






Chapter 12

Electrical system

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Degrees of difficulty

Easy , suitable for novice with little experience		Fairly easy , suitable for beginner with some experience		Fairly difficult , suitable for competent DIY mechanic		Difficult , suitable for experienced DIY mechanic		Very difficult , suitable for expert DIY or professional	
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Specifications

System type	12 volt, negative earth
Bulbs	Wattage
Headlamp:	60/55
Halogen	50/45W
Tungsten	4W
Front sidelamp	21W
Front indicator lamp	21/5W
Stop/tail lamp	21W
Reversing lamp	21 W
Rear foglamp	21W
Rear indicator lamp	5W
Rear number plate lamp	55W
Auxiliary lamp (Halogen)	55W
Foglamp (Halogen)	1.3W
Instrument cluster warning lamps	2.6W
Panel illumination	1.4W
Cigar lighter illumination	2W
Glove compartment lamp	10W
Luggage compartment lamp	10W
Interior lamp	
Windscreen wipers	
Wiper blades:	
Front	Champion X-4503
Rear	Champion X-5103
Wiper arms:	
Front	Champion CCA6
Rear	Champion type not available

Torque wrench settings	Nm	lbf ft
Horn to body	25 to 35	18 to 26
Windscreen wiper arm to pivot mounting	15 to 18	11 to 13
Rear wiper arm to pivot mounting	12 to 15	9 to 11
Reversing lamp switch to transmission	16 to 20	12 to 15
Door window motor mounting bolts	4 to 5	3 to 4
Window regulator bolts	4 to 5	3 to 4

1 General information and precautions


General information

The body electrical system consists of all lights, wash/wipe equipment, interior electrical equipment, and associated switches and wiring.

The electrical system is of the 12 volt negative earth type. Power to the system is provided by a 12-volt battery, which is charged by the alternator (see Chapter 5).

The engine electrical system (battery, alternator, starter motor, ignition system) is covered separately in Chapter 5.

Precautions



Warning: Before carrying out any work on the electrical system, read through the precautions given in "Safety first!" at the beginning of this manual, and in Chapter 5.

Prior to working on any component in the electrical system, the battery negative lead should first be disconnected, to prevent the possibility of electrical short circuits and/or fires.

2 Electrical fault finding - general information



Note: Refer to the precautions given in "Safety first!" and in Section 1 of this Chapter before starting work. The following tests relate to testing of the main electrical circuits, and should not be used to test delicate electronic circuits (such as anti-lock braking systems), particularly where an electronic control module is used.

General

1 A typical electrical circuit consists of an electrical component, any switches, relays, motors, fuses, fusible links or circuit breakers related to that component, and the wiring and connectors which link the component to both the battery and the chassis. To help pinpoint a problem in a circuit, wiring diagrams are included at the end of this manual.

2 Before attempting to diagnose an electrical fault, first study the appropriate wiring diagram, to obtain a more complete understanding of the components included in the particular circuit concerned. The possible sources of a fault can be narrowed down by

noting whether other components related to the circuit are operating properly. If several components or circuits fail at one time, the problem is likely to be related to a shared fuse or earth connection.

3 Electrical problems usually stem from simple causes, such as loose or corroded connections, a faulty earth connection, a blown fuse, a melted fusible link, or a faulty relay (refer to Section 3 for details of testing relays). Visually inspect the condition of all fuses, wires and connections in a problem circuit before testing the components. Use the wiring diagrams to determine which terminal connections will need to be checked, in order to pinpoint the trouble-spot.

4 The basic tools required for electrical fault-finding include a circuit tester or voltmeter (a 12-volt bulb with a set of test leads can also be used for certain tests); a self-powered test light (sometimes known as a continuity tester); an ohmmeter (to measure resistance); a battery and set of test leads; and a jumper wire, preferably with a circuit breaker or fuse incorporated, which can be used to bypass suspect wires or electrical components. Before attempting to locate a problem with test instruments, use the wiring diagram to determine where to make the connections.

5 To find the source of an intermittent wiring fault (usually due to a poor or dirty connection, or damaged wiring insulation), a "wiggle" test can be performed on the wiring. This involves wiggling the wiring by hand, to see if the fault occurs as the wiring is moved. It should be possible to narrow down the source of the fault to a particular section of wiring. This method of testing can be used in conjunction with any of the tests described in the following sub-Sections.

6 Apart from problems due to poor connections, two basic types of fault can occur in an electrical circuit - open-circuit or short-circuit.

7 Open-circuit faults are caused by a break somewhere in the circuit, which prevents current from flowing. An open-circuit fault will prevent a component from working, but will not cause the relevant circuit fuse to blow.

8 Short-circuit faults are caused by a "short" somewhere in the circuit, which allows the current flowing in the circuit to "escape" along an alternative route, usually to earth. Short-circuit faults are normally caused by a breakdown in wiring insulation, which allows a feed wire to touch either another wire, or an earthed component such as the bodyshell. A short-circuit fault will normally cause the relevant circuit fuse to blow.

Finding an open-circuit

9 To check for an open-circuit, connect one lead of a circuit tester or voltmeter to either the negative battery terminal or a known good earth.

10 Connect the other lead to a connector in the circuit being tested, preferably nearest to the battery or fuse.

11 Switch on the circuit, bearing in mind that some circuits are live only when the ignition switch is moved to a particular position.

12 If voltage is present (indicated either by the tester bulb lighting or a voltmeter reading, as applicable), this means that the section of the circuit between the relevant connector and the battery is problem-free.

13 Continue to check the remainder of the circuit in the same fashion.

14 When a point is reached at which no voltage is present, the problem must lie between that point and the previous test point with voltage. Most problems can be traced to a broken, corroded or loose connection.

Finding a short-circuit

15 To check for a short-circuit, first disconnect the load(s) from the circuit (loads are the components which draw current from a circuit, such as bulbs, motors, heating elements, etc).

16 Remove the relevant fuse from the circuit, and connect a circuit tester or voltmeter to the fuse connections.

17 Switch on the circuit, bearing in mind that some circuits are live only when the ignition switch is moved to a particular position.

18 If voltage is present (indicated either by the tester bulb lighting or a voltmeter reading, as applicable), this means that there is a short-circuit.

19 If no voltage is present, but the fuse still blows with the load(s) connected, this indicates an internal fault in the load(s).

Finding an earth fault

20 The battery negative terminal is connected to "earth" - the metal of the engine/transmission and the car body - and most systems are wired so that they only receive a positive feed, the current returning via the metal of the car body. This means that the component mounting and the body form part of that circuit. Loose or corroded mountings can therefore cause a range of electrical faults, ranging from total failure of a circuit, to a puzzling partial fault. In particular, lights may shine dimly (especially when another circuit sharing the same earth point is

in operation), motors (eg wiper motors or the radiator cooling fan motor) may run slowly, and the operation of one circuit may have an apparently-unrelated effect on another. Note that on many vehicles, earth straps are used between certain components, such as the engine/transmission and the body, usually where there is no metal-to-metal contact between components, due to flexible rubber mountings, etc.

21 To check whether a component is properly earthed, disconnect the battery, and connect one lead of an ohmmeter to a known good earth point. Connect the other lead to the wire or earth connection being tested. The resistance reading should be zero; if not, check the connection as follows.

22 If an earth connection is thought to be faulty, dismantle the connection, and clean back to bare metal both the bodyshell and the wire terminal or the component earth connection mating surface. Be careful to remove all traces of dirt and corrosion, then use a knife to trim away any paint, so that a clean metal-to-metal joint is made. On reassembly, tighten the joint fasteners securely; if a wire terminal is being refitted, use serrated washers between the terminal and the bodyshell, to ensure a clean and secure connection. When the connection is remade, prevent the onset of corrosion in the future by applying a coat of petroleum jelly or silicone-based grease, or by spraying on (at regular intervals) a proprietary ignition sealer, or a water-dispersant lubricant.

3 Fuses, relays and circuit breakers - general information



Pre-1986 models

1 The fuses and most of the relays are located in a plastic box attached to the bulkhead on the driver's side of the engine compartment.

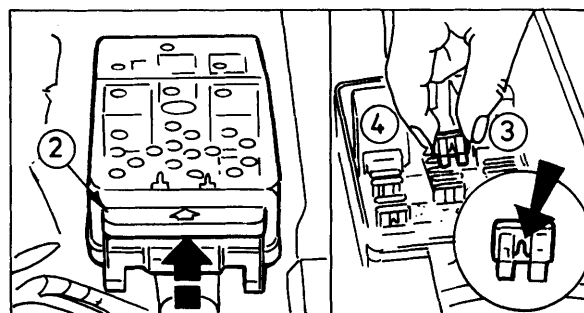
2 The fuses are numbered to identify the circuit which they protect and the circuits are represented by symbols on the plastic fusebox cover (see illustrations).

3 When an accessory or other electrical component or system fails, always check the fuse first. The fuses are coloured red (10A), blue (15A), yellow (20A), clear (25A) and green (30A). Always renew a fuse with one of an identical rating. Never renew a fuse more than once without finding the source of the trouble. Spare fuses are carried in the fusebox lid.

4 The radio, and where fitted, electrically operated aerial, have their own in-line circuit fuses, or are fused in the rear of the radio casing.

5 Relays are of the plug-in type and will be found within the fusebox with a symbol on the cover designating the relay circuit. Additional relays for the headlamp washers, fuel injection system and speed sensor (where fitted) are located below the facia on the driver's side,

3.2a Fuse and relay box showing plastic cover removal (2), fuse removal (3) and relays (4). Check if fuse has blown at point indicated in inset



H163/B

and a relay for the central locking system is located under the instrument panel next to the glove compartment.

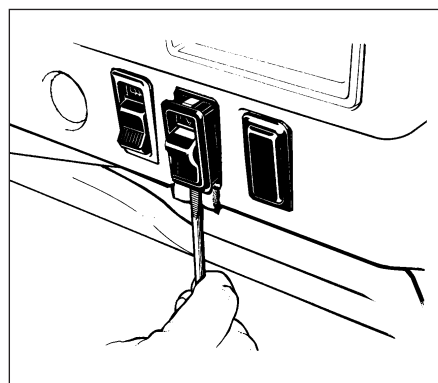
6 Circuit breakers are only fitted to vehicles equipped with electrically operated windows or a central locking system. The circuit breakers are also located in the fusebox.

1986 models onwards

7 The fusebox and its location are the same on later models but the fuse positions and circuits protected have been rearranged. Additional fuses are still used and located as for early models. A central locking system relay is no longer fitted following circuit modifications.

8 Relays located in the fusebox have their circuits designated by a symbol for identification. Up to six additional relays are located under the instrument panel on the driver's side. These are used in conjunction with the speed sensor, diode assembly, fuel-injection system, heated windscreen, and dim-dip lighting system. On certain RS Turbo models, a relay to prevent radio interference by the ignition system is fitted adjacent to the fuel-injection module behind the plenum chamber in the engine compartment.

9 The direction indicator/hazard flasher relay is located at the rear of the direction indicator multi-function switch on the steering column.



4.5 Rear window wash/wipe switch removal - pre-1986 models



3.2b Fusebox location (arrowed) on engine compartment bulkhead - cover removed to show fuses and relays

4 Switches - removal and refitting



General

1 Disconnect the battery negative terminal before removing any switches.

Pre-1986 models

Wiper delay switch

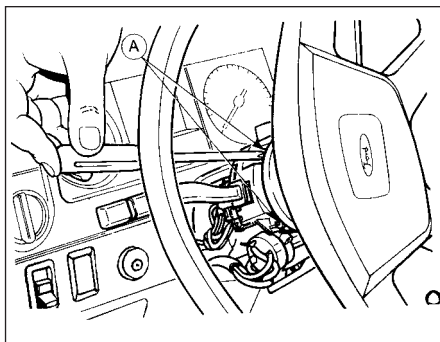
- 2** Remove the switch knob and the bezel nut.
- 3** Withdraw the switch through the parcel tray and disconnect it from the wiring harness.
- 4** Refitting is a reversal of removal.

Rear foglamp, heated rear window, rear window wash/wipe switches

- 5** Using a screwdriver carefully prise the switch from the facia panel (see illustration).
- 6** Disconnect the wiring multi-plug and remove the switch.
- 7** Refitting is a reversal of removal.

Steering column multi-function switches

- 8** Undo the screws and remove the upper and lower steering column shrouds.



4.9 Steering column multi-function switch removal pre-1986 models

A Switch retaining screws

9 Undo the switch retaining screws, disconnect the wiring multiplug and remove the switch (**see illustration**).

10 Refitting is a reversal of removal.

Load space lamp switch - all models except Cabriolet

11 Open the tailgate and release the four trim panel fasteners.

12 Disconnect the lead from the switch and remove the switch retaining screw.

13 Refitting is a reversal of removal.

Local space lamp switch - Cabriolet models

14 Open the boot lid and undo the switch retaining screw.

15 Withdraw the switch and disconnect the lead. Tape the lead to the rear panel to prevent it dropping in the hole.

16 Refitting is a reversal of removal.

Courtesy lamp switch

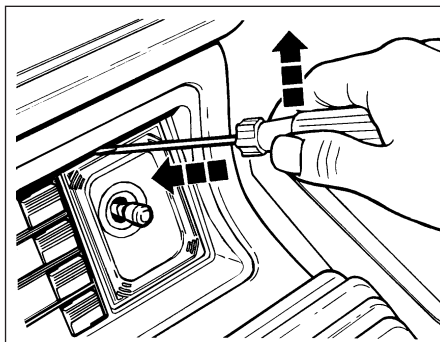
17 Extract the screw securing the switch to the door pillar.

18 Withdraw the switch from its rubber shroud and disconnect the lead. Tape the lead to the pillar to prevent it dropping in the hole (**see illustration**).

19 Refitting is a reversal of removal.

Ignition switch

20 Refer to Chapter 5, Part A.



4.33 Removing the speaker balance control bezel - pre-1986 models



4.18 Courtesy lamp switch removal from door pillar

Reversing lamp switch

Manual transmission

21 On manual transmission models the switch is located on the forward facing side of the transmission housing beneath the clutch release lever.

22 Working in the engine compartment disconnect the switch wiring and unscrew the switch.

23 Refitting is a reversal of removal.

Automatic transmission

24 On automatic transmission models the reversing lamp switch is combined with the starter inhibitor switch, and reference should be made to Chapter 7, Part B.

Stop-lamp switch/handbrake warning switch

25 Refer to Chapter 9.

Heater blower motor switch

26 Remove the switch knob by carefully pulling it off.

27 Depress the two tangs and withdraw the switch from the fascia (**see illustration**).

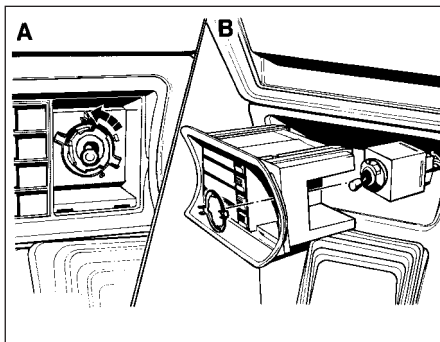
28 Disconnect the wiring and remove the switch.

29 Refitting is a reversal of removal.

Electric window switch

30 Carefully lever the switch from the armrest and disconnect the multi-plug connector.

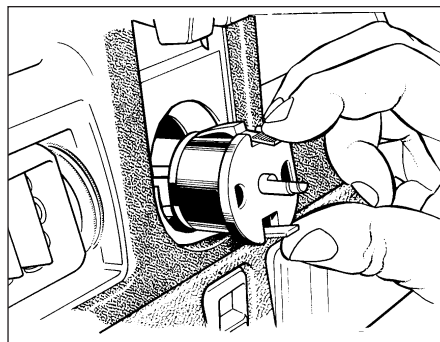
31 Refit by reversing the removal operations.



4.35 Speaker balance control removal - pre-1986 models

A Releasing the securing clip

B Balance control removal from stowage box



4.27 Removing the heater blower motor switch - pre-1986 models

Loudspeaker balance control joystick

32 Disconnect the battery.

33 Use a screwdriver and carefully prise free the balance control bezel (**see illustration**).

34 Pull free the cassette stowage box from its aperture.

35 Rotate the securing clip anti-clockwise to remove it and the balance control from the box (**see illustration**). Detach the wiring multi-plug.

36 Refit in the reverse order of removal.

1986 models onwards

Note: With the exception of the switches listed in the following paragraphs, removal and refitting of all switches is as described previously in this Section for pre-1986 models.

Heated windscreen/rear window, rear foglamp switches

37 Undo the two screws, carefully remove the instrument panel bezel then prise out the switch with a screwdriver (**see illustration**).

38 Disconnect the wiring multi-plug and remove the switch.

39 Refitting is a reversal of removal.

Steering column multi-function switches

40 Remove the steering wheel (Chapter 10).

41 Undo the screws and remove the upper and lower steering column shroud (**see illustrations**).



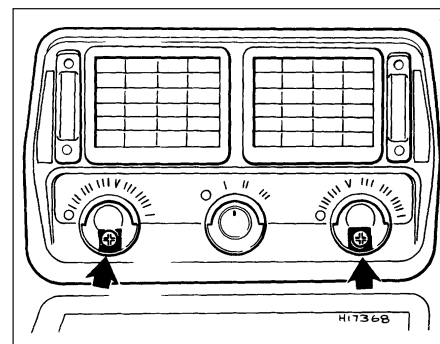
4.37 Rear foglamp switch removal - models from 1986 onwards



4.41a Unscrewing the steering column shroud upper . . .



4.41b . . . and lower retaining screws



4.47 Heater control panel retaining screw locations - 1986 models onwards

42 Undo the retaining screws and remove the switch from the steering column.

43 Disconnect the switch wiring multi-plug.

44 If removing the direction indicator multi-function switch, remove the hazard flasher switch and relay if required.

45 Refitting is a reversal of removal, but refit the steering wheel with reference to Chapter 10.

Heater blower motor switch

46 Carefully pull off the three heater control knobs.

47 Undo the two retaining screws and remove the heater control panel (see illustration).

48 Undo the two switch panel-to-facia securing screws and withdraw the panel.

49 Depress the two tabs on either side of the switch and remove the switch.

50 Disconnect the switch wiring multi-plug.

51 Refitting is a reversal of removal.

Door mirror control switch

52 Using a thin screwdriver carefully prise the switch out of its location in the facia.

53 Disconnect the wiring multi-plug and remove the switch.

54 Refitting is a reversal of removal.

Loudspeaker balance control joystick

55 Disconnect the battery then remove the instrument panel as described in Section 9.

56 Carefully prise off the trim bezel using a screwdriver.

57 Turn the retaining clip anti-clockwise and remove the clip.

58 From within the instrument panel aperture disconnect the wiring multi-plug and remove the unit.

59 Refit in the reverse order of removal.

5 Bulbs (exterior lamps) - renewal



5.2 Releasing headlamp bulb spring clip arms

Headlamp

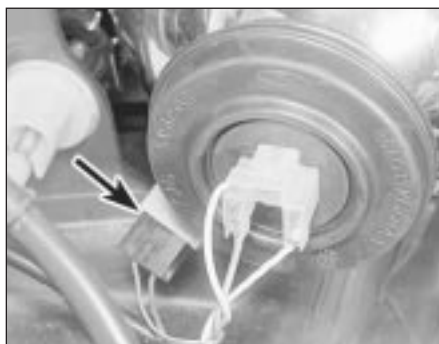
1 From within the engine compartment pull the multi-plug from the rear of the headlamp.

2 Remove the rubber gaiter and rotate the bulb securing clip or release the spring clip arms according to type (see illustration).

3 Withdraw the bulb, taking care not to touch the glass with your fingers (see illustration). If the glass is touched, wipe the bulb with a rag



5.3 Headlamp bulb removal



5.5 Sidelamp bulb location (arrowed) in side of headlamp

moistened with methylated spirit.

4 Fit the new bulb using a reversal of the removal procedure, taking care not to touch the glass.

Front sidelamp

5 The bulbholder is located on the side of the headlamp unit and is removed by twisting it anti-clockwise (see illustration).

6 Withdraw the push-fit bulb from the holder.

7 Fit the new bulb using a reversal of the removal procedure.

Front direction indicator lamp

8 Working through the aperture in the inner wing panel in the engine compartment, turn the bulbholder anti-clockwise and withdraw it from the lens unit (see illustration).

9 Depress and turn the bulb anti-clockwise to remove it from the holder.

10 Fit the new bulb using a reversal of the removal procedure.

Front direction indicator side repeater lamp

11 Reach up behind the front wheelarch and locate the back of the repeater lamp holder.

12 Depress the two clips on the holder body and push the assembly outwards and out of the wing.

13 Twist the bulbholder anti-clockwise to free it from the lens.

14 Pull the bulb from its socket.

15 Push in a new bulb and refit the assembly in the reverse order to removal.



5.8 Front indicator bulbholder accessible through inner wing panel aperture



5.16 Front auxiliary lamp lens retaining screw



5.17 Disconnecting auxiliary lamp earth lead



5.18 Removing the auxiliary lamp bulbholder

Front auxiliary lamp and foglamp

16 Undo the retaining screw at the bottom of the lens and withdraw the lens assembly (see illustration).

17 Disconnect the earth lead and remove the lens (see illustration).

18 Spring back the clip legs and remove the bulbholder, then withdraw the bulb (see illustration). Avoid touching the bulb glass with your fingers. If the glass is touched, wipe it with a cloth moistened in methylated spirit.

19 Fit the new bulb using a reversal of the removal procedure, taking care not to touch the glass.

Rear lamps - Saloon

20 Open the tailgate, reach down and depress the retaining tab on the side of the bulbholder. Swing the bulbholder outward to release the locating tag at the other end (see illustration).

21 Remove the relevant bulb by pushing down and turning anti-clockwise.

22 Fit the new bulb using a reversal of the removal procedure.

Rear lamp - Cabriolet

23 Open the boot and pull the bulb cover open.

24 Push the upper and lower retaining tabs apart and withdraw the bulbholder.

25 Remove the relevant bulb by pushing down and turning anti-clockwise.

26 Fit the new bulb using a reversal of the removal procedure.

Rear lamps - Estate

27 Open the tailgate and release the side trim panel by turning the four screws a quarter of a turn with a coin.

28 Push the upper and lower retaining tabs apart and withdraw the bulbholder.

29 Remove the relevant bulb by pushing down and turning anti-clockwise.

30 Fit the new bulb using a reversal of the removal procedure.

Rear lamp - Van

31 Open the rear doors and remove the rear trim panel to gain access to the bulbholders (where applicable).

32 Remove the individual bulbholders by turning anti-clockwise, then similarly remove the bulbs from the holders.

33 Fit the new bulb using a reversal of the removal procedure.

Rear number plate lamp

34 Using a small screwdriver carefully prise the lamp out of the bumper.

35 On pre-1986 models turn the bulbholder anti-clockwise and remove it from the lens. Withdraw the push-fit bulb (see illustration).

36 On 1986 models onwards spread the retaining clips and withdraw the bulbholder. Remove the bulb by pushing and turning anti-clockwise.

37 Fit the new bulb using a reversal of the removal procedure.

6 Bulbs (interior lamps) - renewal

Pre-1986 models

Glove compartment lamp

1 This is simply a matter of gently pulling the bulb from its holder.

Heater control illumination lamp

2 Slide the heater control levers to the top of their travel.

3 Pull off the heater motor switch knob, then unclip the control trim panel from the fascia.

4 Pull the bulb from the lamp socket.

5 Refitting is a reversal of removal.

Hazard warning switch lamp

6 Grip the switch cover and pull it off.

7 Gently pull the bulb from its socket (see illustration).

8 Refitting is a reversal of removal.

Interior lamp

9 Carefully prise the lamp from its location and remove the bulb from its spring contact on the lamp body.

10 Fit the new bulb using a reversal of the removal procedure.

Load space lamp

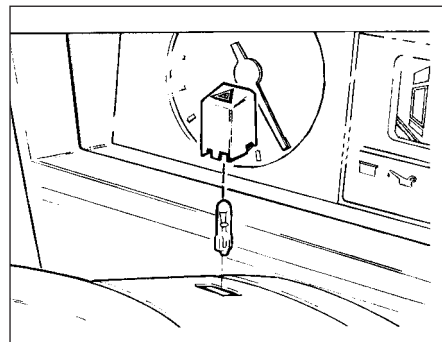
11 Using a thin screwdriver, prise the lamp from its location (see illustration).



5.20 Removing the rear lamp bulbholder for access to the bulbs



5.35 Removing the number plate lamp bulbholder from the lens



6.7 Hazard warning switch bulb renewal - pre-1986 models



6.11 Removing the load space lamp

- 12 Remove the bulb from its spring contact clip.
13 Fit the new bulb using a reversal of the removal procedure.

Load space lamp (Cabriolet)

- 14 Open the boot lid and prise out the lamp with a thin screwdriver.
15 Depress and twist the bulb from the holder.
16 Fit the new bulb using a reversal of the removal procedure.

Roof-mounted clock illumination lamp

- 17 Remove the clock (Section 13).
18 Remove the rear cover from the unit by depressing the two clips at the top outer corners of the cover.
19 The bulb is a bayonet fitting in its holder.
20 Refitting is a reversal of removal.



7.8a Removing the retaining clip . . .



7.8b . . . and the ball-headed bolt



7.3a Releasing the headlamp side plastic retaining clip head

1986 models onwards

Note: With the exception of the bulbs listed in the following paragraphs, removal and refitting of all bulbs is as described previously in this Section for pre-1986 models.

Glove compartment lamp

- 21 From inside the glove compartment undo the two switch assembly retaining screws and withdraw the assembly.
22 Using a thin screwdriver carefully prise out the switch and remove the bulb by pushing and turning anti-clockwise.
23 Refitting is a reversal of removal.

Heater control illumination lamp

- 24 Pull off the three heater control knobs.
25 Undo the two retaining screws and withdraw the heater control panel.
26 From the rear of the panel, push and turn the bulb anti-clockwise to remove.
27 Fit the new bulb using a reversal of the removal procedure.

Manual choke knob warning lamp

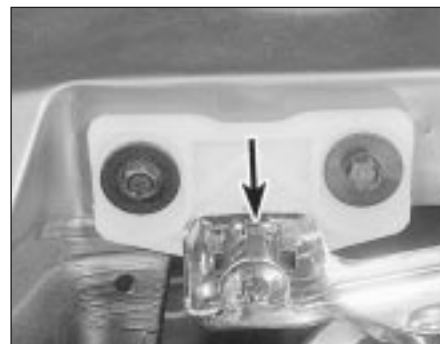
- 28 Remove the choke knob by depressing the pin located on the underside of the knob.
29 Withdraw the sleeve, then remove the bulb by pushing it down, then pushing down the bulb retainer using a thin screwdriver.
30 Refitting is a reversal of removal.

Fuel computer lamp

- 31 Remove the fuel computer (Section 14).
32 Using thin-nosed pliers, turn the bulbholder anti-clockwise to remove it then withdraw the push-fit bulb.



7.9a Release the adjuster by turning the collar (arrowed)



7.3b Headlamp upper plastic retaining clip head (arrowed)

- 33 Refitting is a reversal of removal.

7 Exterior lamps - removal and refitting



Headlamp

Removal

- 1 On pre-1986 models, remove the radiator grille as described in Chapter 11.
2 Working in the engine compartment, disconnect the headlamp wiring multi-plug and remove the sidelamp bulbholder.
3 Rotate the side and upper plastic retaining clip heads through 90° to release the headlamp mountings (see illustrations).
4 With the headlamp unit released, pull it sharply forward off its lower ballstud.

Refitting

- 5 Refitting is a reversal of removal.

Front direction indicator lamp

Removal

- 6 Working inside the engine compartment disconnect the indicator bulb holder from the lamp.
7 Remove the headlamp as described above.
8 Remove the headlamp upper plastic retaining clip then unscrew the ball-headed bolt (see illustrations).
9 Remove the lower adjuster by turning the collar (see illustrations).



7.9b . . . then remove the adjuster



7.10 Release the direction indicator side spring clip

10 Release the side spring clip, then pull the lamp out at the bottom to disengage the upper tangs (see illustration).

Refitting

11 Refitting is a reversal of removal.

Rear lamp

Removal

12 Remove the bulbholder(s) as described in Section 5.

13 Remove the lamp retaining screws or nuts as applicable, and remove the lamp.

Refitting

14 Refitting is a reversal of removal.



9.2a Extracting the instrument panel bezel screws - pre-1986 model

8 Headlamps and auxiliary lamps - beam alignment

The headlamps are adjustable individually for both horizontal and vertical alignment from within the engine compartment. The auxiliary lamp adjustment is carried out by slackening the lamp mounting and moving the lamp as necessary.

Accurate alignment can only be carried out using optical beam setting equipment, and this work should be entrusted to a Ford dealer.

9 Instrument panel - removal and refitting

Pre-1986 models

Removal

- 1 Disconnect the battery negative terminal.
- 2 Extract the screws and pull the instrument panel bezel from the panel. The two clips at the base of the bezel will release by the pulling action (see illustrations).
- 3 Extract the two screws which hold the panel to the facia (see illustration).
- 4 Remove the dash under-trim panel, reach up and disconnect the cable from the speedometer by depressing the serrated plastic ring.
- 5 Gently pull the cluster forwards and to one side so that the wiring multi-plug can be disconnected. Withdraw the panel.



9.2b Removing the instrument panel bezel - pre-1986 model

Refitting

6 Refitting is a reversal of removal.

1986 models onwards

Removal

7 Refer to Chapter 10 and remove the steering wheel.

8 Extract the two screws and pull the instrument panel bezel from the panel. The two clips at the base will release by the pulling action (see illustration).

9 Undo the four screws securing the panel to the facia (see illustrations).

10 Pull the panel away from the facia and disconnect the wiring multi-plug and speedometer cable from the rear of the



9.3 Removing an instrument panel retaining screw - pre-1986 model



9.8 Bezel lower retaining clip (arrowed) - 1986 models onwards



9.9a Instrument panel upper retaining screw (arrowed)



9.9b ... and lower screw removal - 1986 models onwards



9.10 Disconnecting the speedometer cable



10.2 Instrument panel bulb renewal

instrument panel. It may be necessary to feed the speedometer cable slack through the bulkhead from the engine compartment to facilitate removal. Withdraw the panel (see illustration).

Refitting

11 Refitting is a reversal of removal.

10 Instrument panel components - removal and refitting

Panel illumination and warning lamp bulbs

Removal

- 1 Remove the instrument panel as described in Section 9.
- 2 Turn the bulbholders anti-clockwise and remove them from the rear of the instrument panel (see illustration).
- 3 The bulbs and bulbholders are renewed complete, the bulbs cannot be removed from the holders separately.

Refitting

- 4 Refit by pushing down and turning clockwise.

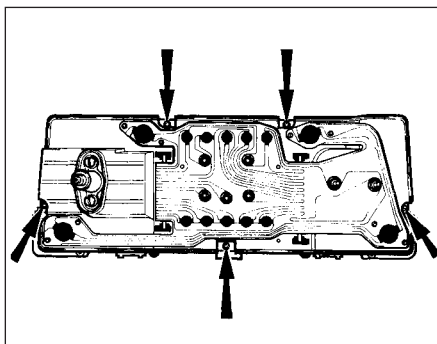
Printed circuit

Removal

- 5 Remove the instrument panel (Section 9).



10.12a Extracting speedometer retaining screws



10.11a Instrument panel assembly retaining screws-pre-1986 models

- 6 Remove all illumination and warning lamp bulbholders.

- 7 Undo all the nuts and remove the washers from the printed circuit terminals.

- 8 Remove the wiring multi-plug retainers and carefully pull the printed circuit off the pins on the rear of the panel.

Refitting

- 9 Refitting is the reverse sequence to removal.

Speedometer

Removal

- 10 Remove the instrument panel as described in Section 9.
- 11 Undo the retaining screws around the edge of the panel at the rear and separate the two panel halves (see illustrations).
- 12 Undo the two screws and remove the speedometer (see illustrations).

Refitting

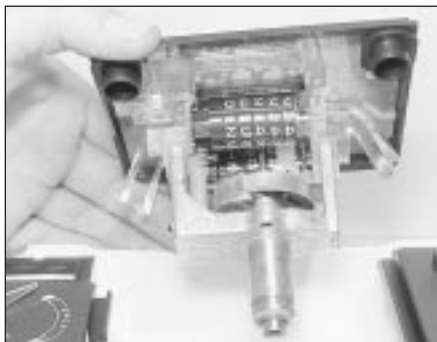
- 13 Refitting is the reverse sequence to removal.

Tachometer

- 14 The procedure is the same as for the speedometer except that the unit is secured by three nuts.

Fuel and temperature gauges

- 15 Proceed as for the speedometer but remove the combined gauge assembly after undoing the four nuts.



10.12b Removing the speedometer



10.11b Instrument panel assembly upper retaining screws - 1986 models onwards

11 Cigar lighter - removal and refitting

Removal

- 1 Disconnect the battery negative terminal.
- 2 On pre-1986 models remove the ashtray then undo the screws and withdraw the ashtray housing. On 1986 models onwards, refer to Section 21 and remove the radio/cassette player.
- 3 Disconnect the wiring from the cigar lighter body.
- 4 Pull out the cigar lighter element.
- 5 Push the lighter body and illuminating ring out of their locations then separate the ring from the lighter body.

Refitting

- 6 Refitting is the reverse sequence to removal.

12 Speedometer cable - removal and refitting

Removal

- 1 Disconnect the battery and remove the instrument panel as described in Section 9.
- 2 Disconnect the cable from the transmission and release it from its clips and grommet.
- 3 Withdraw the cable through the bulkhead.

Refitting

- 4 Refitting is a reversal of removal. The inner and outer cables are supplied as a complete assembly.

13 Clock - removal and refitting

Facia mounted clock

Removal

- 1 Remove the instrument panel (Section 9).
- 2 Undo the screws around the edge of the instrument panel at the rear and separate the two panel halves.

3 Undo the nuts and remove the clock.

Refitting

4 Refitting is a reversal of removal.

Roof mounted clock

Removal

- 5 Disconnect the battery negative terminal.
- 6 Extract the two screws which hold the clock to the header panel.
- 7 Disconnect the clock and courtesy lamp wiring plug.
- 8 Detach the lamp from the clock.

Refitting

9 Refit by reversing the removal operations. Once the battery is reconnected, the time must be re-set.

14 Fuel computer components - removal and refitting

Computer unit

Removal

- 1 Disconnect the battery negative terminal.
- 2 Undo the two instrument panel bezel retaining screws and ease the bezel out to release the lower clips.

3 Withdraw the computer module from the fascia to the right of the instrument panel.

4 Disconnect the wiring multi-plug and remove the computer.

Refitting

5 Refitting is a reversal of removal.

Speed sender unit

Removal

- 6 Undo the retaining nut and detach the speedometer cable from the speed sender unit (see illustration).
- 7 Unclip and disconnect the wiring multi-plug.
- 8 Undo the retaining nut and withdraw the speed sender unit from the transmission.

Refitting

9 Refitting is a reversal of removal.

Fuel flow sensor

Removal

- 10 The fuel flow sensor is used in conjunction with the fuel computer on fuel-injected models and is located on the fuel distributor at the front left-hand side of the engine compartment.
- 11 Disconnect the wiring multi-plug then undo the two banjo unions on the side of the unit. Note the position of the sealing washers.

12 Undo the two retaining screws and remove the fuel flow sensor.

Refitting

13 Refitting is the reverse sequence to removal. Ensure that the sealing washers are correctly fitted.

15 Auxiliary warning system components - removal and refitting

General

1 This system monitors the fluid levels and front brake pads for excessive wear. In the event of a fluid level dropping below the specified level, or the brake pads wearing down to the minimum allowable thickness, the driver is warned of the particular malfunction by means of a warning lamp.

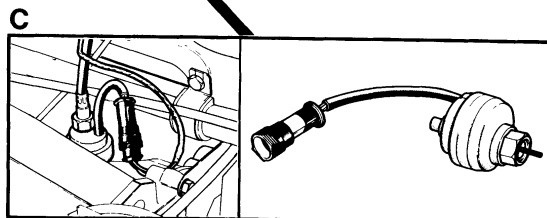
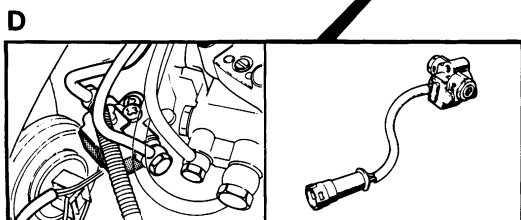
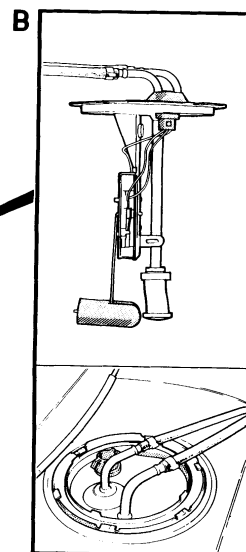
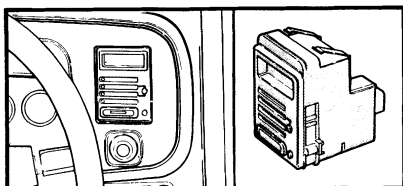
Low washer fluid warning switch

Removal

2 Drain or syphon out the reservoir fluid then disconnect the switch multi-plug. Lever the switch away from the seal grommet using the flat blade of a suitable screwdriver. Do not allow fluid to enter the connectors.

14.6 Fuel computer component layout on fuel-injected models

- A Fuel computer
- B Fuel tank sender unit
- C Speed sender unit
- D Fuel flow sensor



Refitting

3 Refit in reverse order of removal, checking that the grommet is correctly seated. On completion, check that the switch is operational and that there are no leaks around the grommet.

Low coolant warning switch

Removal

4 Drain the coolant from the expansion tank (see Chapter 1), having first depressurized the system if necessary.

5 Detach the switch multi-plug and then unscrew the threaded retainer. The switch can then be levered from the seal grommet using a flat-bladed screwdriver. Do not allow coolant to enter the connectors.

Refitting

6 Refit in reverse order, and, on completion, check the switch operation and, when the reservoir is refilled to the specified level, that there are no signs of leaks from the grommet/retainer.

Warning indicator control unit

Removal

7 Remove the radio speaker grille and speaker from the fascia.

8 Disconnect the multi-plug from the warning indicator/control assembly and then remove the two nylon fixing nuts which hold the assembly in position on the fascia panel. Take care when withdrawing and handling the unit not to knock it, as the integral micro-electronics could be damaged.

Refitting

9 Refit in the reverse order of removal. On completion check that the warning lights function for the initial period of five seconds after the ignition is switched on.

Low fuel sensor unit

10 This is integral with the fuel tank sender unit and is removed from the tank as described in Chapter 4.

Brake pad wear indicators

11 The sensors are integral with the brake



17.2 Disconnecting wiper blade from arm

pads. Refer to Chapter 9 for details of brake pad removal and refitting.

Auxiliary system warning light bulbs

12 The auxiliary warning light bulbs are integral with the instrument panel and are welded in position. They cannot be individually renewed. To remove the instrument panel refer to Section 9.

16 Horn - removal and refitting

Removal

- 1 The horn(s) are located in the left-hand front corner of the engine compartment. Before removing, disconnect the battery.
- 2 Disconnect the lead from the horn.
- 3 Unscrew the single bolt and remove the horn and bracket.

Refitting

- 4 Refitting is a reversal of removal.

17 Windscreen/tailgate wiper blades and arms - removal and refitting

Removal

- 1 Pull the wiper arm away from the glass until the arm locks.

2 Depress the small clip on the blade and slide the blade out of the hooked part of the arm (see illustration).

3 Before removing the wiper arms it is worthwhile marking their parked position on the glass with a strip of masking tape as an aid to refitting. Raise the plastic nut cover.

4 Unscrew the nut which holds the arm to the pivot shaft and pull the arm from the splines.

Refitting

- 5 Refit by reversing the removal operations.

18 Windscreen wiper motor and linkage - removal and refitting

Removal

1 Remove the wiper arms and blades as described in Section 17.

2 Disconnect the battery negative terminal.

3 Remove the nut covers, the fixing nuts, washers and spacers from the pivot shafts.

4 Disconnect the wiper motor wiring at the multi-pin plugs.

5 Unscrew the two fixing bolts and withdraw the motor complete with linkage from the engine compartment (see illustration).

6 Remove the spacers from the pivot shafts.

7 The motor can be separated from the linkage by removing the nut from the crankarm and then unbolting the motor from the mounting.

Refitting

8 Refitting is a reversal of removal, but connect the motor crankarm when the link is aligned with it as shown (see illustration).

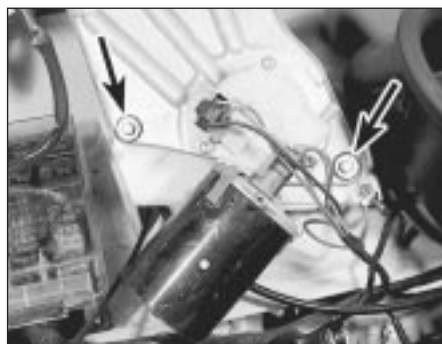
19 Tailgate wiper motor - removal and refitting

Removal

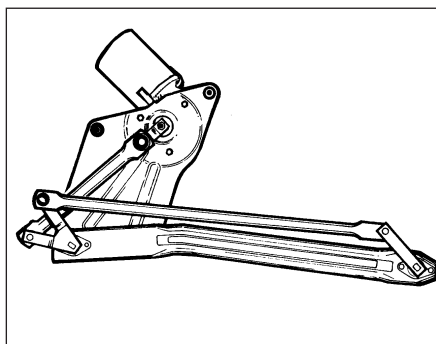
1 Disconnect the battery and remove the wiper arm/blade assembly.

2 Remove the pivot shaft nut, spacer and outer seals.

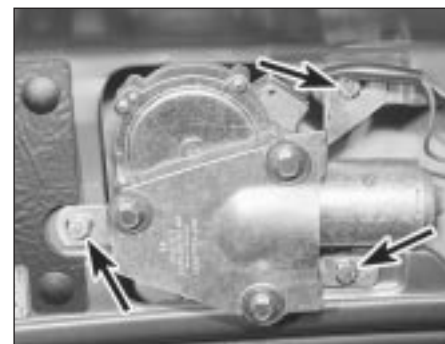
3 Open the tailgate and remove the trim panel (refer to Chapter 11).



18.5 Windscreen wiper motor fixing bolts (arrowed)



18.8 Windscreen wiper crankarm alignment for refitting



19.4 Tailgate wiper motor retaining bolts (arrowed)

4 Release the earth lead and unscrew the two, or on later models, three wiper motor mounting bolts (see illustration).

5 Disconnect the multi-pin plug and remove the motor from the tailgate.

6 Take off the pivot shaft seal, spacer and bracket from the motor.

Refitting

7 Refit by reversing the removal operations.

20 Wash/wipe system components - removal and refitting



Windscreen washer pump

Engine compartment-mounted reservoir

Removal

1 Drain the washer fluid container.

2 Disconnect the lead and washer pipe.

3 Ease the top of the washer pump away from the fluid container and remove it.

Refitting

4 Refitting is a reversal of removal; check that the pump sealing grommet is a good fit.

Windscreen washer pump - wing-mounted reservoir

Removal

5 On some models the windscreen washer pump and fluid reservoir are mounted on the forward end of the underside of the left-hand front wing panel. It also incorporates the headlamp washer pump which also draws its fluid from this reservoir.

6 To remove the reservoir and pump units withdraw the level dipstick and syphon the fluid out of the reservoir through the filler neck.

7 Unscrew and remove the reservoir retaining bolts at its top end from inside the engine compartment.

8 Working under the wheel arch, unscrew and remove the two lower retaining bolts.

9 Withdraw the reservoir, carefully pulling its filler neck through the grommet on the inner wing panel. Disconnect the pump hoses.

10 The pump and fluid level sensor unit can be eased away from their location apertures in the reservoir.

Refitting

11 Refitting is a reversal of removal; check that the pump and fluid level sensor grommets are in good condition when reassembling, and check for leaks on completion.

Tailgate washer pump

Saloon models

Removal

12 Remove the load space trim panel as described in Chapter 11.

13 Disconnect the leads at the multi-plug.

14 Unscrew the three reservoir mounting screws, and remove the reservoir until the fluid pipe can be pulled from the pump.

15 With the reservoir removed, pull the pump from its reservoir seal.

Refitting

16 Refit by reversing the removal operations.

Estate models

Removal

17 Open the tailgate, raise the spare wheel cover and disconnect the electrical leads and fluid pipe from the pump.

18 Extract the two securing screws and remove the pump (see illustration).

Refitting

19 Refitting is a reversal of removal.

Windscreen washer jets

Single jet system - pre-1986 models

Removal

20 Open the bonnet and disconnect the washer pipe from the jet.

21 If the pipe stub on the jet assembly is now pushed to one side, the jet retaining tang will be released and the jet can be removed from the bonnet grille slots.

Refitting

22 Refit by reversing the removal operations. The end of the plastic washer pipe should be warmed in very hot water to make it easier to push onto the jet pipe stub and so avoid breaking it.

23 Adjustment of the jet spray pattern can be done using a pin in the jet nozzle.

Twin jet system - pre-1986 models

24 Later models are fitted with a twin jet windscreen washer system instead of the single jet type used on earlier models.

25 The jets are located as shown, one each side on the bonnet inner panel (see illustration). The washer supply hose is connected to a central T-piece connector which directs the fluid to each jet.

26 The twin jets can be adjusted in the same manner as the earlier single type. They should be set so that the fluid jets hit the windscreen about 250 mm (9.8 in) from the top edge of the windscreen.

Twin jet system - 1986 models onwards

27 1986 models onwards are fitted with a twin jet system but using the same jet type as the early single jet system.

28 Removal, refitting and adjustment procedures for this washer type are therefore the same as described previously.

Tailgate washer jet

Removal

29 Remove the tailgate wiper motor as described in Section 19.

30 Pull the washer jet off the tailgate wiper motor shaft, disconnect the hose and remove the jet.

Refitting

31 Refitting is the reverse of removal.

Headlamp washer pump

Removal

32 Drain the washer reservoir by siphoning, and disconnect the electrical leads from the pump.

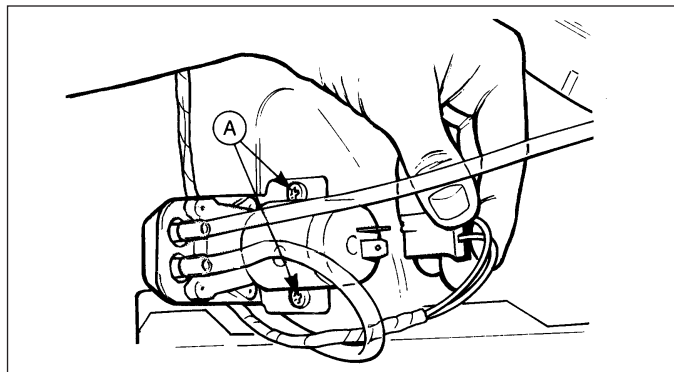
33 Disconnect the fluid pipe from the pump.

34 Release the reservoir clamp screw.

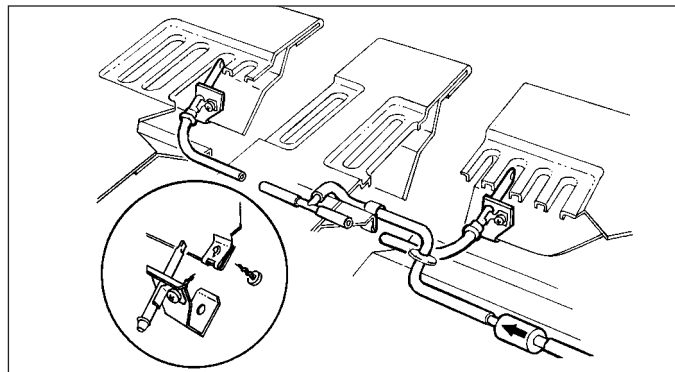
35 Ease the top of the pump from the reservoir and remove it upwards.

Refitting

36 Refitting is a reversal of removal.



20.18 Tailgate washer pump retaining screws (A) - Estate models



20.25 Twin jet windscreen washer layout - pre-1986 models

Headlamp washer jet

37 The headlamp washer jets are an integral part of the bumper overrider and cannot be removed separately. If a jet is to be renewed for any reason the complete overrider must be obtained (see Chapter 11).

38 Adjustment of the jets entails the use of special tool 32-004. If the tool is not available, have this work carried out by a Ford dealer.

21 Radio/cassette player and graphic equaliser - removal and refitting



Note: The information in this Section applies to Ford original equipment fitment components.

Radio

Early models

Removal

- 1 Disconnect the battery.
- 2 Pull off the control knobs, the tuning knob spacer and the tone control lever. Remove the cover panel.
- 3 Extract the four fixing screws from the front of the radio.
- 4 Pull the radio far enough from the fascia to be able to disconnect the aerial, power supply and earth leads and the speaker wires.

- 5 Unscrew the two nuts which hold the receiver to the mounting plate. Remove the mounting plate.
- 6 Take off the rear support bracket and locating plate.

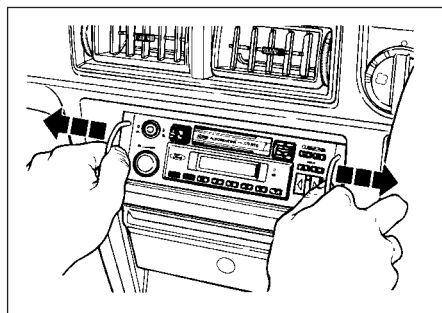
Refitting

- 7 Refitting is a reversal of removal.

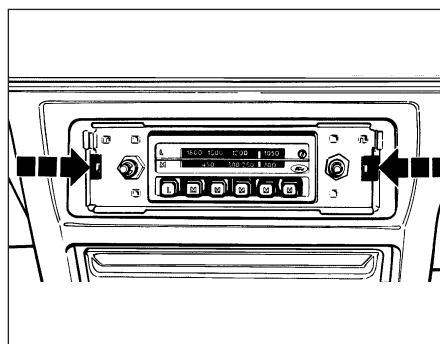
Later models

Removal

- 8 Disconnect the battery.
- 9 Remove the radio control knobs and withdraw the tuning knob spacer and the tone control lever.
- 10 Unscrew and remove the fascia plate retaining nuts and washers, then withdraw the fascia plate.
- 11 The radio retaining tangs can now be pulled inwards (towards the centre of the radio) and the radio withdrawn from its aperture. You may need to make a hook-ended rod (welding rod is ideal) to pull the tangs inwards to release the radio (see illustration).



21.18 Radio/cassette player removal using the extractor tools



21.11 Later type radio retaining tang locations

- 12 With the radio withdrawn, disconnect the power lead, the speaker plug, earth lead, the aerial cable and feed.

- 13 From the rear of the radio remove the plastic support bracket and locating plate, then remove the radio from the front bracket.

Refitting

- 14 Refitting is the reversal of the removal procedure.

Radio/cassette player

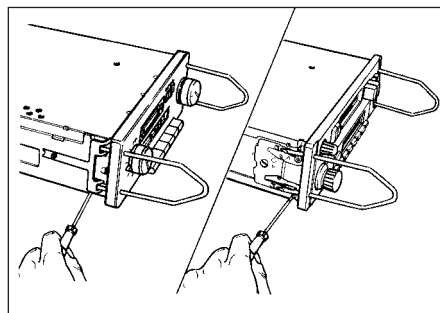
Early models

- 15 Proceed as described previously in this Section for the radio fitted to early models.

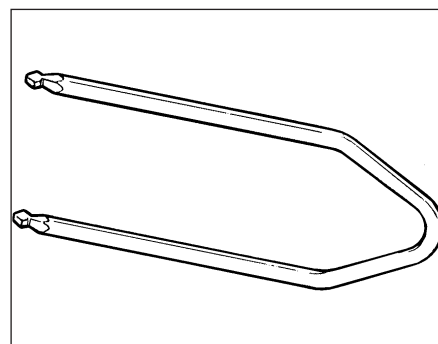
Later models

Removal

- 16 Disconnect the battery.
- 17 To withdraw the radio/cassette unit from its aperture you will need to fabricate the U-shaped extractor tools from wire rod of suitable gauge to insert into the withdrawal slots on each side of the unit (in the front face) (see illustration).
- 18 Insert the withdrawal tools as shown then, pushing each outwards simultaneously, pull them evenly to withdraw the radio/cassette unit (see illustration). It is important that an equal pressure is applied to each tool as the unit is withdrawn.
- 19 Once withdrawn from its aperture disconnect the aerial cable, the power lead, the aerial feed, the speaker plugs, the earth lead and the light and memory feed (where applicable).



21.20 Releasing the extractor tool after removal



21.17 Radio/cassette player extractor tool

- 20 Push the retaining clips inwards to remove the removal tool from each side (see illustration).

Refitting

- 21 Refit in the reverse order of removal. The withdrawal tools do not have to be used, simply push the unit into its aperture until the securing clips engage in their slots.

Graphic equaliser

- 22 The procedure is the same as for the radio/cassette player as fitted to later models and described previously in this Section.

22 Loudspeakers - removal and refitting



Facia mounted loudspeaker

Removal

- 1 Carefully prise up the speaker grille using a small screwdriver. Lift it from the fascia.
- 2 Extract the speaker mounting screws which are now exposed.
- 3 Lift the speaker up until the connecting wires can be disconnected by pulling on their terminals. The wires have different connecting terminals to prevent incorrect connection.

Refitting

- 4 Refitting is a reversal of removal.

Cowl panel-mounted loudspeaker

Pre-1986 models (except Cabriolet)

Removal

- 5 Prise out the grille retaining clip.
- 6 Extract screws as necessary to be able to remove the cowl panel/grille.
- 7 Extract the four speaker mounting screws and withdraw the speaker until the leads can be disconnected at the rear of the speaker (see illustration).

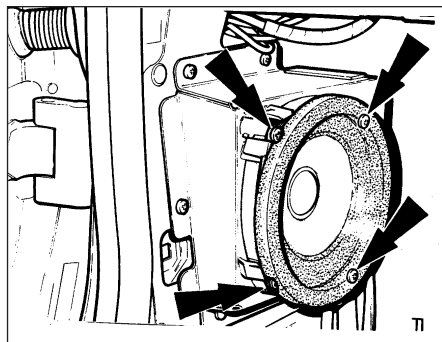
Refitting

- 8 Refitting is a reversal of removal.

1986 models onwards (except Cabriolet)

Removal

- 9 Extract sufficient screws from the scuff plate to facilitate cowl panel removal.



22.7 Cowl mounted loudspeaker retaining screw locations - pre-1986 models

10 Insert a screwdriver into the captive plastic retainers and turn 90° anti-clockwise to remove them. Withdraw the cowl panel (see illustration).

11 Undo the three speaker retaining screws, disconnect the leads and remove the speaker (see illustration).

Refitting

12 Refitting is a reversal of removal.

Cabriolet models

Removal

13 Extract the screws from the scuff plate.

14 Extract the end screw from the fascia panel.

15 Prise the door weatherseal from the cowl panel.

16 Remove the cowl panel and, if required, unclip the speaker grille.

17 Extract the four speaker mounting screws and withdraw the speaker until the leads can be disconnected.

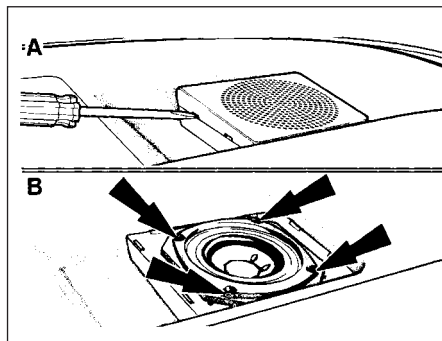
Refitting

18 Refitting is a reversal of removal.

Rear parcel shelf-mounted loudspeaker

Removal

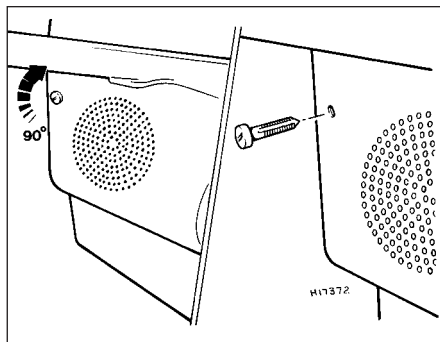
19 On pre-1986 models, prise the loudspeaker cover free by inserting a screwdriver blade into the slots on the side of the cover (see illustration).



22.19 Rear parcel shelf-mounted loudspeaker removal - pre-1986 models

A Prising cover open

B Retaining screw locations



22.10 Cowl mounted loudspeaker panel retainer removal - 1986 models onwards

20 On all models undo the four speaker retaining screws, pull the speaker away from the shelf and disconnect the wires.

Refitting

21 Refitting is a reversal of removal.

Rear parcel tray-mounted loudspeaker

Removal

22 Unscrew the collar and pull the wiring plug from the loudspeaker.

23 Remove the rear parcel tray. Unscrew the four retaining screws and remove the speaker.

Refitting

24 Refit in the reverse order to removal.

Rear quarter panel-mounted loudspeaker - Cabriolet models

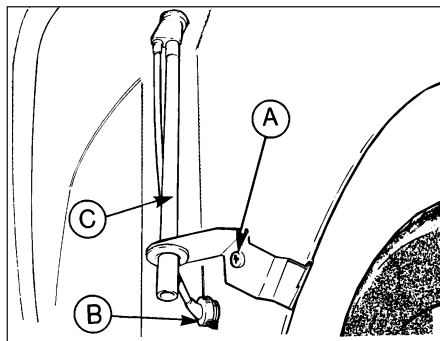
Removal

25 Fully open the roof and lock it.

26 Pull off the roof release lever knob and remove the window winder.

27 Pull back the rear quarter trim panel then remove the three screws and withdraw the trim panel with the speaker.

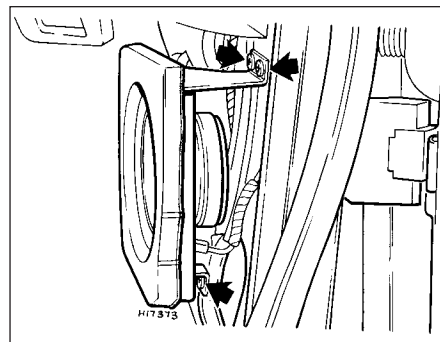
28 Disconnect the wiring then extract the screws and detach the speaker and grille from the panel. Note the location of the washers.



23.2 Manually operated aerial attachments - all except Cabriolet models

A Inner wing bracket screw

B Rubber grommet
C Aerial



22.11 Cowl mounted loudspeaker retaining screw locations - 1986 models onwards

Refitting

29 Refitting is a reverse of removal. Position the speaker so that the terminals face forwards.

23 Aerial - removal and refitting

Manually-operated type - all models except Cabriolet

Removal

1 Withdraw the radio (Section 21) until the aerial lead can be pulled out of the receiver socket.

2 Working under the front wing, release the aerial inner wing bracket (see illustration).

3 Prise out the grommet and pull the aerial lead through the hole in the inner wing.

4 Unscrew the aerial collar retaining nut.

5 Withdraw the aerial, spacers and seal (see illustration).

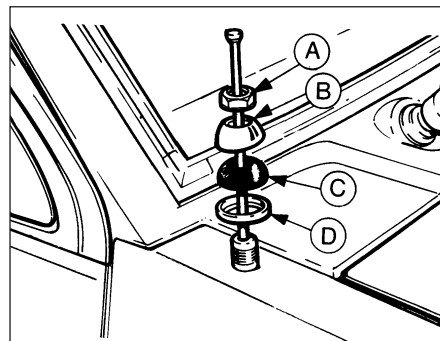
Refitting

6 Refitting is a reversal of removal.

Manually-operated type - Cabriolet models

Removal

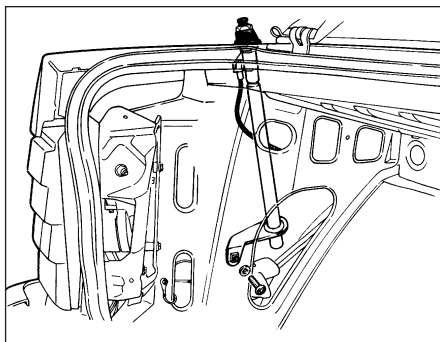
7 Open the boot lid and detach the support strut from the side panel.



23.5 Manually operated aerial upper attachment fixings - all except Cabriolet

A Collar retaining nut
B Bezel

C Spacer
D Seal



23.9 Manually operated aerial location on Cabriolet models

8 Release the tabs and remove the trim panel.

9 From under the rear panel undo the aerial bracket retaining screw (**see illustration**).

10 Undo the aerial collar retaining nut and remove the spacers and seal. Withdraw the aerial after unscrewing the lead.

Refitting

11 Refitting is a reversal of removal.

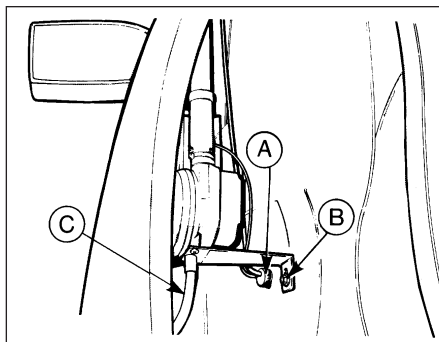
Power-operated type - all models except Cabriolet

Removal

12 Carry out the operations described in paragraph 1.

13 Lower the bottom fascia insulation panel and disconnect the red and white aerial feed cables.

14 Working under the front wing, extract the self-tapping screw which secures the aerial lower bracket (**see illustration**).



23.14 Power operated aerial attachments - all models except Cabriolet

A Grommet

B Lower bracket screw

C Aerial drain tube

15 Prise out the grommet and pull the aerial lead through the hole in the inner wing.

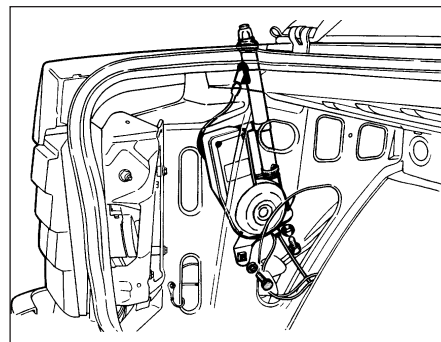
16 Unscrew the aerial upper retaining nut and lower the aerial from its location. Take off the seals and spacers.

Refitting

17 Refitting is a reversal of removal.

Power-operated type - Cabriolet models

18 The operations are the same as for the Cabriolet manually operated type described previously, but in addition disconnect the power feed multi-plug before unscrewing the aerial lead (**see illustration**).



23.18 Power operated aerial location on Cabriolet models

24 Heated rear window aerial amplifier - removal and refitting



Removal

1 On some 1986 models onwards the radio aerial is incorporated in the heated rear window element, and to assist reception an amplifier is fitted. This is located in the tailgate adjacent to the tailgate wiper motor. Removal and refitting is as follows.

2 Remove the tailgate wiper motor trim panel and the adjoining trim panel.

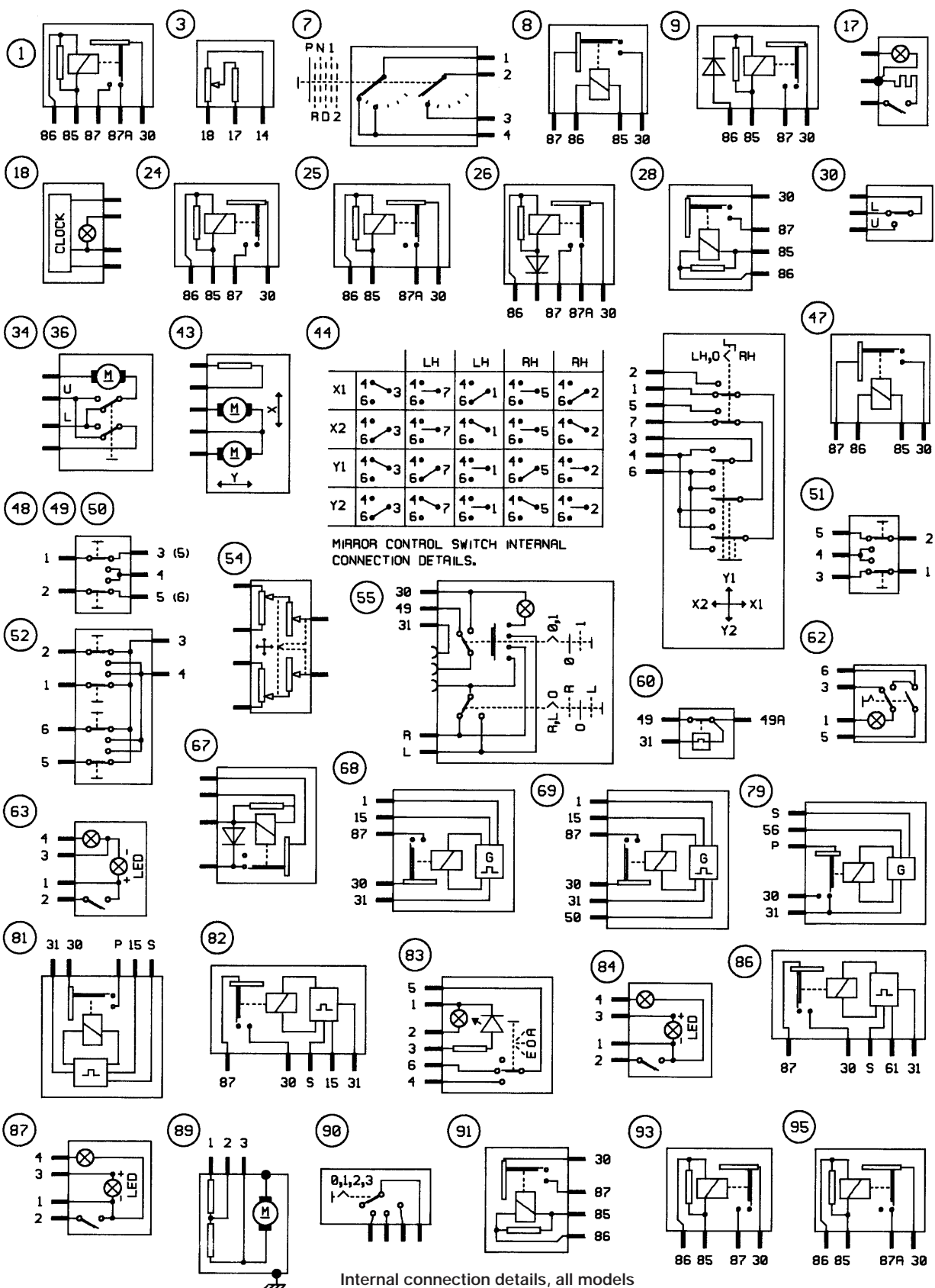
3 Undo the two screws and withdraw the amplifier.

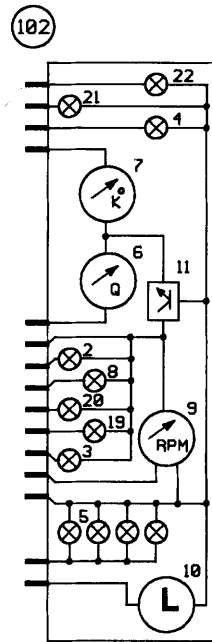
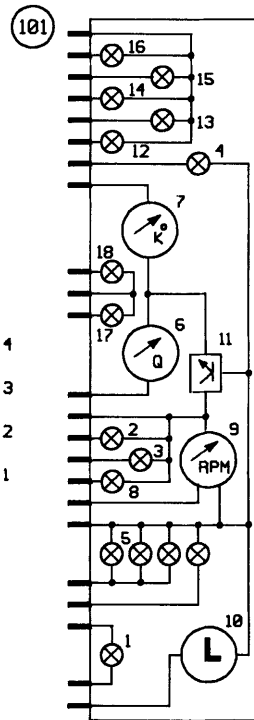
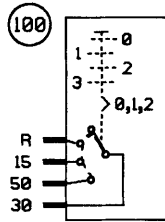
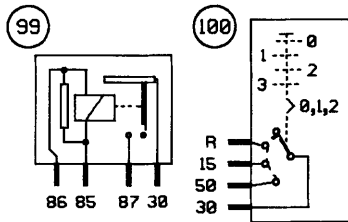
4 Disconnect the wiring and remove the amplifier.

Refitting

5 Refitting is a reversal of removal.

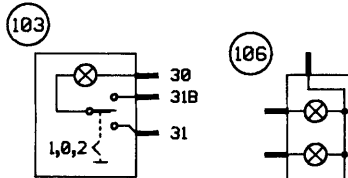
Wiring diagrams commence overleaf





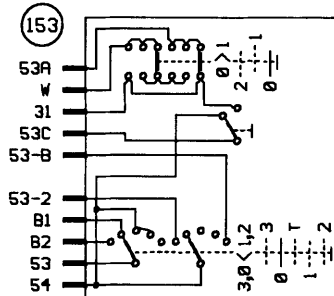
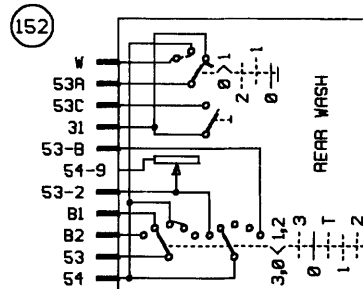
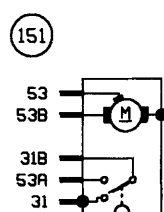
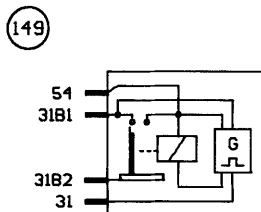
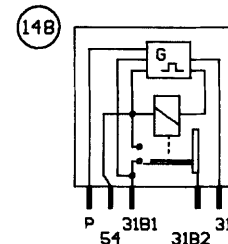
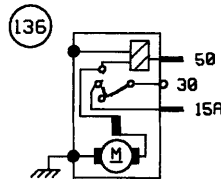
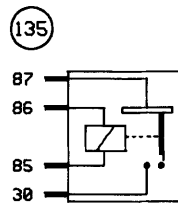
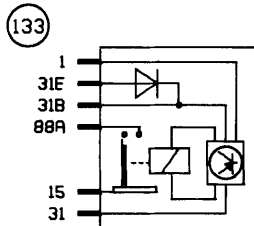
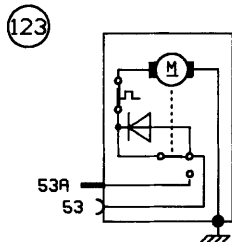
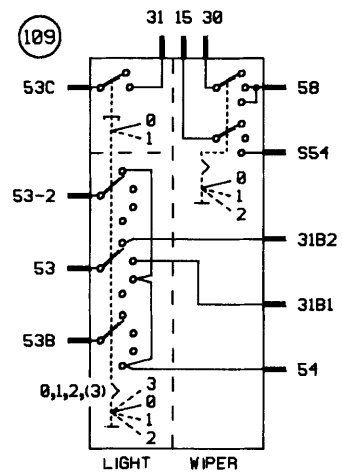
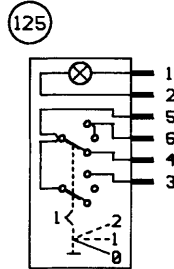
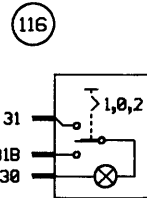
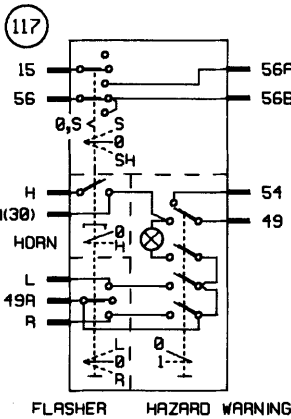
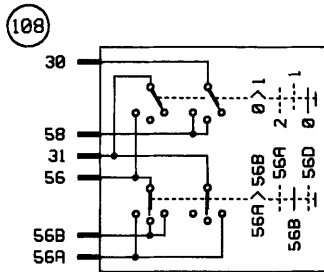
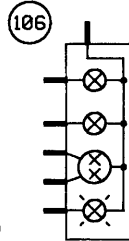
- 1 = Flasher Warning Lamp
- 2 = Alternator Warning Lamp
- 3 = Handbrake Warning Lamp
- 4 = Main Beam Warning Lamp
- 5 = Instrument Illumination
- 6 = Fuel Indicator
- 7 = Temperature Indicator
- 8 = Oil Pressure Lamp
- 9 = Tachometer
- 10 = Clock
- 11 = Voltage Divider
- 12 = Low Fuel Warning Lamp
- 13 = Low Coolant Warning Lamp
- 14 = Low Oil Warning Lamp
- 15 = Low Washer Fluid Warning Lamp
- 16 = Brake Wear Warning Lamp
- 17 = Econolight Red
- 18 = Econolight Amber
- 19 = ABS Warning Lamp
- 20 = Choke Warning Lamp
- 21 = Flasher Warning Lamp LH
- 22 = Flasher Warning Lamp RH

KEY TO INSTRUMENT CLUSTER
(ITEMS 101 AND 102)



- 1 = Flash Lamp
- 2 = Stop/Tail Lamp
- 3 = Reversing Lamp
- 4 = Fog Lamp

KEY TO TYPICAL LIGHT CLUSTER
(ITEMS 106 AND 107)



Internal connection details, all models
continued

H24005

ITEM	DESCRIPTION	DIAGRAM/ GRID REF.	ITEM	DESCRIPTION	DIAGRAM/ GRID REF.	ITEM	DESCRIPTION	DIAGRAM/ GRID REF.	ITEM	DESCRIPTION	DIAGRAM/ GRID REF.
1	RBS Warning Relay	1a/C1	40	Econolight Switch (amber)	1/F3	88	Heater Blower Illumination	2/G6	122	Radio Unit	3/H6
2	RBS Warning Switch	1a/B2	41	Econolight Switch (red)	1/F3			2a/G6			5/D3
		1a/B8	42	Electric Choke	1/F5	89	Heater Blower Motor	3/G6			5/D5
3	Air Flow Potentiometer	4a/D7	43	Electric Mirror	3a/F1			3a/G6	123	Rear Wash/Wipe Motor	5/D8
		4b/D7			3a/F8	90	Heater Blower Switch	3/G5			3/M5
4	Air Temp. Sensor	4a/B7	44	Electric Mirror Control Switch	3a/H2			3a/G4			3a/M5
		4b/B7	45	Electric Window Motor LH	3/G8	91	High Beam Relay	2a/H6	124	Rear Wash/Wipe Pump	3/M6
5	Alternator	1/A3			3a/G8	92	Horn	3/A6			3a/M6
		1a/A3	46	Electric Window Motor RH	3/G1			3a/A6	125	Rear Wash/Wipe Switch	3/G4
6	Antenna Module	3a/M2			3a/G1	93	Horn Relay	3a/B1	126	Reversing Lamp Switch	2/C7
		5/F2	47	Electric Window Relay	3/E1	94	Horn Switch	3a/K5			2a/C7
		5/F5	48	Electric Window Switch LH 1980-86	3/H8	95	Idle Speed Relay	1a/D1			1/E4
		5/F8	49	Electric Window Switch LH 1986-On	3a/H8	96	Idle Speed Valve	1/F6	127	Spark Plugs	1/E6
7	Auto. Trans. Inhibitor Switch	1/D7	50	Electric Window Switch RH 1980-86	3/H1			1a/F6			1a/E4
		1a/D7	51	Electric Window Switch RH 1980-86	3/K1			4/E3			4/D3
		2/B7		(LH window driver controlled)		97	Ignition Coil	1/D4			4/D6
		2a/B7	52	Electric Window Switch RH 1986-On	3a/H1			1/D6			4a/D5
8	Auto. Trans. Relay 1980-86	1/E1	53	Electro/Hydraulic Actuator	4a/E3			1a/C4	128	Speaker LH Front	4b/D5
9	Auto. Trans. Relay 1986-On	1a/E1	54	Fader Control (4 way)	5/B4			4/B3			5/R2
10	Auto. Trans. Selector Illumination	2a/J5	55	Flasher/Hazard Switch	2a/K3			4/B5			5/R5
		2a/J5	56	Flasher Lamp LH	2/A8			4a/B4	129	Speaker LH Rear	5/R8
11	Auxiliary Air Device	4/F4			2a/A8			4b/B4			5/F5
		4a/C7	57	Flasher Lamp RH	2/A1	98	Ignition Module	4a/J7			5/F8
		4b/C7			2a/A1			4b/J7	130	Speaker RH Front	5/R1
12	Auxiliary Warning System Module	1/K3	58	Flasher Lamp LH Side Mark	2/C8	99	Ignition Relay	1/D1			5/R4
13	Battery	1/F8			2a/C8			1a/D1			5/R6
		1a/F8	59	Flasher Lamp RH Side Mark	2/C1			2a/C1	131	Speaker RH Rear	5/F3
14	Brake Pad Sender LH	1/C8			2a/C1	100	Ignition Switch	1/K1			5/F6
15	Brake Pad Sender RH	1/C1	60	Flasher Relay 1980-86	2/D1			1a/K1	132	Speed Sensor	1a/D8
16	Choke Switch	1/K5	61	Flasher Relay 1986-On	2a/J3			3/K2	133	Speed Sensor Relay	4/J3
		1a/K5	62	Fog Lamp Switch 1980-86	2/K6			5/D1	134	Spot Lamp	2/R3
17	Cigar Lighter	2/K6	63	Fog Lamp Switch 1986-On	2a/K6			5/D4			2/R6
		2a/K6	64	Fuel Computer	1a/L3			5/E7			2a/R3
18	Clock	2/G5	65	Fuel Flow Sensor	1a/C8	101	Instrument Cluster 1980-86	1/K4			2a/R6
		2a/G5	66	Fuel Injection Module	4a/J5			2/F4	135	Spot Lamp Relay	2/E1
19	Cold Running Valve	1a/D5			4b/J5			4/K4	136	Starter Motor	1/B5
20	Cold Starting Valve	4/F3	67	Fuel Injection Module Relay	4a/J3			4a/K4			1a/R5
		4a/F3	68	Fuel Injection Relay	4/J2	102	Instrument Cluster 1986-On	1a/K4			2/C5
		4b/F3			4b/J2			2a/F4			2a/C4
21	Coolant Temp. Sensor	1/B7	69	Fuel Injection Relay	4a/J2			4/L3	138	Suppressor	1a/D5
		1a/B7		(KE-Jetronic 1984-86)				4b/K4			3a/B2
22	Cooling Fan	1/A6	70	Fuel Pump	4/L6	103	Interior Lamp/Switch	2/G4			4/D2
		1a/A6			4a/L6			2/K4			4b/H4
23	Cooling Fan Switch	1/A7			4b/L6			2a/G4	139	Tailgate Lock Motor	3a/M5
		1a/A7	71	Fuel Sender	1/L7	104	Knock Sensor	4b/C3	140	Tailgate Release Actuator	3/M4
24	Dim/Dip Relay V	2a/D1			1a/L7	105	Licence Plate Lamp	2/M4			4a/D6
25	Dim/Dip Relay D	2a/E1	72	Fuel Shut Off Valve	1/C7			2/M5	141	Temperature Sensor	4b/C3
26	Dim/Dip Relay L4/L5	2a/F1			1a/C7			2a/M5			4b/D6
27	Diode Block	4/J6	73	Glove Box Lamp/Switch	2/G7			2/M8	142	Thermal Time Switch	1a/C5
28	Dip Beam Relay	2a/A5			2a/G7	106	Light Cluster LH Rear	2/M8			4/D5
		3a/A2	74	Graphic Equalizer	5/B7			2/M1			4a/D5
29	Distributor	1/D4	75	Handbrake Warning Switch	1/K7	107	Light Cluster RH Rear	2a/M1			4b/D5
		1/D6			1a/K7			2a/K4	143	Throttle Position Switch	4a/F5
		1a/D4	76	Headlamp Unit LH	2/A7	108	Light/Dimmer Switch	2/J3			4b/F5
		4/C3			2a/A7	109	Light/Wiper Switch	3/J3	144	Throttle Switch	4/E6
		4/C6	77	Headlamp Unit RH	2/A2			1/E7	145	Warm-Up Regulator	4/F5
		4a/C4			2a/A2			1a/E7	146	Wastegate Solenoid	4a/C6
		4b/C4	78	Headlamp Washer Pump	3/A7			1/B1			4b/C6
30	Door Lock RH Front	3/J1			3a/A7	111	Low Coolant Sender	1/F4	147	Windscreen Washer Pump	3/C7
31	Door Lock Actuator LH Front	3/J8	79	Headlamp Washer Relay	3/C6	112	Low Oil Sender	1/B8			3a/C7
32	Door Lock Actuator LH Rear	3/L8			3a/B4	113	Low Washer Fluid Sender	2/L3	148	Wiper Intermittent Relay 1980-86	3/C1
33	Door Lock Actuator RH Rear	3/L1	80	Heated Rear Window	3/L4			2a/L3	149	Wiper Intermittent Relay 1986-On	3a/D1
34	Door Lock Motor LH Front	3a/K8			3a/M3	114	Luggage Comp. Lamp	2/M3	150	Wiper Intermittent Speed Control	3/F3
35	Door Lock Motor LH Rear	3a/M8	81	Heated Rear Window Relay 1980-86	3/C3	115	Luggage Comp. Lamp Switch	2a/M3	151	Wiper Motor	1/E2
36	Door Lock Motor RH Front	3a/K1	82	Heated Rear Window Relay 1986-On	1a/B1			2/L2			1a/E2
37	Door Lock Motor RH Rear	3a/M1			3a/C1	116	Luggage Comp. Lamp/Switch (cargo)	2a/L2			3/C4
38	Door Lock Relay	3/K6			4/B1	117	Multifunction Switch	2/J4			3a/C4
39	Door Switch	2/H1	83	Heated Rear Window Switch 1980-86	3/H3			3/J4	152	Wiper Switch 1986-88	3a/K4
		2/H8	84	Heated Rear Window Switch 1986-On	3a/J6	118	Oil Pressure Switch	1/F5	153	Wiper Switch 1988-On	3a/K4
		2/K1	85	Heated Windscreen	3a/F6			1a/F5			
		2/K8	86	Heated Windscreen Relay	1a/H1	119	Over Voltage Protection Device	4b/J3			
		2a/H1			3a/E1	120	Overrun Shut Off Valve	4/C7			
		2a/H8	87	Heated Windscreen Switch	3a/J6	121	Pressure Actuator	4b/F2			

1988-86 MODEL		1986-ON MODEL			
COMMON POINT	DIGRAM/ GRID REF.	COMMON POINT	DIGRAM/ GRID REF.	COMMON POINT	DIGRAM/ GRID REF.
S183	1/H	S185	3a/P5	S185	1a/G3
	2/H2		4/P8		2a/G3
S184	1/J	S186	1a/P8		2a/G3
	2/J2		2a/H1		4/H5
S185	1/H		4/H1		4a/G3
	3/H	S187	4a/H1		2a/H4
	4/H		1a/P2		3a/H4
S186	4a/H1		3a/C3	S188	1a/H2
	1/H5		3a/C3		4/H1
	2/H5	S189	5/H8		4a/H1
	3/H5		1a/J2		2a/H5
	4/H5		2a/C3		1a/H5
S187	1/H1		5/H8	S189	2a/C5
	2/H2		1a/P8		2a/C5
S188	1/H8	S190	4/H8		3a/H5
	2/H8		1a/J2		5/C3
	4/H8		3a/C4		5/C5
S189	1/H2		4a/C2		5/C1
	2/H1				
S190	1/J5				
	2/J5				
S191	1/H1				
S192	2/H1				
	4/H4				
S193	1/H5				
	2/J5				
	3/J5				

NOTES:

1. Feed wires are coloured red/black when switched and originate from diagrams 1 and 1a.
2. Earth wires on all diagrams are coloured brown.
3. The above tables show where common connecting points e.g. S183 common battery +ve, interconnect between diagrams.
4. Earthing points which are identified e.g. S183, denote common earths between diagrams.
5. Not all these are fitted to all models.
6. Brackets show how the circuit may be connected in more than one way.

WIRE COLOURS

B	Blue	Ra	Pink
Bk	Black	S	Gray
Br	Brown	V	Violet
Gr	Green	W	White
R	Red	Y	Yellow

1983-86 MODEL			1986-ON MODEL		
FUSE	RATING	CIRCUIT	FUSE	RATING	CIRCUIT
1	20A	Hazard Warning Lamps, Horn	1	15A	Hazard Warning Lamps, Horn
2	15A	Interior Lighting, Windscreen Washer, Clock	2	15A	Door Lighter, Interior Lighting
3	25A	Headlamp Washer	3	20A	Heated Rear Window, Electric Mirrors
4	10A	Spot Lamps	4	20A	Headlamp Washers
5	10A	RH High Beam	5	15A	Central Locking
6	10A	LH High Beam	6	10A	Injection Residual Voltage Protection
7	10A	RH Low Beam	7	20A	Fuel Pump
8	10A	LH Low Beam	8	15A	Spot Lamps
9	10A	RH Side, Interior Lamps	9	15A	LH High Beam
10	10A	LH Side, Interior Lamps	10	15A	RH High Beam
11	20A	Cooling Fan	11	20A	Heater Blower
12	20A	Flashing, Reversing Lamps	12	20A	Cooling Fan
13	20A	Heater Blower	13	10A	Flashing, Reversing Lamps
14	20A	Heated Rear Window	14	10A	LH Low Beam
15	15A	Stop Lamps, Wipers	15	10A	RH Low Beam
16	20A	Door Locking, Tailgate Release	16	20A	Wiper Motor, Washer Pump
17	20A	Electric Windows	17	10A	Stop Lamps, Instrument Illumination
18	20A	Fuel Injection	18	20A	Electric Windows
			19	10A	LH Side Lamps
			20	10A	RH Side Lamps

Table of common points, fuses, wire colours and notes

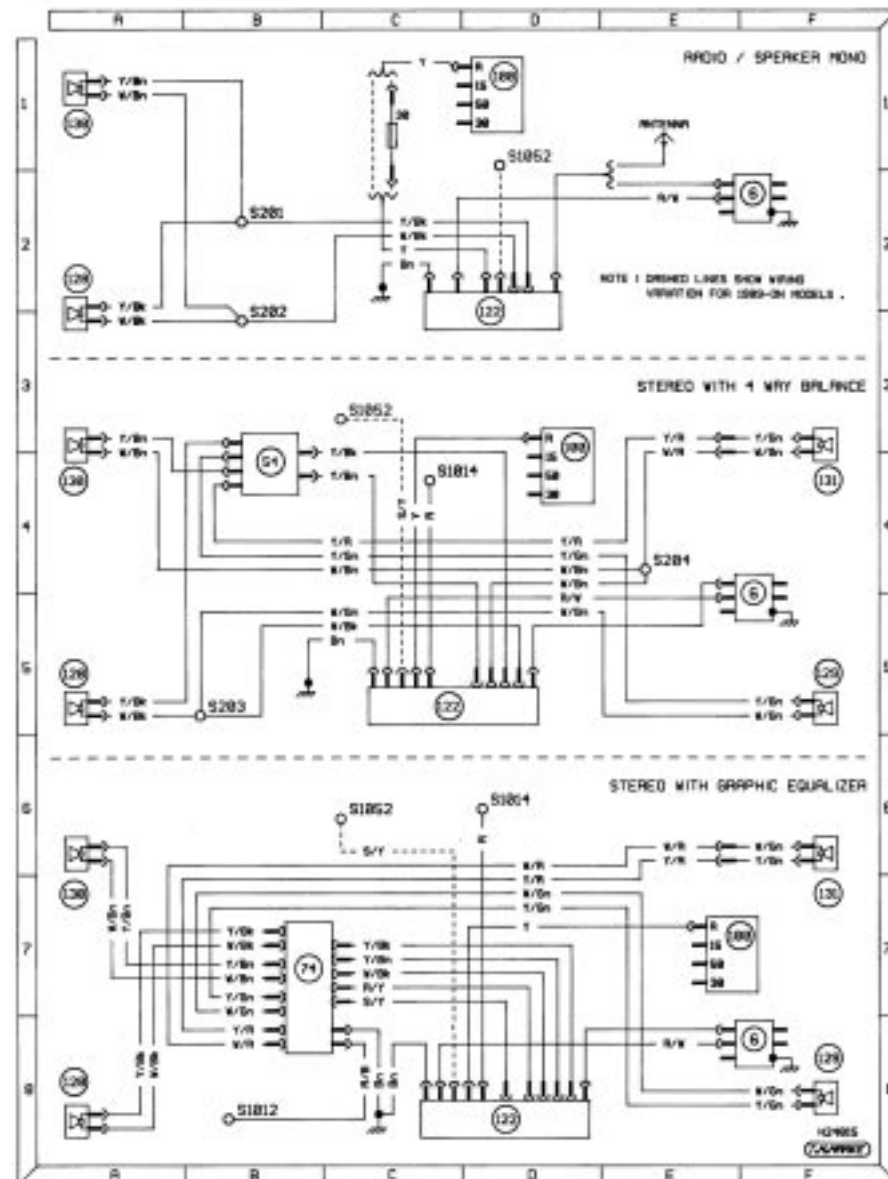


Diagram 5: 1986-on in car entertainment

Diagram 1: 1980-86 Starting, charging, and ignition (except fuel injection models)

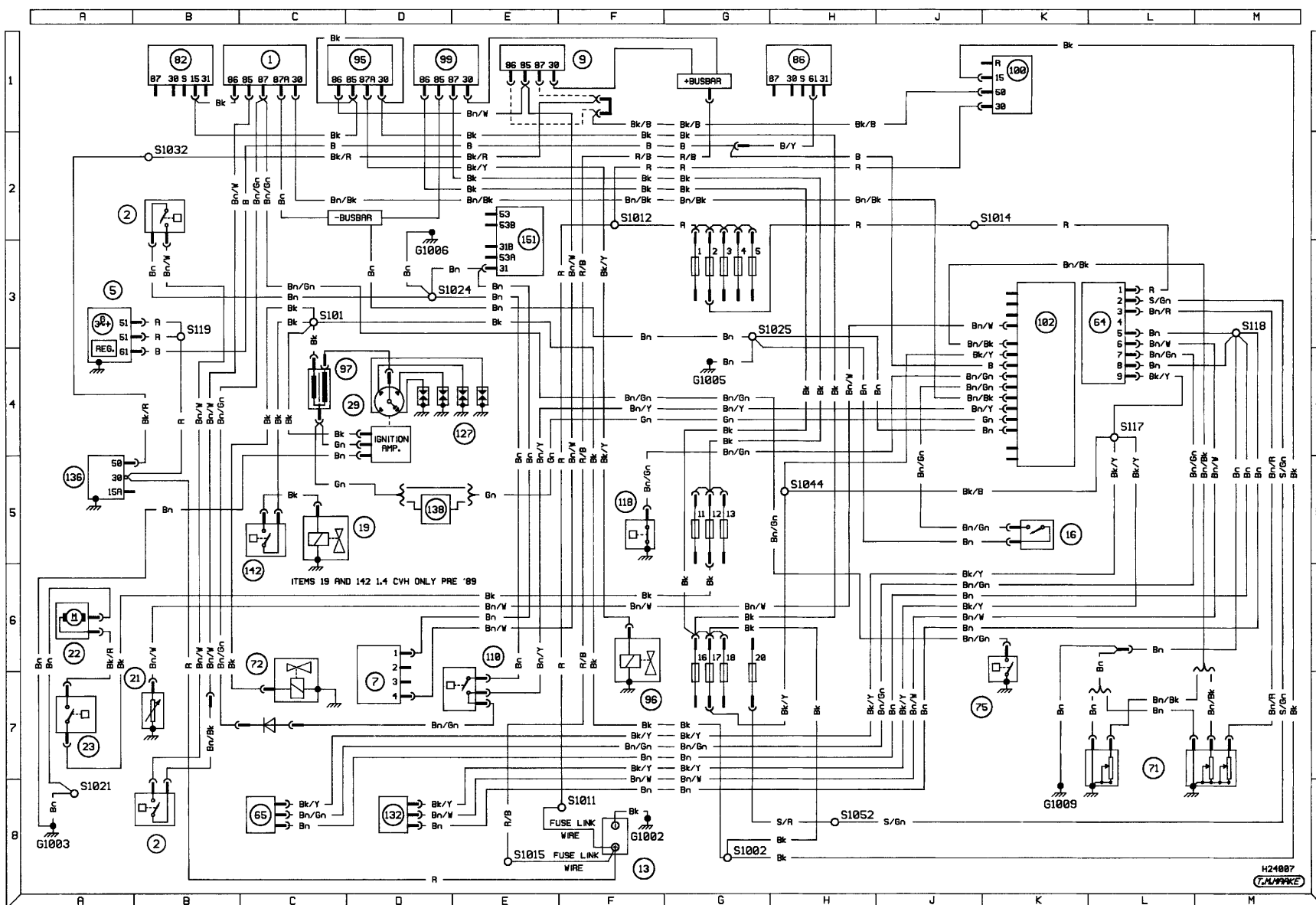


Diagram 1a: 1986-on Starting, charging, and ignition (except fuel injection) all models

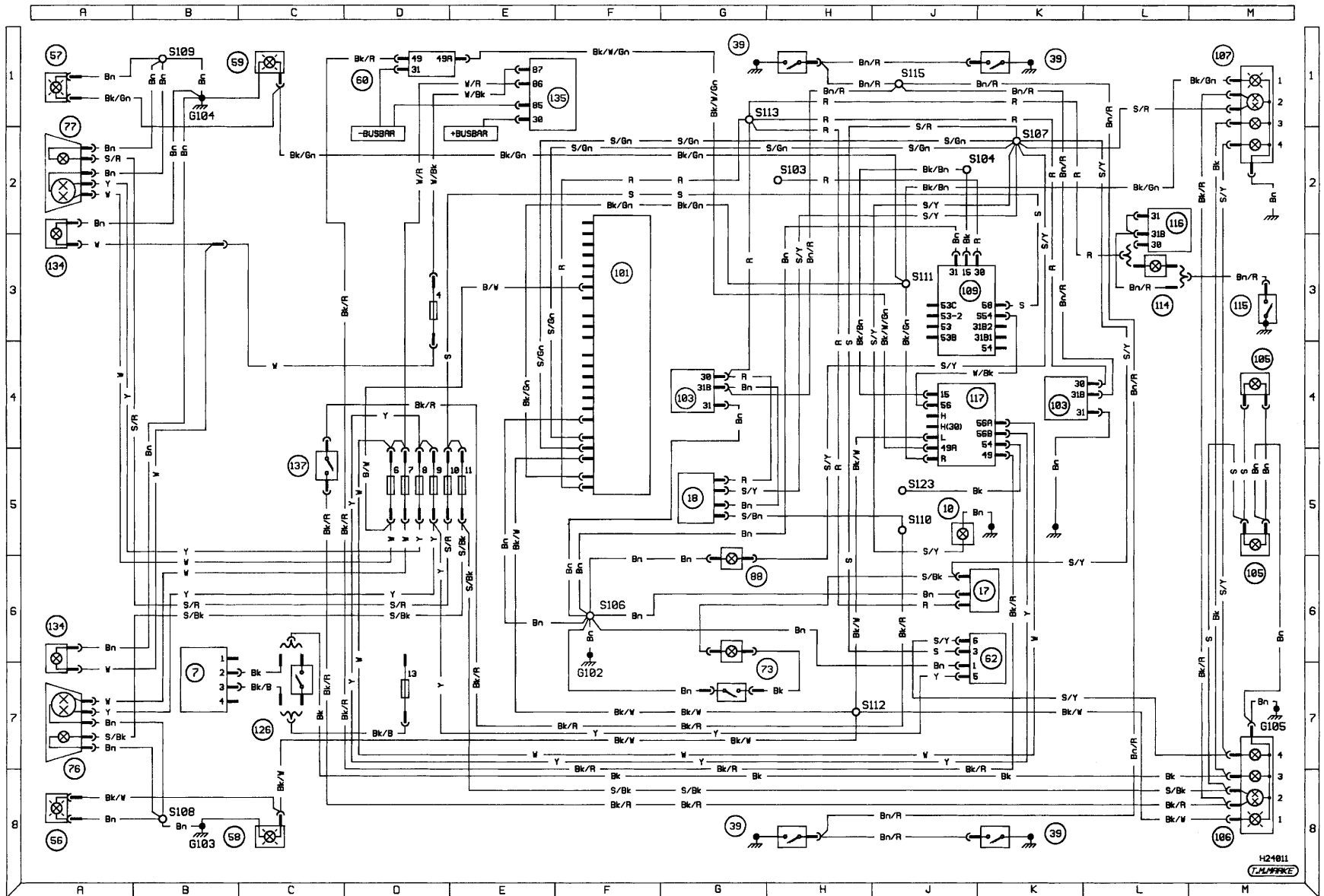


Diagram 2: 1980-86 Lighting all models



WD-7

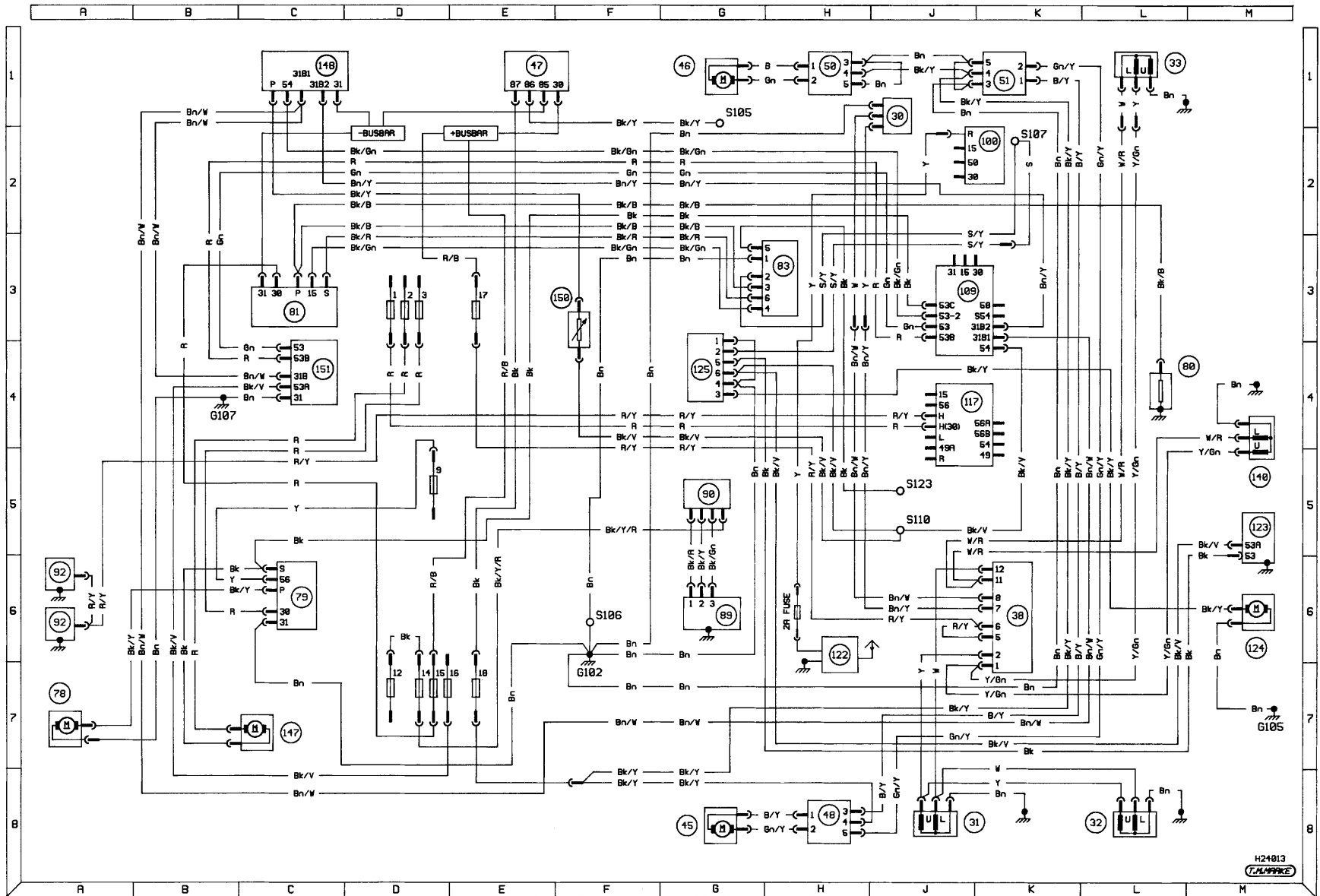


Diagram 3: 1980-86 Ancillary circuits all models

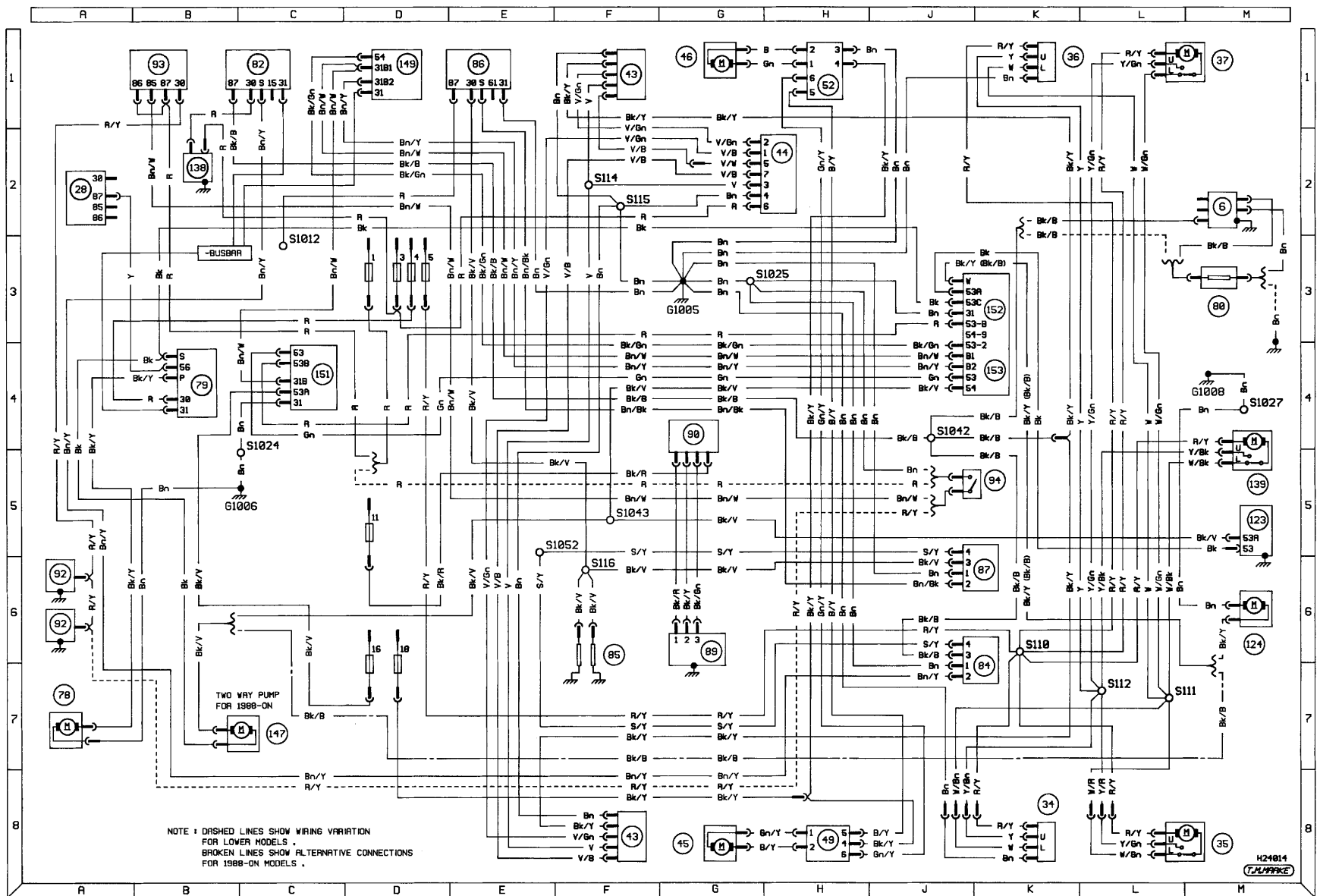
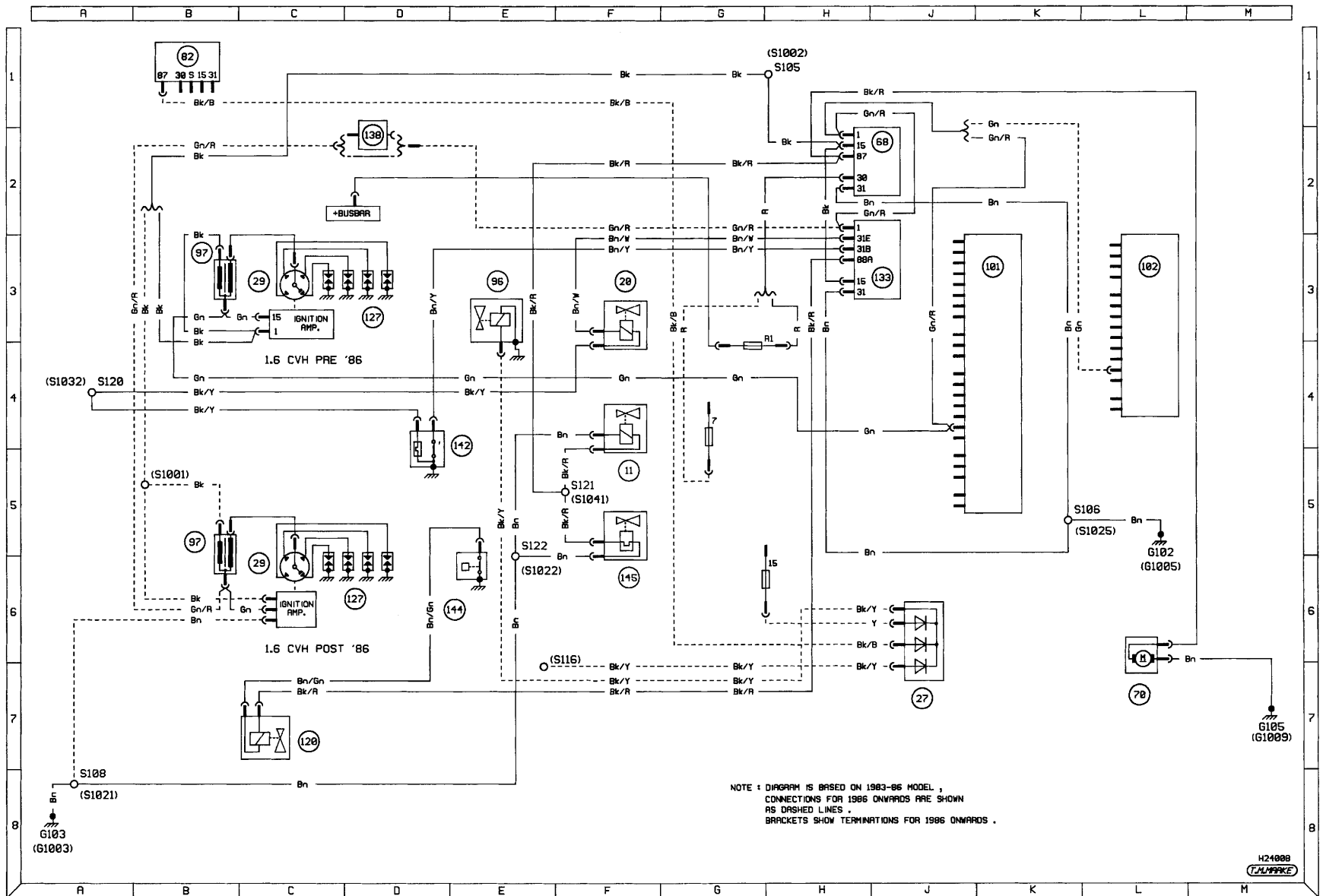


Diagram 3a: 1986-on Ancillary circuits all models



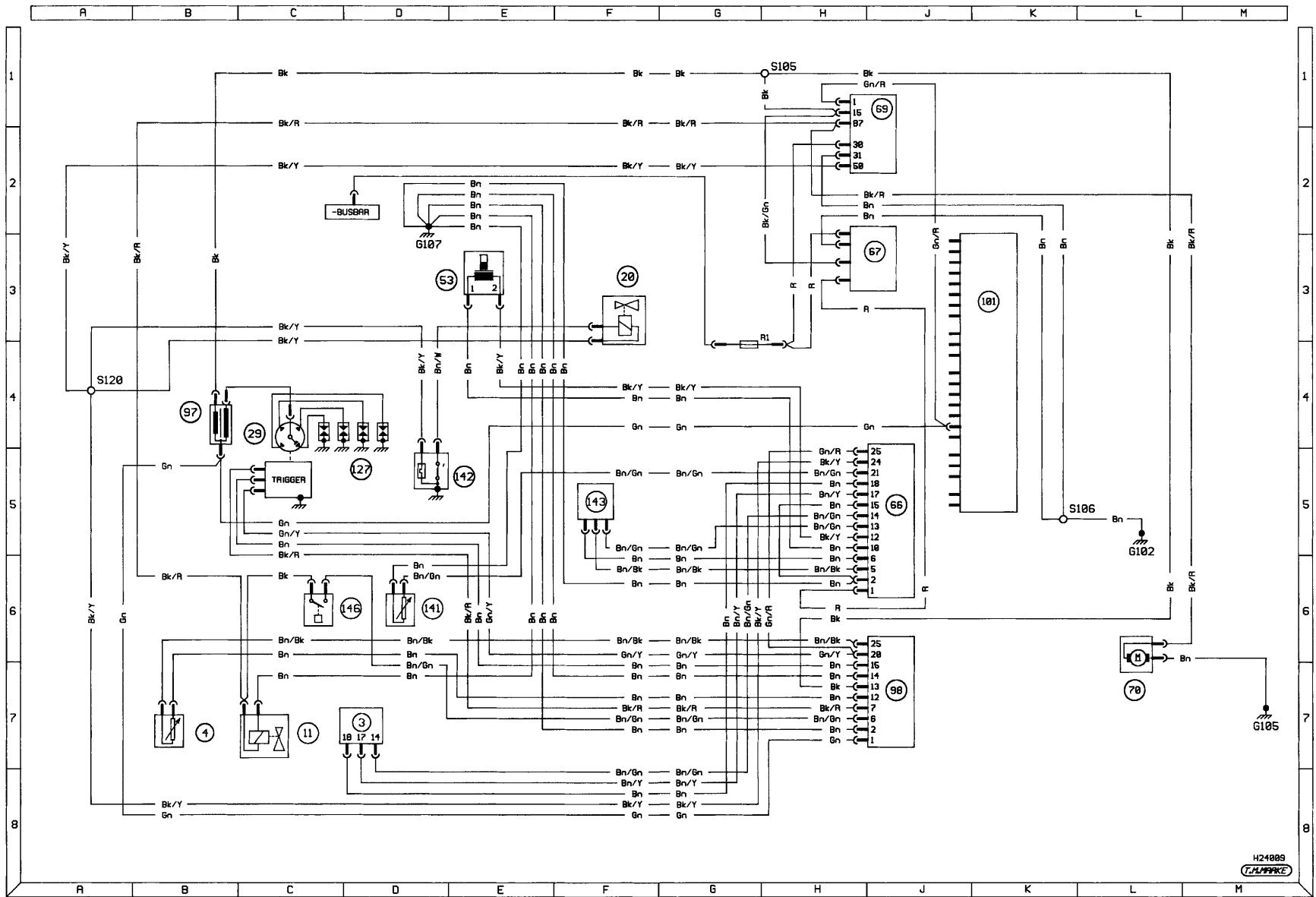


Diagram 4a: 1984-86 KE-Jetronic fuel injection
For starting and charging circuits see Diagram 1

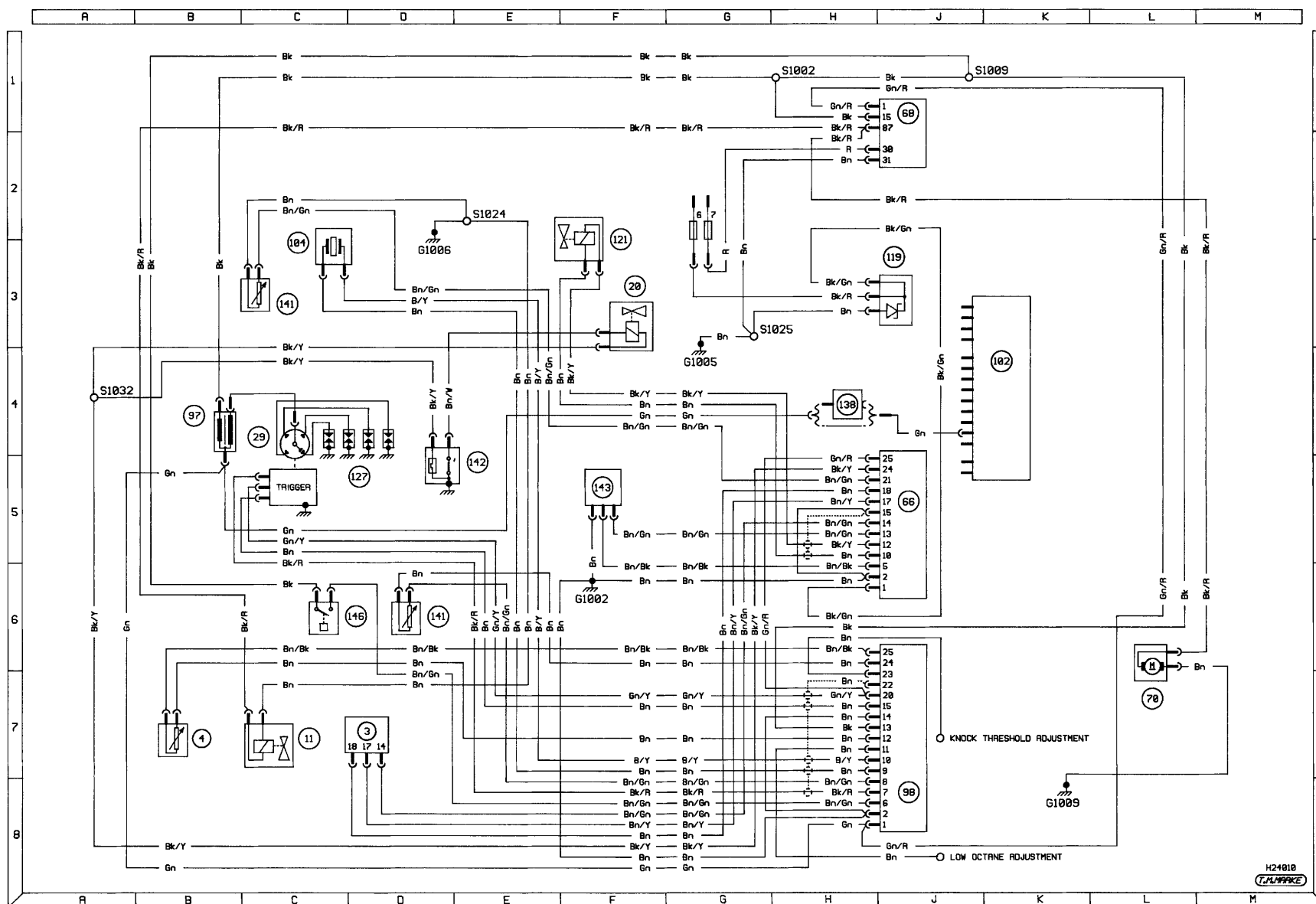


Diagram 4b: 1986-on KE-Jetronic fuel injection
For starting and charging circuits see Diagram 1a