oil to get on or near the contacts.

### Water Pump and Fan

There is one nipple provided, see Fig. 7, to which the grease gun should be applied every 5,000 miles or 8,000 km. Give **five strokes only with gun.**

### Dynamo and Starter

Once every 10,000 miles or 15,000 km. unscrew the cap of the lubricator at the commutator end. If the lubricating wick is dry, the cap should be filled with the recommended grease.

The bearing at the driving end of the dynamo is packed with grease before leaving the works and after a considerable mileage the dynamo should be removed for cleaning, adjustment and repacking of the bearings with grease. This should be done preferably by the nearest Triumph or Lucas Service depot.

The starter is fitted with special bearings which require no lubrication.

### Air Cleaner and Silencer Gauze Type.

The air cleaner gauze should be re-oiled with engine oil in order to ensure effective filtering of the air. Every 5,000 miles (8,000 km.) it is

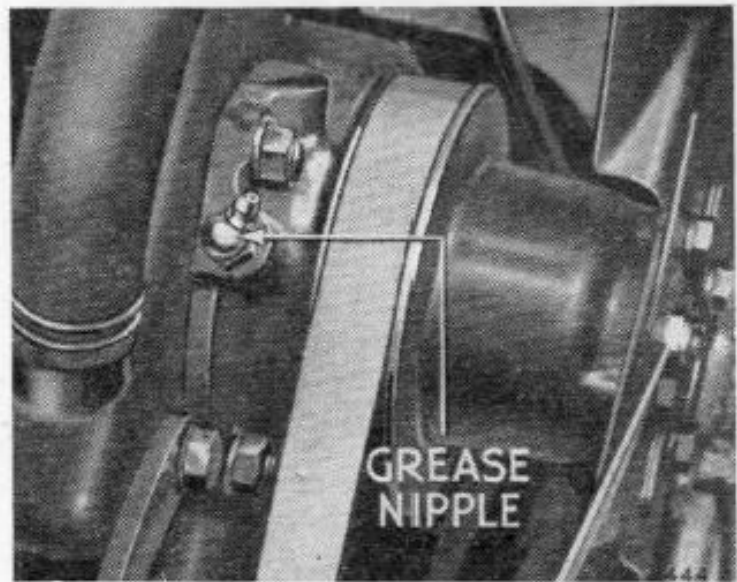


Fig. 7. Water pump lubrication.



Fig. 8. Oil bath air cleaner.



## GENERAL UPKEEP—Lubrication

advisable to remove the air cleaner and wash in petrol, particularly the gauze, after which soak the gauze in oil and allow to drain before finally wiping over and refitting.

### Oil Bath Type.

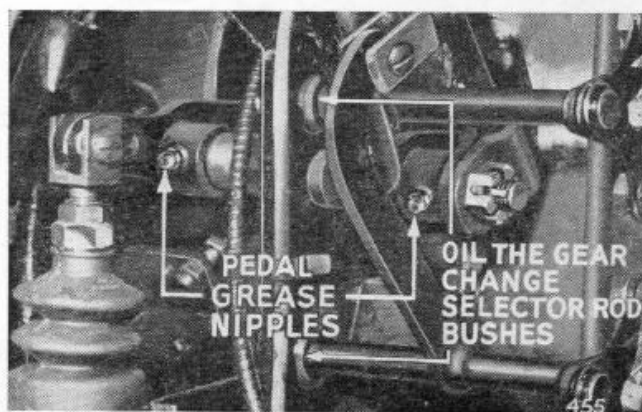
This cleaner (see Fig. 8), must be cleaned out and refilled with fresh engine oil each time the oil in the engine is changed, additionally it should be inspected every 1,000 miles or 1,500 km. (or more frequently under very dusty operating conditions) and topped up with oil.

To clean the element remove the wing nut and cover, then the element can be lifted out. Wipe out the oil chamber, which may also be removed and refill with fresh engine oil to the level indicated, the quantity required will be approximately  $\frac{1}{2}$  pint (.27 litre). Swill the element in petrol, drain and replace in chamber.

## CLUTCH SHAFT BEARINGS

The oil can should occasionally be applied to the clutch bearings (one at each side of the clutch housing), the oil holes are accessible from underneath the car. This operation requires a pump type of oil can.

## CLUTCH AND BRAKE PEDAL BEARINGS



Grease nipples are provided (see Fig. 9), they are accessible from underneath the car.

**Fig. 9.** Pedal bearings and gear change selector rod bushes.

## GEARBOX

The correct oil only should be used in the gearbox as the use of very thick oil or grease will spoil the operation of gear changing. Every 2,500 miles (4,000 km.) the oil level should be checked and topped up if necessary.

To check the oil level, raise the carpet and remove the rubber plug from the gearbox domed cover plate, thus exposing the dipstick (see Fig. 10). The plug is on the left-

## GENERAL UPKEEP—Lubrication



**Fig. 10.** Gearbox oil filler and dipstick.

hand side for right-hand drive cars and vice versa.

Withdraw dipstick and wipe clean, then insert stick and push it fully home before withdrawing for reading. The correct level is to the top mark. The dipstick orifice is also the gearbox oil filler.

Every 10,000 miles or 15,000 km. The gearbox should be drained and refilled with new oil (see page 75 or 76).

### REAR AXLE

The hypoid bevel gears fitted in the rear axle require a special lubricant to ensure efficient operation and long life since there is a sliding action between the sturdy gear teeth. The sliding action is too severe for normal axle oils, so special oils have been developed which contain additives that make the oil capable of withstanding greater pressures, however, the special additives gradually lose their properties in the course of use, and the oil tends to revert to a light gear oil.

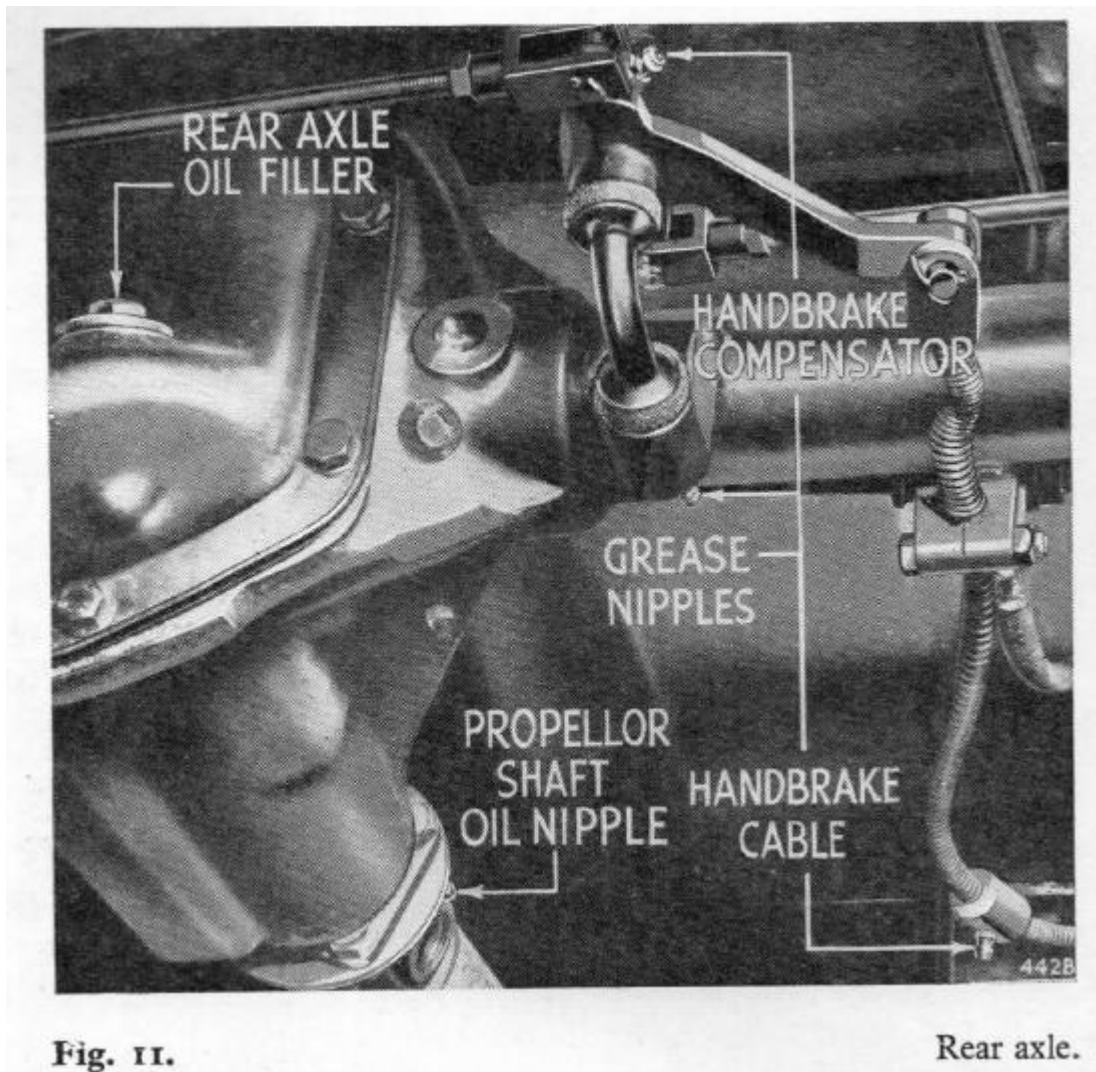
**Thus it is advisable to completely drain and replenish with new "Hypoid" oil every 5,000 miles (8,000 km.) and in any event do not exceed a period of 10,000 miles (16,000 km).**

It is desirable to have the oil level checked during this period, and if the oil level is more than  $\frac{1}{2}$  " below the threads in the filler orifice do not " top up " but drain the oil and refill with new oil to the bottom of the threads, this will overcome the danger of mixing the various grades of oil.

## GENERAL UPKEEP—Lubrication

The filler plug is accessible from underneath the car, being fitted to the rear axle cover (see Fig. 11).

Clean away mud before unscrewing the filler plug to avoid grit falling into the axle.



## BRAKES

### Handbrake Cables and Conduits

To ensure free, efficient action, it is essential that the handbrake cables be kept well lubricated, particularly where they are enclosed by the conduit.

A grease nipple is fitted in the conduit, located underneath the right-hand side of chassis to the front of the rear axle, to which the grease gun should be applied every 5000 miles(8,000 km.). This operation should be carried out with the handbrake applied.

## GENERAL UPKEEP—Lubrication

During the winter months it is very important to keep the bottom cable regularly lubricated as this prevents the entry of water which on cold nights will freeze, thus locking the brake cable.

When lubricating the cables, grease is forced both ways and the gun should be pumped until grease exudes at the end of the conduit.

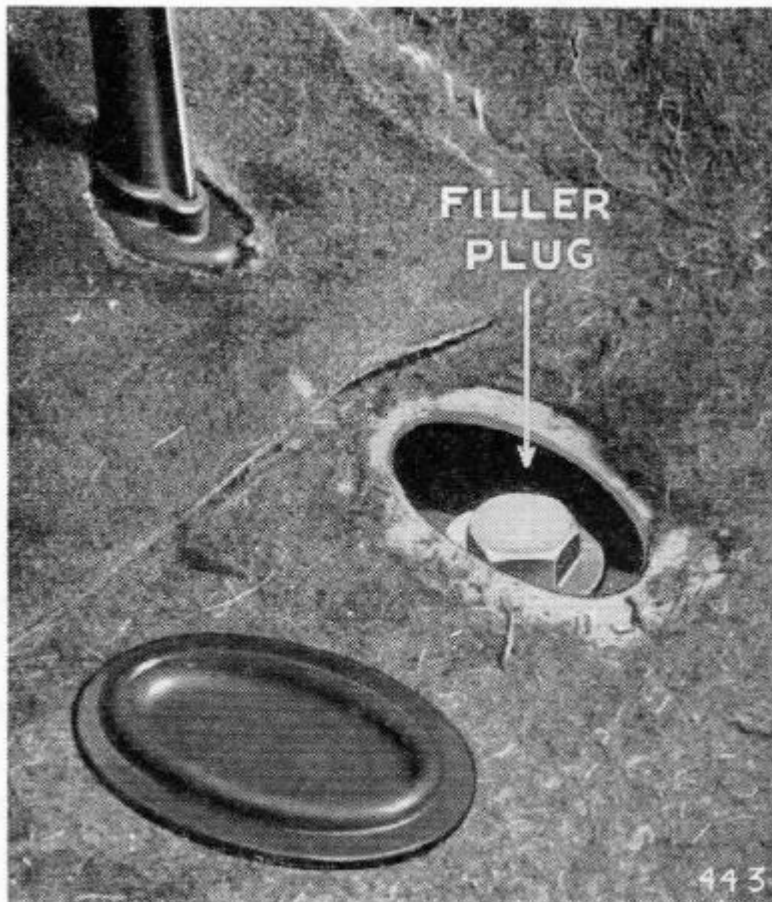
### Handbrake Compensator

Two grease nipples are provided on the compensator which is situated on the rear axle casing (see Fig. 11).

**Brake Pedal Bearing** (see page 24).

### Hydraulic Brakes.

It is important that the filler cap on the brake fluid reservoir, integral with the master cylinder (see Fig. 12) should be removed every 5,000 miles (8,000 km.), the fluid



**Fig. 12.**

Brake master cylinder filler.

level checked and topped up if necessary. Remove the cover immediately to the rear of the brake pedal underneath the carpet to gain access to the filler plug and always clean the area around the plug before removing it, this will lessen the risk of grit falling into the chamber after removal of the plug. The reservoir should be filled to within half-an-inch of the top, and never less than half full (see page 79 or 80 for the correct fluid). As the cups in the master and all wheel cylinders are pure rubber it is imperative to use only the recommended fluid. Mineral oils would, in a very short time, distort and ruin them.

## GENERAL UPKEEP—Lubrication

### FRONT SUSPENSION

Nipples are provided for the lubrication of the suspension pivots, ball joints and outer bush of each wish-bone shackle (see Fig. 14). Do not lubricate the inner bushes of the shackles as they contain rubber. This also applies to the rubber mounting washers between which the coil springs are fitted.

It is an advantage when greasing the suspension swivels to jack up the front of the car so that the suspension hangs free. This will allow grease to cover the thrust faces as the grease gun is applied.

To maintain the best riding qualities of the independent suspension it is essential that it is properly and regularly lubricated. The distance of 1,000 miles (1,600 km.) between lubrication of the suspension pivots should be regarded as a maximum.

### WHEEL HUBS

The front and rear hubs require a small but regular supply of grease as specified on page 79 or 80, every 5,000 miles (8,000 km.). It is essential that the correct type of grease be used, this has a high melting point. Five strokes of the "hand" grease gun will normally be sufficient as it is inadvisable to overload the hubs with grease. **The grease should not be used from a machine unless it is certain that the machine reservoir contains the correct grade of grease.**

#### Front Hubs

To grease the hub bearings, remove the nave plate, when the grease nipple will be exposed (see Fig. 13).

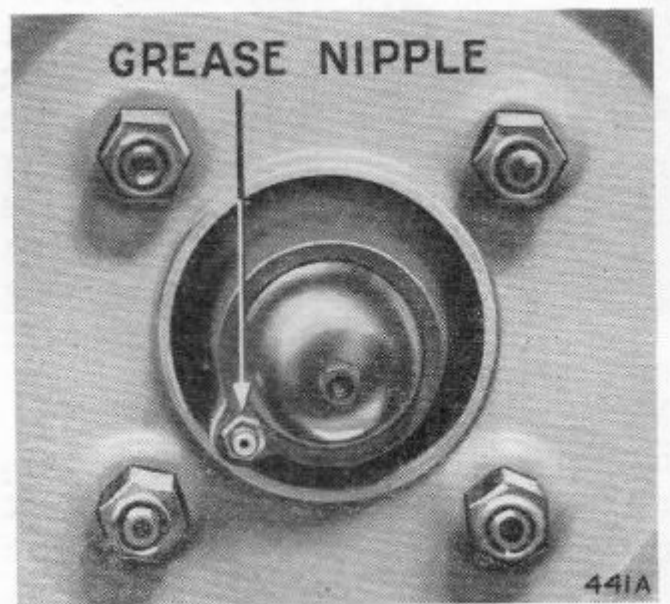
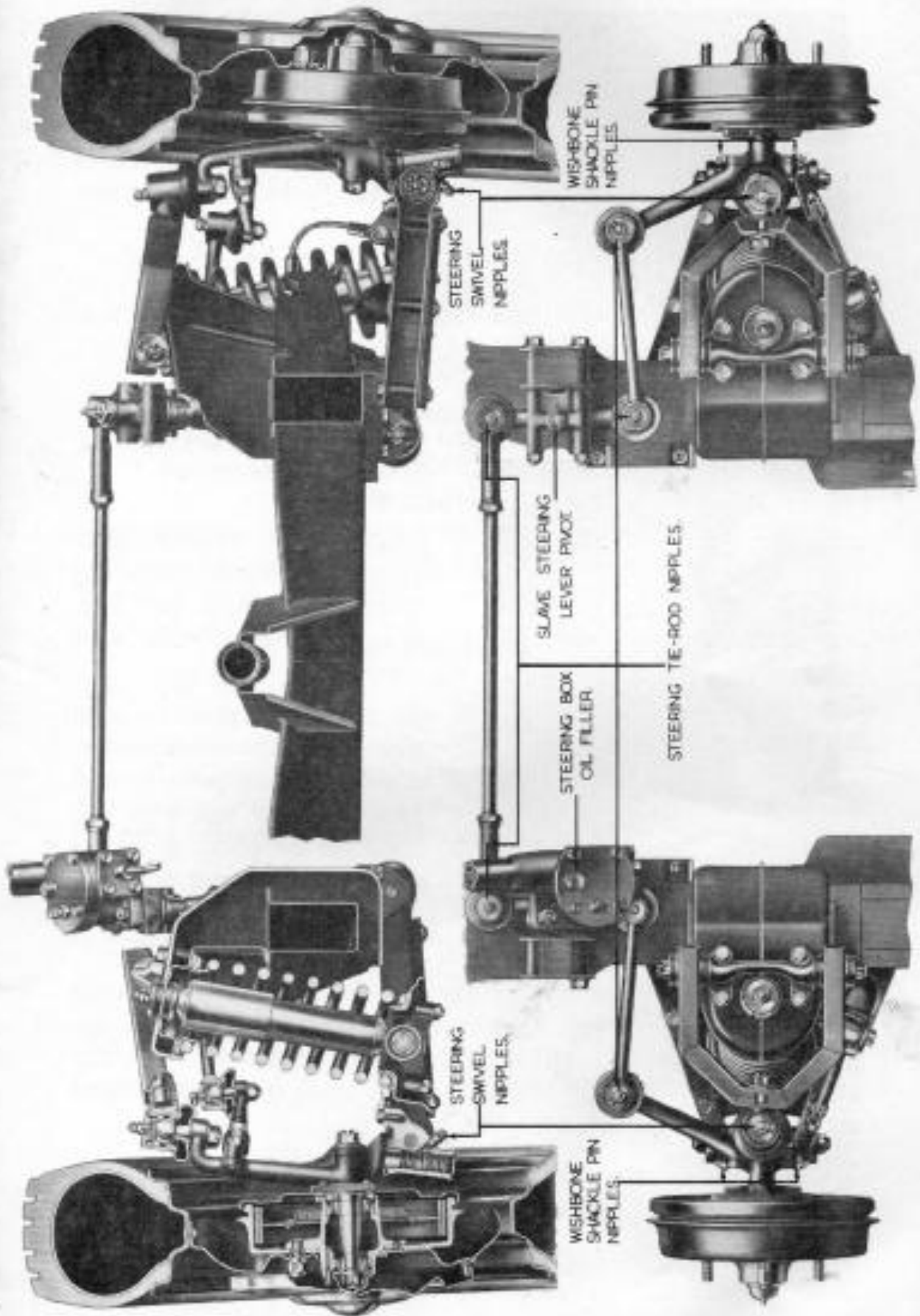


Fig. 13.

Front hub lubricator.

# GENERAL UPKEEP—Lubrication



Front suspension lubrication

Fig. 14-

## GENERAL UPKEEP—Lubrication

### Rear Hubs

These bearings are lubricated via nipples (see Fig. 15) situated facing downwards at the rear of the brake backing plate.

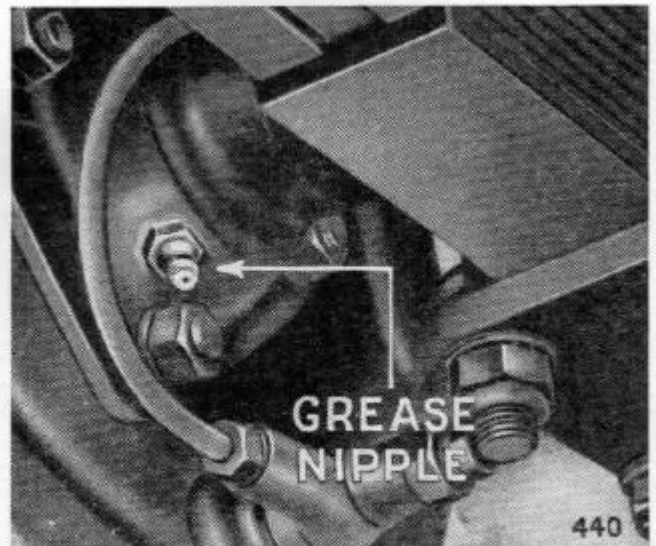


Fig. 15.

Rear hub lubricator.

### Nave Plate Removal and Refitting

Engage the special lever provided in kit, in one of the wheel depressions (see Fig. 16), and lever off the Nave Plate.

To refit plate, place its edge over the securing studs or clips as far as possible and give a sharp tap with the hand on the plate, to spring it into the correct position.

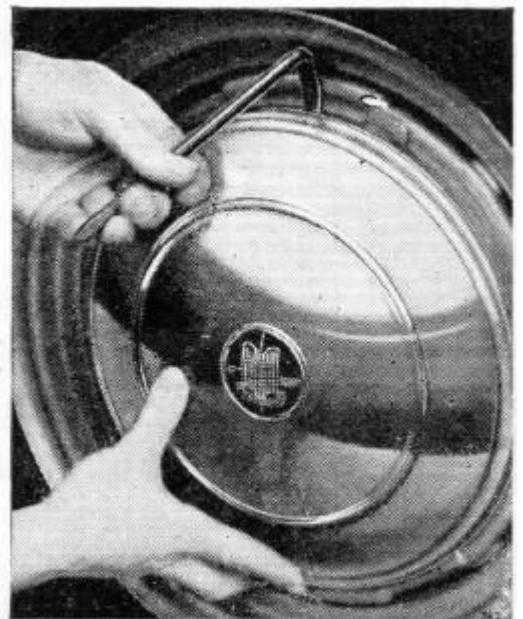


Fig. 16. Nave plate removal.

### PROPELLER SHAFT

The universal joints are of the needle roller bearing type and each is fitted with a nipple for lubrication (see Fig. 11, page 26). The two nipples should receive attention with the oil gun every 5,000 miles (8,000 km.), using oil recommended on page 79 or 80.

### REAR ROAD SPRINGS

The spring blades should not be allowed to get rusty as this will prevent the correct working of the springs and provide a hard suspension.

Service stations are often equipped to spray the springs with penetrating oil, but this

## GENERAL UPKEEP—Lubrication

is not lasting in effect, and it is advisable afterwards to paint over with rear axle or engine oil. It is the area around the tips of the blades which most requires the lubricant, as it is at these points that one blade presses upon the next. The blade clips should also be oiled.

Rubber bushes are fitted in all the rear spring eyes and must not be lubricated.

### STEERING

To lubricate the steering gearbox, remove the screwed plug and top-up with oil to the level of the orifice (see Fig. 5 page 11), this should be carried out every 5,000 miles (8,000 km.).

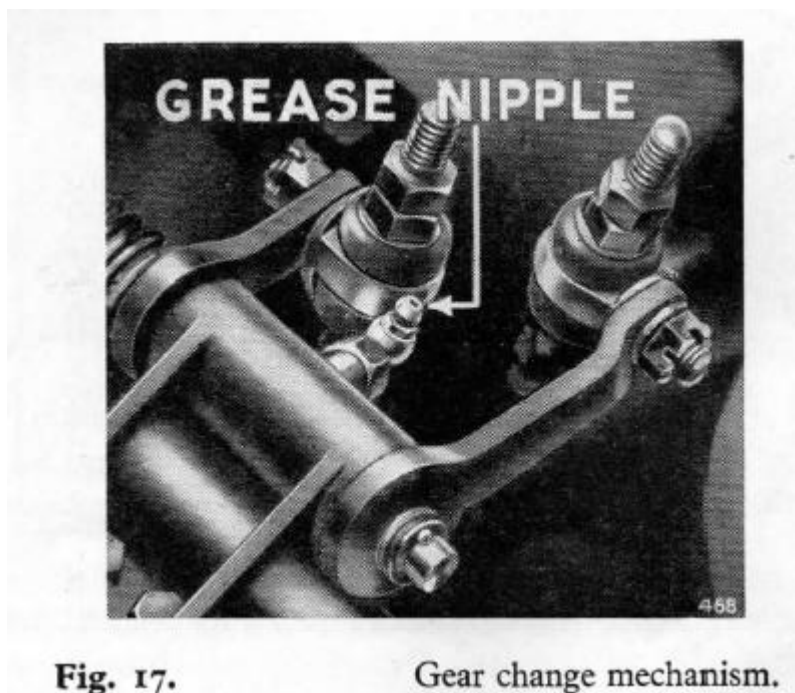
Grease nipples are provided on all steering ball joints and the "slave" steering pivot (see Fig. 14). These nipples should receive attention with the grease gun every 1,000 miles or 1,500 km. as their duty is high.

### HYDRAULIC DAMPERS

The telescopic type dampers fitted do not require any attention such as "topping up." If they become inoperative they should be serviced by the makers.

### GEAR CHANGE MECHANISM

The only attention necessary is to ensure that the steering column mechanism and the two selector rod bushes on the frame side member (see Fig. 9, page 24 and lubrication chart) receive attention every 5,000 miles (8,000 km.). Also the grease gun should be applied to the nipple provided on the steering column mechanism (see Fig. 17 below).



**Fig. 17.**

**Gear change mechanism.**



## GENERAL UPKEEP—Lubrication

### HINGES, CONTROLS, DOOR LOCKS, ETC.

The bonnet catches, hinges, spare wheel lowering screw and several small control joints should be given occasional attention with the oil can. Door locks should receive a drop of oil each month to ensure easy operation with the key and to prevent corrosion.

The connections on the handbrake and ratchet mechanism, the clutch operating links, etc., all require attention to allow the controls to work freely and prevent unnecessary wear.

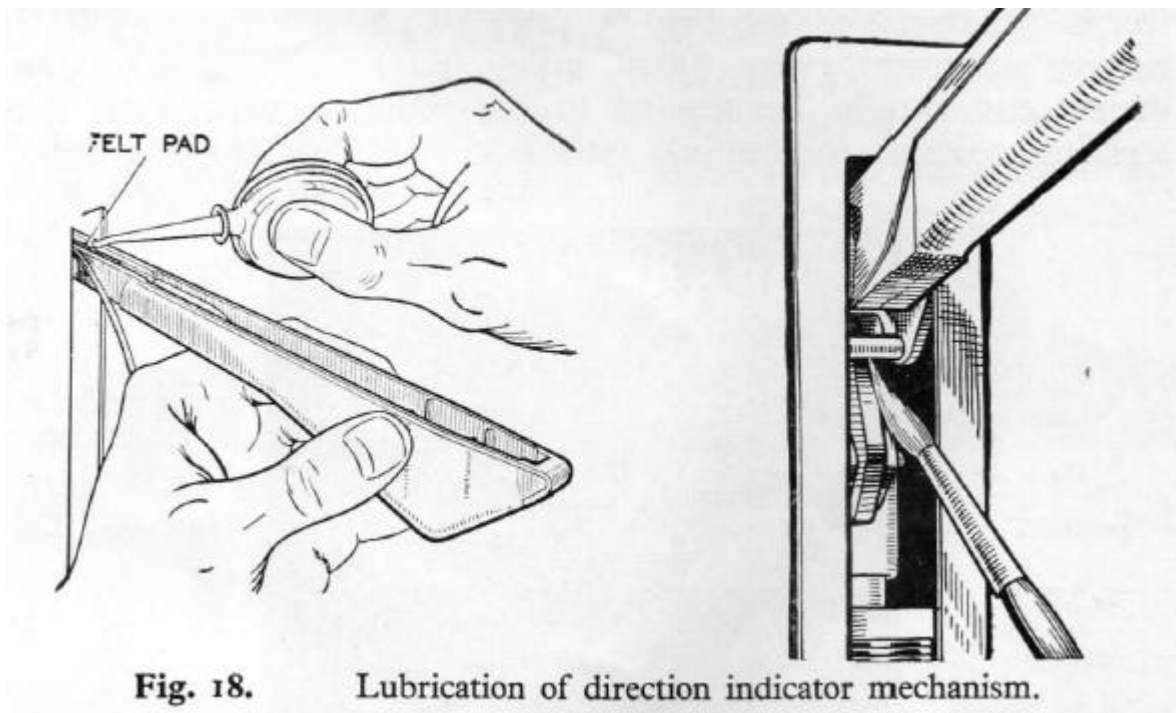
### ACCELERATOR CONTROLS

Apply oil to cable at each end of the casing and work the pedal to spread the oil inside casing.

### DIRECTION INDICATORS

A little thin oil should be applied by means of a small brush to the catch pin between the arm and the operating mechanism. This can be done when the indicator is switched up.

Also withdraw the screw on the underside of the arm end and slide off the arm cover. Place the connecting wire to the bulb on one side and apply a drop of thin machine oil to the lubricating pad at the top of the arm. To replace the arm cover, slide it in an upward direction so that the side plates engage with the slots on the underside of the spindle bearing and secure with the screw.



**Fig. 18.** Lubrication of direction indicator mechanism.

### WINDSCREEN WIPER

The windscreen wiper motor is adjusted and packed with grease before leaving the works and therefore requires no additional attention.

## GENERAL UPKEEP—Care of Tyres

### CARE OF TYRES

**Maintain the correct inflation pressure by weekly tests with a gauge applied directly to the valve.** The maintenance of correct tyre pressure is a large factor in tyre life and the steering of the car.

Tyres lose their pressure due to diffusion, even though there is no porosity or leakage due to a puncture or faulty valve. The loss varies from 1 to 3 lbs. per sq. in. per week and must be made up if the tyre is to give proper service.



**Fig. 19.** Tyre tread examination.

**Examine the tyres occasionally for flints or other road matter** which may have become embedded in the tread. If the car is driven where tacks or short nails may be picked up, these also may be found buried in the tread. If these are left in they may eventually work through the cover and puncture the tube. Fill up any large holes with a suitable compound, obtainable for the purpose.

**Oil** should not be allowed to get on the tyres. If any should accidentally do so, clean off by using petrol sparingly.

**Do not drive over sharp edged kerbs** or "bump" them with the side of the tyre, as this is liable to fracture the cotton tyre casing, and in the latter case upset the front wheel alignment or even bend the wheel "out of truth."

### **CORRECT TYRE PRESSURES** (Fully-laden condition)

Front—20 lb./sq. in (1.4 kg./sq. cm.)

Rear—25 lb./sq. in. (1.76 kg./sq. cm.)

It is assumed that the above pressures are maintained by weekly attention. If the owner is able to check the pressure only every two or three weeks, then it is advisable to inflate the tyres by an additional 2 lbs./sq. in. On the other hand, it is permissible for a more

## GENERAL UPKEEP—Care of Tyres

comfortable ride, when carrying only two persons, to run with the rear tyre pressures 2lbs./sq. in. below those recommended, provided they are checked weekly or some convenient time when purchasing fuel.

### WHY TYRE RESULTS VARY

**Speed.** Car owners vary greatly in the speed at which they habitually drive. The rate of tread wear at 50 m.p.h. is double that at 30 m.p.h.

**Rapid Acceleration and Cornering.** During wheel slippage caused by rapid acceleration or severe cornering, excessive tread wear takes place due to the abrasion of the tyre against the road surface.

**Braking.** Some owners "drive on the brakes." It is established that where this practice is adopted, and especially if stops are frequent, the rate of tyre wear increases considerably.

### FRONT WHEEL ALIGNMENT

The alignment of the front wheels is most important in its effect on tyre wear and good steering. Excessive toe-in will lead to severe tyre wear particularly on the "kerb side" front tyre.

"**Toe-in**" or "**toe-out**" is the amount by which the front wheels are inclined from parallel.

#### Correct Wheel Alignment

The wheels should "**Toe-in**"  $\frac{1}{8}$ " .

#### To Check and Adjust Wheel Alignment

Jack up each front wheel in turn until just clear of "ground." Spin wheel to test for run-out. Set wheel so that maximum run-out is at the top. Lower and remove the jack.

This operation will tend to correct for errors which might otherwise occur due to wheel run-out.

Set the steering in the "straight ahead" position and measure the distance between the two front wheel rims at a height above the ground approximately equal to that of the wheel hubs. Take this measurement both in front of and behind the hub centres. The amount by which the front measurement is less than the rear is termed "toe-in."

## GENERAL UPKEEP—Care of Tyres

If adjustment is found necessary slacken the lock nuts at each end of the centre tie rod. Since it has a left-hand thread at one end and right-hand thread at the other, by rotating the rod an alteration of the alignment of the wheels can be effected. One complete turn of the tie rod will alter alignment by almost  $\frac{1}{2}$  in. measured at the wheel rims. When adjustment is complete ensure that the ball joints are in the centre of "swing" before securely tightening tie rod locking nuts.

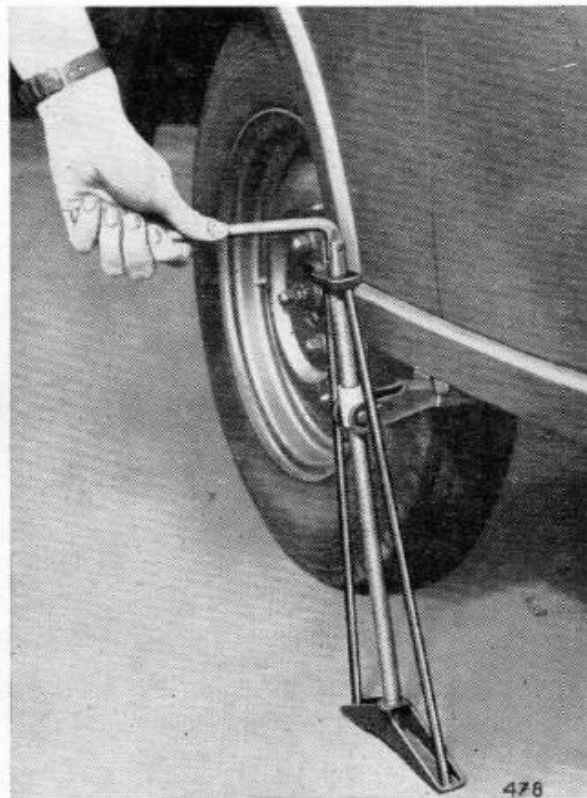
### THE JACK

A triangulated screw jack is provided which is adapted to lift any wheel of the car as required.

Fit the jack in position as shown, **making sure that it is right home in its socket**. Apply the hand-brake or chock the wheels which will remain on the ground, before operating the handle.

If a jack is used under the rear axle case, **take care** to ensure that the jack pad does not touch the rear cover plate when lifting, otherwise there is a risk of damage and consequent oil leak.

To remove nave plate, see page 30.



**Fig. 20.**

Jacking the car.

## **BODYWORK**

### **CARE OF BODYWORK**

The "finish" used for coachwork is remarkably durable but in order to retain the lustre of the finish, it is necessary to take a little trouble in cleaning and polishing it occasionally. Although dust may be removed with a duster, yet if it has been wet, it is advisable to clean off with a sponge and water. Always use water when removing mud, and when the car is clean finally wipe over with an almost dry chamois leather. All chromium parts should be cleaned frequently with a little soap and water, finished off with a damp chamois leather, and then be polished with a soft dry rag. If, due to neglect, the plate becomes spotted it is necessary to use a chromium plate cleaner. The radiator grilles should be kept smart in appearance in the same manner.

Washing alone will not keep up the brilliance of the paintwork and polishing with a suitable polish, specially prepared for this purpose, such as Duckham's DA Liquid Wax Polish No. 13, is advisable. Occasional removal of the "traffic film" which accumulates over the finish is well worth while, and special cleaners for the purpose are available. The finish will improve in appearance if properly looked after.

Tar is best removed before it has had time to set. This may be done by the aid of a little paraffin or petrol. However, it often happens that tar becomes firmly attached, and attempts to remove it are made when the car is being cleaned. Special tar removers are available for this purpose which are designed to dissolve tar without damage to the parts.

For parts requiring lubrication see page 32.

If, for example, the door hinges are left unlubricated they will eventually wear and cause the door to fall out of proper location with the door catch and dovetail. This leads to door rattles which can be avoided by careful attention to proper lubrication.

The interior of the body should be dusted occasionally, and the carpets taken out, shaken and brushed. Grime may be removed from the leather upholstery by the application of a little soap and a damp cloth, followed by a final wipe down with an almost dry sponge or wash-leather. When a vacuum cleaner is available it can be used with advantage to help clean the interior of the car.

## GENERAL UPKEEP—Bodywork

### DOOR ADJUSTMENT

The doors are provided with special locks which, when correctly adjusted, prevent any movement of the closed door. Only the striking plate requires repositioning when adjustment becomes necessary. *On earlier models the spring loaded dovetails and the striking plate may require repositioning.* This adjustment should preferably be carried out by a coach fitter.

### FRONT SEAT ADJUSTMENT

The front seats are adjustable for "leg length" by depressing the handle which is situated under the front of the seat and adjusting to the required position.

### SPARE WHEEL AND TOOL STOWAGE

The starting handle is clipped against the scuttle (see Fig. 5, page 11), the jack and tool roll are strapped and clipped to the left-hand wheel housing. The remaining tools of the kit are kept in the tool roll, which may be accommodated under the driver's seat.

The spare wheel is in a tray immediately underneath the luggage boot. To gain access rotate the nut inside the boot with the wheel nut spanner to the full extent of its travel, which is limited by a stop that prevents screwing out too far, and then pull rearwards the clip securing the tray (see Fig. 21 and 22) thus releasing carrier and spare wheel. Returning the tray is the reverse of this procedure. If the spare is not carried in the tray it is advisable to ensure that the tray is wound right up solid to prevent any rattles.

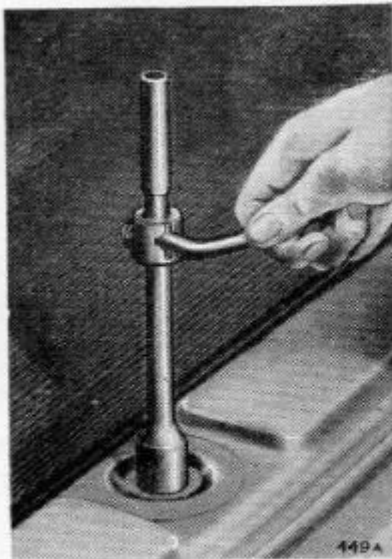


Fig. 21.

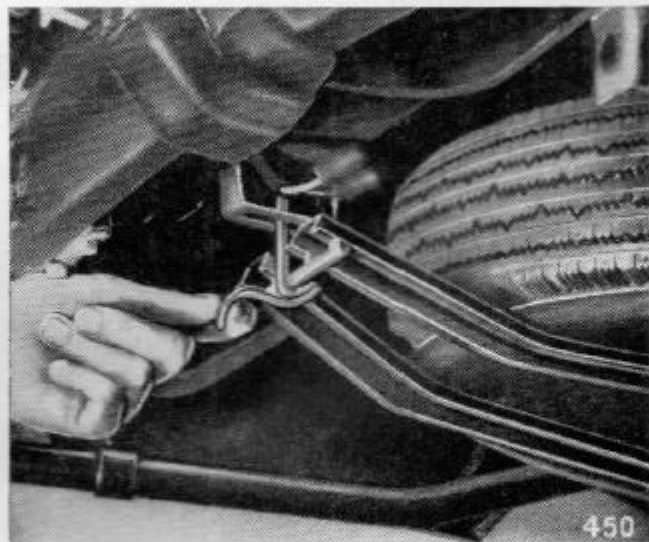


Fig. 22.

Removal of spare wheel.

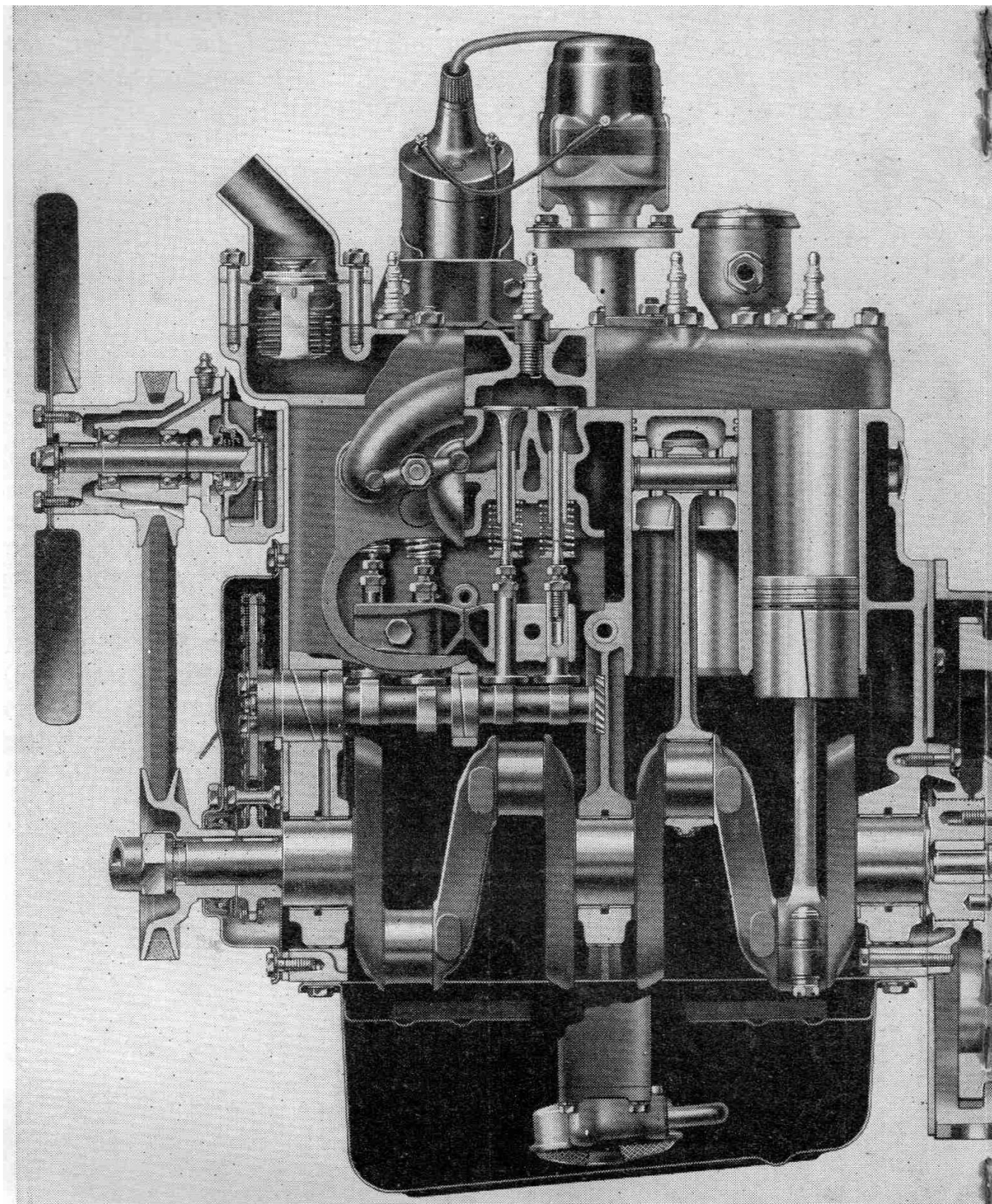
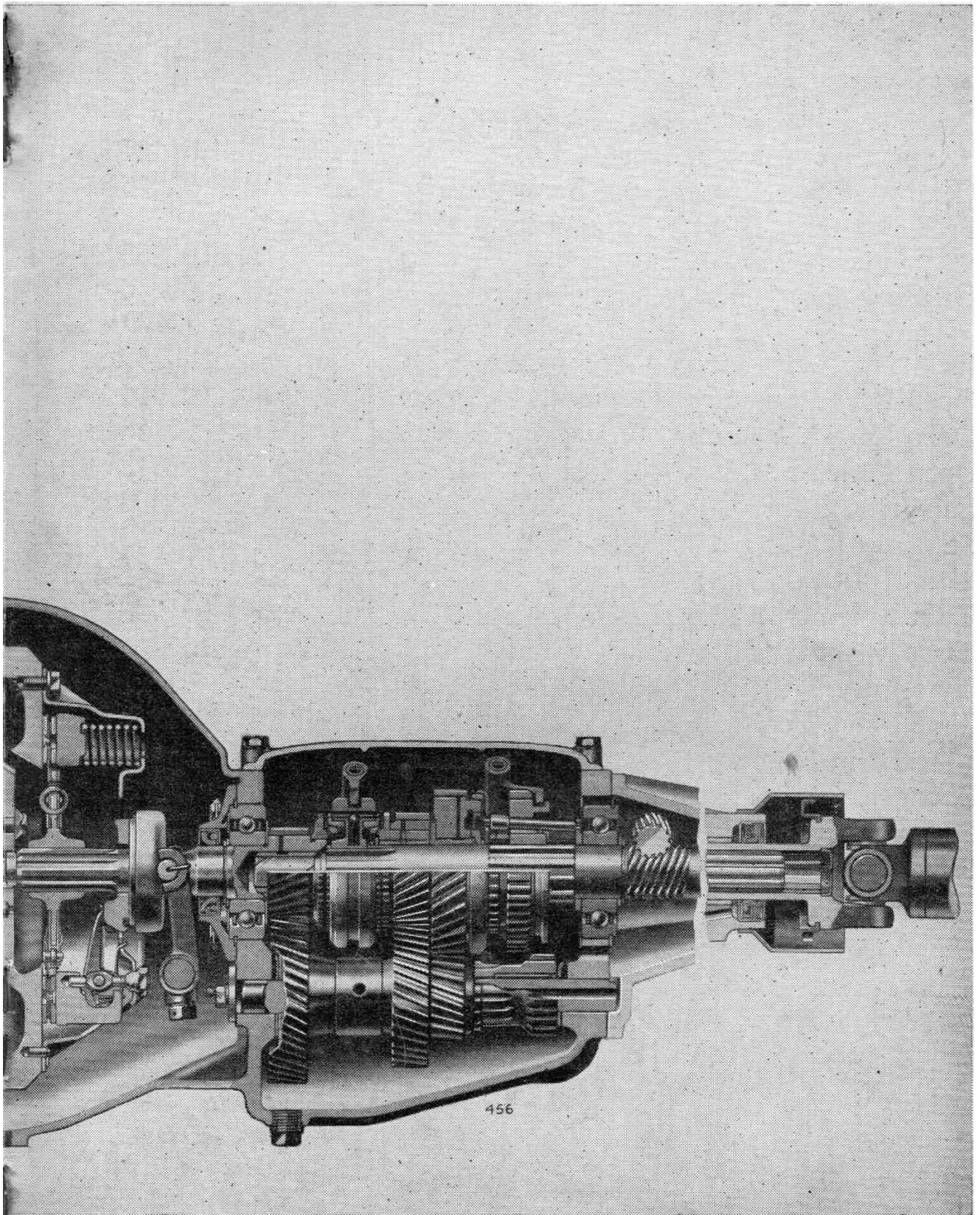


Fig. 23.



Engine longitudinal section.



## GENERAL UPKEEP—Bodywork

### TOOL KIT

The tool kit is comprised of the following, the detail numbers being given for anyone requiring spares :

	Detail No.
Adjustable Spanner	1396
Combination Tool. Used as screwdriver, tommy bar and nave plate remover	59427
Contact Breaker (Gauge and Screwdriver)	52125
Feeler Gauges (1 set) for tappets and sparking plug points	101763
Grease Gun	60056
	or 59429
Jack	200339
Open Ended Spanner, .68" and .75" A/flats	101319
Open Ended Spanner, .50" and .56" A/flats	59426
Open Ended Spanner, .37" and .44" A/flats	101318
Slip Joint Grips	101308
Starting Handle	200260
Tool Roll	24731
Tube Spanner, .68" and .82" A/flats	101089
Tube Spanner, .50" and .63" A/flats	102761
Tyre Levers (2)	52322
Tyre Valve Tool	52203
Wheel Nut Spanner	101761
Spanner, tappet adjustment	27383
Hub Cap Extractor (Set Screw)	UH0508
Plug for Jacking Bracket, 4 off, Black Rubber	101884

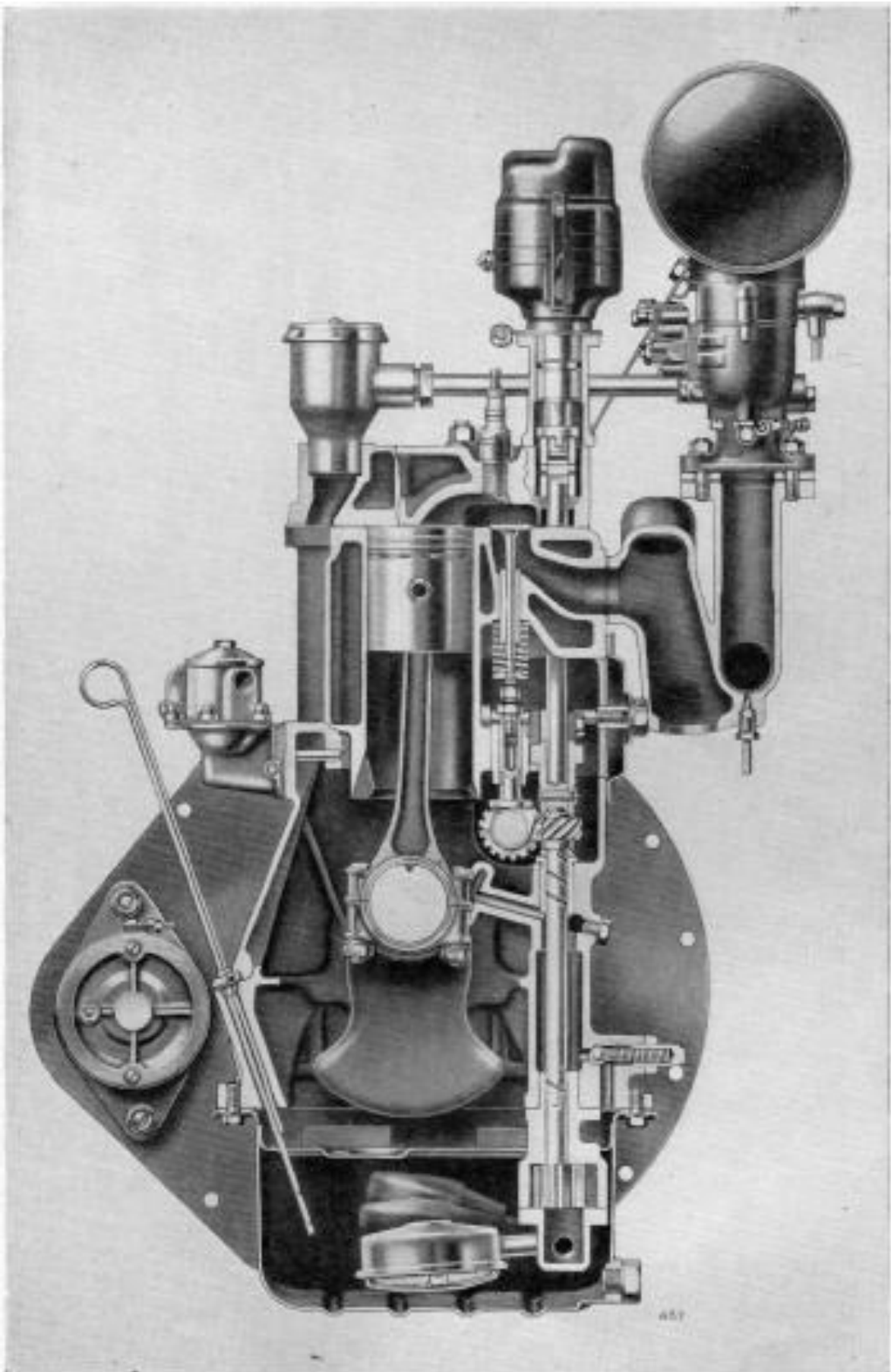


Fig. 24.

Engine cross section.

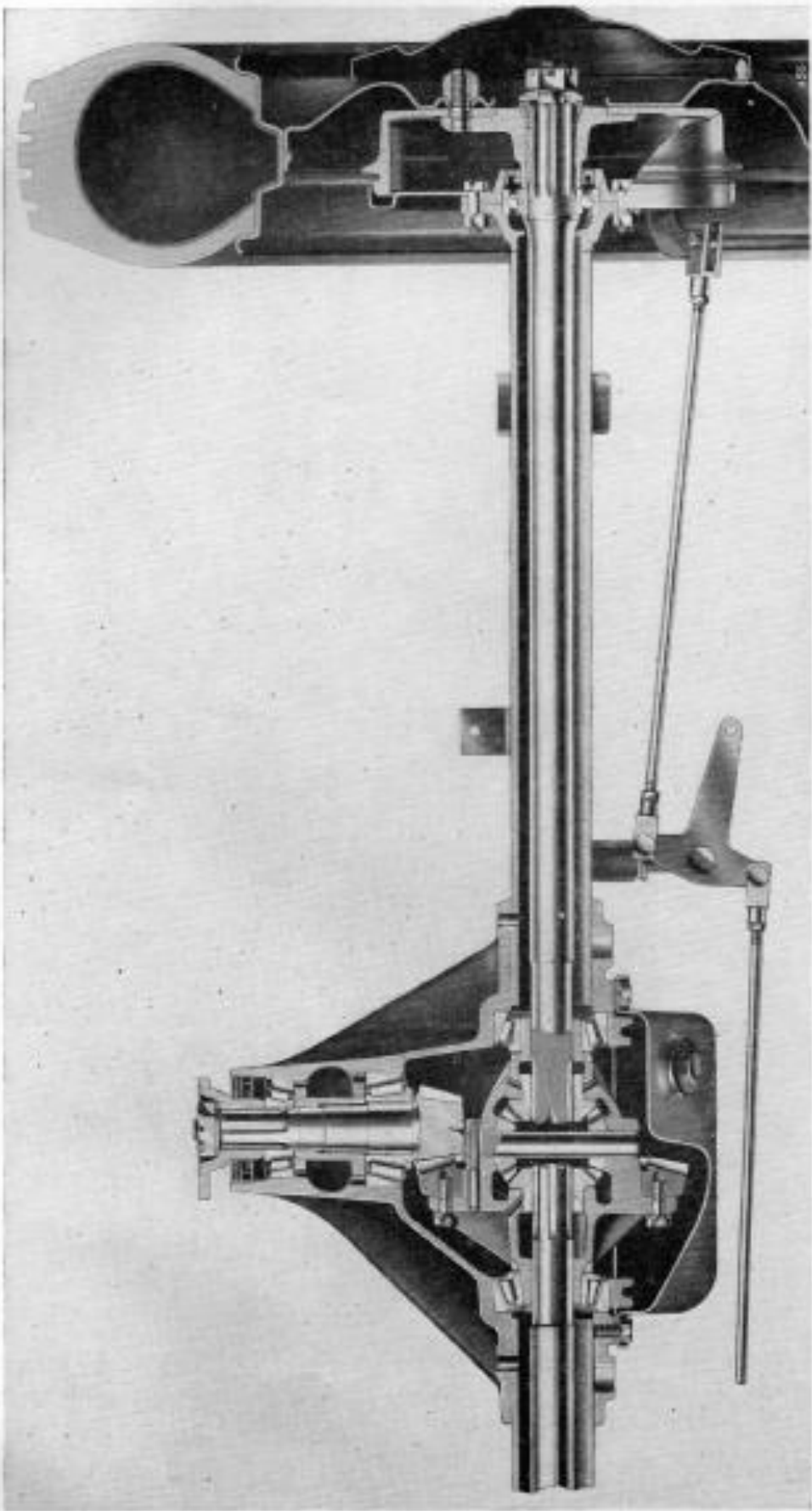


Fig. 25.

Rear axle section.

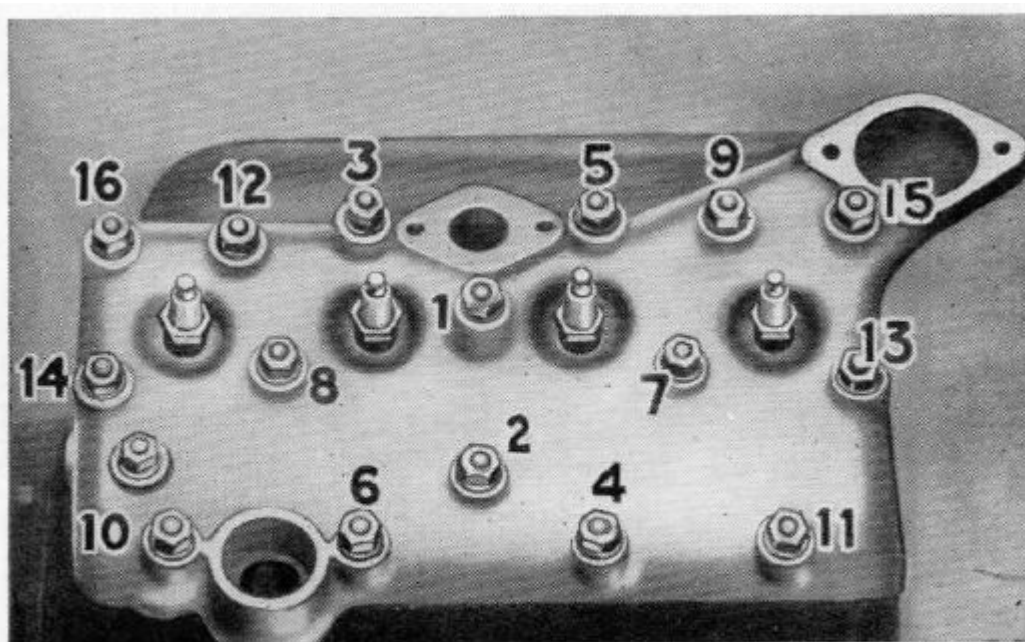
## RUNNING ADJUSTMENTS

Various adjustments are necessary from time to time in order to keep the mechanism in efficient running order. The periods between depend largely upon the manner in which the car is used and no definite time can be given here for carrying out these corrections. The car should be examined, however, every 5,000 miles (8,000 km.) and any adjustments which appear necessary can then be made (see page 56).

### ENGINE

#### Cylinder Head Nuts

After the first 1,000 miles or (1,500 km.) the cylinder head nuts should be checked, with engine cold, for tightness in the order shown in Fig. 26.



**Fig. 26.** Order of tightening cylinder head nuts.

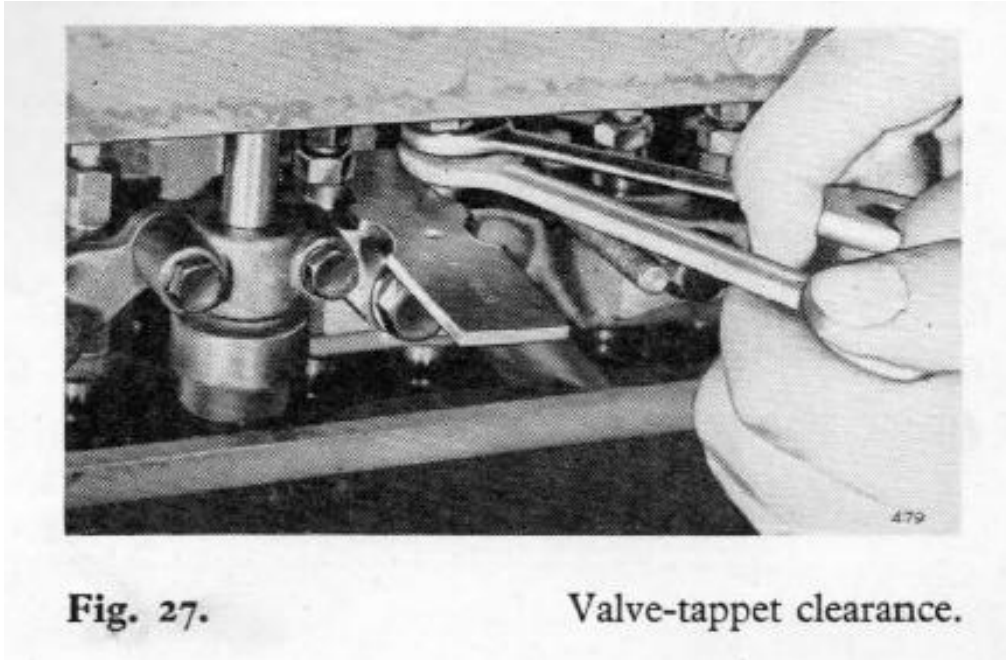
#### Valve-Tappet Clearances

A clearance between the valve stem and the head of the tappet screw is necessary to ensure correct closing of the valves and efficient running of the engine.

The correct running clearance is 0.015" (0.37 mm.) for both the inlet and the exhaust valves measured with engine cold. A gauge is provided in the tool kit for the purpose of setting these clearances.

## RUNNING ADJUSTMENTS—Engine

If a tappet becomes noisy, it may be silenced by adjusting the clearance to the correct amount. Do not set the valve clearances too small or the engine will not maintain good tune.



### **Adjustment of Valve-Tappet Clearance**

Remove the tappet cover and turn the crankshaft with the starting handle for half a revolution after the valve to be adjusted has closed. Slacken the lock nut and adjust the tappet screw until the gauge is a sliding fit between the valve stem and the tappet adjusting screw. Now tighten the lock nut and check that the clearance has not altered.

### **Ignition Timing**

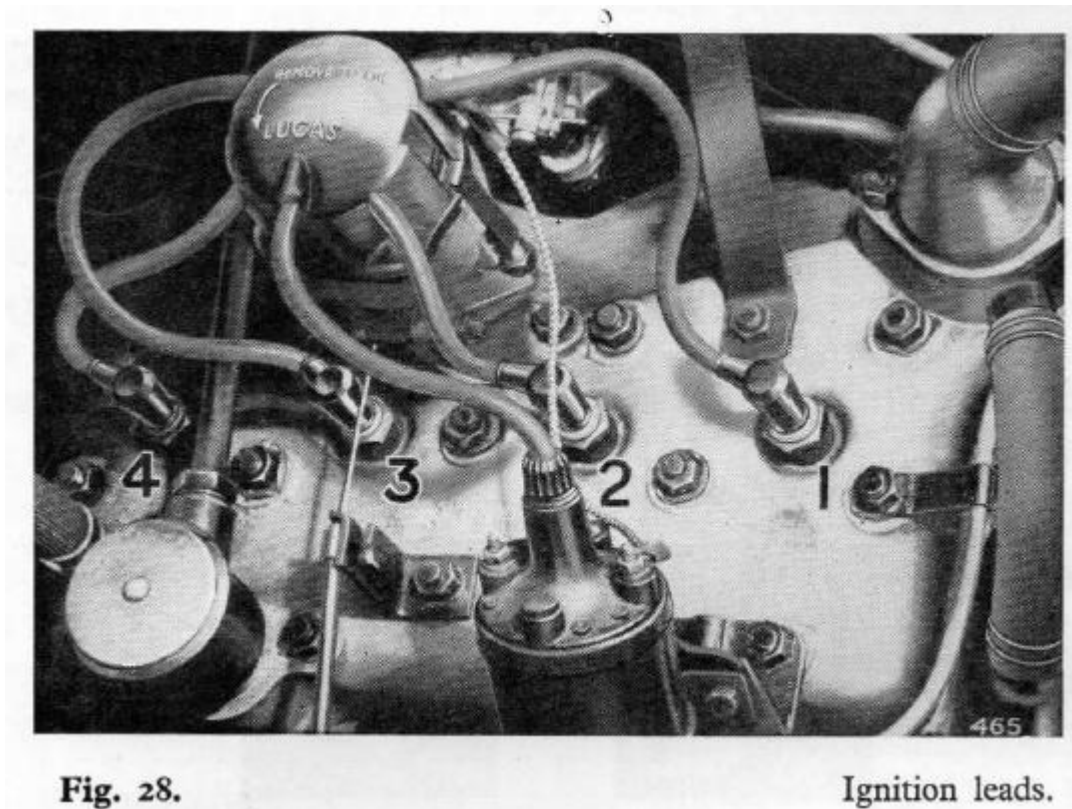
The ignition advance is automatic and **when fully retarded, i.e., engine at rest, the ignition should be set to fire 2° before top dead centre.**

The ignition is correctly set at the works and should not normally be adjusted, excepting that after the car has covered a considerable mileage it may be necessary, due to the increased carbon deposit, to set back the ignition slightly to prevent a metallic sounding noise termed "pinking." It is evident when pulling hard up-hill or when accelerating from low speed in top gear.

## RUNNING ADJUSTMENTS—Engine

The setting recommended above should be regarded as a starting point, as individual engines may require more or less advance than this. Maximum power is obtained by giving the greatest possible advance without causing pinking. Minor adjustments can readily be made on the road.

To advance ignition turn the distributor body clockwise, and vice versa. Do not alter the ignition more than  $1^{\circ}$  at a time ( $2^{\circ}$  on flywheel).



To obtain top dead centre position turn the crankshaft until the small drilled hole in the belt pulley is in line with the pointer attached to the timing cover.

The firing order is 1, 3, 4, 2 and the sparking plug leads should be attached to the distributor as shown in Fig. 28. The cylinder numbers are counted in sequence. No. 1 being the cylinder nearest to the radiator.

### Valve Timing

See page 5 for correct valve timing. To obtain top dead centre see above.

## RUNNING ADJUSTMENTS — Engine

### Sparking Plugs

The sparking plugs were adopted for original equipment after lengthy tests as sparking plug types vary in suitability for various engines. It is important that the correct type of plug be fitted when making replacements, this is :

**Champion NA8- 3/4 " reach.**

The gaps (*i.e.*, width between the firing point of the centre electrode and the earth point) are originally set and should be maintained at thirty-two thousandths of an inch (0.8 mm.) to ensure even running to the engine.

Incorrect gap setting may cause misfiring or erratic slow running. Faulty plug leads or cracked porcelain insulation in the sparking plug will also cause faulty ignition (see also page 12).

Sparking plugs should be thoroughly cleaned by a sandblasting process and checked, and adjusted if necessary, for gap setting after 5,000 miles (8,000 km.) use and at 10,000 miles or 15,000 km. should be replaced by new plugs.



*Oily, dirty, worn out  
plugs — a sluggish  
wasteful, hard start-  
ing engine.*



*New, clean, efficient  
plugs — a quick  
starting, responsive  
engine.*

**Fig. 29.**

**Plug before and after cleaning.**

## RUNNING ADJUSTMENTS-Engine

### Carburettor

The correct sizes of choke and jets are fitted to the carburettor and it is inadvisable to alter them as they are the result of exhaustive bench and road tests.

Slow running adjustments are provided and these are the only points that may require attention after the engine has become run-in. Two adjusting screws are shown in Fig. 30, one for limiting the closing of the throttle and thus the idling speed. The other screw regulates the strength of the idling mixture. There is also a screw which sets the full open position. Don't interfere with this. With the latest starting jet settings no air jets are fitted into the "start box."

### CHOKE AND JET SIZES

Component	Size of Jet
Choke tube .....	21
Main jet .....	105
Air correction jet .....	220
Pilot jet (slow running) .....	45
Starter jet .....	135

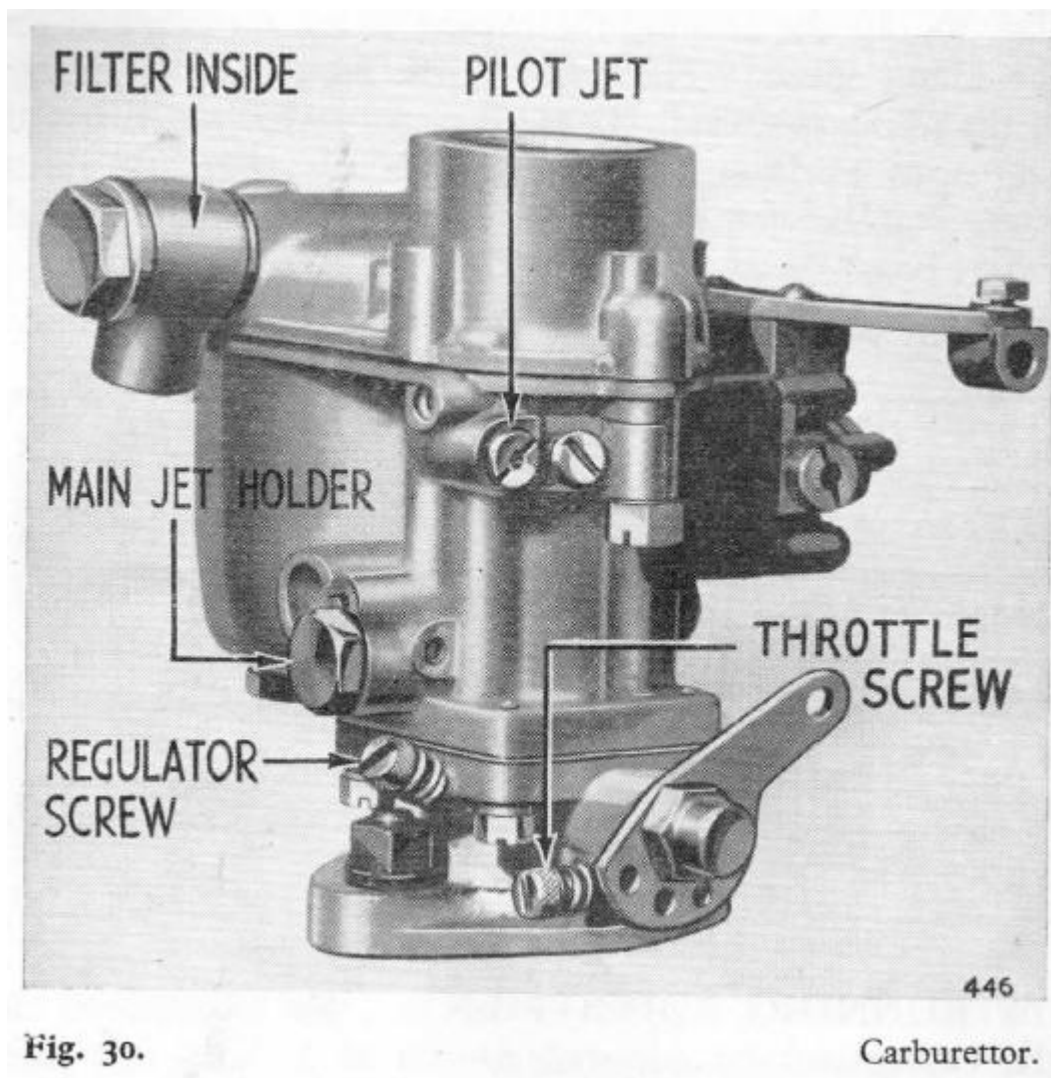
**SLOW RUNNING ADJUSTMENT.** We recommend that the carburettor be adjusted to run at a fairly fast idling speed, because an engine which is regulated to a minimum speed when hot, is apt to stall when cold.

Commence with the regulator screw screwed out  $1\frac{1}{2}$  complete turns and the throttle screw set to the lowest possible idle, and under these circumstances the engine should have a tendency to "hunt." Now screw in the regulator screw until the engine runs evenly. This may cause the engine speed to increase, in which case the throttle screw should again be rotated until the engine idles slowly.



## RUNNING ADJUSTMENTS—Engine

**CLEANING THE JETS AND FILTER.** It may happen that foreign matter enters the float chamber and is sucked into the jets, so preventing the flow of fuel and causing the engine to falter. Fig. 30 shows the jets which may be removed for cleaning purposes. Care should be taken not to enlarge the jet orifice. The filter incorporated in the fuel pipe union can be removed for cleaning after the union bolt has been removed.



**NOTE.**—A fully comprehensive booklet on each type of Solex carburettor can be obtained post paid on remittance of 1/- to Solex Ltd., 223/231, Marylebone Road, London, N.W.I.

Besides giving full instructions on tuning the carburettor, the booklet contains a helpful chart on engine and carburettor fault diagnosis, many useful general hints and tips, a complete price list of spare parts, a list of Solex Service Stations throughout

## RUNNING ADJUSTMENTS-Engine

the country, and a non-technical survey of the importance of good carburetion and how to maintain it.

### **Fuel Pump**

The fuel pump is mounted on the right-hand side of the crankcase and provides a constant pressure of fuel to the carburettor float chamber when the engine is running.

A hand primer is fitted which can be used to pump fuel to the carburettor if the float chamber is not already full, under which condition a slight pumping resistance is felt before the lever reaches its stop. This resistance ceases when the chamber is full.

*To clean the filter.*

Remove the filter cover and gauze, clean out the sediment chamber, swill the gauze in fuel and replace. Make certain that the cork washer lies flat on its seat and makes an air-tight joint, and that the fibre washer is under the head of the cover screw. Tighten the screw just sufficiently to ensure a fuel-tight joint. Over-tightening will either destroy the cork or fibre washers, crack the cover, or fracture the main casting.

If the pump fails to supply fuel to the carburettor it is advisable to attend to the following points: (a) inspect the fuel pipe unions which, if any are loose, should be tightened up; (b) a blockage may have been caused in the fuel pipe which may be removed by blowing through the pipe with the aid of a tyre pump.

If, after attending to the above points, the pump still fails to operate, it should be renewed and the old pump sent to the nearest A.C. Service Station or Standard Service Depot.

## RUNNING ADJUSTMENTS—**Engine**

### **DECARBONISING AND VALVE GRINDING**

It is recommended that the cylinder head be removed for decarbonising and valve grinding after the first 5,000 miles (8,000 km.). This is chiefly to give attention to the valve seats, the metal of which becomes stabilised during this period. Thereafter it will be found that decarbonisation will be required only after a period of about 15,000 miles (24,000 km.). Providing that the engine is running satisfactorily after this period and that each cylinder gives a normal compression, showing that the valves are seating reasonably well, it is much better to leave it alone and delay decarbonising for as long as the engine continues to run satisfactorily.

Operations such as decarbonisation and valve grinding should be carried out by the skilled mechanics at your nearest Triumph Agent, but for those who desire to do this work themselves the main points to watch are outlined below:

1. Use a tool made of some soft material such as solder for removing the carbon.
2. For decarbonising it is not necessary to remove the tappet guide blocks. If, however, they are removed, it is essential that the longer set screws secure the central abutment plate. If they are used in the two end holes they will project into No. 1 and 4 cylinders and damage the pistons. Take care also not to lose any of the shims which may be fitted between the abutment and plate. When securing the abutment ensure that the distributor shaft is pressed down and the abutment just touches the cam before tightening the bolts.
3. After removing carbon from the combustion chamber in the cylinder head clean out the stud holes before refitting. The cylinder head has been treated against corrosion so on no account are the stud holes to be drilled out as that may remove the protective coating.
4. When replacing cylinder head nuts refer to page 43. The tightness of the nuts should be checked after the engine has been thoroughly warmed and allowed to become cold. This is important if a new gasket has been fitted.

## RUNNING ADJUSTMENTS

### CLUTCH

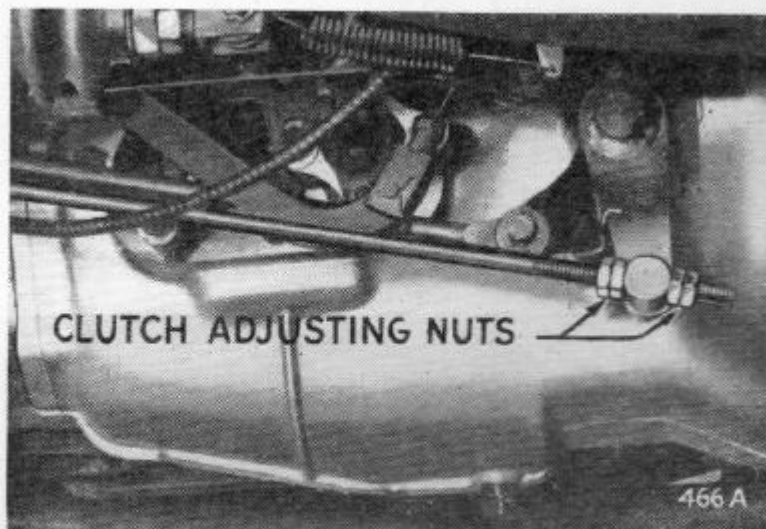
A Borg & Beck single dry plate clutch is fitted and as it is correctly set before leaving the works it will be some considerable time before it requires re-adjustment.

#### Adjustment

Indication that adjustment is required is given when :

1. The free pedal movement is reduced to about  $\frac{1}{4}$  " (6 mm.)  
or
2. The free pedal movement increases until the clutch will not be fully released when the pedal is fully depressed.

It is then necessary to adjust the clearance until there is backlash or free movement of about  $\frac{1}{2}$  " (13 mm.) measured at the pedal pad. This will provide the  $\frac{1}{16}$  " (1.5 mm.) clearance required at the toggle ring.



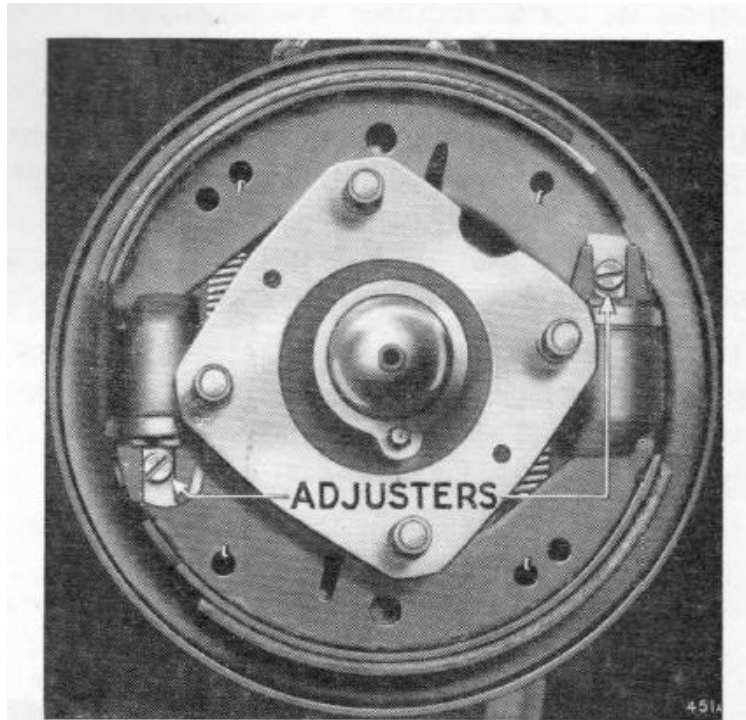
**Fig. 31.**

Clutch Adjustment.

## RUNNING ADJUSTMENTS

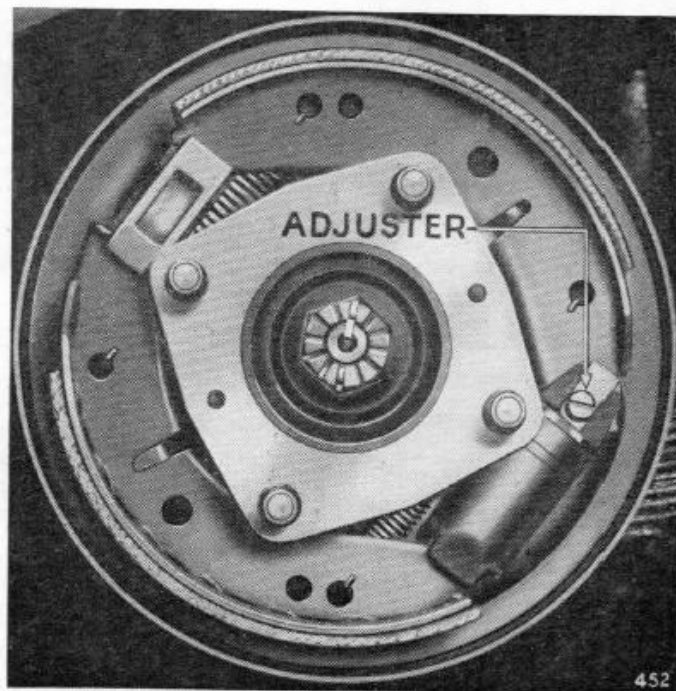
### BRAKES

Lockheed hydraulic brakes are fitted to all four wheels. Two leading shoe type being used on front wheels, leading and trailing shoe type on rear wheels.



**Fig. 32.**

Brake shoe assembly, front.



**Fig. 33.**

Brake shoe assembly, rear.

## RUNNING ADJUSTMENTS—**Brakes**

The pedal operates the brakes on all four wheels hydraulically, whilst the handbrake control operates the brakes on the rear wheels, by means of cable and rods.

It must be remembered that the presence of oil, grease or similar foreign matter on a brake shoe will seriously affect the coefficient of friction and in consequence the retarding effect of that particular brake, in spite of the fact that it is being applied with the same force as the others. In such cases, the brake drum should be thoroughly cleaned with fuel and the brake shoes replaced by new replacement shoes. Cleaning the brake shoe is not satisfactory.

See page 27 for checking level of fluid in reservoir. If it is found to be particularly low it is an indication that a leak has developed somewhere in the system and it should be traced and rectified without delay.

Do not reline the shoes, but fit genuine Lockheed replacement shoes. These shoes have the right type of lining machined to the correct radii.

Should the shoes be removed, care must be exercised to ensure that the pull-off springs are located behind the shoes and hooked through the correct holes as shown in Figs. 32 and 33.

### **Adjustment of Brake Shoes**

After a considerable mileage it may be found necessary to adjust the brakes. This is evident when the brake pedal has to be depressed to within 1" of the floor before the brakes operate. There are TWO adjusters to each front wheel and ONE to each rear wheel (see Figs. 32 and 33).

The following procedure should be followed to correctly adjust the brakes.

1. Apply the brakes hard with the car stationary, to position the shoes in the drum.
2. Jack up the car and remove the nave plates and the road wheel.
3. Rotate brake drum until hole provided coincides with screwdriver slot in micram adjuster.
4. Insert a screwdriver and turn the adjuster clockwise until the shoe contacts the brake drum, then turn the adjuster back one notch. There is a consistent drag

## RUNNING ADJUSTMENTS—Brakes

on the rear wheels due to the action of the differential and the axle oil, don't confuse this with the brake drag.

5. Replace road wheels and nave plates and remove jack.

### Handbrake Adjustment

Adjustment of the brake shoes as previously described automatically readjusts the handbrake mechanism. The rods are correctly set before leaving the works and only maladjustment will result from tampering with the mechanism.

### Bleeding the System

Except for periodical inspection of the fluid level in the reservoir chamber and lubrication of the handbrake cables and connections (see page 26) no attention should be necessary. If, however, a pipe joint is uncoupled at any time, or the wheel cylinder cups are inspected or replaced, the system must be bled in order to expel any air which may have been admitted.

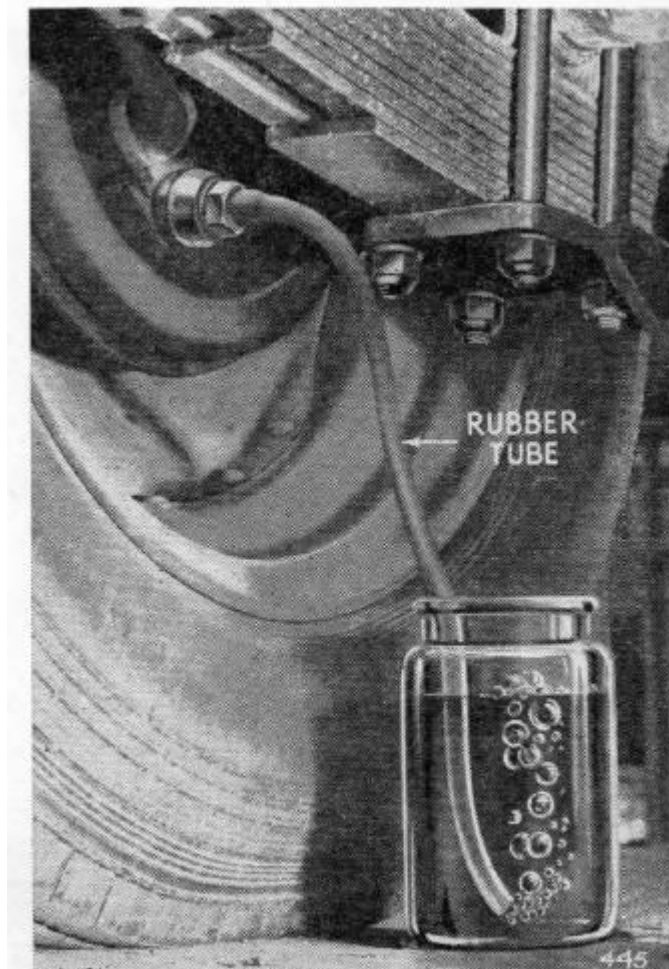


Fig. 34.

Bleeding the brakes.

## RUNNING ADJUSTMENTS—Brakes

Air is compressible, and its presence in the system will affect the working of the brakes.

Whilst the majority of owners will prefer to have these operations carried out by a Triumph Agent, for the benefit of those desiring to carry out their own running adjustments, the procedure is as follows:

1. Remove the cover in the floor just to the rear of the brake pedal to allow access to master cylinder reservoir.
2. Wipe clean the bleed nipple of the brake concerned and fit a piece of rubber tube over it, allowing the tube to hang in a clean container partially filled with fluid, so that the end of the pipe is below the level of the fluid (see Fig. 34).

NOTE.—Although with the two leading shoe brakes fitted to the front wheels there are two actuating cylinders there is only one bleed nipple for each brake assembly.

3. Unscrew the bleed nipple one complete turn with a suitable spanner.
4. The fluid reservoir of the master cylinder must be topped up before commencing the bleeding operation, and must be kept at least half-filled during the whole operation, otherwise more air will be drawn into the system via the master cylinder. Always clean the area around the plug before removing it, this will lessen the risk of grit falling into the chamber after removal of the plug. Seven to eight strokes of the pedal will reduce the fluid level from full to half-full.
5. Depress the brake pedal quickly and allow it to return without assistance.

Repeat this pumping operation with a slight pause between each depression of the pedal. Observe the flow of fluid being discharged into the glass jar and when all air bubbles cease to appear, **hold the pedal firmly down and securely tighten the bleed nipple.**

NOTE. Depending upon the position at which a pipe joint has been uncoupled it will be necessary to bleed the system at either both the front or both the back wheels. If the pipe was uncoupled at the master cylinder then the system must be bled at all four wheels.



## RUNNING ADJUSTMENTS—**Brakes**

### **HYDRAULIC DAMPERS**

The telescopic hydraulic dampers fitted do not require any adjustment or topping up.

If these are removed, or for some reason new ones are fitted, it is advisable to hold the hydraulic damper right way up and pump the piston to each end of the stroke, this will dispel any air which may have entered the chamber. After this operation, keep the damper the right way up until it is fitted in place.

### **LOOSE BOLTS OR NUTS**

All the vital nuts are locked in position by split pins, locking wire, or by an additional lock nut or lock washer. It is, however, desirable that the car should be examined every 5,000 miles (8,000 km.) so that if any nut is found to be loose it may be tightened. The wheel nuts can periodically be checked by the owner himself and occasionally removed, oiled and refitted.

The general examination of the chassis is a mechanic's job.

## ELECTRICAL SYSTEM

A 12 volt earth return (or one wire) lighting and starting set is fitted.

**As the frame parts are not insulated, one cable should be disconnected from the battery terminal before removing any electrical unit, otherwise there is risk of a serious "short."**

### IGNITION

See page 10 for the function of the red warning lamp bulb. Although the failure of this bulb will not affect the ignition, the bulb should be replaced at the earliest opportunity by one of the same size and type, *i.e.*, Lucas No. 987, 12 volt, 2.2 watt (see page 63).

#### **Misfiring, etc.**

If misfiring occurs, check that the fault is not due to a defect in the carburettor, fuel supply, sparking plugs, etc.

Examine the high tension leads. If they are perished or worn through, replace with 7mm. rubber covered ignition cable.

#### **Cleaning and Adjustment of Distributor Contacts**

Every 5,000 miles (8,000 km.) wipe the inside and outside of the moulded distributor cover with a soft dry cloth, paying particular attention to the space between the terminals. See that the small carbon brush on the inside of the moulding works freely on its holder.

Examine the contact breaker. The contacts must be free from grease or oil. If they are burned or blackened clean them with a fine carborundum stone or with very fine emery cloth. Afterwards wipe away any trace of dirt or metal dust with a cloth moistened in petrol.

After cleaning check the contact breaker gap. To do this turn the crankshaft with the starting handle until the contacts are fully opened and insert a 0.015" (0.4 mm.) gauge between the contacts.

If the setting is correct the gauge will be a sliding fit, but if the gap varies appreciably from the gauge the setting should be adjusted. Slacken the two screws securing the plate carrying the fixed contact and move the plate until the gap is set to the thickness of the gauge, tighten the two screws and re-check the setting.

## ELECTRICAL SYSTEM—**Battery**

### **THE BATTERY**

Lucas GTW7A. 12v. 38 amp. hr. at 10 hr. rating.

About once every fortnight (more frequently in hot climates), top up each cell with distilled water to bring the acid solution (electrolyte) **just level** with the top of the separators. Do not use a naked light when examining the condition of the cells and on no account use tap water when topping up.

Keep the terminals clean and well covered with petroleum jelly. If they are corroded, scrape them clean, assemble and cover with petroleum jelly. Wipe away all dirt and moisture from the top of the battery, and make sure that the connections are clean.

### **THE DYNAMO**

The dynamo is of the compensated voltage control type and operates in conjunction with the regulator unit which is housed alongside the cut-out in the control box.

The regulator unit ensures that the dynamo charges the battery at the rate best suited to its condition. It automatically provides a large charging current for a discharged battery and a low trickle charge for a battery in a fully charged state.

When the engine is at rest, or running slowly, the dynamo does not develop sufficient current to charge the battery, and under these circumstances, the battery would discharge itself through the dynamo if the cut-out were not fitted. The cut-out is operated by the dynamo voltage, and when, due to increasing speed, the dynamo develops sufficient voltage to actuate the cut-out, the points make contact and so allow current to flow from the dynamo to the battery. In this system, current cannot flow in the reverse direction. The cut-out requires no attention, it is correctly adjusted by the manufacturers and the sealed unit must not be tampered with.

The brush gear and commutator on the dynamo will not normally require any attention. After 50,000 miles (80,000 km.) however, it is advisable to have the unit serviced at a Lucas depot.

### **Belt Tightness**

See that the belt is sufficiently tight to drive the dynamo. It can be adjusted by slackening the securing nuts and swinging the dynamo in the desired direction. Re-tighten the nuts whilst holding the dynamo in the adjusted position. Don't over-tighten the belt as this would put an undue load on the dynamo and the water pump bearings. The correct tension is achieved when the belt can be pressed inwards about  $\frac{3}{4}$  " on the longest run, *i.e.*, from the water pump pulley to the crank pulley.

## ELECTRICAL SYSTEM—**Starter Motor**

### **THE STARTER MOTOR**

The starter brush gear and commutator will not normally require attention. After 50,000 miles (80,000 km.) however, it is advisable to have the unit serviced at a Triumph or Lucas Service depot.

Should the starter pinion become jammed in mesh with the flywheel, then it can be released by turning the crankshaft with the starting handle in the normal manner, or select top gear and rock the car backwards and forwards until the pinion releases itself

#### **Starter Motor only turns Crankshaft slowly**

The battery may be run down due to leaving the ignition switch on, or leaving the car standing with the head lamps on.

The grade of oil in the engine sump may be too heavy.

#### **Starter Motor will not turn Crankshaft**

This may be due to a broken connection between the starter and battery or a bad contact.

If the red warning light goes out when the starter button is pressed, then the battery is in a rundown condition and the engine should be started by hand.

If the motor hums but does not engage with the flywheel when the starter button is pressed, then:

- (a) The battery may be in a rundown condition.
- (b) The brushes are sticking or the commutator requires cleaning.
- (c) Battery terminals are not clean or secure.

### **CONTROL BOX**

The control box, mounted on the wing valance, in front of the battery, houses the voltage regulator and cut-out. These units are carefully and accurately set before leaving the works and must not be tampered with.

### **FUSES**

The fuse box is located forward and slightly below the control box and contains the two fuses. The top fuse (50 amp.) protects the horn, while the other fuse (35 amp.) protects those items which can only operate when the ignition is switched on, i.e., direction indicators, windscreen wipers, brake light, reverse light, petrol gauge, and heater ( if fitted). When replacing a fuse, it is important to use the correct replacement (the fusing value is marked on a coloured paper slip inside the tube). Spare fuses are also carried in the box.

## ELECTRICAL SYSTEM—Lamps

### LAMPS

#### Head Lamps—Bulbs Fitted

	Lucas No.	Voltage	Wattage
Left Dip, Both Lamps (Home Type)	354	12	42/36
Right Dip, Both Lamps	301	12	36/36
"Straight" Dip, Both Lamps	350	12	35/35

The lamps fitted to the Mayflower have the reflector and glass sealed as a unit. The bulb has a "pre-focus" cap accurately located and correctly positioned relative to the reflector, thus no adjustment to focusing is required when a replacement bulb is fitted.

It is not possible with these types of lamps to alter the direction of dip entirely by fitting bulbs of the opposite dipping characteristics as some of the dip effect is produced by the shape of the glass in the lens.

#### Alignment

The lamp must be set to ensure that the beam is projected below the horizontal, taking into account that the lamp must be dipped slightly more to compensate for road inequalities and heavy loads which may be carried in the rear of the vehicle.

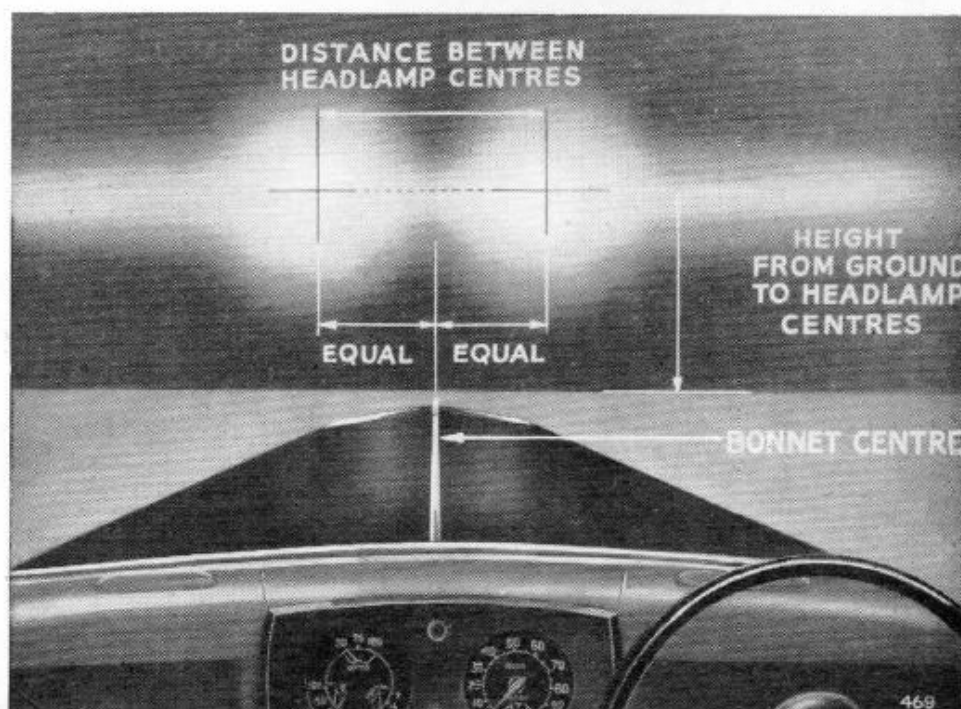


Fig. 35.

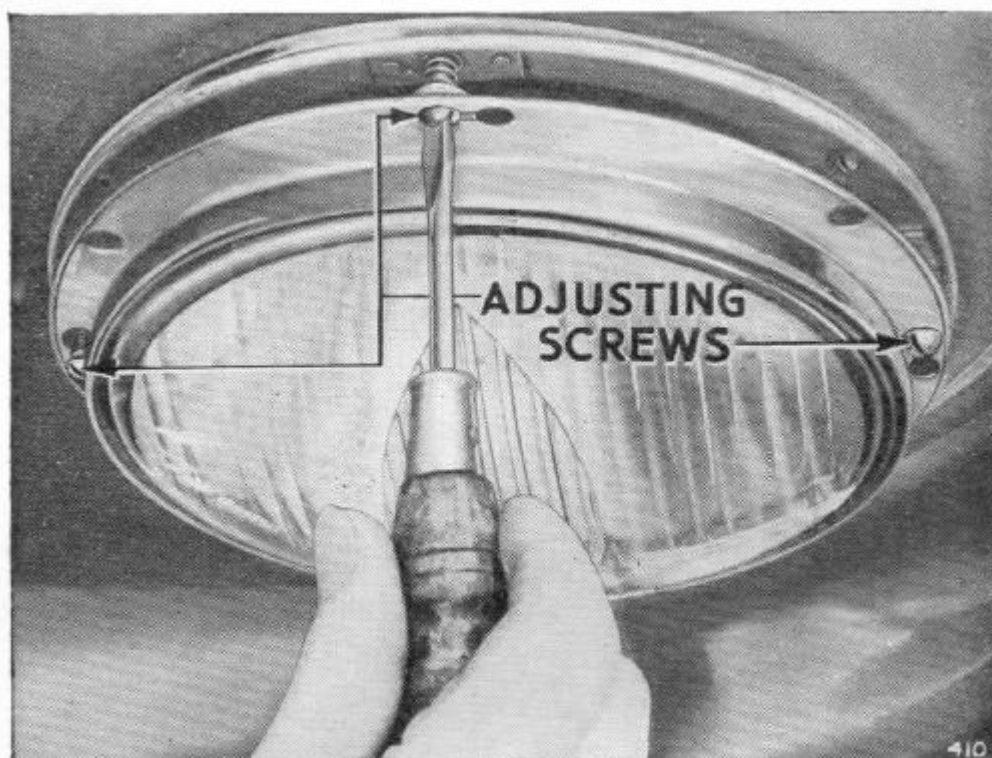
Head lamps correctly aligned.

## ELECTRICAL SYSTEM—Lamps

### To Check and Adjust Alignment

Park the car in front of a garage door or wall and square to it. The car must stand on level ground and the front of the lamps should be approximately 25 ft. from the "screen." The car must be unladen and the tyres at the correct pressures.

A point should be marked on the "screen" in line with the centre of the bonnet. Two crosses should be drawn on the "screen" 31" above the ground level and 45" apart, measured equally about the centre point (see Fig. 35). Switch on the head lamps and adjust the lamps if necessary, until the centre of each circle of light coincides with the centre of its respective cross.



**Fig. 36.**

Adjusting head lamp alignment.

IF ADJUSTMENT IS NECESSARY, PROCEED AS FOLLOWS:

Withdraw the front rim after removing the securing screw. Remove the dust excluding rubber. This will reveal three screws which can be adjusted to align the reflector correctly. When the correct alignment has been obtained replace the rubber and rim.

It is advisable to start adjustment with each screw screwed out half-way, this will ensure correct fitting of the rim when assembled.

## ELECTRICAL SYSTEM—Lamps

### Bulb Replacement

Withdraw the front rim after removing the securing screw. Press in the lamp unit against the tension of the three adjusting screw springs and turn in an anti-clockwise direction until the key-slot holes in the rim line up with the screw heads. The lamp unit can then be drawn off. Do not rotate any of the screws as this will affect the alignment of the reflector when assembled.

Rotate the back shell anti-clockwise and pull off, then the head lamp bulb can be removed. Care should be taken to see that the bulb does not drop out.

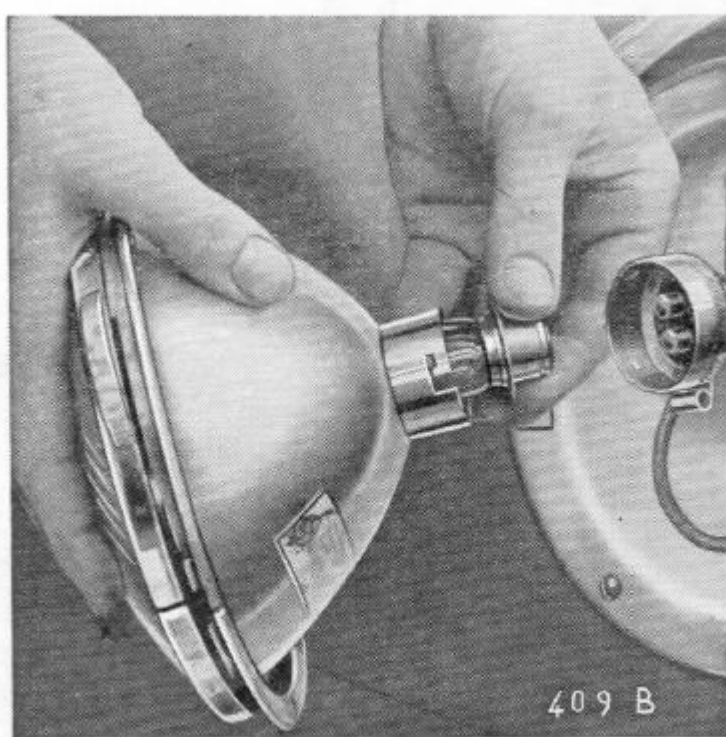


Fig. 37. Head lamp light unit with backshell removed.

### Parking Lamps (Front)

(Lucas No. 989, 12 volt 6 watt single contact bulbs fitted.) To remove bulb, peel back the rubber ring and remove rim, then the bulb can be withdrawn. When replacing rim, first slip the edge over the two small lugs, then peel back rubber as rim is fitted. Ensure that the rubber is located correctly over the rim edge, otherwise vibration may cause the rim to become detached.

## ELECTRICAL SYSTEM—Lamps

### Tail and Brake Lamps

(Lucas No. 353, 12 volt 6/24 watt, double filament bulb fitted in each lamp.) The rim and the glass are removed separately and in this order by peeling back the rubber retaining ring.

### Number Plate Illuminator

Two Lucas No. 989, 12 volt 6 watt, or Lucas No. 994, 12 volt 4 watt bulbs fitted. To gain access to the bulbs, remove the securing screw and withdraw the cover.

### Interior Lamp

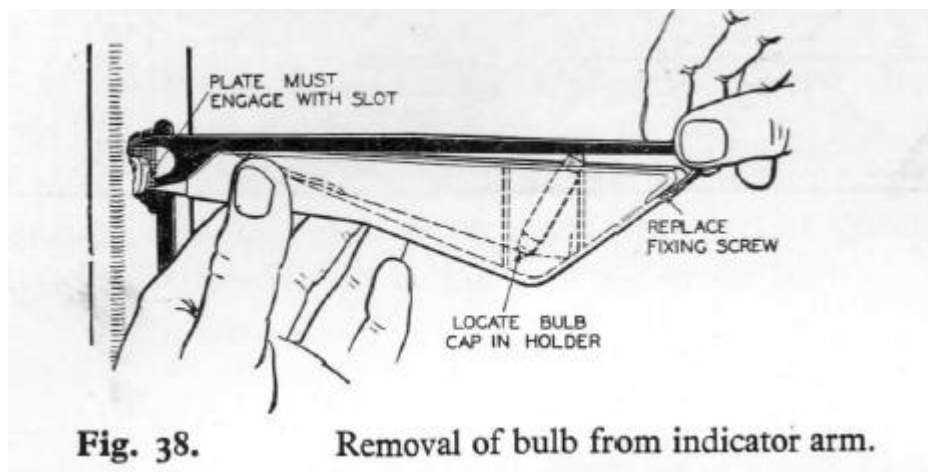
(Lucas No. 254, 12 volt 6 watt festoon type bulb fitted.) To gain access to the bulb, pull off the cover.

### Ignition Warning Light

(Lucas No. 987, 12 volt 2.2 watt screw cap type bulb fitted.) The bulb holder can easily be withdrawn from the rear of the panel for bulb renewal.

### Direction Indicators

(Lucas No. 256, 12 volt 3 watt festoon type bulbs fitted.) To replace bulb withdraw the cover as explained on page 32, fit new bulb and replace cover.



### Instrument Panel Lights

(Lucas No. 987, 12 volt 2.2 watt screw cap type bulb fitted.) Replacing these bulbs is best left to the safe hands of a service station.



## ELECTRICAL SYSTEM - Horns, etc.

### WINDSCREEN WIPER

For operation see page 9, for lubrication see page 32,

### WINDTONE HORNS

Each electric horn, before being passed out of the works, is adjusted to give its best performance, and will give long periods of service without any attention. No adjustment is required in service.

If for any reason the note is unsatisfactory do not attempt to dismantle the horn, but return it to a Lucas Service Depot for examination.

## ELECTRICAL COMPONENT SPECIFICATION

SPECIFICATION OF EQUIPMENT			BULBS			
	Model	Service No.		Lucas No.	Voltage	Watt.
Battery .....	GTW7A	4011517	<b>Head Lamps.</b>			
Control Box	RB106	37126	Main.			
Coil .....	Q12	45020	Left-hand Dip,			
Dynamo .....	C39PV/2	22258	Both Lamps			
Distributor	DKYH4A	40232	Home Type	354	12	42/36
Starter .....	M35G/1	25022	Right-hand Dip,			
			Both Lamps	301	12	36/36
			Continental (Duplo)	350	12	35/35
			Parking lamps .....	989	12	6
			Tail and brake lamps .....	353	12	6/24
			Number plate illumination			
			lamps .....	989	12	6
			Trafficators .....	256	12	3
Fuses .....	50 Amp.	188219	Ignition warning and			
	35 Amp.	188218	Panel lights .....	987	12	2.2
			Interior lamp .....	254	12	6

## OPTIONAL EXTRAS

### RADIO

The radio set fitted to the Mayflower, " His Master's Voice " Automobile Radio, operates on medium and long wave transmissions and is controlled either manually or by the push buttons, the whole unit is housed below the instrument panel and the controls arranged as illustrated in Fig. 39. The set is protected against possible damage due to a "short" by a 10 amp. fuse housed in the main lead union.

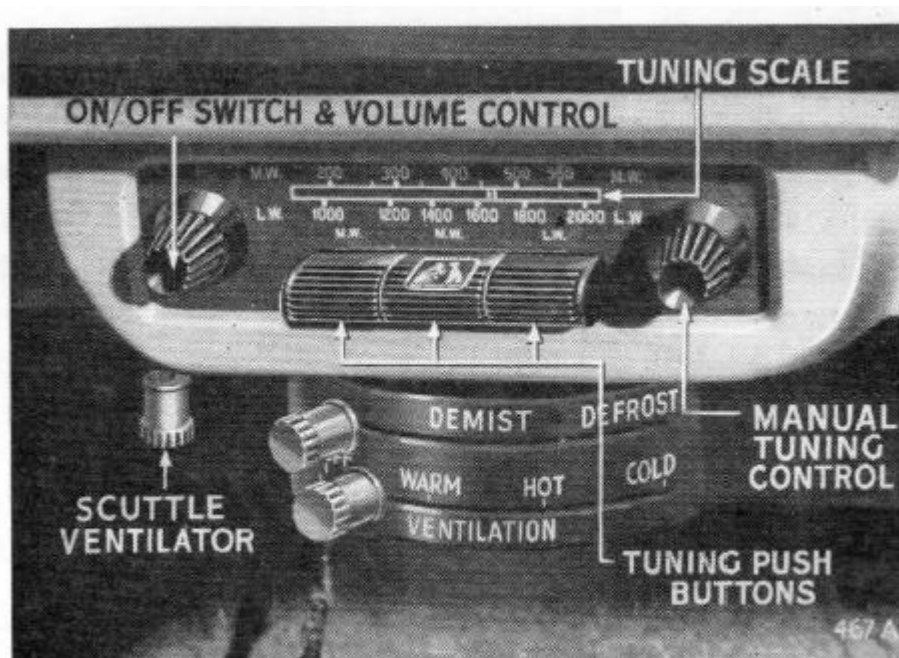


Fig. 39.

Radio and heater controls.

### Aerial

The aerial is of the telescopic type located just in front of the windscreen on the right-hand side of the body. The mast should always be lowered when the set is not operating. It is essential to park the mast before entering a garage if the headroom is lower than seven feet.

### CONTROLS

**The Combined On/Off Switch and Volume Control** switches the receiver on when turned clockwise, and progressive rotation of the controls increases the volume.

Allow about forty seconds for the receiver to warm up after switching on. Turning the control fully anti-clockwise will switch off the receiver.

## RADIO AND HEATER—Instructions

**The Manual Tuning Control** provides completely variable station selection. A feature of this control is that the knob will not engage the tuning mechanism until it is pressed inwards; otherwise, the knob will "idle." This prevents accidental disturbance of a station setting previously selected by a push button. The knob will remain in engagement for manual tuning until released by pressing one of the push buttons.

**The Tuning Push Buttons** provide automatic tuning of stations pre-selected from the medium and long wave bands. The right-hand button provides for one station on the long wave band and the remaining buttons to the left provide for medium wave stations. The indicator "M.W." (medium wave) or "L.W." (long wave) is marked on the tuning scale immediately above each button. Wave change switching is automatically effected when a button is pressed for any preselected station.

**The Tuning Scale** is divided into two sections — "medium wave" and "long wave", and is calibrated in metres.

### To Set Up the Tuning Push Buttons:

1. Select the wave band required by pressing the appropriate push button.
2. Tune in the desired station by means of the manual tuning control as described above.
3. With the station accurately tuned in, remove one of the push buttons by simply pulling outwards. A lip is provided on the underside of each button to facilitate removal.
4. Insert edge of small coin in screw-slot of button plunger and unscrew (*i.e.* anti clockwise) about half a turn.
5. Push the plunger as far as it will go, release and re-tighten by means of screw-slot.
6. Replace the button. This push button is now set to the desired station and independent of manual tuning. Proceed in the same manner for the remaining buttons.

## RADIO AND HEATER—Instructions

### HEATING AND VENTILATING SYSTEM

Fresh air can be used in this system for both heating and ventilation by opening the scuttle ventilator (see page 8). With the ventilator shut the system can be used for heating only and, instead of using fresh air, recirculates the air already inside the car.

Fresh air from the forward facing scuttle ventilator is fed to a Heating / Ventilating Set, comprising a booster and a separate heater unit, and then via a distributing duct or baffle into the car near the driver's and front passenger's feet, and also via flexible pipes to the windscreen nozzles. The blower and heater units are controlled by two quadrant type controls marked "DEMIST & DEFROST" and "VENTILATION" respectively, together with a pull-push "ON/OFF" switch on the facia panel for the electrically driven centrifugal blower, these controls are located as shown in Figs. 2 and 39. The blower switch will only operate when the ignition is switched on.

#### Notes on Operation of System.

If it is **desired not to use the system** either as a heater or a ventilator, then blower switch should be put to "OFF" position and both control knobs moved as far as possible to "OFF" position—no appreciable quantity of air will then enter the car via this system.

If it is desired to use ventilating air only then the ventilation control knob should be moved to "COLD" position—the blower should only be switched on if it is desired to boost the ventilating air supply.

Above speeds of about 25-30 m.p.h. the air supply due to vehicle movement and the forward facing fresh air intake will probably produce all the air required—at lower speeds or if it is desired to boost the supply, the blower should be switched on.

If heating is required, either on the screen or in the vehicle generally, the appropriate control knob should be moved accordingly. The Demist position gives cold air on screen and the Defrost position gives hot air on screen. The degree of heating required can be controlled to suit individual preference according to the position selected for the control knobs.

For completely **unheated** air, however, control knob must be in the "DEMIST" and "COLD" positions respectively.

If it is desired to use all the air supply for the screen with none to the passengers' feet, or vice versa, this can be done by moving the appropriate knob to the desired position and moving the other knob to the "OFF" position.

## HEATER—Instructions

### **Drainage of System in Cold Weather**

In cold weather it is desirable to use anti-freeze in the cooling system to prevent damage—if this is not done however, and the system is drained instead, the heater will drain satisfactorily provided the quadrant controls are put in the "HOT" position during draining, so that the manually operated water valve is fully open.

## SERVICE

Any Triumph owner who experiences any doubt or difficulty with the performance of his car is invited to communicate with his agent, and **it is particularly desirable to seek the advice of one of our agents in the locality, preferably the supplier of the vehicle, who, being thoroughly conversant with all our models, will rapidly diagnose the symptoms of any peculiarity and be able to advise a remedy.**

Considerable care is exercised in the choice of all Triumph Agents, particularly to ensure that they are suitably equipped to give after-sales service.

## MAINTENANCE

All our principal Agents hold comprehensive stocks of spares for current models.

**Every TRIUMPH chassis has a distinguishing number. This is known as the car commission number, and should always be quoted, together with the engine number when spares or renewals are ordered.**

When ordering spare parts it is always advisable to give, in addition to the car commission number, a brief description of the part required.

# INDEX

	Page
Air Cleaner	23
Anti-freeze mixtures	14
Battery	58
Belt tightness	58
Bodywork	36
Bolts and nuts (loose)	56
Brakes	52
Brake Adjustment	53
Brake Cable lubrication	26
Brake reservoir fluid level	27
Brake Shoe replacement	53
Bulb replacements	
Brake light	62
Direction indicators	63
Ignition warning light	63
Interior light	63
Head light	62
Number plate illuminator	63
Panel light	63
Parking light	62
Tail lamps	63
Carburettor	47
Choke control	8
Clock	10
Clutch	51
Clutch adjustment	51
Clutch shaft lubrication	24
Cooling system	14
Controls	7
Controls—Radio and heater	66
Control box	59
Cut-out	58
Cylinder head nut tightening	43
Decarbonising and valve grinding	50
Dimensions of car	4
Direction indicators	63
Direction indicator lubrication	32
Door adjustment	37
Don'ts for beginners	back of Oiling Chart
Draining the cooling system	14
Draining the engine, gearbox and rear axle oil	20
Driving the car	17
Dynamo	58
Dynamo lubrication	23
Electrical component specification	64
Electrical system	57
Battery	58
Control box	59
Dynamo and cut-out	58
Fuses	59
Horn	64
Ignition and distributor	57
Lamps	60
Misfiring	57
Starter motor	59
Wiring diagram	back of Oiling Chart

INDEX—continued

	Page
Engine lubrication .....	21
Engines—new .....	16
Engine oil pressure .....	10
Engine oil level .....	11
Engine, desirable speed limits .....	6
Fan bearing lubrication .....	23
Filling the cooling system .....	14
Firing order .....	4
Flushing oils .....	20
Foreword .....	3
Fuel capacity .....	4
Fuel pump .....	49
Fuses .....	59
Gearbox oil level .....	24
Gear changing .....	17
Gear change mechanism, lubrication .....	31
Gear positions .....	8
General upkeep .....	19
Grease gun .....	19
Head lamps .....	60
Aligning .....	61
Bulb replacement .....	62
Heater controls .....	66
Horns .....	64
Hydraulic dampers, lubrication .....	31
Hydraulic dampers, fitting .....	56
Ignition .....	57
Ignition distributor .....	57
Ignition timing .....	44
Instruments .....	10
Instrument panel lights .....	63
Interior lamp .....	63
Jack .....	35
Licence data .....	4
Lubrication .....	19
Accelerator controls .....	32
Air cleaner .....	23
Brake cables (hand) .....	26
Brake compensator .....	27
Brake reservoir .....	27
Chart .....	75 and 76 and insert
Clutch shaft .....	24
Controls .....	32
Direction indicators .....	32
Door locks .....	32
Draining .....	20
Dynamo .....	23
Engine .....	21
Fan .....	23
Front suspension .....	28
Gearbox .....	24
Gear change mechanism .....	31
Grease gun .....	19
Hinges, etc. .....	32
Hydraulic dampers .....	31



INDEX—*continued*

	Page
Lubrication— <i>cont.</i>	
Ignition distributor .....	22
Pedal bearing .....	24
Propeller shaft .....	30
Rear axle .....	25
Road springs .....	30
Starter motor .....	23
Steering .....	31
Water pump .....	23
Wheel hubs .....	28
Windscreen wiper motor .....	32
Maintenance .....	69
Management of car .....	7
Misfiring .....	57
Nave plate removal .....	30
Oil capacities .....	4
Parking lights (front) .....	63
Pedal bearing lubrication .....	24
Propeller shaft lubrication .....	30
Radio controls .....	65
Rear axle lubrication .....	25
Regular inspection .....	11
Road speed data .....	5
Running adjustments .....	43
Brakes .....	52
Clutch .....	51
Engine .....	43
Hydraulic dampers .....	56
Loose bolts and nuts .....	56
Scuttle ventilator .....	8
Seat adjustment (front) .....	37
Service .....	69
Spare wheel .....	37
Sparking plugs .....	46
Specification .....	4
Springs, road—rear .....	30
Starter motor .....	59
Starter motor lubrication .....	23
Starting the engine .....	12
Steering lubrication .....	31
Suspension lubrication—front .....	28
Tail and brake lamps .....	63
Tools .....	38
Tyres—care of .....	33
Tyre pressures .....	33
Valve grinding .....	50
Valve-tappet clearances .....	5
Valve timing .....	5
Water pump lubrication .....	23
Water capacity of cooling system .....	4
Weight of car..... .....	5
Wheel alignment (track) .....	34
Wheel hub lubrication .....	28
Windscreen wiper switch .....	9
Windscreen wiper lubrication .....	32

## INDEX TO ILLUSTRATIONS

	Fig.	Page
Brakes		
Bleeding the brakes .....	34	54
Master cylinder .....	12	27
Shoe assembly—Front .....	32	52
Rear .....	33	52
Bonnet, view under .....	5	11
Carburettor .....	30	48
Chassis .....	40	Chart
Chassis—rear view .....	11	26
Clutch adjustment .....	31	51
Controls, switches and instruments .....	2	7
Cylinder head nut tightening .....	26	43
Direction indicators—Bulb removal .....		
Lubrication .....	38	63
Lubrication .....	18	32
Engine—Cross section .....		
Longitudinal section .....	24	41
Longitudinal section .....	23	38&39
Front suspension .....	14	29
Gearbox oil filler .....	10	25
Gear change mechanism .....	17	31
Gear change selector rod bushes .....	9	24
Gear positions—Right hand drive .....	3	8
Left hand drive .....	4	8
Head lamps		
Adjusting alignment .....	36	61
Correctly aligned .....	35	60
Light unit .....	37	62
Heater controls .....	39	65
Hub lubrication—Front .....		
Rear .....	13	28
Rear .....	15	30
Ignition distributor .....	6	22
Ignition leads .....	28	45
Jacking the car .....	20	35
Lubrication chart .....	40	end of book
Nave plate removal .....	16	30

**INDEX TO ILLUSTRATIONS—continued**

	Fig.	Page
Oil bath air cleaner .....	8	23
Pedal bearing .....	9	24
Radio and heater controls .....	39	65
Rear axle section .....	25	42
Rear axle .....	11	26
Spare wheel removal .....	21 and 22	37
Sparking plug, before and after cleaning .....	29	46
Timing diagram .....	1	5
Triumph Mayflower .....	—	2
Tyre tread examination .....	19	33
Valve timing diagram .....	1	5
Valve-tappet clearance .....	27	44
Water pump lubrication .....	7	23
Wiring diagram .....	Back of lubrication chart	

# RECOMMENDED LUBRICANTS — OVERSEAS

COMPONENT	SHELL	ESSO	DUCKHAM'S	VACUUM	WAKEFIELD	ENERGOL
<b>ENGINE</b>						
Air Temp. °F. .... Over 70° .....	Shell X-100, S.A.E. 40 or Double Extra	Essolube 40	Duckham's NOL "Forty"	Mobiloil "AF"	Castrol XXL	Energol Motor Oil S.A.E. 40
40° to 70° .....	Shell X-100, S.A.E. 30 or Double Shell	Essolube 30	Duckham's NOL "Thirty"	Mobiloil "A"	Castrol XL	Energol Motor Oil S.A.E. 30
10° to 40° .....	Shell X-100, S.A.E. 20 or Single Shell	Essolube 20	Duckham's NOL "Twenty"	Mobiloil Arctic	Castrolite	Energol Motor Oil S.A.E. 20W
-10° to 10° .....	Shell X-100, S.A.E. 10 or Silver Shell	Essolube 10	Duckham's NOL "Ten"	Mobiloil Arctic Special	Castrol Z	Energol Motor Oil S.A.E. 10W
<b>Upper Cylinder Lubricant</b> .....	Shell Donax U	Esso Upper Motor Lubricant	Duckham's Adcoids	Mobil Upperlube	Castrollo	Energol U.C.L.
<b>Flushing Oils</b> .....	Shell Donax F	Esso Flushing Oil	Duckham's NOL "Ten"	Mobiloil Arctic Special	Wakefield Flushing Oil	Energol Flushing Oil
Over 70° .....	Shell X-100 S.A.E. 50	Essolube 50	Duckham's NOL "Fifty"	Mobiloil BB	Castrol XXL	Energol Motor Oil S.A.E. 40
<b>GEARBOX</b>						
Over 10° to 70° .....	Shell X-100, S.A.E. 30 or Double Shell	Essolube 30	Duckham's NOL "Thirty"	Mobiloil A	Castrol XL	Energol Motor Oil S.A.E. 30
Below 10° .....	Shell X-100, S.A.E. 20 or Single Shell	Essolube 20	Duckham's NOL "Twenty"	Mobiloil Arctic	Castrolite	Energol Motor Oil S.A.E. 20W
<b>STEERING GEARBOX</b> .....	Shell Spirax 90EP	Esso XP Compound 90	Duckham's Hypoid 90	Mobilube GX 90	Castrol Hypoy Gear Oil	Energol Transmission Oil. EP-S.A.E. 90
<b>REAR AXLE</b>						
Over 10° .....	Shell Spirax 80EP	Esso XP Compound 80	Duckham's Hypoid 80	Mobilube GX 80	Castrol Hypoy 80 Gear Oil	Energol Transmission Oil. EP-S.A.E. 80
Below 10° .....	Shell Spirax 140EP	Esso XP Compound 140	Duckham's NOL EPT 140	Mobilube GX 140	Castrol Hi-Press	Energol Transmission Oil. EP-S.A.E. 140
<b>PROPELLER SHAFT JOINTS</b>						
<b>WHEEL HUBS and ENGINE WATER PUMP</b> (Hand Gun)	Shell Retinax A	Esso Bearing Grease	Duckham's H.B.B.	Mobilgrease No. 5	Castrol Heavy	Energol C.3.
<b>CHASSIS. Grease Nipples</b> (Hand or Pressure Gun)		Esso Chassis Grease	Duckham's Laminoid Soft	Mobilgrease No. 4	Castrol CL	Energol C.3.
<b>OIL Points (Oil can)</b> Body and Chassis	Shell X-100, S.A.E. 20 or Single Shell	Esso Handy Oil	Duckham's NOL "Twenty"	Mobiloil Arctic	Castrolite	Energol Motor Oil S.A.E. 20W
<b>REAR ROAD SPRINGS</b> .....	Shell Donax P	Esso Penetrating Oil	Duckham's Laminoid Liquid	Mobilgrease No. 2	Castrol Penetrating Oil	Energol Penetrating Oil
<b>ALTERNATIVELY USE REAR AXLE OR ENGINE OIL</b>						
<b>BRAKE CABLES</b> .....	Shell Retinax C	Esso Graphite Grease	Duckham's Keenol KG.16	Mobilgrease No. 4	Castrol Cable Grease	Energol C.3.G.
<b>BRAKE RESERVOIR</b> .....	LOCKHEED ORANGE BRAKE FLUID		OR LOCKHEED No. 5 BRAKE FLUID			
			OR LOCKHEED AMERICAN BRAKE FLUID No. 21			

# RECOMMENDED LUBRICANTS — BRITISH ISLES

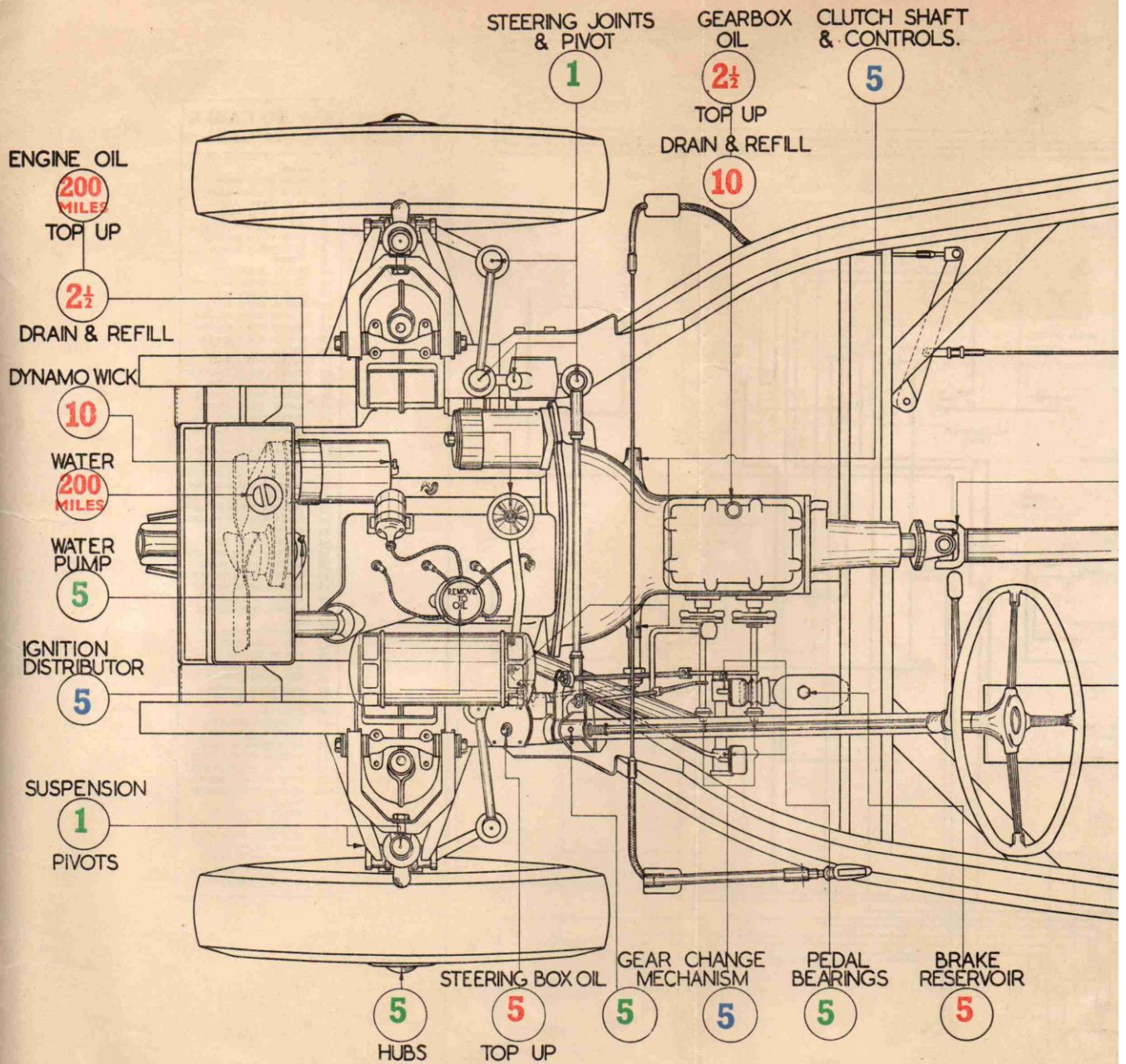
COMPONENT	SHELL	Esso	DUCKHAM'S	VACUUM	WAKEFIELD	PRICE'S
<b>ENGINE</b> Summer .....	Double Shell	Essolube 30	Duckham's NOL "Thirty"	Mobiloil A	Castrol XL	Energol S.A.E. 30
	Single Shell	Essolube 20	Duckham's NOL "Twenty"	Mobiloil Arctic	Castrolite	Energol S.A.E. 20W
Winter .....	Shell Donax U	Essomix	Duckham's Adcoids	Mobil Upperlube	Castrollo	Energol U.C.L.
<b>Upper Cylinder Lubricant</b> .....	Shell Flushing Oil	Esso Flushing Oil	Duckham's NOL "Ten"	Mobil Engine Flushing Oil	Wakefield Flushing Oil	Energol Flushing Oil
<b>Flushing Oils</b> .....	Double Shell	Essolube 30	Duckham's NOL "Thirty"	Mobiloil A	Castrol XL	Energol S.A.E. 30
<b>GEARBOX</b> .....	Shell Spirax 90 E.P.	Esso Expee Compound 90	Duckham's Hypoid 90	Mobilube G.X. 90	Castrol Hypoy Gear Oil	Energol Transm'n Oil EP. S.A.E. 90
<b>REAR AXLE STEERING GEARBOX</b> .....	Shell Spirax 140 E.P.	Esso Expee Compound 140	Duckham's NOL EPT 140	Mobilube G.X. 140	Castrol Hi-Press	Energol Transm'n Oil EP. S.A.E. 140
<b>PROPELLER SHAFT JOINTS</b> .....	Shell Retinax A	Esso Grease	Duckham's H.B.B.	Mobil Hub Grease	Castrolase Heavy	Energolase C3
<b>WHEEL HUBS and ENGINE WATER PUMP (Hand Gun)</b> .....	Single Shell	Essolube 20	Duckham's NOL "Twenty"	Mobil Handy Oil	Castrolite	Energol S.A.E. 20W
<b>CHASSIS. Grease Nipples (Hand or Pressure Gun)</b> .....	Shell Donax P	Esso Penetrating Oil	Duckham's Laminoid Soft	Mobil Spring Oil	Castrol Penetrating Oil	Energol Penetrating Oil
<b>Oil Points (Oil can) Body and Chassis</b> .....		ALTERNATIVELY USE REAR AXLE OR ENGINE OIL				
<b>REAR ROAD SPRINGS</b> .....		Esso Graphite Grease	Duckham's Keenol KG 16	Mobil Graphited Grease	Castrolase Brake Cable Grease	Energolase C3G.
<b>BRAKE CABLES</b> .....	Shell Retinax C					
<b>BRAKE RESERVOIR</b> .....		LOCKHEED ORANGE BRAKE FLUID				

## A FEW DON'TS FOR BEGINNERS

- DON'T** neglect to read this Handbook and if any point is not clear ask for further instructions from your Service Agent.
- DON'T** run your engine for any considerable time whilst in an enclosed space, such as a garage with the doors closed. The dangers of carbon-monoxide poisoning from the exhaust gases are very real under such circumstances.
- DON'T** neglect to pay regular attention to lubrication and always use a good lubricant as recommended.
- DON'T** rev. the engine immediately after starting up, but give the oil time to circulate, see page 13.
- DON'T** continue to run the engine if the oil pressure gauge indicates an abnormally low pressure or if the needle fluctuates unduly, but examine the engine to find the cause. This may be lack of oil.
- DON'T** run the engine with too little water in the radiator.
- DON'T** allow the engine to run too fast during the first 500 miles, see page 16.
- DON'T** forget to make full use of the gearbox when climbing hills. Don't change "up" too soon.
- DON'T** apply your brakes suddenly except in emergency, it is bad for the passengers, the tyres, the car as a whole and the driver behind who may not be able to pull up as quickly as you.
- DON'T** forget that rapid cornering not only is uncomfortable for your passengers, but also causes great strains on the chassis and high loads on the wheel bearings, in addition to excessive tyre wear.
- DON'T** continue to run the car if you feel that there is some slight defect or falling off in power. Investigate this and if you cannot trace the trouble get in touch with our Agent.
- DON'T** neglect your tyre pressures and examine the covers for flints as well—this will save you money, see page 33.
- DON'T** omit to readjust the alignment of your head lamps if they have become incorrectly adjusted. You will get more pleasure when driving at night and will not inconvenience other road users, see page 62.
- DON'T** forget to switch off the ignition and put the hand brake on when the car is at rest.
- DON'T** neglect the level of the acid in the battery—which is quite accessible by raising the bonnet.
- DON'T** forget to engage a lower gear when about to descend a very steep hill.
- DON'T** omit to read "The Highway Code," a copy of which can be obtained from the local licensing authority.

**Fig. 40. LUBRICATION CHART—Fold Out.**

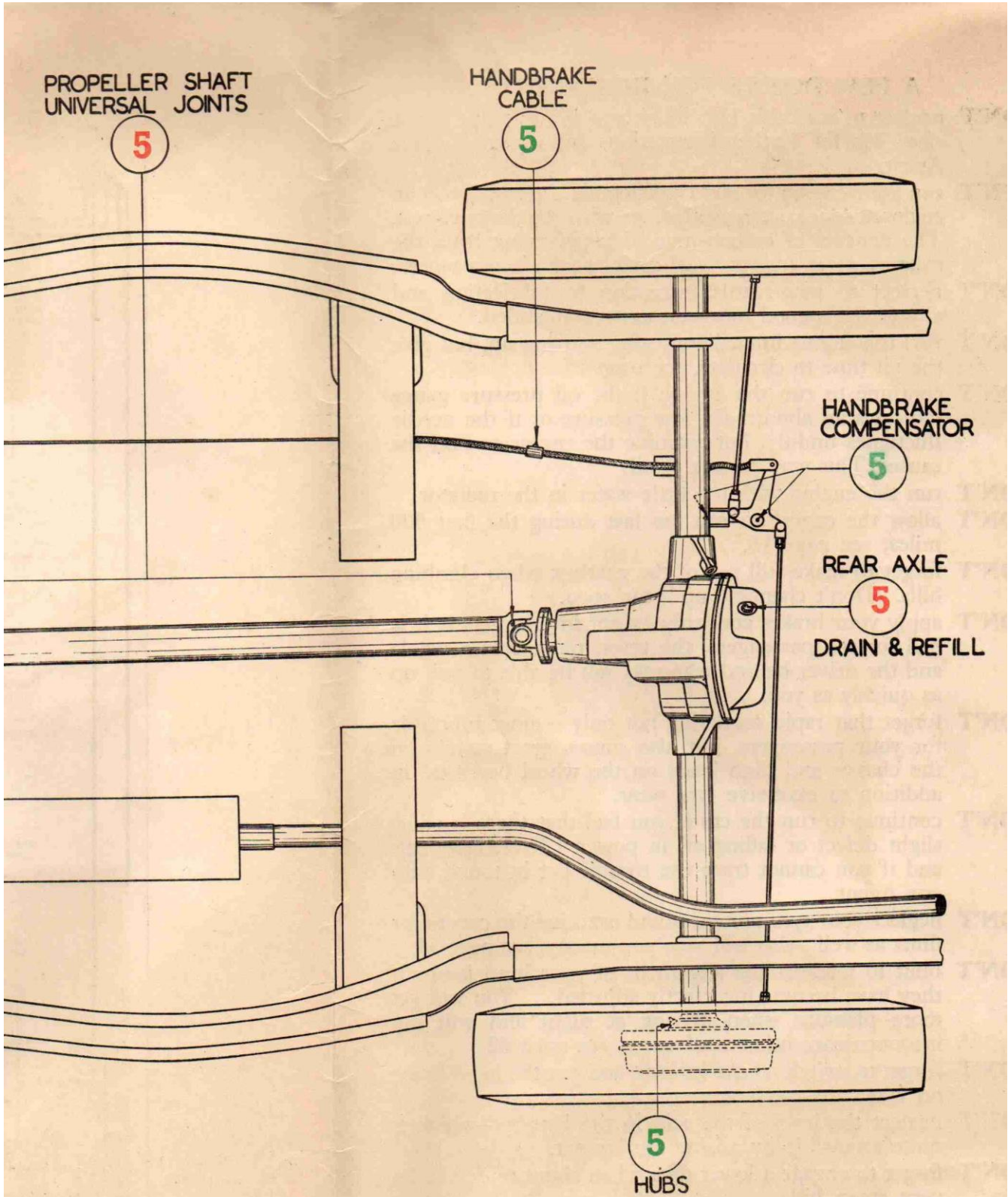
ITEM	DETAILS	PAGE REF.	MILEAGE INTERVAL IN THOUSANDS
Front Axle Swivels ..... (4 nipples)	THREE OR FOUR STROKES <b>GREASE GUN</b>	28	1
Lower Wishbone Outer Shackle Pins ..... (4 nipples)		28	1
Steering Tie-rods ..... (6 nipples)		31	1
“ Slave ” Lever ..... (1 nipple)		31	1
Handbrake Cable ..... (1 nipple)		26	5
Compensator ..... (2 nipples)		27	5
Pedal Bearings ..... (2 nipples)		24	5
Engine Water Pump and Fan (1 nipple)		23	5
Wheel Hubs ..... (4 nipples)		FIVE STROKES 28	5
Gear Change Selector Box (1 nipple)		OIL AS RECOMMENDED <b>OIL CAN</b>	31
Mechanism Frame Bearings .....	31		5
Ignition Cam and Spindle Bearings .....	22		5
Distributor Automatic Advance Mech'sm .....	22		5
Accelerator and Handbrake Lever .....	32		5
Clutch Shaft Bearing .....	24		5
Controls (Clutch, etc.) .....	32		5
Doors, Locks, Hinges and Bonnet Catches	32		5
Direction Indicators .....	32		5
Engine Sump	TOP UP OIL LEVEL		11
	DRAIN & REFILL WITH NEW OIL	21	2½
Gearbox	TOP UP OIL LEVEL	24	2½
	DRAIN AND REFILL WITH NEW OIL	24	10
Rear Axle .....		25	5
Steering Box .....	TOP UP OIL LEVEL	31	5
Propeller Shaft Universal Joints (2 nipples)	THREE OR FOUR STROKES WITH OIL GUN	30	5
Road Springs .....	CLEAN AND OIL	30	5
Air Cleaner .....	OIL AS RECOMMENDED	23	5
Dynamo Wick .....	GREASE AS RECOMMENDED	23	10
Hydraulic Brake Reservoir .....	TOP UP FLUID LEVEL	27	5



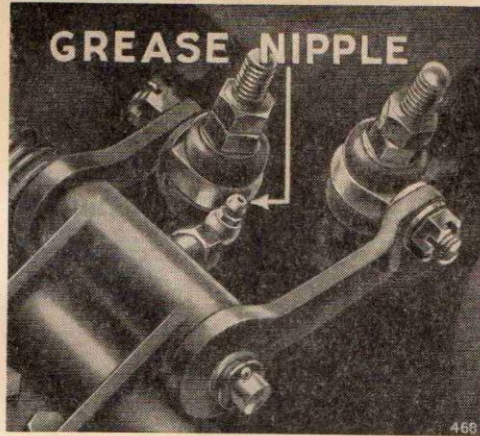
## CHASSIS

The Chart is laid out to simplify lubrication, the items requiring similar attention turn to the page referred to in the respective column. The coloured numerals

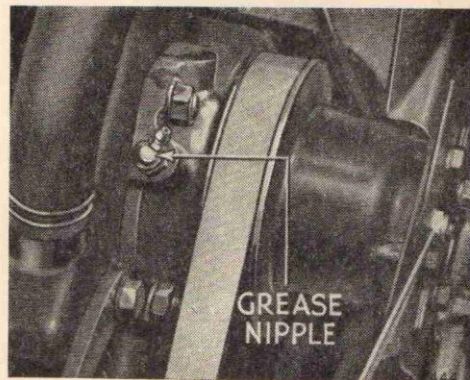




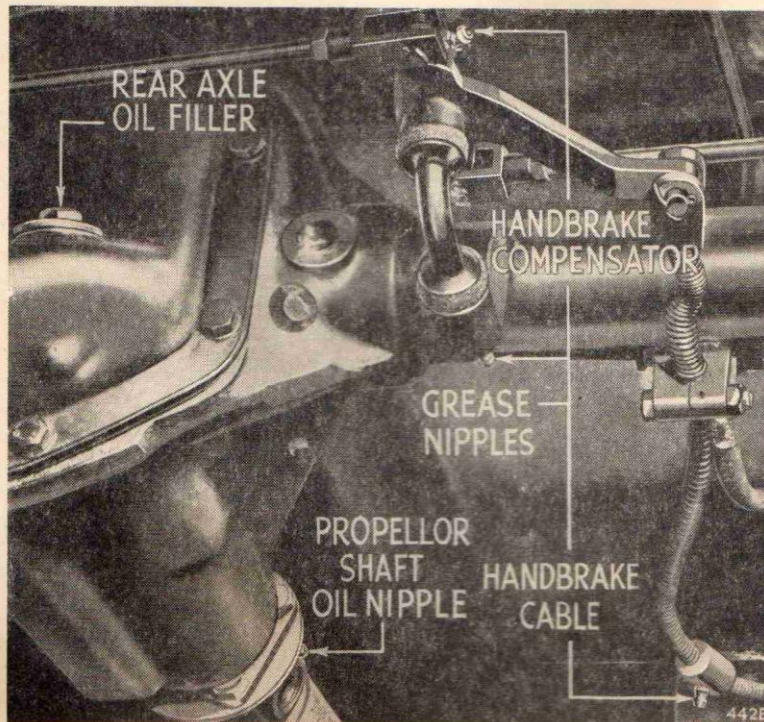
tion being grouped in distinctive colours. If in doubt, als indicate the attention periods in thousands of miles.



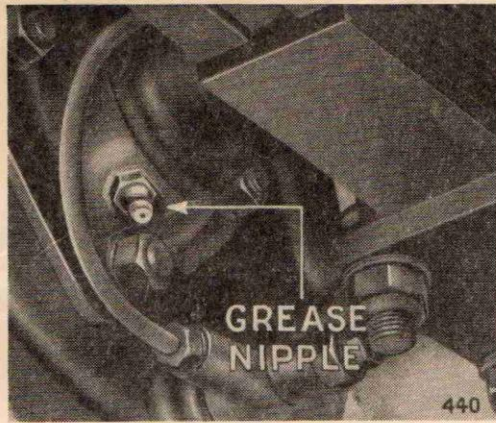
GEAR CHANGE MECHANISM



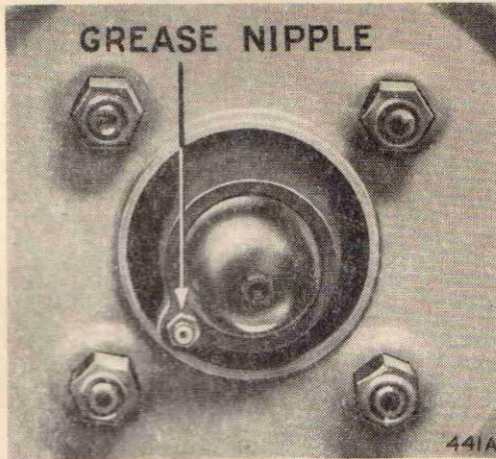
WATER PUMP



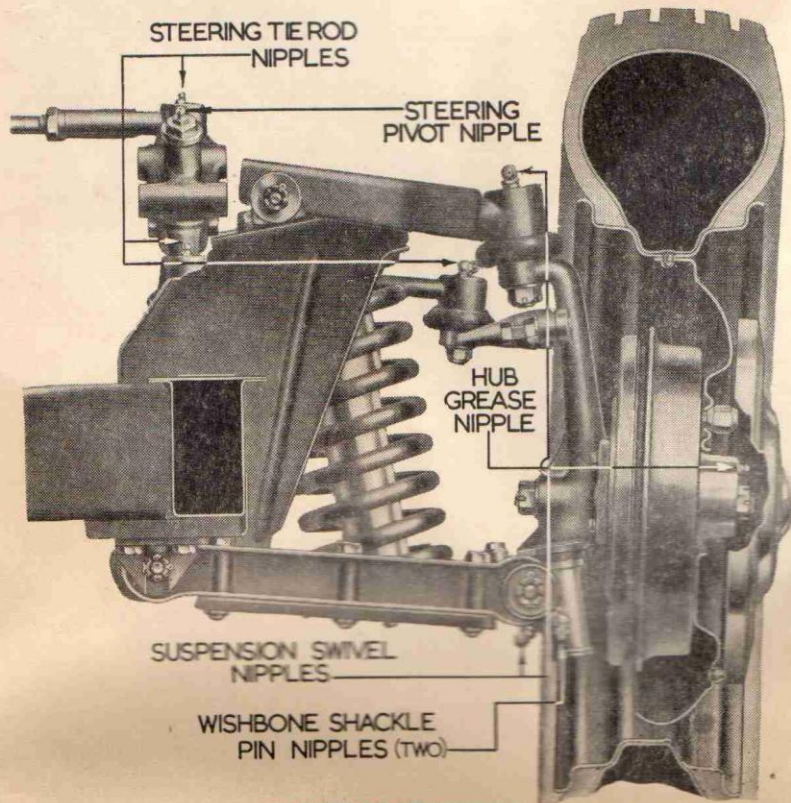
REAR OF CHASSIS



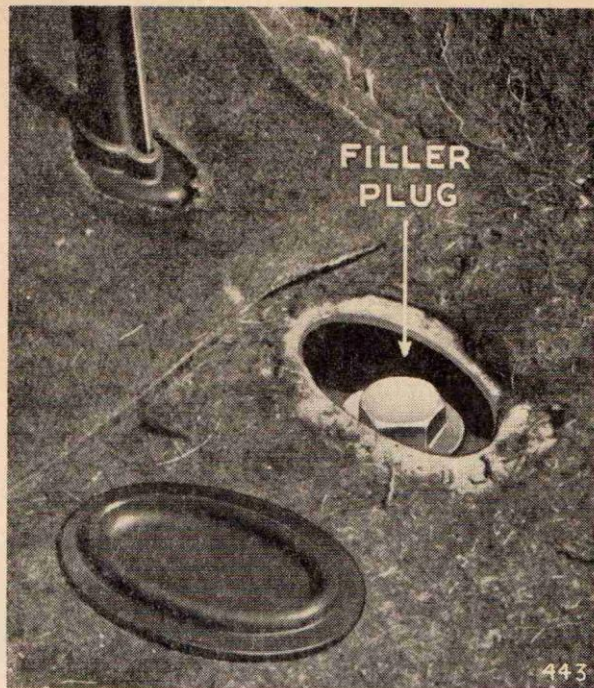
REAR HUB LUBRICATOR



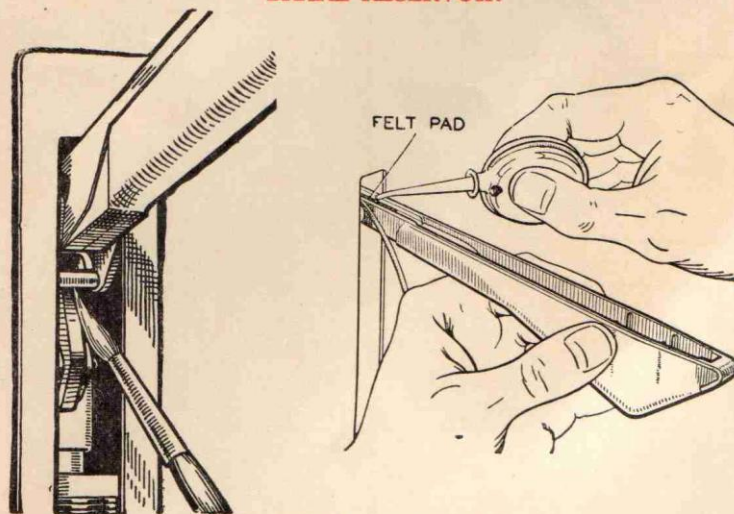
FRONT HUB LUBRICATOR



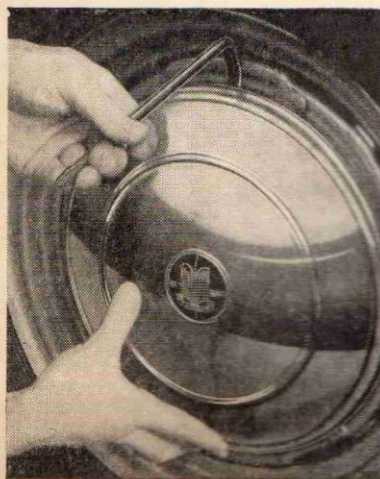
FRONT SUSPENSION



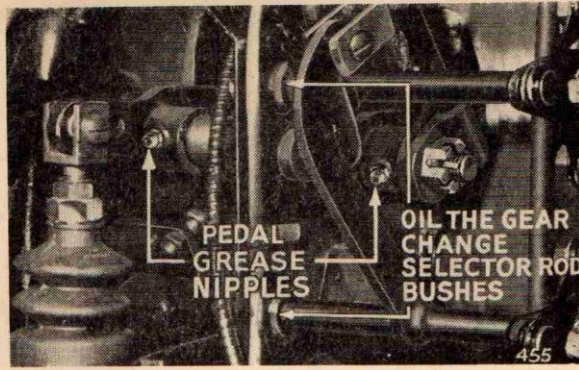
**BRAKE RESERVOIR**



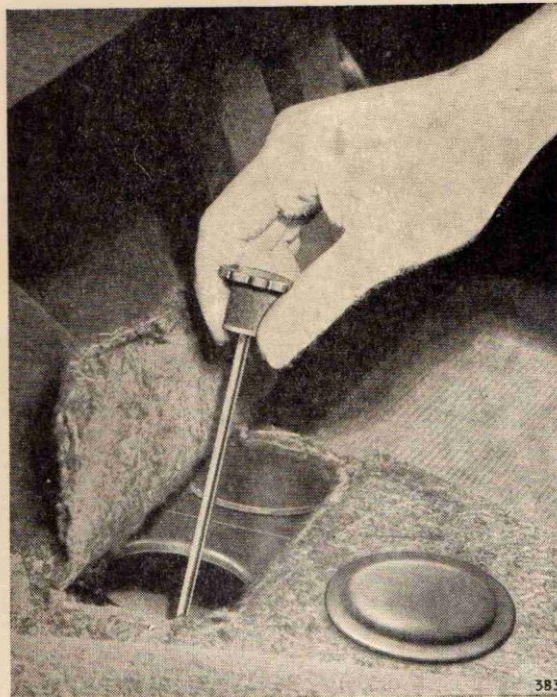
**DIRECTION INDICATORS**



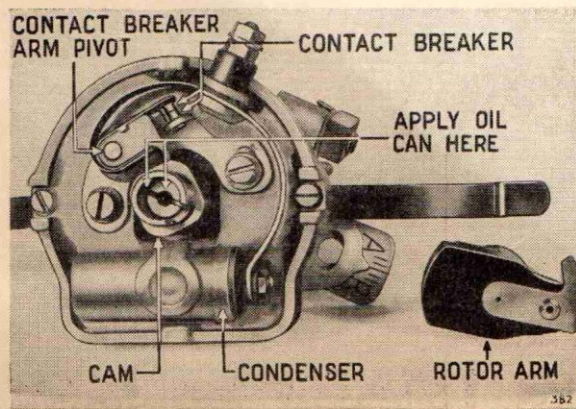
**NAVE PLATE REMOVAL**



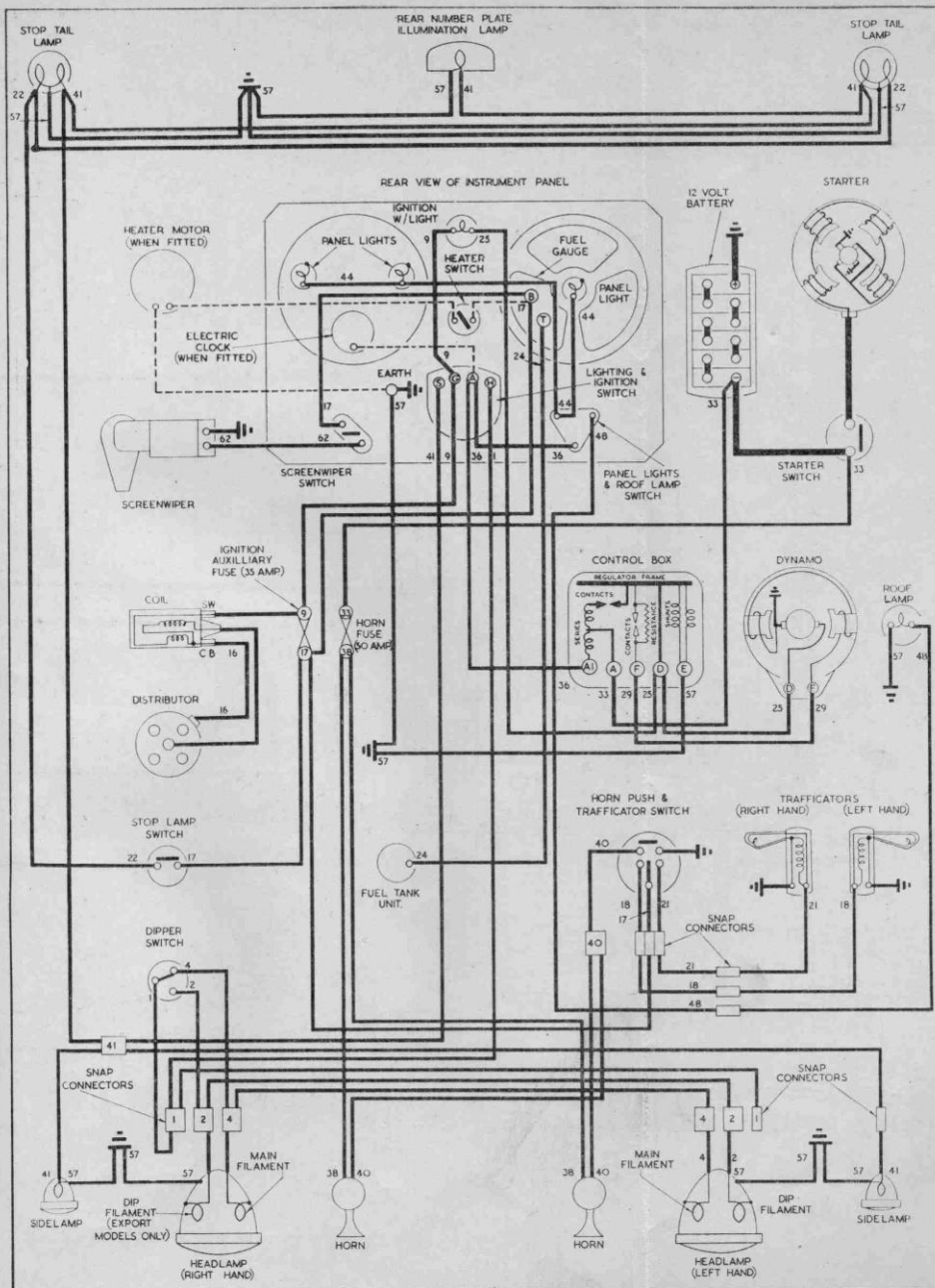
PEDAL BEARINGS



GEARBOX OIL FILLER



IGNITION DISTRIBUTOR



**KEY TO CABLE COLOURS**

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

Fig. 42.

Wiring Diagram.