

Amendment to Javelin Instruction Book

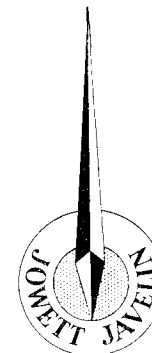
Page 16 Engine oil and gearbox oil of SAE 30 viscosity may safely be used throughout the year. For overseas Tropical use, i.e. with ambient air temperatures exceeding 90 F., an increase in viscosity by 1 Grade to SAE 40 is recommended. **Only the recommended brands should be used.**

Page 18 Item (P) should read: Change oil filter element every 5000 miles.

Page 26 The metal plate originally fitted to the cylinder head has now been deleted together with the plastic plug cover and rubber sealing ring. The new type plug cover consists of a flat rubber cover, fitted over the plug cavity which allows the top portion of the plug to project. This portion of the plug is covered by a Lodge plug cover, push on type. A similar method for ignition testing can be employed to that shown in Fig. 12.

Page 26 Copper-asbestos washer should read Copper washer.

Date of issue March 1953



OWNER'S INSTRUCTION BOOK

for the operation and maintenance

of the 1½-litre 4-cylinder

JAVELIN

STANDARD AND DE LUXE MODELS

Issued May 1952

A copy of this book issued free with every car

Extra copies may be obtained from Main Agents for ~~three shillings~~ each, net

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JOWETT CARS LIMITED

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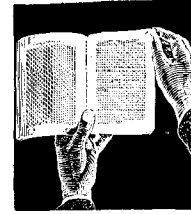
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Foreword



In preparing this instruction book, it has been our aim to present in a simple and concise manner, the information necessary for the operation, care and general maintenance of the 1½-litre JOWETT JAVELIN car. This vehicle will give you many years of enjoyable motoring if it is driven with reasonable care, and is properly and regularly lubricated and serviced. Hints and instructions to this end will be found in the ensuing pages.

The owner is recommended to become thoroughly acquainted with the construction and mechanical details of the car, and by reading this book to know where all points requiring lubrication are located. Only in this way can the servicing of them, at the regular recommended mileages, be attended to rapidly and efficiently.

For the more detailed repair and overhaul operations owners are strongly recommended to take the car to their nearest Jowett Agent. If, however, they wish to do certain of these themselves, full information concerning them will be found in the JAVELIN Maintenance Manual, copies of which may be purchased through any Main Agent.

Registration and Servicing Data

Engine	Bore	2.85 (72.5 mm.)
Dimensions	Stroke	3.54 in. (90 mm.)
	Number of cylinders ..	4
	Piston displacement ..	90.9 cu. in. (1486 c.c.)
	R.A.C. and S.A.E. Rating ..	13.05
	Firing Order	1, 4, 2, 3
	Brake Horse-power	50, at 4100 r.p.m.
Car	Overall Length	14 ft. 0 in. (4.265 metres)
Dimensions	Overall Width	5 ft. 0½ in. (1.536 metres)
& Weights	Overall Height (unladen) ..	5 ft. 2½ in. (1.59 metres)
	Wheelbase	8 ft. 6 in. (2.59 metres)
	Track—Front	4 ft. 4 in. (1.320 metres)
	.. —Rear	4 ft. 2 in. (1.270 metres)
	Ground Clearance (laden) ..	7 in. (17.8 cms.)
	Shipping Weight	2200 lbs. (995 Kgs.)
	Kerb Weight	2290 lbs. (1038 Kgs.)
Capacities	Fuel Tank	8 gals. (36.2 litres)
	Cooling System	2 gals. (9.1 litres)
	Engine Sump	10 pints (5.7 litres)
	Gearbox	1 pint (.57 litres)
	Rear Axle	2½ pints (1.27 litres)
Tyre Sizes	5.25×16	26 lbs./sq. in., front and rear
& Pressures		(1.825 Kgs./sq. cm.)
Sparking Plugs	Champion type L.10. Gap set to .020-.025 in.	
Carburettors	Zenith type 30 VM5. Fixed choke 23 mm. diameter. Main Jet 90. Slow-running Jet 45. Compensating Jet 50.	
Distributor	Contact Breaker Point Gap set to .014-.016 in. Type DM2 distributor, .010 to .012 type DKYH4A distributor. Ignition set at T.D.C. to ¾ in. after T.D.C. on flywheel.	
Valve Tappets	Cast iron with bronze insert. Push rods adjustable for length. Settings must be made with engine cold:	
	Inlet .002; .0508 mm. Exhaust .006; .1524 mm.	
Lamp Bulbs	Headlamps RHD ..	Home Models: Lucas No. 354
(Standard)		Transverse D.F. Prefocus 12 V. 42/36 W.
	.. RHD ..	Export Models: Lucas No. 354
		Transverse D.F. Prefocus 12 V. 42/36 W.
	.. LHD ..	Export Models: Lucas No. 301
		D.F. Prefocus 12 V. 36/36 W.
	.. LHD ..	Export to Europe: Lucas No. 360
		Duplo Prefocus 12 V. 45/35 W.
	Side Lamp	Lucas No. 989 12 V. 6 W. Miniature Bayonet Cap

Stop Tail Lamp	..	..	Lucas No. 361 12 V. 6/18 W. D.C. Indexed Bayonet Cap
Number Plate Lamp			Lucas No. 989 12 V. 6 W., S.C. Miniature Bayonet Cap
Instrument Panel	..		Lucas No. 987 12 V. 2.2 W., Screw Cap, 11 mm. Envelope
Direction Indicators			Lucas No. 256 12 V. 3 W., Festoon type
Ignition Warning Lamp	..	..	Lucas No. 987 12 V. 2.2 W., Screw Cap 11 mm. Envelope
Headlamps RHD	..		Home Models: Lucas No. 354 Transverse D.F. Prefocus 12 V. 42/36 W.
„ RHD	..		Export Models: Lucas No. 354 Transverse D.F. Prefocus 12 V. 42/36 W.
„ LHD	..		Export Models: Lucas No. 301 D.F. Prefocus 12 V. 36/36 W.
„ LHD	..		Export to Europe: Lucas No. 360 Duplo Prefocus 12 V. 45/35 W.
Side Lamp	..	..	Lucas No. 989 12 V. 6 W. Miniature Bayonet Cap
Stop Tail Lamp	..		Lucas 12 V. 6/18 W. D.C. Indexed Bayonet Cap
Number Plate	..		One Lucas No. 221
Illuminating and Reverse Lamp	..		Transverse Single Centre Contact 12 V. 18 W.
			Two Lucas No. 989 Miniature Centre Contact 12 V. 6 W.
Instrument Panel	..		Lucas No. 987 12 V. 2.2 W., Screw Cap, 11 mm. Envelope
Direction Indicators			Lucas No. 256 12 V. 3 W. Festoon type
Boot Lamp	..	..	12 V. 6 W., Bayonet Cap
Ignition Warning Lamp	..	..	Lucas No. 987 12 V. 2.2 W., Screw Cap 11 mm. Envelope
Fog Lamp	..	..	Lucas No. 325, 12 V. 38 W.
One 12-Volt 50 amp.-hr. Lucas type GTW 9A			
Top Gear	..	..	4.875 to 1
3rd „	..	..	6.7 to 1
2nd „	..	..	10.6 to 1
1st and Reverse Gear		..	17.4 to 1
Parallel to $\frac{1}{8}$ in. toe-out (measured on line of hubs at rim diameter)			
Stamped on face on L.H. front of engine			
Stamped on plate on engine side of dashboard and on bonnet lock cross member			

Controls and Instruments



A view of the driving compartment of the car is shown in Fig. 1 (Standard Model) and Fig. 2 (De Luxe Model), which illustrates all its main controls; these may be classed as driving controls, electric and lighting controls, and instruments. A new owner should make himself thoroughly familiar with these so that he is also able to operate them automatically, even in the dark.

DRIVING CONTROLS (DE LUXE AND STANDARD)

Accelerator. The pedal is connected through a short Bowden Cable to the interconnected throttle controls.

Do not depress the pedal when starting the engine from cold.

Brake Pedal. Operates through a fully hydraulic system to all four wheels.

Clutch Pedal. Depress the pedal to disengage the drive from the engine to the gearbox. Do not rest your foot on the clutch pedal when driving, as this will cause rapid wear of the clutch and thrust race.

Gear Lever. The position of the gear lever for the four forward speeds and reverse is shown in Figs. 1 and 2. Before attempting to engage the reverse position the press button at the end of the gear lever, must be depressed.

Handbrake. The handbrake lever operates independently of the hydraulic system through the mechanical linkage to the rear wheels only.

ELECTRIC AND LIGHTING CONTROLS (STANDARD MODEL)

These are situated on the centre part of the instrument panel.

The **Ignition Switch** is in the centre of the lighting switch and is operated by the key also used for locking the car door, luggage trunk lid, and the glove box lid.

The **Lighting Switch** when turned clockwise, progressively takes up two positions: in the first the side, numberplate and tail lamps are on, and in the second the head, side, numberplate, and tail lamps are on.

The **Starter Switch** operates the engine only after the ignition is switched on.

The **Panel Light Switch** (marked P) and the **Windscreen Wiper Switch** (marked W) are rotating type switches and when turned in an anti-clockwise or clockwise direction the respective components are switched on. The panel light will not illuminate unless the side lamps are switched on and the wiper does not operate unless the ignition is switched on.

The **Trafficator Switch** raises the left or right hand direction indicator arm when moved to the left or right respectively. This switch which is not self cancelling incorporates a warning device which illuminates when either indicator is in use.

The **Carburettor Choke Control** (marked CHOKE) should be pulled out when starting the engine from cold (see page 12). The control will hold in any desired position if turned slightly left or right.

The **Bonnet Lock Control** (marked BONNET), when pulled out, unlocks the bonnet, which springs up to its second safety catch, and only by operating the lever on the underside of the bonnet at the front of the car can the bonnet be completely raised.

The **Horn Button** is in the centre of the steering wheel.

The **Dipper Switch** situated at the toeboard dips the main beam of both headlamps when depressed.

INSTRUMENTS (STANDARD MODEL)

The **Speedometer**, **Petrol Gauge**, and **Water Thermometer and Oil Pressure Gauge** are in the main panel.

The **Speedometer** is provided with a "trip" figure, which can be returned to zero by pressing and turning the control which can be found behind the panel immediately below the instrument.

The **Water Temperature Gauge** shows the temperature of the Radiator Header Tank, which is thermostatically controlled. The gauge should read about 75°C. under average conditions.

The **Ignition Warning Light** (red) which is situated in the speedometer face, glows when the ignition is switched "on" and is extinguished when the dynamo commences to charge.

The **High Beam** warning light situated between the multiple instrument and speedometer clock operates when the headlamp beam is in the "High position" and is extinguished immediately the beam is dipped.

The **Cold Air Controls** are operated by the two levers below the dash panel in each side of the bulkhead, when pushed forward they open ducts through which cool air enters the body.

INTERIOR APPOINTMENTS (STANDARD MODEL)

The front seat is adjustable for fore and aft positions, the control for this being a lifting handle just below the front edge of the seat, in the centre. The seat can be moved by lifting the handle to release the locking catch which has a number of notches giving a wide range of seating positions.

The **Roof Light** is operated by a switch incorporated in the lamp and is operative at all times.

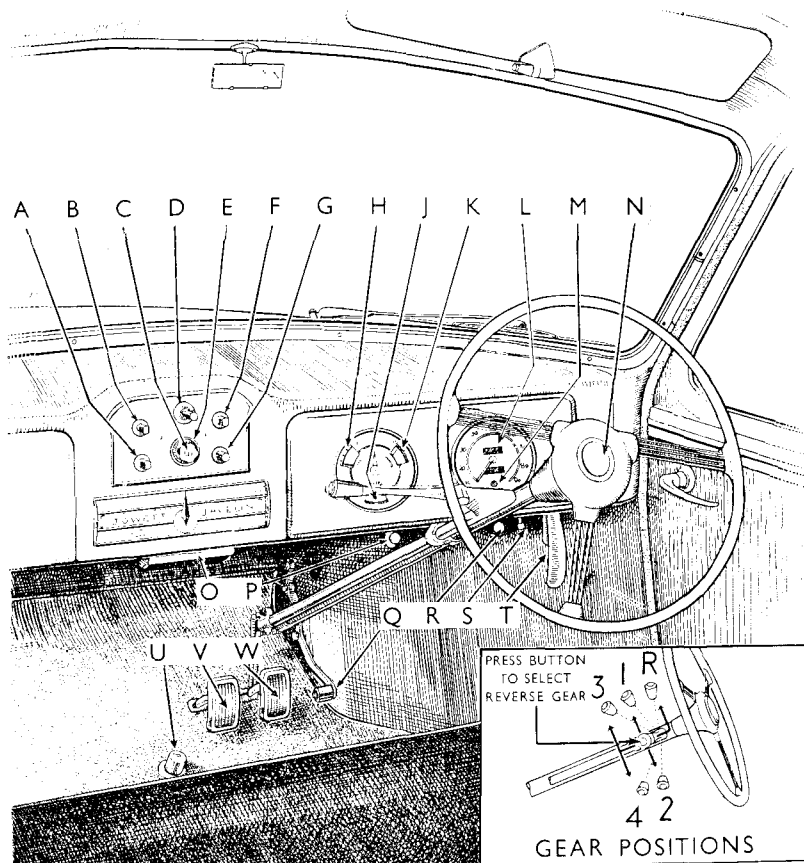


Figure 1 DRIVING CONTROLS (Standard Model)

- | | |
|------------------------------|-----------------------------|
| A Heater Switch | M Ignition Warning Light |
| B Panel Light Switch | N Horn Button |
| C Ignition Switch | O Ash Tray |
| D Direction Indicator Switch | P Bonnet Lock Control |
| E Lighting Switch | Q Accelerator |
| F Wind-screen Wiper Switch | R Carburettor Choke Control |
| G Starter Switch | S Speedometer Trip Control |
| H Oil Pressure Gauge | T Handbrake |
| J Petrol Gauge | U Dipper Switch |
| K Water Thermometer | V Clutch Pedal |
| L Speedometer | W Brake Pedal |

ELECTRIC AND LIGHTING CONTROLS (DE LUXE MODEL)

These are situated in the centre part of the instrument panel.

The **Ignition Switch** is located immediately below the starter button and heater switch and is operated by the key which is also used for locking the car door, luggage boot, glove box lid and petrol cap.

The **Starter Switch** operates the engine starter after the ignition is switched "on".

The **Heater Switch** (marked H), the **Panel Light Switch** (marked P), the **Windscreen Wiper Switch** (marked W) are of the "push-pull" type. When pulled out, the respective components are switched on. The panel lights will not illuminate unless the side or head lamps are switched on.

The **Trafficator Switch** raises the left or right hand direction indicator respectively; these revert to the central position automatically after a lapse of about a quarter of a minute.

The **Lighting Switch** when turned in a clockwise direction progressively takes up three positions. The first (S) operates the side, number plate and tail lamps. The second (H) operates the head, side, number plate and tail lamps. The third "F" operates the fog lamp, side, number plate and tail lamps and the headlamps are extinguished.

The **Luggage Boot** light is operated by a mercury switch which automatically switches "On" when the luggage boot is raised and "Off" when the luggage boot is lowered.

The **Inspection Lamp Socket** is situated on the floor beneath the front seat.

The **Reverse Lamp Switch** is positioned on the gearbox and is operated automatically when the gearchange lever is moved into reverse position.

The **Carburettor Choke Control** (marked CHOKE) should be pulled out when starting the engine from cold (see page 12). The control will hold in any position desired if turned to the left or right.

The **Bonnet Lock Control** (marked BONNET), when pulled out, unlocks the bonnet, which springs up to its second safety catch, and only by operating the lever on the underside of the bonnet lock at the front of the car, can the bonnet be completely raised.

The **Horn Button** is in the centre of the steering wheel.

The **Dipper Switch**, when depressed, dips the main beams of both headlamps.

INSTRUMENTS (DE LUXE MODEL)

The **Speedometer**, **Time Clock**, **Petrol Gauge**, **Ammeter**, **Oil Pressure Gauge**, and **Water Temperature Gauge** are in the panel immediately in front of the driver.

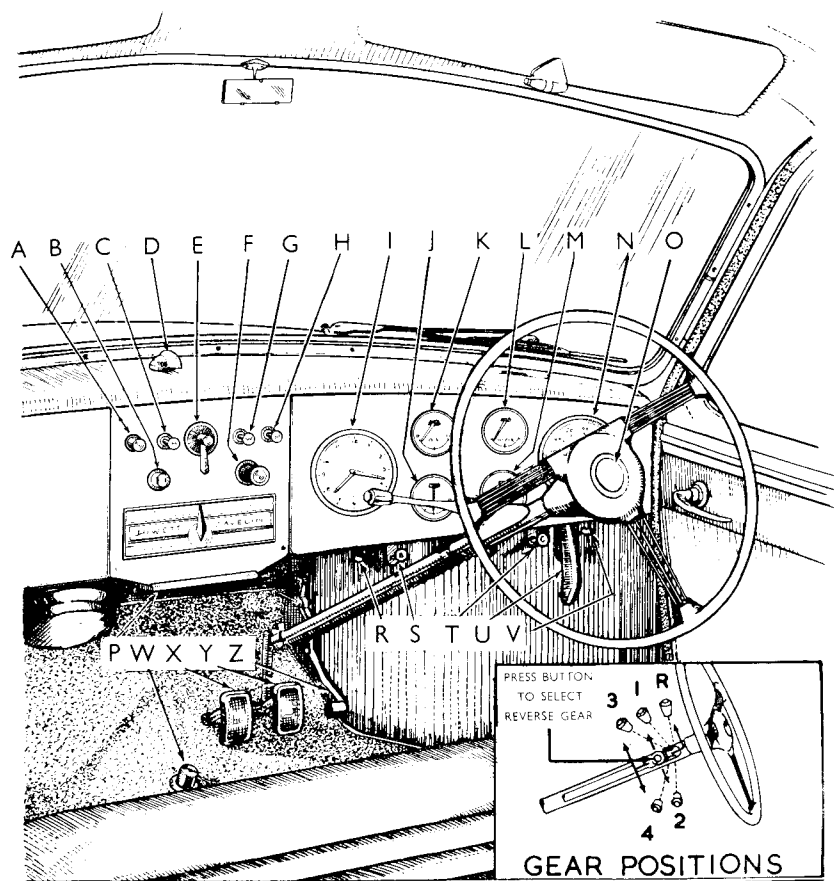


Figure 2 DRIVING CONTROLS (De Luxe Javelin)

A Starter Switch	M Petrol Gauge
B Ignition Switch	N Speedometer
C Heater Switch	O Horn Button
D Direction Indicator	P Ash Tray
E Lighting Switch	R Clock Control
F Cigar Lighter	S Bonnet Lock Control
G Windscreen Wiper Switch	T Carburettor Choke Control
H Panel Light Switch	U Handbrake
I Time Clock	V Speedometer Trip Control
J Ammeter	W Dipper Switch
K Oil Pressure Gauge	X Clutch Pedal
L Water Thermometer	Y Brake Pedal
Z Accelerator	

The **Speedometer** is provided with a "trip" figure, which can be returned to zero by pressing and turning the control, which will be found immediately below the instrument.

The **Electric Clock** can be set in a similar manner to the Speedometer "trip".

The **Water Temperature Gauge** shows the temperature of the Radiator Header Tank, which is thermostatically controlled. The gauge should read about 75°C. under average conditions.

The **Ammeter** indicates the charge going into or being taken from the battery. The dynamo output is automatically adjusted to the state of the battery by the regulator in the control box on the engine side of the dash.

The **Ignition Warning Light** (red) which is situated on the speedometer face glows when the ignition is switched "On" and is extinguished when the dynamo commences to charge.

The **High Beam Warning Light** situated on the panel above the thermometer and oil pressure gauge, operates when the headlamp beam is in the High position and is extinguished immediately the beam is dipped.

Cold Air Controls are operated by two levers below the dash panel on each side of the bulkhead. When pushed forward these open ducts through which cool air enters the body.

INTERIOR APPOINTMENTS (DE LUXE MODEL)

The front seat is adjustable for fore and aft position, the control for this being a winding handle just below the front edge of the seat in the centre. As the seat moves back, its rear edge falls, and the squab assumes a more reclining angle. A folding armrest is provided in the centre of the squab, and hinged arm rests on each front door. In the rear seat a hinged arm rest is also provided in the centre of the squab, while those at each side can be lifted out to provide extra room.

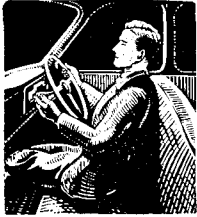
The **Roof Light** is operated by a switch incorporated in the centre pillar and is operative at all times.

The **Cigar Lighter** is situated immediately below the wiper and panel switches. To operate press in and withdraw when the element can be seen glowing red through the glass screen.

Picnic Tray. This fixes into two brackets at the rear of the front seat back rest. When not in use it is secured in two clips below the rear window.

The **Heater.** On starting from cold, wait until the water in the cooling system begins to reach its normal running temperature before switching on the heater if warm air is required. If cool air is required the control tap, situated in the water pump body (see Fig. 4), should be fully closed.

General Driving Hints



On starting the car from cold, be quite sure that the gear lever is in neutral. Pull out the choke control to its full extent, and switch on the ignition. Do not depress the accelerator pedal, as the choke when pulled out opens the throttle to the best position for starting. Press the starter switch and keep it pressed until the engine fires, then release it at once.

It is necessary to use the choke control only when the engine is cold, and the object then is to push it back again at the earliest possible moment as soon as the engine is warm enough to run without faltering. Running with the control out means waste of petrol, sluggish performance, dilution of engine lubricating oil and excessive wear. It is sometimes convenient, if manœuvring with a cold engine to leave the choke control pulled out about $\frac{1}{2}$ in.—this keeps the engine idling at a faster speed than normal.

Use of the choke should not be necessary in warm weather, but if it is, great care should be taken not to “overchoke” the engine—this means the cylinders will become full of an over-rich mixture which is difficult to ignite. If this occurs, and you are sure the ignition is switched on and that there is petrol in the tank, push the choke control right in, depress the accelerator pedal to its full extent, and keep it there. Then press the starter switch—the first few revolutions will clear away the rich mixture until it is just right to fire, when the engine should start. Should any further difficulty be experienced, refer to the information given on page 42.

“RUNNING IN”

The performance of a car throughout its life depends to a large extent on the manner in which it is handled during the first few hundred miles. The engine, during the “running in” period, should not be allowed to labour in any gear. When conditions call for more than half-throttle, a change should be made to the next lower gear, but the engine speeds shown in the panel on page 13 should not be exceeded.

After 1000 miles have been covered, gradually work up the car to its maximum speed, if you so desire, but long periods of driving at an engine speed exceeding 4000 r.p.m. should be avoided until after 2000 miles have been covered.

“Running in” Speeds

First 200 miles	..	..	{	35 m.p.h. on Top Gear
				25 m.p.h. on Third Gear
				15 m.p.h. on Second Gear
200 to 400 miles	..	..	{	45 m.p.h. on Top Gear
				30 m.p.h. on Third Gear
				20 m.p.h. on Second Gear
400 to 1000 miles	..	..	{	55 m.p.h. on Top Gear
				40 m.p.h. on Third Gear
				25 m.p.h. on Second Gear

Details of minor adjustments which should be made during the running in period, are fully dealt with in a separate leaflet entitled “The Jowett Initial Service Plan”, a copy of which will be supplied by the Main Agent. (United Kingdom only.)

The Cooling System

During cold weather, precautions must be taken to prevent the cooling water freezing, as this is likely to result in damage to the cylinder blocks, radiator, etc.

If the car is to be left outside, or in an unheated garage, the water must be drained from the system by removing the radiator cap and opening the taps immediately under each cylinder head. When the cooling system has drained off completely, the engine should be run for 3 or 4 seconds to ensure that all water has been expelled from the water chambers in the cylinder head and the water pump.

Note: If a heater is fitted which has no provision for draining the heater radiator, a recognised brand of Anti-Freeze must be used to protect the cooling system during frosty weather. If the Anti-Freeze solution is of the Ethylene Glycol variety it must contain a corrosion inhibitor and the proportions as recommended by the manufacturers of the Anti-Freeze solution should be strictly adhered to.

When changing over to Anti-Freeze, drain away sufficient water and replace by the desired brand of Anti-Freeze. If the Anti-Freeze is added when the weather has already become cold, all the water should be drained from the cooling system, and the Anti-Freeze should be mixed

with the correct proportion of water in a suitable container. If the Anti-Freeze is put directly into the radiator, it may take some time to mix with the water in the cylinder jackets, as the thermostat prevents circulation until the water in the jackets is hot.

With the correct proportion of Anti-Freeze in the cooling system it is unnecessary to drain the system even in the coldest weather and one filling normally lasts the whole winter.

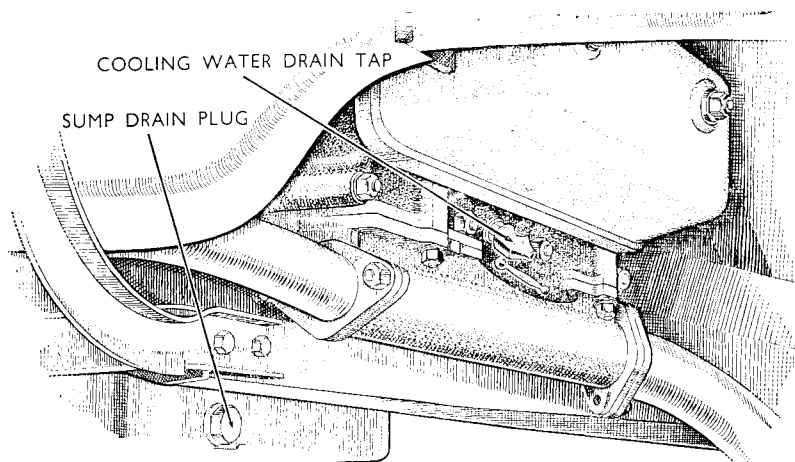
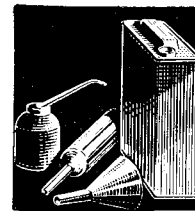


Figure 3 POSITION OF ENGINE DRAIN TAP (L.H.) AND SUMP PLUG

Before adding the Anti-Freeze solution, make sure that all water hose clips are securely fitted and that the cylinder head nuts are tight. A label should also be fastened in a prominent position under the bonnet so that anyone who may have occasion to drain the radiator will be aware of the presence of Anti-Freeze mixture.

Lubrication



The importance of proper and regular lubrication of the car cannot be over-emphasised. In the design of a modern car, as much reliance is placed upon the presence and quality of the lubricating oils as is placed upon the quality and temper of the steels used for its components. The manufacturer provides the latter—the owner is relied upon to provide the former. The properties of the lubricants used have been assessed and made full use of by the designers. If inferior grades are used they will not possess these properties, and breakdown will result—rapid wear and possible seizure of parts will follow, incurring heavy replacement expenses. Owners are, therefore, urged to use only the oils and greases recommended.

Regular lubrication is as important as proper lubrication, and it is suggested to owners that they develop the habit of carrying out a well rehearsed drill, as detailed on page 18, at the intervals shown. This should be learned in connection with the lubricating chart which shows where the various filling plugs and grease nipples are located.

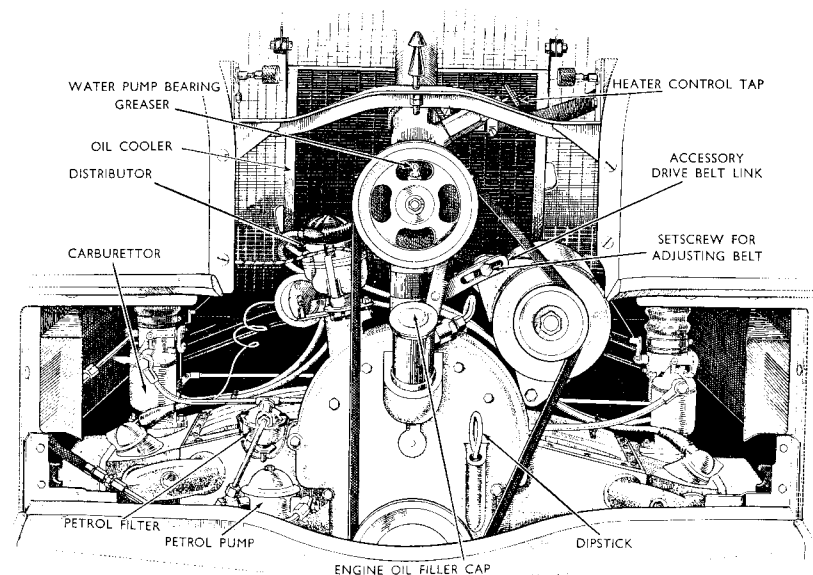
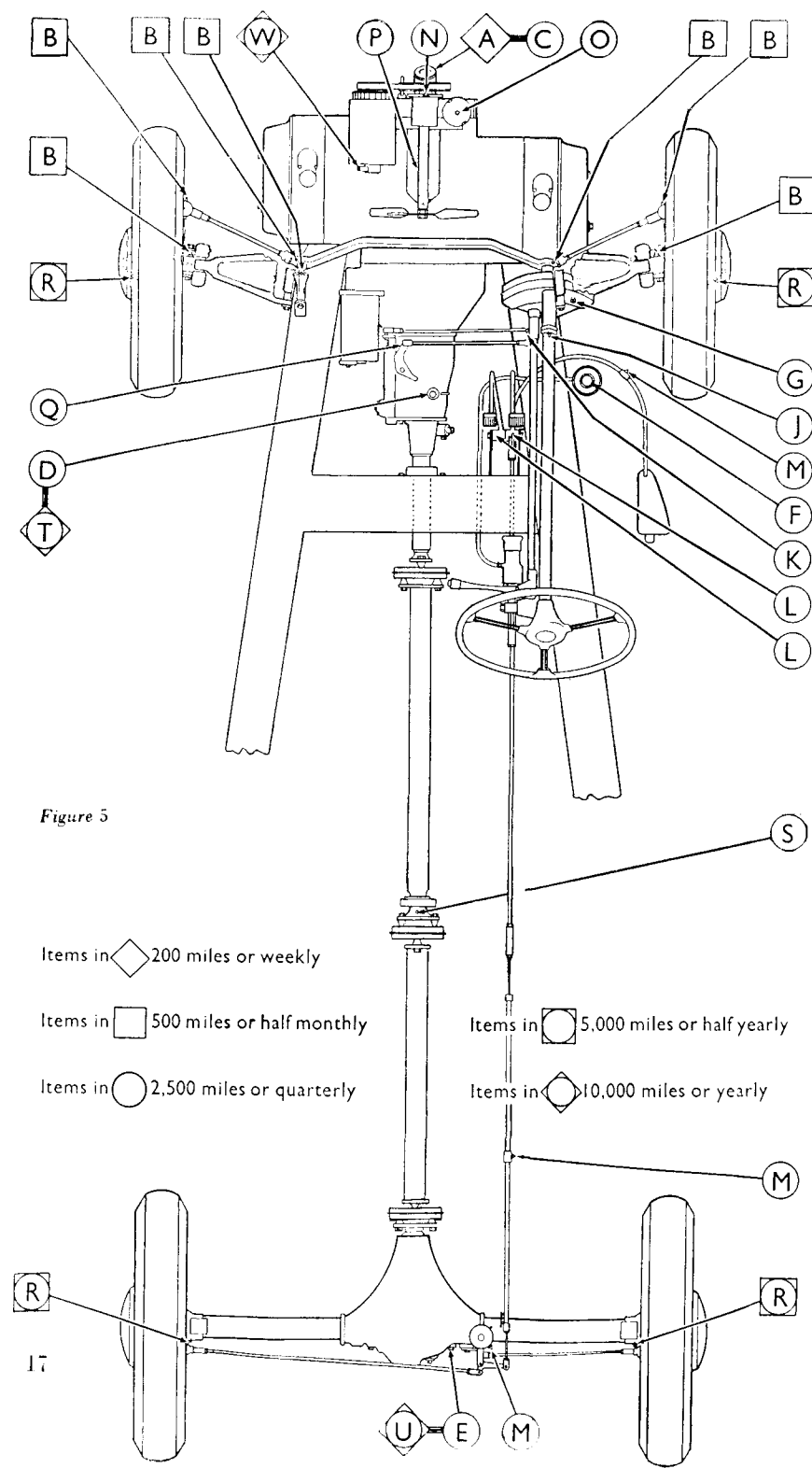


Figure 4 FRONT VIEW OF ENGINE

RECOMMENDED LUBRICANTS

UNIT	CLIMATIC CONDITIONS	WAKEFIELD	DUCKHAM'S	ESSO	PRICES	SHELL	VACUUM	FILTRATE
ENGINE AND GEARBOX	C.K. Over 70 F.	Castrol N.N.L.	N.O.L. 40	Essolube 40	Energol SAE 40	Shell X-100 SAE 40	Mobiloil BB	Heavy Filtrate SAE 40
	20°-70 F.	Castrol N.L.	N.O.L. 30	Essolube 30	Energol SAE 30	Shell X-100 SAE 30	Mobiloil A	Medium Filtrate SAE 30
	Overseas Over 70 F.	Castrol N.N.L.	N.O.L. 40	Essolube 40	Energol SAE 40	Shell X-100 SAE 40	Mobiloil BB	Heavy Filtrate SAE 40
	20°-70 F.	Castrol N.L.	N.O.L. 30	Essolube 30	Energol SAE 30	Shell X-100 SAE 30	Mobiloil A	Medium Filtrate SAE 30
REAR AXLE		Castrol Hypoy	Duckham's Hypoid 90	Esso Exspec Compound 90	Energol EP SAE 90	Shell Spirax 90 EP	Mobilube GN 90	Hypoid Filtrate Gear Oil 90
SUSPENSION NIPPLES STEERING BOX STEERING NIPPLES PROPELLOR SHAFT CENTRE BEARING REAR BRAKE COMPENSATOR CHASSIS LUBRICATION		Castrolase Medium or Castrolase CL	Duckham's H.P.G.	Esso Grease	Belmoline D Overseas Energol C2	Shell Retinax A or C	Mobilgrease No. 4	H.P. Solidified Filtrate Oil
FRONT & REAR HUBS WATER PUMP		Castrolase Heavy	Duckham's HBB	Esso Grease	Belmoline C Overseas Energol C3	Shell Retinax A or RB	Mobilgrease No. 4	Filtrate RB Grease
BRAKE FLUID								
BRAKE CABLES		Castrolase Brake Cable Grease	Keenol K.G. 16	Esso Graphite Grease	Belmoline CG Overseas Energol C3C	Shell Retinax A or C	Mobil Graphited Grease	Filtrate Brake Cable Grease
General Lubrication by oil-can: Fan Spindle, Door hinges, etc.								
As for Engine								



Every 200 miles or weekly*

- (A) Check level of oil in sump
Check level of water in radiator

Every 500 miles or half-monthly*

- (B) Grease steering nipples
Check tyre pressure
Check acid level in battery

Every 2500 miles or quarterly*

- (C) Change engine oil (see page 19)
- (D) Check level of oil in gearbox
- (E) Check level of oil in rear axle
- (F) Check level of fluid in brake fluid reservoir
- (G) Check steering box. Add lubricant to fill if necessary (pressure must not be used)
- (J) Grease steering column bearings
- (K) Grease gear control column
- (L) Grease brake and clutch pedals
- (M) Grease hand-brake cables and linkage
- (N) Grease water pump bearing and oil fan spindle
- (O) Oil distributor and throttle linkage
- (P) Change oil filter element after 2500 miles and thereafter every 3000 miles
Oil direction indicators
- (Q) Oil gear control linkage
- (S) Grease propellor shaft centre bearing

Every 5000 miles or half-yearly*

- (R) Grease front and rear hubs
Grease seat adjuster and spare wheel screw
Clean and re-set sparking plugs
Adjust brakes
Adjust clutch pedal
Remove and replace, or clean, the tappet cover air vent filter felts

Every 10,000 miles or yearly*

- (T) Change oil in gearbox
- (U) Change oil in rear axle
- (W) Grease dynamo rear bearing
Remove sump and clean sump oil filter

*Or more frequently if necessary

ENGINE LUBRICATION

The engine oil filler cap and the dipstick are at the front of the engine and easily accessible when the bonnet and top portion of the grille are lifted. Always check the oil level with the car on level ground and if possible, before running the engine, adding sufficient oil to the sump to retain level to the "F" or full mark on the dipstick.

It should be noted that after stopping the engine a certain amount of time elapses before the oil (approximately 1 pint) contained in the cooler returns to the sump. Therefore if a check is made immediately after stopping the engine the correct oil level will show approximately $\frac{1}{4}$ in. below the full mark on the dipstick. As a general guide it can be taken that a $\frac{1}{4}$ in. on the dipstick is equivalent to 1 pint of oil.

The low mark on the dipstick indicates the safety point below which the oil level should not be allowed to fall. Take care that any containers used to fill the sump are scrupulously clean.

Changing the Engine Oil is preferably carried out after a good run when the oil is warm and flows freely. The sump plug is on the left hand side of the sump (see Fig. 3) easily accessible from the front of the car. When carrying out this operation allow sufficient time for the oil contained in the oil cooler to drain into the sump and drain the oil contained in the filter into the sump by unscrewing the oil filter drain plug (A) (see Fig. 6) until approximately $\frac{1}{4}$ in. of thread is exposed.

Replacing Oil Filter Element. First unscrew the drain plug "A" (see Fig. 6) until about $\frac{1}{4}$ in. of thread is showing which will allow oil in the filter to drain back into the sump. Remove the filter body and element by unscrewing the central bolt—this cannot be removed but is lifted away with filter element and body. In lifting these away, take care to tilt the body (open end highest) slightly to prevent any oil remaining inside from spilling on to the top of the engine. Clean the filter body thoroughly in petrol and allow to dry.

In replacing the filter, make sure that the rubber sealing ring for the body is in good condition (replace if necessary) and that the body seats squarely upon it, before screwing home the central bolt tightly. Finally screw home the drain plug "A".

GEARBOX LUBRICATION

Access to the gearbox filler and dipstick is obtained by turning back the carpet and removing the large rubber plug in the toeboard. Remove the dipstick and measure the oil level in the usual way. If necessary, add sufficient oil to restore the level to the "F" or full mark. The use of a funnel will be found helpful for this purpose.

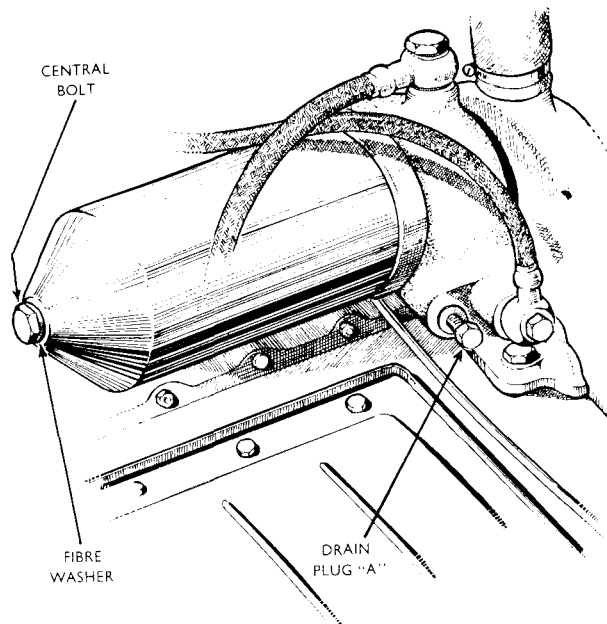


Figure 6
ASSEMBLY
OF OIL
FILTER

Changing the gearbox oil is best done after a run when the oil is warm and flows freely. The drain plug is in a horizontal position on the left-hand side of the gearbox, and there is a special key in the tool kit for removing it. Leave the car with the plug removed, allowing the oil to drain thoroughly before replacing and refilling the gearbox to the correct level.

REAR AXLE LUBRICATION

The correct lubrication of the hypoid rear axle is of the utmost importance. On no account must oils other than those recommended by us be used, and these oils must not be mixed one with the other. AFTER THE FIRST 2000 MILES DRAIN THE AXLE, and refill with the brand of oil you intend to use. Thereafter replenish ONLY WITH THIS BRAND OF OIL—if a change is desired the axle must again be drained and refilled with the new brand. The combined filler and level plug is in the rear cover of the axle, and it can be removed by the key provided in the tool kit. Drain the axle after a run, when the oil is warm, and allow adequate drainage time before refilling. The filling and changing of oil in

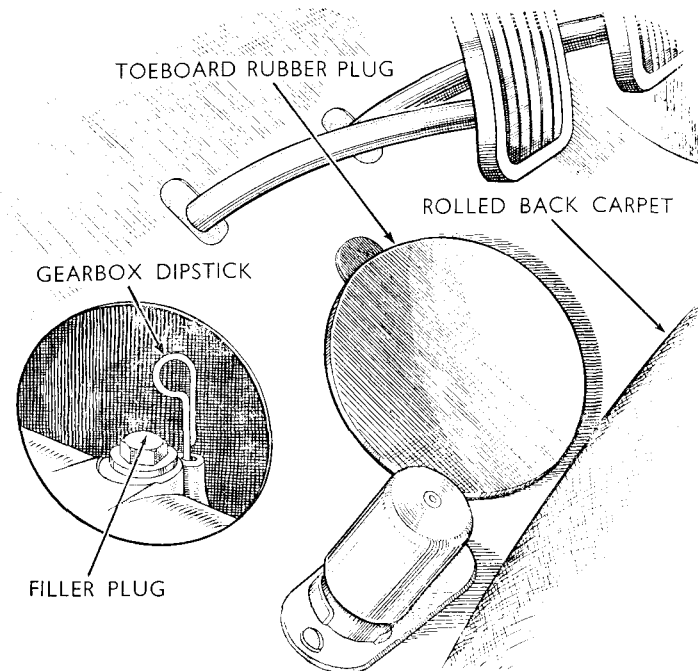


Figure 7 POSITION OF GEAR-BOX FILLER

the rear axle is, under the best conditions, an awkward and dirty job for an owner to undertake. He is well advised to allow a service station to do it, but should insist on the aforesaid instructions being carried out, and should make sure that one of the recommended HYPOID OILS, where possible from a sealed container, is used.

STEERING BOX LUBRICATION

To obtain access to the filler plug for the steering box, it is best to jack up the right-hand side of the car, and remove the right-hand front wheel; the plug is then readily accessible. See Fig. 8.

STEERING CONNECTION LUBRICATION

Five greasers are provided for the lubrication of the steering connections, one for the ball joints at each end of the steering rod and one for the intermediate steering arm. Access to the outer pair of the former is gained under each front mudguard (see Fig. 9), while the inner pair of these, and the latter (see Fig. 11), are accessible from the engine compartment.

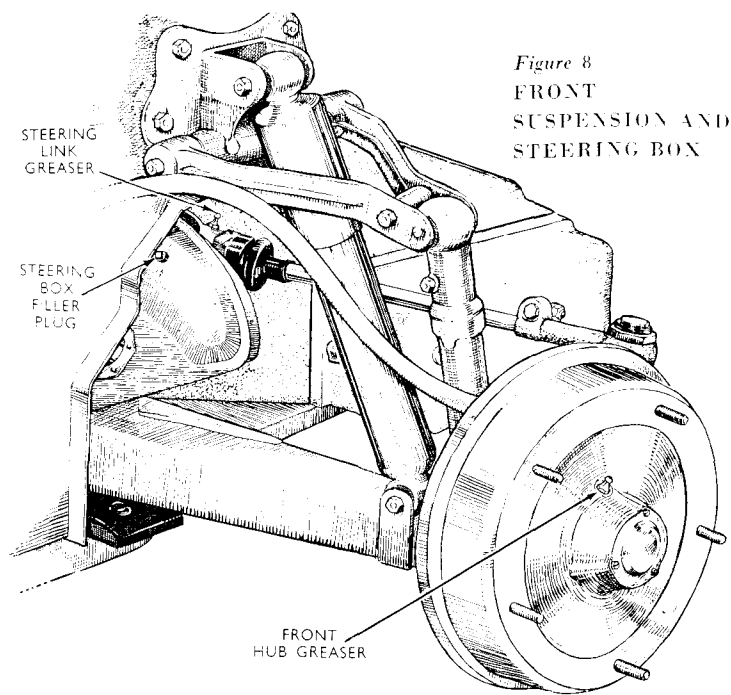


Figure 8
FRONT
SUSPENSION AND
STEERING BOX

BRAKE FLUID RESERVOIR

This is mounted on the right-hand side of the dash, behind the radiator, and is accessible on lifting the bonnet. The level of the fluid should be inspected at the recommended mileage and restored to about 1 in. from the top of the container. On no account use any fluid other than that recommended.

BRAKE GEAR LUBRICATION

There are four greasers provided for the lubrication of the brake-operating gear. They are mounted on the pedal, the rear axle compensator and one on each of the handbrake cables (see Lubrication Chart, Fig. 5). One of the latter can be reached by opening the bonnet, but the other three are only accessible from underneath the car. It is a good plan when lubricating these points to jack up the right-hand side of the car, as it greatly improves access to them. Particular importance is attached to the regular and thorough greasing of the handbrake cables and the rear axle compensator—neglect of these items will impair the efficiency of the braking system. As a special graphited grease is required for the cables (see page 16), which means cleaning out the grease gun and refilling with this grease, owners may prefer to allow their service station to attend to these two points.

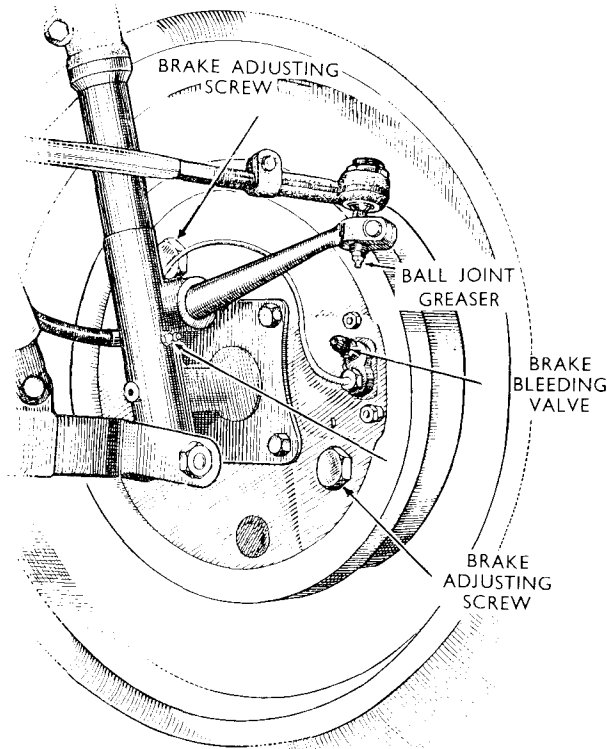


Figure 9 FRONT BRAKE DRUM AND STUB AXLE

WATER PUMP BEARING

Access to the greaser for the water pump bearing is obtained through one of the four holes in the drive pulley (see Fig. 4). A few strokes with the grease gun at the recommended mileage should be given.

REAR HUB BEARINGS

The greaser for each rear hub is situated at the end of the axle tube and is accessible from underneath the car (see Fig. 10). Give each two or three strokes with the grease gun at the recommended mileage. Grease issuing from the small hole above the nipple indicates that there is sufficient grease in the bearings.

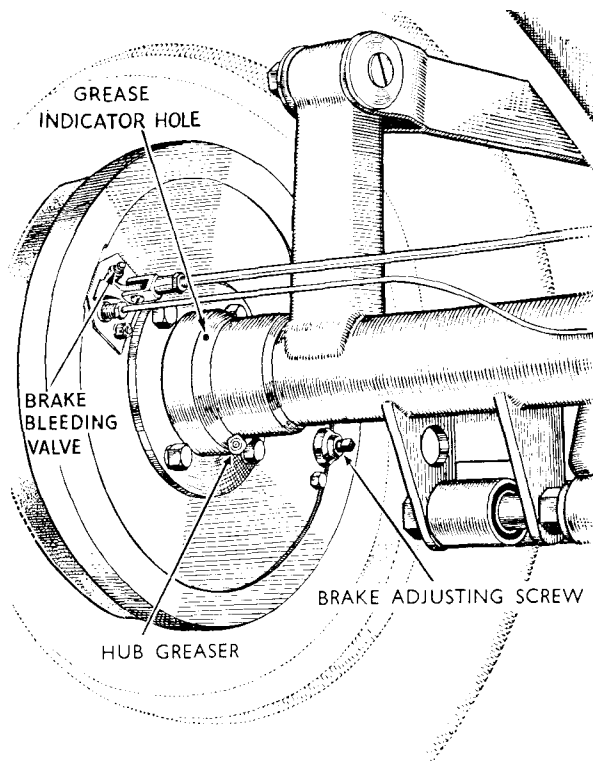


Figure 10 REAR BRAKE DRUM

GREASING FRONT HUBS

In the case of both front and rear hubs, great care should be exercised when greasing, to avoid injecting too much grease, as there is a danger that any excess may exude on to the brake linings, and impair their efficiency. The front hub greasers are easily reached by removing the front wheel cover caps (see Fig. 8).

MINOR LUBRICATION POINTS

Periodic lubrication with an oil can of various items of the car will be well repaid in that these items will remain sweet and quiet in operation. Chief among these is the throttle linkage, follow this through from the pedal to the carburettors, oiling each pin and sliding surface, not forgetting the moving joints of the carburettors themselves. The inner members of the Bowden cable should also be oiled. At the engine end oil the cable for about 1½ in. where it emerges from the conduit and at the pedal end, with the pedal pressed hard down, similarly oil the cable where it emerges.

Then operate the pedal up and down two or three times to help the oil work into the conduit at each end. The ball joints at each end of the control rods between the gearbox and the steering column gear lever also require lubricating occasionally.

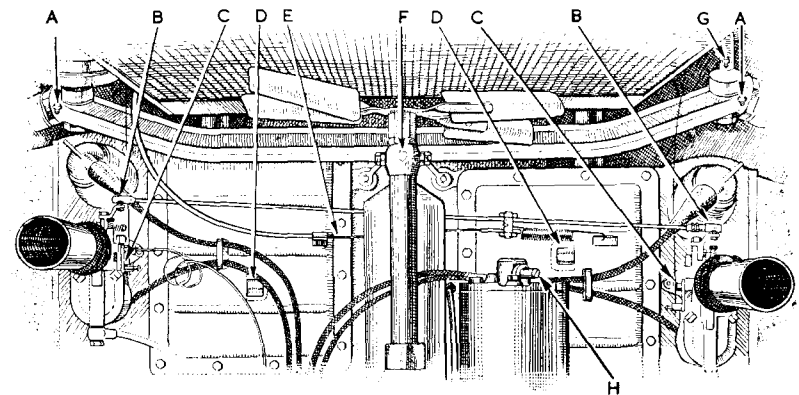


Figure 11 CARBURETTOR CONTROLS ON ENGINE (oil cooler not shown)

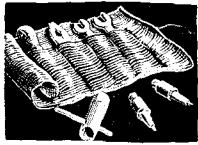
A Steering Link Greasers
B Throttle Rod Joints
C Choke Wires
D Crankcase Air Vents

E Throttle Cable
F Fan Spindle Oil Cup (oil cooler not fitted)
G Intermediate Steering Arm Greaser
H Dynamo Greaser

Occasional attention should be given to various hinges on the body in order to keep them operating smoothly. The door hinges, which are the most important, are easily accessible from outside the car. Squirt a few drops of oil on to each end and move the door to and fro so that the oil works in, then wipe off any surplus from the outside. Treat the boot and bonnet hinges in the same way.

Maintenance

SPARKING PLUGS



After the first 500 miles, and subsequently at the recommended mileages, the four sparking plugs should be removed for cleaning and re-setting their electrode gaps. Each one is enclosed by a plastic cover attached to the end of the lead; this is removed

by turning it in an anti-clockwise direction until it springs out of the metal cover enclosing the sparking plug; then withdraw it completely. Using the box spanner provided in the tool kit, unscrew the sparking plug.

When lifting the sparking plug clear from the engine, take care not to lose its copper-asbestos washer. When the four plugs are out, examine them. The hard carbon deposit should be removed from each plug by brushing it with a wire brush, or scraping it with a penknife or other similar tool. Finally, check the electrode gap with your feeler gauge. This should be .020 to .025 in. Adjust it by tapping the side electrode towards the centre one.

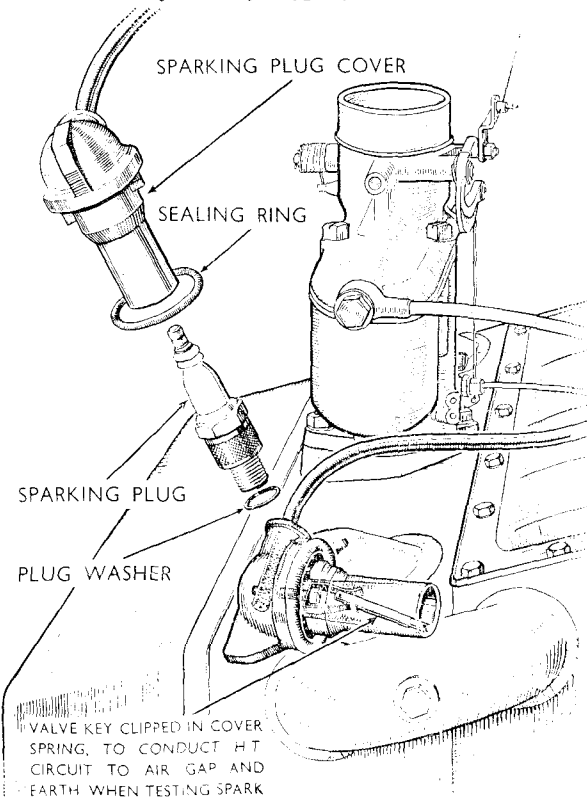


Figure 12
SPARKING PLUG
AND
COVER ASSEMBLY
AND
IGNITION TEST

In replacing the sparking plugs, screw them home as far as possible with the fingers, having made sure that the copper-asbestos washer is in position. Then tighten up with the box spanner. Before replacing the plastic cover make sure its rubber seal is correctly in position; lower the cover carefully over the plug, holding it centrally in the hole, aligning the two lugs on its side with the mating slots. Finally, press it home and turn about one-eighth of a turn in a clockwise direction.

Access to each rear sparking plug is improved by turning the steering wheel so that the road wheels are in the opposite lock to the plug being removed. This places the steering linkage in such a position that a longer stroke can be obtained on the spanner.

ADJUSTMENT OF BRAKES

Adjustment of the brake shoes will be necessary as wear takes place. This will be indicated by the "free" movement of the brake pedal becoming excessive.

Shoe adjustment is done individually at each wheel by the single adjusting screw on each rear carrier plate and the two adjusting screws on each front brake carrier plate. Jack up the car at one side until the front and rear wheels are clear of the ground. The two adjusting screws of the front brake are located at the front and rear of the brake carrier plate (see Fig. 9) and are turned with the use of a $\frac{3}{8}$ -in. spanner. Spin the wheel in the rotation of FORWARD movement of the car and at the same time tighten one of the adjusting screws until the brake shoe rubs and stops the wheel (turn adjuster clockwise on both left and right brake carrier plates). Then slacken back the adjusting screw until the wheel just spins freely. Carry out the same operation on the other adjusting screw at the opposite side of the brake carrier plate. In the case of the rear brakes, the adjusting screw is located as shown in Fig. 10, and is turned with the use of an $\frac{1}{8}$ -in. spanner. It clicks over notches as it is tightened in a clockwise direction, do this as far as it will go without forcing until the shoes are binding on the drum. Then slacken off the adjusting screw until the drum revolves without binding on the brake shoes, releasing two notches is normally sufficient.

Jack the car up at the other side and repeat the above procedure. Brake shoe adjustment should only be done with the drums cold.

ADJUSTMENT OF HANDBRAKE

The handbrake normally requires no adjustment as its setting should be restored with the adjustment of the rear brake shoes. If, however, after the latter have been adjusted the handbrake lever can be pulled on hard so that its ratchet "clicks" over seven or more notches it will be necessary to readjust the setting.

Remove the split pin and withdraw the clevis pin from the clevis connecting the handbrake cable to the brake compensator lever at the rear axle (see Fig. 13). Move the compensator lever forward to take up any free movement in the rear brake linkage and leaving the lever in this position move to the rear handbrake cable and handbrake rod connecting nut (see Fig. 13) which is situated at the side of the centre universal joint. Slacken off the rear lock nut which secures the threaded end of the cable in the connecting nut, and disconnect the return spring which is fastened to the small bracket between the lock nut and the connecting nut. Screw the threaded end of the cable into the connecting nut until the holes in the rear handbrake cable clevis just mate with the hole in the compensator lever. Replace the clevis pin and test. The handbrake lever should 'click' over to four or five notches at this setting. Replace the split pin in the clevis pin and tighten the rear cable lock nut positioning the return spring bracket so that the spring pulls in line with the brake cable. Refasten the return spring.

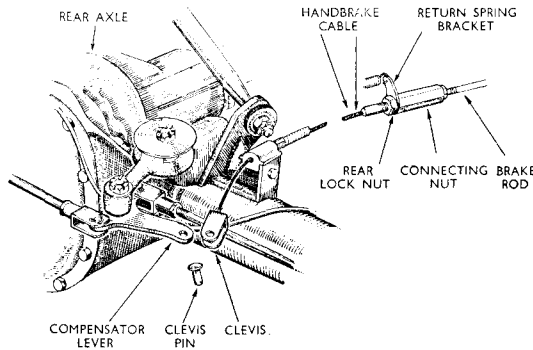


Figure 13 HANDBRAKE ADJUSTMENT

ADJUSTMENT OF CLUTCH PEDAL

When depressing the clutch pedal, it should move approximately 1 in. before the resistance of the clutch springs is felt. Should this "free movement" become less or more than this, adjustment of the pedal is necessary. This is effected by shortening or lengthening the link between the clutch pedal and the clutch itself, access to which is obtained underneath the car. Remove the split pin from the rod at the rear of this link, and after having slackened off the locknut, screw the rod either in or out of the fork, depending on whether the free movement of the pedal has been excessive or insufficient. Screwing in will reduce the "free movement" on the pedal and screwing out will increase it. The rod should be adjusted until the pedal movement is approximately the desired length. Then replace the rod and the split pin, and tighten the lock nut on the rod.

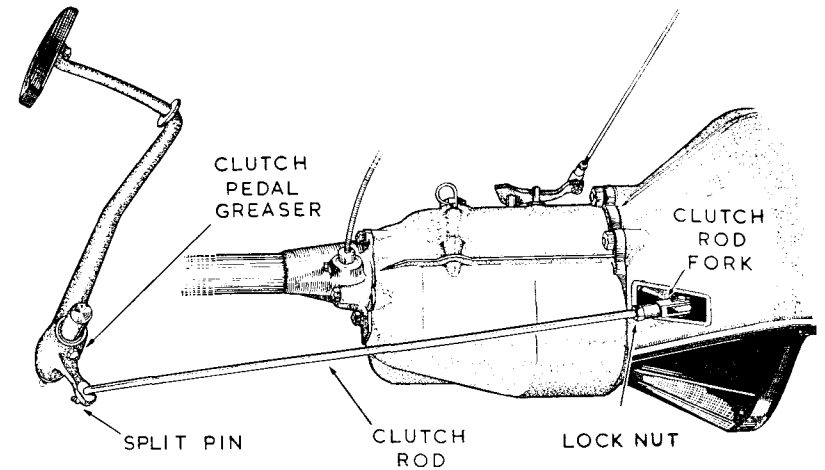


Figure 14 CLUTCH PEDAL ADJUSTMENT

CLEANING AIR VENT FILTER

An air vent filter felt is fitted in the top of each tappet cover. It is essential that these are kept in a clean condition as any blockage by dust, etc., will interrupt the ingress of air to the crank case and consequently affect the operation of the petrol pump.

Remove the felts and clean or replace every 5000 miles or more frequently if necessary.

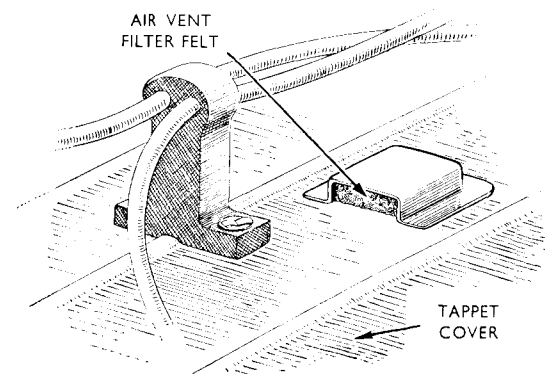


Figure 15 AIR VENT FILTERS

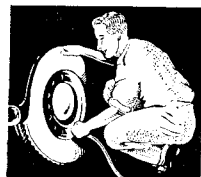
SHOCK ABSORBERS

The shock absorbers are factory sealed units, and no topping up is required. The occasional application of a preservative oil to the surface of the lower cylinders of the shock absorbers is recommended.

WHEEL CHANGING

In the event of a puncture it will be necessary to remove the road wheel and replace it with the spare wheel carried in the tray below the luggage compartment floor. Lower this tray by turning the screw shown in Fig. 32 anti-clockwise, using the wheelbrace, when the wheel can be slid out below the rear bumper. Then jack up the side of the car (on level ground if possible) as detailed on page 50, having first made sure that the hand-brake is hard on—this will raise both front and rear wheels on that side, so that either may be removed. Remove the wheel, using the wheel-brace, and replace it with the spare. After placing the damaged wheel in the spare wheel tray, tighten up the screw hard to ensure that the spare wheel is held firmly in position. Final tightening of the wheel should be done after removal of the jack.

Tyres



Tyres should be maintained at the correct pressure of 26 lbs. per sq. in. and should be checked every week. This should, of course, be done when they are at normal temperature.

The tyres should be examined occasionally for flints or other road material, tacks, etc., which may become embedded in the tread. Oil should not be allowed to get on the tyres. If any should accidentally do so this should be cleaned off by using petrol sparingly.

CAUSES OF PREMATURE TYRE WEAR

Speed. Car owners vary greatly in the speed at which they habitually travel. The rate of tread wear at 70 m.p.h. is more than double that at 40 m.p.h.

Rapid acceleration. During wheel slip caused by rapid acceleration excessive tread wear takes place, due to the abrasion of the tyre against the road surface.

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

Cornering. Driving round a curve even at 35 m.p.h. can create a centrifugal force equal to twice the normal load carried by the tyres. This is inclined to cause tyre side wall stretch which will, in time, weaken the tyre walls.

Under-inflation. Ascertain that the correct pressure is maintained in your tyres. Running for a considerable distance with soft tyres will result in the cording on the tyre walls being overstressed. Remember that even under normal conditions a tyre will lose 2 to 3 lbs. pressure per week.

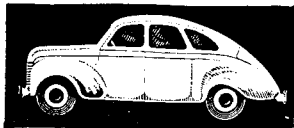
Over-inflation. If a tyre is over-inflated the centre of the tyre tread only contacts the road surface. Road friction is concentrated on this part of the tread and rapid wear takes place.

FRONT WHEEL ALIGNMENT

To ensure the maximum life from front tyres, it is advisable occasionally to check the alignment of the front wheels. These are set correctly when the car leaves the factory, but operation over bad roads, straining the steering against curbs, and so on, may affect the alignment. When set correctly, the track should be parallel within $\frac{1}{8}$ in. Adjustment is made by slackening off the clamp bolt on each steering ball housing, and screwing each steering rod equally, in or out as the case may be.

The use of independent front suspension makes the carrying out of adjustments to the steering track an operation which involves a very high degree of accuracy, the owner is advised to make use of one of our Main Agent's Services when this work is necessary.

Care of Bodywork



Constant attention to the paintwork of a car is well repaid—it will retain its freshness for years if it is kept clean and occasionally polished. Cleaning is best done with a clean sponge and a copious supply of water; especially when mud has been allowed to dry on the surface, it should be washed and not rubbed off. After washing finish with a leather.

Periodical polishing with a good cellulose polish will restore fresh lustre to surface. Do not be alarmed if some of the colour comes off on the cloth—it does no harm to the finish. After polishing, the surface should be protected by the application of a good wax polish this will seal the surface for some time until further polishing is necessary. Grease and oil, and even tar, can be removed with a little petrol on a clean rag.

CHROMIUM PLATING

This is best cleaned by merely rubbing with a soft rag. If it is badly marked with tar, mud, or dead insects, use a little petrol or wash with warm soapy water. Do not use ordinary metal polish, as it contains abrasive matter which will ruin the plating.

BODY PAINTWORK

If this should accidentally get chipped or scraped unsealed edges of paintwork will be left exposed to the atmosphere. To reseal the edges and prevent the damage spreading, “touch in” with cellulose. Small tins of cellulose of the same colour and grade as used at the works can be supplied by your Jowett Agent.

UPHOLSTERY

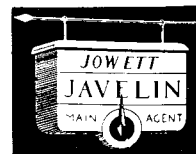
Saddle soap may be used sparingly on leather upholstery or, alternatively, a good brand of furniture polish. For P.V.C. upholstery wash with warm soapy water and polish with a soft dry cloth. Cloth upholstery should be brushed.

HEADER LINING

To remove any marks from the header lining brush over gently with a cloth damped with a proprietary brand of dry cleaning fluid. Although petrol would probably remove the mark, it is inclined to leave a faint tide mark after drying.

Service Information

DECARBONISING



The only sure indication of the need for decarbonising, is the performance of the engine, and the mileage covered before this becomes necessary varies considerably, depending upon the conditions under which the car is used. The normal symptoms which indicate that decarbonising is necessary are excessive pinking and loss of performance, often coupled with lack of compression which results from valves failing to seat correctly. As a general guide, we would recommend that as long as the engine performance is satisfactory, you leave well alone. There are, however, several authorities who consider that early decarbonising after, say, the first 2500 miles of the engine life is advantageous. The question is, therefore, left open for the owner to act as he thinks fit, and we would respectfully suggest that the guidance of the Jowett Main Agent, with knowledge of local conditions, quality of petrol available, etc., is sought.

It is appreciated that most owners will prefer to have the work carried out by specialist mechanics, and we would strongly recommend that the work should be done by a Jowett Main Agent, but for those who wish to carry out the work themselves, the method is outlined as follows:—

Drain off the cooling system, remove the front road wheels, dynamo, carburettor petrol pipe, throttle controls, and carburettors.

Remove the rocker covers, tappet covers, and rocker assemblies, withdraw the push rods and tappets and place them in a suitably marked container to ensure that the push rods which are already “bedded in” to their respective tappets are refitted in their original positions.

Remove the water transfers. Remove the cylinder heads. It may be found necessary to lever the engine down slightly at the side from which the cylinder head is being removed to avoid the front of the cylinder head fouling the bumper bracket. It is possible when turning the engine with the cylinder heads removed to disturb the cylinder liners and damage the liner gaskets. To avoid this place a further tube or a number of flat washers over the tube and locating plate already in position between the liners on the lower central head stud (see Fig. 16) and tighten down gently with a cylinder head nut, until the locating plate is held firmly in position between the two flats on the cylinder liners.

Remove the sparking plugs and valves from the cylinder heads, scrape the combustion chambers, and wipe clean as soon as the operation is

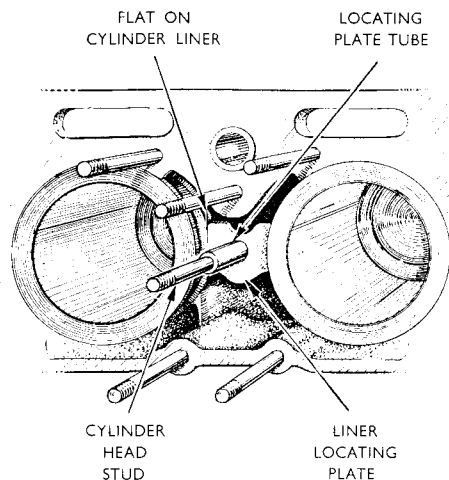


Figure 16 CYLINDER LINER LOCATING PLATE IN POSITION

completed. Scrape clean the valve ports, but be careful to avoid scratching the valve seats. When completed, wipe clean with a petrol-damped cloth. Do not polish any parts with an abrasive or emery cloth as particles of these may, during assembly, enter the cylinder bores.

When finally cleaning the head, make sure that all stud holes, push rod tubes, etc., are thoroughly clean.

Clean the carbon from the underside of the valve head as well as from the top, using a blunt knife and finishing with a petrol-damped cloth. If the cylinder head gasket is suitable for refitting both sides should be carefully cleaned.

VALVE GRINDING

The purpose of valve grinding is to ensure that the bevelled surfaces of the valve, and the valve seat in the cylinder head make perfect contact, so that the valve is gastight when seated. This is achieved by grinding the two surfaces together, taking care that each valve is ground into its appropriate seat. The valves should not be scratched or marked in any way to indicate the valve number.

Valve grinding consists of coating the bevelled face with grinding paste and placing the valve in its guide, then, using a suction cup grinding tool spin the valve first in one direction, then in the other, using only a light pressure. From time to time lift the valve off its seat and re-seat it in a slightly different position. If the valve seats are only slightly pitted, only a fine abrasive compound will be needed but if badly pitted commence

with a coarse paste, finishing off with a fine paste. When correctly ground the mating surfaces of the valve and seat should present an even clean matt appearance. Before replacing the valves care should be taken to see that every particle of grinding compound has been removed both from the valves and the seats and valve ports.

RE-ASSEMBLY

When re-assembling, lightly oil the valve stem and enter the valve into its guide. Place the valve spring and collar in position, and holding the valve in position press down the spring and collar using a standard compression tool, insert the split cones into the valve groove and ease off the tension on the spring, locking the collar into position. Before fitting the cylinder head gasket ensure that the cylinder liner locating plate is seating correctly in the two flats provided, one on each liner.

Replace cylinder head using a gasket sealed with gasket cement and tighten the cylinder head nuts, in rotation, in the order shown in Fig. 17. The torque wrench setting for the cylinder head nuts is 42 ft./lbs.

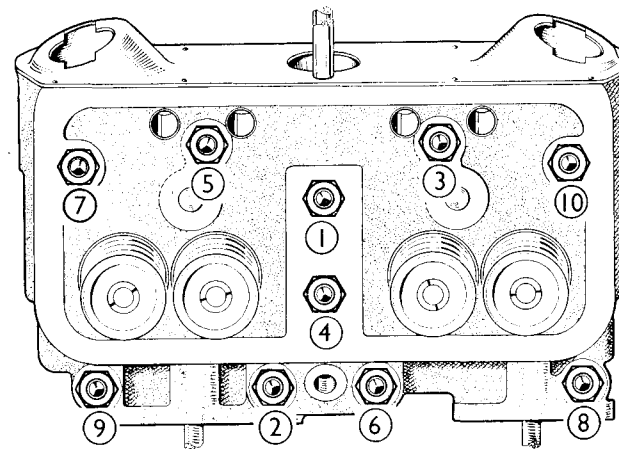


Figure 17 TIGHTENING ORDER CYLINDER HEAD NUTS

Smear the tappets with oil and refit into the crankcase. Fit the push rods and rocker shafts. Set the push rod adjustment so that with the engine cold there is a clearance of .002 in. (.0508 mm.) between the inlet valves and the rocker faces and .006 in. (.1524 mm.) between the exhaust valves and the rocker faces. It is necessary to rotate the engine to T.D.C. at the firing point for each cylinder when setting the push rods for that cylinder.

Clean or replace the crankcase air vent filter felts and refit the tappet cover.

Now remove the sump and thoroughly clean the sump filter gauze and the interior of the sump itself. Under no circumstances must cloth be used for cleaning internal engine parts. Loose threads or fluff adhering to the various surfaces tend to collect and cause a blockage in the lubrication system.

Replace sump and refill with engine oil.

Run the engine until the thermometer registers a temperature of approximately 75°C., check the flow of oil from the rocker shaft assembly which should be approximately 60 drops per minute, then again tighten up the cylinder head nuts. Finally refit the rocker covers and check for possible oil leaks.

ENGINE TUNING

The following notes on tuning the engine may be helpful to the owner who wishes to carry out this work himself.

The contact breaker gap should be checked and set at .014-.016 in. if a DM2 type distributor is fitted and .010-.012 in. if a DKYH4A type distributor is fitted.

The plug point gaps should be checked and set at .020-.025 in. (0.5-.60 mm.).

Tappet setting, engine cold: Inlet .002 in. (.0508 mm.).

Exhaust .006 in. (.1524 mm.).

The suction and centrifugal ignition advance mechanism must work perfectly freely. This point should be very carefully checked.

Ignition timing should be set at T.D.C. on the flywheel, subject, of course, to final adjustment on road test, and to the type of fuel available. Slight pinking on part throttle, at low speeds, is permissible, but if full throttle pinking occurs the ignition timing should be retarded slightly. It should not normally be necessary to retard the ignition later than $\frac{3}{8}$ in. after T.D.C.

Two Zenith 30 VM5 carburettors are fitted. All adjustments on these are made at the time of manufacture, other than the idling adjustment. After the first 500 miles, when the engine begins to lose its initial stiffness it may tend to idle at too fast a speed. This may be adjusted by means of the throttle stop screw A (see Fig. 18) and the air regulating screw B on each carburettor, the latter richens the mixture when turned clockwise and weakens it when turned anti-clockwise.

If, with the engine warm it idles too fast, slightly unscrew screw A on each carburettor an equal amount until a slower speed is reached. Do not try to make the engine idle too slowly or it may easily stall in traffic. It may now be necessary to readjust the air regulating screws B. If the engine is inclined to "hunt" the mixture is too rich and must be weakened by turning the air regulating screw anti-clockwise until a regular "beat"

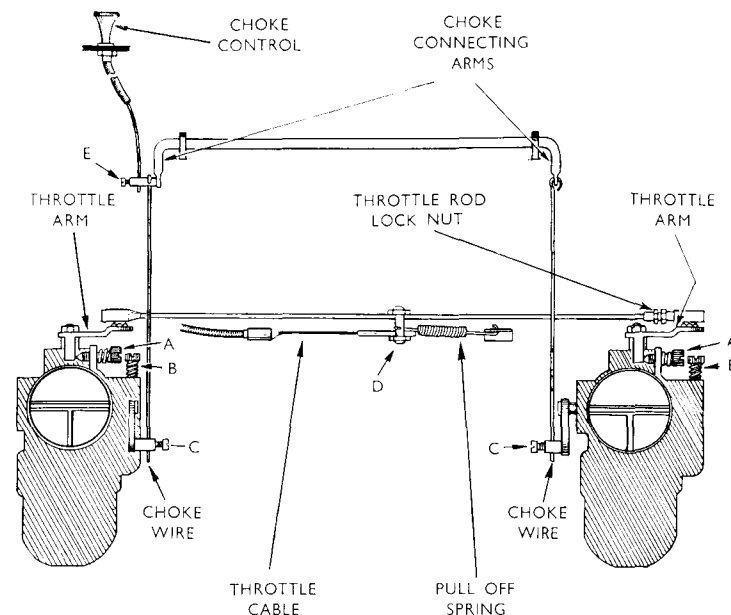


Figure 18 CARBURETTOR CONTROLS

A	Throttle Stop Screw (2)	D	Throttle Cable Screw
B	Air Regulating Screw (2)	E	Choke Cable Screw
C	Choke Wire Screws (2)		

is achieved. It is most important that the screw on each carburettor is adjusted an equal amount.

Should, for any reason, the carburettors become out of adjustment and cause engine idling to be uneven, it may be necessary to reset the throttle and slow running, and to ensure that the carburettors are perfectly synchronised, which is of the utmost importance, we recommend the following method of resetting be adopted:—

1. Remove pull off spring. (Fig. 18).
2. Release locknut (D) and withdraw accelerator cable.
3. Release the throttle rod nut allowing the rod to be lengthened or shortened as required.
4. Turn out throttle stop screws (A) until throttle arms are in the fully closed position.
5. Now holding throttle arms in the closed position turn adjusting screws (A) until they just contact the arms and then turn a further full turn. This ensures that both throttle plates are open exactly the same amount.

6. Again ensuring that the throttle arms are resting on screws (A) retighten the throttle rod nut thereby securing the throttle rod at its correct length.
7. Connect the throttle cable making sure that whilst no excessive slack exists it does allow the throttle arms to rest against screws A, when in the fully-closed position. Replace pull-off spring.
8. Screw in fully the air regulating screws B, without forcing and loosen out threequarters of a turn which is the approximate slow running position.
9. Switch on and start the engine and allow to warm. If the engine speed is too slow turn screws A equally in a clockwise direction until the desired speed is obtained. If the engine refuses to run for any length of time and gradually dies, it indicates that the mixture is too weak. To enrich turn screws B inwards equally. If engine tends to "hunt", the mixture is too rich, and screws B should be turned outwards equally.

CHOKE ADJUSTMENT

It is essential that the choke mechanism is adjusted correctly if good starting from cold and a good petrol consumption figure is to be obtained. To adjust:—

1. Slacken off screws C (Fig. 18), allowing choke wires to move freely in the strangler flap levers.
2. Ensuring the choke control knob is pushed in fully, slacken off screw E on right-hand side choke connecting arm and move arms until maximum fulcrum position is obtained, which is with choke connecting arms and choke wires pointing in a direct line to the strangler flap levers.

Retighten screw E in this position.

3. Holding the strangler flap levers forward so that strangler flap is in full open position, tighten screws C.

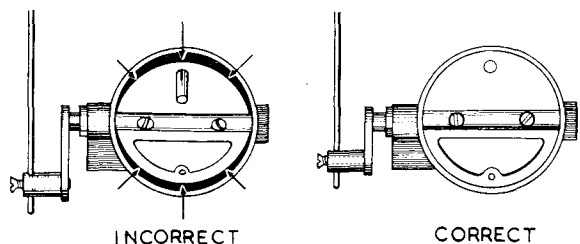


Figure 19 CHOKES

Finally, release air cleaner tube clip from top of carburettor and move tube to one side so that strangler flap is visible. Pull the choke control knob out fully and ensure that strangler flap is seating correctly on fully-closed position as shown in Fig. 19.

FAST IDLING ADJUSTMENT

This mechanism, operated by a connecting wire fastened to the strangler flap lever on the right-hand carburettor, works in conjunction with the choke (see Fig. 20) and increases the engine speed when the choke is operated by opening the throttle plate slightly.

To adjust:—

1. Slacken off screw E and move lever F upward until the lever contact opens the throttle plate slightly when the choke is operated, holding arm in this position tighten screw E. It is essential that the engine speed is not excessive when the choke is operated.

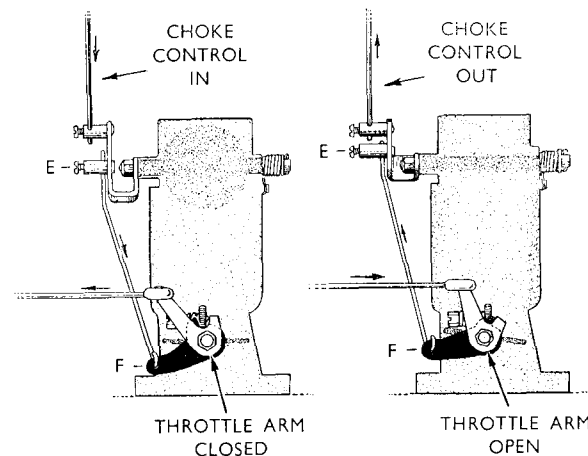


Figure 20 FAST IDLING ADJUSTMENT

CLEANING FUEL SYSTEM

To clean carburettor bowls and jets, unscrew the two set screws holding the bowls to the carburettor body and lift the bowls away. Remove the float, and screw out the main and compensator jets using the square end tip of the set screw (see Fig. 21). Remove the remaining jets with a screwdriver. Remove the emulsion block by unscrewing the five holding screws taking care not to damage the gasket. If damaged in any way replace the gasket. Wash out the jets and bowl and emulsion block in petrol and blow out thoroughly. To reassemble reverse the above procedure taking care to replace the fibre washers underneath the jets.

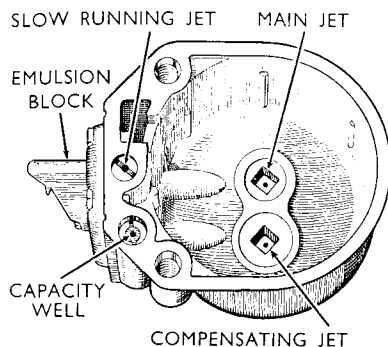


Figure 21 CARBURETTOR FLOAT CHAMBER JETS

CLEANING FUEL SYSTEM FILTERS

Two gauze filters are used in the petrol system to prevent ingress of dirt into the carburettors, one in the petrol pump and one in the petrol filter. These filters should be cleaned out periodically as follows.

The Petrol Pump is positioned at the front of the engine on the right-hand side. Remove the petrol pump top cover by removing the screw in its centre and lift out the gauze screen or filter. Wash in petrol and blow it through to remove any dirt. When replacing make sure that the cork gasket is correctly located, and that the cover is correctly seated and airtight. The cork cover gasket must be replaced if it is damaged or over compressed.

The Petrol Filter is positioned just above the petrol pump (see Fig. 4). To clean out the filter, remove the glass bowl by unscrewing the bowl retaining nut (see Fig. 22). Remove the cork washer taking care not to damage it in any way and withdraw the petrol filter gauze. Wash the gauze out in petrol, blow it through to remove any dirt and replace it in the filter. Before replacing the cork gasket examine it carefully and fit a new gasket if it shows any signs of damage. Wash out the bowl and when replacing ensure that a good fit is obtained between the cork gasket and the face of the bowl.

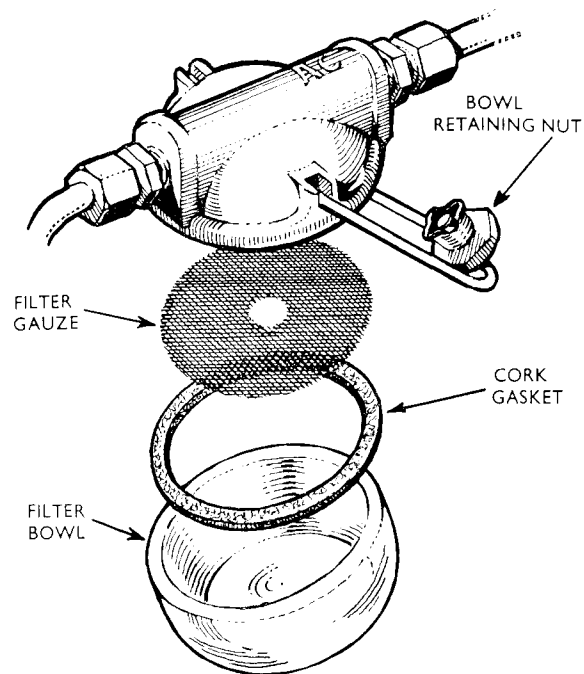


Figure 22 PETROL FILTER

CLEANING AIR FILTER

An oil bath type air filter is fitted to clean all air being drawn into the carburettor intakes. The filter is attached to the air silencer box positioned underneath the front of the bonnet and should be removed and cleaned every three thousand miles or more frequently if operating under extremely dusty climatic conditions. To carry out this operation remove the oil filter bath and element by unscrewing the two nuts securing the forward end of the oil bath to the air silencer box when the oil bath casing and element can be lifted away taking care not to spill the oil contained inside the oil bath. Thoroughly wash the bath and element in clean petrol or paraffin. Soak the element in engine oil and refill the bath with one third of a pint of engine oil. Replace the filter into the bath and refit the assembly ensuring that the felt joint which is fitted between the bath flange and the silencer box is correctly positioned to obtain an airtight joint.

Tracing Starter Trouble

Failure of the engine to start is usually due to a fault in the petrol feed or ignition system. After having made quite certain that the ignition has been properly switched on and that there is petrol in the tank, we would suggest that the systems are checked in the following manner, starting first with the ignition.

IGNITION SYSTEM

Remove a plug cover and, into the spring within its open end, clip the brass type tyre valve key (which is provided in the tool kit) so that its end is flush with the open end of the cover. Lay the cover on a metallic part of the engine as shown in Fig. 12. Crank the engine when every second complete turn a spark should jump across the skirt of the cover between the key and the metallic surface. If a spark does occur, the ignition system is in order and the fault may be in the sparking plugs. Remove these and clean and adjust to the correct gap. If, however, no spark occurs, the ignition system is at fault and further investigation is required.

Remove the wire marked (S.W.) from the bottom of the coil and with the ignition switched "on" touch momentarily the terminal end to a metallic part of the engine. If a spark does not occur it indicates a faulty wire or connection between the coil and switch, or the switch and the battery and these should be examined carefully to locate the trouble. If a spark did occur on the above test remove distributor cover and examine the contact breaker points. If they are worn or pitted, clean, and adjust to correct gap.

PETROL SYSTEM

Check that the choke mechanism is working correctly and that both strangler flaps are closing fully when the choke is pulled out (see Fig. 19). Remove one of the carburettor bowls, and with the ignition switched "Off" crank the engine. Petrol should now flow past the carburettor needle valve. If no petrol appears remove the cover from the petrol pump and examine the pump filter gauze and pump cover gasket and also clean out the petrol filter as described on page 40. If, after these have been attended to, the petrol system is still not in order, it would indicate a defective petrol pump diaphragm or a blockage between the pump and the tank, in which case the owner would be well advised to contact his Main Agent or Service Station.

Electrical System Maintenance



The electrical system is a Lucas 12-volt earth return system, with compensated voltage control. A diagrammatic drawing of the wiring system is shown in Figs. 33 and 34 affixed inside the back cover. It requires

no attention beyond the routine maintenance duties described below.

THE BATTERY

The 12-volt unit is carried underneath the rear seat—access is gained by removing this and then lifting the access door in the rear seat pan (see Fig. 23). Remove the six vent plugs in the battery so that the electrolyte is visible. This is a solution of acid and water, and it should always just cover the tops of the plates. Keep the cells topped up to this level by adding distilled water—use of a small glass funnel will greatly help this operation. After replacing the plugs, wipe the top of the battery dry.

Keep the terminals of the battery clean. If they are corroded, scrape them clean and smear with petroleum jelly. Occasionally check to see whether the battery is firmly fixed by trying to move it with your hands. If there is any movement tighten up the fixing bolts.

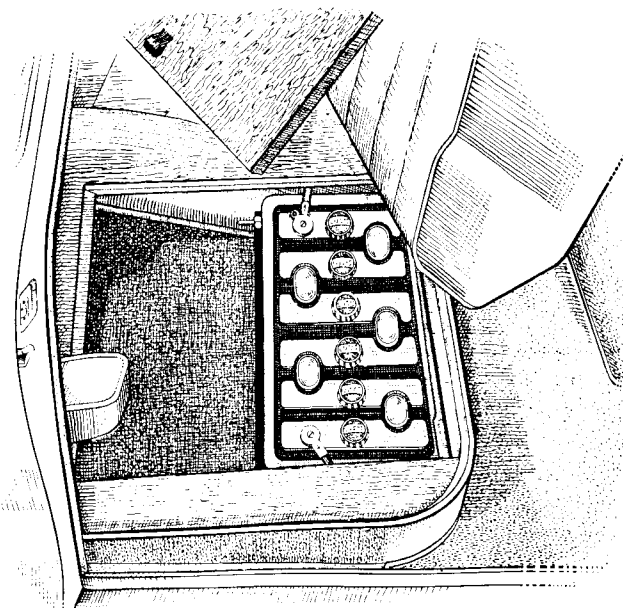


Figure 23
POSITION OF
BATTERY
WITH REAR
SEAT LIFTED
(LEFT-HAND
DRIVE,
R.H. OPPOSITE
SIDE)

DISTRIBUTOR LUBRICATION AND ADJUSTMENT

The distributor is at the front of the engine on the right-hand side. Remove the cap by springing back the two securing clips on the outside. Place the spout of the oil can through the central hole in the base plate through which the spindle passes, and inject a few drops of oil on to the governor mechanism. Put a light smear of grease on the contact breaker cam, and a spot of oil on the pivot on which the contact breaker works. Do not allow any oil to get on or near the contacts. To check the setting of

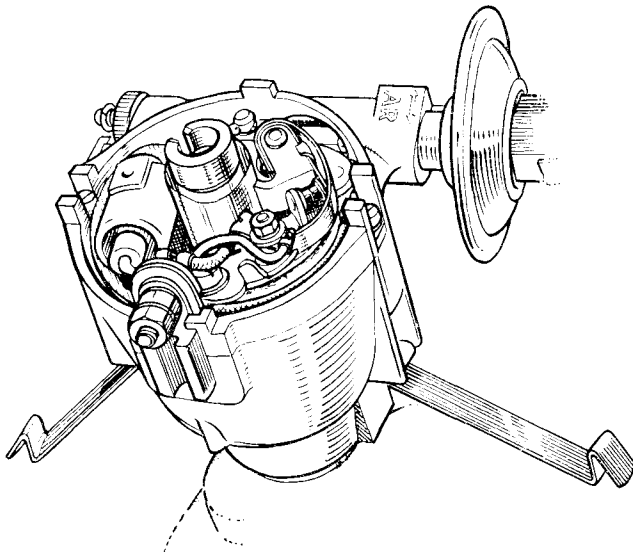


Figure 24
DISTRIBUTOR
WITH CAP
REMOVED

the contact breaker, turn the engine by hand until the contacts are fully open. Insert the gauge provided on the ignition screwdriver between the contact; it should be a sliding fit when the gap is correct. To make adjustment, keep the engine in the position giving maximum opening of the contacts, and slacken the two screws securing the fixed contact plate. Then move the plate until the gap is set to the thickness of the gauge, tighten the two screws and re-check the setting.

If the contact faces are badly worn or pitted, they should be redressed, using a fine carborundum stone or very fine emery cloth. Finish off with a cloth moistened with petrol and remove all traces of dirt and metal dust. Dirt between the points will cause misfiring and bad starting.

DIRECTION INDICATOR LUBRICATION

Raise the arm of the direction indicator by switching on and then supporting the arm in the horizontal position, move the switch to the "off" position. Apply, by means of a brush or other suitable article, a drop of thin machine oil, such as sewing machine oil, to the catch pin between the arm and the operating mechanism. Also withdraw the screw on the underside of the arm 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.

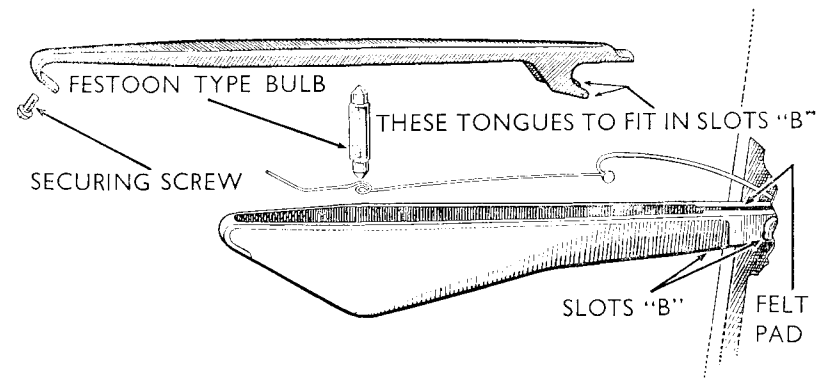


Figure 25 DIRECTION INDICATOR ASSEMBLY

DYNAMO LUBRICATION

Unscrew the lubricator fitted at the rear end (see Fig. 11) and lift out the felt pad and spring, and about half fill the lubricator with H.M.P. grease. Replace the spring and felt pad, and screw the lubricator back in position.

BULB REPLACEMENT SIDE LAMP (DE LUXE AND STANDARD)

To gain access to the side lamp bulb, carefully ease the glass and rim assembly out of the lower portion of the rubber rim and lift clear of the top locating lips on the lamp body (see Fig. 26). The bulb which is of the bayonet fixing type can then be removed. To replace the glass and rim assembly, place the rim over the body locating lips and work gently under the rubber rim.

HEADLAMP BULB REPLACEMENT

Each headlamp incorporates a Lucas Light Unit, which consists essentially of a reflector and front glass assembly provided with a mounting flange by means of which it is screwed in the body housing. The bulb, which is of the pre-focus type, is located accurately in the rear of the light unit, and is secured by a bayonet-fixed back-shell which also provides the contact to the bulb.

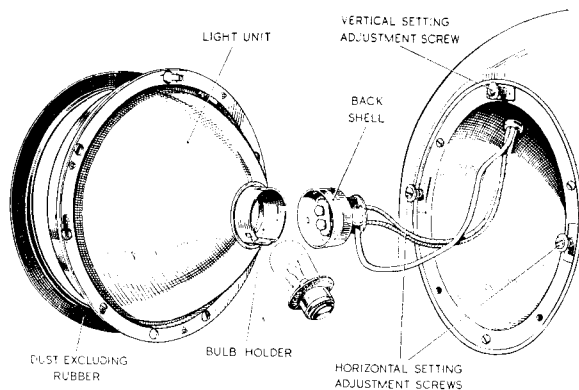


Figure 30 HEADLAMP BULB REPLACEMENT

To replace a bulb, remove the front rim of the headlamp by unscrewing its securing screw and lifting off; it is split to facilitate removal. Next remove the dust-excluding rubber, when three spring-loaded adjustment screws will be visible. Press the light unit in against the tension of the adjustment screw springs, and turn it in an anti-clockwise direction until the heads of the screws can be disengaged through the slotted holes in the light unit rim. Do not disturb the screws when removing the light unit as this will alter the lamp setting.

Twist the back-shell in an anti-clockwise direction and pull it off. The bulb can then be removed. Place the replacement bulb in the holder. Engage the projections on the inside of the back-shell with the slots in the holder, press on, and screw by twisting it to the right ensuring that the arrow on the light unit is opposite the arrow on the back-shell.

Position the light unit in the large body so that the heads of the adjusting screws protrude through the slotted holes in the flange, press the unit and turn in a clockwise direction. Replace the dust-excluding rubber so that its thicker inner edge rests in the recess around the light unit rim, locating the top of the rim first and securing by means of the fixing screw.

HEADLAMP BEAM SETTING

The lamps should be set so that the main driving beams are directed straight ahead, parallel with the road surface and with each other. If adjustment is required, remove the rim by removing its securing screw. Set the horizontal adjustment first by turning in or out, the adjustment screws at each side of the light unit. Set each lamp to correct vertical position by means of the vertical adjustment screw at the top of the light unit; turn the screw clockwise to raise the beam and anti-clockwise to lower it. (see Fig. 31).

The setting of the lamps can best be carried out by placing the car in front of a blank wall at the greatest possible distance, taking care, of course, that the surface on which the car stands is not sloping relative to the wall. It will be found an advantage to cover one lamp while setting the other.

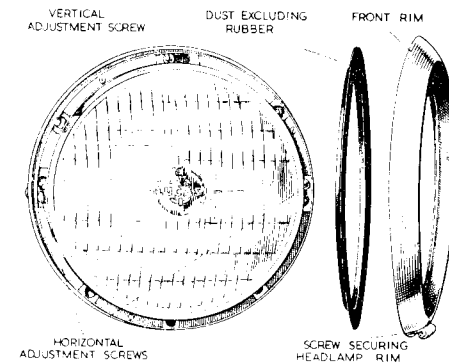


Figure 31 HEADLAMP BEAM SETTING

FUSES

The fuses are carried on a separate Fuse Unit adjacent to the control box, which is on the left-hand side of the dash under the bonnet. Two fuses are fitted: that bridging terminals A1-A2 protects the horn circuit, interior light and components which must operate irrespective of the ignition being "on" or "off"; that bridging terminals A3-A4 protects all components wired in the ignition circuit, namely, the warning lamps, the windscreen wiper, the direction indicators, the fuel gauge, the heater, and the stop lamp.

When a fuse "blows", all the items protected by it become inoperative; confirm this by removing the fuse - if it has "blown", the broken ends of the wire will be visible inside the glass tube. Before replacing a blown fuse, inspect the wiring of the units that have failed for evidence of a short circuit or other fault which may have caused the trouble, and repair it.

Spare fuses are provided, and it is important to use only the correct replacement fuse, namely 35 amps.

TOOLS

The tools provided with the car are stored in the tool locker at the rear of the luggage compartment, as shown in Fig. 32. The tray holding the small tools on the De Luxe models is removable by pulling out the latch shown, and can thus be carried to wherever the tools are wanted.

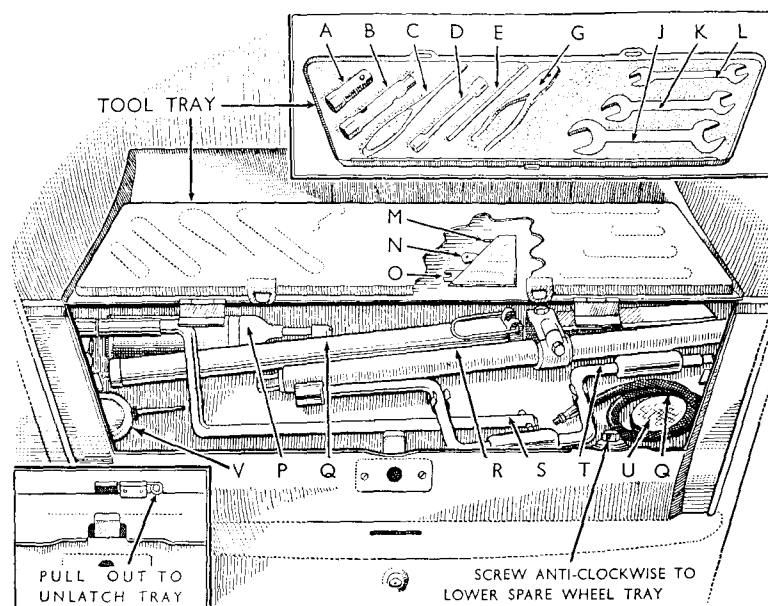


Figure 32 TOOLS (DE LUXE MODEL)

STANDARD TOOL KIT

A Spark Plug Spanner
C Screwdriver
E Tommy Bar
G Pliers
M Tyre Valve Key
N Contact Breaker Spanner
O Gearbox Drain Plug
P Grease Gun
Q Tyre Pump and Connection
R Jack—Stevenson Type
S Starting Handle

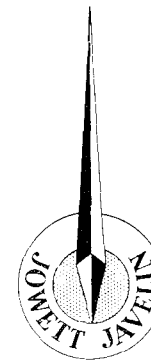
T Wheel Brace
U Bleeder Tube and Container
ADDITIONAL TOOLS DE LUXE
B Box Spanner $\frac{1}{16} \times \frac{3}{8}$ in.
D Cylinder Head Spanner
J $\frac{7}{16} \times \frac{1}{4}$ in. Spanner
K $\frac{7}{16} \times \frac{3}{8}$ in. Spanner
L $\frac{3}{16} \times \frac{1}{4}$ in. Spanner
V Oil Can
TOOL TRAY

The jack is a Smith's side-lifting type—in operation the hinged H section member is inserted in the square socket at the side of the body below the centre pillar. Before jacking the car make certain that this member is fully "home" in the socket. The jack is then operated by the wheel brace placed on the hexagon nut at the top of the screw.

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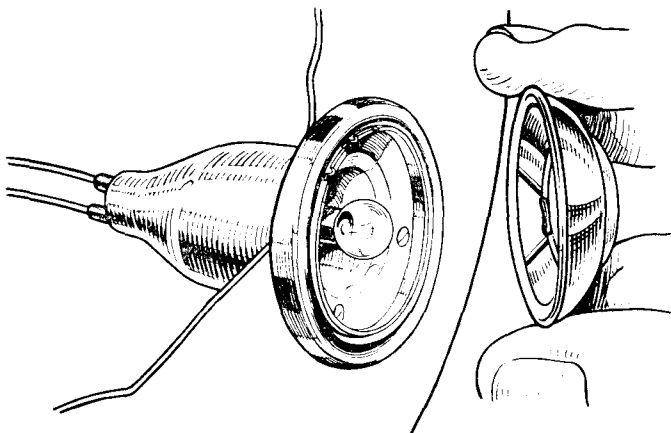


Figure 26 SIDE LAMP BULB REPLACEMENT

STOP TAIL LAMP (DE LUXE AND STANDARD)

Remove the top screw and turn the lamp rim approximately one quarter of a turn, until the tag on the lamp body comes opposite the cut-away on the mudwing. The lamp body can then be eased forward, away from the mudwing. Move the rubber cover back along the wires and turn the bulb holder until it is free of the securing clip and can be withdrawn. The bulb can then be removed. The bulb, which is of the twin filament type, is marked TOP and should coincide with the mark TOP on the bulb holder when being replaced. After replacing the bulb slide the bulb holder in position and make sure that the spring securing clip registers securely into the elongated holes in the bulb holder. Move the rubber cover back into position and replace the lamp unit by reversing the removal procedure.

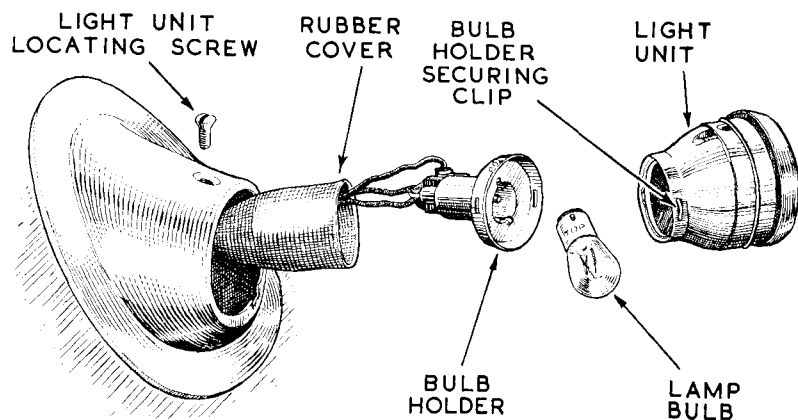


Figure 27 STOP TAIL LAMP ASSEMBLY

NUMBERPLATE LIGHT BULB REPLACEMENT (STANDARD)

Remove the chrome cover by unscrewing the centre screw. The bulb, which is the bayonet-fixing type is held in position by the spring contact, and can be removed and replaced without disturbing any other part of the assembly. When replacing the cover, do not overtighten the holding screw as this may tend to force the metal cover inwards and fracture the glass.

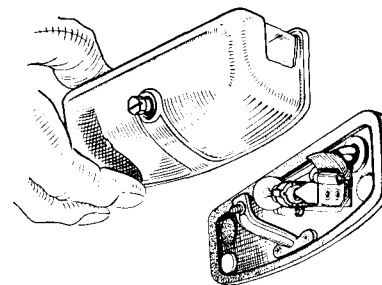


Figure 28 NUMBER PLATE LIGHT

REPLACING NUMBER PLATE AND REVERSE LIGHT BULBS (DE LUXE)

Remove the two screws which secure the cover in position and withdraw the cover. The bulbs, which are of the bayonet fitting type, held in position by the spring contact can then be removed and replaced as required. When replacing the cover ensure that the rubber gasket and washers are positioned correctly. Do not over-tighten the cover screws as this would have a tendency to distort the cover and fracture the reverse lamp glass.

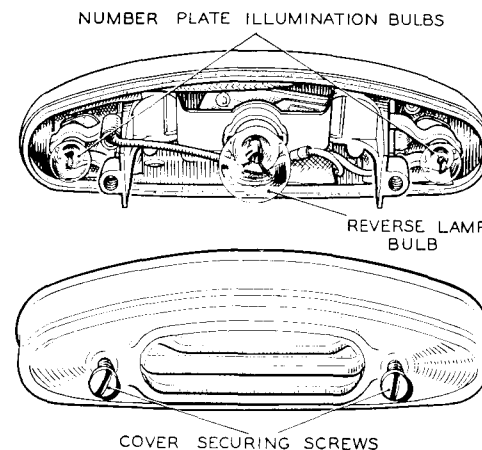


Figure 29 NUMBER PLATE AND REVERSE LIGHT