BY APPOINTMENT
TO H.M. QUEEN ELIZABETH
THE QUEEN MOTHER
MOTOR CAR MANUFACTURERS
JAGUAR CARS LTD

JAGUAR

3·4 'S' and 3·8 'S'

MODELS

OPERATING, MAINTENANCE AND SERVICE HANDBOOK

Jaguar Cars Limited reserve the right to make changes in design, or to make additions to or improvements upon their products without incurring any obligation to install the same on vehicles previously built.

ISSUED BY

JAGUAR CARS LIMITED, COVENTRY, ENGLAND

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FOREWORD

This Handbook gives the information necessary for the satisfactory operation and maintenance of the Jaguar 3.4 'S' and 3.8 'S' Models.

Major service operations and repairs are not described and the owner is recommended to have operations not covered in this Handbook executed by the local Jaguar Distributor or Dealer, who is in a position to give authoritative advice and service. The satisfactory running and fine performance of which the car is capable, depends to a great extent upon the care and attention which it receives from the owner. We, therefore, earnestly recommend that careful attention is paid to the following instructions and that the servicing detailed in the "Routine Maintenance" section is carried out at the suggested periods. The text of the Handbook is divided into three main sections :—

Operating Instructions

deals with the operation of the controls and equipment.

Routine Maintenance

deals with the maintenance of the various components of the car at certain mileage intervals.

Service Instructions

deals with certain operations which should normally be undertaken by a Jaguar Distributor or Dealer, but which are included as a guide for the enthusiast or the owner living in a remote district.

Note

All references in this Handbook to "right-hand side" and "left-hand side" are made assuming the person to be looking from the rear of the car or unit.

The 3·4/3·8 'S' model.

INDEX

CAR IDENTIFICATION

It is imperative that the Car and Engine numbers, together with any prefix or suffix letters, are quoted in any correspondence concerning this vehicle. If the unit in question is the Gearbox or Overdrive the Gearbox number and any prefix or suffix letters must also be quoted. This also applies when ordering spare parts.

Car Number .. ..

Stamped in the bonnet catch channel, forward of the radiator header tank.

Suffix "DN" to the car number indicates that an overdrive unit is fitted.

Engine Number .. ..

Stamped on the right-hand side of the cylinder block above the oil filter and at the front of the cylinder head casting.

/7, /8 or /9 following the engine number denotes the compression ratio.

Gearbox Number .. ..

Stamped on a shoulder at the left-hand rear corner of the gearbox casing and on the top cover.

Letter "N" at the end of the prefix letters indicates that an overdrive unit is fitted.

Key Numbers **(i)** .. .. **(ii)** .. ..

Two different types of key are provided to enable the car to be left with the luggage boot and cubby locker locked, on the occasions when it is required to leave the ignition key with the car.

(a) The round headed key operates the ignition switch, and door locks.

(b) The rectangular headed key operates the locks for the luggage boot lid and the cubby locker.

SEAT BELTS

Anchorage points for seat belts are incorporated in the construction of the car. If it is required to fit seat belts, contact your usual Jaguar dealer.

GENERAL DATA

Engine

Number of cylinders	6
Bore—3.4 Litre	3.2677″ (83 mm.)
Bore—3.8 Litre	3.425″ (87 mm.)
Stroke	4.1732″ (106 mm.)
Cubic capacity—3.4 Litre	3,442 c.c. (210.6 cu. ins.)
Cubic capacity—3.8 Litre	3,781 c.c. (230.6 cu. ins.)
Compression ratio	8 to 1 (7 to 1 or 9 to 1 alternative)
Torque (max.)—3.4 Litre	215 lbs. ft. (29.2 kg./m.) at 3,000 r.p.m.
Torque (max.)—3.8 Litre	240 lbs. ft. (32.2 kg./m.) at 3,000 r.p.m.
Distributor contact breaker gap	.014″—.016″ (.36—.41 mm.)
Sparking plug type	Champion UN12Y
Sparking plug gap	.025″ (.64 mm.)
Ignition Timing	
7 to 1 comp. ratio	7° B.T.D.C.
8 to 1 comp. ratio	7° B.T.D.C.
9 to 1 comp. ratio	5° B.T.D.C.
Valve Clearances (cold)	
Inlet	.004″ (.10 mm.)
Exhaust	.006″ (.15 mm.)
Valve Seat Angle	
Inlet and Exhaust	45°
Firing Order	1, 5, 3, 6, 2, 4.
Tightening Torque Figures	
Flywheel	67 lbs. ft. (9.2 kg./m.)
Connecting rod	37 lbs. ft. (5.1 kg./m.)
Main bearings	83 lbs. ft. (11.5 kg./m.)
Cylinder head	54 lbs. ft. (7.5 kg./m.)
Camshaft bearings	15 lbs. ft. (2.0 kg./m.)

Carburetters

Type : S.U. H.D.6

Gearbox

Type: Four speed—synchromesh on 1st, 2nd, 3rd and top.

Front Suspension and Steering

Castor angle	$0° \pm \frac{1}{2}°$
Camber angle	$\frac{1}{2}° \pm \frac{1}{2}°$ positive
Front wheel alignment	Parallel to $\frac{1}{16}''$ (1.59 mm.) toe-in

Rear Suspension

Camber angle	$\frac{3}{4}° \pm \frac{1}{4}°$ negative

Independent Rear Drive Unit

Type : Hypoid.

Ratio

Cars fitted with a synchromesh gearbox only	3.54 : 1*
Cars fitted with an overdrive	3.77 : 1
Cars fitted with automatic transmission	3.54 : 1*

*Cars for U.S.A. and Canada .. .. 3·77 : 1

Automatic Gear Changes

Upshifts

		m.p.h.	k.p.h.
Low to intermediate—light throttle		11	18
Low to intermediate—full throttle		40	64
Intermediate to direct—light throttle		23	37
Intermediate to direct—full throttle		64	103
Intermediate to direct—after "kick down"		78	126

Downshifts

Direct to intermediate—closed throttle		16	26
Intermediate to low—closed throttle		4	6
Direct to intermediate—"kick down"	Up to	68	109
Parking pawl permitted to engage	Below	3 to 5	5 to 8
Reverse gear permitted to engage	Below	10	16
Manual change from drive to low to be **avoided**	Above	45	72

Tyres

Type: Dunlop SP 185 × 15

Pressures	**Front**	**Rear**
For conditions where maximum performance with sustained speeds is being used, or for touring conditions where the car is fully laden	36 lb./in.^{2} (2.5 kg./cm.^{2})	36 lb./in.^{2} (2.5 kg./cm.^{2})
For normal motoring with maximum speed up to 100 m.p.h. (160 k.p.h.)	30 lb./in.^{2} (2.1 kg./cm.^{2})	30 lb./in.^{2} (2.1 kg./cm.^{2})

For two-up normal motoring to give maximum comfort it is permissible and may be found desirable to reduce the rear tyre pressures by 3 lb./in.^{2} (0.2 kg./cm.^{2}).

Capacities

	Imperial	U.S.	Litres
Engine (refill including filter)	12 pints	14½ pints	6.75
Gearbox (without overdrive)	2½ ,,	3 ,,	1.5
Gearbox (with overdrive)	4 ,,	4¾ ,,	2.25
Automatic transmission unit	15 ,,	18 ,,	8.5
Rear axle	2¾ ,,	3¼ ,,	1.5
Cooling system (including heater)	22 ,,	26½ ,,	12.5
Petrol tanks—left hand	7 galls.	8¼ galls.	31.75
Petrol tanks—right hand	7 ,,	8¼ ,,	31.75

Dimensions and Weights

Wheelbase	8′ 11⅜″	(2.727 m.)
Track, Front—Disc Wheels	4′ 7¼″	(1.403 m.)
Track, Front—Wire Wheels	4′ 7¼″	(1.403 m.)
Track, Rear—Disc Wheels	4′ 6¼″	(1.373 m.)
Track, Rear —Wire Wheels	4′ 4⅞″	(1.343 m.)
Overall length	15′ 7$\frac{13}{16}$″	(4.770 m.)
Overall width	5′ 6¾″	(1.695 m.)
Overall height	4′ 6½″	(1.38 m.)
Weight (dry) approximate	30.7 cwts.	(1560 kg.)
Turning circle	33′ 6″	(10.21 m.)
Ground Clearance	7″	(178 mm.)

Lamp Bulbs

LAMP	LUCAS BULB No.	VOLTS	WATTS	APPLICATION
Head	Sealed Beam Unit	12	75/45	Home and R.H.D. Export
	Sealed Beam Unit	12	50/40	Middle East, S. America and U.S.A.
	410	12	45/40	Belgium, Holland, Sweden, Austria and Italy
	411	12	45/40 (Yellow)	France
Side	989	12	6W	
Front and Rear Flashing Indicators	382	12	21W	
Rear/Brake	380	12	21/6W	
Number plate and luggage compartment illumination	989	12	6W	
Reversing light	382	12	21W	
Fog lights	Sealed beam unit			
(Not fitted on cars for U.S.A.)	Phillips No. 683	12	48W	Switzerland
	323	12	48W	France
Interior light	254	12	6W	
Glovebox illumination ..	254	12	6W	
Map light	989	12	6W	
Instrument illumination: Headlamp warning light .. Ignition warning light .. Handbrake/Brake Fluid .. warning light .. .. Backlight heater warning light ... ... Traffic hazard warning light	987	12	2.2W	
Switch indicator strip .. Flasher indicator warning light .. .. .. Automatic Transmission indicator light .. .. Overdrive indicator light ..	281	12	2W	

PERFORMANCE DATA

The following table gives the relationship between engine revolutions per minute and road speed in miles and kilometres per hour.

It is recommended that engine revolutions **in excess of 5,000 per minute** should not be exceeded for long periods. Therefore, if travelling at sustained high speed on motorways, the accelerator should be released occasionally to allow the car to overrun for a few seconds.

AXLE RATIO 3.54 : 1

ROAD SPEED		ENGINE REVOLUTIONS PER MINUTE			
Kilometres per hour	Miles per hour	First and Reverse Gears 10.760	Second Gear 6.98	Third Gear 4.7	Top Gear 3.54
16	10	1413	917	617	465
32	20	2826	1833	1234	930
48	30	4239	2750	1852	1395
64	40		3667	2469	1860
80	50		4584	3086	2325
96	60		5501	3703	2790
112	70			4320	3250
128	80			4938	3720
144	90			5555	4185
160	100				4650
176	110				5115
192	120				5580

Note: The figures in the above table are theoretical and make no allowance for changes in tyre radius due to the effect of centrifugal force.

The following table gives the relationship between engine revolutions per minute and road speed in miles and kilometres per hour.

It is recommended that engine revolutions **in excess of 5,000 per minute** should not be exceeded for long periods. Therefore, if travelling at sustained high speed on motorways, the accelerator should be released occasionally to allow the car to overrun for a few seconds.

AXLE RATIO 3.77 : 1

(Ratio for cars fitted with an overdrive)

ROAD SPEED		ENGINE REVOLUTIONS PER MINUTE				
Kilometres per hour	Miles per hour	First and Reverse Gears 11.46	Second Gear 7.44	Third Gear 5.0	Top Gear 3.77	Overdrive 2.933
16	10	1505	977	657	495	385
32	20	3010	1954	1314	990	770
48	30	4515	2931	1971	1485	1155
64	40		3908	2628	1980	1541
80	50		4885	3285	2475	1926
96	60			3942	2970	2311
112	70			4599	3465	2696
128	80			5256	3960	3082
144	90				4455	3467
160	100				4951	3852
176	110				5445	4237
192	120					4622

Note: The figures in the above table are theoretical and make no allowance for changes in tyre radius due to the effect of centrifugal force.

OPERATING INSTRUCTIONS

INSTRUMENTS

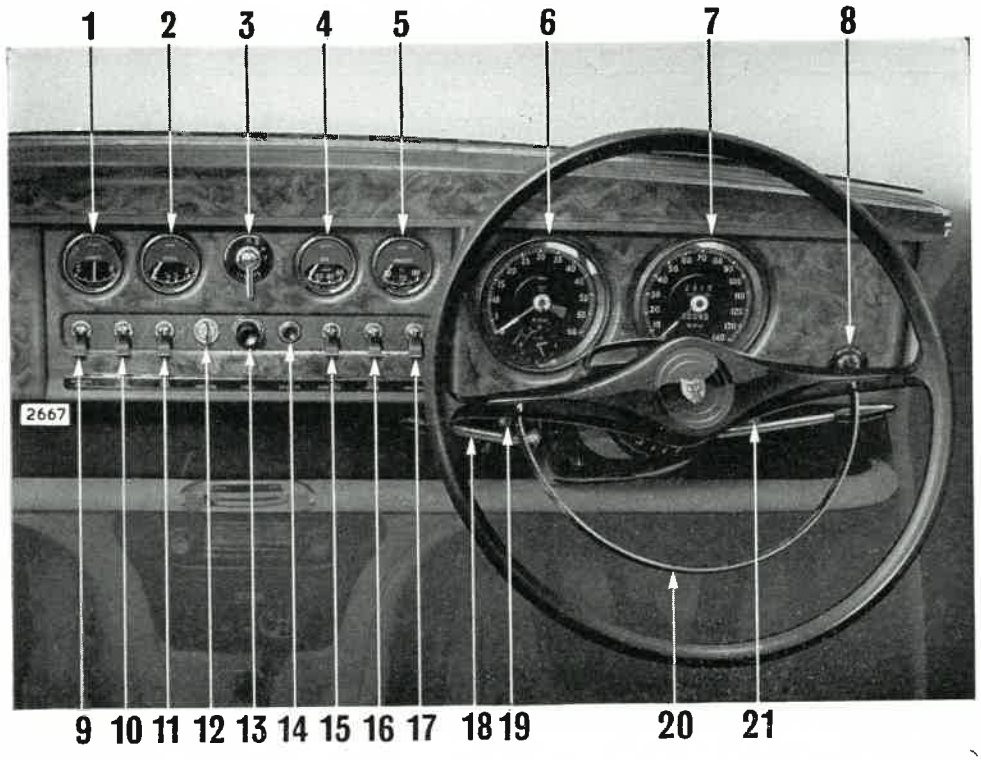


Fig. 1. **Instruments and controls—Right hand drive.**

1. *Ammeter.*
2. *Fuel gauge.*
3. *Lighting switch.*
4. *Oil pressure gauge.*
5. *Water temperature gauge.*
6. *Revolution counter.*
7. *Speedometer.*
8. *Brake fluid level/Handbrake warning light.*
9. *Interior/Map light switch.*
10. *Panel light switch.*
11. *Heater fan switch.*
12. *Ignition switch.*
13. *Cigar lighter.*
14. *Starter switch.*
15. *Fuel tank change-over switch.*
16. *Windscreen wiper switch.*
17. *Windscreen washer switch.*
18. *Flashing direction indicator and headlamp flashing switch.*
19. *Clock adjuster.*
20. *Horn switch ring.*
21. *Speedo trip control.*

OPERATING INSTRUCTIONS

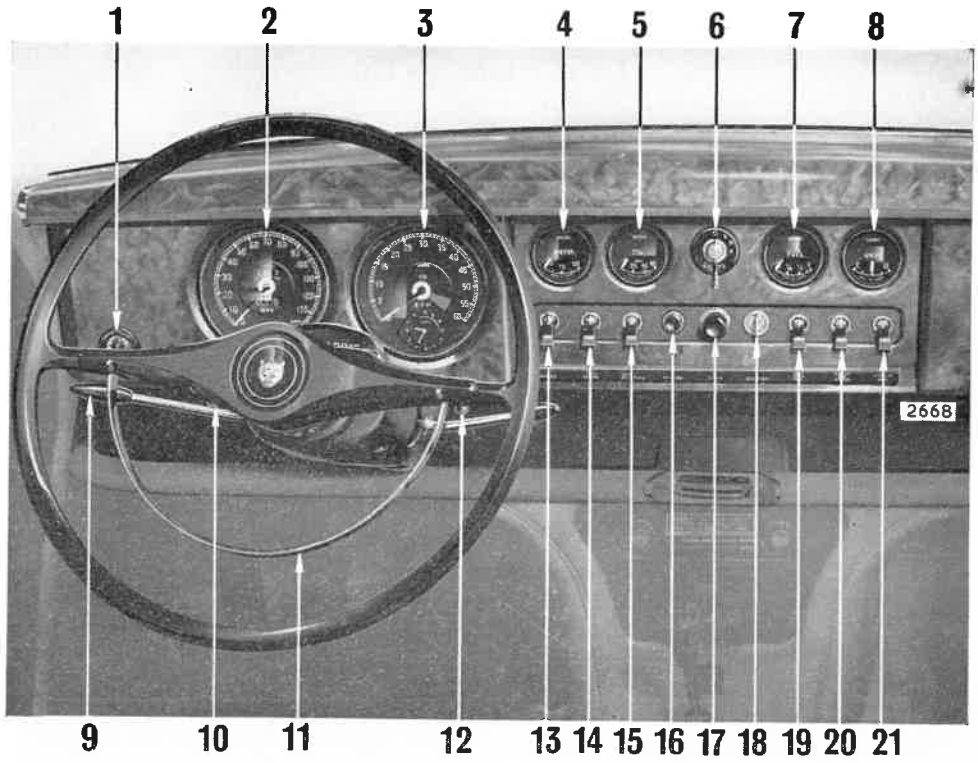


Fig. 2. **Instruments and controls—Left-hand drive.**

1. *Brake fluid level/Handbrake warning light.*
2. *Speedometer.*
3. *Revolution counter.*
4. *Water temperature gauge.*
5. *Oil pressure gauge.*
6. *Lighting switch.*
7. *Fuel gauge.*
8. *Ammeter.*
9. *Flashing direction indicator and headlamp flashing switch.*
10. *Speedometer trip control.*
11. *Horn switch ring.*
12. *Clock adjuster.*
13. *Windscreen washer switch.*
14. *Windscreen wiper switch.*
15. *Fuel tank change-over switch.*
16. *Starter switch.*
17. *Cigar lighter.*
18. *Ignition switch.*
19. *Heater fan switch.*
20. *Panel light switch.*
21. *Interior/Map light switch.*

Ammeter

Records the flow of current into or out of the battery. Since compensated voltage control is incorporated, the flow of current is adjusted to the state of charge of the battery; thus when the battery is fully charged the dynamo provides only a small output and therefore little charge is registered on the ammeter, whereas when the battery is low a continuous high charge is shown.

Oil Pressure Gauge

The electrically operated pressure gauge records the oil pressure being delivered by the oil pump to the engine; it does not record the quantity of oil in the sump. The minimum pressure at 3,000 r.p.m. when hot should not be less than 40 lbs. per square inch.

Note : After switching on, a period of approximately 20 seconds will elapse before the correct reading is obtained.

Water Temperature Gauge

The electrically operated water temperature gauge records the temperature of the coolant by means of a bulb screwed into the inlet manifold water jacket.

Fuel Level Gauge

Records the quantity of fuel in the supply tank in use. To obtain readings for the opposite tank operate the fuel change-over switch on the instrument panel. Readings will only be obtained when the ignition is switched "ON".

Note : Lift the switch lever for the left-hand tank, lower for the right-hand tank as shown on the switch indicator strip.

Electric Clock

The clock is built in the revolution counter instrument and is powered by the battery. The clock hands may be adjusted by pushing up the winder and rotating. Starting is accomplished in the same manner. The clock should always be running when connected to the electrical supply.

Revolution Counter

Records the speed of the engine in revolutions per minute.

Speedometer

Records the vehicle speed in miles per hour, total mileage and trip mileage (kilometres on certain export models). The trip figures can be set to zero by pushing the winder upwards and rotating clockwise.

Headlamp Warning Light

A warning light marked "Headlamps" situated in the speedometer, lights up when the headlamps are in full beam position and is automatically extinguished when the lamps are in the dipped beam position.

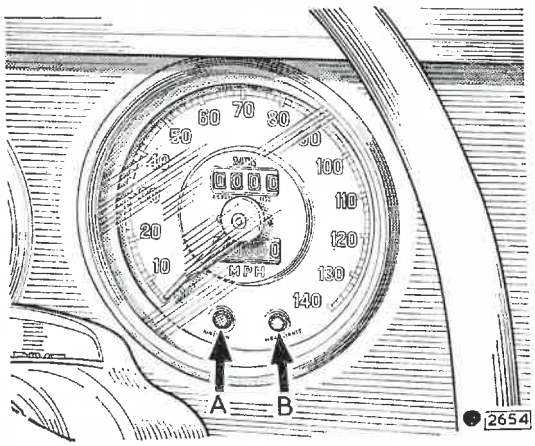


Fig. 3. *Warning lights. A—Ignition. B—Headlamp main beam.*

Ignition Warning Light

A red warning light (marked "Ignition") situated in the speedometer lights up when the ignition is switched "on" and the engine is not running, or when the engine is running at a speed insufficient to charge the battery. The latter condition is not harmful, but always switch "off" when the engine is not running.

Flashing Direction Indicator-Warning Lights

The warning lights are in the form of green arrows one at each side of the quadrant situated behind the steering wheel.

When the flashing indicators are in operation one of the arrows lights up on the side selected.

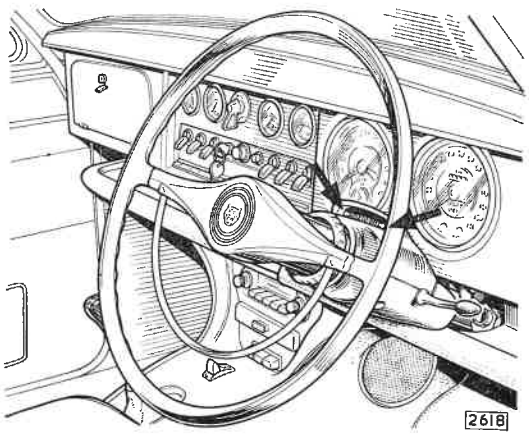


Fig. 4. *Flashing direction indicator warning lights.*

Brake Fluid Level and Handbrake Warning Light

A warning light (marked "Brake Fluid—Handbrake") situated on the facia behind the steering wheel, serves to indicate if the level in the brake fluid reservoir has become low, provided the ignition is "on." As the warning light is also illuminated when the handbrake is applied, the handbrake must be fully released before it is assumed that the fluid level is low. If with the ignition "on" and the handbrake fully released the warning light is illuminated the brake fluid must be "topped up" immediately.

As the warning light is illuminated when the handbrake is applied and the ignition is "on" a two-fold purpose is served. Firstly, to avoid the possibility of driving away with the handbrake applied. Secondly, as a check that the warning light bulb has not "blown"; if on first starting up the car with the handbrake fully applied, the warning light does not become illuminated the bulb should be changed immediately.

Fig. 5. *Brake fluid level and handbrake warning light.*

CONTROLS AND ACCESSORIES

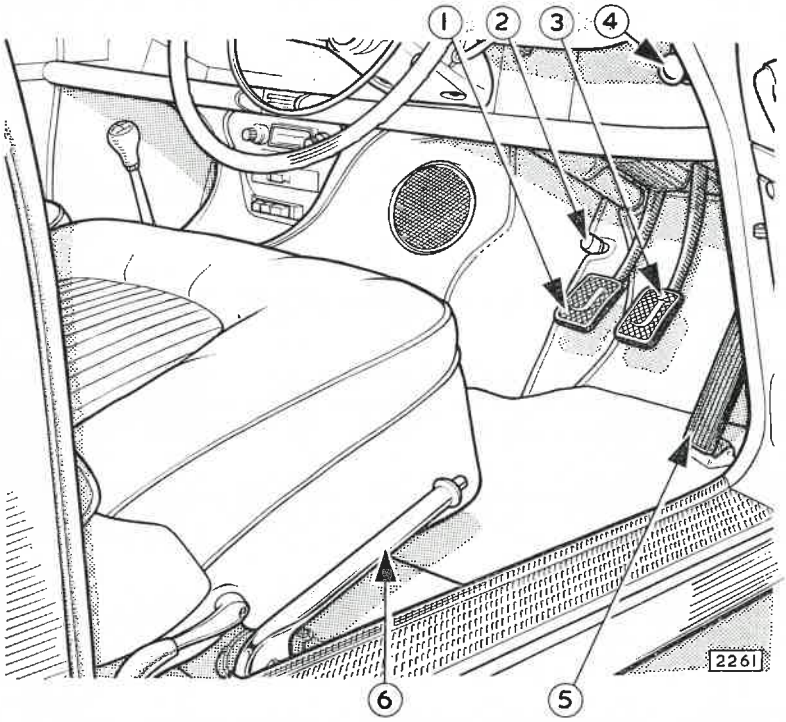


Fig. 6. *The foot and hand controls. 1. Clutch pedal. 2. Headlamp dipper. 3. Brake pedal. 4. Bonnet lock control. 5. Accelerator pedal. 6. Handbrake.*

Accelerator Pedal

Controls the speed of the engine.

Brake Pedal

Operates the vacuum-servo assisted disc brakes on all four wheels.

Clutch Pedal

On overdrive and standard transmission cars, connects and disconnects the engine and the transmission. Never drive with the foot resting on the pedal and do not keep the pedal depressed for long periods in traffic. Never coast the car with a gear engaged and clutch depressed.

Headlight Dipper

Situated on the toe boards to the left of the clutch pedal. The switch is of the change over type and if the headlights are in the full beam position a single pressure on the control will switch the lights to the dipped beam position and they will remain so until another single pressure switches them to the full beam position again.

Gear Lever (Overdrive and Standard Transmission Models)

Centrally situated and with gear positions indicated on the control knob. To engage reverse gear first press the lever against the spring pressure before pulling the lever back. Always engage neutral and release the clutch when the car is at rest.

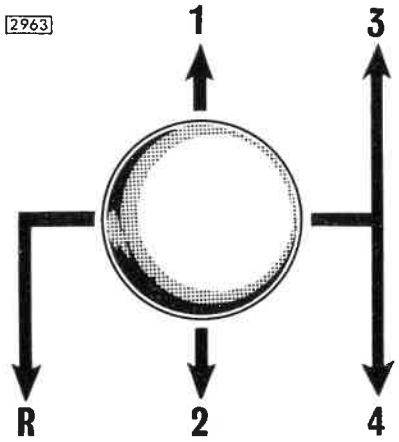


Fig. 7. *Gear positions.*

Overdrive Switch Lever

For full instructions on the operation of the overdrive, see page 14.

Automatic Transmission Selector Lever

For full instructions on the operation of the automatic transmission, see page 15.

Handbrake Lever

Positioned at the outside of the driver's seat. The handbrake operates mechanically on the rear discs only and is provided for parking, driving away on a hill and when at a standstill in traffic. To apply the brake, pull the lever upward and the trigger will automatically engage with the ratchet. The handbrake is released by pressing in the knob, and pushing the lever downward.

Seat Adjustment

Both front seats are adjustable for reach. Push the lock bar, situated beside the inside runner, towards the inside of the car and slide into the required position. Release the lock bar and slide until the mechanism engages with a click.

Adjustable Front Seat Back.

The seats are adjustable from the vertical to the fully reclined position.

To adjust, lift the lever located on the outside of the seat cushion and adjust the seat back to the desired position.

Release the lever to lock in position.

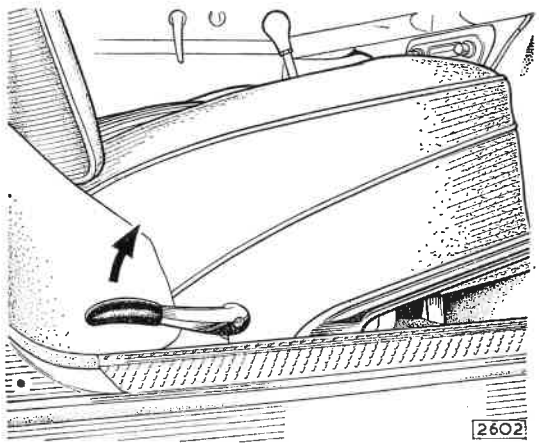


Fig. 8. *Reclining seat control lever.*

Steering Wheel Adjustment

Rotate the knurled ring at the base of the steering wheel hub in an anti-clockwise direction when the steering wheel may be slid into the desired position. Turn the knurled ring clockwise to lock the steering wheel.

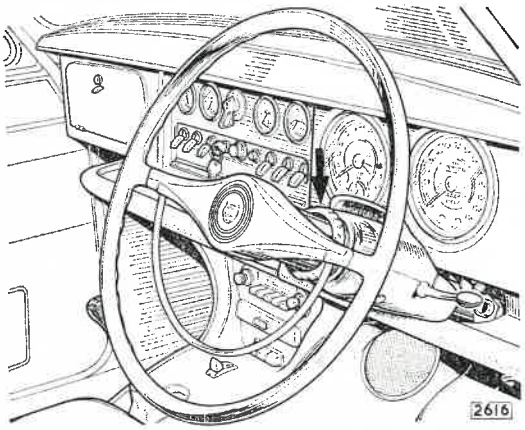


Fig. 9. *Steering wheel adjustment.*

Front Door Locks

Close the doors by pushing firmly; there is no necessity to "slam" the doors to close them.

The front doors are opened from the outside by pressing the button incorporated in the door handle. The doors are opened from the inside by pulling the interior handles rearwards.

Both front doors can be locked from the interior by turning the lock escutcheon, marked "LOCK", in the direction of the arrow. Return the escutcheon to the original position to unlock.

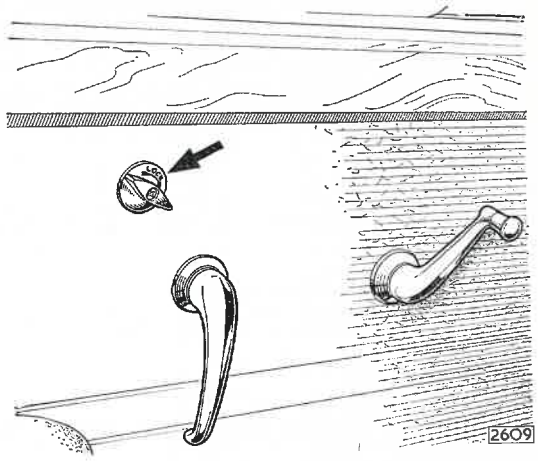


Fig. 10. *The door lock control. Turn in the direction of the arrow to lock.*

Both front doors can be locked from the outside by means of the ignition key; the locks are incorporated in the push buttons of the door handles.

To lock the right hand door insert the key in the lock, rotate clockwise as far as possible and allow the lock to return to its original position—the door is now locked. To unlock turn the key anti-clockwise as far as possible and allow the lock to return to its original position.

To lock the left hand door rotate the key anti-clockwise; to unlock rotate the key clockwise.

KEYLESS LOCKING is obtainable by first turning the escutcheon in the direction of the arrow and closing the door with the push button in the door fully depressed.

Warning.—If the doors are to be locked by this method the ignition key should be removed beforehand (or the spare key kept on the driver's person) as the only means of unlocking the front door is with the key.

Rear Door Locks

Close the doors by pushing firmly; there is no necessity to "slam" the doors to close them.

The rear doors are opened from the outside by pressing the button incorporated in the door handle. The doors are opened from the inside by pushing the interior door handle forward and are locked by turning the escutcheon marked "LOCK" in the direction of the arrow.

Horn

Depress the semi-circular ring attached to the steering wheel or press the button in the centre to operate the twin horns.

Ignition Switch

Inserting the key provided in the switch and turning clockwise will switch on the ignition.

Never leave the ignition on when the engine has stopped, a reminder of such circumstances is provided by the ignition warning light situated in the speedometer.

Interior/Map Light Switch

The map and interior lights are controlled by a three-position switch marked "Interior/Map" on the indicator strip. Lift the switch lever to the second position to operate the map light situated above the instrument panel. For interior lights lift the switch lever to the third position. To provide ease of entry into the car at night the interior lights are automatically switched on when any one of the doors is opened and are extinguished when the door is closed.

Lighting Switch

From "Off" can be rotated clockwise into three positions, giving in the first location, side and tail, in the second location, head, side and tail, and in the third position, fog, side and tail lamps.

(*Fog lamps are not fitted on cars for U.S.A.*)

Panel Light Switch

Lift the switch lever (marked "Panel" on the indicator strip) to enable the instruments to be read at night and to provide illumination of the switch markings. The switch has two positions "Dim" and "Bright" to suit the driver's requirements. The panel lights will only operate when the side lights are switched on.

Starter Switch

Press the button (marked "Starter" on the indicator strip) with the ignition switched on, to start the engine. Release the switch immediately the engine fires and never operate the starter when the engine is running.

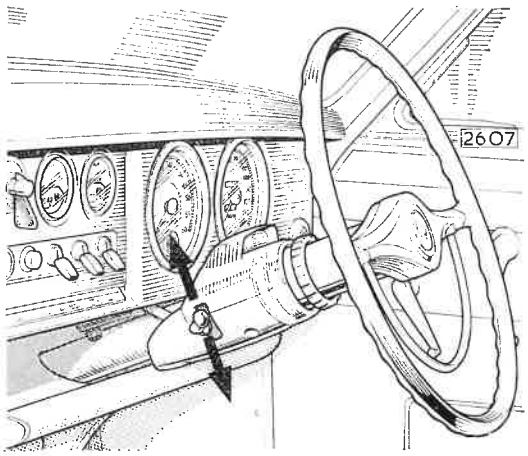


Fig. 11. *Flashing direction indicator control.*

Flashing Direction Indicators

The "Flashers" are operated by a lever behind the steering wheel. To operate the flashing direction indicators on the right-hand side of the car, move the lever clockwise ; to operate the left-hand side indicators move the lever anti-clockwise. While the flashing indicators are in operation one of the warning lights in the quadrant behind the steering wheel lights up on the side selected.

Headlamp Flasher

To "flash" the headlamps as a warning signal, lift and release the flashing indicator

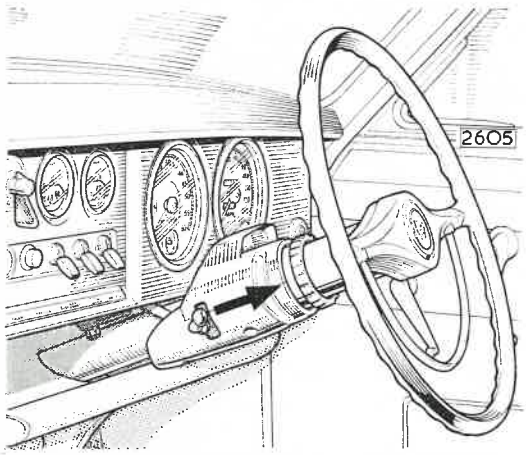


Fig. 12. *Method of "flashing" the headlamps.*

switch lever in quick succession. The headlamps can be "flashed" when the lights are "off" or when they are in the dipped beam position ; they will not "flash" in the main beam position.

Glovebox Light

A lamp in the glovebox is automatically illuminated when the lid is opened and the sidelights are "on".

Braking Lights

The brake lights automatically function when the footbrake is applied.

Reversing Light

The reversing light is automatically brought into operation when reverse gear is engaged and the ignition is switched on.

Luggage Compartment Illumination

The luggage compartment is automatically illuminated by a lamp when the lid is opened. The lamp operates only when the sidelights are switched on.

Cigar Lighter

To operate, press holder into the socket (marked "Cigar" on the indicator strip) and remove the hand. On reaching the required temperature, the holder will return to the extended position. Do not hold the lighter in the "pressed in" position.

Windscreen Wipers

The wipers are controlled by a three position switch (marked "Wiper" on the indicator strip). Lift the switch to the second position (Slow) which is recommended for all normal adverse weather conditions and snow.

For conditions of very heavy rain and for fast driving in rain lift the switch to the third position (Fast). This position should not be used in heavy snow or with a drying windscreen, that is, when the load on

the motor is in excess of normal ; the motor incorporates a protective cut-out switch which under conditions of excessive load cuts off the current supply until normal conditions are restored.

When the switch is placed in the "Off" position the wipers will automatically return to the parked position along the lower edge of the screen.

Windscreen Washer

For full instructions on the use of Windscreen Washing Equipment see page 25.

Heating and Ventilating Equipment

For full instructions on the use of the Heating and Ventilating Equipment see page 23.

Scuttle Ventilator

The scuttle ventilator is operated only by the heating and ventilating controls (see page 23).

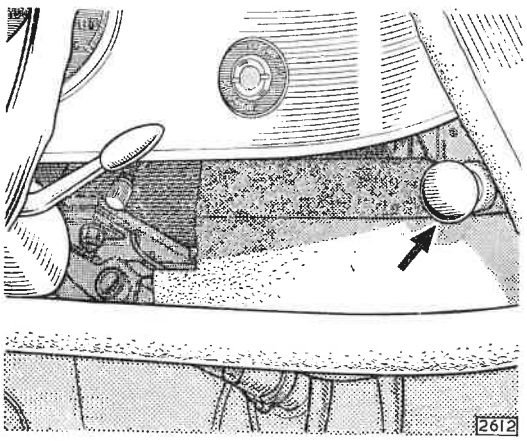


Fig. 13. *Bonnet lock control.*

Bonnet Lock Control

The bonnet lock is controlled from the driving compartment. To open the bonnet pull the control knob, situated under the facia on the right-hand side. This will release the bonnet which will now be retained by the safety catch. Insert the fingers under

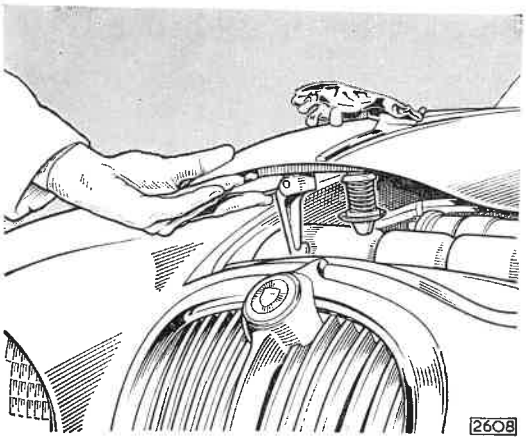


Fig. 14. *Bonnet safety catch.*

the nose of the bonnet and lift the safety catch upwards when the bonnet may be raised. The bonnet is automatically retained in the fully open position by the action of the hinge springs. The bonnet is self locking when pushed down firmly into the closed position.

No Draught Ventilation

All doors are fitted with no draught ventilation windows incorporating quick locking catches.

To open the window, release the locking catch and set the window to the desired position. It will be observed that initial

opening of the front window gives extraction of air from the body. When the window is opened further, air is forced into the body due to the angle of the ventilator and forward motion of the car. It should be observed that using the N.D.V. windows as extractors (that is, partially open) has, to a minor degree, the effect of demisting the windscreen.

Spare Wheel and Jacking Equipment

The spare wheel is housed in a compartment underneath the luggage boot floor and is accessible after raising the hinged panel.

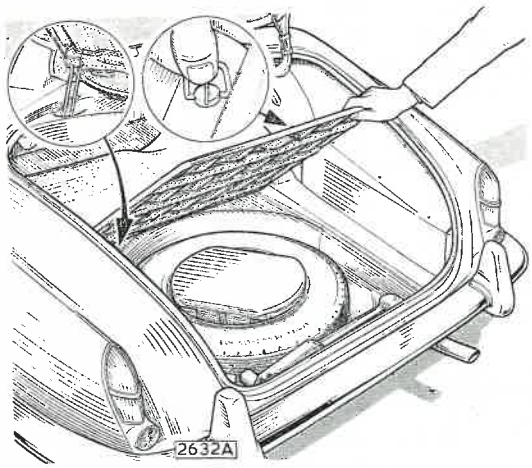


Fig. 15. *The spare wheel is housed in a compartment underneath the luggage boot floor. The container for the hand tools is also stored in this compartment. The insets show the floor panel fastener which should be rotated anticlockwise to release and the location of the stay.*

The jacking equipment is retained in clips also in the spare wheel compartment and is accessible after raising the panel.

Tools

The container for the hand tools is housed in the spare wheel compartment.

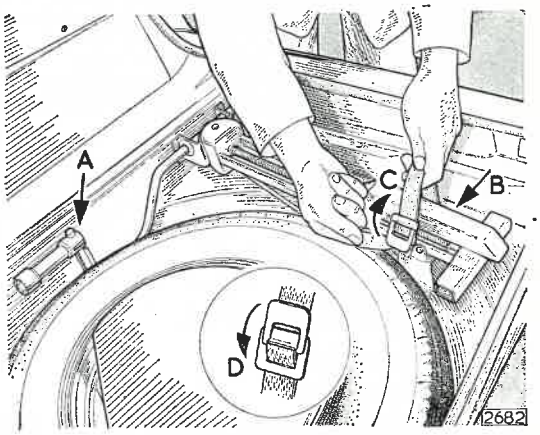


Fig. 16. *"A" Location of the wheel brace. "B" Location of the jack. "C" Pull the top strap and lift the buckle tongue to tighten. "D" Press tongue downwards to release the strap.*

Luggage Compartment

To open the luggage compartment, insert the square-headed key in the lock situated between the twin reversing lamps and unlock by rotating anti-clockwise through a quarter of a turn. Release the catch lever located beneath the lock and raise the lid. The lid is retained in the fully open position by means of torsion bar springs.

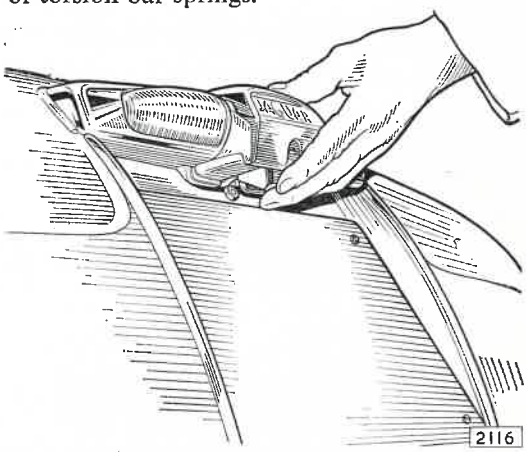


Fig. 17. *Opening the luggage compartment.*

Two Pin Plug Socket

A two pin plug socket is provided, situated under the bonnet on the left hand wing valance. The socket may be used to "trickle charge" the battery, or, provide an inspection lamp point.

Fuel Tank Fillers

The two fuel tank fillers are situated in recesses in the rear wings and are accessible after lifting the hinged covers.

Electrically Heated Backlight (Optional Extra)

An electrically heated backlight to provide demisting or defrosting of the rear window is available as an optional extra.

A heating element consisting of a fine wire mesh between the laminations of glass is connected to the wiring harness and functions only when the ignition and heater switches are in the "ON" position.

An amber warning lamp, situated on the facia panel, lights up when the backlight heater is switched on. A resistance in the circuit through the side and headlamp switch automatically dims the warning lamp for night driving.

Traffic Hazard Warning Device (U.S.A. Market Only)

The traffic hazard warning system operates in conjunction with the four flashing turn indicator lamps fitted to the car and the operation of a toggle switch on a sub-panel will cause these four lamps to flash simultaneously.

A red warning lamp is incorporated in the circuit to indicate that the hazard warning system is in operation.

Interior Driving Mirror

This is of the dipping type. Move the lever, situated under the mirror, to the left for night driving to avoid being dazzled by the lights of a following car.

The mirror is adjustable for height by releasing the hexagon nut on the stem and sliding the mirror up or down. Re-tighten the nut when the correct position is obtained.

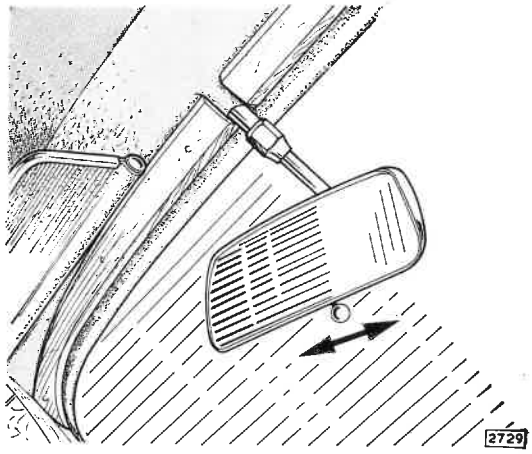


Fig. 18. *Interior driving mirror dipping operation.*

SEAT BELTS

Anchorage points for seat belts are incorporated in the construction of the car. If it is required to fit seat belts, contact your usual Jaguar dealer.

STARTING AND DRIVING

Prior to Starting

Before starting the engine the new owner should be familiar with the location and function of the instruments and controls.

Ensure that the water level in the radiator and the oil level in the sump are correct. Check for sufficient petrol in the tanks.

Place the gear lever in the neutral position and check that the handbrake is applied.

On cars equipped with automatic transmission the selector lever must be in the "P" or "N" position.

Starting from Cold

The auxiliary starting carburetter is entirely automatic and controls the mixture strength without assistance from the driver. The starting carburetter automatically cuts out when the temperature of the water in the cylinder head reaches 35° C.

When starting from cold do not depress the accelerator pedal until the engine has run for a few seconds.

Warming up

Do not operate the engine at a fast speed when first started but allow time for the engine to warm up and the oil to circulate. A thermostat is incorporated in the cooling system to assist rapid warming up. In very cold weather run the engine at 1,500 r.p.m. with the car stationary until a rise in temperature is indicated on the temperature gauge.

Driving

(a) Careful adherence to the "Running-in" Instructions given on the next page will be amply repaid by obtaining the best performance and utmost satisfaction from the car.

(b) The habit should be formed of reading the oil pressure gauge, water temperature gauge and ammeter occasionally as a check on the correct functioning of the car. Should an abnormal reading be obtained an investigation should be made immediately.

(c) Always start from rest in first gear. To start in a higher gear will cause excessive clutch slip and premature wear. Never drive with a foot resting on the clutch pedal and do not keep the clutch depressed for long periods in traffic.

(d) The synchromesh gearbox provides a synchronized change into first, second, third and top. When changing gear the movement should be slow and deliberate.

When changing down a smoother gear change will be obtained if the accelerator is left depressed to provide the higher engine speed suitable to the lower gear. Always fully depress the clutch pedal when changing gear.

(e) Gear changing may be slightly stiff on a new car but this will disappear as the gearbox becomes "run-in".

(f) Always apply the footbrake progressively ; fierce and sudden application is bad for the car and tyres. The handbrake is for use when parking the car, when driving away on a hill and when at a standstill in traffic.

"Running-in" Instructions

Only if the following important recommendations are observed will the high performance and continued good running of which the Jaguar is capable be obtained.

During the "running-in" period do not allow the engine to exceed the following speeds and particularly do not allow the engine to labour on hills ; it is preferable to select a lower gear and use a higher speed rather than allow the engine to labour at low speed :—

First 1,000 miles (1,600 km.)	2,500 r.p.m.
From 1,000—2,000 miles (1,600—3,200 km.) ...	3,000 r.p.m.

Have the engine sump drained and refilled and the oil filter attended to as recommended at the free service, that is, after the first 1,000 miles (1,600 km.).

OVERDRIVE OPERATION

The Laycock de Normanville overdrive unit (fitted as an optional extra) comprises a hydraulically-controlled epicyclic gear housed in a casing which is directly attached to an extension at the rear of the gearbox.

When brought into operation, the overdrive reduces the engine speed in relation to the road speed. This permits high road speeds with low engine revolutions resulting in fuel economy and reduced engine wear.

Operation

The overdrive will operate in top gear only and is brought into action by means of the lever behind the steering wheel on the right-hand side of the column. Operate the lever clockwise to engage the overdrive and anti-clockwise to bring the drive into top (4th) gear.

When the overdrive is in operation the word "Overdrive" and a red warning light in the quadrant behind the steering wheel become illuminated. When the sidelights are switched on, the lights are automatically dimmed.

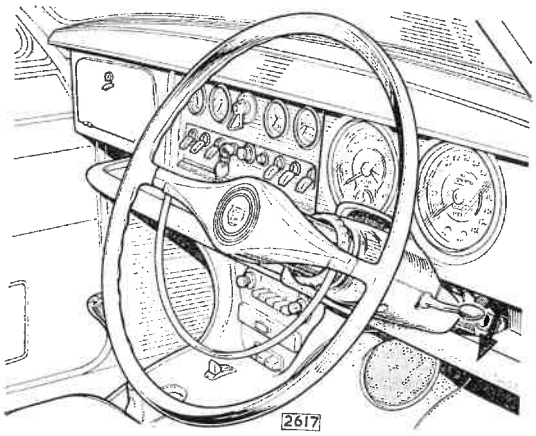


Fig. 19. *Overdrive control lever.*

Use of the clutch pedal when changing into or out of overdrive is unnecessary but to

ensure maximum smoothness of operation, particularly when changing down from overdrive to top gear, the accelerator pedal should be slightly depressed.

Do NOT bring the overdrive into operation at high speed with a wide throttle opening ; release the accelerator momentarily when engaging overdrive.

For driving in towns, heavy traffic, or hilly country when the maximum flexibility and low speed performance is required the overdrive manual switch should be placed in the "Out" position which will bring the drive into the normal top gear ratio.

For normal driving in open country the overdrive should be brought into operation when the required cruising speed has been obtained.

AUTOMATIC TRANSMISSION

Operation

The transmission assembly consists of a three-element hydraulic torque converter followed by two planetary gear sets which permit the elimination of the clutch pedal and normal gear-shift lever. The planetary gear sets incorporate free-wheels and are controlled by hydraulically-operated band and disc clutches.

The manual control lever allows selection of the following conditions :—

P (Park). A pawl is mechanically engaged with teeth on the main shaft. A hydraulic interlock prevents engagement at speeds above 3 to 5 m.p.h. (5 to 8 k.p.h.).

N (Neutral). All clutches are disengaged and there is no drive beyond the torque converter.

D (Drive). Automatic changes between the low gear and intermediate gear and between the intermediate gear and direct drive.

Warning

The P (Park) position must **not** be selected whilst the car is moving in Reverse. Always bring the car to a stop and apply the handbrake firmly before selecting "P".

Changes from low to intermediate gear and intermediate to direct drive depend upon the combination of road speed and throttle position ; the larger the throttle opening the higher the speed at which the change occurs. This is achieved by mechanically combining the motions of a mechanical centrifugal governor and the throttle linkage. The resultant motion operates a hydraulic valve.

Depression of the accelerator pedal beyond normal travel causes a "kick-down" change from direct to intermediate gear.

Below 52 m.p.h. (84 k.p.h.) a downshift from direct to intermediate gear can be obtained by depressing the accelerator to the full throttle position short of "kick-down". No "kick-down" downshift is possible for intermediate to low gear.

The torque converter and a gear reduction are operative in the low intermediate gears. Direct drive is obtained by coupling the engine directly to the main shaft by a disc clutch. The relevant road speeds are given in "Transmission Data" on page viii.

Manual L (Low). A low gear train and the torque converter are operative and no automatic change can occur. Manual changes between L and D may be made while the car is in motion but changes into L should be avoided at speeds above 45 m.p.h. (72 k.p.h.).

R (Reverse). A reverse-gear train and the torque converter are operative. A hydraulic interlock prevents engagement of the reverse clutch at forward speeds above 5 m.p.h. (8 k.p.h.).

Electrical connection to the starter is made only when N and P are selected. An anti-creep device traps brake fluid pressure when the car is stationary after the brakes have been applied. Opening the throttle releases the fluid.

Selector

The operation of the automatic transmission is controlled by the position of the selector lever which is indicated by the quadrant pointer. The quadrant is situated in front of the steering wheel and is marked P, N, D, L and R. The lever must be raised when selecting P, L or R and when moving from P to any other position.

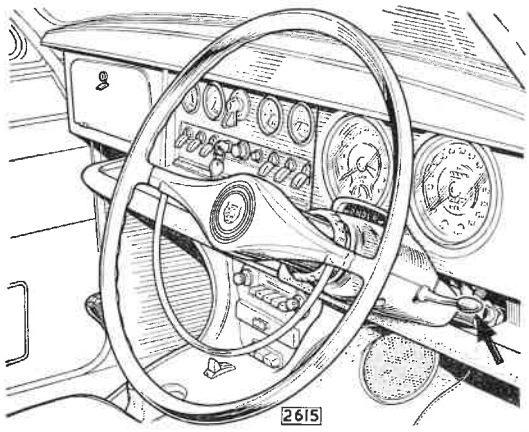


Fig. 20. *Automatic transmission selector lever.*

When the ignition is switched on the letters P, N, D, L, R, in the quadrant behind the steering wheel become illuminated ; when the side-lights are switched on the illumination is automatically dimmed.

To start the engine the selector lever must be in the P or N position.

P or Park provides a safe, positive lock on the rear wheels when the car is stopped. Movement of the selector lever to the P position actuates a mechanical locking device in the transmission which prevents the rear wheels from turning in either direction. For

this reason, should the car be pushed from front or rear with sufficient force, the car will skid on the rear tyres. This condition is quite similar to that encountered when a car with conventional transmission is parked in gear or with the handbrake applied firmly. The fact that the engine may be started with the selector in P position is convenient when parked on an incline.

Warning

The P (Park) position must **not** be selected whilst the car is moving in Reverse. Always bring the car to a stop and apply the handbrake firmly before selecting "P".

When the car is stopped on a hill and the P (Park) position is selected, the parking mechanism may become very firmly engaged due to the load on the pawl. To disengage the parking pawl under these conditions the following procedure should be adopted :—

To release transmission from P (Park) when facing UP HILL.

1. Start the engine.
2. Release the handbrake.
3. Select D and **hold** lever in this position (irrespective of the direction in which it is desired to move off).
4. Depress accelerator slowly until the car moves forward, indicating the release of the parking pawl.
5. The car is now "free" and can be driven away in the desired direction.

To release transmission from P (Park) when facing DOWN HILL.

1. Start the engine.
2. Release the handbrake.
3. Select R and **hold** lever in this position (irrespective of the direction in which it is desired to move off).
4. Depress the accelerator slowly until the car moves backward, indicating the release of the parking pawl.
5. The car is now "free" and can be driven away in the desired direction.

N or Neutral position permits idling the engine without the possibility of setting the car into motion by pressure on the accelerator and may be used when starting the engine. It is inadvisable to engage neutral for coasting.

D or Drive provides the normal forward driving range and includes automatic shifting between the low, intermediate and direct drive ranges. Virtually all forward driving, accelerating and stopping can be done with the lever in the D position. Once the engine is started and the lever is moved to D it can be left in this position for all normal driving. When accelerating, the transmission shifts automatically from low to intermediate between 11 and 40 m.p.h. (18 and 64 k.p.h.) and from intermediate to direct between 23 and 64 m.p.h. (37 and 103 k.p.h.) depending on the position of the accelerator pedal. On deceleration, it will shift automatically from direct drive to intermediate at approximately 16 m.p.h. (26 k.p.h.) and from intermediate to low at approximately 4 m.p.h (6 k.p.h.).

L or Low is an emergency engine power range for use on unusually long and steep grades or for braking on descents, for extra heavy pulling, and for rocking the car out of mud, sand or snow.

R or Reverse position of the selector lever provides reverse driving range.

Intermediate Speed Hold. A switch mounted on the facia provides a means for the driver to obtain a downshift from direct to intermediate without depressing the accelerator pedal (as advised under the heading "Additional Power and Acceleration") and to retain the drive in the intermediate range. This will be found convenient for overtaking or when hill climbing.

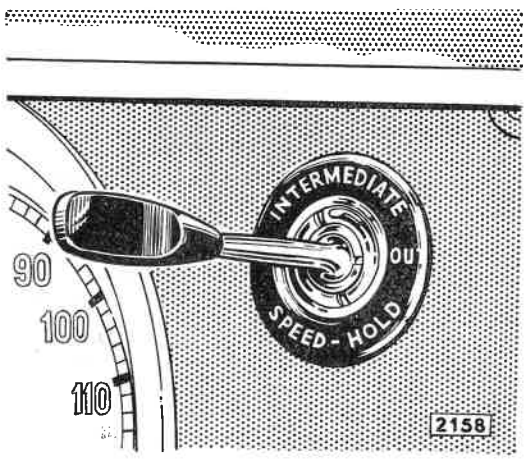


Fig. 21. *Intermediate speed hold switch.*

With the switch in the "IN" position no upshift will take place between intermediate and direct drive ; placing the switch lever in the "OUT" position will cause the transmission to shift to direct drive, provided the normal upshift speed has been obtained.

Warning. Do NOT allow the maximum permitted engine revolutions to be exceeded through allowing the "Intermediate Speed Hold" to remain in operation longer than necessary, or by switching in the "Hold" at speeds in excess of 75 m.p.h. (121 k.p.h.).

Additional Power and Acceleration in D range can be obtained as follows :—

(a) Below 52 m.p.h. (84 k.p.h.) depress the accelerator pedal to the full throttle position to effect a change into the intermediate range ; the drive will continue in the intermediate range until the release of the accelerator or approximately 64 m.p.h. (103 k.p.h.) is reached.

(b) Between 52 m.p.h. and 68 m.p.h. (84 k.p.h. and 109 k.p.h.) depress the accelerator pedal all the way to the floorboard to effect a "kick-down" change into intermediate range; the drive will continue in the intermediate range until release of the accelerator or approximately 78 m.p.h. (126 k.p.h.) is reached.

Hard Pulling, such as encountered in deep snow, mud or other adverse driving conditions, is best accomplished in the L range.

Rocking out of Mud, Sand or Snow is accomplished with the accelerator pedal slightly depressed and held steady while making quick alternate selections of L and R ranges.

Anti-Creep is a special braking feature which prevents the car from creeping forward when stopped on level ground or slight grades, as long as the ignition key is turned on.

Apply the footbrake to stop the car and then remove the foot from the brake pedal. The car will not creep forward or backward. Any movement of the accelerator pedal, or turning off the ignition key, releases the anti-creep action.

Push Starting may sometimes be necessary, as in the case of a flat battery. Turn ignition key ON, place selector lever in the N position. The car may now be pushed and when it has reached 15 to 20 m.p.h. (24 to 32 k.p.h.) move the selector lever to D or L position. **Do not tow the car to start the engine—it may overtake the tow car.**

Engine Braking, for descending long mountainous grades, is easily secured by bringing the car speed below 45 m.p.h. (72 k.p.h.) and momentarily depressing the accelerator while placing the selector lever in the L position.

Prolonged Idling is sometimes unavoidable. In such cases, as a safety precaution, move the selector lever to the P or N position.

Towing of the car should be done with the selector in the N position. When towing the car for a short distance do not exceed 30 m.p.h. (48 k.p.h.) If the car is to be towed for an appreciable distance the propeller shaft must be disconnected.

WHEEL CHANGING

(Disc Wheels)

Whenever possible, the wheel changing should be carried out with the car standing on level ground and in all cases with the handbrake fully applied.

The spare wheel and wheel changing equipment is housed in a compartment underneath the luggage boot floor.

Unlock the luggage compartment by turning the key in the lock, situated between the twin reverse lamps through half-a-turn. Lift the catch lever located beneath the lock and raise the lid as far as possible where it will be retained by the action of the hinge torsion bars.

Rotate the floor panel fastener anti-clockwise until the catch is released.

Raise the panel, which will automatically be retained in the open position by means of the self-locking stay.

Unscrew the spare wheel clamping

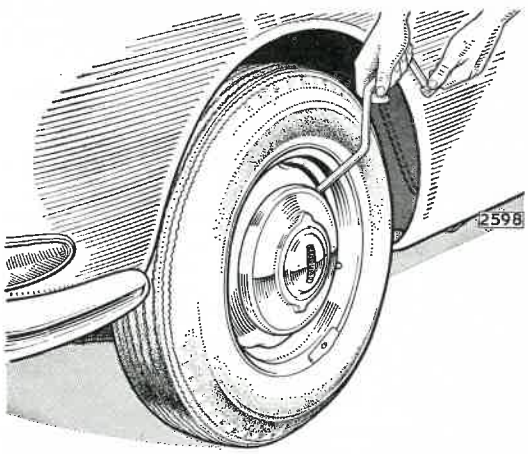


Fig. 22. *Removal of the wheel nave plate. To avoid damaging the nave plate do not allow it to fall on the ground.*

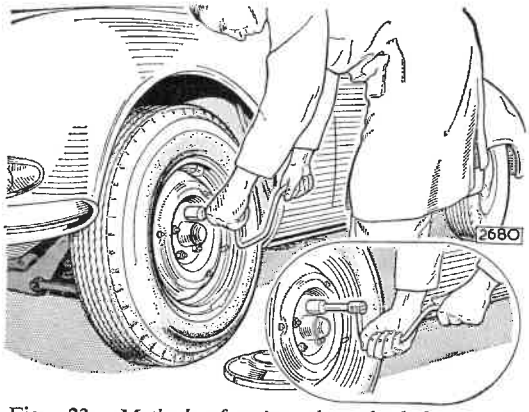


Fig. 23. *Method of using the wheel brace for releasing and also removing the wheel nuts.*

handle and lift out the wheel. Remove the jack and wheel brace.

Remove the wheel nave plate by levering off with the blade end of the wheel brace. Using the wheel brace loosen, but do not remove, the five wheel nuts ; all wheel nuts have right-hand threads, that is, they are unscrewed anti-clockwise.

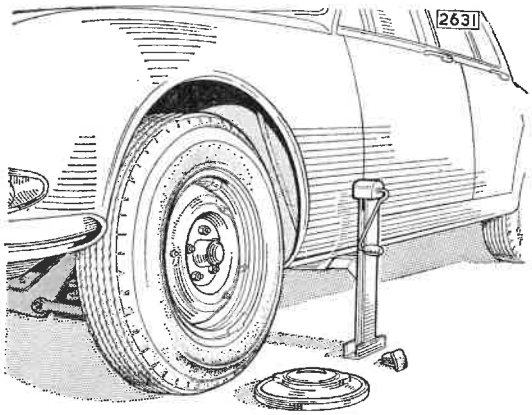


Fig. 24. *The jack in position for raising the left-hand front wheel.*

Remove the rubber plug from the jacking socket adjacent to the wheel to be removed, insert the square portion of the jack well home into the socket and rotate the handle attached to the jack clockwise. Raise the car until the wheel is clear of the ground. Remove the wheel nuts and withdraw the road wheel.

Mount the spare wheel on the fixing studs and start all five nuts on the threads by rotating clockwise. Apply the wheel brace and run up all the nuts until they are tight.

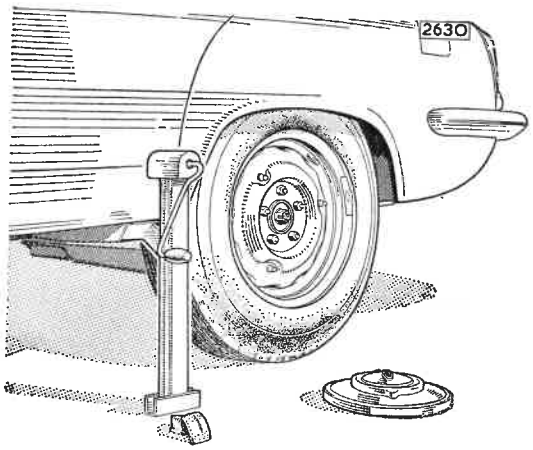


Fig. 25. *The jack in position for raising the left-hand rear wheel.*

Rotate the jack handle anti-clockwise and lower the jack until the full weight of the car is on the wheel. Finally tighten all wheel nuts.

Fit the nave plate over two of the three mounting posts and secure by a sharp tap from the hand at a point in line with the third mounting post.

WHEEL CHANGING

(Wire Spoke Wheels)

Remove the copper and hide mallet from the tool kit. Using the mallet, slacken but do not remove the hub cap ; the hub caps are marked "Right (off) side" or "Left (near) side" and the direction of rotation to remove, that is, clockwise for the right-hand side and anti-clockwise for the left-hand side.

Remove the rubber plug from the front or rear jacking socket on the side to be raised. Insert the square portion of the jack well home into the socket and rotate the handle attached to the jack clockwise. Raise the car until the wheel is clear of the ground.

Remove the hub cap and withdraw the road wheel.

On cars for certain continental countries it will be necessary to attach the hub cap removal tool contained in the tool kit, (See Fig. 27) before the hub cap can be removed.

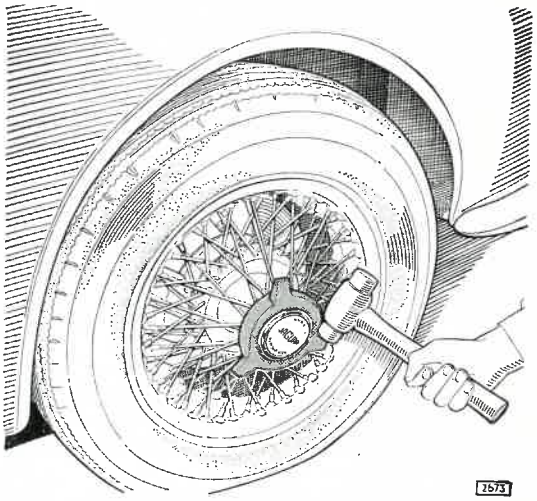


Fig. 27. *Removing the continental type hub cap with the removal tool.*

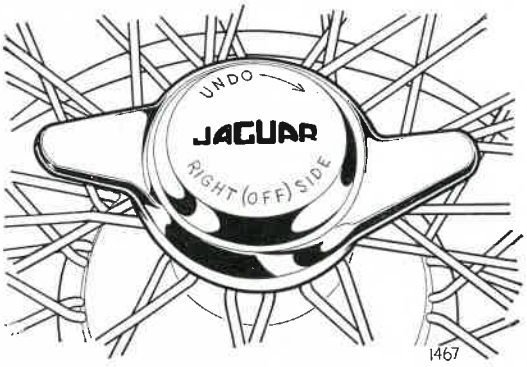


Fig. 26. *Hub cap—right hand side.*

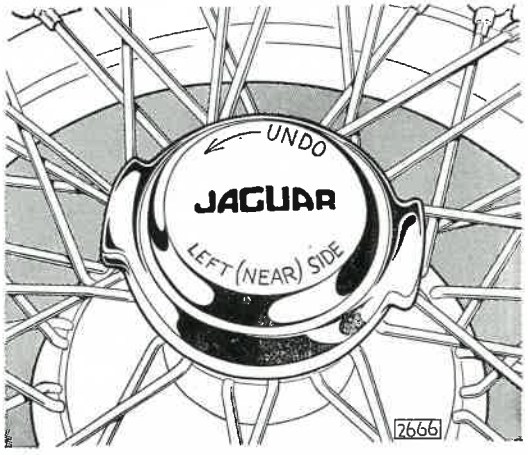


Fig. 28. *Hub cap—left-hand side (continental type).*

Mount the spare wheel on the splined hub. Refit the hub and tighten as much as possible by rotating the hub cap in the required direction, that is, anti-clockwise for the right-hand side and clockwise for the left-hand side.

Rotate the jack handle anti-clockwise and lower the jack until the full weight of the car is on the wheel.

Finally, tighten the hub cap fully with the copper and hide mallet.

FROST PRECAUTIONS

Anti-freeze—Important

During the winter months it is strongly recommended that an anti-freeze compound with an inhibited Ethylene Glycol base be used in the proportions laid down by the anti-freeze manufacturers.

It should be remembered that if anti-freeze is not used or is not of sufficient strength it is possible owing to the action of thermostat for the radiator to "freeze-up" whilst the car is being driven even though the water in the radiator was not frozen when the engine was started.

Before adding anti-freeze solution the cooling system should be cleaned by flushing. To do this, open the radiator block and cylinder block drain taps and insert a water hose into the radiator filler neck. Allow the water to flow through the system, with the engine running at 1,000 r.p.m. to cause circulation, until the water runs clear. The cylinder head gasket must be in good condition and the cylinder head nuts pulled down correctly, since if the solution leaks into the crankcase a mixture will be formed with the engine oil which is likely to cause blockage of the oil-ways with consequent damage to working parts. Check the tightness of all water hose connections, water pump and manifold joints. To ensure satisfactory mixing, measure the recommended proportion of water and anti-freeze solution in a separate container and fill the system from this container, rather than add the solution direct to the cooling system. Check the radiator water level after running the engine and top up if necessary. Topping up must be carried out using anti-freeze solution or the degree of protection may be lost. Topping up with water will dilute the mixture possibly to an extent where damage by frost will occur.

Important

When refilling the cooling system following complete drainage, depress the "HEAT" button on the heater controls to allow the heater system to be filled with coolant. Re-check the level after running the engine for a short period.

Engine Heater

Provision is made on the right-hand side of the cylinder block for the fitment of an American standard engine heater element No. 7 manufactured by "James B. Carter Ltd., Electrical Heating and Manufacturing Division, Winnipeg, Manitoba, Canada" or "George Bray & Co. Ltd., Leicester Place, Blackman Lane, Leeds 2, England".

Warning

The fitting of an engine heater does not obviate the use of "anti-freeze" during the winter months.

CAR HEATING AND VENTILATING SYSTEM

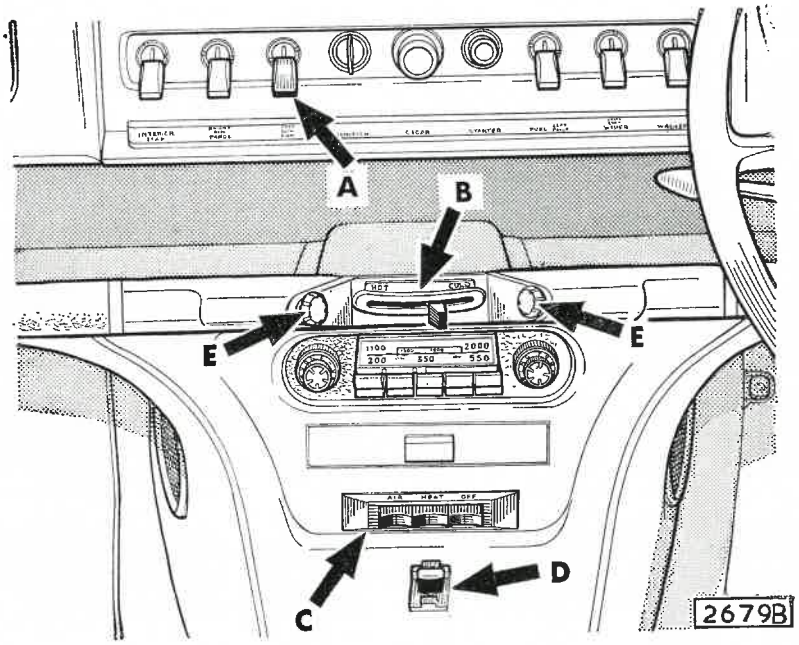


Fig. 29. *Heating and ventilating controls. "A" Fan switch. "B" Temperature control. "C" Heater control switches. "D" Rear outlet control. "E" Controls for front outlets.*

The car heating unit consists of a heating element and an electrically driven fan.

The scuttle vent acts as an inlet for the fresh air.

Air from the heating and ventilating system is directed:

(a) To the front of the car through outlets, one on the driver's side and one on the passenger's side below the parcel shelf.

(b) To the rear of the car through an outlet situated on the propeller shaft tunnel cover between the two front seats.

(c) To vents at the base of the windscreen to provide demisting and defrosting.

Heater Controls

The heater control buttons marked "AIR", "HEAT", "OFF" are situated centrally below the parcel tray (Fig. 29).

These controls operate the air intake vent on the scuttle and the water valve. Operating the "OFF" button automatically cancels the "HEAT" and "AIR" buttons.

The "HEAT" button also cancels the "AIR" button. If it is desired to have the "HEAT" and "AIR" buttons in operation at the same time the "HEAT" button must be pressed first.

The heater control quadrant marked "HOT—COLD" situated centrally in the edge of the parcel tray regulates the temperature of the air delivered.

Off

When the "OFF" button is pressed the system is inoperative.

Heat

To obtain hot or warm air in the car, press the "HEAT" button which will open the water valve to supply hot water to the heater element. Before operating the "AIR" button, it is advisable to allow the engine to reach normal operating temperature, particularly in cold weather, to enable hot water to circulate through the heater unit prior to admitting cold air through the scuttle vent.

Adjust the heater control quadrant to give the required temperature.

Air

If cold fresh air is required, press the "AIR" button which will open the scuttle vent and direct the air to the outlets in the car by-passing the heating element. The fan can be switched on if it is desired to increase the circulation. The heater control quadrant should be set at cold.

The Fan Switch

The fan for the heating and ventilating system increases the flow of air through the system and is controlled by a three-position switch (marked "FAN" on the indicator strip) on the instrument panel (Fig. 29).

Lift the switch to the second position for slow speed and to the third position for fast speed, whichever is required.

Operation of the fan is required mainly when the car is stationary or running at a slow speed. At higher speeds it will be found possible to dispense with the fan due to the speed of the car forcing air through the scuttle vent.

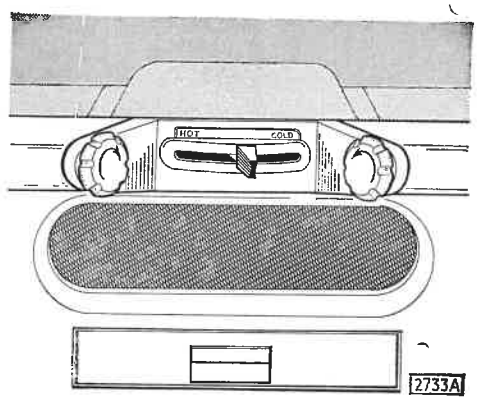


Fig. 30. *Rotation of the knobs in the direction indicated by the arrows will progressively redirect the flow of air out of the front outlets from the feet to the body.*

AIR DISTRIBUTION

The demisting outlets operate whenever the system is working. To obtain the maximum

amount of air at the windscreen, both the front and rear outlets should be closed.

The two front outlets are fitted with thumb operated directional controls, one each side of the heater control quadrant. Fully rotating the right-hand knob clockwise and the left-hand knob anti-clockwise will cut off the supply of air completely. Reverse rotation of the knobs will progressively re-direct the air flow from the feet to the body.

Operating the lever for the rear outlet (Fig. 29) turns the air supply "ON" or "OFF".

VACUUM SYSTEM

The vacuum system controlled by the heater buttons includes a vacuum supply tank which will provide approximately six complete operations after the ignition is switched off.

In frosty weather it is advisable to close the scuttle vent on leaving the car by pressing the "OFF" button.

COLD WEATHER

To obtain heating, demisting and defrosting :

(a) Depress the button marked "HEAT" and allow a short period to elapse to permit the heater to warm up.
(b) Depress the "AIR" button.
(c) Switch the fan ON at the desired speed.
(d) Open the front and rear outlets as desired.
(e) Adjust the heater control quadrant to give required temperature.

To obtain rapid demisting and defrosting :

(a) Depress the button marked "HEAT" and allow a short period to elapse to permit the heater to warm up.
(b) Depress the "AIR" button.
(c) Switch the fan ON at the desired speed.
(d) Close the front and rear outlets.
(e) Move the heater control quadrant to "HOT".

HOT WEATHER

To obtain ventilation and demisting :

(a) Depress the button marked "AIR".
(b) Switch the fan ON at the desired speed.
(c) Open the front and rear outlets as desired.
(d) Move the heater control quadrant to "COLD".

To obtain rapid demisting :

(a) Depress the button marked "AIR"
(b) Switch the fan ON at the "FAST" position.
(c) Close the front and rear outlets.
(d) Move the heater control quadrant to "COLD".

WINDSCREEN WASHING EQUIPMENT

The windscreen washer is electrically operated and comprises a plastic water container mounted in the engine compartment.

The container is connected by tubing to two jets at the base of the windscreen.

Water is delivered to the jets by an electrically driven pump incorporated in the water container.

Operation

The windscreen washer should be used in conjunction with the windscreen wipers to remove foreign matter that settles on the windscreen.

Lift the switch lever (marked "Washer") when the washer should operate immediately; release the switch when sufficient water has been delivered to the windscreen.

Warning

If the washer does not function immediately check that there is water in the container. The motor will be damaged if the switch is held pressed for more than one or two seconds if the water in the container is frozen.

The washer should not be used under freezing conditions as the fine jets of water spread over the windscreen by the blades will tend to freeze up.

In the summer the washer should be used freely to remove insects before they dry and harden on the screen. Lucas "Crystal Clear Screen Jet Fluid" may be added to assist the removal and to dissolve greasy smears from the glass.

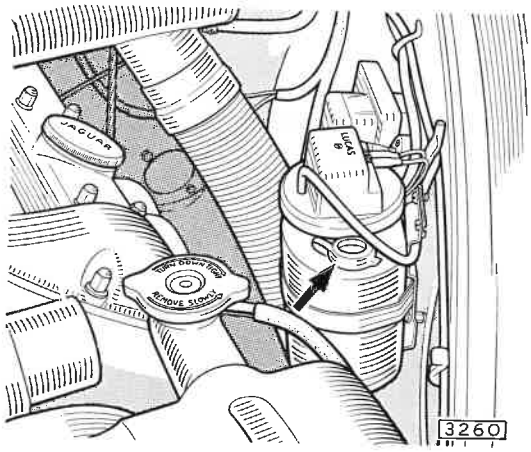


Fig. 31. *The windscreen washer container is replenished through a hole in the cap.*

Filling-Up

The water should be absolutely CLEAN. If possible, use SOFT water for filling the container, but if this is not obtainable and hard water has to be used, frequent operation and occasional attention to the nozzle outlet holes will be amply repaid in preventing the formation of unwelcome deposits.

The correct water level is up to the bottom of the container neck. Do not overfill, or unnecessary splashing may result. Always replace the filler cover correctly after filling.

It is not possible to empty the container completely with the pump. Refilling is necessary when the water level has fallen below the level of the pump.

Do not continue to operate the switch after the available water has been used up otherwise damage may be caused to the unit.

Refilling the container will restore normal operation of the unit.

Keep the pump filter clean and the container free from sediment.

Cold Weather

The Lucas 5SJ windscreen washer container, which is made of high density polythene, can be given a safe degree of protection from frost damage down to —28°F (—33°C) by the use of proprietary anti-freeze solvents as marketed by "TRICO" or as "HOLTS SCREENWASH."

Instruction regarding the use of the solvent will be found on the container.

Denatured alcohol (Methylated Spirits) must NOT be used.

The use of this chemical will discolour the paintwork.

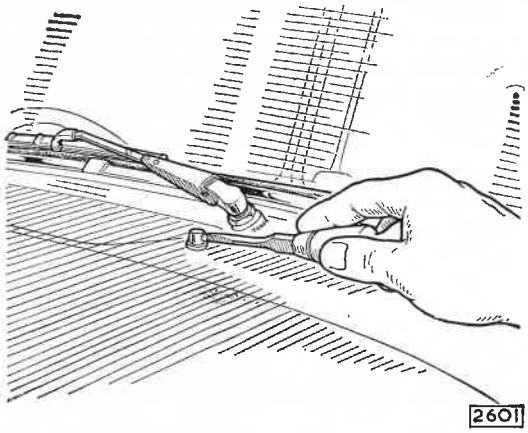


Fig. 32. *Adjusting the windscreen washer jets.*

Adjusting the Jets

With a screwdriver turn the jet nozzle in the jet holder until the jets of water strike the windscreen in the area swept by the wiper blades. It may be necessary to adjust the nozzle slightly after a trial on the road due to jets of water being deflected by the airstream.

Cleaning the Jet Nozzles

To clear a blocked jet nozzle completely unscrew the nozzle from the jet holder. Clear the small orifice with a piece of thin wire or blow out with compressed air ; operate the washer with the nozzle removed. Allow the water to flush through the jet holder and then replace the nozzle.

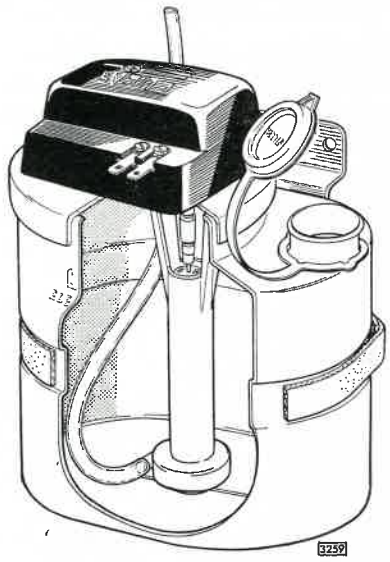


Fig. 33. *Windscreen washer water container.*

FUEL REQUIREMENTS FOR 9 TO 1 and 8 TO 1 COMPRESSION RATIO ENGINES

If the engine of your car is fitted with 9 to 1 compression ratio pistons (indicated by /9 after the engine number) use only Super grade fuel with a minimum octane rating of 98. (Research method.) If a car is fitted with 8 to 1 compression ratio pistons (indicated by /8 after the engine number) use premium grade fuel with a minimum rating of 94. (Research method.)

If, of necessity, the car has to be operated on lower octane fuel do not use full throttle otherwise detonation may occur with resultant piston trouble.

ROUTINE MAINTENANCE

This section deals with the lubrication and maintenance operations which require attention at regular intervals; the section is divided into the main components of the car and is sub-divided into the mileage intervals at which the various maintenance operation should receive attention.

The importance of regular maintenance cannot be overstressed; the satisfactory running and high performance of which the car is capable is to a large extent dependent on the attention it receives. It is, therefore, recommended that careful attention is paid to the instructions detailed in this section and that servicing is carried out at the suggested periods.

The 1,000 mile (1,600 km.) Free Service

After the car has completed the first 1,000 miles (1,600 km.) a general check over should be carried out.

A Service Voucher is included in the literature wallet provided with the car and entitles the original owner to have the following servicing carried out by a Jaguar dealer free of charge, except for the cost of the lubricants used.

Tighten cylinder head nuts to correct torque figures.
General test of car and making of any necessary minor adjustments.
Check fluid level in automatic transmission (if fitted).
Check fluid level in power-assisted steering reservoir (if fitted).
Check all hydraulic brake pipe unions and clutch pipe unions.
Tune up engine.
Drain engine sump and refill.
Clean oil filter element and renew seal.
Check gearbox oil level.
Check rear axle oil level.
Top up steering unit (standard steering).
Lubricate all grease nipples (excluding wheel bearings).
Top up carburetter hydraulic piston dampers.
Lubricate distributor and check contact points.
Clean, adjust and test sparking plugs.
Check fluid level in brake and clutch master cylinder reservoirs.
Check tightness of steering bolts and nuts.
Check tightness of front suspension bolts and nuts.
Check tightness of rear suspension bolts and nuts.
Check tightness of exhaust manifold flange nuts.
Check tightness of bumper mounting bolts.

The Service Voucher should be presented to the Jaguar Dealer by whom the car was supplied. Should the owner not reside in the vicinity of the original supplier or is temporarily absent when the service is required, the Voucher will be accepted by the nearest authorised Jaguar Dealer.

ENGINE

Daily

Checking the Engine Oil Level

Check the oil level with the car standing on level ground otherwise a false reading will be obtained.

Remove the dipstick and wipe it dry. Replace and withdraw the dipstick; if the oil level is on the knurled patch, with the engine hot or cold, no additional oil is required. If the engine has been run immediately prior to making an oil level check, wait one minute after switching off before checking the oil level.

Note: Almost all modern engine oils contain special additives, and whilst it is permissible to mix the recommended brands it is undesirable. If it is desired to change from one brand to another this should be done when the sump is drained, and the oil company's recommendation in regard to flushing procedure should be followed.

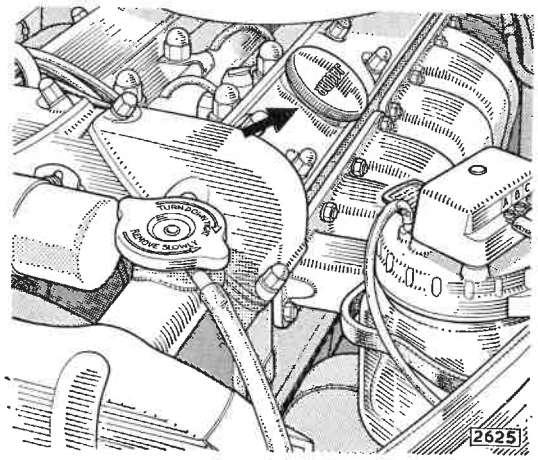


Fig. 34. *Engine oil filler.*

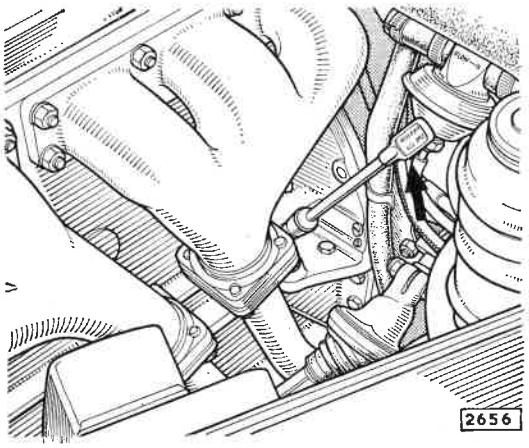


Fig. 35. *Engine oil dipstick.*

Every 3,000 miles (5,000 km.)

Changing the Engine Oil

Note: Under certain adverse operating conditions, conducive to oil dilution and sludge formation, more frequent oil changing than the normal 3,000 mile (5,000 km.) period is advised. Where the car is used mainly for low-speed city driving, stop-start driving particularly in cold weather or in dusty territory the oil should be changed at least every 1,000 miles (1,600 km.).

The draining of the sump should be carried out at the end of a run when the oil is hot and therefore will flow more freely. The drain plug is situated at the right-hand rear corner of the sump. When the engine oil is changed, the oil filter which is situated on the right-hand side of the engine, must also receive attention.

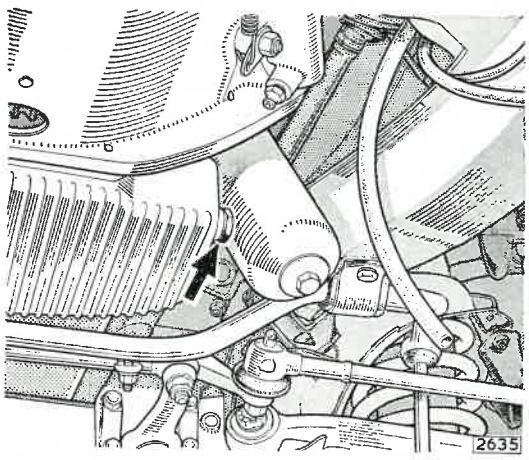


Fig. 36. *Engine drain plug.*

Unscrew the central bolt and remove the canister and element. Thoroughly wash these parts in petrol and allow to dry out. When replacing the canister renew the circular rubber seal in the filter head. (Attention is drawn to the importance of renewing the filter element at 6,000 miles (10,000 km.) intervals.)

Note: Almost all modern engine oils contain special additives, and whilst it is permissible to mix the recommended brands it is undesirable. If it is desired to change from one brand to another this should be done when the sump is drained, and the oil company's recommendation in regard to flushing procedure should be followed.

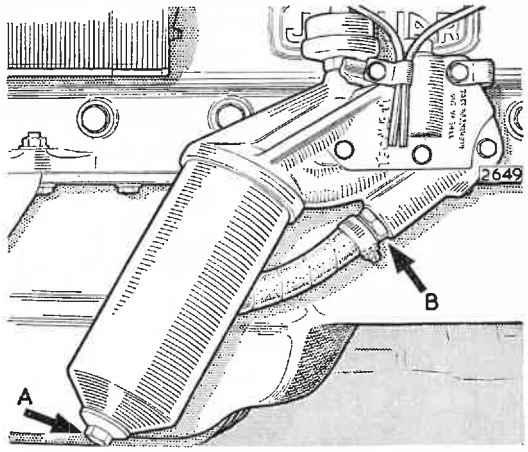


Fig. 37. *The engine oil filter is removed by unscrewing the bolt 'A' and withdrawing the canister and element. The oil pressure relief valve is situated behind the outlet 'B'.*

Distributor—Lubrication

Take great care to prevent oil or grease from getting on or near the contact breaker points.

Remove the moulded cap at the top of the distributor by springing back the two clips and detach the waterproof cover. Lift off the rotor arm and apply a few drops of engine oil around the screw (A, Fig. 38) now exposed. It is not necessary to remove the screw as it has clearance to permit the passage of oil.

Apply **one** drop of oil to the post (B) on which the contact breaker pivots. Lightly smear the cam (C) with grease. Lubricate the centrifugal advance mechanism by injecting a few drops of engine oil through the aperture at the edge of the contact breaker base plate.

Distributor Contact Breaker Points

Check the gap between the contact points with feeler gauges when the points are fully opened by one of the cams on the distributor shaft. A combined screwdriver and feeler gauge is provided in the tool kit.

The correct gap .014″—.016″ (.36—.41 mm.).

Contact Breaker Adjustment

If the gap is incorrect, slacken (very slightly) the contact plate securing screw (A, Fig. 39) and adjust the gap by turning a screwdriver in the nick in the contact plate and the slot in the base plate. (B). Turn clockwise to decrease the gap and anti-clockwise to increase. Tighten the securing screw and plate.

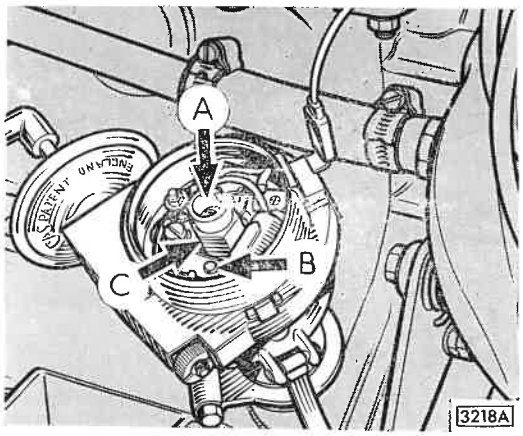


Fig. 38. *Distributor lubrication points.*

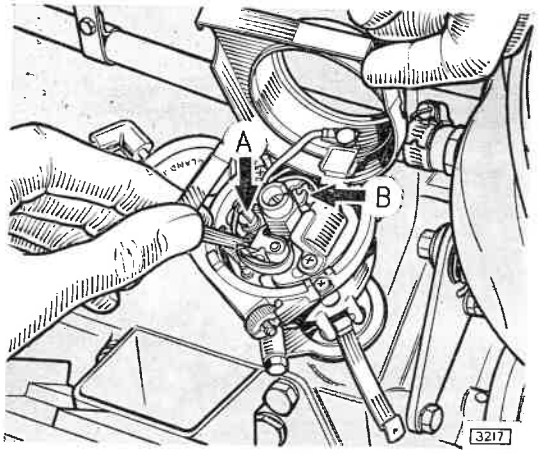


Fig. 39. *Checking the gap between the distributor contact points. The screw 'A' secures the fixed contact point; the contact gap is adjusted by turning a screwdriver in the slot 'B' in the contact plate.*

Examine the contact breaker points. If the contacts are burned or blackened, clean them with a fine carborundum stone or very fine emery cloth. Afterwards wipe away any trace of grease or metal dust with a petrol moistened cloth.

Cleaning of the contacts is made easier if the contact breaker lever carrying the moving contact is removed. To do this, remove the nut, insulating piece and connections from the post to which the end of the contact breaker spring is anchored. The contact breaker lever can now be lifted off its pivot post.

Sparking Plugs

Every 3,000 miles (5,000 km.) or more often if operating conditions demand, withdraw, clean and reset the plugs.

The only efficient way to clean sparking plugs is to have them properly serviced on machines specially designed for this purpose. These machines operate with compressed air and utilise a dry abrasive material specially graded and selected to remove harmful deposits from the plug insulator without damaging the insulator surface. In addition the majority of the machines incorporate electrical testing apparatus enabling the plugs to be pressure tested to check their electrical efficiency and gas tightness.

The gap between the points should be .025" (.64 mm.). When adjusting the gap always move the side wire—never bend the centre wire.

The Champion Sparking Plug Co. supply a special combination gauge and setting tool, the use of which is recommended.

Every 12,000 miles (20,000 km.) a new set of plugs of the recommended type should be fitted. To save petrol and to ensure easy starting, the plugs should be cleaned and tested regularly.

Every 6,000 miles (10,000 km.)

Oil Filter Element

It is most important to renew the oil filter element every 6,000 miles (10,000 km.) as after this mileage it will have become choked with impurities.

To guard against the possibility of the filter being neglected to the extent where the element becomes completely choked, a balance valve is incorporated in the filter head which allows **unfiltered** oil to by-pass the element and reach the bearings. This will be accompanied by a drop in the normal oil pressure of some 10 lb. per sq. in. and if this occurs the filter element should be renewed as soon as possible.

To gain access to the element, unscrew the central bolt when the canister complete with the element can be removed. Thoroughly wash out the canister with petrol and allow to dry before inserting the new element.

When replacing the canister renew the circular rubber seal in the filter head.

Fan Belt—Check for wear

Periodically check the condition of the fan belt. The belt is automatically tensioned correctly by means of a spring-loaded jockey pulley and routine adjustment is therefore unnecessary.

If the belt has to be replaced carry out the following procedure :—

Slacken the two bolts securing the dynamo to the mounting bracket. Remove the nut and unscrew the bolt securing the top link to the dynamo. Slacken the bolt securing the top link to the engine and press the dynamo as far as possible towards the engine. Remove the belt.

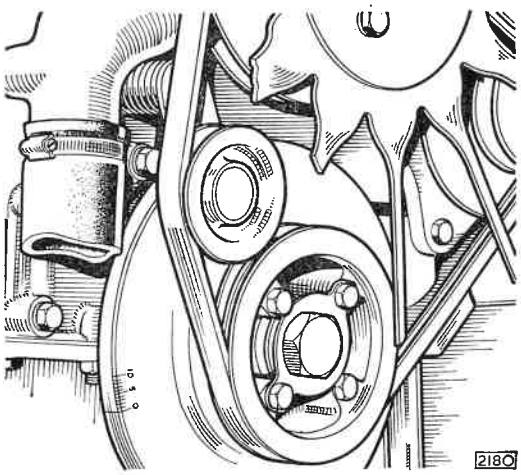


Fig. 40. *The automatic fan belt tensioner.*

Place the new belt in position on the fan, jockey and crankshaft pulleys and by pressing the jockey pulley against the spring pass the belt over the dynamo pulley.

Pass the dynamo top securing bolt through the link and screw into the dynamo lug. Pull the dynamo away from the engine as far as possible, tighten the dynamo top securing bolt and replace the nut. Tighten the bolt securing the dynamo link to the engine and the two dynamo mounting bolts.

Top Timing Chain Tension

If the top timing chain is audible adjust the tension as follows:—

This operation requires the use of a special tool to enable the adjuster plate to be rotated. To gain access to the adjuster plate remove the breather housing attached to the front face of the cylinder head.

Slacken the locknut securing the serrated adjuster plate. Tension the chain by pressing the locking plunger inwards and rotating the adjuster plate in an anti-clockwise direction.

When correctly tensioned there should be slight flexibility on both outer sides of the chain below the camshaft sprockets, that is, the chain must not be dead tight. Release locking plunger, and securely tighten lock nut. Refit the breather housing.

Every 12,000 miles (20,000 km.)

Air Cleaner

The air cleaner is of the paper element type and is fitted on top of the cylinder head.

No maintenance is necessary but the element should be renewed every 12,000 miles (20,000 km.) or more frequently in dusty territories.

Roll back the sealing rubber between the carburetter elbow and the air cleaner. Slacken the two wing nuts securing the air cleaner to the bracket on the cylinder head. Release the air cleaner by pulling it towards the left hand wing valance. Release the two clips securing the end cover to the air cleaner. Withdraw the end cover and element. Remove the wing nut, washer, end cap and rubber ring securing the element to the end cover. When refitting the element ensure that the two rubber sealing rings are in their correct positions.

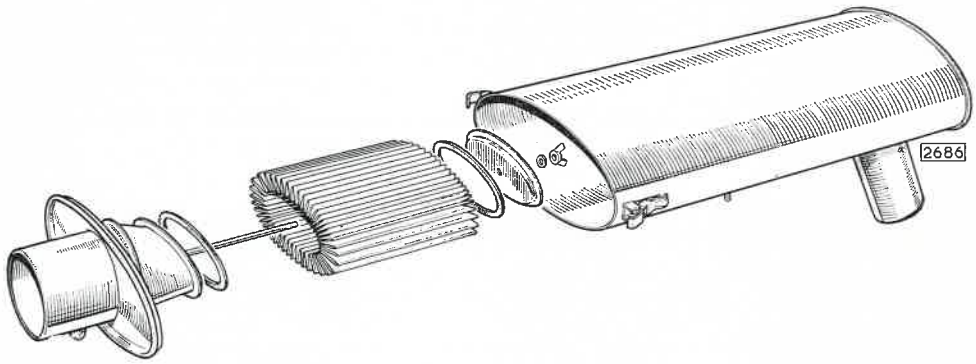


Fig. 41. *The air cleaner element.*

CARBURETTERS AND FUEL SYSTEM

Every 3,000 miles (5,000 km.)

Lubricate Carburetter Piston Damper

Each carburetter is fitted with a hydraulic piston damper which, unless periodically replenished with oil, will cause poor acceleration and spitting back through the carburetter on rapid opening of the throttle.

To replenish with oil, unscrew the cap on top of suction chambers and lift out the damper valve which is attached to the cap. Fill the hollow piston spindle, which can be seen down inside the bore of the suction chamber, with S.A.E. 20 engine oil.

Checking Carburetter Slow Running

1. Cars fitted with synchromesh gearbox.

The idling speed of the engine when fully warmed up should be set at 700 r.p.m.

Note: If the idling speed is less than 700 r.p.m. or if the engine is not idling smoothly, chatter from the constant mesh gears may be noticeable.

2. Cars fitted with automatic transmission.

The idling speed of the engine when fully warmed up should be set at 500 r.p.m. with P or N selected—there will be a slight reduction of idling speed when D or L is engaged.

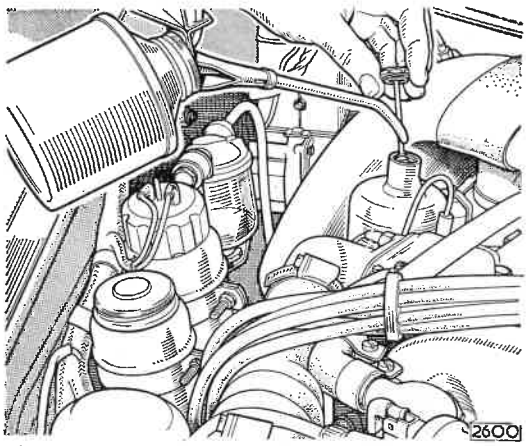


Fig. 42. *Topping up a carburetter hydraulic piston damper.*

Every 6,000 miles (10,000 km.)

Tune Carburetters

See instructions on page 64.

Cleaning Carburetter Filters

Removal of the bolt securing the petrol pipe banjo union to each float chamber will expose the filters. Remove the filters and clean in petrol ; do not use a cloth as particles will stick to the gauze.

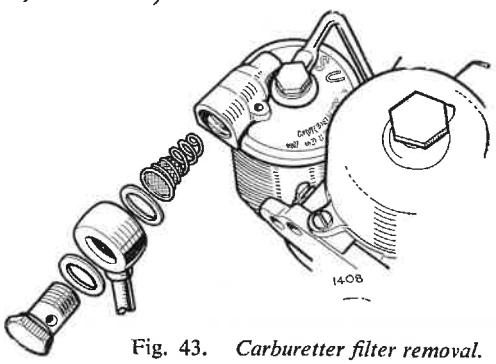


Fig. 43. *Carburetter filter removal.*

When refitting, insert the filter with the spring first and ensure that the fibre washers are replaced one to each side of the banjo union.

Fuel Feed Line Filter

The filter is attached to the right-hand wing valance and is of the glass bowl type with a flat filter gauze.

At the recommended intervals, or more frequently if the glass bowl shows signs of becoming full of sediment, slacken the locking nut, swing the retaining clip to one side and remove the bowl, sealing washer and filter gauze.

Clean the filter gauze and bowl by washing in petrol. Examine the sealing washer and if necessary fit a new one.

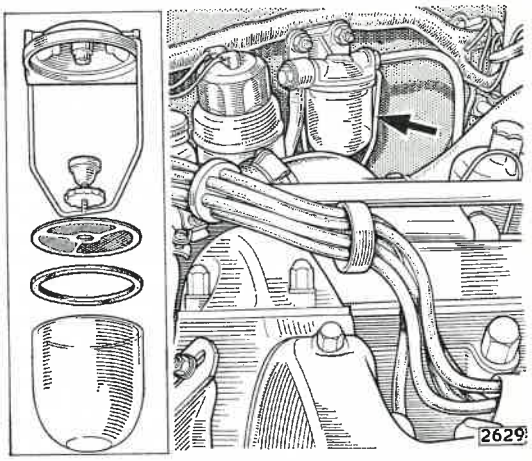


Fig. 44. *Fuel feed line filter.*

COOLING SYSTEM

Daily

Checking Radiator Coolant Level

Every day check the level of the coolant in the radiator header tank and if necessary top up to the bottom of the filler neck.

Soft water should be used if available ; hard water produces scale which in time will affect the cooling efficiency of the system.

Care must be taken when removing the filler cap if the engine is hot ; it is advisable to protect the hands against escaping steam. Turn the cap slowly anti-clockwise until the resistance of the safety stop is felt. Leave the cap in this position until all pressure is released before removing completely.

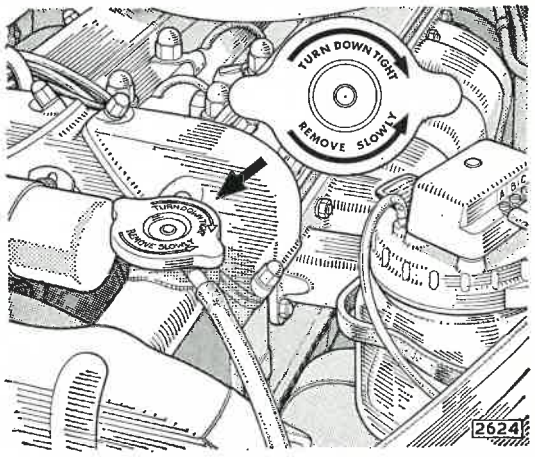


Fig. 45. *Radiator filler cap.*

Periodically

Care of the Cooling System

The entire cooling system should occasionally be flushed out to remove sediment. To do this, open the radiator block and cylinder block drain taps and insert a water hose into the radiator filler neck. Allow the water to flow through the system, with the engine running at a fast idle speed (1,000 r.p.m.) to cause circulation, until the water runs clear.

Since deposits in the water will in time cause fouling of the surfaces of the cooling system with consequent impaired efficiency it is desirable to retard this tendency as much as possible by using water as nearly neutral (soft) as is available. One of the approved brands of water inhibitor may be used with advantage to obviate the formation of deposits in the system.

Check the radiator water level after running the engine and top up if necessary.

Important

When refilling the cooling system following complete drainage, depress the "HEAT" button on the heater controls to allow the heater system to be filled with coolant. Recheck the level after running the engine for a short period.

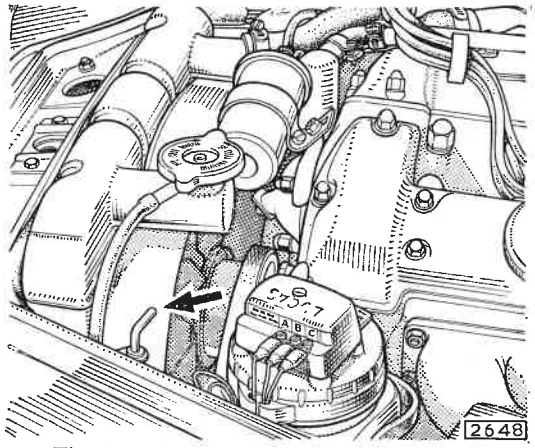


Fig. 46. *Radiator drain tap remote control.*

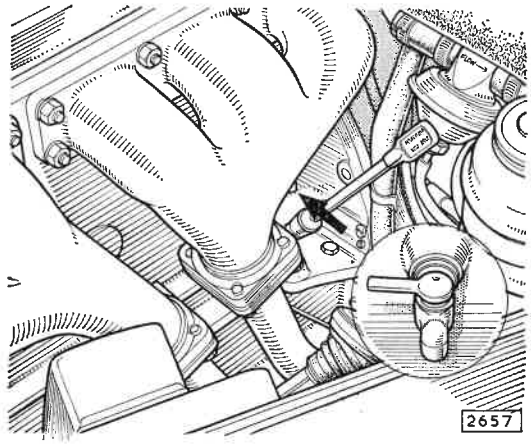


Fig. 47. *Cylinder block drain tap.*

CLUTCH

(Standard Transmission)

Every 3,000 miles (5,000 km.)

Check Fluid Level

The clutch is operated hydraulically from a master cylinder situated at the rear of the engine compartment on the driver's side of the car. The hydraulic fluid is stored in a reservoir also situated on the driver's side of the car and it is important that the level does not fall below the line marked "Fluid Level". Normal clutch wear is automatically compensated for by the hydrostatic clutch operating slave cylinder.

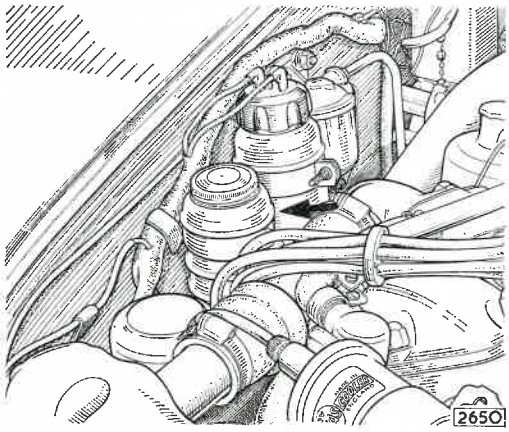


Fig. 48. *Clutch fluid reservoir—right hand drive.*

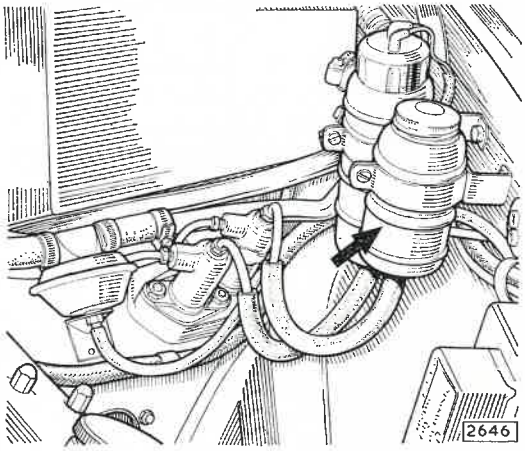


Fig. 49. *Clutch fluid reservoir—left hand drive.*

GEARBOX

(and Overdrive if fitted)

Every 3,000 miles (5,000 km.)

Gearbox Oil Level

Check the level of the oil in the gearbox with the car standing on level ground.

A combined level and filler plug is fitted on the left-hand side of the gearbox. Clean off any dirt from around the plug before removing it.

The level of the oil should be to the bottom of the filler and level plug hole.

Overdrive Oil Level—Important

The oil for the lubrication and operation of the overdrive unit is fed from the gearbox casing and therefore checking the gearbox oil level will also check the level of oil in the overdrive unit, but as this unit is hydraulically controlled extra attention should be paid to exercising absolute cleanliness when replenishing with oil. It is also important that the oil level is not allowed to fall appreciably otherwise the operation of the overdrive may be affected.

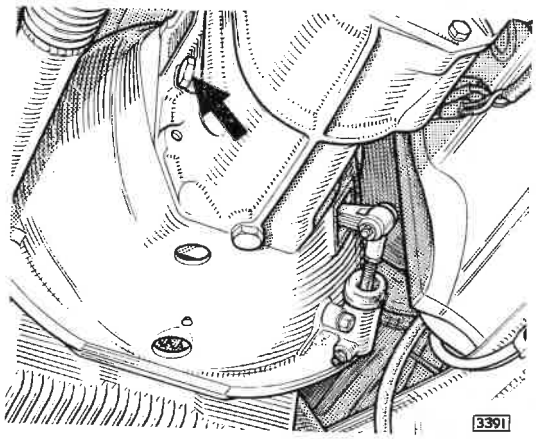


Fig. 50. *The gearbox filler and level plug.*

Every 12,000 miles (20,000 km.)

Changing the Gearbox Oil

The draining of the gearbox should be carried out at the end of a run when the oil is hot and therefore will flow more freely. The drain plug is situated at the front end of the gearbox casing.

After all the oil has drained replace the drain plug and refill the gearbox with the recommended grade of oil through the combined filler and level plug hole situated on the left-hand side of the gearbox casing ; the level should be to the bottom of the hole.

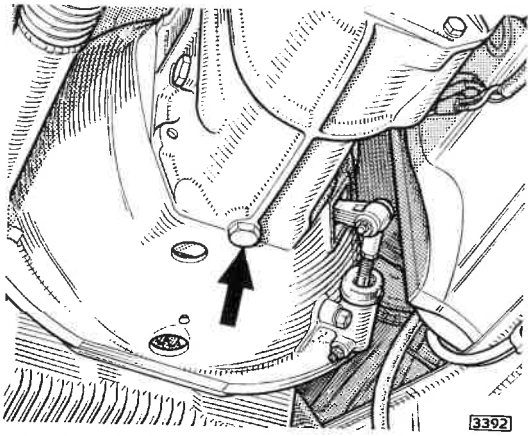


Fig. 51. *Gearbox drain plug—standard transmission.*

Overdrive—Oil Changing

The oil for the overdrive unit is common with that in the gearbox but draining oil from the gearbox will not drain the overdrive unit.

When draining the gearbox: the filter plug, situated in the side of the overdrive unit, should be removed together with the filter and magnetic washers.

Thoroughly wash the filter gauze and magnetic washers.

When dry, refit the filter, magnetic washers and filter plug. Fully tighten the filter plug and refill the gearbox and overdrive unit with oil through the gearbox filler and level plug hole.

Recheck the level after the car has been run as a certain amount of oil will be retained in the hydraulic system of the overdrive.

Particular attention should be paid to maintaining absolute cleanliness when filling the gearbox and overdrive with oil as any foreign matter that enters may seriously affect the operation of the overdrive.

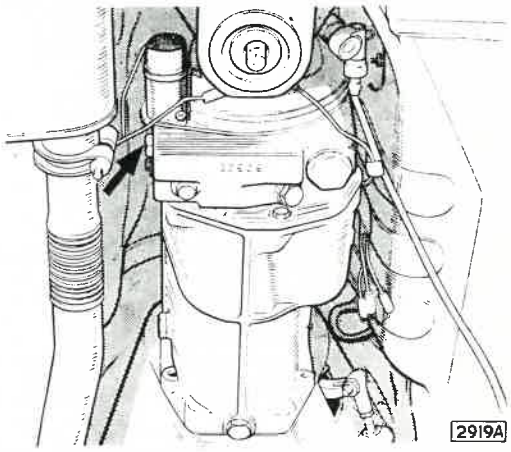


Fig. 52. *Overdrive Filter plug.*

AUTOMATIC TRANSMISSION

(if fitted)

The fluid necessary for the operation of the torque converter is common with that used in the transmission. The total capacity of the transmission assembly is approximately 15 Imperial pints (18 U.S. pints ; 8.5 litres), but when draining the transmission a small quantity of fluid will remain in the unit and the amount required to refill it will be that needed to bring the fluid level to the FULL mark on the dipstick as described in "Drain and Refill Transmission".

Every 3,000 miles (5,000 km.)

Check Transmission Fluid Level

1. Raise the bonnet. The dipstick will be found forward of the carburetter adjacent to the radiator top water hose.

2. With the car on a level floor, set the handbrake firmly. Set the selector lever in the P position and start the engine. With the footbrake applied move the selector lever to L and raise the transmission fluid temperature by running the engine at 800 r.p.m. for 2 or 3 minutes.

3. Clean the end of the filler tube. Remove the dipstick and wipe it dry. With the foot still on the brake and the selector lever at L run the engine at its normal idling speed and check the fluid level. Add sufficient fluid to bring the level up to the "Full" mark on the dipstick. DO NOT OVERFILL. The space between the "Full" and "Low" marks on the dipstick represents approximately one pint.

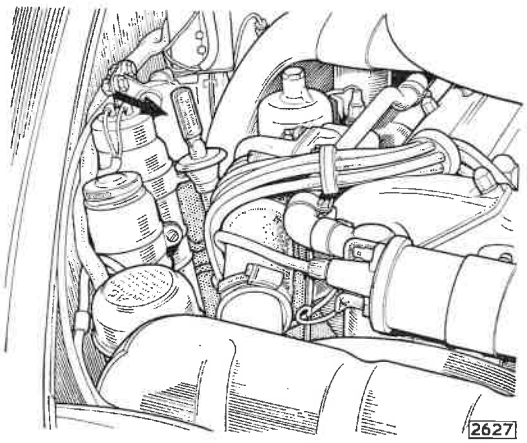


Fig. 53. *Automatic transmission dipstick.*

Every 12,000 miles (20,000 km.)

Drain and Refill Transmission

1. Raise the bonnet. The dipstick will be found forward of the front carburetter adjacent to the radiator top water hose.

2. With the car on a level floor, set the handbrake firmly. Set the selector lever in the P position and start engine. With the footbrake applied move the selector lever to L and raise the transmission fluid temperature by running the engine at 800 r.p.m. for 2 or 3 minutes.

3. Stop the engine. Clean the end of the filler tube.

4. Remove the transmission oil pan drain plug. (A, Fig. 54).

5. Remove the converter housing cover plate and rotate the converter until the drain plug is in position for draining. Remove the converter drain plug. (B).

6. To facilitate draining, remove the square-headed converter pressure take-off plug from the bottom of the housing attached to the left-hand side of the transmission casing (C).

7. After fluid has drained, refit and tighten the drain plugs in the transmission oil pan and converter. Refit the converter housing cover plate. Refit and tighten the converter pressure take-off plug.

8. Pour 10 Imperial pints (12 U.S. pints; 5.7 litres) of the recommended grade of fluid into the transmission through the filler tube.

9. Set the selector lever in the P position and start engine. With the footbrake applied move the selector lever to L and run the engine at 800 r.p.m. for 2 or 3 minutes to transfer fluid from the transmission case to the converter.

10. With the foot still on the brake and the selector lever at L run the engine at its normal idling speed and add additional fluid (approximately 5 Imperial pints ; 6 U.S. pints or 2.8 litres) to bring the level up to the "Full" mark on the dipstick. DO NOT OVERFILL.

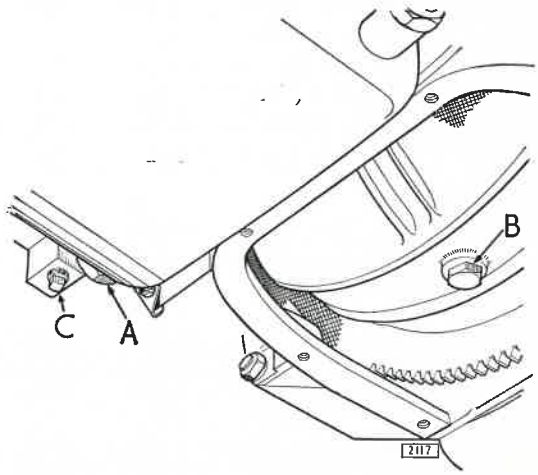


Fig. 54. *Automatic transmission drain plug. (The converter housing cover plate has been removed).*

PROPELLER SHAFTS

The propeller shaft universal joints and sliding spline are of the "sealed for life" type and require no periodic lubrication.

REAR AXLE

The rear axle half shaft universal joints are of the "sealed for life" type and require no periodic lubrication.

Every 3,000 miles (5,000 km.)

Checking Rear Axle Oil Level

Check the level of the oil in the rear axle with the car standing on level ground.

A combined filler and level plug is fitted in the rear of the axle casing accessible from underneath the car. Clean off any dirt from around the plug before removing it.

The level of the oil should be to the bottom of the filler and level plug hole ; use only HYPOID oil of the correct grade and since different brands may not mix satisfactorily, draining and refilling is preferable to replenishing if the brand of oil in the axle is unknown.

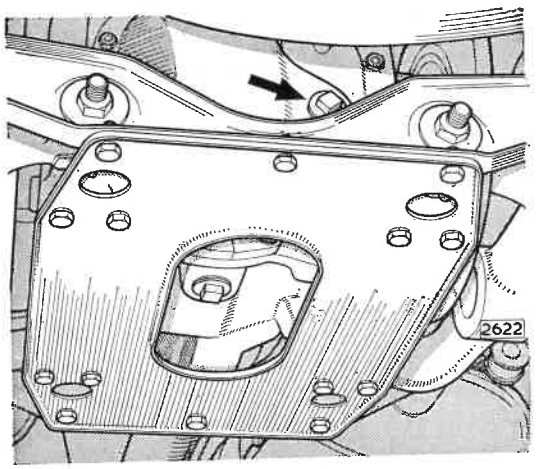


Fig. 55. *Rear axle filler and level plug.*

Every 12,000 miles (20,000 km.)

Changing the Rear Axle Oil

The draining of the rear axle should be carried out at the end of a run when the oil is hot and will therefore flow more freely. The drain plug is situated in the base of the differential casing.

After the oil has drained, replace the drain plug and refill the rear axle with the recommended grade of oil after removal of the combined filler and level plug situated in rear cover.

The level of the oil should be to the bottom of the filler and level plug hole when the car is standing on level ground.

Use only HYPOID oil of the correct grade.

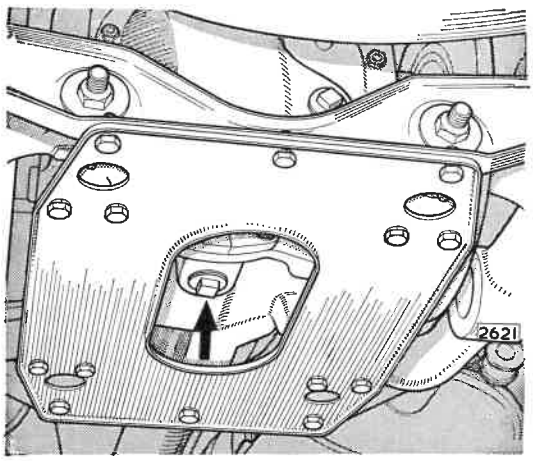


Fig. 56. *Rear axle drain plug.*

FRONT SUSPENSION AND STEERING

Front Suspension

The front suspension wishbone levers and anti-roll bar are supported in rubber bushes which do not require any attention.

Front Shock Absorbers

The front shock absorbers are of the telescopic type and no replenishment with fluid is necessary or provided for.

Every 3,000 miles (5,000 km.)

Checking the Steering Reservoir Oil Level (Power-assisted Steering)

The oil reservoir is attached to the left-hand wing valance. It is important that absolute cleanliness is observed when replenishing with oil as any foreign matter that enters may affect the hydraulic system.

Clean the area around the filler cap and then remove the cap by turning anti-clockwise.

Check the level of oil and top up if necessary with the recommended grade. The level of oil must be just above the filter element located in the reservoir.

Important. If the oil level is allowed to fall appreciably, the power assistance to the steering will be affected.

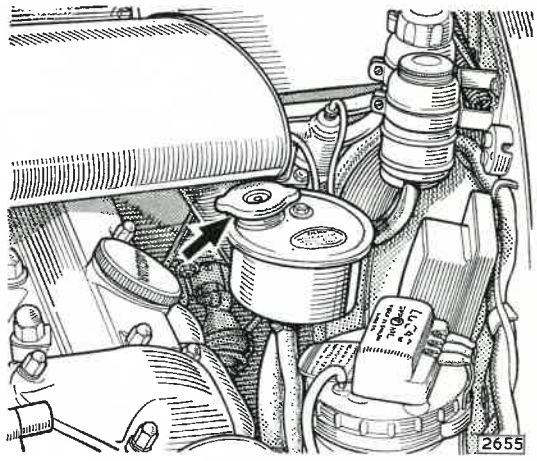


Fig. 57. *Power steering oil reservoir.*

Every 6,000 miles (10,000 km.)

Steering Box (Standard Steering)

The steering box is attached to the front suspension cross member ; the filler plug is situated in the top cover and is accessible from the engine compartment on the driver's side of the car. The filler plug has a plain head and should not be confused with the rocker shaft adjustment screw which is threaded externally. Top up the steering

box with the recommended grade of lubricant until no more oil will enter.

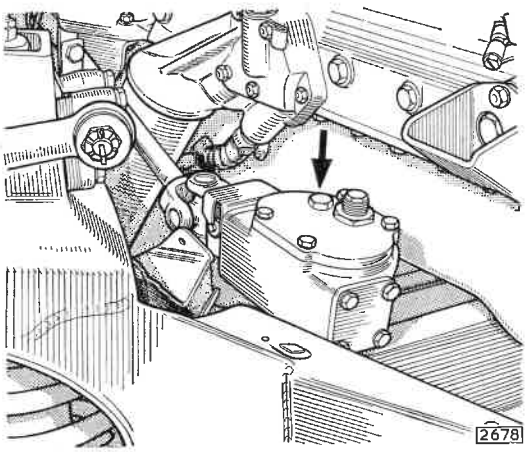


Fig. 58. *Steering box filler plug—right-hand drive.*

Steering Idle Lever Housing

The idler housing is pre-packed with grease which only requires replenishing if the idler assembly is dismantled for overhaul.

Steering Tie-Rods

Lubricate the ball joints at the ends of the two steering tie-rods with the recommended lubricant. A bleed hole is provided in each ball joint; the hole is covered by a nylon washer which lifts under pressure and indicates when sufficient lubricant has been applied. The tie-rods are situated at the rear of the front suspension cross-member. When carrying out this operation examine the rubber seals at the ends of the ball housings to see if they have become displaced or split.

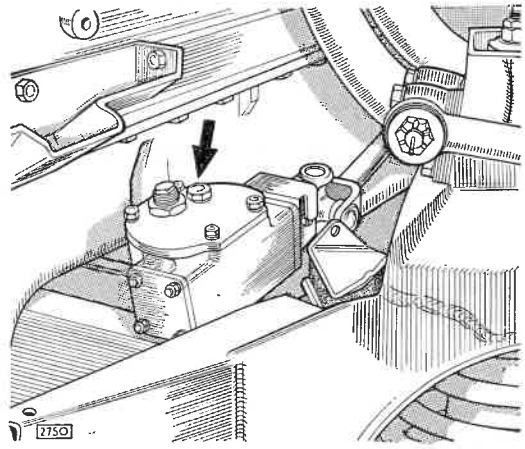


Fig. 59. *Steering box filler plug—left-hand drive.*

In this even they should be repositioned or replaced as any dirt or water that enters the ball joints will cause premature wear.

Do not over-lubricate the ball joints to the extent where grease escapes from the rubber seals.

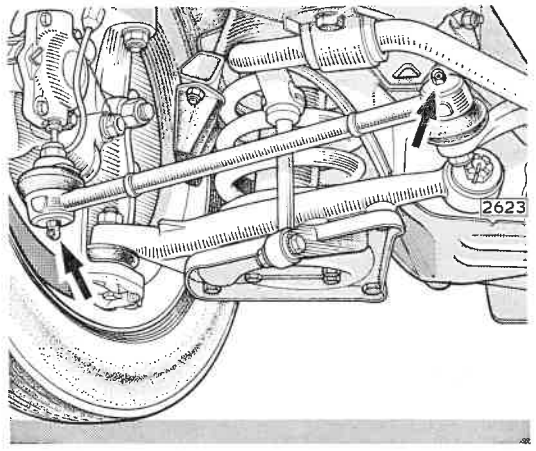


Fig. 60. *Steering tie rod grease nipples.*

Wheel Swivels

Lubricate the nipples (four per car) fitted to the top and bottom of the wheel swivels. A bleed hole is provided in each ball joint; the hole is covered by a nylon washer which lifts under pressure and indicates when sufficient lubricant has been applied.

The nipples are accessible from underneath the front of the car.

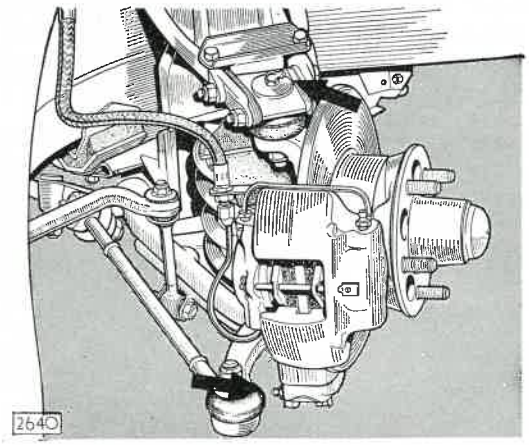


Fig. 61. *Wheel swivel grease nipples.*

Front Wheel Alignment

Check that the car is full of petrol, oil and water. If not, additional weight must be added to compensate for, say, a low level of petrol (the weight of 10 gallons of petrol is approximately 80 lbs.—36.0 kg.).

Ensure that the tyre pressures are correct and that the car is standing on a level surface.

With the wheels in the straight ahead position check the alignment of the front wheels with an approved track setting gauge.

The front wheel alignment should be :—
Parallel to $\frac{1}{16}$" (1.59 mm.) "toe in"
(measured at the wheel rim).

Recheck the alignment after pushing the car forward until the wheels have turned half a revolution (180 °).

If adjustment is required slacken the clamp bolt at each end of the central track rod and rotate the rod in the required direction until the alignment of the front wheels is correct. Tighten the clamp bolts and recheck the alignment.

Every 12,000 miles (20,000 km.)

Oil Reservoir Filter (Power-assisted steering)

At the recommended intervals, renew the paper filter element in the oil reservoir.

Unscrew the bolt securing the oil reservoir top cover. Lift off the top cover and collect the spring and retainer plate. The filter element can now be lifted out from the reservoir.

When fitting the new element ensure that it is located in the support plate at the bottom of the reservoir. Refit the retainer plate, spring and top cover. Tighten the central bolt.

REAR SUSPENSION

Rear Springs

The rear suspension is by coil springs which do not require maintenance attention.

Rear Shock Absorbers

The rear shock absorbers are of the telescopic type and no replenishment with fluid is necessary or provided for.

Every 6,000 miles (10,000 km.)

Outer Pivot Bearings

A grease nipple is located in the centre of the rear wishbone outer pivot. Lubricate sparingly with the recommended grade of lubricant. A bleed hole is provided, opposite the grease nipple, to indicate when an excess of lubricant has been applied. Always ascertain that the bleed hole is clear before carrying out operation.

Inner Pivot Bearing

Two grease nipples are provided, one at each end of the wishbone fork. Lubricate sparingly with the recommended grade of lubricant.

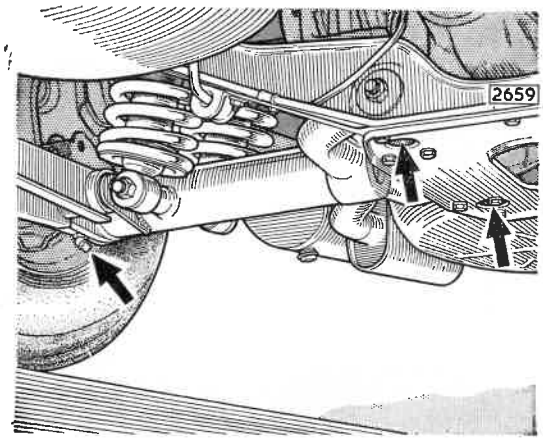


Fig. 62. *Inner and outer pivot bearing grease nipples.*

WHEEL BEARINGS

Every 12,000 miles (20,000 km.)

Front Wheel Bearings

Removal of the wheels will expose a grease nipple in the wheel bearing hubs. Lubricate sparingly with the recommended grade of lubricant. Always thoroughly clean the grease nipple before applying the grease gun.

On disc wheel hubs a bleed hole is provided in the hub cap to indicate when sufficient lubricant has been applied.

On wire wheel hubs an indication that sufficient lubricant has been applied will be by the escape of grease past the nut in the bore of the splined hub.

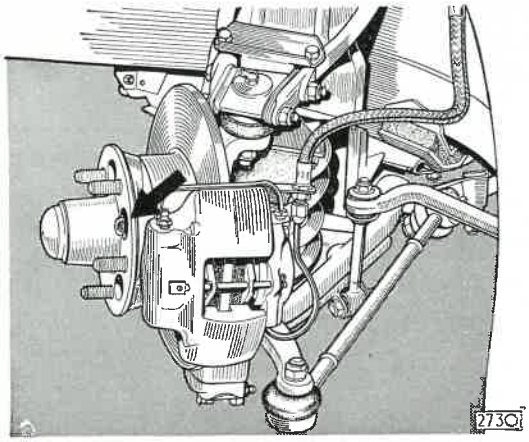


Fig. 63. *Front wheel hub grease nipple (disc wheels).*

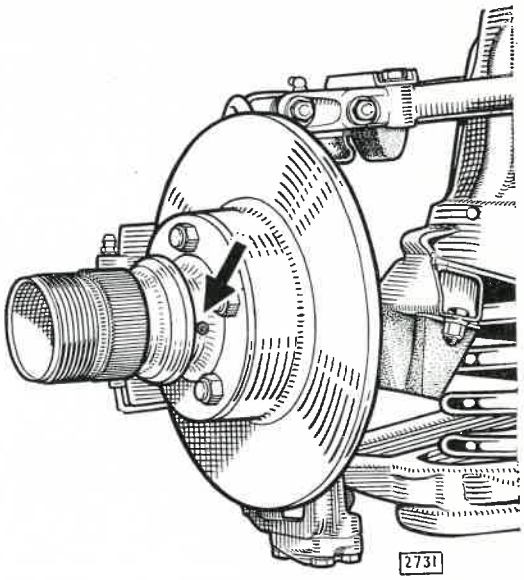


Fig. 64. *Front wheel hub grease nipple (wire wheels).*

Rear Wheel Bearings

A hole in the hub bearing housing for lubrication of the wheel bearings is accessible after removal of the wheel. Clean off the area around the dust cap to ensure that no dirt enters the hub. Prise out the cap and inject the recommended grade of grease through the hole until no more will enter. If a pressure gun is used take care not to build up pressure in the hub as the grease may escape past the oil seal. Refit the dust cap.

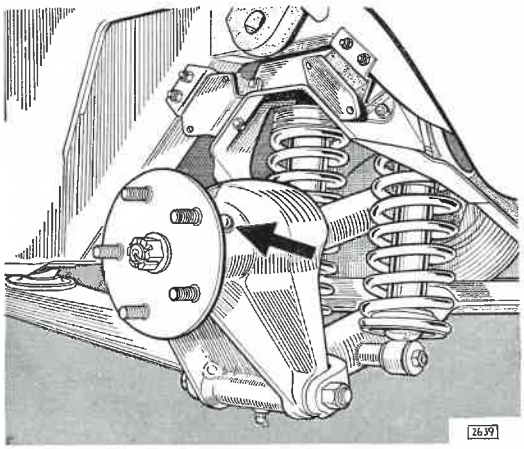


Fig. 65. *Rear wheel hub bearing grease cap.*

Wheel Bearing Adjustment

At the recommended intervals the end-float of the front and rear wheel hub bearings should be checked and, if necessary, reset. As this operation requires the use of special tools it should be entrusted to a Jaguar dealer.

BRAKING SYSTEM

Footbrake Adjustment

Both the front wheel and rear wheel brakes are so designed that no manual adjustment to compensate for brake friction pad wear is necessary as this automatically takes place when the footbrake is applied.

Handbrakes

The self-adjusting handbrakes are attached to the rear brake caliper bodies but form an independent mechanically actuated system carrying its own friction pads. The handbrakes are self-adjusting to compensate for friction pad wear and automatically provide the necessary clearance between the brake discs and the friction pads

Every 3,000 miles (5,000 km.)

Brake Fluid Level

The fluid reservoir for the hydraulic brakes is attached to the wing valance on the driver's side of the car.

At the recommended intervals check the level of the fluid in the reservoir and top up if necessary to the level mark above the fixing strap marked "Fluid Level" using only the correct specification of brake fluid.

Do NOT overfill.

The level can be plainly seen through the plastic reservoir.

First, disconnect the two electrical cables from the "snap-on" terminals. Unscrew the filler cap and "top up" if necessary to the recommended level. Insert the combined filler cap and float slowly into the reservoir to allow for displacement of fluid and screw down the cap. Wipe off any fluid from the top of the cap and connect the cables to either of the two terminals.

Note. An indication that the fluid level is becoming low is provided by an indicator pin situated between the two terminals.
First, press down the pin and allow it to return to its normal position ; if the pin can then be lifted with the thumb and forefinger the reservoir requires topping up immediately.

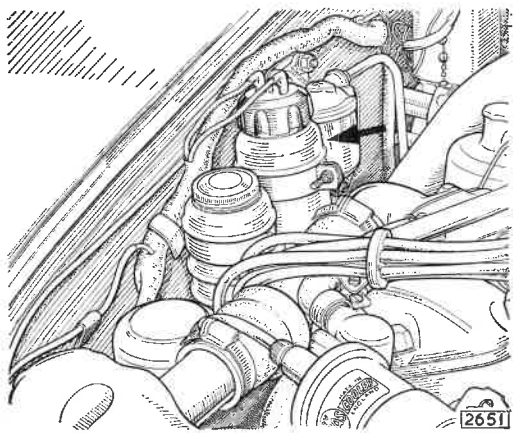


Fig. 66. *Brake fluid reservoir—right hand drive.*

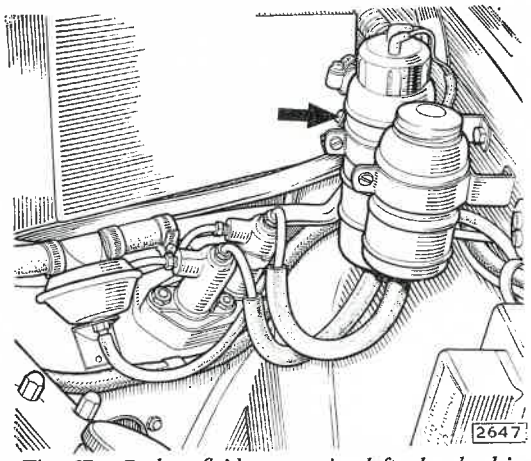


Fig. 67. *Brake fluid reservoir—left hand drive*

Brake Fluid Level Warning Light

A warning light (marked "Brake Fluid —Handbrake") situated on the facia behind the steering wheel, serves to indicate if the level in the brake fluid reservoir has become low, provided the ignition is "on". As the warning light is also illuminated when the handbrake is applied, the handbrake must be fully released before it is assumed that the fluid level is low. If with the ignition "on" and the handbrake fully released the warning light is illuminated the brake fluid must be "topped up" immediately.

As the warning light is illuminated when the handbrake is applied and the ignition is "on" a two-fold purpose is served. Firstly, to avoid the possibility of driving away with the handbrake applied. Secondly, as a check that the warning light-bulb has not "blown"; if on first starting up the car with the handbrake fully applied, the warning light does not become illuminated the bulb should be changed immediately.

Note. If it is found that the fluid level falls rapidly indicating a leak from the system, the car should be taken immediately to the nearest Jaguar Dealer for examination.

Every 6,000 miles (10,000 km.)

Friction Pads—Examination for Wear

At the recommended intervals, or if a loss of braking efficiency is noticed, the brake friction pads (2 per brake) should be examined for wear; the ends of the pads can be easily observed through the apertures in the brake caliper. When the friction pads have worn down to a thickness of approximately $\frac{1}{4}$" (7 mm.) they need renewing.

Friction Pads—Renewal

To remove the friction pads withdraw the spring clip and extract the pad retaining pin and stop plate.

Insert a hooked implement through the

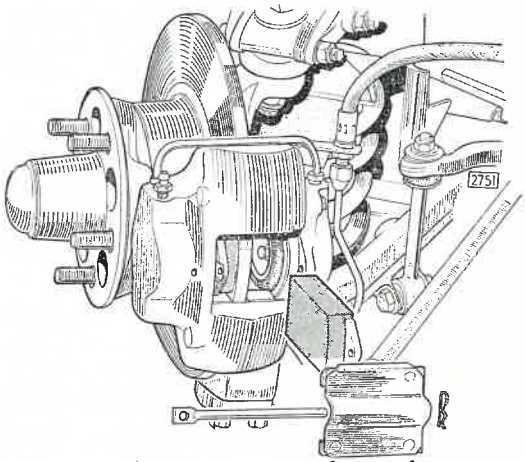


Fig. 68. *Friction pad removal.*

hole in the metal tag attached to the friction pad and withdraw the pad by pulling on the tag.

To enable the new friction pads to be fitted it will be necessary to force the pistons back into the cylinder blocks by means of two screwdrivers.

Before doing this, it is advisable to half empty the brake supply tank, otherwise forcing back the friction pads will eject fluid from the tank with possible damage to the paintwork. When all the new friction pads have been fitted, top up the supply tank to the recommended level.

Insert the new friction pads into the caliper ensuring that the slot in the metal plate attached to each pad engages with the button in the centre of the piston.

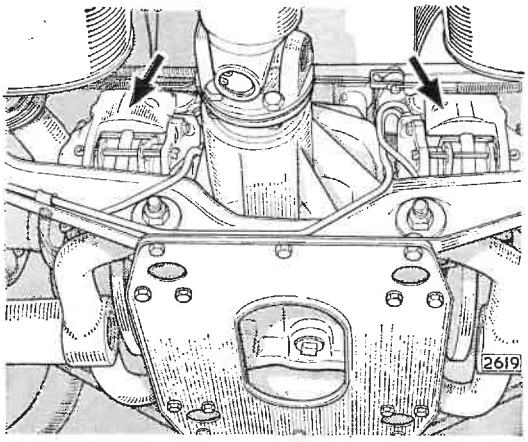


Fig. 69. *Location of the rear brake calipers.*

WHEELS AND TYRES

Weekly

It is important to maintain the tyre pressures at the correct figures, incorrect pressures will affect the steering, riding comfort and tyre wear.

Check the inflation pressures when the tyres are cold and not when they have attained their normal running temperature ; tyres pressures increase with driving and any such increase should be ignored. Always ensure that the caps are fitted to the ends of the valves as they prevent the ingress of dirt and form a secondary seal to the valve core.

Tyre Pressures

Tyre pressures are quoted under "General Data" page ix.

Tyre Replacement and Wheel Interchanging

When replacement of the rear tyres becomes necessary, fit new tyres to the existing rear wheels and, after balancing, fit these wheels to the front wheel positions on the car, fitting the existing front wheel and tyre assemblies (which should have useful tread life left) to the rear wheel positions on the car.

If at the time this operation is carried out the tyre of the spare wheel is in new condition, it can be fitted to one of the front wheel positions in preference to replacing one of the original rear tyres, which wheel and tyre then become the spare.

Note : Due to the change in the steering characteristics which can be introduced by fitting to the front wheel positions wheels and tyres which have been used on the rear wheel positions, interchanging of part worn tyres from rear to front wheel positions is not recommended.

COACHWORK

Every 6,000 miles (10,000 km.)

Door Hinges

A grease nipple is fitted to each of the door hinges. Lubricate the nipples sparingly with grease and wipe off any surplus from the door hinges.

Door Drain Holes

At the recommended intervals clear the drain holes in the bottom of the doors with a piece of stiff wire.

Periodically

Carpets

These may be cleaned by brushing or with a vacuum cleaner. Grease or oil stains can be removed with petrol.

Chromium Plate

Whilst all chrome-plated parts are produced to a high standard, owners should note that deterioration of the plate may occur unless regular maintenance treatment is given.

With cars that are washed frequently and not operated in areas where climatic conditions liable to affect chrome plate exist, normal washing and leathering of the chrome and occasional use of chrome polish will maintain the plate in satisfactory condition.

In certain industrial areas or coastal areas, however, discoloration of the chrome plate from deposits in the atmosphere is liable to occur and more frequent attention is required.

Particular attention is drawn to the fact that salt is now commonly used on roads for frost or snow dispersal and it is of greater importance that in areas where this treatment is used cars should be washed off as quickly as possible following use under these conditions.

Head Lining

Dirt may be removed from the lining by the use of a vacuum cleaner. Stains may be removed by means of a white cloth moistened with carbon tetrachloride or methylated spirit applied briskly but without pressure.

Paintwork

Never clean the paintwork other than by washing with a soft sponge and hose pipe. Use a steady flow of water and sponge lightly. Dry and polish the paintwork with a good quality wash leather.

Tar may be removed with a clean soft cloth moistened in petrol or with a proprietary brand of tar remover.

The paintwork may be polished from time to time with a good quality proprietary polish, either wax or emulsion type.

Upholstery

The leather should be wiped over occasionally with a cloth damped in warm soapy water. Repeat operation using fresh cloth and water alone (avoid flooding the leather) and finish by drying and polishing with a soft dry cloth. It is important to use a mild, non-caustic soap of the toilet kind and to avoid the use of petrol and detergents.

OIL CAN LUBRICATION

Every 6,000 miles (10,000 km.)

At the recommended intervals carry out oil can lubrication of the following points:

Seat runners and adjusting mechanism.
Handbrake lever ratchet.
Door locks.
Luggage boot hinges and lock.
Bonnet hinges and catches.
Windscreen wiper arms.
Accelerator linkage.
Petrol filler cover hinges.
Generator end bush.

ELECTRICAL EQUIPMENT

Monthly

Battery Electrolyte Level

At the recommended intervals examine the electrolyte level in the battery cells, and top up if necessary with distilled water until the separators are just covered. Under no circumstances overfill above this level. Never use tap water to "top up" the battery as the impurities in the water will be harmful to the plates.

Battery Connections

At the time of checking the electrolyte level ensure that battery terminals are clean and tight; if corroded, scrape the insides of the terminals clean and smear with petroleum jelly.

Every 12,000 miles (20,000 km.)

Headlamps

Check headlamp alignment and adjust as necessary.

RECOMMENDED HYDRAULIC FLUID.

Braking System and Clutch Operation.

Dunlop Disc Brake Fluid is recommended. This conforms to S.A.E. 70 R3 specification modified for additional safety to give a higher boiling point.

Where this is not available, only fluid guaranteed to conform to S.A.E. 70 R3 specification, which is fully miscible with Dunlop Disc Brake Fluid, may be used as an alternative.

Component	MOBIL	CASTROL	SHELL	ESSO	B.P.	DUCKHAM	REGENT Caltex/Texaco
Engine	Mobiloil Special*	Castrol XL 20W/50	Shell Super Oil	Esso Extra Motor Oil 5W/20* Esso Extra Motor Oil 10/W30* Esso Extra Motor Oil 20W/40	Super Visco-Static	Q20–50 or Q5500*	Havoline 20W/40 or 10W/30*
Upper cylinder lubrication	Mobil Upperlube	Castrollo	Shell U.C.L. or Donax U.	Esso U.C.L.	U.C.L.	Adcoid Liquid	Regent U.C.L.
Distributor oil can points Oil can lubrication	Mobiloil A	Castrol XL	Shell X-100 30	Esso Motor Oil 20W/30	Energol SAE 30	NOL 30	Havoline 30
Gearbox Rear axle	Mobilube GX 90	Castrol Hypoy	Spirax 90 E P	Esso Gear Oil GP 90/140	Gear Oil SAE 90 E P	Hypoid 90	Multigear Lubricant EP. 90
Steeringbox (standard steering)	Mobilube GX 140	Castrol Hi-press	Spirax 140 E P	Esso Gear Oil GP 90/140	Gear Oil SAE 140 E P	NOL EP 140	Multigear Lubricant EP. 140
Front wheel bearings Rear wheel bearings Distributor cam	Mobilgrease MP	Castrolease LM	Retinax A	Esso Multi-purpose Grease H	Energrease L.2	LB 10	Marfak All Purpose
Steering tie-rods Wheel swivels Door hinges	Mobilgrease MP	Castrolease LM	Retinax A	Esso Multi-purpose Grease H	Energrease L.2	LB 10	Marfak All Purpose
Automatic transmission unit Power steering system	Mobilfluid 200	Castrol T.Q.	Shell Donax T6	Esso Automatic Transmission Fluid	Automatic Transmission Fluid Type A	Nolmatic	Texamatic Fluid

* These oils should NOT be used in worn engines requiring overhaul.
If an SAE 30 or 40 oil has previously been used in the engine a slight increase in oil consumption may be noticed but this will be compensated by the advantages gained.

† According to availability in the country of operation.

SUMMARY OF MAINTENANCE

Daily

Check radiator water level.

Check engine oil level.

Weekly

Check tyre pressures (including spare wheel).

Monthly

Check battery electrolyte level and connections.

Check battery electrolyte level and connections.

Check fluid level in automatic transmission unit (if fitted).

Check fluid level in power-assisted steering reservoir (if fitted).

Check fluid level in brake and clutch master cylinder reservoirs.

Check gearbox oil level.

Check rear axle oil level.

Drain engine sump and refill.

Clean oil filter element and renew seal.

Top up carburetter hydraulic piston dampers.

Lubricate distributor and check contact points.

Clean, adjust and test sparking plugs.

Check carburetter slow running.

Every 3,000 miles (5,000 km.)

Check radiator water level.

Check tyre pressures (including spare wheel).

Every 6,000 miles (10,000 km.)

Carry out 3,000 mile (5,000 km.) service.

Top up steering unit (standard steering).

Lubricate all grease nipples (excluding wheel bearings).

Renew oil filter element and seal.
Tune carburetters.

Clean carburetter filters.

Clean fuel feed line filter.

Examine brake friction pads for wear.

Clear drain holes in bottoms of doors.

Adjust top timing chain (if necessary).

Check front wheel alignment.

Check fan belt for wear.

Carry out oil can lubrication of (a) seat runner and adjusting mechanism (b) hand-brake lever ratchet (c) door locks (d) luggage compartment hinges and lock (e) bonnet hinges and catches (f) windscreen wiper arms (g) accelerator and carburetter linkage (h) fuel filler cover hinge (i) generator end bush.

Every 12,000 miles (20,000 km.)

Carry out 3,000 and 6,000 mile (5,000 and 10,000 km.) service.

Drain and refill gearbox (and overdrive if fitted).

Clean overdrive oil pump filter (if overdrive fitted).

Drain and refill rear axle.

Drain and refill automatic transmission unit (if fitted).

Renew air cleaner element.

Renew steering oil reservoir filter (power-assisted steering only).

Renew sparking plugs.

Lubricate front and rear wheel bearing hubs.

Check front and rear wheel bearings for end-float. (additional charge for adjustment).

Check exhaust system for leaks.

Check and tighten all chassis and body nuts, bolts and screws.

Check headlamp alignment and adjust as necessary.

Rear Axle—Oil Changing

Do NOT drain and refill the rear axle at the first 1,000 mile (1,600 km.) free service. Change the rear axle oil after the car has completed 6,000 miles (10,000 km.) and thereafter at the recommended intervals.

SERVICE INSTRUCTIONS

This section deals with certain operations which although not requiring attention at regular intervals, may be found necessary either due to the mileage covered or to the replacement of parts.

Normally these operations should be undertaken by a Jaguar Distributor or Dealer but the instructions are included as a guide for the enthusiast or the owner living in a remote district.

DECARBONISING AND GRINDING VALVES

Important

Before carrying out any work on the cylinder head the following points should be observed to avoid possible fouling between (a) the inlet and exhaust valves, and (b) the valves and pistons.

1. Do NOT rotate the engine or the camshafts with the camshaft sprockets disconnected.

   If, with the cylinder head removed from the engine, it is required to rotate a camshaft, the other camshaft must either be removed or the bearing cap nuts slackened to their fullest extent to allow the valves to be released.

2. When fitting the camshafts to the cylinder head ensure that keyway in the front bearing flange of each camshaft is perpendicular (at 90°) to the adjacent camshaft cover face before tightening down the camshaft bearing cap nuts. If this operation is being carried out with the cylinder head fitted to the engine, rotate the engine until No. 6 (Front) piston is on Top Dead Centre in the firing position, that is with the distributor rotor opposite No. 6 cylinder segment, before fitting the camshafts.

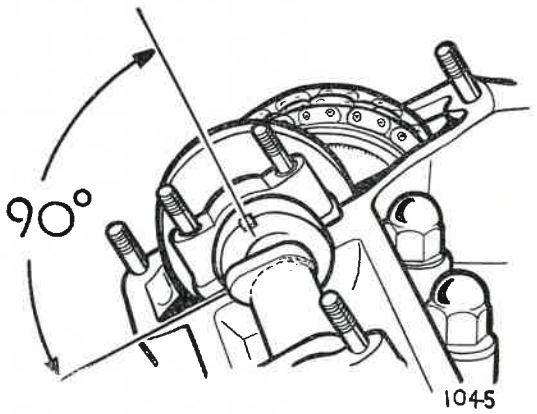


Fig. 70. *The keyway on the front bearing flange of the camshaft must be perpendicular (90°) to the cover face before tightening down the camshaft bearing caps.*

Note.—As the valves in the fully open position protrude below the cylinder head joint face, the cylinder head must not be placed joint face downwards directly on a flat surface.

Disconnect Engine Connections

Drain the cooling system by turning the radiator drain tap remote control and opening the cylinder block drain tap. Conserve water if anti-freeze is in use.

Remove the bonnet by unscrewing the four setscrews, having previously marked the position of the hinges to facilitate adjustment on re-assembly. Remove the battery and battery platform. Remove the air silencer and air intake pipe. Disconnect the accelerator linkage at the throttle spindle and at the attachment to inlet manifold. Disconnect the petrol feed pipe at float chamber unions. Disconnect leads from auxiliary starting carburetter solenoid.

Disconnect the cables from the revolution counter generator at the rear of the cylinder head. Disconnect the top water hose and by-pass hose from the front of the inlet manifold water jacket.

Remove the high tension leads from the sparking plugs and the lead carrier from the cylinder head studs. Disconnect the wires from the ignition coil and remove the coil. Remove the sparking plugs.

Disconnect the engine breather pipe from the front of the cylinder head. Disconnect the exhaust manifolds from the engine. Disconnect two camshaft oil feed pipe unions from the rear of the cylinder head.

Disconnect the heater hose from the rear of the inlet manifold water jacket. Disconnect the heater pipe clips from the inlet manifold cold starting pipes. Disconnect the cable from the water temperature gauge bulb in the inlet manifold water jacket. Slacken the clip and disconnect the vacuum servo pipe from the connection at the rear of the inlet manifold.

Remove Cylinder Head

Remove the dome nuts from each camshaft cover and lift off the covers.

Remove four nuts securing breather housing to front of cylinder head and withdraw housing, observing position of baffle plate with the two holes vertical. Release tension on camshaft chain by slackening nut on eccentric idler sprocket shaft, depressing spring-loaded stop peg and rotating serrated adjuster plate clockwise. Anti-clockwise rotation of the serrated adjuster, viewed from the front of the engine, tightens the chain.

Break the locking wire on the two setscrews, securing camshaft sprockets to respective camshaft. Remove one setscrew only

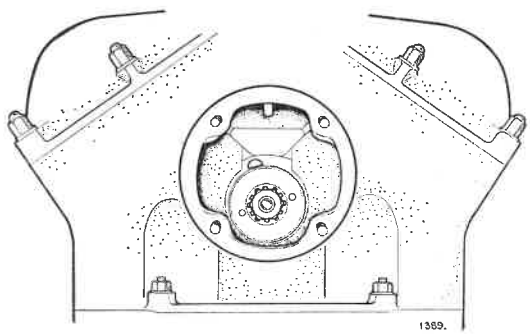


Fig. 71. *The serrated plate for adjustment of the top timing is accessible after removal of the engine breather housing.*

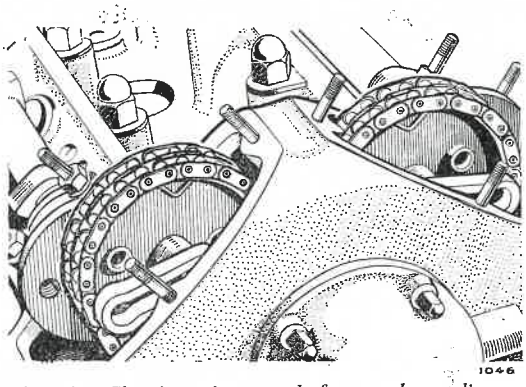


Fig. 72. *Showing the camshaft sprockers disconnected from the camshafts and slid up the support brackets.*

from each of the camshaft sprockets ; rotate the engine until the two remaining setscrews are accessible and remove these screws. Do NOT rotate the engine or the camshaft after having disconnected the sprockets. The two camshaft sprockets may now be slid up the support brackets.

Remove the fourteen cylinder head dome nuts and six nuts securing the front of the cylinder head, working diagonally out from the centre. Slacken the nuts a part at a time until they become free. Lift off cylinder head complete with inlet manifold. Remove and scrap the cylinder head gasket.

Remove Valves

With the cylinder head on the bench remove the inlet manifold and the revolution counter generator.

Remove the four bearing caps from each camshaft and lift out camshaft (note mating marks on each bearing cap).

Remove the twelve floating tappets and adjusting pads situated between tappets and valve stems. Lay out the tappets and pads in order, to ensure that they can be replaced in their original guides.

Obtain a block of wood the approximate size of the combustion chambers and place this under the valve heads in No. 1 cylinder combustion chamber. Press down the valve collars and extract the split cotters. Remove collars, valve springs and spring seats. Repeat for the remaining five cylinders. Valves are numbered and must be replaced in the original locations, No. 1 cylinder being at the rear, that is the flywheel end.

Fig. 73. *The pad for adjustment of the valve clearance is situated between the tappet and the top of the valve stem.*

Decarbonise and Grind Valves

Remove all traces of carbon from the combustion chambers and deposits from the induction and exhaust ports. The cylinder head is of aluminium alloy and great care

should be exercised not to damage this with scrapers or sharp pointed tools. Use worn emery cloth and paraffin only. Thoroughly clean the water passages in the cylinder head. Clean the carbon deposits from the piston crowns and ensure that the top face of the cylinder block is quite clean particularly round the cylinder head studs. Remove any pitting in the valve seats, using valve seat grinding equipment. Reface the valves if necessary using valve grinding equipment ; grind the valves to the seats, using a suction valve grinding tool.

Valve seat angle : Inlet 45 °, Exhaust 45 °.

Adjusting Valve Clearances

Thoroughly clean all traces of valve grinding compound from cylinder head and valve gear. Assemble valves in head. For checking the valve clearances the camshafts must be fitted one at a time as if one camshaft is rotated when the other camshaft is in position, fouling is likely to take place between the inlet and exhaust valves. Obtain and record all valve clearances by using a feeler gauge between the back of each cam and the appropriate valve tappet.

Correct valve clearances are :—

Inlet	.004″ (.10 mm.)
Exhaust	.006″ (.15 mm.)

Adjusting pads are available rising in .001″ (.03 mm.) sizes from .085″ to .110″ (2.16 to 2.79 mm.) and are acid etched on the surface with the letter 'A' to 'Z', each letter indicating an increase in size of .001″ (.03 mm.) Should any valve clearance require correction, remove the camshaft, valve tappet and adjusting pad. Observe the letter etched on the existing adjusting pad and should the recorded clearance for this valve, obtained previously, have shown say .002″ (.05 mm.) excessive clearance select a new adjusting pad bearing a letter two lower than the original pad.

As an example, assume that No. 1 inlet valve clearance is tested and recorded as .009″ (.23 mm.). On removal of the adjusting pad, if this is etched with the letter 'D' then substitution with a pad bearing the letter 'I' will correct the clearance for No. 1 inlet valve.

When fitting the camshafts prior to fitting the cylinder head to the engine it is most important that the keyway in the front bearing flange of each camshaft is perpendicular (at 90 °) to the adjacent camshaft cover face before tightening down the camshaft bearing cap nuts.

Tighten the camshaft bearing cap nuts to a torque of 15 lbs./ft. (2.0 kg./m.).

Refit Cylinder Head

When all the valve clearances have been correctly set, refit the inlet manifold.

Before refitting the cylinder head it is **important** to observe that, if the camshafts are out of phase with the piston position, fouling may take place between the valves and pistons. It is, therefore, essential to adhere to the following procedure before fitting the cylinder head :—

Accurately position the camshafts by engaging the valve timing gauge (provided in

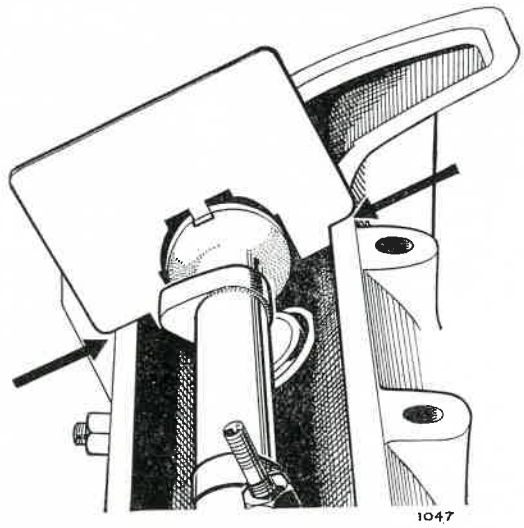


Fig. 74. *The valve timing gauge in position. Ensure that the gauge is seated at the points indicated by the arrows.*

tool kit) ; the key of the gauge locates in the keyway of the camshaft and the bottom face of the gauge with the camshaft cover face on the cylinder head.

Turn No. 6 (front) piston to firing position on top dead centre. Remove the distributor cover and check that the rotor arm is opposite No. 6 cylinder segment. A top dead centre (0 °) mark is provided on the crankshaft damper with a pointer on the sump immediately below.

Refit the cylinder head, using a new cylinder head gasket, fitted side marked "TOP" upwards. When tightening cylinder head nuts it is recommended that a torque spanner should be used and the fourteen large dome nuts tightened a part of a turn at a time to a torque of 54 lbs./ft. (7.5 kg./m.) working diagonally outwards from the centre. Refit the six nuts at the front of the cylinder head.

It is important to tension the timing chain before attempting to set the valve timing. Proceed as follows :—

Through the breather aperture in the front of the cylinder head slacken the locknut securing the serrated plate.

With the camshaft sprocket on the flanges of the camshafts, tension chain by pressing locking plunger inwards and rotating serrated plate by the two holes in an anti-clockwise direction.

With the correct tension there should be slight flexibility on both outer sides of the chain below the camshaft sprockets, that is, the chain must not be dead tight. Release the locking plunger, and securely tighten the locknut. Tap the camshaft sprockets off the flanges of the camshafts. Accurately position the camshaft with the valve timing gauge and check that the T.D.C. marks are in exact alignment. Offer up the camshaft sprockets to the camshaft flanges and check if the setscrew holes in

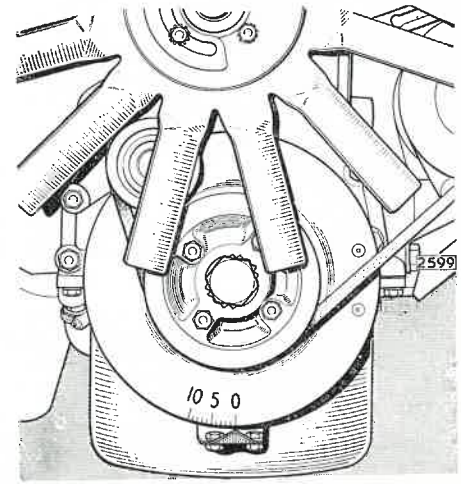


Fig. 75. *Timing scale marked on the crankshaft damper.*

the adjuster plates are in exact alignment with the tapped holes in the camshaft flanges, if so, the securing setscrews can be fitted. If the holes are not in exact alignment it will be necessary to remove the circlip retaining the adjuster plate in the sprocket and withdraw the adjuster plate forward until the serrations disengage. Re-position the adjuster plate until the holes are in alignment, with the serrations engaged ; if exact alignment cannot be obtained turn the plate through 180 ° which due to its construction will facilitate alignment. Finally secure the camshaft sprocket setscrews with new locking wire.

Clean the sparking plugs and set gaps ; if possible use approved plug cleaning and testing equipment. Clean and adjust distributor contact breaker points.

CARBURETTER TUNING

Before tuning the carburetters, the sparking plug gaps and contact breaker gaps should be checked and adjusted if necessary. The distributor centrifugal advance mechanism and vacuum advance operation should be checked and ignition timing set to the figure given under "General Data", with the centrifugal advance mechanisms in the static position. For final road test, adjustment of not more than six clicks of the micrometer adjustment at the distributor to either advance or retard is permitted. The ignition setting is important since if retarded or advanced too far the setting of the carburetters will be affected. As the needle size is determined during engine development, tuning of the carburetters is confined to the correct idling setting.

If after tuning the carburetters, the idling setting and engine performance is not satisfactory, it will be necessary to check the cylinder compressions and the valve clearances.

Tuning

The air intake should be removed and the engine run until it has attained its normal operating temperature.

Slacken one clamp bolt on the coupling between the throttle spindles. Check that both butterfly valves are fully closed by rotating both throttle spindles clockwise when viewed from the front. Tighten the coupling clamp bolt.

Screw in (rotate clockwise) the slow running volume screws until they are down fully on their seatings. Unscrew each screw 2 turns.

Remove the piston and suction chambers. Unscrew the mixture adjusting screws (B) until each jet is flush with the bridge of its carburetter. Replace the pistons and suction chambers and check (by means of the piston lifting pin) that each piston falls freely on to the bridge of its carburetter. Turn down the mixture adjusting screws $2\frac{1}{2}$ turns.

Check that the hydraulic piston dampers are topped up with the recommended grade of engine oil.

Restart the engine and adjust to the desired idling speed of 500 r.p.m. automatic transmission cars, 700 r.p.m. standard transmission cars, by moving each slow running volume screw an equal amount. By listening to the hiss in the intakes, adjust the slow running screws until the intensity of the hiss is similar on all intakes. This will synchronise the mixture flow of the carburetters.

When this is satisfactory the mixture should be adjusted by screwing both the mixture adjusting screws up (weaker) or down (richer) by the same amount until the fastest idling speed is obtained consistent with even firing.

As the mixture is adjusted, the engine will probably run faster and it may therefore be necessary to screw down the slow running volume screws in order to reduce the speed.

Now check the mixture strength by lifting the piston of the front carburetter by approximately $\frac{1}{32}$" (.8 mm.) when, if:

(a) the engine speed increases and **continues to run faster,** this indicates that the mixture is too rich.

(b) the engine speed immediately decreases, this indicates that the mixture is too weak.

(c) the engine speed **momentarily** increases very slightly, this indicates that the mixture is correct.

Repeat the operation at the remaining carburetter and after adjustment recheck the front carburetter since the carburetters are interdependent.

When the mixture is correct, the exhaust note should be regular and even. If it is irregular with a splashy type of misfire and colourless exhaust, the mixture is too weak. If there is a regular or rythmical type of misfire in the exhaust beat together with a blackish exhaust, then the mixture is too rich.

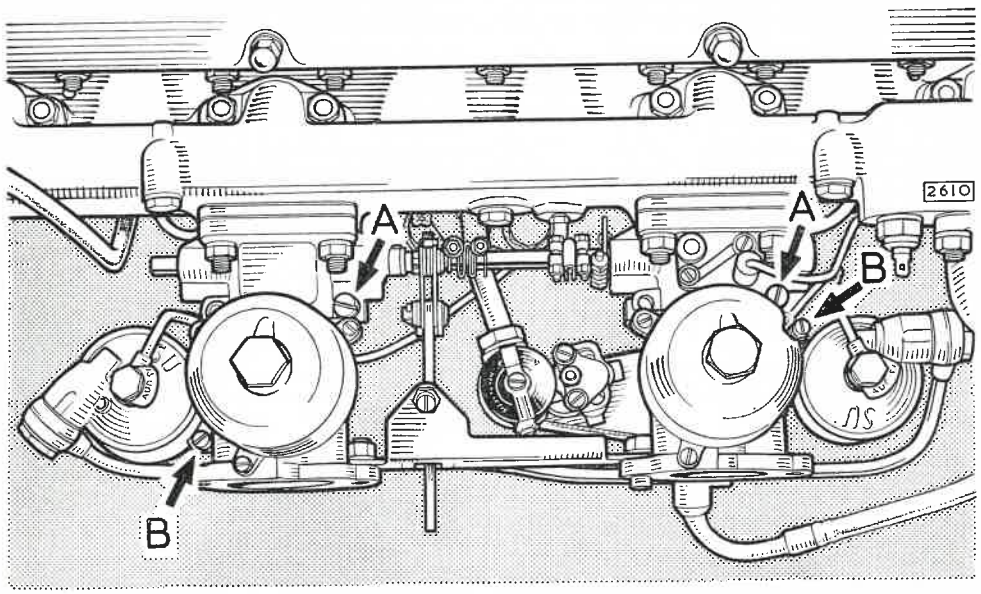


Fig. 76. *Carburetter tuning. A—slow running volume screw. B—Mixture adjusting screw.*

IGNITION TIMING

Set the micrometer adjustment in the centre of the scale.

Rotate the engine until the rotor-arm approaches the No. 6 (front) cylinder segment in the distributor cap.

Slowly rotate the engine until the ignition timing scale on the crankshaft damper is the appropriate number of degrees (see "General Data") before the pointer on the sump. Fig. 75).

Connect a 12 volt test lamp with one lead to the distributor terminal (or the CB terminal of the ignition coil) and the other to a good earth.

Slacken the distributor clamping plate pinch bolt. Switch on the ignition.

Slowly rotate the distributor body until the points are just breaking, that is, when the lamp lights up.

Tighten the distributor plate pinch bolt.

A maximum of six clicks on the vernier adjustment from this setting, to either advance or retard, is allowed.

FRONT WHEEL CAMBER ANGLE — ADJUSTMENT

Check that the car is full of petrol, oil and water. If not, additional weight must be added to compensate for, say, a low level of petrol (the weight of ten gallons of petrol is approximately 80 lbs.—36.0 kg.).

Ensure that the tyre pressures are correct and that the car is standing on a level surface.

Camber Angle $\frac{1}{2}° \pm \frac{1}{2}°$ positive.

Note. The camber angle for each wheel must not vary by more than $\frac{1}{2}°$.

Line up the front wheel being checked parallel to the centre line of the car. Using an approved gauge, check the camber angle. Rotate the wheel being checked through 180° and re-check.

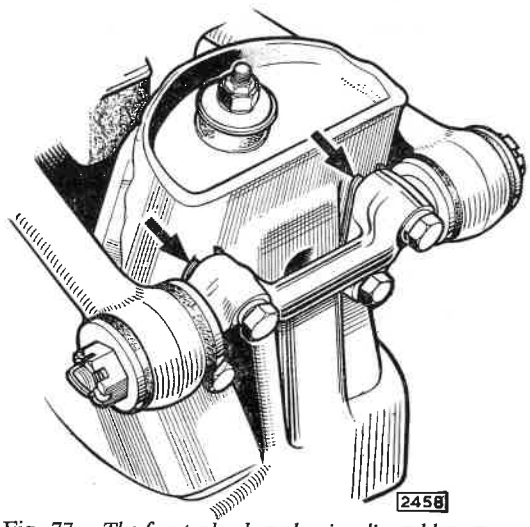


Fig. 77. *The front wheel camber is adjusted by means of the shims indicated by the arrows. Remove or add an equal thickness of shims from each position.*

Adjustment is effected by removing or adding shims at the front suspension top wishbone bracket ; the holes in the shims are slotted and it is therefore only necessary to slacken the setscrews securing the bracket. Inserting shims decreases positive camber ; removing shims decreases negative camber or increases positive camber. Remove or add an equal number of shims from each position, otherwise the castor angle will be affected. It should be noted that $\frac{1}{16}$" (1.6mm.) of shimming will alter the camber angle by approximately $\frac{1}{4}$°.

Check the other front wheel in a similar manner. If any adjustment is made to the camber angle, the front wheel alignment should be checked and if necessary be reset (see page 47).

REAR WHEEL CAMBER ANGLE—ADJUSTMENT

As this operation requires the use of special tools, it should only be carried out by an Authorised Jaguar Distributor or Dealer.

CASTOR ANGLE — ADJUSTMENT

Check that the car is full of petrol, oil and water. If not, additional weight must be added to compensate for, say, a low level of petrol (the weight of 10 gallons of petrol is approximately 80 lbs.—36.0 kg.).

Ensure that the tyre pressures are correct and that the car is standing on a level surface.

Using an approved gauge check the castor angle.

Castor Angle $0° \pm \frac{1}{2}°$.

Note. The castor angle for each wheel must not vary by more than $\frac{1}{2}°$.

Adjustment is effected by either transposing the shims from the rear of the upper wishbone ball joint to the front or transposing the packing piece and shim(s).

To decrease negative castor or increase positive castor transpose shim(s) from the rear to the front ; the holes in the shims are slotted and therefore it will only be necessary to slacken the two bolts securing the upper wishbone members to enable the shims to be removed.

To increase negative castor or decrease positive castor transpose the shim(s) as necessary.

As the holes in the packing piece are not slotted in will be necessary to remove the two bolts after first having supported the brake disc and the stub axle carrier.

It should be noted that $\frac{1}{16}$" (1.6 mm.) of shimming will alter the castor angle by approximately $\frac{1}{4}°$.

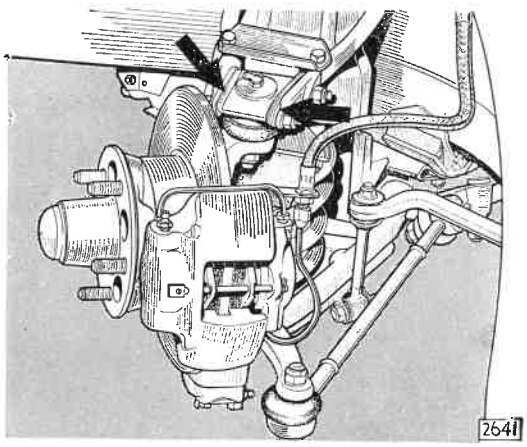


Fig. 78. *The castor angle is adjusted by means of the shims and packing pieces indicated by the arrows.*

The front of the car should be jacked up when turning the wheels from lock to lock during checking.

If any adjustment is made to the castor angle, the front wheel alignment should be checked, and if necessary, re-set (see page 47).

BLEEDING THE BRAKE HYDRAULIC SYSTEM

"Bleeding" the brake hydraulic system (expelling the air) is not a routine maintenance operation and should only be necessary when a portion of the hydraulic system has been disconnected or if the level of the brake fluid has been allowed to fall. The presence of air in the hydraulic system will cause the brakes to feel "spongy".

During the bleeding operation it is important that the level in the reservoir is kept topped up to avoid drawing air into the system.

1. Check that all connections are tightened and all bleed screws closed.

2. Fill the reservoir with brake fluid of the correct specification.

3. Attach the bleeder tube to the bleed screw on the near side rear brake and immerse the open end of the tube in a small quantity of brake fluid contained in a clean glass jar. Slacken the bleed screw and operate the brake pedal slowly backwards and forwards through its full stroke until fluid into the jar is reasonably free from air bubbles. Keep the pedal depressed and close the bleed screw. Release the pedal.

4. Repeat for each brake in turn.

5. Repeat the complete bleeding sequence until the brake fluid pumped into the jar is completely free from air bubbles.

6. Lock all bleed screws and finally regulate the fluid level in the reservoir.

7. Apply normal working load on the brake pedal for a period of two or three minutes and examine the entire system for leaks.

Do not use the fluid which has been bled through the system to replenish the reservoir as it will have become aerated. Always use fresh fluid straight from the tin.

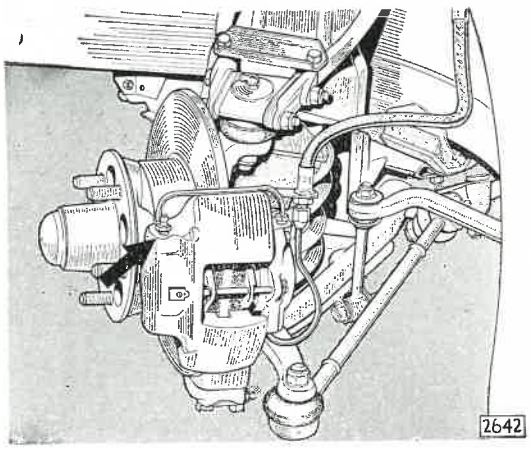


Fig. 79. *Brake bleed nipple.*

BLEEDING THE CLUTCH HYDRAULIC SYSTEM

(Standard Transmission)

"Bleeding" the clutch hydraulic system (expelling the air) is not a routine maintenance operation and should only be necessary when a portion of the hydraulic system has been disconnected or if the level of the fluid in the reservoir has been allowed to fall. The presence of air in the hydraulic system may result in difficulty in engaging gear owing to the clutch not disengaging fully.

The procedure is as follows:—

Fill up the reservoir with brake fluid exercising great care to prevent the entry of dirt. Attach a rubber bleed tube to the nipple on the slave cylinder on the right-hand side of the clutch housing and allow the tube to hang in a clean glass jar partly filled with brake fluid. Unscrew the nipple one complete turn. Depress the clutch pedal slowly, tighten the bleeder nipple before the pedal reaches the end of its travel and allow the pedal to return unassisted.

Repeat the above procedure, closing the bleed nipple at each stroke, until the fluid issuing from the tube is entirely free of air, care being taken that the reservoir is replenished **frequently** during this operation, for should it be allowed to become empty more air will enter.

On completion, top up the reservoir to the line marked "Fluid Level".

Do not on any account use the fluid which has been bled through the system to replenish the reservoir as it will have become aerated. Always use fresh fluid straight from the tin. Use only the recommended fluid.

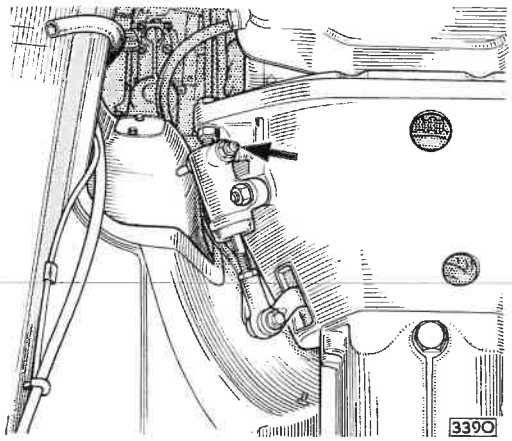


Fig. 80. *Clutch slave cylinder bleed nipple.*

HEADLIGHT BEAM SETTING

The alignment of the headlamp beams is set correctly before the car leaves the factory but if for any reason adjustment becomes necessary the following instructions should be carried out.

Place the car on a level surface in front of a garage door or wall; the car should be at least 25 feet (7.6 m.) away and square to the door or wall. Carry out the work with conditions as dark as possible so that the oval shaped light areas can be clearly seen.

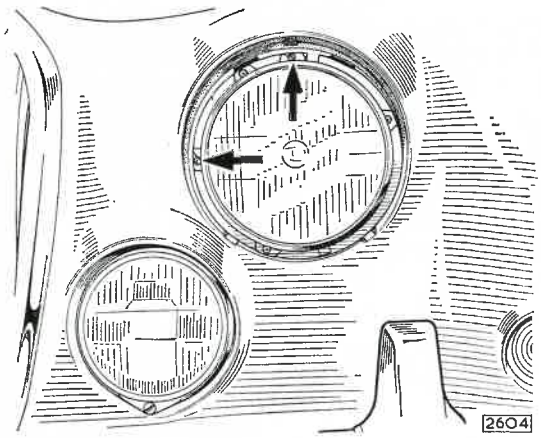


Fig. 81. *The headlamp beam setting screws.*

With the headlamps in the full beam positions, that is, not dipped, the beams from the two headlamps should be parallel with the ground and with each other; measurements should be taken from the centres of the headlamps and the horizontal and vertical axes of the oval light areas.

If adjustment is required, remove the headlamp rim by unscrewing the retaining screw. Switch on the headlamps and check that the beams are not in the dipped position.

The setting of the beams is adjusted by two screws. The top screw is for vertical adjustment, that is, to raise or lower the beam; turn the screw anti-clockwise to lower the beam and clock-wise to raise the beam.

The side screw is for side adjustment, that is, to turn the beam to the right or left. To move the beam to the right turn the screw clockwise; to move the beam to the left turn the screw anti-clockwise.

FUSES

Fuses

Should a component in the electrical system fail to function it is possible that the fuse protecting that component has blown.

Should a replacement fuse of the correct type also blow this indicates a fault in the circuit serving the affected component, and the car should therefore be taken to the nearest Jaguar dealer for examination.

The fuses are located behind the instrument panel and access to them is obtained by removing the two instrument panel retaining screws (top left-hand and right-hand corners).

Pull out the picnic tray to the full extent; press inwards the two retaining clips when the tray can be withdrawn. The instrument panel will now hinge downwards exposing fuses and fuse indicator plate.

Circuits controlled by individual fuses are shown on the indicator plate and spare fuses are provided. It is essential that a blown fuse is replaced by one of the correct value.

An in-line fuse is also included in the Overdrive solenoid or the Intermediate speed hold solenoid (Automatic Transmission) circuits when these units are fitted.

The plastic fuse-holder is retained in a clip located behind the side facia panel, adjacent to the hand-brake warning light unit. The electrically heated back light fuse is retained in a clip accessible when the instrument panel is lowered.

A 25 amp. in-line fuse (14 amp. American rating) is incorporated in the sub-panel of the traffic hazard warning device.

The tail and number plate lamps are not fused on cars manufactured for the German Market.

Always replace the spare fuse as soon a posssible.

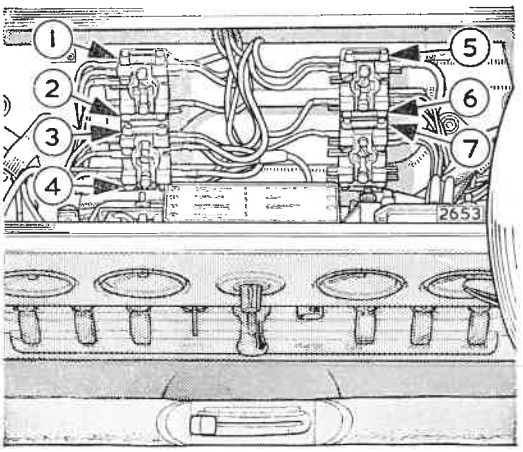


Fig. 82. *Location of fuses.*

Fuse No.	Circuits	Amps
1	Headlamp (main beam).	35
2	Headlamp (dip beam)	35
3	Horn relay—Screen washer—Stop lamps—Flashers—Reverse lamps—Over drive solenoid or Anti-creep and Intermediate speed hold solenoids (Automatic Transmission)	35
4	Windscreen wipers—Auxiliary starting carburetter, Fuel, Oil and Water gauges. Heater motor	35
5	Horns	50

Fuse No.	Circuits *continued*	Amps
6	Side, Tail, Panel and Number plate lamps	35
7	Headlamp flashers—Interior lamps—Cigar lighter	35
Separate fuse	Electrically heated backlight (optional extra)	15
	Overdrive Solenoids or Intermediate Speed Hold Solenoid (Automatic Transmission)	8
	Traffic hazard warning device	25

LIGHT BULBS—REPLACEMENT

Headlight Unit—Replacement

Remove the top retaining screw and withdraw the headlight embellisher, noting the two retaining lugs at the lower edge. Remove the three cross-headed screws and the headlight unit retaining rim. Withdraw the headlight and unplug the adaptor from the rear of the unit, the headlight can now be replaced with a sealed beam unit of the correct type (see "Light Bulbs" page xi).

On cars fitted with non-sealed beam headlights, proceed as described above until the headlight unit is withdrawn, release the bulb retaining spring clips and withdraw the bulb. Replace with a bulb of the correct type (see page xi). When re-assembling note that a groove in the bulb plate must register with a raised portion on the bulb retainer.

Note. Do not turn the two slotted screws or the setting of the headlight will be upset.

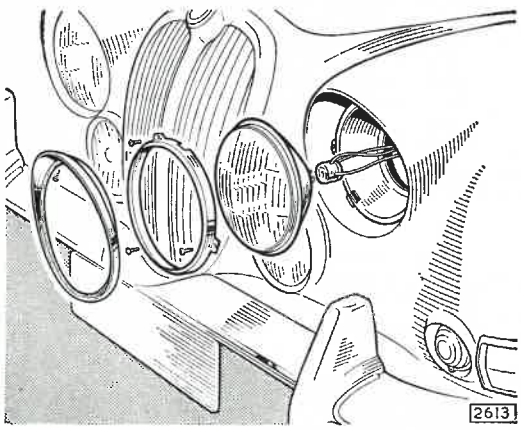


Fig. 83. *Headlight sealed beam unit removal.*

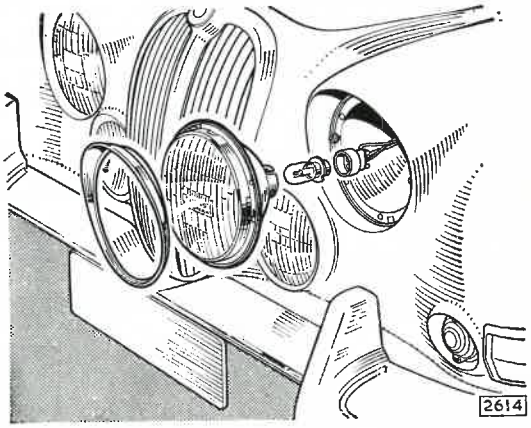


Fig. 84. *Headlight bulb removal—non-sealed beam unit.*

Sidelight Bulb—Replacement

Remove the two screws retaining the light embellisher. Withdraw the embellisher and light unit, remove the bulb holder from the rear of the unit. The bulb may then be removed by pressing in and turning anti-clockwise.

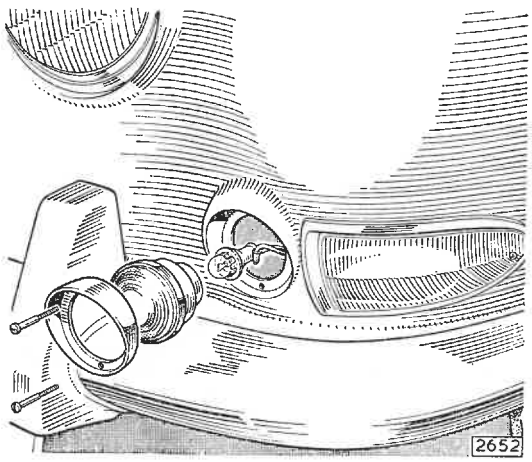


Fig. 85. *Side light bulb removal.*

Front Flasher Bulb—Replacement

Remove the screw retaining the light glass and disconnect the glass at the three tags under the chrome surround. The bulb may then be removed by pressing in and turning anti-clockwise.

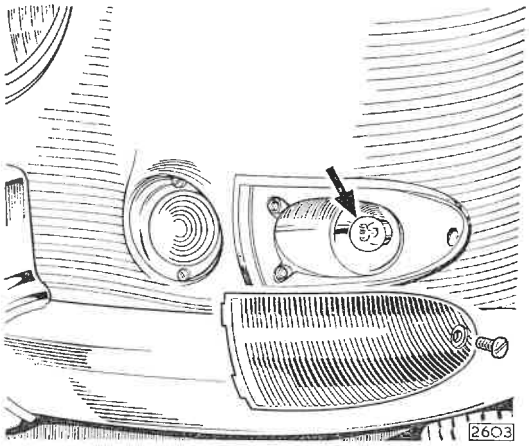


Fig. 86. *Front flasher bulb removal.*

Rear Flasher Bulb—Replacement

Remove the screws securing the appropriate luggage compartment casing and withdraw the upper bulb holder from the rear of the light assembly. The bulb may then be removed by pressing in and turning anti-clockwise.

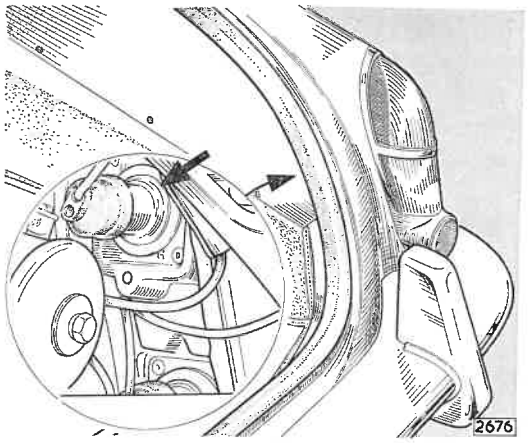


Fig. 87. *Rear flasher bulb removal.*

Rear/Brake Light Bulb—Replacement

Proceed as for rear flasher bulb but withdraw the lower bulb holder. When fitting a replacement bulb note that the pins are offset.

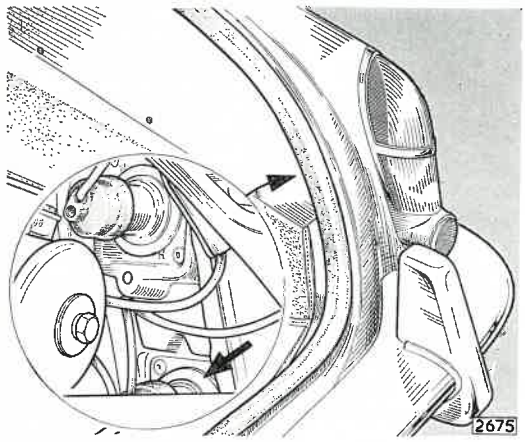


Fig. 88. *Rear/brake light bulb removal*

Luggage Compartment Light Bulb—Replacement

The bulb is accessible through an aperture in the luggage compartment lid casing. Remove the bulb by pressing in and turning anti-clockwise.

Number Plate Light Bulb—Replacement

Remove sufficient screws securing the luggage compartment lid casing to allow access to the bulb holders. The number plate bulb holders are the two in the centre of the group. Press the tag in, lift and withdraw the

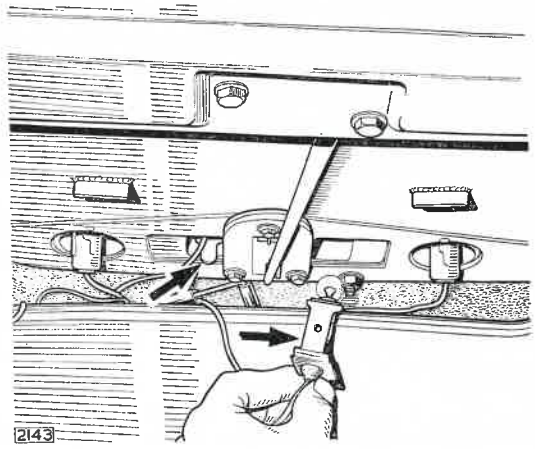


Fig. 89. *Number plate light bulb removal.*

holder. The bulb may then be removed by pressing in and turning anti-clockwise.

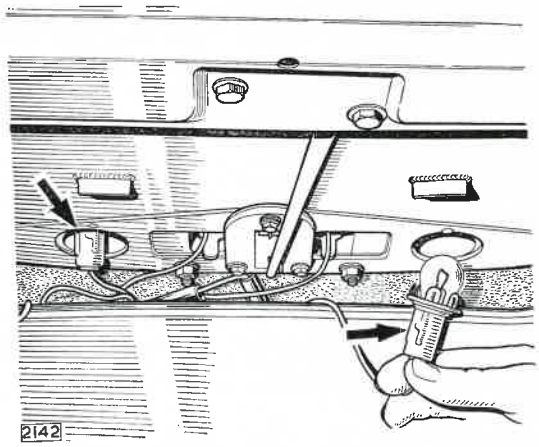


Fig. 90. *Reverse light bulb removal.*

Reversing Light Bulb—Replacement

Proceed as for the number plate light bulb. The reversing light bulb holders are those on the outsides of the group.

Fog-Light Unit—Replacement

Unscrew the screw from the bottom of the lamp and disengage the rim at the top. Disconnect the cables, remove the four spring clips and withdraw the light unit.

Refitting is the reverse of the removal sequence.

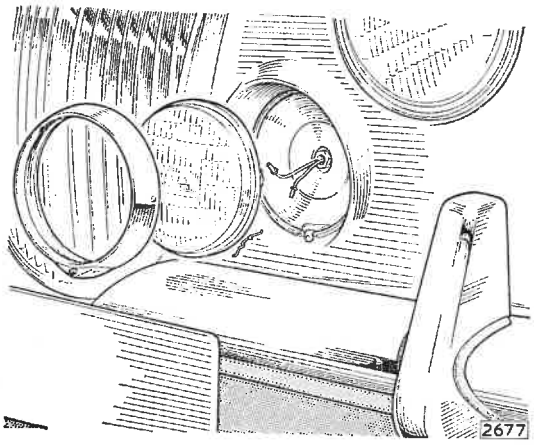


Fig. 91. *Fog light unit removal.*

Fog Lamp Bulb—Replacement (France)

Unscrew the screw from the bottom of the lamp, disengage the rim at the top and withdraw the light unit from the back shell. Ease back the earth contact and withdraw the bulb. When replacing the bulb align the groove in the bulb plate with its register in the reflector. When refitting the light unit, care must be taken to ensure that the contact blade registers with the centre contact on the bulb.

Fog Lamp Bulb—Replacement (Optional extra for Switzerland)

Remove the two front securing screws and detach the light unit. Withdraw the bulb and replace with one of the correct type.

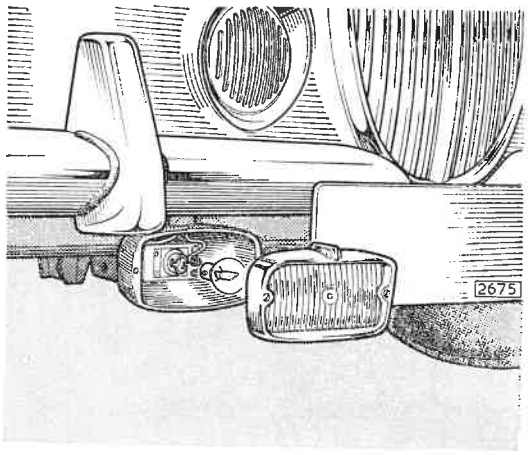


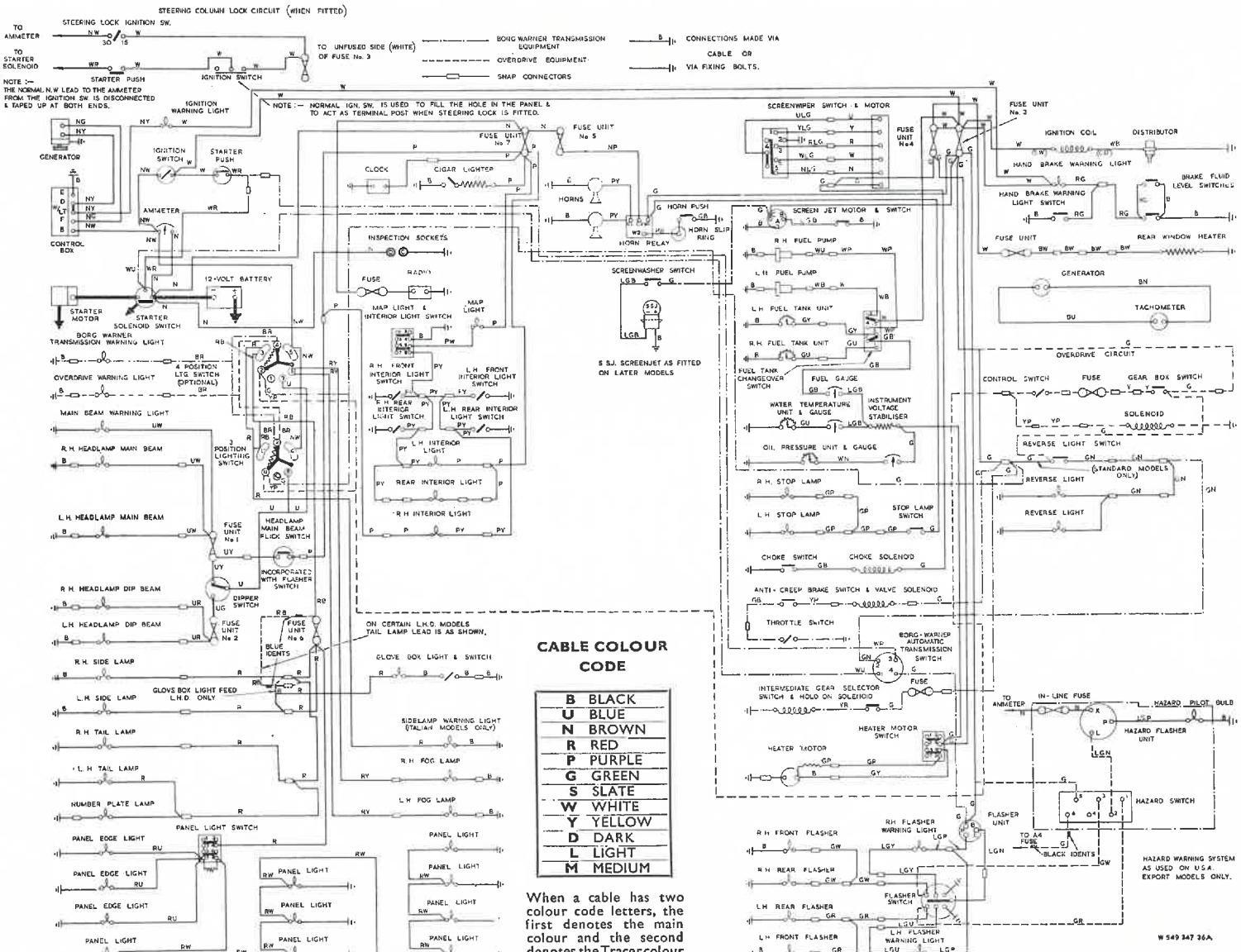
Fig 92. *Fog light bulb removal (Switzerland).*

Backlight Heater Indicator Bulb—Replacement

Remove the chrome bezel and unscrew the bulb from the bulb holder.

Traffic Hazard Indicator Bulb—Replacement

Remove the chrome bezel and unscrew the bulb from the bulb holder.


STEERING COLUMN LOCK CIRCUIT (WHEN FITTED)
STEERING LOCK IGNITION SW.
TO AMMETER
TO STARTER SOLENOID
STARTER PUSH
IGNITION SWITCH
TO UNFUSED SIDE (WHITE) OF FUSE No. 3
BORG WARNER TRANSMISSION EQUIPMENT
OVERDRIVE EQUIPMENT
SNAP CONNECTORS
CONNECTIONS MADE VIA CABLE OR VIA FIXING BOLTS.
NOTE :— THE NORMAL N.W LEAD TO THE AMMETER FROM THE IGNITION SW IS DISCONNECTED & TAPED UP AT BOTH ENDS.
IGNITION WARNING LIGHT
NOTE :— NORMAL IGN. SW. IS USED TO FILL THE HOLE IN THE PANEL & TO ACT AS TERMINAL POST WHEN STEERING LOCK IS FITTED.
GENERATOR
IGNITION SWITCH
STARTER PUSH
AMMETER
CONTROL BOX
12-VOLT BATTERY
STARTER MOTOR
STARTER SOLENOID SWITCH
BORG WARNER TRANSMISSION WARNING LIGHT
OVERDRIVE WARNING LIGHT
4 POSITION LTG SWITCH (OPTIONAL)
MAIN BEAM WARNING LIGHT
R.H. HEADLAMP MAIN BEAM
3 POSITION LIGHTING SWITCH
L.H. HEADLAMP MAIN BEAM
HEADLAMP MAIN BEAM FLICK SWITCH
INCORPORATED WITH FLASHER SWITCH
DIPPER SWITCH
R.H. HEADLAMP DIP BEAM
L.H. HEADLAMP DIP BEAM
R.H. SIDE LAMP
L.H. SIDE LAMP
GLOVE BOX LIGHT FEED L.H.D. ONLY
R.H. TAIL LAMP
L.H. TAIL LAMP
NUMBER PLATE LAMP
PANEL LIGHT SWITCH
PANEL EDGE LIGHT
PANEL LIGHT
FUSE UNIT No 1
FUSE UNIT No 2
FUSE UNIT No 3
FUSE UNIT No 4
FUSE UNIT No 5
FUSE UNIT No 6
FUSE UNIT No 7
ON CERTAIN L.H.D. MODELS TAIL LAMP LEAD IS AS SHOWN,
BLUE IDENTS
CLOCK
CIGAR LIGHTER
HORNS
HORN PUSH
HORN SLIP RING
HORN RELAY
INSPECTION SOCKETS
RADIO
FUSE
MAP LIGHT & INTERIOR LIGHT SWITCH
MAP LIGHT
R.H. FRONT INTERIOR LIGHT SWITCH
L.H. FRONT INTERIOR LIGHT SWITCH
R.H. REAR INTERIOR LIGHT SWITCH
L.H. REAR INTERIOR LIGHT SWITCH
L.H. INTERIOR LIGHT
REAR INTERIOR LIGHT
R.H. INTERIOR LIGHT
SCREENWASHER SWITCH
S.U. SCREENJET AS FITTED ON LATER MODELS
GLOVE BOX LIGHT & SWITCH
SIDELAMP WARNING LIGHT (ITALIAN MODELS ONLY)
R.H. FOG LAMP
L.H. FOG LAMP
SCREENWIPER SWITCH & MOTOR
SCREEN JET MOTOR & SWITCH
R.H. FUEL PUMP
L.H. FUEL PUMP
L.H. FUEL TANK UNIT
R.H. FUEL TANK UNIT
FUEL TANK CHANGEOVER SWITCH
FUEL GAUGE
WATER TEMPERATURE UNIT & GAUGE
INSTRUMENT VOLTAGE STABILISER
OIL PRESSURE UNIT & GAUGE
R.H. STOP LAMP
L.H. STOP LAMP
STOP LAMP SWITCH
CHOKE SWITCH
CHOKE SOLENOID
ANTI-CREEP BRAKE SWITCH & VALVE SOLENOID
THROTTLE SWITCH
BORG-WARNER AUTOMATIC TRANSMISSION SWITCH
INTERMEDIATE GEAR SELECTOR SWITCH & HOLD ON SOLENOID
HEATER MOTOR SWITCH
HEATER MOTOR
IGNITION COIL
DISTRIBUTOR
HAND BRAKE WARNING LIGHT
HAND BRAKE WARNING LIGHT SWITCH
BRAKE FLUID LEVEL SWITCHES
REAR WINDOW HEATER
GENERATOR
TACHOMETER
OVERDRIVE CIRCUIT
CONTROL SWITCH
FUSE
GEAR BOX SWITCH
SOLENOID
REVERSE LIGHT SWITCH
(STANDARD MODELS ONLY)
REVERSE LIGHT
TO AMMETER
IN-LINE FUSE
HAZARD PILOT BULB
HAZARD FLASHER UNIT
HAZARD SWITCH
FLASHER UNIT
TO A4 FUSE
BLACK IDENTS
R.H. FRONT FLASHER
R.H. REAR FLASHER
L.H. REAR FLASHER
L.H. FRONT FLASHER
R.H. FLASHER WARNING LIGHT
FLASHER SWITCH
L.H. FLASHER WARNING LIGHT
HAZARD WARNING SYSTEM AS USED ON U.S.A. EXPORT MODELS ONLY.
W 549 347 36A
CABLE COLOUR CODE
B BLACK
U BLUE
N BROWN
R RED
P PURPLE
G GREEN
S SLATE
W WHITE
Y YELLOW
D DARK
L LIGHT
M MEDIUM
When a cable has two colour code letters, the first denotes the main colour and the second denotes the Tracer colour

CONVERSION TABLES

METRIC INTO ENGLISH MEASURE

1 millimetre is approximately 1/25″, and is exactly ·03937″.
1 centimetre is approximately $\frac{3}{8}$″, and is exactly ·3937″.
1 metre is approximately 39$\frac{3}{8}$″, and is exactly 39·37″ or 1·0936 yards.
1 kilometre is approximately $\frac{5}{8}$ mile, and is exactly ·6213 miles.
1 kilogramme is approximately 2$\frac{1}{4}$ lbs., and is exactly 2·21 lbs.
1 litre is approximately 1$\frac{3}{4}$ pints, and is exactly 1·76 pints.
To convert metres to yards, multiply by 70 and divide by 64.
To convert kilometres to miles, multiply by 5 and divide by 8 (approx.).
To convert litres to pints, multiply by 50 and divide by 88.
To convert grammes to ounces, multiply by 20 and divide by 567.
To find the cubical contents of a motor cylinder, square the diameter (or bore), multiply by 0.7854, and multiply the result by the stroke.
1 M.P.G.—0·3546 kilometres per litre or 2·84 litres per kilometre.

MILES INTO KILOMETRES

Kilo.	Miles	Kilo.	Miles	Kilo.	Miles	Kilo.	Miles	Kilo.	Miles
1	$\frac{5}{8}$	16	10	31	19$\frac{1}{4}$	46	28$\frac{5}{8}$	60	37$\frac{1}{4}$
2	1$\frac{1}{4}$	17	10$\frac{5}{8}$	32	19$\frac{7}{8}$	47	29$\frac{1}{4}$	70	43$\frac{1}{2}$
3	1$\frac{7}{8}$	18	11$\frac{1}{4}$	33	20$\frac{1}{2}$	48	29$\frac{7}{8}$	80	49$\frac{3}{4}$
4	2$\frac{1}{2}$	19	11$\frac{3}{4}$	34	21$\frac{1}{8}$	49	30$\frac{1}{2}$	90	55$\frac{7}{8}$
5	3$\frac{1}{8}$	20	12$\frac{3}{8}$	35	21$\frac{3}{4}$	50	31$\frac{1}{8}$	100	62$\frac{1}{8}$
6	3$\frac{3}{4}$	21	13	36	22$\frac{3}{8}$	51	31$\frac{3}{4}$	200	124$\frac{1}{4}$
7	4$\frac{3}{8}$	22	13$\frac{5}{8}$	37	23	52	32$\frac{1}{4}$	300	186$\frac{3}{8}$
8	5	23	14$\frac{1}{4}$	38	23$\frac{5}{8}$	53	32$\frac{7}{8}$	400	248$\frac{1}{2}$
9	5$\frac{5}{8}$	24	14$\frac{7}{8}$	39	24$\frac{1}{4}$	54	33$\frac{1}{2}$	500	310$\frac{3}{4}$
10	6$\frac{1}{4}$	25	15$\frac{1}{2}$	40	24$\frac{7}{8}$	55	34$\frac{1}{8}$	600	372$\frac{7}{8}$
11	6$\frac{7}{8}$	26	16$\frac{1}{8}$	41	25$\frac{1}{2}$	56	34$\frac{3}{4}$	700	435
12	7$\frac{1}{2}$	27	16$\frac{3}{4}$	42	26$\frac{1}{8}$	57	35$\frac{3}{8}$	800	497$\frac{1}{8}$
13	8$\frac{1}{8}$	28	17$\frac{3}{8}$	43	26$\frac{3}{4}$	58	36	900	559$\frac{1}{4}$
14	8$\frac{3}{4}$	29	18	44	27$\frac{3}{8}$	59	36$\frac{5}{8}$	1000	621$\frac{3}{8}$
15	9$\frac{3}{8}$	30	18$\frac{5}{8}$	45	28				

PINTS AND GALLONS TO LITRES

Pints	Gallons	Litres Approx.	Litres Exact	Pints	Gallons	Litres Approx.	Litres Exact
1	$\frac{1}{8}$	$\frac{1}{2}$	·57	40	5	23	22·75
2	$\frac{1}{4}$	1	1·14	48	6	27	27·30
3	$\frac{3}{8}$	1$\frac{1}{2}$	1·71	56	7	32	31·85
4	$\frac{1}{2}$	2$\frac{1}{4}$	2·27	64	8	36$\frac{1}{2}$	36·40
8	1	4$\frac{1}{2}$	4·54	72	9	41	40·95
16	2	9	9·10	80	10	45$\frac{1}{2}$	45·50
24	3	13$\frac{1}{2}$	13·65	88	11	50	50·05
32	4	18	18·20	96	12	54$\frac{1}{2}$	54·60

CONVERSION TABLES

RELATIVE VALUE OF MILLIMETRES AND INCHES

mm.	Inches	mm.	Inches	mm.	Inches	mm.	Inches
1	0·0394	26	1·0236	51	2·0079	76	2·9922
2	0·0787	27	1·0630	52	2·0473	77	3·0315
3	0·1181	28	1·1024	53	2·0866	78	3·0709
4	0·1575	29	1·1417	54	2·1260	79	3·1103
5	0·1968	30	1·1811	55	2·1654	80	3·1496
6	0·2362	31	1·2205	56	2·2047	81	3·1890
7	0·2756	32	1·2598	57	2·2441	82	3·2284
8	0·3150	33	1·2992	58	2·2835	83	3·2677
9	0·3543	34	1·3386	59	2·3228	84	3·3071
10	0·3937	35	1·3780	60	2·3622	85	3·3465
11	0·4331	36	1·4173	61	2·4016	86	3·3859
12	0·4724	37	1·4567	62	2·4410	87	3·4252
13	0·5118	38	1·4961	63	2·4803	88	3·4646
14	0·5512	39	1·5354	64	2·5197	89	3·5040
15	0·5906	40	1·5748	65	2·5591	90	3·5433
16	0·6299	41	1·6142	66	2·5984	91	3·5827
17	0·6693	42	1·6536	67	2·6378	92	3·6221
18	0·7087	43	1·6929	68	2·6772	93	3·6614
19	0·7480	44	1·7323	69	2·7166	94	3·7008
20	0·7874	45	1·7717	70	2·7559	95	3·7402
21	0·8268	46	1·8110	71	2·7953	96	3·7796
22	0·8661	47	1·8504	72	2·8347	97	3·8189
23	0·9055	48	1·8898	73	2·8740	98	3·8583
24	0·9449	49	1·9291	74	2·9134	99	3·8977
25	0·9843	50	1·9685	75	2·9528	100	3·9370

RELATIVE VALUE OF INCHES AND MILLIMETRES

Inches	0	$\frac{1}{16}$	$\frac{1}{8}$	$\frac{3}{16}$	$\frac{1}{4}$	$\frac{5}{16}$	$\frac{3}{8}$	$\frac{7}{16}$
0	0·0	1·6	3·2	4·8	6·4	7·9	9·5	11·1
1	25·4	27·0	28·6	30·2	31·7	33·3	34·9	36·5
2	50·8	52·4	54·0	55·6	57·1	58·7	60·9	61·9
3	76·2	87·8	79·4	81·0	82·5	84·1	85·7	87·3
4	101·6	103·2	104·8	106·4	108·0	109·5	111·1	112·7
5	127·0	128·6	130·2	131·8	133·4	134·9	136·5	138·1
6	152·4	154·0	155·6	157·2	158·8	160·3	161·9	163·5
Inches	$\frac{1}{2}$	$\frac{9}{16}$	$\frac{5}{8}$	$\frac{11}{16}$	$\frac{3}{4}$	$\frac{13}{16}$	$\frac{7}{8}$	$\frac{15}{16}$
0	12·7	14·3	15·9	17·5	19·1	20·6	22·2	23·8
1	38·1	39·7	31·4	42·9	44·4	46·0	47·6	49·2
2	63·5	65·1	66·7	68·3	69·8	71·4	73·0	74·6
3	88·9	90·5	92·1	93·7	95·2	96·8	98·4	100·0
4	114·3	115·9	117·5	119·1	120·7	122·2	123·8	125·4
5	139·7	141·3	142·9	144·5	146·1	147·6	149·2	150·8
6	165·1	166·7	168·3	166·9	171·5	173·0	174·6	176·2

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