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Colour Codes

Letter	Colour
R	Red
W	White
G	Green
B	Black
Y	Yellow
S	Slate
U	Blue
P	Purple
LG	Light Green
N	Brown
O	Orange
K	Pink

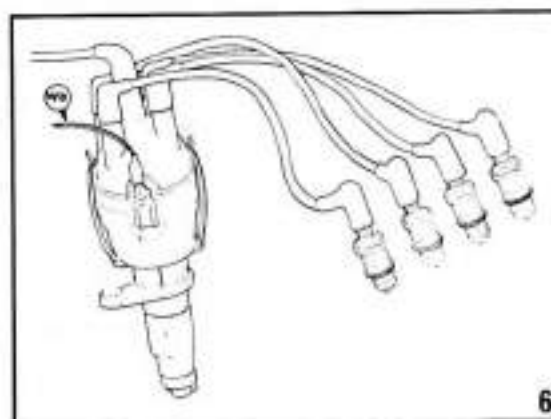
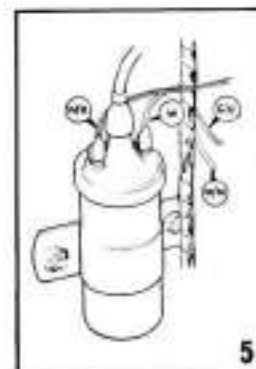
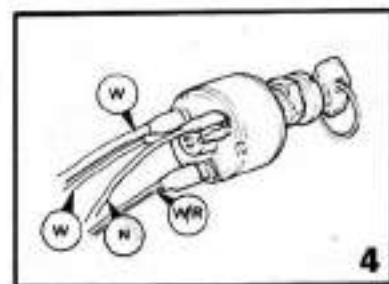
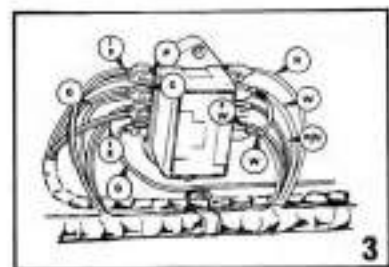
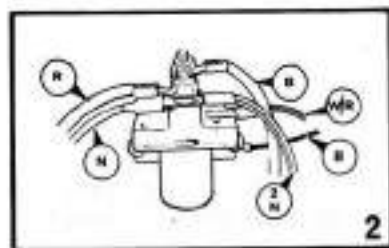
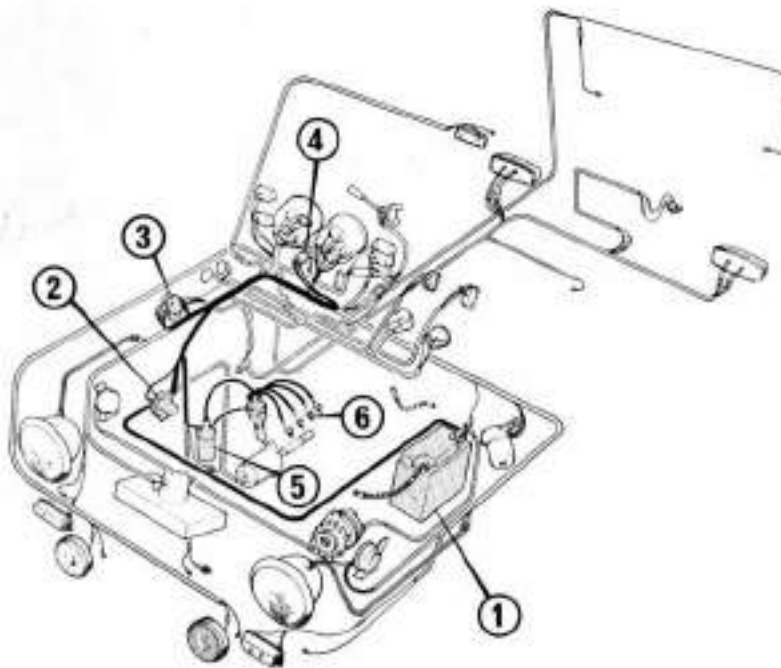


Figure 1 Electrics, ignition system

- | | | |
|--------------------|-------------------|---------------|
| 1 Battery | 3 Fuse unit | 5 Coil |
| 2 Starter solenoid | 4 Ignition switch | 6 Distributor |

Ignition system

The ignition system comprises battery, ignition switch, coil, distributor and sparking plugs as shown in Figure 1.

If trouble is experienced with the ignition the components shown in Figure 1 should be systematically checked to diagnose the fault.

Particular attention should be given to the cleanliness and security of the earth braids, for if after inspecting the various electrical components the ignition system still fails to function correctly, a loose braid could be the cause.

The distributor is described in full below but for details of the other ignition system components refer to the General Electrics on page 18.

Distributor

Description

The distributor is mounted on the R.H. side of the cylinder block and is driven by an offset dog from the camshaft. Ignition advance is mechanically controlled, according to engine speed, by governor weights inside the distributor body. Distributor rotation is anti-clockwise viewed from above.

Lubrication

The cam and contact breaker plate pivots and bushings, when assembling after overhaul, should be lubricated with petroleum jelly. The cam spindle governor weights and breaker arm pivots should be lubricated with engine oil every 3,000 miles (5,000km). To lubricate cam spindle remove the rotor and apply two drops of oil through the apertures in the breaker plate. Only a film of engine oil should be applied to the breaker arm pivot, ensuring that none contaminates the distributor points.

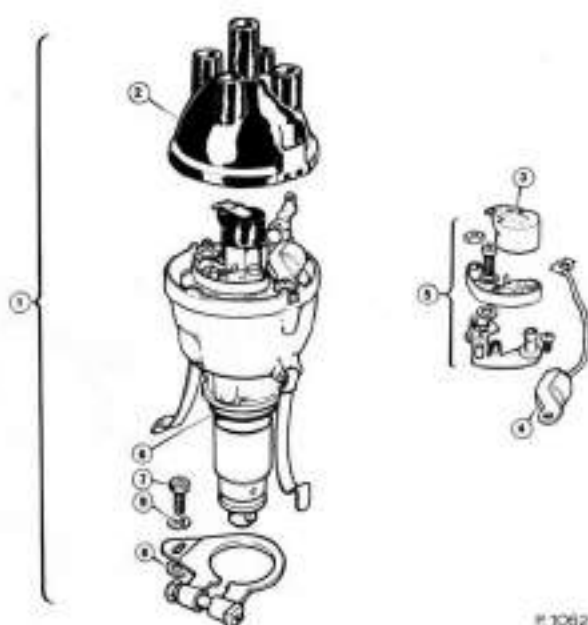
Caution: Do not over lubricate any part of the distributor.

The presence of dirt, oil or water on the ignition points, the central carbon brush, or on the contact segments in the distributor cover, will cause erratic running or may even prevent the engine from running at all.

Contact breaker points

To adjust

- 1 Remove the distributor cap and rotor arm.
- 2 Turn the engine so that the heel of the contact breaker is on the highest point of the cam. (It may be necessary to remove the sparking plugs to eliminate the resistance caused by compression.)



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Figure 2 Distributor

- 1 Distributor
- 2 Cover
- 3 Rotor arm
- 4 Capacitor
- 5 Contact set
- 6 Sealing washer
- 7 Screw
- 8 Washer
- 9 Lockwasher

3 Slacken the slotted head screw '4' in the contact plate (see Figure 3) and adjust until the gap is 0.38mm (0.015in).

4 Retighten the screw and make a further check in case tightening the screw has altered the setting.

5 Reposition the rotor arm squarely on the distributor cam boss with the slot and lug in line. Press the rotor into position so that the lower face abuts the cam.

To remove

- 1 Remove the distributor cap and rotor arm.
- 2 Remove the slotted head screw securing the breaker arm and the hexagon nut securing the primary and condenser lead tags (see Figure 3).
- 3 Lift off the two tags and remove the breaker arm point assembly from the distributor.

Check the condition of the points for signs of wear or burning on the contacts. If this is apparent, the complete breaker arm assembly will need replacing. Contacts showing a greyish colour and only slightly pitted need not be renewed. If necessary, contacts can be smoothed

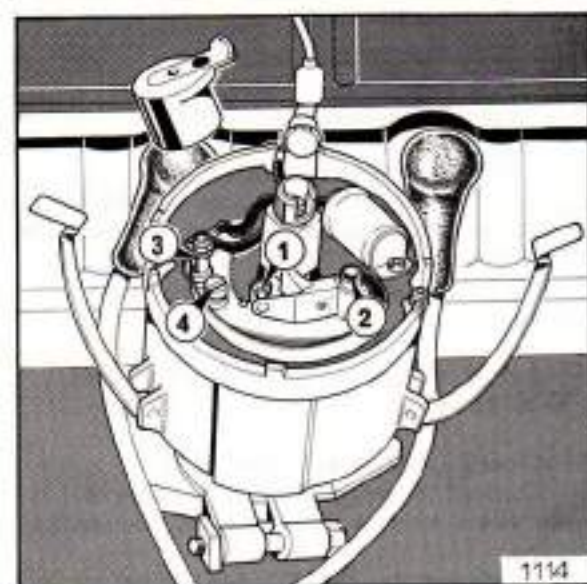


Figure 3 Contact breaker adjustment

- 1 Contact breaker points
- 2 Pivot post
- 3 Terminal pillar
- 4 Locking adjustment screw

with a very fine emery stone and then thoroughly cleaned with carbon-tetrachloride.

To replace

- 1 Position the breaker arm assembly on the pivot pin and locate the primary and condenser lead tags on the nylon screw, which is secured to the breaker arm spring.
- 2 Refit the hexagon nut to the nylon screw to secure the two tags.
- 3 Replace the slotted head screw and adjust the contact breaker points as previously described.
- 4 Replace the rotor arm and distributor cap.

Distributor condenser

The condenser is fitted in parallel to the contact breaker points. A short circuit in the condenser will cause ignition failure as the contact points will no longer interrupt the low tension circuit. In such cases the condenser will need replacing. An open circuit, however, cannot be readily checked without the use of specialised equipment such as a Diagnosis Test Set. The usual signs of this are excessively burnt contact breaker points and difficult starting.

To remove the condenser

- 1 Remove the distributor cap and rotor arm.
- 2 Unscrew the hexagon nut and remove the primary and condenser lead tags from the nylon screw.

3 Remove the crosshead screw and lift condenser from the contact breaker plate.

4 Replace in reverse order, checking that there is no possibility of a short circuit between the condenser lead and the breaker plate.

Note: Dismantling of the complete distributor is not recommended as only the cover, rotor arm, condenser and contact set are available as spares.

To remove distributor from the engine

- 1 Disconnect spark plug leads from the plug terminals.
- 2 Remove the high and low tension leads from the coil.
- 3 Unscrew single $\frac{1}{2}$ UNC bolt, complete with washer and lockwasher, securing distributor clamp to cylinder block and remove distributor. Do not disturb the clamping bolt securing the distributor unless the ignition timing is to be adjusted.
- 4 Replace in reverse order.

Ignition timing

Incorrect ignition timing can cause rough running, bad idling, high fuel consumption and poor performance. It is, therefore, important it should be correctly set. In order to facilitate the timing two marks are stamped on the crankshaft pulley face (see **Figure 4**). A pointer is located on the timing cover.

The timing on vehicles fitted with the 30IZ carburettor is TDC and vehicles with the 30 IZE carburettor 10° BTDC.

Two methods for obtaining correct ignition timing are described as follows:

Method 1

- 1 Rotate the crankshaft in a clockwise direction until the TDC/ 10° BTDC (depending on carburettor type) pulley mark is aligned with the pointer on the timing cover (see **Figure 4**).
- 2 Remove distributor cap and connect a 12 volt bulb between the lower tension terminals of the distributor and a good earth. With the battery connected and ignition switched on, the bulb will light when the contact breaker points open.
- 3 Slacken the distributor clamp bolt and rotate the distributor anti-clockwise as far as possible.
- 4 Switch on the ignition and applying light

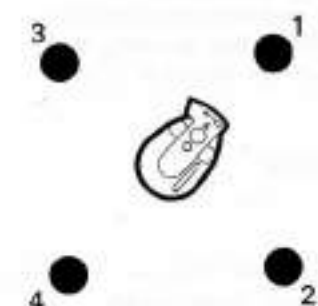
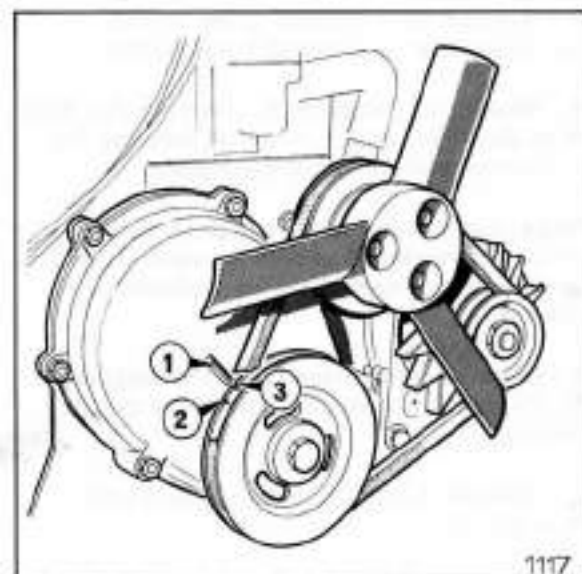


Figure 4 Ignition timing marks

- 1 Timing pointer
- 2 TDC mark
- 3 10° BTDC mark

finger pressure to the rotor arm, turn distributor body back until the bulb just lights.

5 Retighten distributor clamp bolt.

6 Check the setting by rotating the crankshaft two revolutions clockwise until the bulb again lights observing the relative positions of the pointers. The TDC/10° BTDC pulley mark must be aligned with the pointer on the timing cover.

7 Switch off ignition, disconnect bulb and refit all parts.

Method 2 – Using a timing light

1 Connect the leads of the timing light in accordance with the manufacturers instructions.

2 Check that the TDC/10° BTDC mark on the pulley is visible and mark with chalk or paint.

3 Aim the timing light at the upper pointer, on the timing cover. Check that the TDC/10° BTDC pulley mark is aligned with the timing cover pointer.

If the pulley mark is to the left of the timing point the engine is too advanced. Slacken distributor clamping bolt and turn distributor body clockwise slightly to retard the ignition. Should the mark be above the correct timing mark the distributor body should be turned anti-clockwise to slightly advance the ignition.

4 Securely tighten the distributor clamp bolt.

Distributor specification

Type	Single pair contact breaker point
Drive	Dog gear from camshaft
Rotation	Anti-clockwise
Firing order	1, 3, 4, 2
Ignition advance	Centrifugal
Static advance	10° BTDC (30 IZE carburettor) TDC (30 IZ carburettor)
Breaker arm spring tension	510–680g (18–24oz)
Condenser capacity	0.2
Contact breaker point gap	0.396mm (0.015in)
Dwell angle	60°±3°

Introduction

From engine number 7942 the 750cc engine has incorporated a different distributor to that described on pages 2 to 4.

The service recommendations for this new distributor are as follows:

Lubrication of distributor

The cam and contact breaker plate pivots and bushing, when assembling after overhaul, should be lubricated with Shell Retinax 'A' or an equivalent grease. The cam spindle governor weights and breaker arm pivot should be lubricated with engine oil every 3,000 miles (5,000 km). To lubricate the cam spindle remove the rotor and apply two drops of oil to the felt pad in the top of the cam. The felt pad fitted to the contact breaker, augments lubrication of the cam. This does not require periodic lubrication, as it is impregnated before fitting. Only a film of engine oil should be applied to the hollow breaker arm pivot post, ensuring that none contaminates the distributor points.

Caution: Do not over lubricate any part of the distributor. The presence of dirt, oil or water on the ignition points, the central carbon brush, or in the contact segments in the distributor cover, will cause erratic running or may even prevent the engine from running at all.

Contact breaker points

To adjust

1 Remove the distributor cap and rotor arm.

2 Turn the engine so that the heel of the contact breaker is on the highest point of the cam. (It may be necessary to remove sparking plugs to eliminate the resistance caused by compression.)

3 Slacken the slotted headed screw (Figure 4b) in the contact plate and adjust until the gap is 0.38mm (0.015in). The gap is measured with a suitable feeler gauge and pressure should be applied to the points, with the feeler gauge inserted between them, whilst the screw is being tightened.

4 Retighten the screw and make a further check with the feeler gauge in case tightening the screw has altered the settings.

5 Reposition the rotor arm squarely on the distributor cam boss with the slot and lug in line. Press the rotor into position on the spindle.

Note: When the rotor is fitted to the spindle the lower face does not abut the cam.

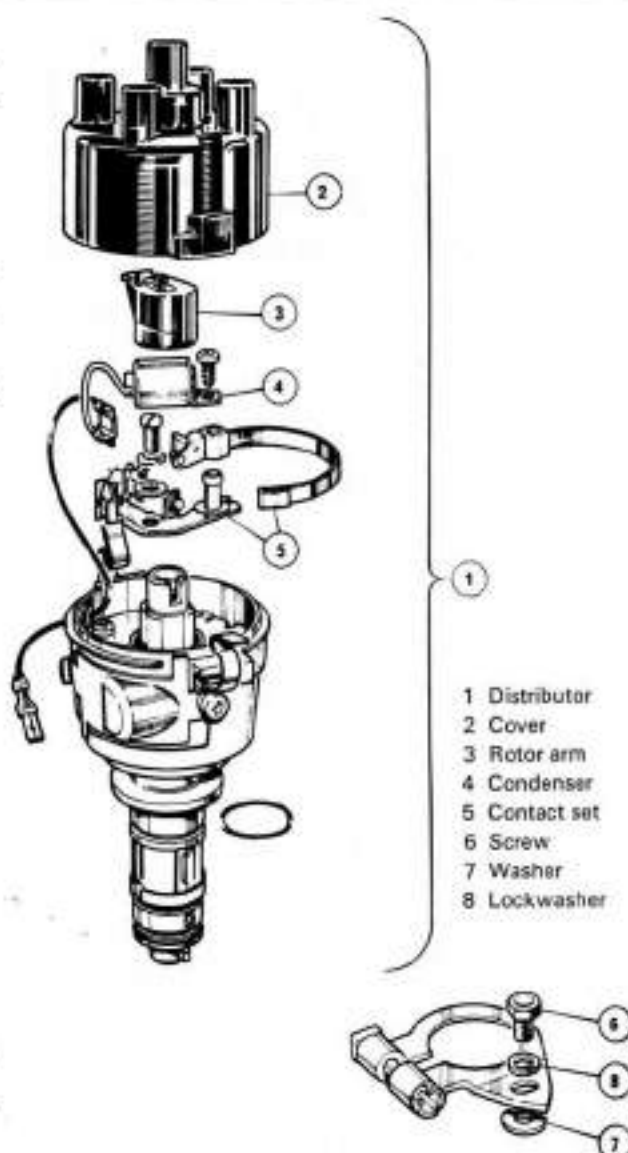


Figure 4a Distributor, engine number 7942 onwards

Removal and examination of contact breaker points

1 Remove the distributor cap and rotor arm.

2 Press the terminal end of the moving-contact spring towards the cam. (Figure 4c). This will disengage the spring from the insulating-piece attached to the terminal post, the capacitor lead and low tension fly-lead can then be detached from the folded end of the spring. Remove the slotted screw securing the fixed-contact and lift the contact-breaker from the base plate.

3 Check the condition of the points for signs of wear or burning on the contact. If this is apparent, the complete breaker arm assembly will need replacing. Contacts showing a greyish

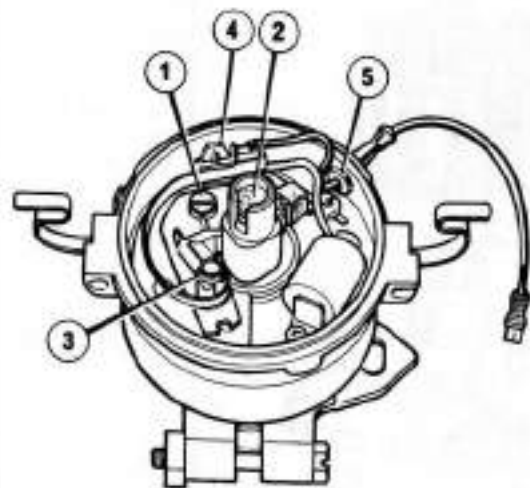


Figure 4b Contact breaker adjustment

- 1 Fixed contact securing screw
- 2 Felt lubrication pad in cam
- 3 Breaker arm pivot post
- 4 Terminal post
- 5 Condenser/L.T. fly lead grommet

colour and only slightly pitted need not be renewed. If necessary, contacts can be smoothed with a very fine emery stone and then thoroughly cleaned with carbon tetrachloride.

To replace

1 When refitting or replacing the contact breaker set it is important to note that the capacitor and low tension fly-lead connecting terminal in the folded end of the moving-contact spring, has the cable clips facing outwards, otherwise the lower clip may foul the fixed contact plate and short-circuit the contact-breaker. (Figure 4d.)

2 Replace the slotted head screw and adjust the contact breaker points as previously described.

Note: If a new contact set is fitted, set the contact gap to 0.40 to 0.45mm (0.016 to 0.018in). To allow for initial bedding-in of the plastic heel.

3 Replace the rotor arm and distributor cap.

Distributor condenser

The condenser is fitted in parallel to the contact breaker points. A short circuit in the condenser will cause ignition failure as the contact points will no longer interrupt the low tension circuit. In such cases the condenser will need replacing.

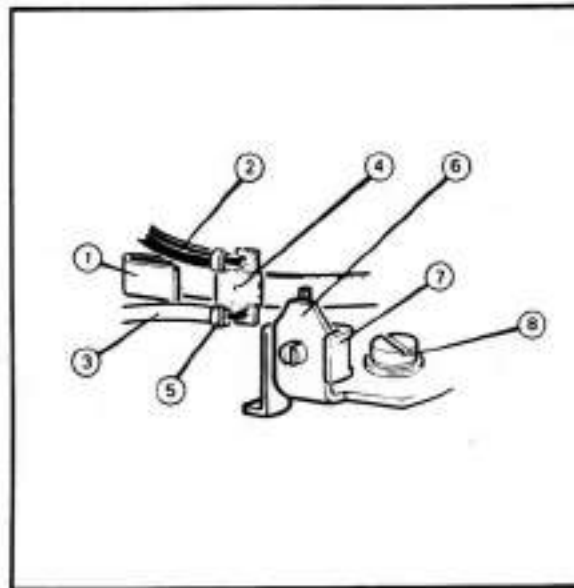


Figure 4c Removal of contact breaker points

- 1 Folded end of moving contact spring
- 2 L.T. fly lead (black)
- 3 Condenser lead (orange)
- 4 L.T. terminal
- 5 Cable clips
- 6 Terminal post
- 7 Nylon insulating piece
- 8 Fixed contact securing screw

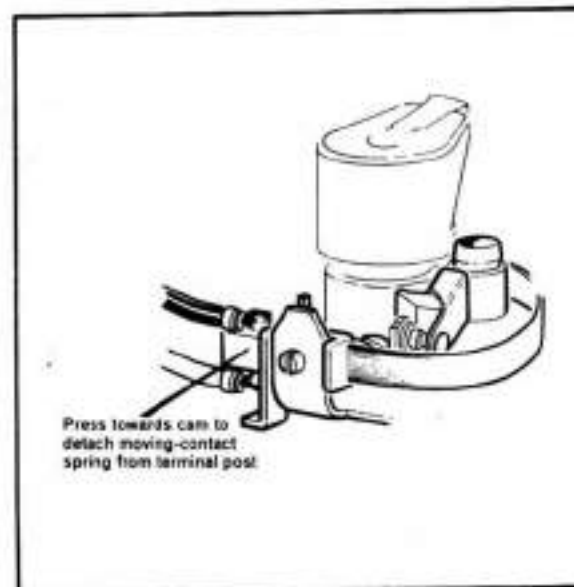


Figure 4d Correct replacement of moving contact spring and L.T. terminal.

An open circuit, however, cannot be readily checked without the use of specialised equipment such as a Diagnosis Test Set. The usual signs of this are excessively burnt contact breaker points and difficult starting.

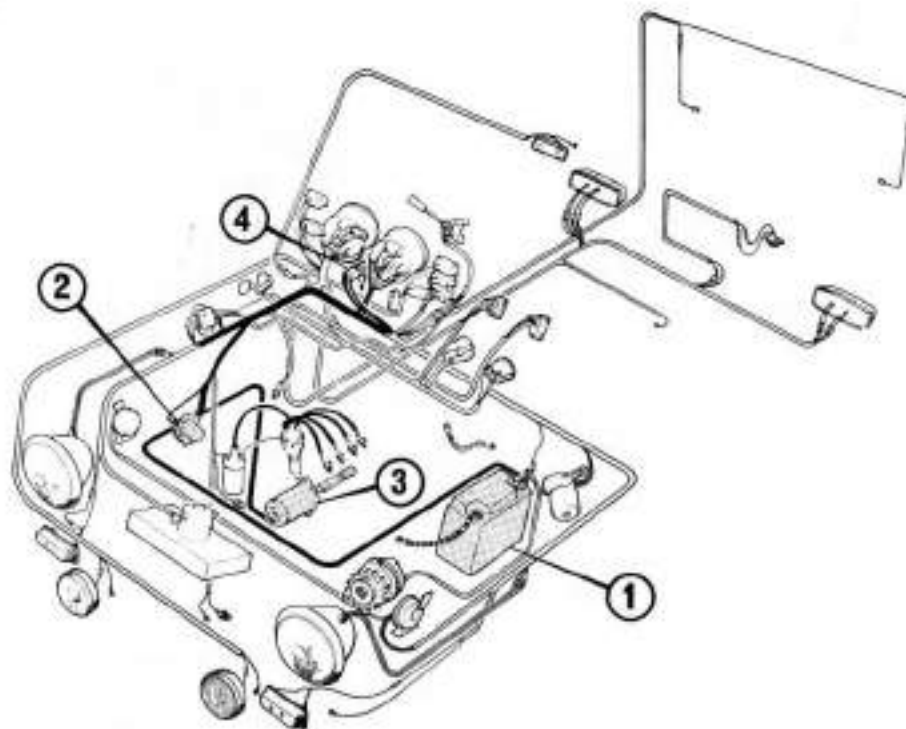
To remove the condenser

- 1 Remove the distributor cap and rotor arm.
- 2 Remove the distributor point set as previously described.
- 3 Remove the cross head screw and lift the condenser from the contact breaker plate.
- 4 The condenser, condenser lead, low tension terminal and low tension fly-lead, is a complete assembly. The fly-lead complete with grommet and insulated Lucas terminal should be withdrawn through the hole in the distributor body. (See **Figure 4b**.)
- 5 Replace in reverse order, checking that there is no possibility of a short circuit between the condenser lead terminal and the contact breaker plate.

Note: Dismantling of the complete distributor is not recommended as only the cover, rotor arm, condenser and leads assembly, and contact breaker set are available as spares

Distributor specification

Direction of rotation	Anti-clockwise
Firing angle	0 to 90° - 180° - 270° - or ±1°
Dwell angle (closed-contact period)	51° or ±5°
Contact-breaker gap	0.38mm (0.015in) 0.40 to 0.45mm (0.16 to 0.018in) initial setting for new contact set.
Contact breaker spring loading (measured at contacts)	522 to 680gf (18 to 24 ozf)
Capacitor	0.18 to 0.25 microfarads
Clamping plate tightening torques	34.59kg.cm (30lb.in) trapped bolt and rotating nut 57.66kg.cm (50lb.in) trapped nut and rotating bolt.



Colour Codes

Letter	Colour
R	Red
W	White
G	Green
B	Black
Y	Yellow
S	Slate
U	Blue
P	Purple
LG	Light Green
N	Brown
O	Orange
K	Pink

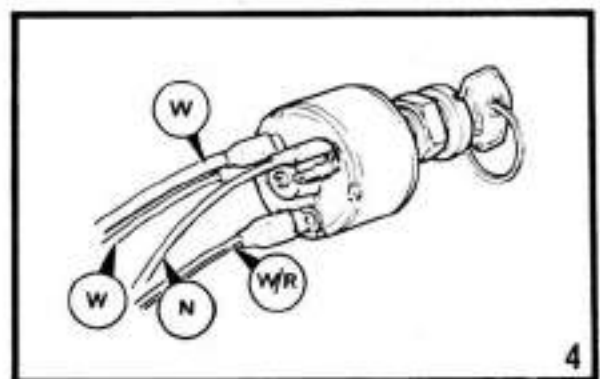
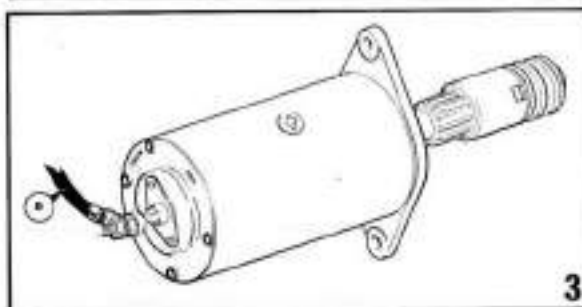
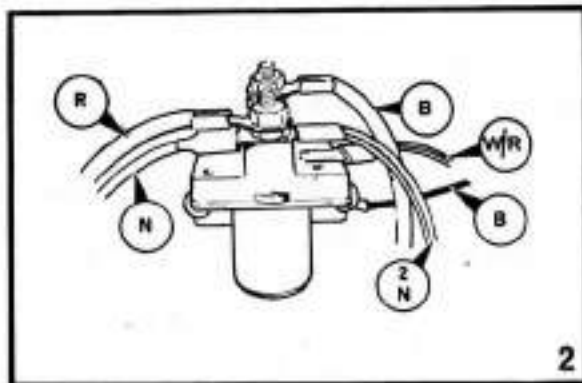


Figure 5 Electrics, starting system

Starting system

The starting system comprises battery, ignition switch, solenoid and starter motor, as shown in **Figure 5**.

If the starter fails to operate when the ignition is switched on the components in **Figure 5** should be systematically checked to diagnose the fault. Examine the starter pinion which may be jamming in mesh with the flywheel ring gear. It can be released by turning the squared end of the pinion shaft in an anti-clockwise direction.

Check that the battery is in a good state of charge and the terminals free from corrosion. The condition and security of the earth braids is also important. The starter solenoid could also be at fault. When the ignition is switched on the starter motor pinion makes a distinct sound when meshing with the flywheel ring gear and if this is not apparent, a faulty solenoid could be indicated.

If the components of the starting system are found to be functioning correctly this would indicate that the fault lies in the ignition or charging systems (see **Figure 1** and **Figure 7**).

The starter motor and testing procedure is described below but for details of the other starting system components refer to the General Electrics on page 18.

Starter motor

Description

The starter motor is a four pole, four brush machine with inertia drive and is secured in the R.H. side to the rear engine plate and gearbox bell housing.

To remove starter motor (see Figure 6)

- 1 Disconnect battery.
- 2 Remove oil filter.
- 3 Disconnect starter motor lead and remove two $\frac{3}{8}$ UNF bolts, washers, lockwashers and hexagon nuts securing the motor to the rear engine plate and bell housing.
- 4 Remove starter motor from the vehicle.
- 5 Replace in reverse order.

Starter motor specification

Lock torque	0.97kg m (7.0lb ft) at 350 amps
Running torque (at 1,000 rpm)	0.61kg m (4.4lb ft) at 260 amps
Light running current	65 amps at 8,000–10,000 rpm
Brush spring pressure	800g (28oz)

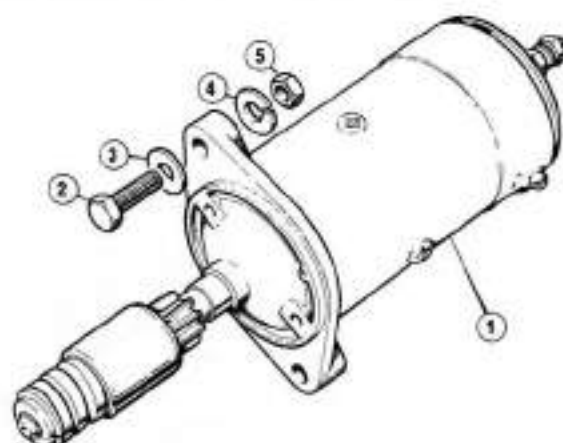


Figure 6 Starter motor

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- 1 Starter motor
- 2 Bolt
- 3 Washer
- 4 Lockwasher
- 5 Nut

Bench testing

Remove the commutator end cover from the motor and check the brushes for wear and replace if necessary.

Measuring light running current

Clamp the motor in a vice and, using a 12 volt battery, with a moving coil ammeter of suitable range, check the light running current and the armature speed. Always use heavy gauge cable for connecting the apparatus.

Under these light load conditions, the starter motor should run freely with a running current of 65 amps at 8,000–10,000 rpm. The test only proves whether the motor is functioning correctly when not under its normal operating load. If, on replacing the motor, it again fails to crank the engine, an internal fault is indicated and a new motor will have to be fitted.

Charging system

The charging system comprises the battery, alternator and ignition warning light as shown in Figure 7.

It is important that the charging system is kept in good working order for the ignition, starting and lighting systems depend upon it. These systems will be rendered inoperative if the battery is in an extremely low state of charge. The electrolyte level in the battery should be regularly checked and topped up if necessary. Keep the battery terminals clean and tight.

The correct fan belt tension is important. A slack belt will slip and prevent the alternator charging the battery to its full capacity.

Attention should also be given to the cleanliness and security of the earth leads.

The ignition warning light serves the dual purpose of reminding the driver to switch off the ignition, and acting as a no-charge indicator. With the ignition switched on the warning light should only be illuminated when the engine is not running, or is idling at a very low speed. As the engine speed increases the light should dim and go out. Failure to do so indicates a fault in the charging system.

The alternator is described in full in the following text but for details of the other charging system components refer to the General Electrics on page 18.

Alternator

Description

The alternator is a 12 pole, two brush machine and is driven by a belt from the crankshaft pulley. To ventilate the interior components a multi-bladed fan is fitted behind the alternator pulley.

The brushgear is enclosed in a moulding screwed to the slip ring end bracket thus giving protection against the adverse effects of dust and moisture.

Voltage control is achieved by a Model 14TR microcircuit voltage regulator built into the slip-ring end bracket.

A normal type of charge indicator (warning) light system is used in conjunction with this alternator. The warning light is connected in series with the 'field' supply diodes and is extinguished when the generated voltage at the diodes side of the light equals that at the battery side.

The only attention the alternator is likely to require is the occasional changing of the commutator bushgear. Remove alternator cover, unscrew two 4BA bolts and lift brushbox moulding from slip ring end bracket. Check whether brushes and slip rings are free of oil or grease. If necessary, the brushes and springs can be cleaned with a petrol moistened cloth. Check brush and spring assemblies for freedom of movement in the brushbox moulding. If the overall length of the brushes have worn to 7.62mm (0.30in) the brush and spring assemblies will have to be removed and replaced.

Wipe away any dirt or oil which may collect around the slip ring end cover ventilating apertures. The bearings are packed with grease during assembly and do not require attention.

Note: Serious damage can occur to the alternator if the following points are not observed:

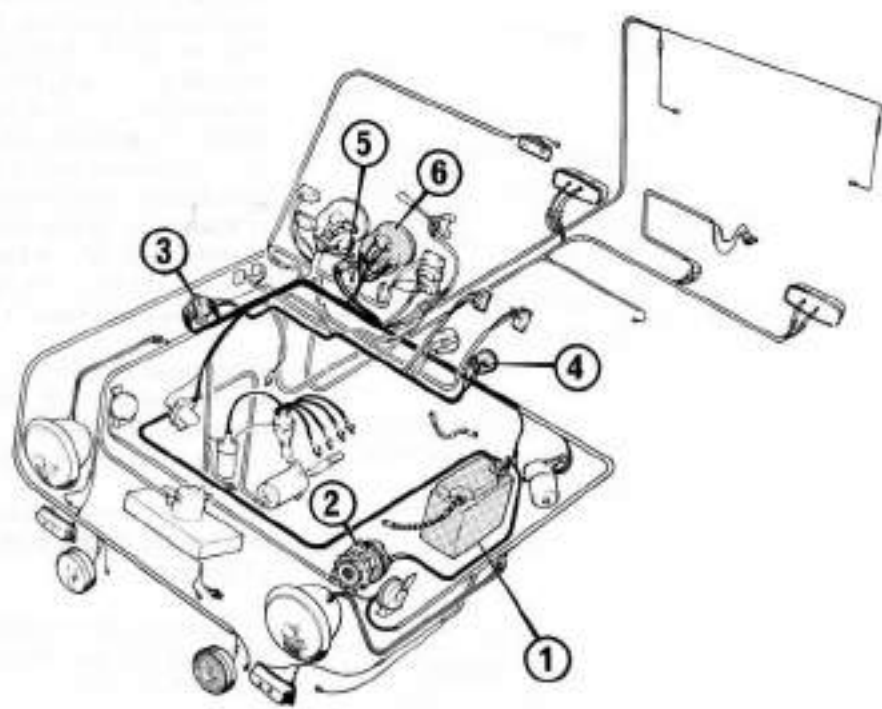
- 1 Ensure that the negative terminal of the battery is earthed. Reversed cable connections will burn out the alternator diodes.
- 2 Never earth the output (B+) terminal of the alternator. It should be connected directly with the battery positive terminal.
- 3 Always disconnect the battery earth cable at the battery before removing the alternator or its connecting wires. Serious damage to the wiring harness and the alternator can result from accidentally earthing the output terminal.
- 4 Never attempt to operate with the output lead between the battery and output terminal disconnected. A very high voltage will develop which could burn out the rotor or damage the diodes.
- 5 When the battery is to be recharged in the car, disconnect both battery cables before connecting a charger.
- 6 When a slave battery is used to start the engine, ensure the leads are connected correctly, i.e. positive to positive, negative to negative.

Testing the alternator

First check the driving belt for condition and tension. The nominal hot ratings are given in the specification at the end of this section. These figures may be exceeded slightly when the alternator is running cold. To avoid misleading results, the following test procedure should therefore be carried out with the alternator running as near to its normal operating temperature as possible.

Alternator output test

- 1 Withdraw the two-part connector from the



Colour Codes

Letter	Colour
R	Red
W	White
G	Green
B	Black
Y	Yellow
S	Slate
U	Blue
P	Purple
LG	Light Green
N	Brown
O	Orange
K	Pink

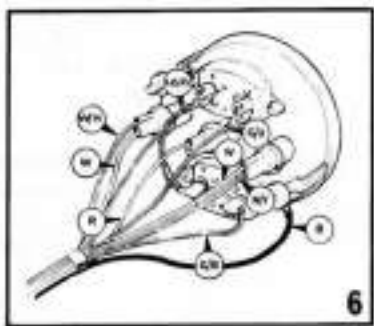
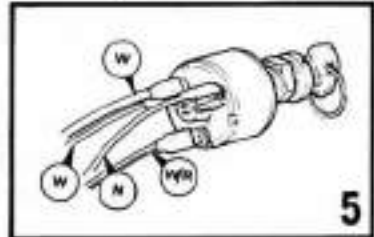
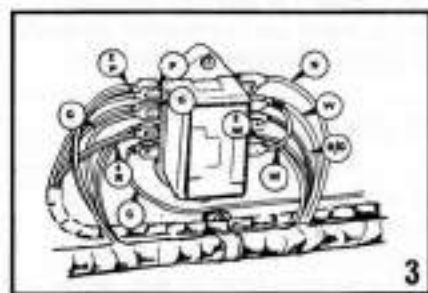


Figure 7 Electrics, charging circuit

- 1 Battery
- 2 Alternator
- 3 Fuse Unit
- 4 Battery condition indicator
- 5 Ignition switch
- 6 Combined instrument

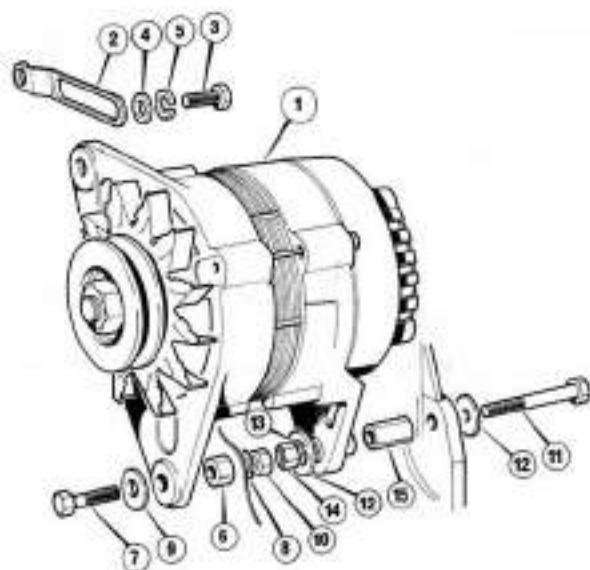


Figure 8 Alternator

- 1 Alternator
- 2 Strap
- 3 Bolt
- 4 Washer
- 5 Lockwasher
- 6 Spacer
- 7 Bolt
- 8 Lockwasher
- 9 Washer
- 10 Nut
- 11 Bolt
- 12 Washer
- 13 Lockwasher
- 14 Nut
- 15 Spacer

alternator, remove the moulded cover (secured by two screws) and link together regulator terminals 'F' and '-'.

2 Connect an external test circuit as shown in Figure 9. Observe carefully the polarity of battery and alternator terminals – reversed connections will damage the alternator diodes.

The variable resistor across the battery terminals must not be left connected for longer than is necessary to carry out the following test.

3 Start the engine. At 1,500 alternator rev/min, the test circuit bulb should be extinguished. Increase engine speed until the alternator is running at 6,000 rev/min approximately, and adjust the variable resistance until the voltmeter reads 14.0 volts. The ammeter reading should then be approximately equal to the rated output. Any appreciable deviation from this figure would indicate an internal fault and the alternator, available as an assembly only, will have to be replaced.

To remove alternator (see Figure 8)

- 1** Disconnect battery and alternator cables.
- 2** Slacken the alternator securing bolts and tilt the unit forward.
- 3** Remove fan belt.
- 4** Remove securing bolts and detach alternator from the engine.
- 5** Replace in reverse order.

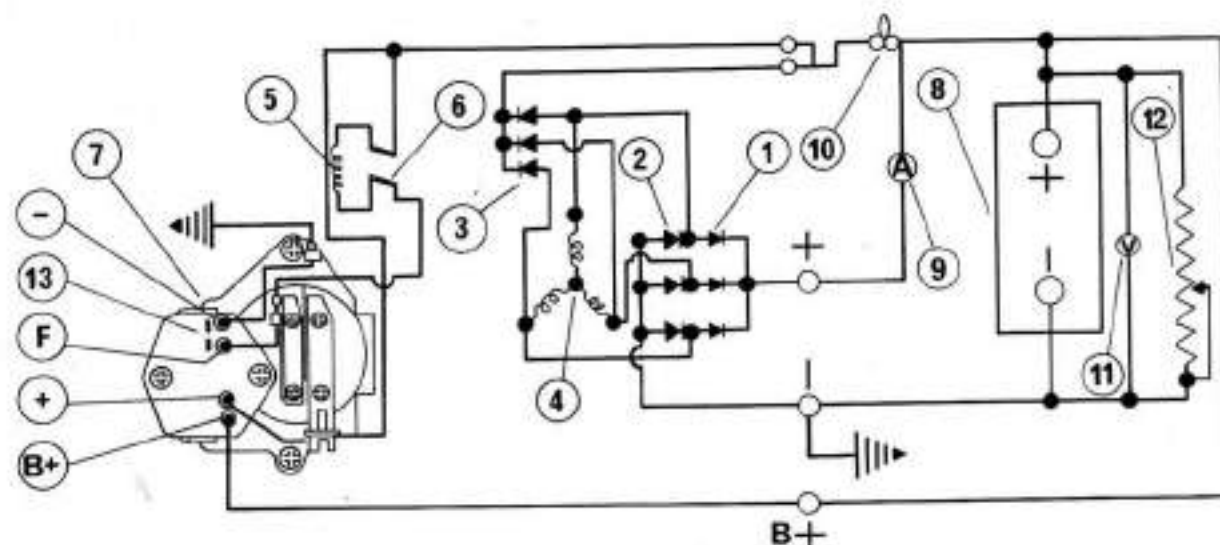


Figure 9 Electrics, alternator output test circuit

- | | | |
|--------------------------------|--------------------------|--|
| 1 Live side output diodes (3) | 6 Slip - rings | 11 0-20 voltmeter |
| 2 Earth side output diodes (3) | 7 Voltage regulator | 12 0-15 ohms 35 amp variable resistor |
| 3 Field feed diodes (3) | 8 12 volt battery | 13 Link bridging regulator terminals 'F' and '-' |
| 4 Stator winding | 9 0-40 or 0-60 ammeter | |
| 5 Field winding | 10 12 volt 2.2 watt bulb | |

Alternator specification

Earth polarity of system	Negative only
Nominal voltage	12
Nominal dc output (I ₀₁) at 14.0 V and 6,000 rev/min	28 amp 15 ACR
Max permissible rotor speed	12,500 rev/min
Stator phases	3
Stator winding connection	Star
Number of rotor poles	12
Resistance of rotor winding in ohms at 20 °C	4.33 ±5%
Brush spring tension	255–368g (9–13oz) with brush face flush with brush box housing

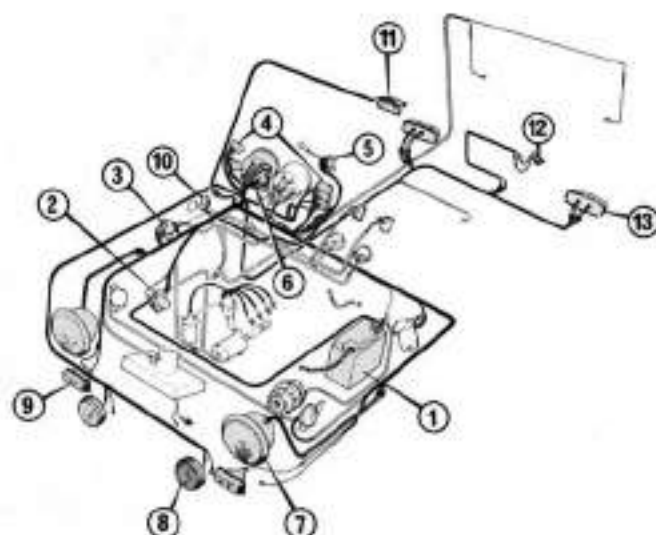
Lighting system

The lighting system comprises headlamps, front indicators, rear stop tail/indicators, number plate lamp, battery, starter solenoid, light switch and multi-switch, as shown in Figure 10.

A single earth lead, secured to the R.H. front engine mounting, earths the complete lighting

system. It is, therefore, of the utmost importance that this lead is kept clean and tight. The condition of the battery earth lead and engine earth strap, secured to the gearbox and chassis is also important.

If any section of the lighting system fails to function the condition and security of the earth leads and straps described above should be checked. A blown fuse could also be the cause



Colour Codes

Letter	Colour
R	Red
W	White
G	Green
B	Black
Y	Yellow
S	Slate
U	Blue
P	Purple
LG	Light Green
N	Brown
O	Orange
K	Pink

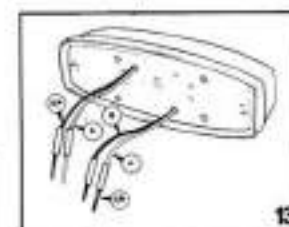
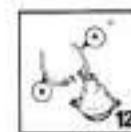
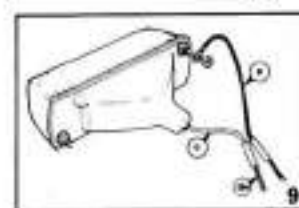
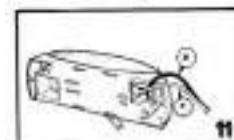
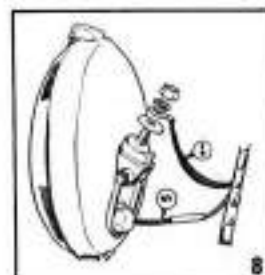
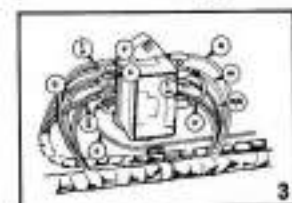
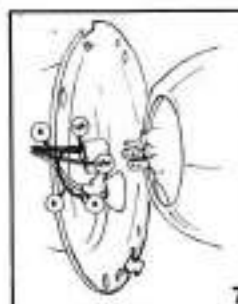
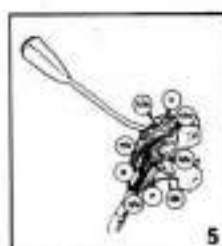
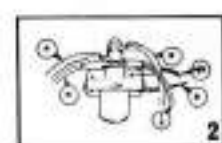


Figure 10 Electrics, lighting system

- | | | |
|--------------------|------------------------|---------------------------------|
| 1 Battery | 6 Speedometer | 11 Interior lamp |
| 2 Starter solenoid | 7 Headlamp | 12 Number plate lamp |
| 3 Fuse box | 8 Fog and spot lamp | 13 Stop-tail and indicator lamp |
| 4 Switches | 9 Front indicator lamp | |
| 5 Multi-switch | 10 Flasher unit | |

and can be confirmed on examination of the fuse. Before renewing a blown fuse inspect the applicable wiring for evidence of a short.

The lighting system is described in full below but for details of the fuse box and lighting system components refer to General Electrics on page 18.

Headlamps (standard vehicles)

The headlamps on the standard Robin vehicles are of the 'sealed beam' type, incorporating the pilot lamps; the filament in the light unit being sealed between the lens and reflector. In the event of main beam or dipped beam filament failure, the light unit must be replaced.

The pilot lamp bulb is of the 'capless' type, and can be replaced in the event of failure.

To remove lamp unit (see Figure 11)

1 The lamp unit rim is a 'clip-on' type. To remove the rim, press the rim upwards and lever outwards at the base of the lamp unit. The rim is located by a spring clip at the base and two lugs at the top of the unit.

2 Remove the three screws which secure the inner rim to the seating rim, withdraw lamp unit.

3 The lamp unit can now be disconnected from the cable connectors, either for replacement or access to the pilot bulb.

To replace

1 Fit the cable connector to the new lamp unit and place the unit in the seating rim, correctly locating the three projections on the rear of the unit with the corresponding slots in the rim.

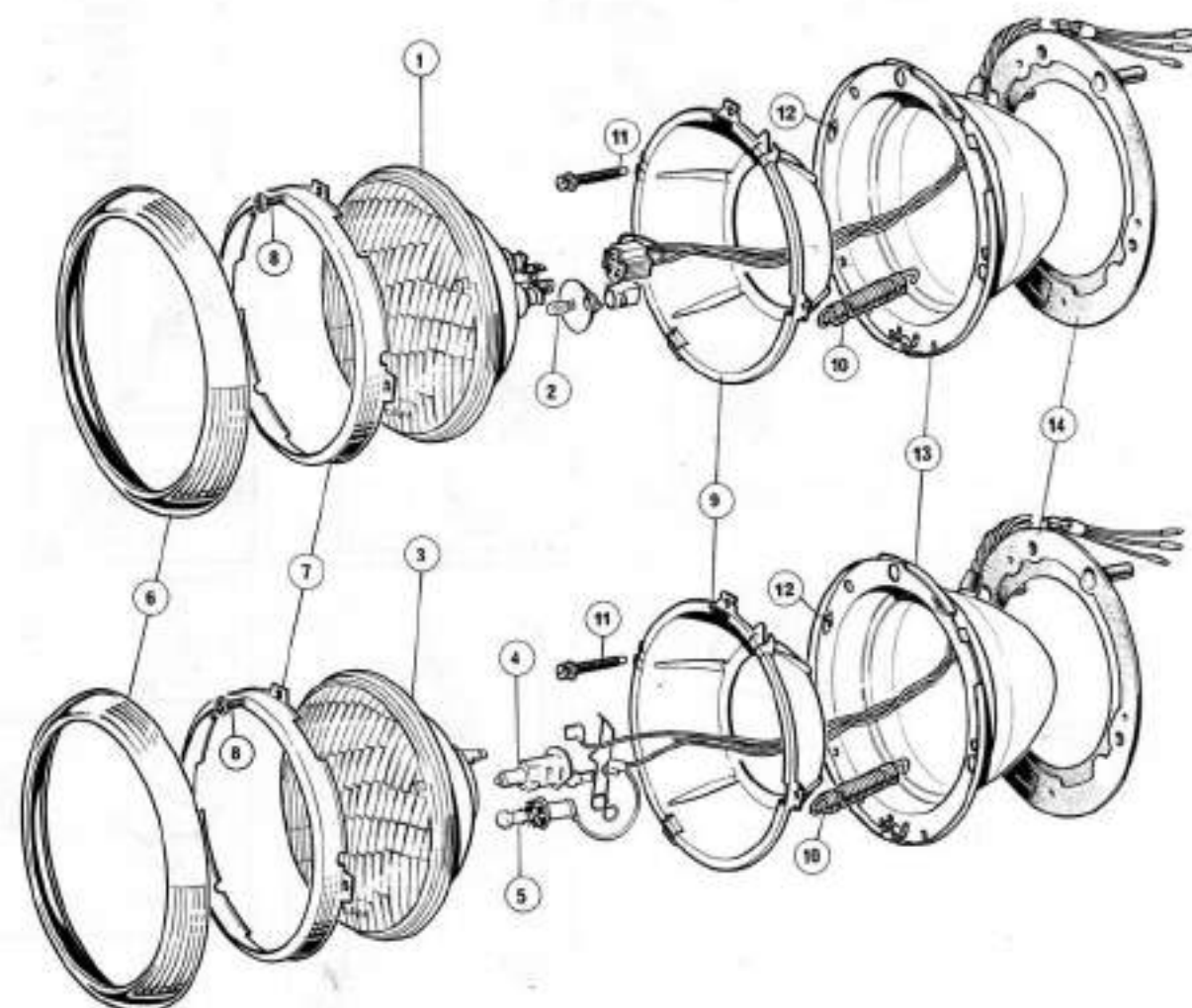


Figure 11 Headlamps

- 1 Light unit, sealed beam - standard
- 2 Pilot bulb, for sealed beam units
- 1 Light unit, (Q.H.), sealed beam - super models
- 3 Glass/reflector unit, alternative

- 4 Bulb (Q.H.), for alternative Q.H. lamp
- 5 Pilot bulb, for alternative Q.H. lamp
- 6 Bezel, clip on
- 7 Rim, light unit
- 8 Screw

- 10 Spring, rim
- 11 Screw, trimmer
- 12 Retainer
- 13 Body, headlamp
- 14 Gasket, body



Figure 13 Headlamp adjustment

- 1 Vertical beam adjuster
- 2 Horizontal beam adjuster
- 3 Inner rim securing screw

2 Prise out locking ring from reflector and remove bulb.

3 Fit new bulb and secure in position with locking ring.

4 Refit lens and reflector to lamp body and secure with retaining clamp and bolt.

To remove lamp unit

1 Disconnect lamp unit wiring lead from snap connector at main harness.

2 Remove hexagon nut, lockwasher and plain washer securing lamp unit to body mounting.

3 Remove lamp unit and retain nylon spacer.

4 Replace in reverse order.

Front direction indicator lamps

The front indicator lamps are dependant on the indicator switch (incorporated in the multi-switch) and the flasher unit secured to the R.H. side of the engine compartment. Failure of one of these will render both front and rear indicators inoperative.

Access to the front indicator bulb is gained by removing two screws and lifting the amber lens from the base plate.

To remove (see Figure 14)

1 Disconnect indicator lead from wiring harness.

2 Remove two No. 10 UNF screws, complete with lockwashers securing indicator base plate to the body. Note position of earth lead.

3 The indicator can now be withdrawn.

4 Replace in reverse order, ensuring the earth lead is securely attached behind the outside fixing nut.

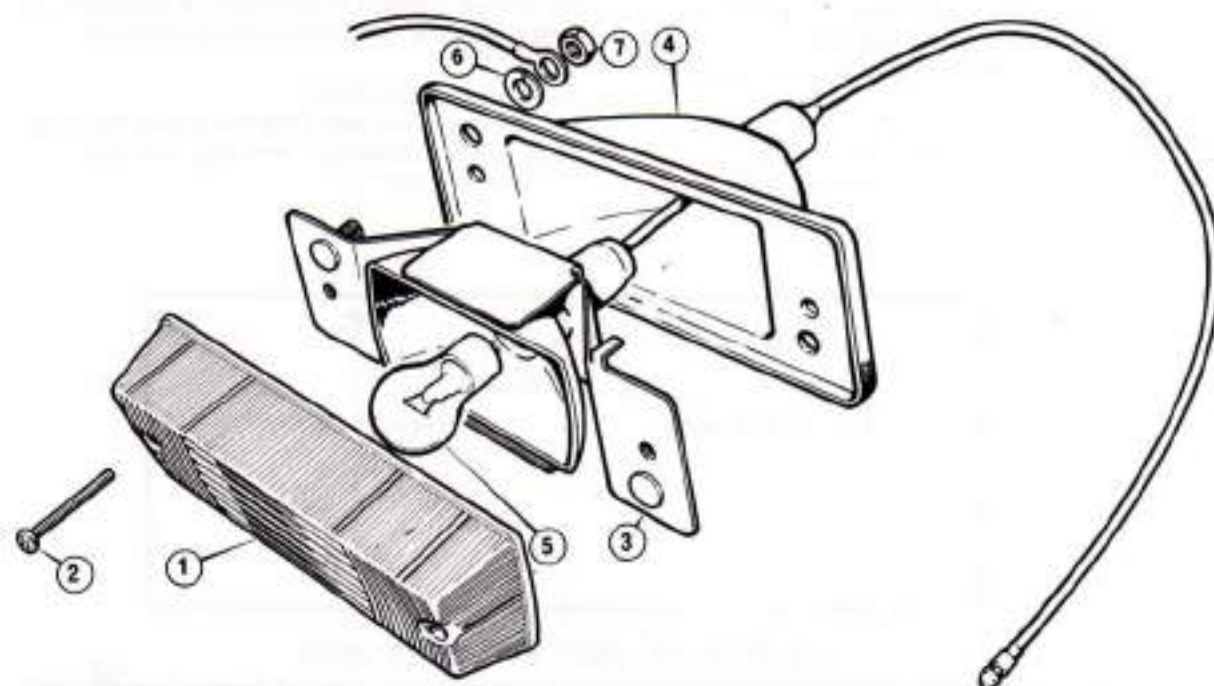


Figure 14 Front indicator lamp

- 1 Lens
- 4 Body
- 7 Nut

Stop tail, rear indicator lamps

Access to the bulbs of the rear lamp cluster is obtained by removing two cross head screws and lifting off the lens assembly from the lamp body.

To remove (see Figure 15)

- 1 From underneath the vehicle disconnect the rear lamp leads from the wiring harness.
- 2 Remove lens and release indicator and stop/tail bulbs to prevent possible damage during next operation.
- 3 Unscrew four tappit fixings and remove rear lamp unit from the body.
- 4 Replace in reverse order. Note: Before refitting the unit it will be necessary to push the nylon inserts back into the base of the lamp body to close up the claws of the inserts.

Number plate lamp

Access to the bulb is gained by removing two cross head screws, securing the chrome bezel

to the body, folding back the rubber flange of the body and removing the glass lens.

To remove (see Figure 16)

- 1 Remove bezel, glass lens and bulb.
- 2 Withdraw lamp body and disconnect leads from wiring harness.
- 3 Replace in reverse order.

Interior lamp

The interior lamp is located above the rear view mirror and has an integral switch within the light unit. To gain access to the bulb remove the lens by pressing on the sides and releasing the spring securing lugs.

To remove (see Figure 16)

- 1 Disconnect battery. (The interior lamp circuit is always live).
- 2 Remove two No. 8 screws, withdraw lamp unit and disconnect lamp leads from wiring harness.

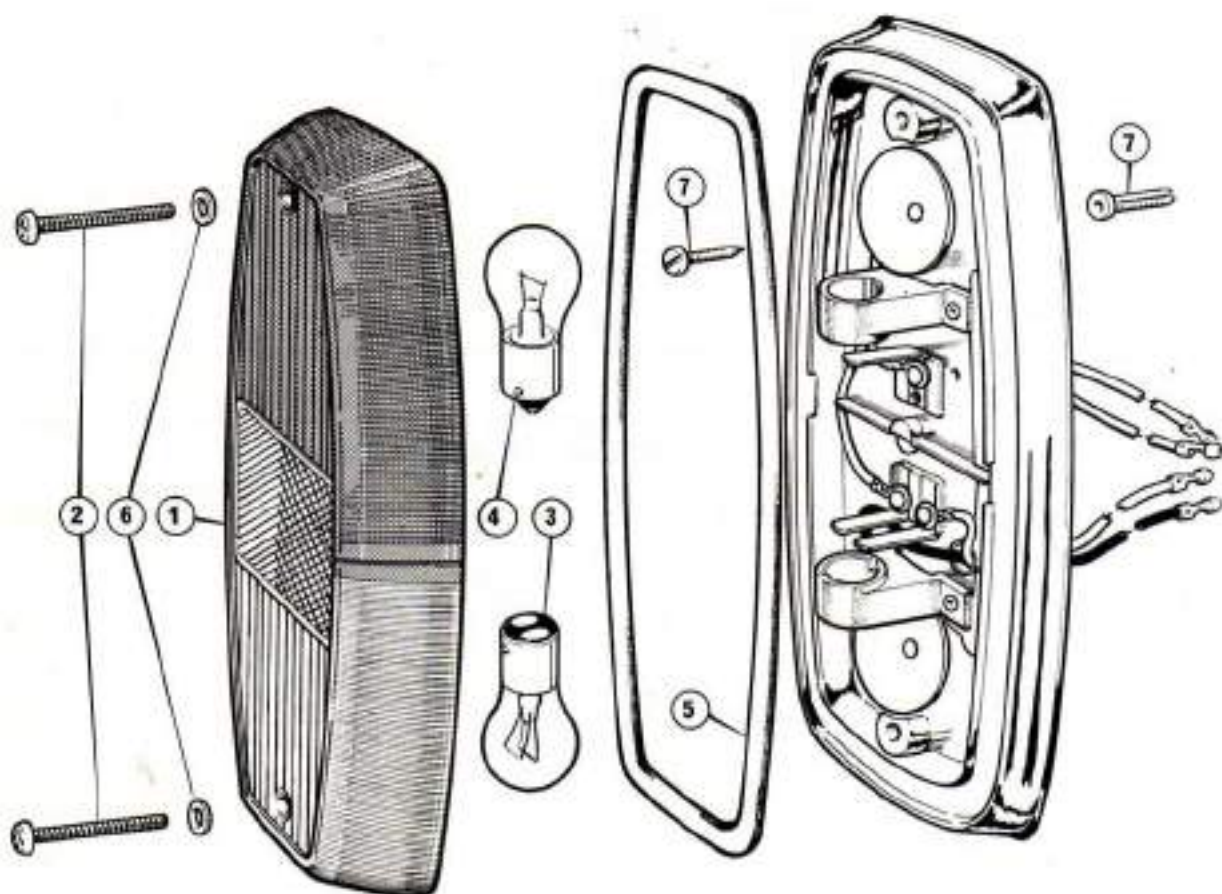


Figure 15 Stop/tail indicator lamp

1 Lens

4 Bulb, indicator

7 Lamp fixings

P. 1069

3 Replace in reverse order and reconnect battery.

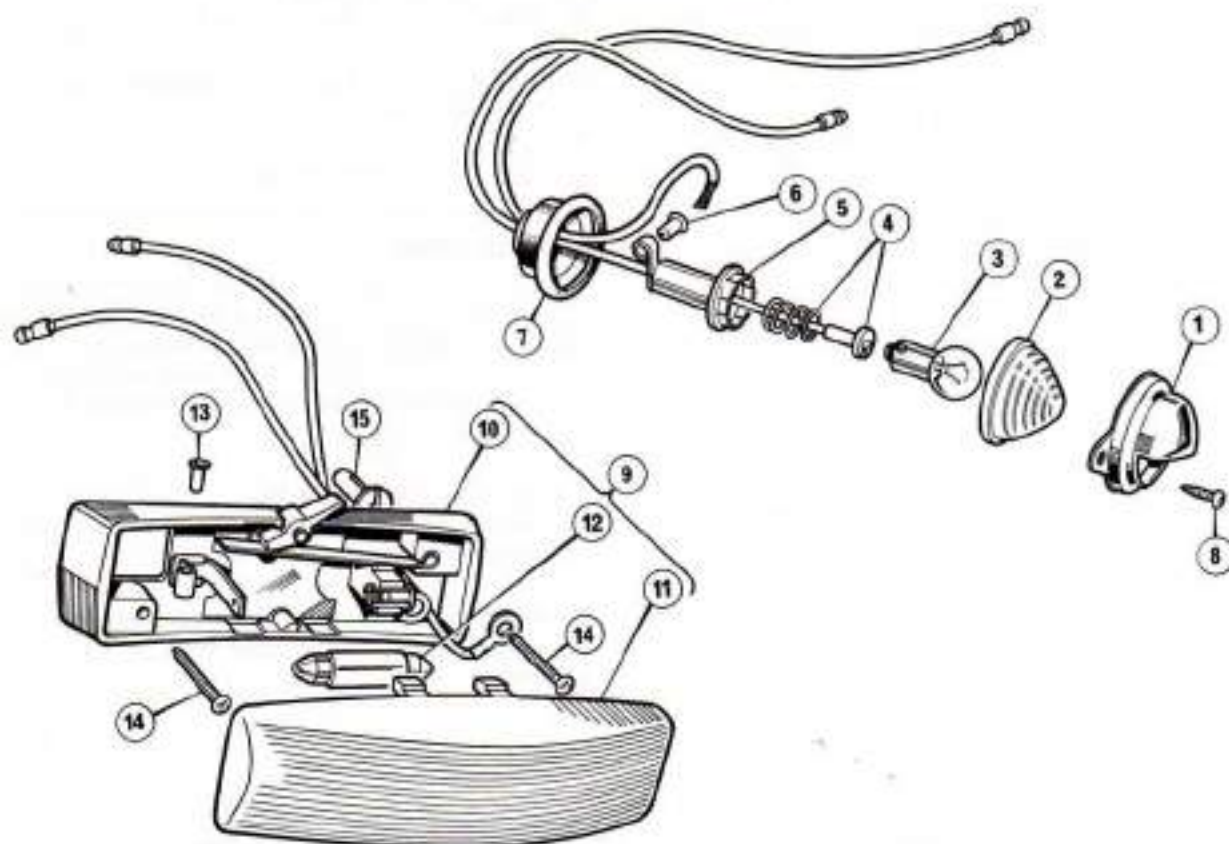
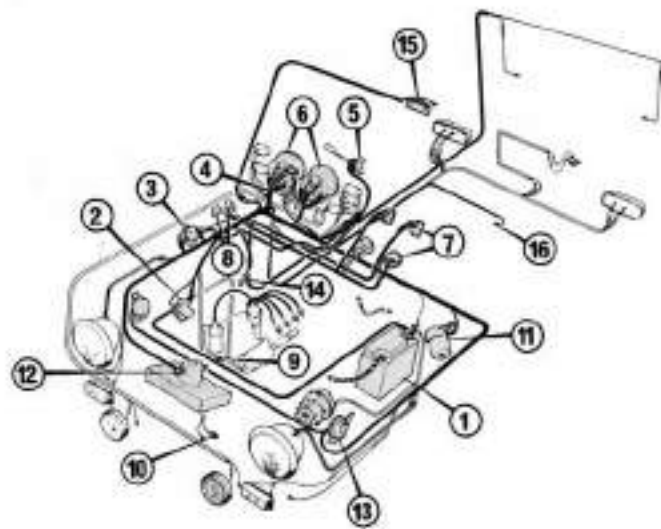


Figure 16 Number plate and interior lamp

1 Bezel	6 Sleeve terminal	11 Lens
2 Glass	7 Body	12 Bulb
3 Bulb	8 Screw, lamp to body	13 Terminal sleeve
4 Interior bulb holder	9 Interior lamp	14 Screw, lamp to body
5 Shell, bulb holder	10 Base	15 Insert, lamp to body

Bulb list

	Voltage	Wattage	Cap type
Headlamp – standard	12	60/45	Sealed beam
Headlamp – super models (quartz halogen)	12	60/55	Sealed beam or metal reflector
Pilot bulb	12	5	Capless
Stop and tail	12	21/5	SBC Stagg
Front and rear indicator	12	21	SCC
Number plate lamp	12	5	MCC
Interior lamp	12	6	Festoon
Fog and spot lamp	12	48	BPF.SC



Colour Codes

Letter	Colour
R	Red
W	White
G	Green
B	Black
Y	Yellow
S	Slate
U	Blue
P	Purple
LG	Light Green
N	Brown
D	Orange
K	Pink

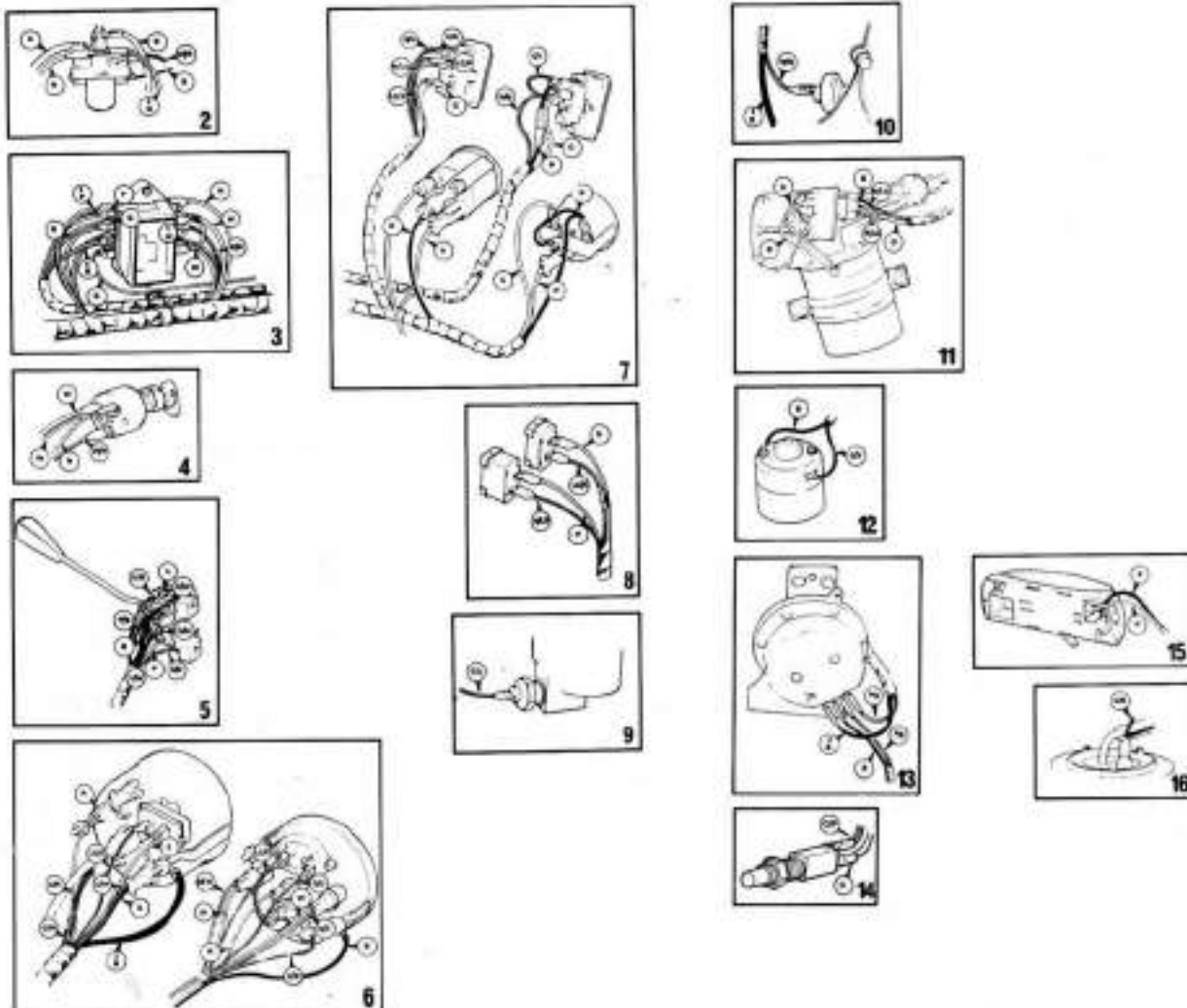


Figure 17 General electrics system

- | | | |
|-------------------------------------|------------------------------------|---------------------------|
| 1 Battery | 7 (a) Hazard warning lights switch | 10 Oil pressure switch |
| 2 Starter solenoid | (b) Heated rear screen switch | 11 Wiper motor |
| 3 Fuse box | (c) Oil pressure gauge | 12 Heater motor |
| 4 Ignition switch | (d) Battery condition indicator | 13 Horn |
| 5 Multi-switch | 8 (a) Hazard warning unit | 14 Brake light switch |
| 6 (a) Speedometer | (b) Flasher unit | 15 Interior light |
| (b) Combined temperature/fuel gauge | 9 Temperature sender | 16 Fuel gauge sender unit |

General electrics system

The general electrics include battery, fuses, coil, starter solenoid, sparking plugs, horn, windscreen wiper motor, instruments and switches as shown in Figure 17.

Battery

The battery is a 12 volt, negative earth, wet cell type and is housed in a well in the L.H. side of the engine compartment. A metal strap, connected to two hook bolts and secured by wing nuts, holds the battery firmly in position (see Figure 18).

General maintenance

Keep the battery terminals clean and tight. A smear of petroleum jelly will protect the battery posts and terminals from corrosion. Regularly examine the level of the electrolyte in the cells and, if necessary, add distilled water to bring the level to the top of the separator plates. If the battery is found to need frequent topping up, steps should be taken to determine the reason. For example, the battery may be receiving an excessive charge, in which case, the alternator regulator should be checked. See pages 7-9. If one cell needs topping up more than the others, check the condition of the battery case. If there are any signs of an electrolyte leak, the battery should be replaced. The efficiency of the battery should occasionally be checked by means of a hydrometer. The specific gravity readings and their indications are as follows.

1.280-1.30 Fully charged
Approx. 1.20 Half discharged
Approx. 1.150 Fully discharged

If electrolyte has been spilled at any time from any of the cells, check the specific gravity of the remaining electrolyte and top up the battery with sulphuric acid solution to the same value. Always add acid to the water when preparing the electrolyte. **It is dangerous to add water to acid.**

Never use a naked light when examining the battery. The mixture given off by the battery is highly explosive.

To remove the battery (see Figure 18)

1 Disconnect the positive and negative leads, secured to the battery terminals by a $\frac{1}{2}$ UNC nut and bolt.

2 Unscrew the two wing nuts securing the battery retaining strap to the hooked bolts. Remove retaining strap and rubber insulation.

3 Lift the battery from the well, ensuring it is kept horizontal to avoid spilling the electrolyte.

4 Replace in reverse order and ensure that the negative terminal is earthed on reconnection.

High rate discharge test

The high rate or heavy discharge test is a timed on-load voltage check applied separately to each cell of the battery. Before testing, a battery should have been left charge for some hours and each cell must be at least 70% charged, having a minimum electrolyte density of 1.230 SG. The correct size of tester for use on car batteries is one having an element rated at 150 to 160 amps. **It is important to use only a suitably rated tester.**

A cell in good condition will maintain a constant 1.2-1.5 volt reading on the test meter for 10 seconds, when the prongs of the tester are pressed onto adjacent terminals. A weak cell will show a rapidly falling voltage. If all the cells appear weak, this may indicate that the battery is merely discharged but otherwise healthy.

Battery voltage

By means of the two tests already described, the condition of the battery has been ascertained and also its state of charge. The working voltage should then be checked.

Connect a voltmeter between the positive and negative battery terminals and note the reading. The minimum reading for the 12 volt system should not fall below 10.5 volts. If the voltage does drop rapidly below the minimum reading the battery will need replacing.

Figure 18 Battery, fuses, coil, starter solenoid, horn, etc.

1 Battery	12 Washer	25 Fuse
2 Hook bolt	14 Insulation	26 Ignition coil
3 Separator plate	15 Nut	27 Sparking plug, universal
4 Cable hook nut	16 Fuse unit	28 Rectifier set ring
5 Bolt	17 Cover plate nut	29 Washer, oil seal nut
6 Stud	18 Bolt, hose clamp	30 Insulation and separator
7 Fuse unit	19 Cable bolt	31 Earth terminal
8 Windscreen hook bolt	20 Spring	32 Horn

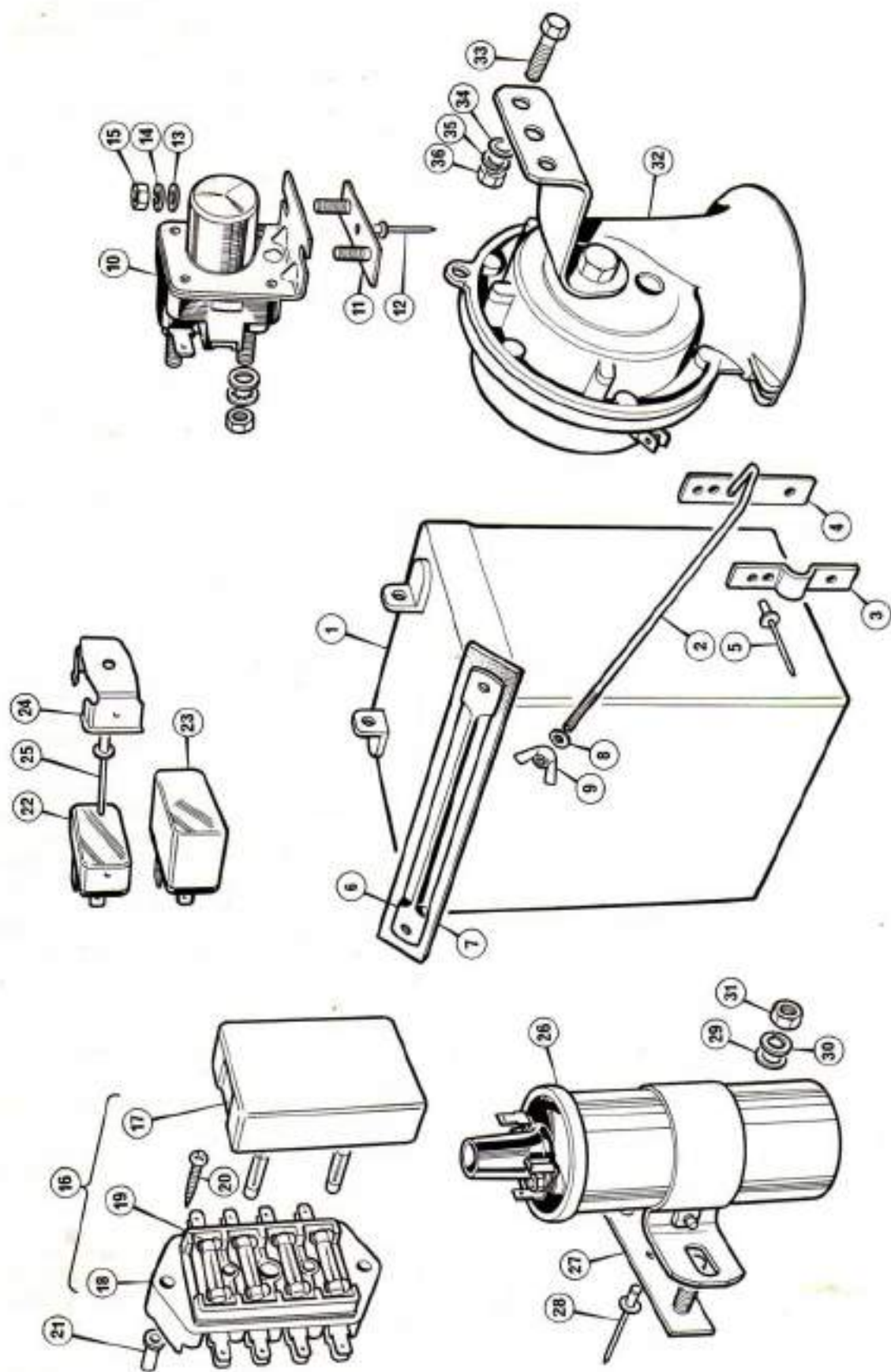


Figure 18 General electrics components

Battery specification

Type	Lead acid
Voltage	12 volts
Amp-hour capacity	20
Specific gravity charged	1.280–1.30
Low limit	1.150

Fuses

The fuse box is secured to the R.H. side of the engine compartment by two No. 8 screws and nylon inserts.

A blown fuse is indicated by the failure of all units protected by it, and is confirmed by examination of the fuse when withdrawn. Before renewing a blown fuse inspect the wiring applicable for evidence of a short. Use only the correct fuse. The fusing value is marked on a coloured paper slip inside the glass tube of the fuse.

The fuses indicated in Figure 18 show the top 35 amp fuse protecting the battery circuit which includes headlamps, interior lamp and horn.

The 2nd 35 amp fuse protects the ignition circuit including the indicators, heater, wiper motor and instrument gauges. This fuse also protects the hazard warning circuit and additional gauges, oil pressure and battery condition indicator, on the Super model.

The 3rd fuse is a 35 amp fuse in series with the battery lighting circuit protecting the side and rear lamps including the number plate lamp and instrument illumination.

The 4th fuse is a 35 amp fuse protecting the heated rear window on Super models. This fuse is a 'spare' position on standard models.

On Super models the fog and spot lamp and radio, if fitted, are protected by separate in-line fuses located behind the fascia.

Coil

The coil is secured to a mounting plate on the R.H. side of the engine bulkhead by two ½ UNF nuts, lockwashers and plain washers (see Figure 18).

Little attention to the coil is necessary other than keeping the terminal connections clean and tight.

The efficiency of the coil can be tested as follows:

1 Remove the distributor cover and set the engine so that the distributor contact points are closed.

2 Remove high tension cable from distributor cover and whilst holding the cable about 6.0mm (0.25in) from some metal part of the vehicle, make and break the contact points with an electrician's screwdriver.

A strong and regular spark will jump the gap from the end of the cable if the coil is in order. If a spark is not apparent the coil will have to be replaced.

Starter solenoid

The starter solenoid is secured to a mounting bracket on the R.H. side of the engine compartment by two No. 10 UNF nuts, plain washers and lockwashers (see Figure 18).

If difficulty is encountered when trying to start the engine a faulty solenoid could be the cause. A simple check can be carried out by pressing the red button on the solenoid, at which the starter motor should 'kick over' the engine. If this fails, a faulty solenoid is indicated, but before resorting to fitting a replacement check the starting, ignition and charging systems and cleanliness and security of the earthing leads.

Sparking plugs

Autolite AGR32 sparking plugs are fitted to all vehicles. The gaps should be maintained at 0.64mm (0.025in). Providing the carburettor mixture is correct, a set of plugs will serve for at least 6,000 miles (10,000km) without attention. When attention is necessary, however, the plugs should be cleaned on a sand blasting machine. If on inspection the plugs are badly worn, they should be replaced to maintain optimum engine performance. When adjusting the points, the central electrodes must not be moved. Always lever the earth electrodes as necessary to obtain the required gap. On replacement ensure the plugs are firmly screwed home.

Horn

On standard vehicles a high tone horn is secured to the L.H. side of the engine compartment by two ½ UNF set screws, plain washers, lockwashers and nuts. Super vehicles are fitted with an additional low tone horn located on the R.H. side of the engine compartment (see Figure 18).

If the horn fails to operate, first check the security of the horn terminals and earthing leads. The horn is not adjustable and must be replaced if faulty.

Windscreen wiper motor and blades

Description

The windscreen wiper motor, mounted inside the

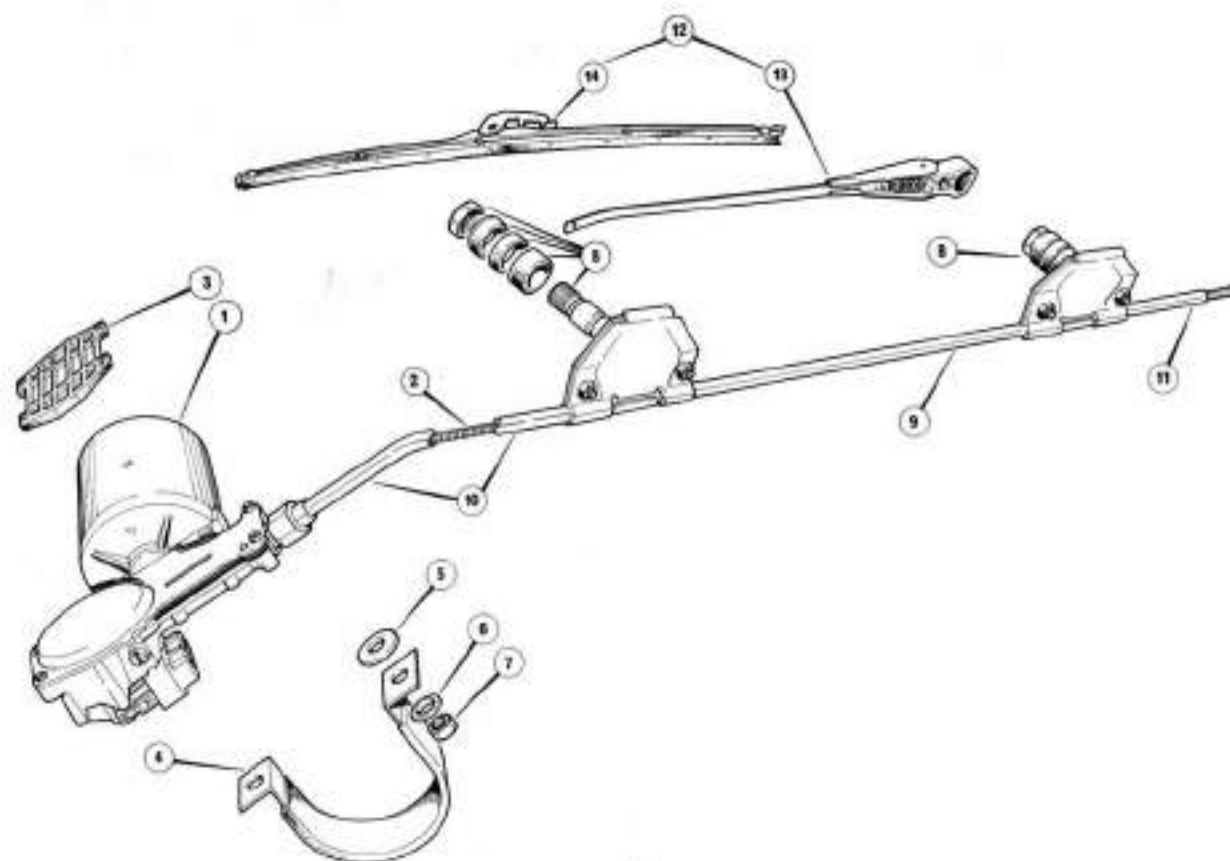


Figure 19 Windscreen wiper motor

- | | | |
|---------------|-------------------------------|------------------------|
| 1 Wiper motor | 6 Washer | 11 Bundy, overrun |
| 2 Rack | 7 Nut | 12 Wiper arm and blade |
| 3 Pad | 8 Wheelbox | 13 Wiper arm |
| 4 Strap | 9 Bundy, wheelbox to wheelbox | 14 Wiper blade |
| 5 Coachwasher | 10 Bundy, motor to wheelbox | |

vehicle above the passenger footwell, is of the single speed type incorporating a self-switching power unit, which drives two wheelboxes by means of a flexible cable rack running through rigid Bundy tubing.

Routine maintenance

To ensure efficient wiping keep the blades in good condition. The windscreen should be kept clean at all times to prevent possible scratching due to deposits of dust, etc. Oil, tar spots, or similar deposits should be removed from the windscreen with methylated spirits. Silicone or wax polishes must not be used. An unsatisfactory action or complete failure to operate may be caused by a mechanical or electrical fault, the symptoms and remedial procedure being described as follows:

(a) Mechanical

Badly kinked or flattened cable rack tubing will prevent the rack from turning freely, thus preventing or restricting the operation of the wheelboxes and wiper arms. The tubing must be reformed or replaced having a radius of no less than 228mm (9.0in). Check the wheelbox

spindle for freedom of rotation, a seized unit or one having damaged teeth must be replaced.

(b) Electrical

Check that the wiring connection is secure in the limit switch on the wiper motor to ensure the voltage supply is adequate. A delay or complete failure of the wiper blades to operate could be caused by a faulty wiper switch located on the fascia. A new one should be fitted to confirm this.

If all the other electrical and mechanical components have been found to be functioning correctly and the wiper system still fails to operate, a faulty motor is indicated and a replacement unit must be fitted.

To remove wiper motor (see Figure 19)

- 1 Prise the wiper blades from the wheelbox splined drive spindles.
- 2 Disconnect wiring plug from wiper motor limit switch.
- 3 Disconnect cable rack tubing at wiper motor union.

4 Remove two $\frac{1}{2}$ UNF set screws, nuts, lockwashers, and plain washers and detach 'U' clamp securing motor to body. Remove motor, carefully withdrawing cable rack from wheelboxes and rack tubing.

5 Replace in reverse order, taking care not to damage cable rack.

Wheelboxes and cable rack tubing To remove

1 Disconnect battery.

2 From underneath fascia disconnect speedometer cable.

3 Pull the fresh air nozzle from the front of the fascia and disconnect ducting hose.

4 Withdraw fascia (see Section R – Interior) just sufficiently to gain access to the

wheelboxes and cable rack tubing. It is not necessary to disconnect instruments and switches.

5 Detach wiper arms, remove wheelbox spindle retaining nuts, spacers and washers and push spindles through their locations in the body.

6 Slacken L.H. wheelbox clamping nuts and remove R.H. wheelbox, complete with intermediate and overrun Bundy tube.

7 Remove R.H. wheelbox, complete with wheelbox to wiper motor cable rack tubing.

8 Replace in reverse order.

Note: Before fitting a new wheelbox ensure the drive wheel is liberally coated with grease.

Wiper motor specification

Type	Lucas 14 watt 12 volt
Typical light running current (i.e. with cable rack disconnected) after 60 seconds from cold	1.5 amp
Light running speed after 60 seconds from cold	16-52 rev/min

Instruments and switches

Speedometer

Located to the right of the steering wheel. The meter indicates the speed of the vehicle and incorporates a total distance travelled recorder.

Direction indicator warning light

An amber light, at left of centre on the speedometer face. While indicator flashing unit is in operation the warning lamp glows intermittently, in unison with the indicator lamps.

Headlamp main-beam warning light

A blue lamp, located at right of centre on the speedometer face. The main-beam warning lamp is illuminated when the headlamp beams are raised and will go out when the beams are dipped.

Water temperature and fuel gauge

This combined instrument is located to the left of the steering wheel and comprises two separate gauges. The upper segment of the instrument indicates the cooling water temperature in the engine. After the initial rise in temperature during the warming-up period any sudden upward change in the meter reading calls for immediate investigation.

The lower segment of the instrument indicates the quantity of fuel in the petrol tank. When the

ignition is switched on the indicator will slowly rise to the final indicated reading due to the damping of the meter mechanism.

Ignition warning light

The ignition warning light is located to the left of centre on the combined temperature and fuel gauge. This red light serves the dual purpose of reminding the driver to switch off the ignition, and of acting as a no-charge indicator. The light should only be illuminated when the ignition is switched on without the engine running, or running at very low speed. When the engine speed is increased the light should dim and then go out, failure to do so indicates a fault in the charging circuit.

Oil pressure warning light

The oil pressure warning light, green in colour, is located to the right of centre on the combined instrument. This light should only be illuminated when the engine is at rest with the ignition switched on. Immediately the engine reaches speed it should extinguish, thus indicating that the oil is circulating under pressure.

Should the light come on at any other time stop the engine immediately and investigate the cause.

Battery condition indicator gauge – Super models only

Located to the left above the centre console this

instrument indicates the battery operating voltage.

Oil pressure gauge – Super models only

Located to the right above the centre console this meter indicates that oil is circulating the engine under the correct pressure. When starting from cold the gauge may show a high initial pressure, but will gradually fall to about 3.16kg/sq cm (45lb/sq in) for normal engine speeds as the engine temperature rises. If a very low indication is given, or the instrument shows no pressure at all, the engine should be switched off immediately and the oil level checked by means of the engine dipstick.

Combined ignition and starter switch

The ignition/starter switch is mounted on a bracket located beneath the fascia to the right of the steering column. Insert the key and turn to the right to switch on the ignition. A further clockwise rotation of the key against spring pressure operates the starter motor. When the engine starts the key should be released instantly.

The switch has an 'auxiliaries' position when the key is turned anti-clockwise from off. This enables the radio, etc., if fitted, to be used without the ignition being switched on.

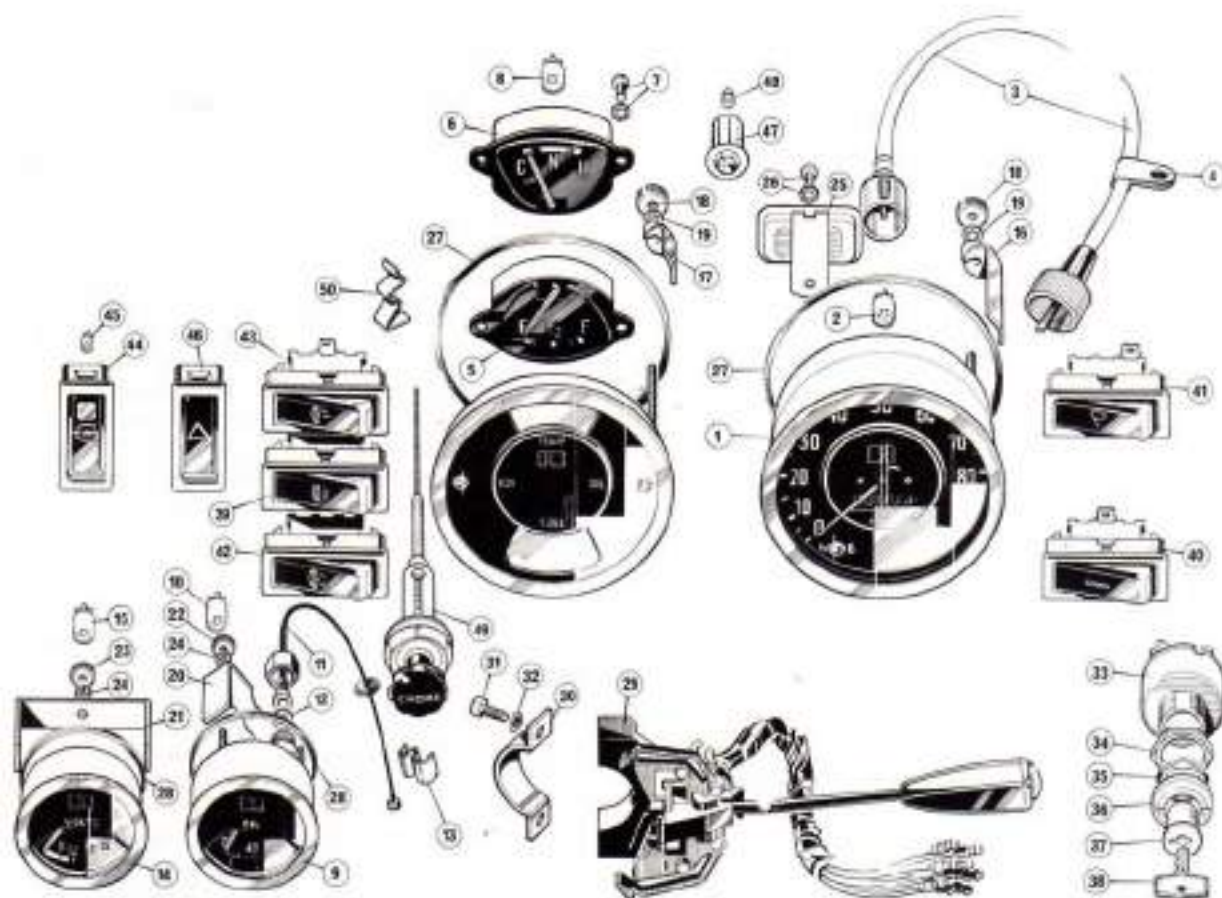


Figure 20 Instruments and switches

- | | | |
|-------------------------------|-----------------------|-------------------------------|
| 1 Speedometer | 18 Knurled nut | 35 Washer |
| 2 Bulb | 19 Washer | 36 Bezel |
| 3 Flexible drive | 20 Clamp, oil gauge | 37 Barrel, ignition lock |
| 4 'P' clip | 21 Clamp, ammeter | 38 Key, ignition lock |
| 5 Fuel gauge | 22 Knurled nut | 39 Switch, lights |
| 6 Temperature gauge | 23 Knurled nut | 40 Switch, heater |
| 7 Screw | 24 Lockwasher | 41 Switch, wiper motor |
| 8 Bulb | 25 Voltage stabilizer | 42 Switch, spot lamp |
| 9 Oil pressure gauge | 26 Screw and washer | 43 Switch, log lamp |
| 10 Bulb | 27 Sealing ring | 44 Switch, rear screen heater |
| 11 Pipe, oil pressure gauge | 28 Sealing ring | 45 Bulb |
| 12 Washer, pipe to gauge | 29 Multi-switch | 46 Switch, hazard warning |
| 13 'P' clip | 30 Clamp | 47 Lamp |
| 14 Ammeter | 31 Screw | 48 Bulb |
| 15 Bulb | 32 Lockwasher | 49 Choke cable |
| 16 Clamp, speeds | 33 Switch, ignition | 50 Clip |
| 17 Clamp, combined instrument | 34 Nut | |

Combined side/tail lamps and headlamps switch

The lights switch is a three position rocker type switch located in the centre of the left hand side of the main instrument panel. Pressure on the switch first switches on the side and rear lights and number plate lamp. Further pressure on the switch operates the headlamps.

Windscreen wiper switch

The windscreen wipers are controlled by a rocker switch situated in the top right corner of the main instrument panel.

Heater switch

The heater has a booster fan controlled by a rocker switch located in the bottom right corner of the main instrument panel.

Fog lamp switch – Super models only

A rocker switch situated above the lights switch operates the fog lamp fitted on Super models as standard equipment.

Spot lamp switch – Super models only

The spot lamp, fitted as standard equipment on Super models, is controlled by a rocker switch located below the lights switch in the bottom left corner of the main instrument panel.

Hazard warning switch – Super models only

The switch operating the hazard warning device is situated to the right of the centre console radio panel. A rocker type switch, which when pressed, actuates a device that flashes all four direction indicator lamps in unison. A warning light in the centre of the main instrument panel also flashes to indicate that the device is operating.

Heated rear window switch – optional extra

The heated rear window, when fitted, is operated by a rocker switch located on the left hand side of the radio panel. The switch incorporates a green lamp which is illuminated as a warning when the heating elements are switched on.

Combined direction indicator switch/dip switch/headlamp flasher and horn-push

A multi-purpose switch located on the right hand side of the steering column.

The switch has four positions thus:

Forward Main beam
Back Flasher
Up Left hand indicator
Down Right hand indicator

Press the button on the extreme end of the switch to operate the horn.

Interior light switch

The interior light is situated above the interior rear view mirror and has an integral switch on the body of the lamp.

Instrument and switch removal (see Figure 20)

Access to both main instrument fixings is achieved from underneath the fascia. Unscrew the knurled nuts securing instrument to securing clamps, withdraw instrument from the fascia and disconnect appropriate leads.

The combined light switch, windscreen wiper switch, heater switch, fog lamp switch, spot lamp switch, hazard warning switch and heated rear window switch are all removable after carefully prising out the body of the switch from the front of the fascia and disconnecting the appropriate leads. The ignition switch is removable after unscrewing the locking bezel, securing switch to mounting bracket and disconnecting the wiring leads.

To remove multi-switch

- 1 Remove two screws, complete with lockwashers, and detach multi-switch cover and retaining clamp from steering column.
- 2 Unscrew the two multi-switch fixing screws and remove clamp, spacer and multi-switch leaving indicator bush on column.
- 3 Disconnect multi-switch wiring from underneath fascia, release rubber grommet, and withdraw wiring through ignition switch mounting bracket.
- 4 Replace in reverse order.

Bulb list (instruments and warning lights)

	Voltage	Wattage	Cap type
Main instrument illumination	12	3	Capless
Warning light – oil	12	3	Capless
Warning light – ignition	12	3	Capless
Warning light – main beam	12	3	Capless
Warning light – indicators	12	3	Capless
Warning light – heated rear screen switch	12	1.2	Capless
Warning light – hazard unit	12	2	BA7S
Battery indicator gauge illumination	12	2.2	MES
Oil pressure gauge illumination	12	2.2	MES

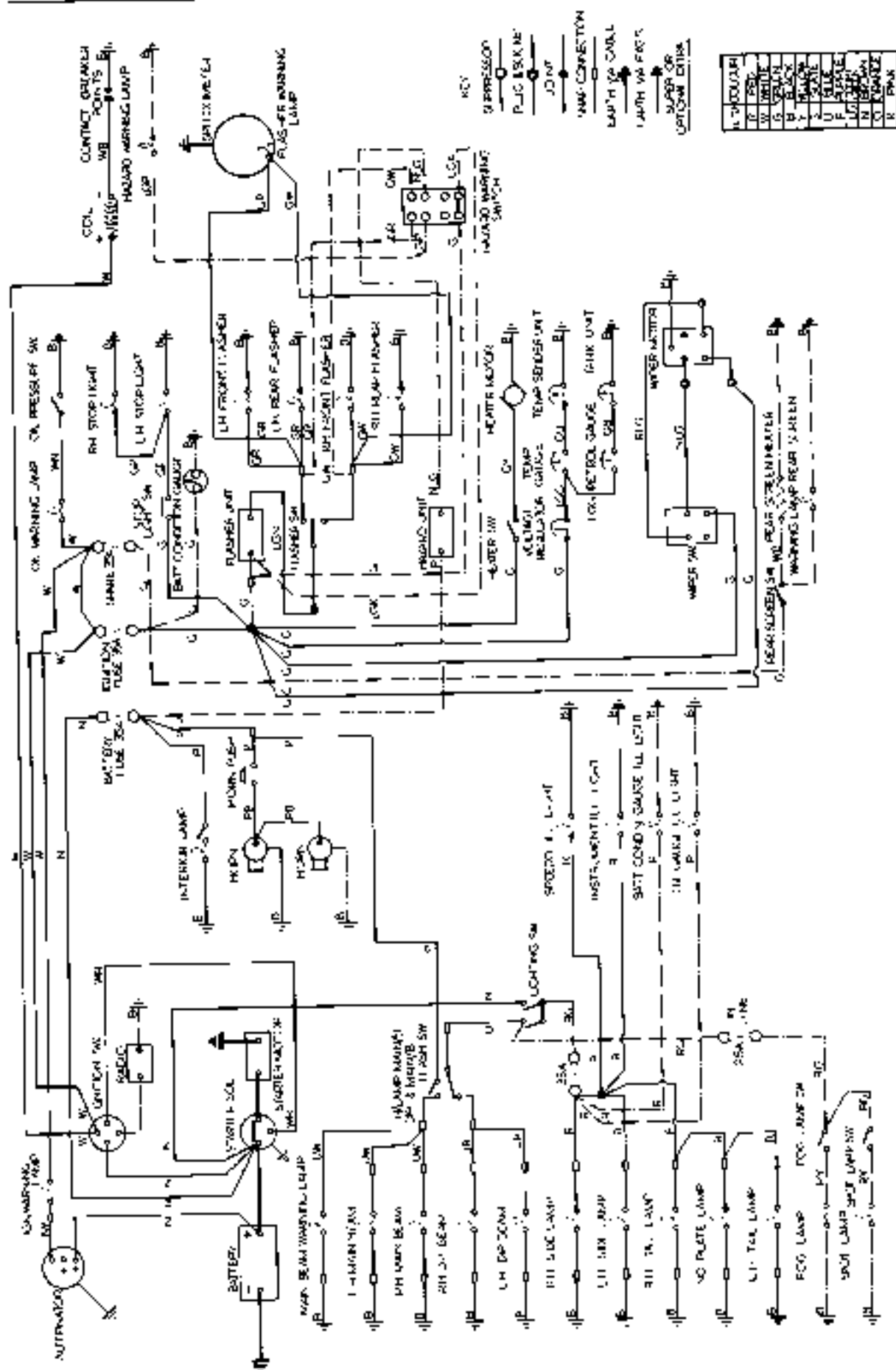
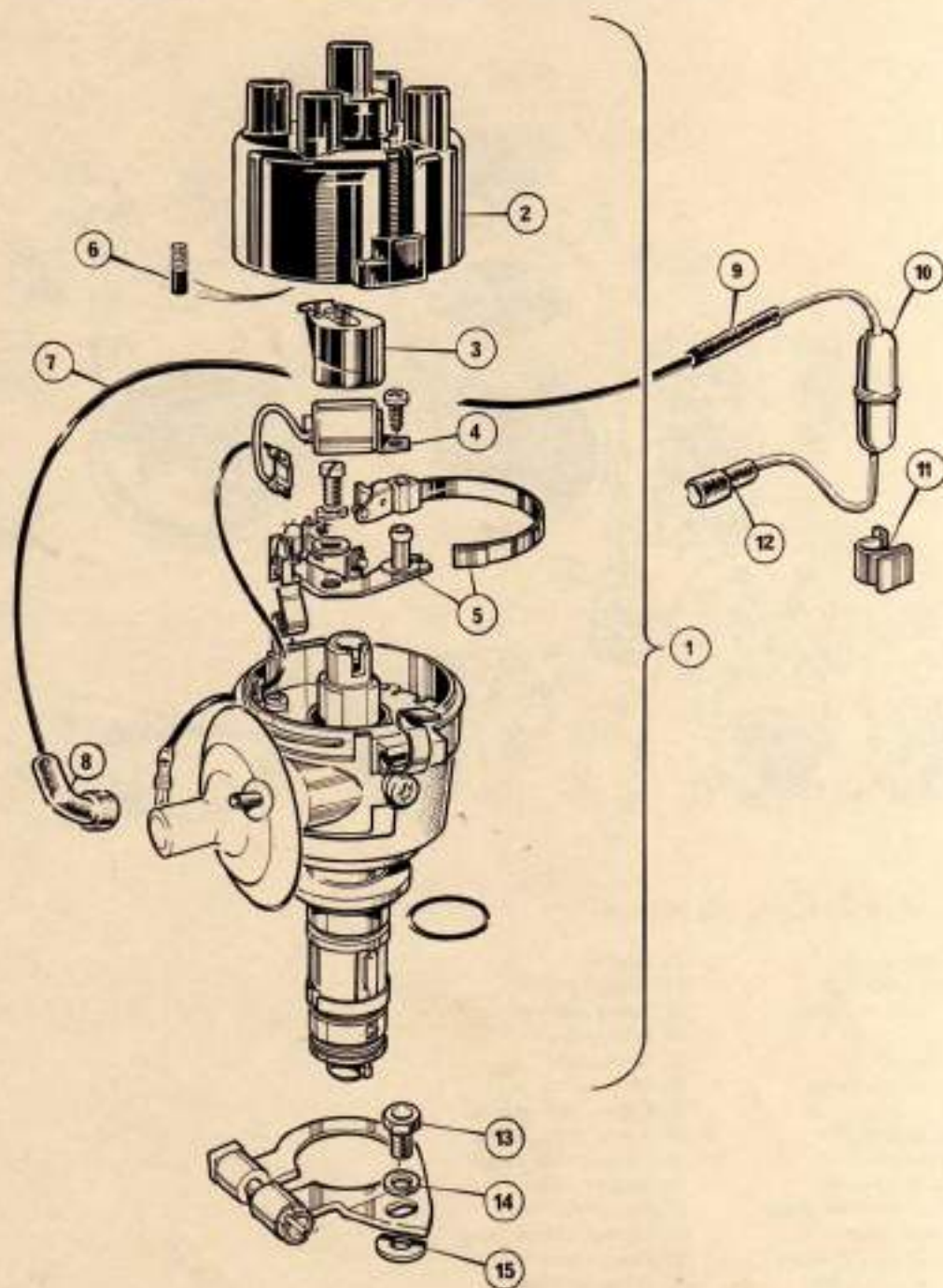


Figure 21 Wiring Diagram

Electrics Section T



Distributor

The 43 D4 distributor as used on later 750 engines has been replaced on the 850 engine by a 45 D4 distributor (**Figure 1**).

The 45 D4 distributor incorporates a vacuum advance unit which controls ignition advance according to engine load by vacuum control acting directly on the contact breaker plate.

Service recommendations and distributor specification are as for the 43 D4 distributor.

Figure 1 Distributor

- 1 Distributor
- 2 Cover
- 3 Rotor arm
- 4 Capacitor
- 5 Contact set
- 6 Bush and spring
- 7 Suction pipe
- 8 Elbow sleeve
- 9 Sleeve, suction pipe
- 10 Fuel trap
- 11 Clip, fuel trap
- 12 Reduction sleeve
- 13 Screw, distributor
- 14 Lockwasher, distributor
- 15 Washer, distributor

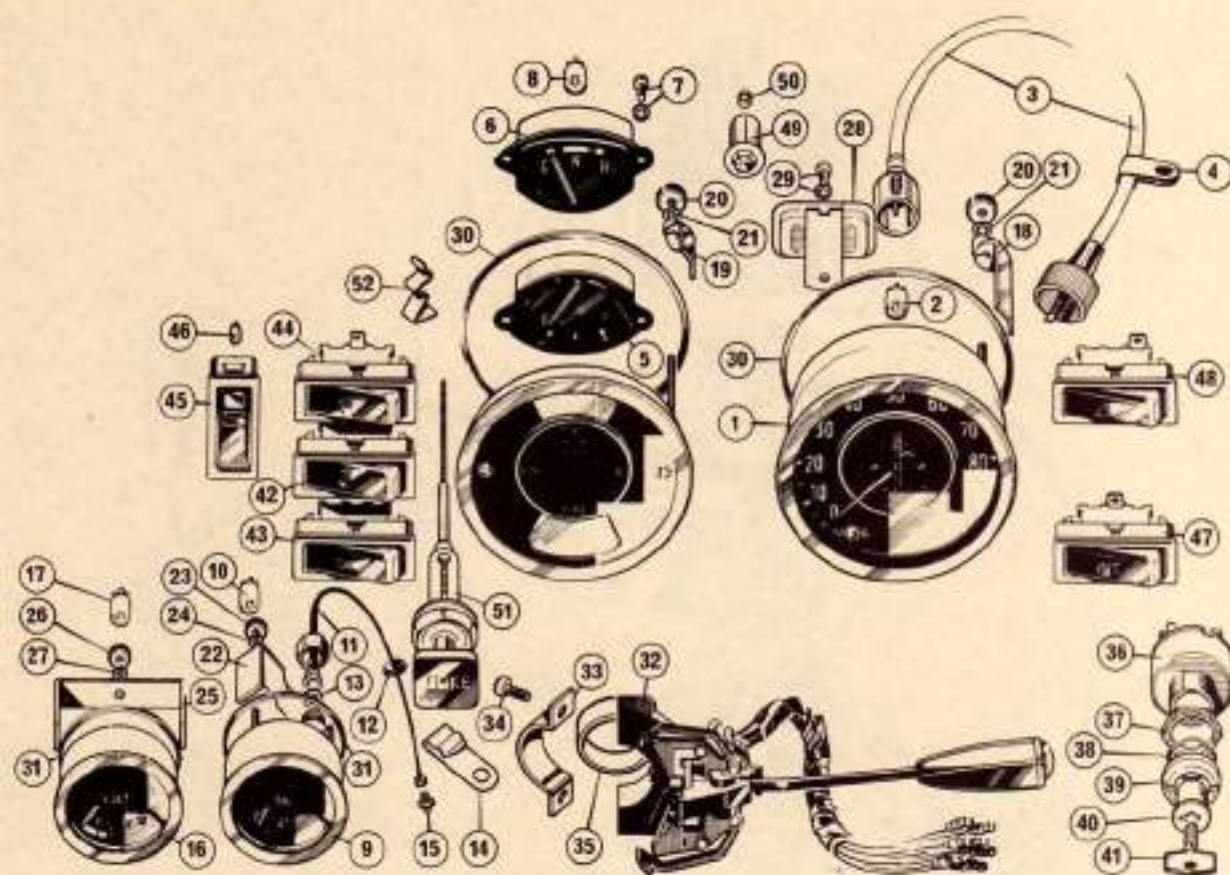


Figure 2 Instruments and switches

- | | |
|-------------------------------|-------------------------------|
| 1 Speedometer | 27 Washer |
| 2 Bulb, illumination | 28 Voltage stabilizer |
| 3 Flexible drive, speedo | 29 Screw, stabilizer |
| 4 'P' clip | 30 Sealing ring |
| 5 Fuel gauge | 31 Sealing ring |
| 6 Temperature gauge | 32 Multi-switch |
| 7 Screw, gauges | 33 Clamp, multi-switch |
| 8 Bulb, illumination | 34 Screw, multi-switch |
| 9 Oil pressure gauge | 35 Spacer, multi-switch |
| 10 Bulb, illumination | 36 Ignition switch |
| 11 Pipe, oil pressure gauge | 37 Nut, switch fixing |
| 12 Grommet, pipe | 38 Washer, switch fixing |
| 13 Washer, pipe to gauge | 39 Bezel, switch fixing |
| 14 Clip, pipe securing | 40 Barrel, ignition lock |
| 15 Adaptor, pipe | 41 Key, ignition lock |
| 16 Ammeter | 42 Switch, lighting |
| 17 Bulb, illumination | 43 Switch, heater motor |
| 18 Clamp, speedometer | 44 Switch, wiper motor |
| 19 Clamp, combined instrument | 45 Switch, heated rear screen |
| 20 Knurled nut | 46 Bulb, illumination |
| 21 Washer | 47 Switch, auxiliary lamps |
| 22 Clamp, oil gauge | 48 Switch, hazard warning |
| 23 Knurled nut | 49 Lamp, warning indicator |
| 24 Washer | 50 Bulb, lamp |
| 25 Clamp, ammeter | 51 Choke cable |
| 26 Knurled nut | 52 Clip, cable securing |

Instruments and switches

With the introduction of the Robin 850, certain switch positions on the main instrument panel have changed as follows (Figure 2).

Windscreen wiper switch

The windscreen wiper switch is now situated in the top left corner of the main instrument panel.

Heater switch

The heater booster fan switch is now situated in the bottom left corner of the main instrument panel.

Fog lamp/spot lamp switch (Super models only)

The individual fog and spot lamp switches have been replaced by a combined auxiliary lamp switch. This is a two-position rocker switch located in the bottom right-hand corner of the main instrument panel. Pressure on the switch first operates the left-hand lamp. Further pressure on the switch illuminates both left-hand and right-hand auxiliary lamps.

Hazard warning switch – Super models

The hazard warning switch is now situated in the top right-hand corner of the main instrument panel.

Heated rear window switch (optional extra)

The heated rear window switch is now situated on the right-hand side of the radio panel.

