






Chapter 12 Body electrical systems

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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

Facia fusebox fuses

Fuse	Rating (amps)	Circuit(s) protected
F1	30.	Heater blower motor, headlamp washers, electric mirrors, air conditioning relay, headlamp washer timer and heated seats
F2	10.	Radio/cassette, instrument panel, stop-lights, front and rear wash/wipe and "lights-on" buzzer
F3	30.	Heated rear window relay, electric window relay, indicators and cooling fan relay(s)
F4	25.	Central locking and anti-theft alarm
F5	25.	Heated rear window and heated exterior mirror
F6	10.	Hazard warning lights
F7	10.	Reversing lights, facia panel lights and instrument panel warning lights
F8	20.	Radio/cassette, interior lights, cigarette lighter, luggage compartment light, clock and remote central locking receiver
F9	30.	Electric windows, sunroof, seat adjustment and map reading light
F10	20.	Horn
F11	5.	Rear foglight
F12	5.	Right-hand front and rear sidelights, ashtray and cigarette lighter illumination, "lights-on" buzzer and switch illumination
F13	5.	Left-hand front and rear sidelights, number plate light

Junction box fuses (two-fuse arrangement)

F1	5.	Unused
F2	5.	Unused
F3	5.	Cooling fan relay
F4	30.	Cooling fan


Junction box fuses (four-fuse arrangement)

F1	15.	Front foglights
F2	30.	Heater blower motor and air conditioning controls
F3	30.	Supplementary cooling fan
F4	30.	Cooling fan

Note: Not all items fitted to all models

Bulbs	Fitting	Wattage
Headlights:		
Dip/main beam bulb.	.H4	60/55
Individual main beam (where fitted).	.H1	55
Front foglights.	.H3	55
Front sidelights.	Capless	5
Direction indicators.	.Bayonet	21
Direction indicator side repeaters.	Capless	5
Interior lights.	Capless	5
Luggage boot light.	Capless	5
Heater control panel illumination.	Capless	1.2
Instrument panel warning lights/illumination.	.Integral with holder	1.2
Clock illumination.	.Integral with holder	1.2
Stop/tail lights.	.Bayonet	21/5
Rear foglight.	.Bayonet	21
Reversing lights.	.Bayonet	21


1 General information and 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.

The electrical system is of 12-volt negative earth type. Power for the lights and all electrical accessories is supplied by a lead/acid type battery, which is charged by the alternator.

This Chapter covers repair and service procedures for the various electrical components not associated with engine. Information on the battery, alternator and starter motor can be found in Chapter 5.

It should be noted that, prior to working on any component in the electrical system, the battery negative terminal should first be disconnected, to prevent the possibility of electrical short-circuits and/or fires.

 **Caution:** If the radio/cassette player fitted to the vehicle is one with an anti-theft security code, as the standard unit is, refer to the information given in the preliminary Sections of this manual before disconnecting the battery.

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 to pinpoint a problem in an electrical 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 bodyshe'll. 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 unit 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 and relays - general information



Fuses

1 Most of the fuses are located behind the driver's side lower facia panel, with a few odd fuses on some models being located in the junction box on the left-hand side of the engine compartment.

2 To gain access to main fusebox, release the three fasteners by rotating them through 90°,

then remove the driver's side lower facia panel. To gain access to those in the junction box, unclip the junction box lid, then release the retaining clip, and lift the small cover situated inside the box (**see illustration 3.7a**).

3 The fuse number is marked on the fusebox next to each fuse; a list of the circuits each fuse protects is given in the Specifications at the start of this Chapter. Plastic tweezers are also clipped into the fusebox, and can be used to remove and fit the fuses (**see illustration**).

4 To remove a fuse, first switch off the circuit concerned (or the ignition), then fit the tweezers and pull the fuse out of its terminals. Slide the fuse sideways from the tweezers. The wire within the fuse is clearly visible; if the fuse is blown, it will be broken or melted.

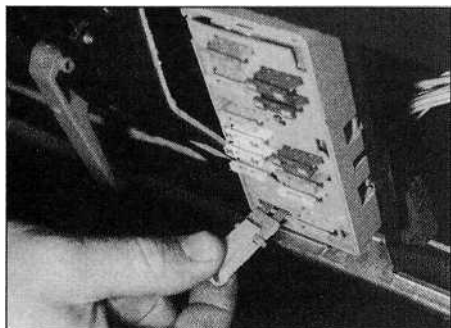
5 Always renew a fuse with one of an identical rating; never use a fuse with a different rating from the original, or substitute anything else. Never renew a fuse more than once without tracing the source of the trouble. The fuse rating is stamped on top of the fuse; note that the fuses are also colour-coded for easy recognition.

6 If a new fuse blows immediately, find the cause before renewing it again; a short to earth as a result of faulty insulation is most likely. Where a fuse protects more than one circuit, try to isolate the defect by switching on each circuit in turn (if possible) until the fuse blows again. Always carry a supply of spare fuses of each relevant rating in the vehicle.

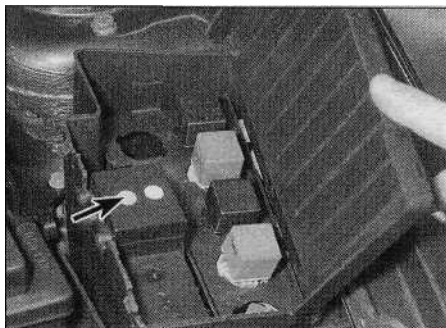
Relays

7 The majority of relays are located either in the junction box located on the left-hand side of the engine compartment (**see illustration**), or are located behind the driver's lower facia panel, directly behind the fusebox. The exceptions to this are as follows:

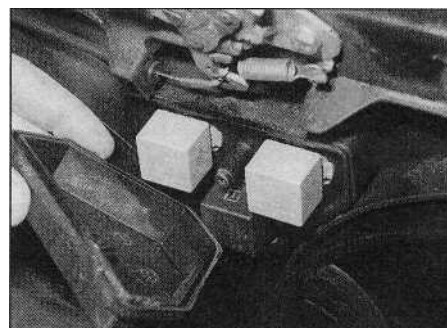
- (a) *Sunroof relay - located behind the overhead console*
- (b) *Tailgate wiper motor relay - fitted to the wiper motor bracket*
- (c) *Cooling fan relay(s) - in the rear of the fan shroud on models with twin fans, or at the side of the radiator where only one fan is fitted (**see illustration**).*



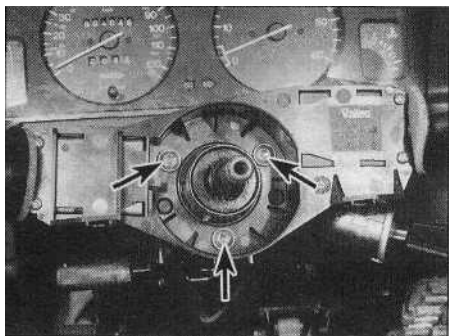
3.3 Using the plastic tweezers supplied to remove a fuse from the main fusebox



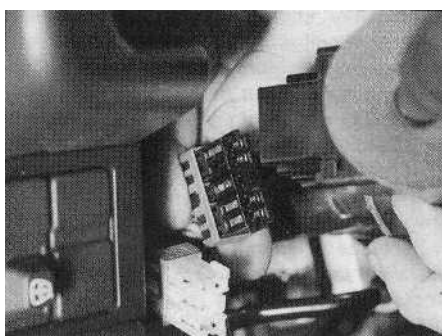
3.7a Engine compartment junction box relays. Fuses are located beneath the small cover (arrowed)



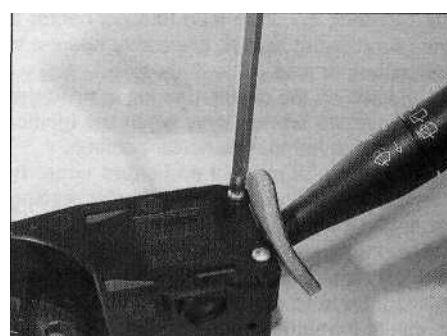
3.7b On models with twin cooling fans, the fan relay(s) are located in the rear of the fan shroud



4.5a Undo the three retaining screws (arrowed)...



4.5b ... then disconnect the wiring connectors, and slide off the combination switch assembly



4.6a Undo the two retaining screws ...

8 Refer to the appropriate Chapters for further information, and to the relevant wiring diagram for details of wiring connections.

9 If a circuit or system controlled by a relay develops a fault and the relay is suspect, operate the system; if the relay is functioning, it should be possible to hear it click as it is energized. If this is the case, the fault lies with the components or wiring of the system. If the relay is not being energized, then either the relay is not receiving a main supply or a switching voltage, or the relay itself is faulty. Testing is by the substitution of a known good unit, but be careful; while some relays are identical in appearance and in operation, others look similar but perform different functions.

10 To renew a relay, first ensure that the ignition switch is off. The relay can then simply be pulled out from the socket, and the new relay pressed in.

4 Switches - removal and refitting



Note: Disconnect the battery negative lead before removing any switch, and reconnect the lead after refitting the switch.

Ignition switch/steering column lock

1 Refer to Chapter 10, Section 21.

Steering column combination switches

2 Remove the steering wheel as described in Chapter 10.

3 Release the panel fasteners by rotating them through a quarter of a turn, and remove the driver's side lower facia panel.

4 Slacken and remove the five screws which secure the two halves of the steering column shrouds together, then remove both the upper and lower shroud.

5 Undo the three retaining screws, then disconnect the wiring connectors from the rear of the combination switches, and lift the switch assembly off the steering column (**see illustrations**).

6 Unscrew the two retaining screws, and slide the relevant switch assembly out of position (**see illustrations**).

7 Refitting is a reversal of the removal procedure.

Instrument panel dimmer switch, exterior mirror switch, alarm switch and air conditioning switch

8 Using a suitable flat-bladed screwdriver, carefully prise the relevant switch panel out of the facia, taking great care not to mark either the panel or facia.

9 Disconnect the wiring connector from the switch, then depress the retaining tangs, and

slide the switch out of the panel (**see illustration**).

10 Slide the switch back into the panel until it clicks into position. Reconnect the wiring connector, then clip the panel back into the facia.

Instrument shroud switches

11 Release the panel fasteners by rotating them through a quarter of a turn, and remove the driver's side lower facia panel.

12 Slacken and remove the five screws which secure the two halves of the steering column shrouds together, then remove both the upper and lower shroud.

13 Slacken and remove the four instrument panel shroud retaining screws, then remove the shroud, disconnecting the switch wiring connectors as they become accessible.

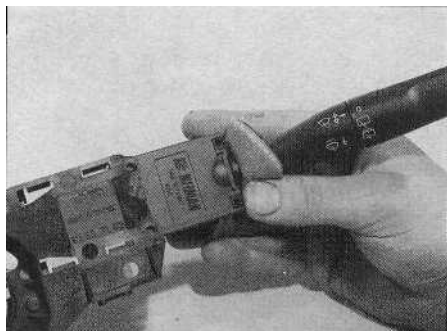
14 Depress the retaining tangs, and slide the relevant switch out of the shroud (**see illustration**).

15 Refitting is a reverse of the removal procedure.

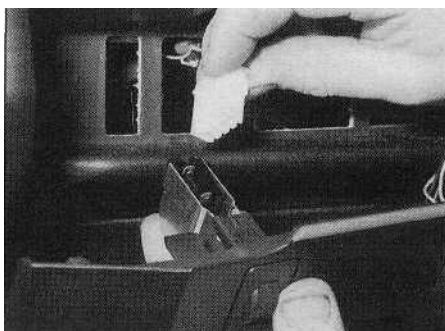
Courtesy light switches

16 Open up the door, then prise the rubber gaiter from the courtesy switch.

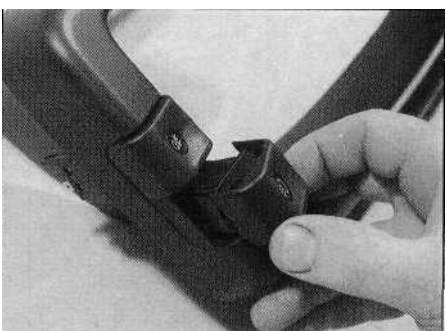
17 Undo the retaining screw, then withdraw the switch from the pillar, disconnecting its wiring connector as it becomes accessible. Tie a piece of string to the wiring, to prevent it falling back into the door pillar.



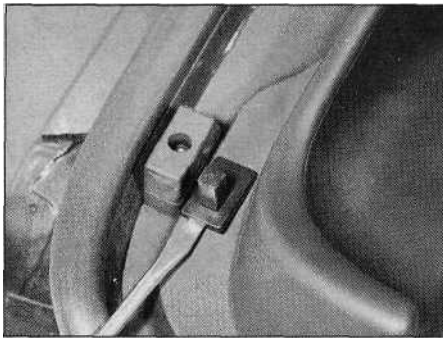
4.6b ... and slide the relevant switch assembly out from the combination switch bracket



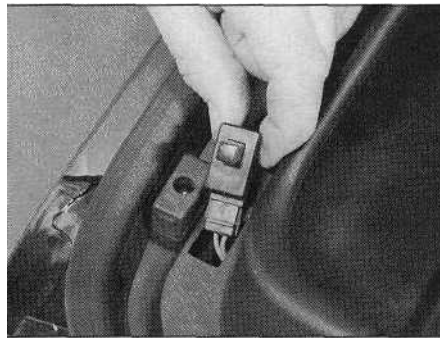
4.9 Removing the instrument panel dimmer switch



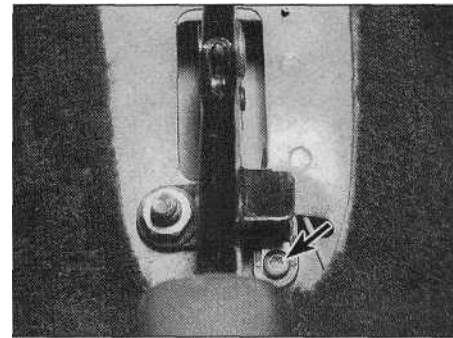
4.14 Removing an instrument shroud switch



4.19a Prise the luggage compartment light switch out of the trim panel...



4.19b ... then withdraw the switch and disconnect its wiring connector



4.22 Handbrake warning light switch retaining screw (arrowed)

18 Refitting is a reverse of the removal procedure, ensuring that the rubber gaiter is correctly seated on the switch.

Luggage compartment light switch

19 Open up the tailgate, then carefully prise the switch out from the left-hand trim panel, and disconnect its wiring connector (**see illustrations**). Tie a piece of string to the wiring, to prevent it falling back behind the trim panel.

20 Reconnect the wiring connector, and clip the switch back into position in the trim panel.

Handbrake warning light switch

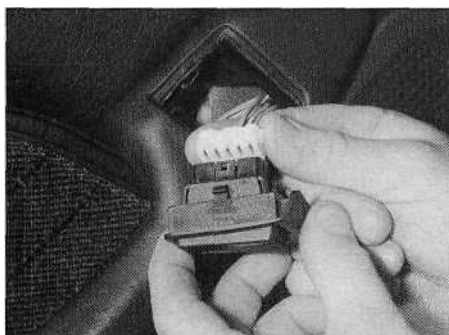
21 Open up the rear ashtray, then depress the retaining tang and remove the ashtray from the handbrake lever cover panel. Slacken and remove the rear retaining nut and the two front retaining screws, then manoeuvre the cover panel off the handbrake lever.

22 Disconnect the wiring connector from the handbrake switch, then undo the retaining screw and remove the switch from the side of the handbrake lever (**see illustration**).

23 Refitting is a reverse of the removal procedure.

Electric window switches

24 Carefully prise the window switch out of the armrest, taking great care not to mark the switch or the armrest, and disconnect the wiring connector (**see illustrations**).



4.24b ... and disconnect it from its wiring connector

25 On refitting, connect the wiring connector, and clip the switch back into position in the armrest.

Electric sunroof switch

26 Carefully prise the courtesy light out from the overhead console, and disconnect it from its wiring connector. Remove the two console retaining screws, then lower the console out of position, and disconnect it from its wiring connectors.

27 Depress the retaining tangs, and slide the sunroof switch out of the console (**see illustration**).

28 Refitting is a reverse of the removal procedure.

5 Bulbs (exterior lights) - renewal



General

1 Whenever a bulb is renewed, note the following points:

- Disconnect the battery negative lead before starting work.
- Remember that, if the light has just been in use, the bulb may be extremely hot.
- Always check the bulb contacts and holder, ensuring that there is clean metal-to-metal contact between the bulb and its live(s) and earth. Clean off any corrosion or dirt before fitting a new bulb.

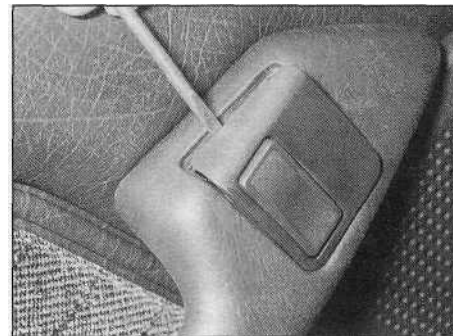
(d) Wherever bayonet-type bulbs are fitted (see Specifications) ensure that the live contacts bear firmly against the bulb contact.

(e) Always ensure that the new bulb is of the correct rating, and that it is completely clean before fitting it; this applies particularly to headlight/foglight bulbs (see below).

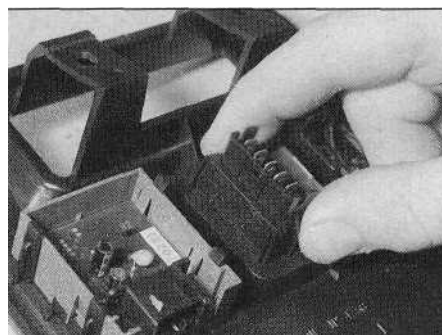
Headlight

2 Working in the engine compartment, remove the relevant plastic cover from the rear of the headlight unit.

3 Disconnect the wiring connectors, then press together the ends of the bulb retaining clip, and release it from the rear of the light (**see illustrations**).



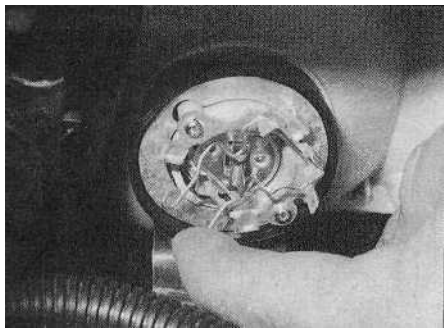
4.24a Carefully prise the window switch out of the armrest...



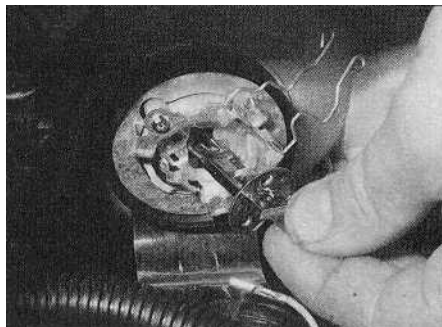
4.27 Depress the retaining tangs, and slide out the sunroof switch



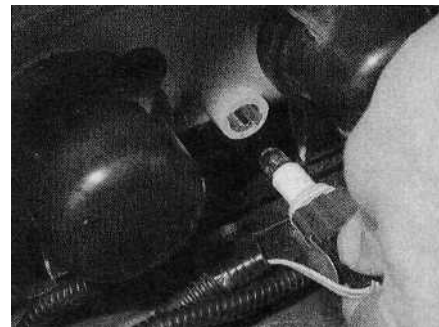
5.3a Disconnect the wiring connectors from the headlight bulb ...



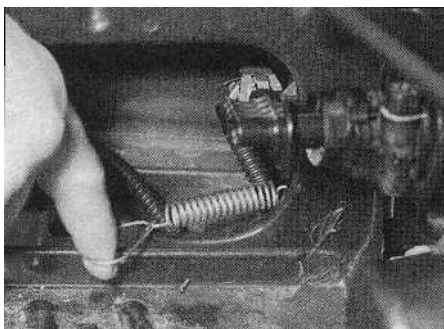
5.3b ... then release the retaining clip ...



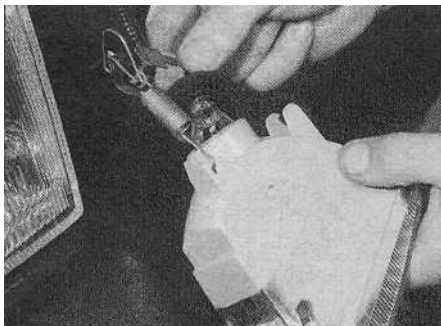
5.4 ... and withdraw the bulb from the rear of the light unit



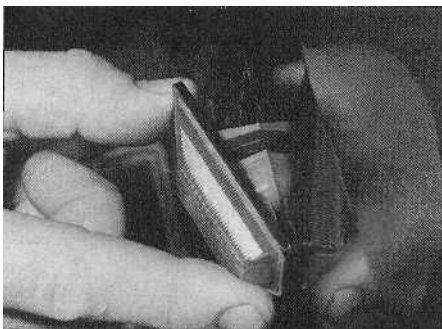
5.8 Removing the sidelight bulbholder from the rear of the headlight unit



5.11 Unhook the retaining spring from within the engine compartment...



5.12 ... then withdraw the direction indicator from the front of the vehicle, and release its bulbholder



5.15 Push the direction indicator side repeater towards the rear of the vehicle, to release its retaining clips ...

4 Withdraw the bulb (see illustration).

5 When handling the new bulb, use a tissue or clean cloth, to avoid touching the glass with the fingers; moisture and grease from the skin can cause blackening and rapid failure of this type of bulb.



If the headlight glass is accidentally touched, wipe it clean using methylated spirit.

6 Install the new bulb, ensuring that its locating tabs are correctly located in the light cut-outs. Secure the bulb in position with the retaining clip, and reconnect the wiring connectors.

7 Slide the plastic cover back into position, ensuring that it is correctly seated on the rear of the light unit.

Front sidelight

8 Working in the engine compartment, twist the bulbholder anti-clockwise, then withdraw it from the headlight unit (see illustration). Note that on some models, it will be necessary to displace the plastic cover from the rear of the unit to gain access to the bulbholder.

9 The bulb is of the capless (push-fit) type, and can be removed by simply pulling it out of the bulbholder.

10 Refitting is the reverse of the removal

procedure, ensuring that the bulbholder seal is in good condition.

Front direction indicator

11 Working in the engine compartment, from behind the light, unhook the retaining spring and withdraw the light unit from the front of the vehicle (see illustration).

12 Twist the bulbholder in a clockwise direction to free it from the light, and remove the light unit (see illustration).

13 The bulb is a bayonet fit in the holder, and can be removed by pressing it and twisting in an anti-clockwise direction.

14 Refitting is a reverse of the removal procedure, ensuring that the light unit is correctly located and securely retained by its spring.

Front direction indicator side repeater

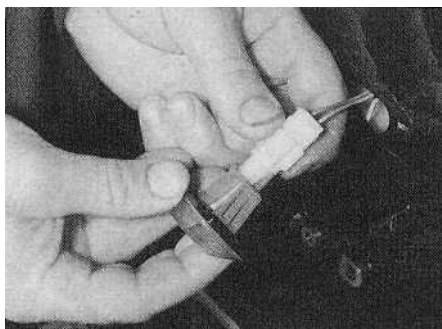
15 Push the light unit towards the rear of the vehicle, to free its retaining clips, then withdraw it from the wing (see illustration).

16 Pull the bulbholder out of the light unit, then pull the capless (push-fit) bulb out of its holder (see illustrations).

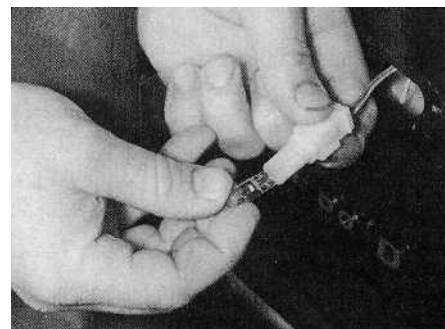
17 Refitting is a reverse of the removal procedure.

Front foglight

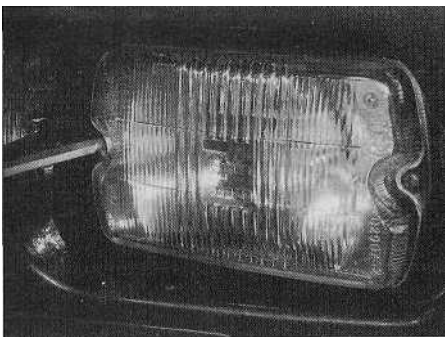
18 Undo the two retaining screws, and



5.16a ... then withdraw the light from the wing, and disengage it from its bulbholder



5.16b Side repeater bulb is of the capless type, being a push-fit in the holder



5.18 Undo the two retaining screws, and withdraw the lens unit from the foglight

withdraw the lens unit from the front of the light (see illustration).

19 Release the retaining clip, and withdraw the bulb from the rear of the unit. Unclip the plastic insulator cover, then disconnect the bulb wiring connector and remove the bulb (see illustrations).

20 When handling the new bulb, use a tissue or clean cloth, to avoid touching the glass with the fingers; moisture and grease from the skin can cause blackening and rapid failure of this type of bulb. If the glass is accidentally touched, wipe it clean using methylated spirit.

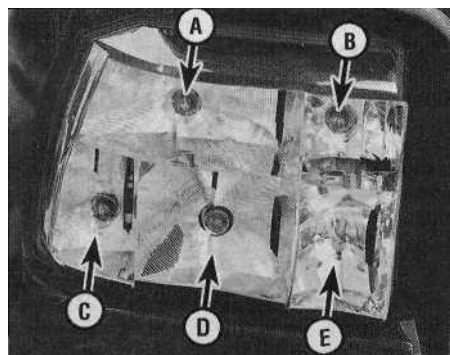
21 Connect the new bulb to the wiring connector, and refit the plastic insulator cover to the connector.

22 Install the bulb in the rear of the lens, ensuring that its locating tabs are correctly located in the cut-outs. Secure the bulb in position with the retaining clip, ensuring that the wiring insulator is correctly located underneath the clip (see illustration).

23 Refit the lens to the light unit, taking great care not trap the wiring, and securely tighten its retaining screws.

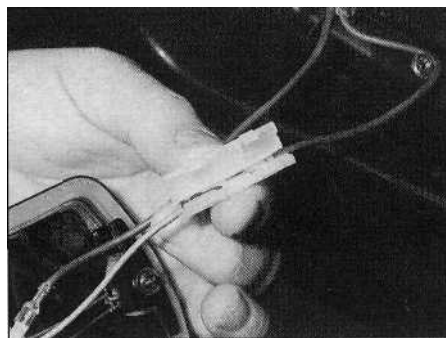
Rear light cluster

24 Open up the tailgate, then undo the two retaining screws and remove the lens from the



5.25 Rear light cluster bulbs

- A Direction indicator
- B Reversing light
- C Stop/tail light
- D Sidelight
- E Foglight (where fitted)



5.19a Unclip the plastic insulator cover ...

rear light cluster, noting its rubber seal (see illustration).

25 The relevant bulb can then be renewed - all bulbs have a bayonet fitting (see illustration). Note that the stop/tail light bulb has offset locating pins, to prevent it being installed incorrectly.

26 Refitting is the reverse of the removal sequence, noting that the rubber lens seal must be renewed if damaged.

Number plate light

27 Raise the tailgate slightly to improve access to the light, then carefully prise out the light lens to gain access to the bulb.

28 The bulb is of the capless (push-fit) type, and is simply pulled out of position.

29 Push in the new bulb, and clip the lens back into position.

6 Bulbs (interior lights) - renewal

General

1 Refer to Section 5, paragraph 1.

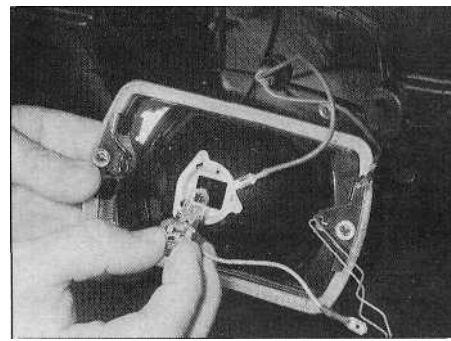
Courtesy lights

2 Carefully prise the light unit out of position, then twist the bulbholder in an anti-clockwise direction, and remove it from the rear of the light unit (see illustrations).

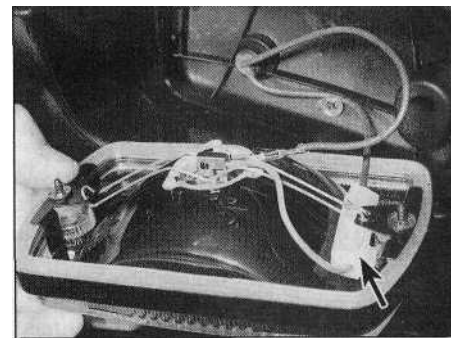
3 The bulb is of the capless (push-fit) type;



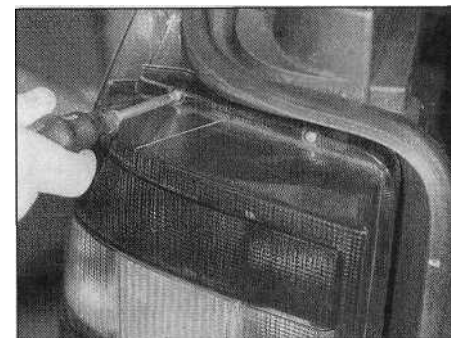
6.2a Prise the courtesy light out of position ...



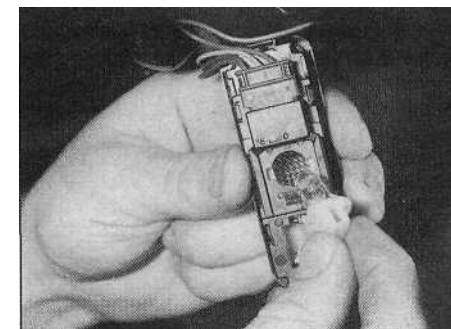
5.19b ... then disconnect the wiring connector and withdraw the foglight bulb



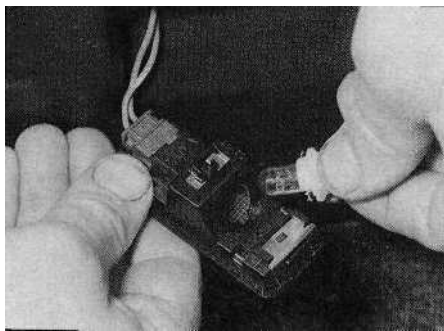
5.22 Prior to refitting the foglight lens, ensure that the plastic insulator (arrowed) is correctly positioned underneath the retaining clip



5.24 Rear light cluster lens is retained by two screws



6.2b ... and twist the bulbholder anti-clockwise to release it from the rear of the light unit



6.5 Removing the luggage compartment light bulbholder

pull the old bulb out of the holder, and press the new one into position.

4 Refit the bulbholder to the rear of the light unit, and clip the light unit back into position.

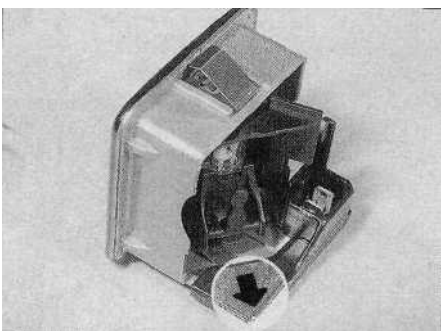
Luggage compartment light

5 Refer to the information given above in paragraphs 2 to 5 (see illustration).

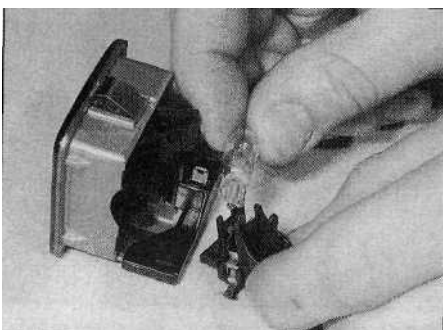
Map reading light

6 Carefully prise the map reading light unit out of the headlining, then disconnect the wiring connector and remove the light unit (see illustrations).

7 Swivel the bulbholder unit fully away from the wiring connector, then pull the bulbholder



6.7 Align the bulbholder with the arrow (arrowed) on the light unit, and pull in the direction of the arrow to remove the bulbholder



6.8 The map reading light bulb is of the capless type



6.6a Carefully prise the map reading light out of the overhead console ...

lever in the direction of the arrow cast on the light unit, to disengage the holder from the light unit (see illustration).

8 The bulb is of the capless (push-fit) type; pull the old bulb out of the holder, and press the new one into position (see illustration).

9 Slide the bulbholder back onto its pivot in the light unit, then connect the wiring connector, and clip the light unit back into position in the headlining.

Instrument panel lights

10 Remove the instrument panel as described in Section 9.

11 Twist the relevant bulbholder anti-clockwise, and withdraw it from the rear of the panel (see illustration).

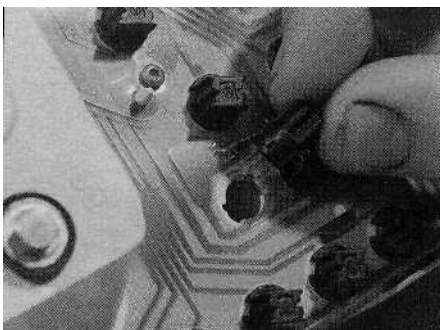
12 All bulbs are integral with their holders. Be very careful to ensure that the new bulbs are of the correct rating, the same as those removed; this is especially important in the case of the alternator/no-charge warning light.

13 Refit the bulbholder to the rear of the instrument panel, then refit the instrument panel as described in Section 9.

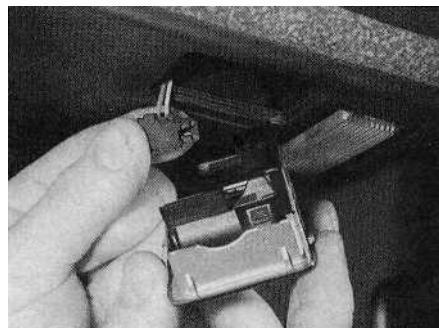
Selector lever position display bulbs - models with automatic transmission

14 Remove the centre console as described in Chapter 11.

15 Twist the relevant bulbholder anti-clockwise, and withdraw it from the rear of the panel.



6.11 Removing an instrument panel bulb from the rear of the panel



6.6b ... and disconnect it from its wiring connector

16 The bulbs are of the capless (push-fit) type; pull the old bulb out of the holder, and press the new one into position.

17 Refit the bulbholder to the rear of the panel, then refit the centre console as described in Chapter 11.

Clock illumination bulb

18 Remove the clock as described in Section 11.

19 Twist the bulbholder anti-clockwise, and withdraw it from the rear of the clock (see illustration). The bulb is integral with its holder.

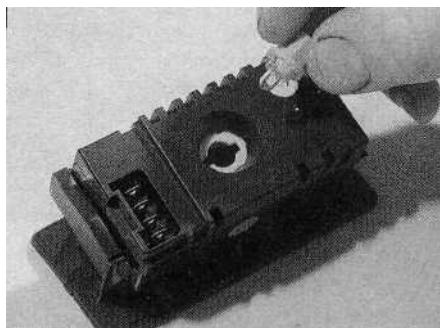
20 Refit the bulbholder to the rear of the clock, then refit the clock as described in Section 11.

Cigarette light/ashtray illumination bulb

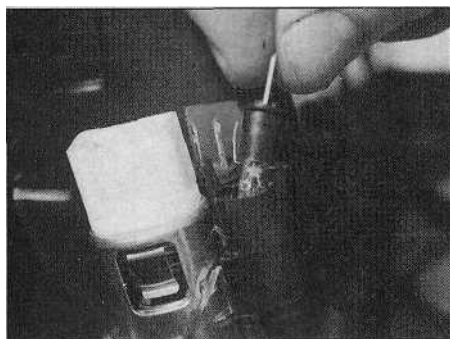
21 Remove the centre console as described in Chapter 11.

22 Where a radio/cassette player is fitted, remove it as described in Section 21, then undo the two retaining screws and remove the mounting bracket from the radio aperture. Where no radio/cassette player is fitted, carefully prise out the storage box from the centre of the fascia panel.

23 Undo the four centre vent panel retaining screws (two located above the heater controls, and two directly below), then unclip the panel and withdraw it from the fascia (see illustrations 13.3a and 13.3b).



6.19 Removing the clock illumination bulb



6.24 Removing the cigarette lighter/ashtray illumination bulb

24 Slide the illumination bulbholder out of the panel, and renew the bulb (**see illustration**). The bulbs are of the capless (push-fit) type; pull the old bulb out of the holder, and press the new one into position.

25 Slide the illumination bulbholder back into position, and refit the panel by reversing the removal procedure.

Heater control panel illumination bulb

26 Carry out the operation described above in paragraph 22.

27 Reaching in through the radio/storage box aperture, rotate the relevant bulbholder anti-clockwise to free it from the rear of the panel. The bulbs are of the capless (push-fit) type; pull the old bulb out of the holder, and press the new one into position.

28 Refitting is a reverse of the removal procedure.

Switch illumination bulbs

29 All of the switches are fitted with illuminating bulbs; some are also fitted with a bulb to show when the circuit concerned is operating. These bulbs are an integral part of the switch assembly, and cannot be obtained separately. Bulb replacement will therefore require the renewal of the complete switch assembly.

7 Exterior light units - removal and refitting



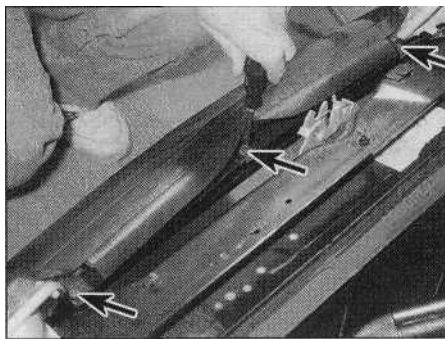
Note: Disconnect the battery negative lead before removing any light unit, and reconnect the lead after refitting the light.

Headlight

1 Open the bonnet, then slacken and remove the three retaining screws, and remove the plastic cover from the bonnet lock. Slacken the three retaining screws, and remove the radiator grille (**see illustration**).

2 Remove the direction indicator light as described below.

3 Remove the plastic cover(s) from the rear of the headlight unit, and disconnect the wiring connectors from both the headlight and



7.1 Radiator grille is retained by three screws (arrowed)

sidelight bulbs (and, where fitted, from the headlight adjustment motor).

4 Using pliers, slide out the retaining clip from the top headlight mounting point (where fitted) (**see illustration**).

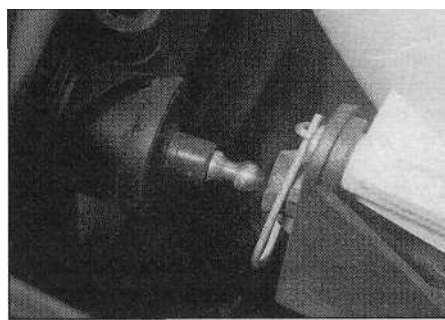
5 Pull the headlight forwards, to release it from its two retaining spring clips, and remove the headlight from the vehicle (**see illustrations**).

6 Refitting is a direct reversal of the removal procedure. On completion, check the headlight beam alignment, using the information given in Section 8.

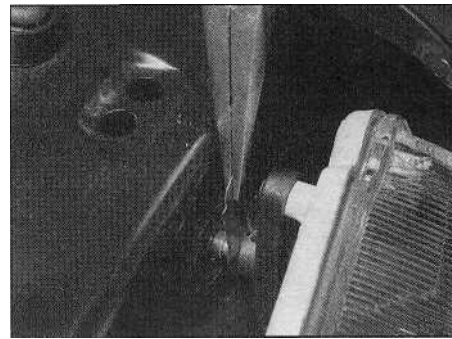
Front direction indicator light

7 Open the bonnet, and from within the engine compartment, unhook the indicator light retaining spring from the vehicle body.

8 Withdraw the light unit from the front of the vehicle, and disconnect its wiring connector.



7.5a Pull the headlight forwards, to release it from its retaining spring clips ...



7.4 Using pliers remove the retaining clip from the top headlight mounting point

9 Refitting is the reverse of removal.

Front direction side repeater light

10 Push the light unit towards the rear of the vehicle, to free its retaining clips, then withdraw it from the wing and disconnect its wiring connector.

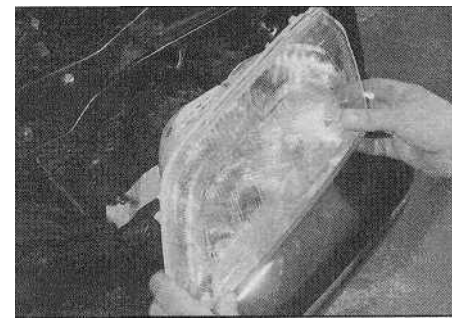
11 On refitting, reconnect the wiring connector to the light, then clip it back into position on the wing.

Front foglight

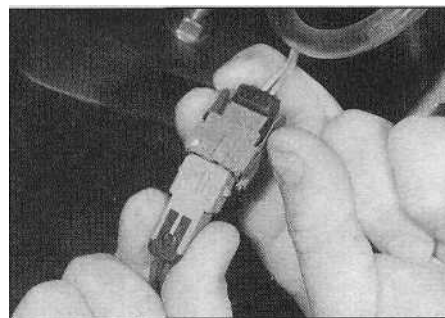
12 Jack up the front of the vehicle, and support it on axle stands.

13 Trace the wiring back from the rear of the foglight, and disconnect it at the wiring connector (**see illustration**).

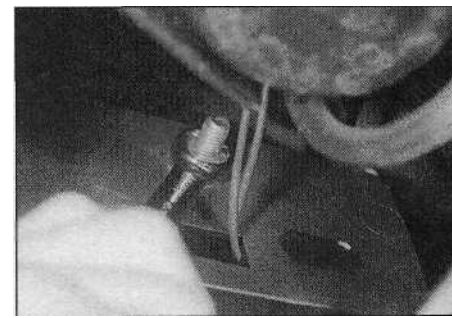
14 Slacken and remove the foglight retaining nut, and withdraw the light unit from the front of the bumper (**see illustrations**).



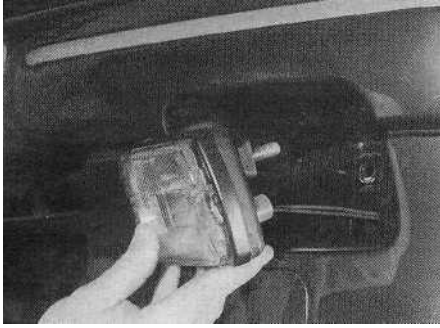
7.5b ... and withdraw the headlight unit from the vehicle



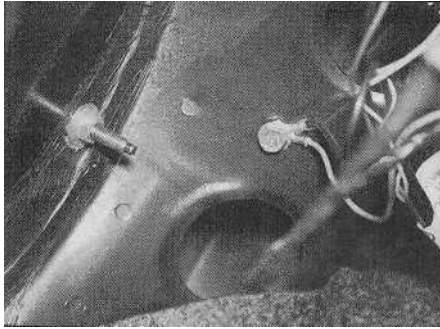
7.13 Disconnect the wiring connector ...



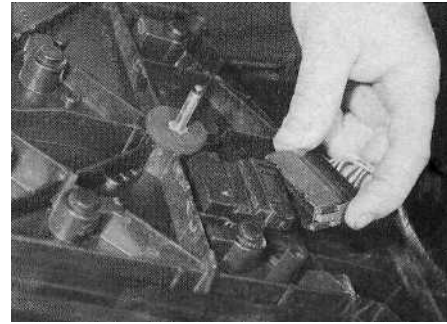
7.14a ... then slacken and remove the retaining nut..



7.14b ... and withdraw the foglight from the front of the bumper



7.17a Undo the retaining nut situated on the inside of the luggage compartment...



7.17b ... then remove the rear light unit from the rear of the vehicle, and disconnect its wiring connector

15 Refitting is the reverse of removal.

Rear light cluster

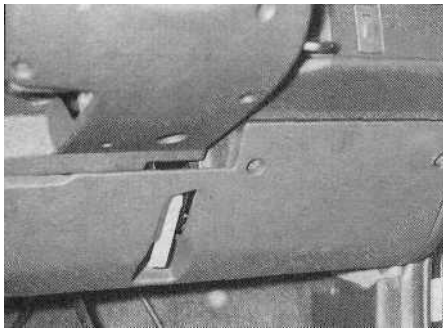
16 Remove the luggage compartment lower side trim panel as described in Chapter 11, Section 26.

17 Slacken and remove the rear light cluster retaining nut, then free the light cluster from the rear of the vehicle, and disconnect its wiring connector (**see illustrations**).

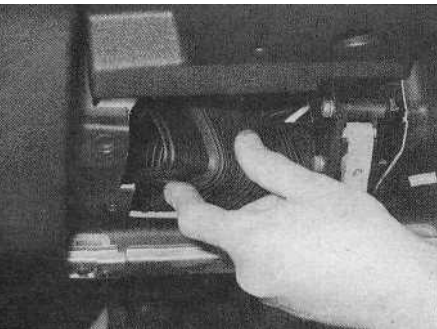
18 Refitting is a reversal of the removal procedure.

Number plate light

19 Raise the tailgate slightly to improve access to the light, then carefully prise out the light lens and disconnect its wiring connector.



9.3a Remove the driver's side lower facia panel...



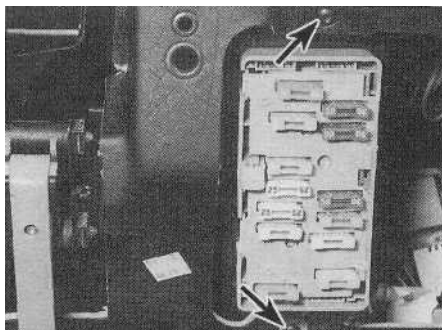
9.3b ... and remove the heater duct from behind the panel

8 Headlight beam alignment - general information

1 Accurate adjustment of the headlight beam is only possible using optical beam-setting equipment, and this work should therefore be carried out by a Citroën dealer or suitably-equipped workshop.

2 For reference, the headlights can be adjusted using a suitable-sized Allen key to rotate the adjuster assemblies fitted to the top of each light unit. The outer adjuster alters the vertical height of the beam, whilst the inner adjuster alters the horizontal position of the beam. Prior to adjustment, ensure that the vehicle is unladen, and the adjuster units (**see below**) are both set to position "0".

3 Each headlight unit is equipped with a four-position adjuster unit - this can be used to adjust the headlight beam, to compensate for the relevant load which the vehicle is carrying. The adjuster units are incorporated into the vertical beam adjuster; access to them can be gained with the bonnet open. Position "0" is the standard position, positions "1" and "2" for when the vehicle is partly-laden, and position "3" for when the vehicle is fully-laden. Ensure that both adjusters are set to the same position, and be sure to reset to position "0" once the load has been removed.



9.5 Fusebox retaining screws (arrowed)

9 Instrument panel - removal and refitting

Removal

1 Disconnect the battery negative terminal.
2 Remove the steering wheel as described in Chapter 10.

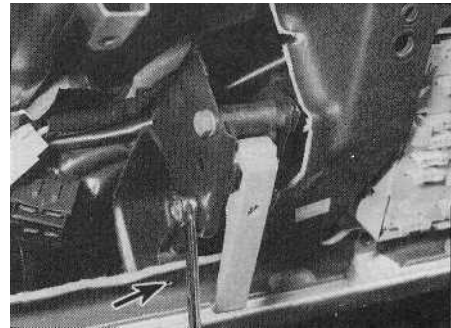
3 Release the panel fasteners by rotating them through a quarter of a turn, and remove the driver's side lower facia panel. Release the heater duct, and remove it from behind the panel (**see illustrations**).

4 Slacken and remove the five screws which secure the two halves of the steering column shrouds together, then remove both the upper and lower shroud. Release the steering column, and lock it in its lowest position.

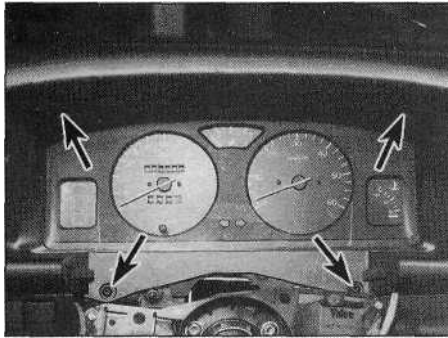
5 Undo the two retaining screws, and free the fusebox from the facia panel (**see illustration**).

6 Slacken and remove the two bolts securing the bonnet release lever to the facia, and free the release lever assembly from the facia. Undo the heater duct retaining screw, located directly beneath the bonnet release lever, then manoeuvre the heater duct out from the behind the facia (**see illustration**).

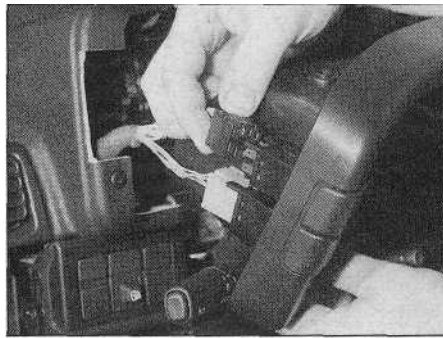
7 Slacken and remove the four instrument panel shroud retaining screws, then remove the shroud, disconnecting the switch wiring



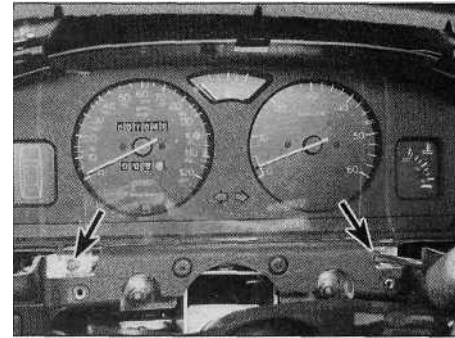
9.6 Undo the two bonnet release lever retaining bolts, and free the lever from its bracket. Heater duct retaining screw is



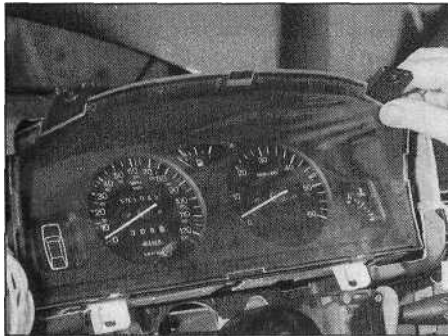
9.7a Slacken and remove the instrument panel shroud retaining screws (arrowed)...



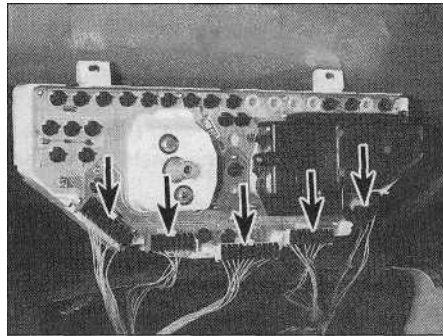
9.7b ... then disconnect the switch wiring connectors and remove the shroud



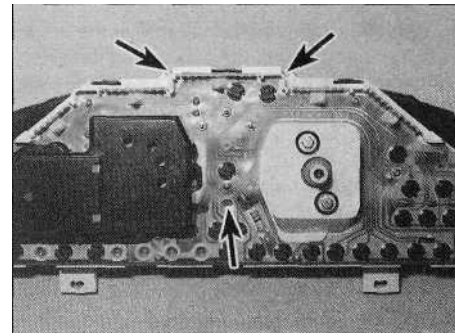
9.9a Undo the retaining screws (arrowed)...



9.9b ... then withdraw the instrument panel from the fascia ...



9.9c ... and disconnect the wiring connectors (arrowed) from the rear of the panel



10.2a Slacken and remove the three instrument panel cover retaining screws (arrowed)...

connectors as they become accessible (see illustrations).

8 Reaching in through the lower fascia aperture, reach up behind the instrument panel, then depress the retaining tangs and detach the speedometer cable from the rear of the panel.

9 Undo the two lower retaining screws, then withdraw the instrument panel assembly from the fascia. Disconnect the wiring connectors from the rear of the panel, and remove the assembly from the vehicle (see illustrations).

Refitting

10 Refitting is a reversal of the removal procedure. On completion, reconnect the battery and check the operation of all the panel warning lights and the instrument panel shroud switches, to ensure that they are functioning correctly.

10 Instrument panel components - removal and refitting

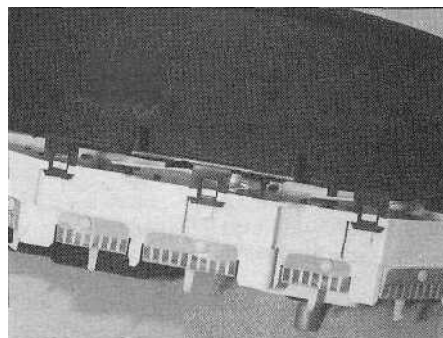


General

1 Remove the instrument panel as described in Section 9, then proceed as described under the relevant sub-heading.

Speedometer

2 Slacken and remove the three panel front cover retaining screws from the rear of the



10.2b ... then release the retaining clips, and separate the panel and cover

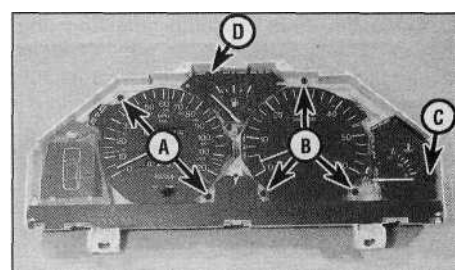
instrument panel. Carefully release the six retaining clips situated around the outside of the cover, then separate the cover and instrument panel (see illustrations).

3 Undo the two retaining screws from the front of the speedometer face, then undo the two retaining bolts from the rear of the panel, and withdraw the speedometer (see illustrations).

4 Refitting is a reverse of the removal procedure. Do not overtighten the instrument panel fasteners, as the plastic is easily cracked.

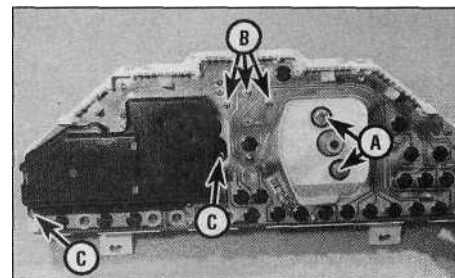
Tachometer

5 Remove the panel front cover as described in paragraph 2.



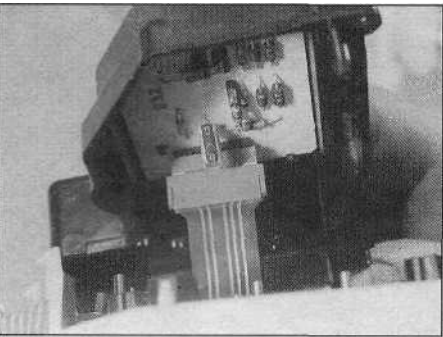
10.3a Instrument panel component front fasteners

- A Speedometer screws
- B Tachometer screws
- C Temperature gauge screw
- D Fuel gauge screw



10.3b Instrument panel component rear fasteners

- A Speedometer bolts
- B Fuel gauge nuts
- C Rear cover screws



10.6 Instrument panel rear cover wiring connector

6 Undo the two screws and remove the cover from the rear of panel, disconnecting its wiring connector as it becomes accessible (**see illustration**).

7 Undo the four retaining nuts, and remove the circuit board from the rear of the tachometer (**see illustration**).

8 Slacken and remove the three screws from the front face of the tachometer, and remove the tachometer from the case.

9 Refitting is a reverse of the removal procedure. Do not overtighten the instrument panel fasteners, as the plastic is easily cracked.

Temperature gauge

10 Remove the front cover and the rear cover, as described in paragraphs 2 and 6.

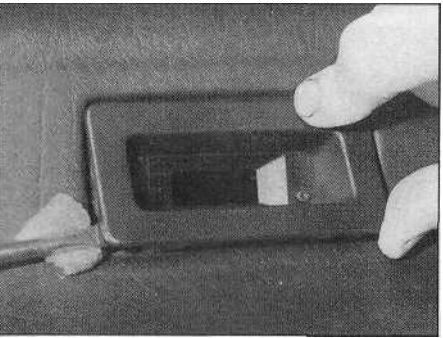
11 Undo the three retaining nuts from the rear, and the single screw from the front, of the temperature gauge, and withdraw the gauge from the case (**see illustration**).

12 Refitting is a reverse of the removal procedure. Do not overtighten the instrument panel fasteners, as the plastic is easily cracked.

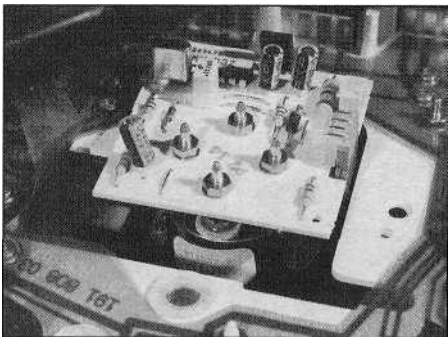
Fuel gauge

13 Remove the front cover as described in paragraph 2.

14 Slacken and remove the three nuts from the rear, and undo the single retaining screw from the front face of the gauge, and withdraw the gauge from the case.



11.2 Carefully prise the clock out of the facia (note the use of padding under the screwdriver, to avoid damage)...



10.7 Tachometer rear retaining nuts and printed circuit board

15 Refitting is a reverse of the removal procedure. Do not overtighten the instrument panel fasteners, as the plastic is easily cracked.

Printed circuit

16 Remove all the panel instruments as described above.

17 Remove all the bulbholders from the rear of the case, by twisting them in an anti-clockwise direction. Slacken and remove all the circuit retaining screws, then release the printed circuit from its retaining pins, and remove it from the rear of the case.

18 Refitting is a reversal of the removal procedure, ensuring that the printed circuit is correctly located on all the necessary retaining pins.

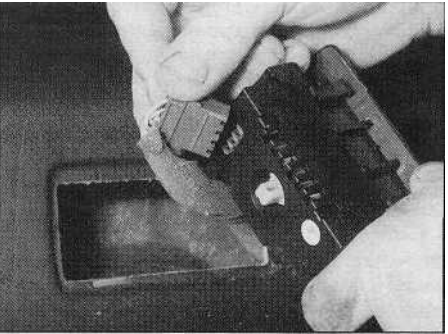
11 Clock - removal and refitting

Removal

- 1 Disconnect the battery negative terminal.
- 2 Using a flat-bladed screwdriver, carefully prise the clock out of the facia panel, taking great care not mark the clock or facia (**see illustration**).
- 3 Disconnect the wiring connector, and remove the clock (**see illustration**).

Refitting

- 4 Reconnect the wiring connector, then clip the clock into the position in the facia.



11.3 ... and disconnect its wiring connector



10.11 Temperature gauge retaining nuts (arrowed)

5 Reconnect the battery negative terminal, then reset the clock.

12 Door-open warning display - general information

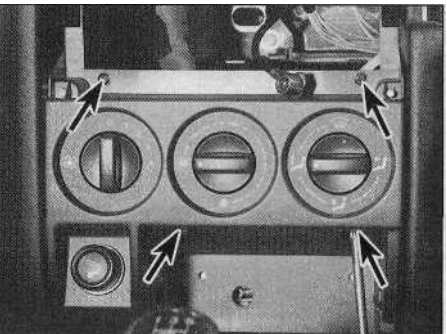
Some models covered in this manual are equipped with a door-open warning display in the instrument panel. If a door is not correctly shut, the relevant door on the warning panel will be illuminated.

The system consists of switches which are built into the door lock assemblies and the panel in the instrument cluster. The panel bulbs are the same as the other instrument panel bulbs, and can be renewed as described in Section 6. The switches are an integral part of each door lock assembly.

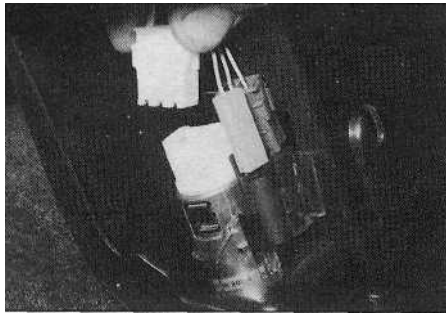
13 Cigarette lighter - removal and refitting

Removal

- 1 Remove the centre console as described in Chapter 11.
- 2 Where a radio/cassette player is fitted, remove it as described in Section 21, then undo the two retaining screws and remove the mounting bracket from the radio aperture. Where no radio/cassette player is fitted, carefully prise out the storage box from the centre of the facia panel.



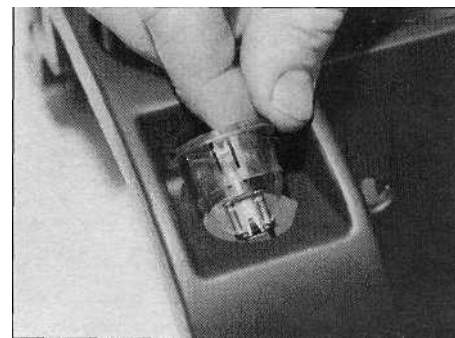
13.3a Undo the four retaining screws (arrowed)...



13.3b ... then withdraw the centre vent panel, disconnecting the wiring connectors from the cigarette lighter



13.4a Release the retaining tangs, then withdraw the metal insert...



13.4b ... followed by the plastic outer section of the cigarette lighter

3 Undo the four centre vent panel retaining screws (two located above the heater controls, and two directly below), then unclip the panel and withdraw it from the fascia. Disconnect the wiring connectors from the cigarette lighter and ashtray illumination bulb, and remove the centre vent panel assembly from the vehicle (see illustrations).

4 Remove the lighter element, release the retaining tangs and push out the metal insert, then remove the plastic outer section of the lighter (see illustrations).

Refitting

5 Refitting is a reversal of the removal procedure.

14 "Lights-on" warning system - general information

1 Most vehicles covered in this manual are equipped with a "lights-on" warning system. The purpose of the system is to inform the driver that the lights have been left on once the ignition switch has been turned off; the buzzer will sound when a door is opened. The system consists of a buzzer unit which is linked to the door courtesy light switches.

2 To gain access to the buzzer unit, release the three fasteners by rotating them through 90°, then remove the driver's side lower fascia panel. The buzzer unit is situated in the relay panel located directly behind the fusebox. The

buzzer unit is a push-fit in the panel, and can easily be identified by the slots in its cover (see illustration).

3 Refer to Section 4 for information on courtesy light switch removal.

15 Horn - removal and refitting

Removal

1 Jack up the front of the vehicle, and support it on axle stands.

Electric horn

2 Undo the nut securing the horn to its mounting bracket, then lower the horn out of

position, and disconnect it from its wiring connector.

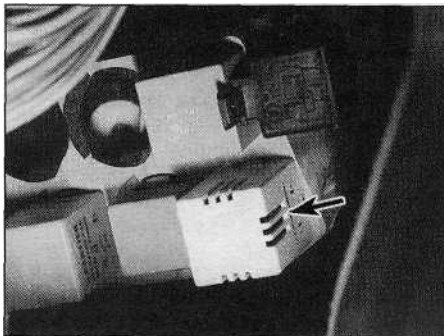
Air horn

3 Slacken and remove the nut and bolt securing the horn mounting bracket to the vehicle body, then remove the horn, disconnecting it from its air supply pipe (see illustrations).

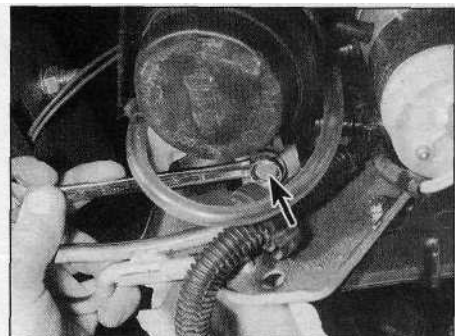
4 Disconnect the wiring connector from the air compressor, then undo the retaining nut and withdraw the compressor from underneath the vehicle (see illustrations). Recover the spacer from the compressor mounting bolt.

Refitting

5 Refitting is a reverse of the removal procedure.



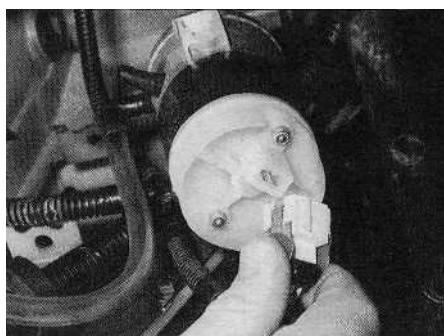
14.2 "Lights-on" warning buzzer (arrowed) is situated behind the main fusebox



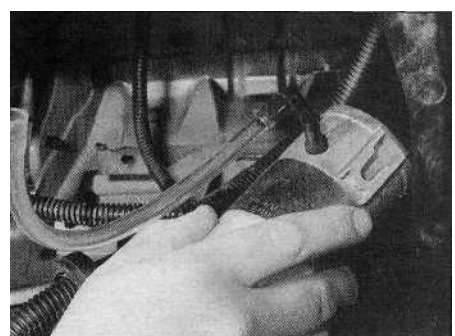
15.3a Slacken and remove the retaining nut and bolt (arrowed)...



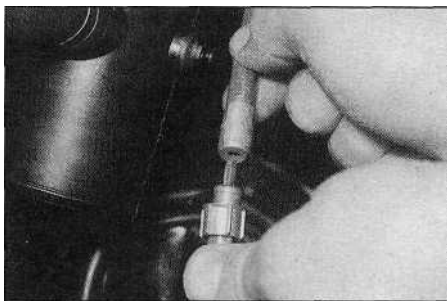
15.3b ... then remove the horn, disconnecting it from its supply pipe



15.4a Disconnect the wiring connector ...



15.4b ... then undo the retaining nut and remove the air compressor



16.4 Unscrew the knurled retaining ring, and separate the upper and lower speedometer cable sections

16 Speedometer drive cable - removal and refitting

General

1 The drive cable is in two parts; the lower cable runs from the transmission to a point just in front of the left-hand end of the bulkhead, while the upper cable runs from that point to the rear of the instrument panel. Each section can be removed individually, as follows.

Upper cable

Removal

2 On left-hand-drive models, remove the instrument panel as described in Section 9.

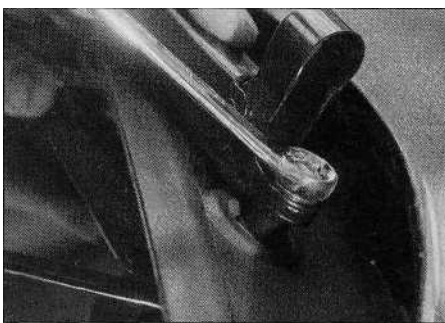
3 On right-hand-drive models, remove the complete fascia assembly (see Chapter 11).

4 Working in the engine compartment, slacken the knurled retaining ring, and separate the upper and lower cable sections (*see illustration*). Tie a length of string to the end of the upper section of the cable.

5 From inside the vehicle, withdraw the cable from the bulkhead. Once the cable is free, untie the string and leave it in position in the vehicle; the string can then be used to draw the new cable back into position.

Refitting

6 Tie the inner end of the string to the end of the cable, then use the string to draw the speedometer cable through into the engine



17.2a Raise the spindle cover, then undo the retaining nut...



17.2b ... and remove the wiper arm from the spindle

compartment. Once the cable is through, untie the string.

7 On left-hand-drive models, position the cable so that approximately 145 mm of the cable protrudes into the engine compartment, then connect the end of the cable to the lower cable section, and securely tighten the retaining ring. Refit the instrument panel as described in Section 9.

8 On right-hand-drive models, position the cable so that approximately 100 mm of the cable protrudes into the engine compartment, then connect the end of the cable to the lower cable section, and securely tighten the retaining ring. Refit the fascia assembly as described in Chapter 11.

Lower cable

Removal

9 Apply the handbrake, then jack up the front of the vehicle and support it on axle stands.

10 Working from underneath the vehicle, withdraw the rubber retaining pin, and detach the cable from the speedometer drive on the transmission.

11 Working in the engine compartment, slacken the knurled retaining ring, then detach the lower cable section from the upper section, and remove it from the vehicle.

Refitting

12 Examine the O-rings fitted to the cable lower-end fitting for signs of damage or deterioration, and renew if necessary. Apply a smear of clean engine oil to the O-rings, to aid installation.

13 Attach the lower cable to the upper cable, and securely tighten the retaining ring.

14 Ensuring that the cable is correctly routed, slide the lower end of the cable into position in the speedometer drive, and secure it in position with the rubber retaining pin. Lower the vehicle to the ground.

17 Wiper arm - removal and refitting

Removal

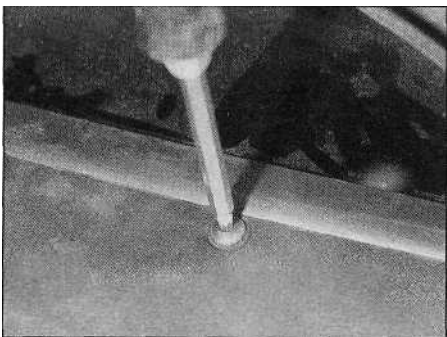
1 Operate the wiper motor, then switch it off so that the wiper arm returns to the at-rest position.

HAYNES HINT *Stick a piece of masking tape along the edge of the wiper blade, to use as an alignment aid on refitting.*

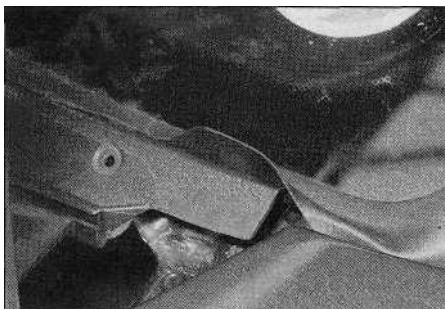
2 Lift up the wiper arm spindle nut cover, then slacken and remove the spindle nut. Lift the blade off the glass, and pull the wiper arm off its spindle (*see illustrations*). If necessary, the arm can be levered off the spindle using a suitable flat-bladed screwdriver.

Refitting

3 Ensure that the wiper arm and spindle splines are clean and dry, then refit the arm to the spindle, aligning the wiper blade with the tape fitted on removal. Refit the spindle nut, tightening it securely, and clip the nut cover back in position.



18.3a Undo the six retaining screws ...



18.3b ... then carefully ease the wiper motor/vent panel cover out from behind the windscreen sealing strip

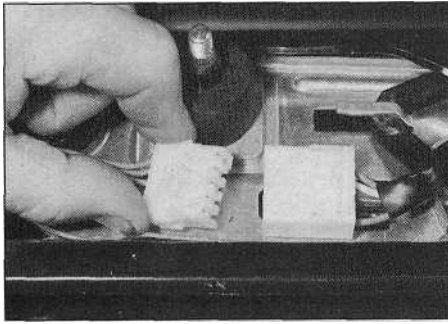
18 Windscreen wiper motor and linkage - removal and refitting

Removal

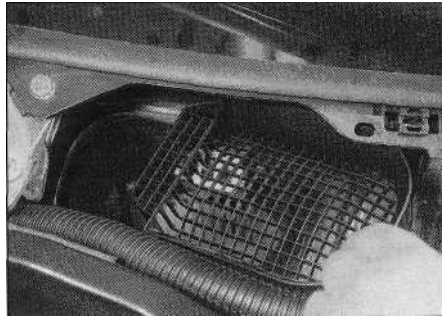
1 Disconnect the battery negative terminal.

2 Remove the wiper arm as described in the previous Section.

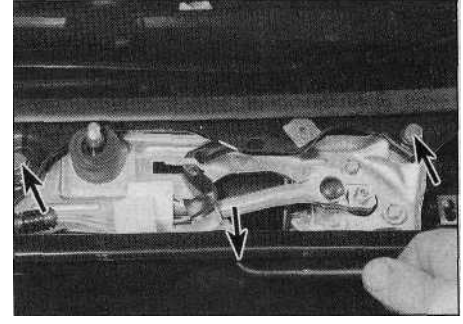
3 Open the bonnet, and slacken and remove the six wiper motor cover/vent panel retaining screws. Carefully ease the cover out from behind the windscreen sealing strip, then disengage its front locating pegs, and manoeuvre the panel away from the vehicle (*see illustrations*).



18.4 Disconnect the wiper motor wiring connector...



18.5 ... and remove the plastic cover from the blower motor intake duct



18.6a Undo the three retaining bolts (arrowed)...

4 Disconnect the wiring connector from the front of the wiper motor (see illustration).

5 Remove the plastic cover from the heater blower motor intake passage (see illustration).

6 Undo the three wiper motor retaining bolts, then manoeuvre the wiper motor out of position, and remove it from the vehicle (see illustrations).

7 If necessary, using a suitable flat-bladed screwdriver, carefully lever the wiper linkage off the motor spindle balljoint. Slacken and remove the three motor retaining bolts, and separate the motor and linkage (see illustration).

Refitting

8 Where necessary, assemble the motor and linkage, and securely tighten the motor

retaining bolts. Clip the linkage onto the spindle balljoint, and check that it is securely retained.

9 Manoeuvre the motor assembly back into position, and refit the three retaining bolts, tightening them securely.

10 Reconnect the wiring connector to the motor, and refit the cover to the blower motor intake passage.

11 Manoeuvre the wiper motor/vent cover back into position, and engage its front locating pegs with their mounting rubbers (see illustration). Starting at the centre and working outwards, carefully ease the top edge of the cover behind the windscreen sealing strip. Once the cover is correctly seated behind the strip, secure it in position with its six retaining screws.

12 Refit the wiper arm as described in

Section 17, and reconnect the battery negative terminal.

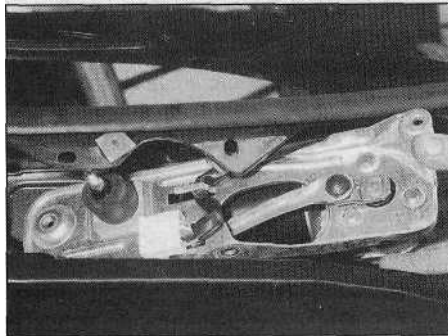
19 Tailgate wiper motor - removal and refitting

Removal

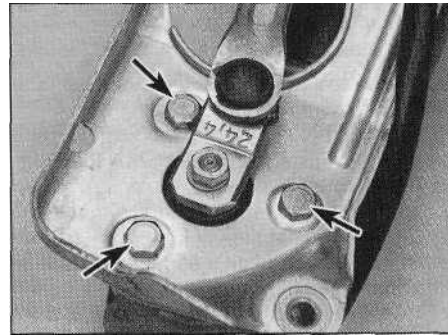
1 Remove the wiper arm as described in Section 17.

2 Unscrew the knurled retaining ring from the wiper spindle, and lift off the trim cover (see illustrations).

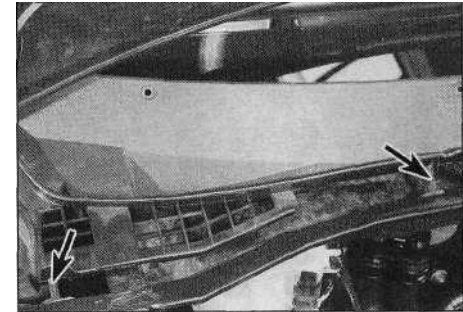
3 Open up the tailgate, then release the fasteners by rotating them through a quarter of a turn, and remove the wiper motor cover from the centre of the tailgate (see illustration).



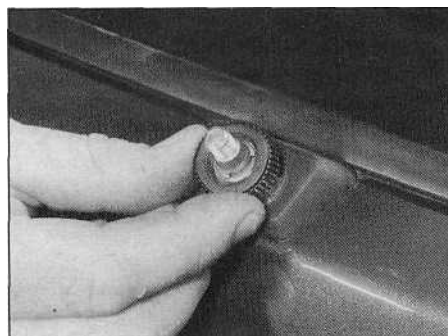
18.6b ... then remove the wiper motor from the vehicle



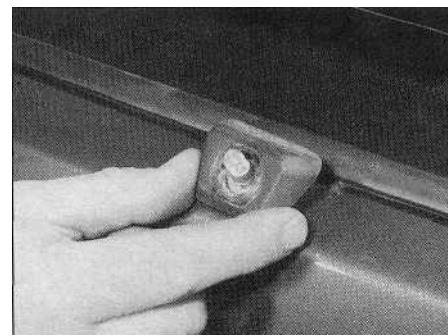
18.7 Windscreen wiper motor retaining bolts (arrowed)



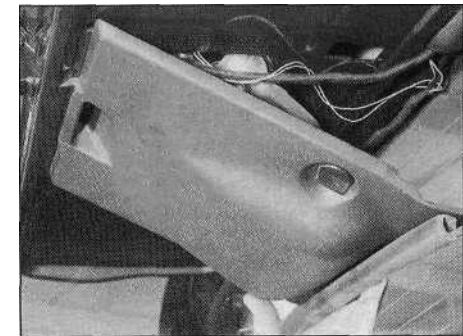
18.11 On refitting, ensure the wiper motor/vent cover locating pegs (arrowed) are correctly located



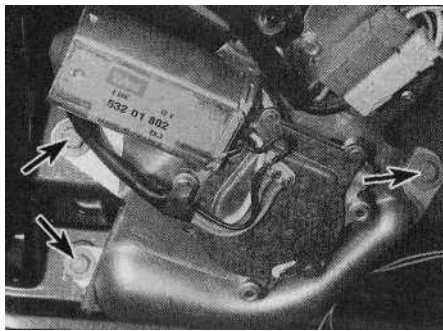
19.2a Unscrew the knurled retaining ring ...



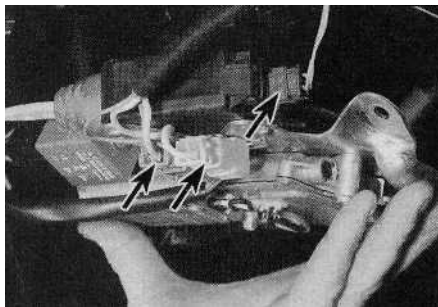
19.2b and remove the trim cover from the tailgate wiper motor spindle



19.3 Removing the wiper motor cover from the rear of the tailgate



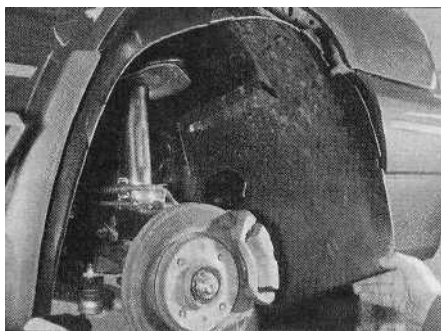
19.4a Slacken and remove the three retaining bolts (arrowed)...



19.4b ... then withdraw the motor, disconnecting the wiring connectors (arrowed) as they become accessible



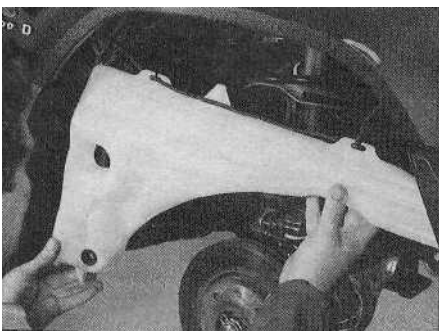
20.2 Disconnecting the windscreen washer supply pipe from its non-return valve



20.3 Removing the right-hand wheel arch liner



20.6a Undo the two retaining bolts (arrowed)...



20.6b ... and lower the washer reservoir out from behind the wing

4 Undo the three wiper motor retaining bolts, then withdraw the motor from the tailgate, disconnecting its wiring connectors as they become accessible (**see illustrations**).

Refitting

5 Refitting is a reverse of the removal procedure. Ensure that the tailgate central locking servo motor (where fitted) is correctly engaged with the lock pin, prior to refitting the wiper motor retaining bolts.

20 Windscreen/tailgate washer system components - removal and refitting

Washer system reservoir

Note: To minimise fluid spillage, it is recommended that the washer reservoir is at least half-empty prior to removal.

1 Jack up the front of the vehicle, and support it on axle stands. Remove the right-hand front roadwheel.

2 Open the bonnet, and disconnect the windscreen washer supply pipe from its non-return valve, situated on the right-hand side of the bonnet (**see illustration**).

3 Undo the retaining screw from the front edge of the wheel arch liner, then work around the liner carefully, prising out all its retaining clips, and remove the right-hand wheel arch

liner and access cover from the vehicle (**see illustration**).

4 Push the front direction indicator repeater light unit towards the rear of the vehicle, to free its retaining clips, then withdraw it from the wing.

5 Reach up behind the wing, and disconnect the wiring connector(s) from the washer pump(s).

6 Slacken and remove the two reservoir retaining bolts, then pull the top of the reservoir outwards, to release it from the reservoir filler neck (**see illustrations**). Lower the reservoir out from underneath the wing, disconnecting the supply pipe(s) from the washer pump(s) as they become accessible.

7 Refitting is the reverse of removal, ensuring that the reservoir is correctly engaged with its filler neck.

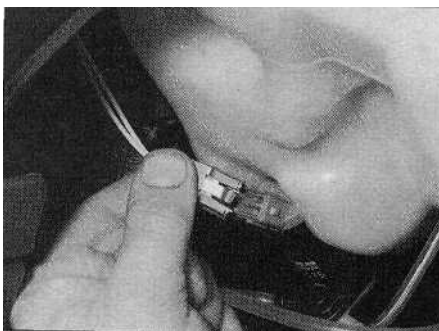
Washer pump(s)

Note: Prior to removing the pump(s), empty the contents of the reservoir, or be prepared for fluid spillage.

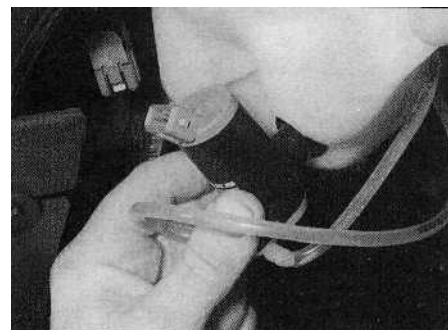
8 Jack up the front of the vehicle, and support it on axle stands. Remove the right-hand front roadwheel.

9 Remove the wheel arch liner as described in paragraph 3.

10 Disconnect the wiring connector from the relevant pump, then carefully ease the pump out of its sealing grommet, and manoeuvre it out from behind the wing (**see illustrations**). If



20.10a Disconnect the wiring connector...



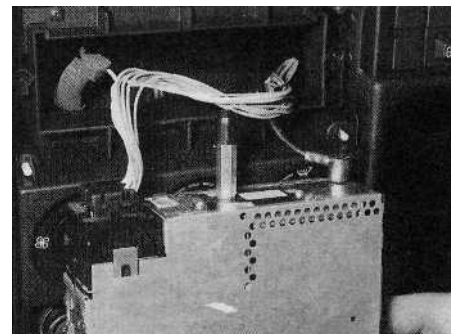
20.10b ... then ease the washer pump out from the reservoir



21.2 Remove the rubber plugs ...



21.3a ... and undo the two radio/cassette unit retaining screws



21.3b Slide the radio/cassette unit out of position, and disconnect the aerial connection and wiring connectors

necessary, to improve access to the pump, undo the mounting bolts, and lower the reservoir slightly. Note that, on models with a dual pump arrangement, the upper pump is tailgate washer pump, and the lower one is the windscreen washer pump.

11 Refitting is a reversal of the removal procedure.

Windscreen washer jet

12 Open the bonnet, then unclip the washer jet from the underside of the bonnet, and disconnect it from its supply pipe.

13 On refitting, ensure that the jet is clipped securely in position. If necessary, the jet nozzles can be adjusted using a pin; aim the spray to a point slightly above the centre of the wiper swept area.

Tailgate washer jet

14 Carefully prise the washer jet out of the top of the tailgate, and disconnect it from its supply pipe. Whilst the jet is removed, tape the supply pipe in position, to ensure that it does not fall back into the tailgate.

15 On refitting, ensure that the jet is clipped securely in position. If necessary, the jet nozzle can be adjusted using a pin; aim the spray to the centre of the wiper swept area.

Non-return valves

16 If trouble is experienced at any time with the flow to the tailgate or windscreen washer

jets, check that the relevant non-return valve is not blocked. The windscreen washer valve is situated in the supply pipe, next to the right-hand bonnet hinge; the tailgate washer valve is situated at the rear of the vehicle, tucked away underneath the top of the tailgate sealing strip.

17 To remove a non-return valve, simply disconnect the hoses from either end of it.

18 On refitting, ensure that the valve is installed the correct way around, so that it allows fluid to flow only in the direction of the washer jet(s).

21 Radio/cassette player - removal and refitting

Note: The following removal and refitting procedure is for the range of radio/cassette units which Citroen fit as standard equipment. Removal and refitting procedures for non-standard units may differ slightly.

Removal

1 Disconnect the battery negative terminal.

2 Remove the two rubber plugs from the front of the unit, to gain access to the radio/cassette unit retaining screws (see illustration).

3 Undo the retaining screws, then withdraw the unit from the fascia, and disconnect the

wiring connectors and aerial from the rear of the unit (see illustrations).

Refitting

4 Refitting is the reverse of the removal procedure. On completion, reconnect the battery, and enter the radio security code using the information given in "Radio/cassette unit anti-theft system" at the start of this manual.

22 Loudspeakers - removal and refitting

Removal

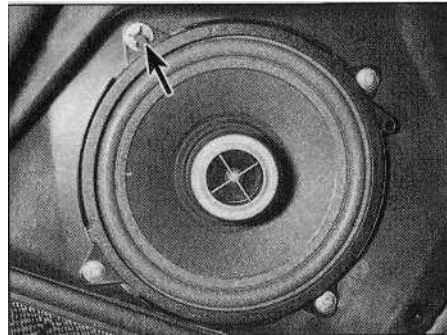
1 The front speakers are located in the front door trim panels, in front of the door pull handles. On five-door models, the rear speakers are located at the bottom of the rear door trim panel; the rear speakers on three-door models are located in the rear seat side trim panels.

2 Carefully prise the speaker grille out from the trim panel (see illustration).

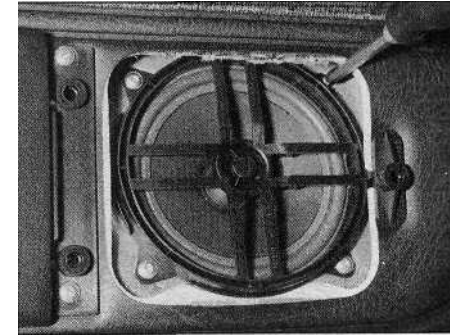
3 Slacken and remove the speaker retaining screws and, on the front speaker, remove the retaining clip from the mounting peg. Withdraw the speaker from the panel, disconnecting its wiring connector as it becomes accessible (see illustrations).



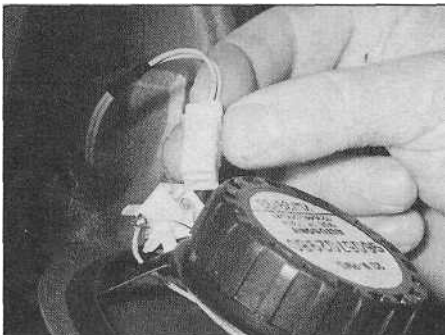
22.2 Remove the grille to gain access to the relevant speaker



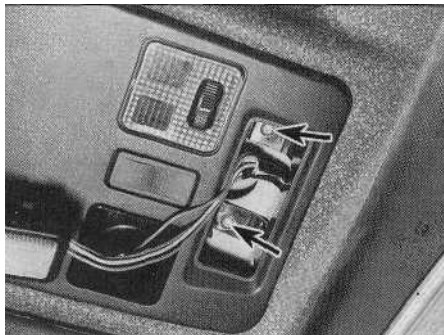
22.3a Front speakers are retained by three screws and a retaining clip (arrowed)



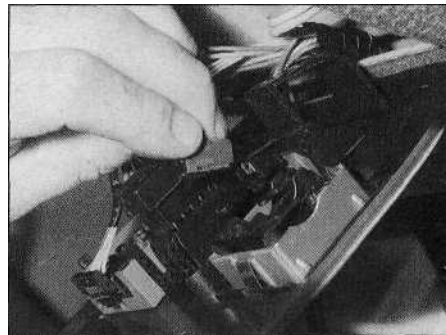
22.3b Rear speakers are retained by four retaining screws



22.3c Remove the speaker from the panel, and disconnect it from its wiring connector



23.1a Undo the two retaining screws (arrowed)...



23.1b ... then lower out the overhead console, and disconnect it from its wiring connectors

Refitting

4 Refitting is a reverse of the removal procedure.

23 Radio aerial - removal and refitting



Removal

Aerial

1 Carefully prise the courtesy light out from the overhead console, and disconnect it from its wiring connector. Remove the two console retaining screws, then lower the console out of position, and disconnect it from its wiring connectors (see illustrations).

2 Slacken and remove the nut from the base of the aerial, and disengage the aerial lead collar from its stud. The aerial can then be lifted away from the outside of the vehicle, noting the rubber seal which is fitted to its base (see illustrations).

Aerial lead upper section

3 Remove the aerial as described above.

4 Unclip the trim panel from the right-hand windscreen pillar, to gain access to the aerial connection (see illustration). Where necessary, release the alarm sensors from the clip on the top of the panel, and remove the panel. If the aerial connection is not situated

behind the right-hand trim panel, remove the left-hand panel.

5 Disconnect the upper section of the lead, and tie a piece of string to it. Withdraw the aerial lead through the overhead console aperture, and untie the string from its end. Leave the string in position - it can then be used to draw the lead back into position on refitting.

Aerial lead lower section

6 To remove the lower section of the aerial lead, linking the upper section to the rear of the radio/cassette unit, it is first necessary to remove the fascia panel as described in Chapter 11. The lead can then be freed from all its relevant retaining clips, and removed from the vehicle.

Refitting

Aerial

7 Ensure that the rubber seal is in good condition, then refit it to the aerial base. Refit the aerial to the roof, ensuring that its locating pin is correctly located in its hole.

8 From inside the vehicle, locate the aerial lead collar on the aerial stud, and refit the retaining nut, tightening it securely.

9 Reconnect the wiring connectors to the overhead console, and locate the console in position in the headlining. Refit the two console retaining screws, and tighten them

securely. Reconnect the courtesy light to its wiring connector, and clip the light back into position in the console.

Aerial lead upper section

10 Tie the string to the end of the aerial lead, and use the string to draw the lead back into position. Untie the string, and reconnect the lead to the lower aerial section.

11 Where necessary, ensure that the alarm sensor wire is correctly routed, and refit the sensor to its retaining clip. Clip the panel back into position, ensuring that the pegs on the base of the panel are correctly located in the fascia panel.

12 Refit the aerial as described above.

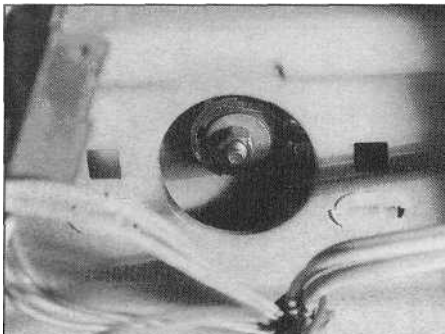
Aerial lead lower section

13 Refitting is a reversal of the removal procedure.

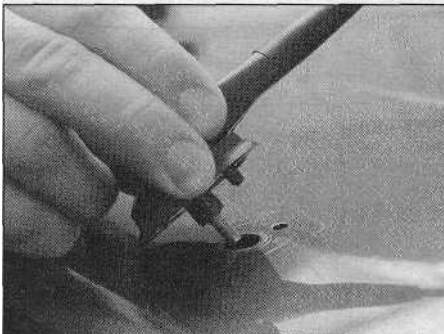
24 Anti-theft alarm system - general information

Note: This information is applicable only to the anti-theft alarm system fitted by Citroen as standard equipment.

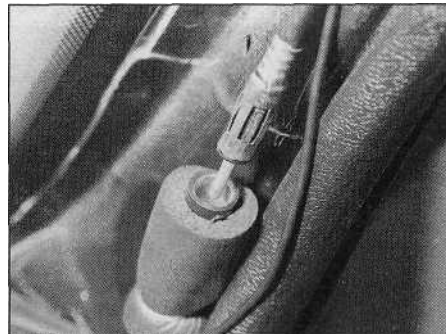
Some models in the range are fitted with an anti-theft alarm system as standard equipment. The alarm is automatically armed and disarmed when the door locks are operated using the remote central locking transmitter.



23.2a Undo the aerial lead retaining nut from inside the vehicle ...



23.2b ... then remove the aerial from the roof of the vehicle



23.4 Aerial lead upper-to-lower section connection is located behind the windscreen pillar trim panel

Note that if the doors are operated using the key, the alarm will not be armed or disarmed (as applicable). If for some reason the remote central locking transmitter fails whilst the alarm is armed, the alarm can be disarmed using the key. To do this, open the door with the key, then enter the vehicle, noting that the alarm will sound as the door is opened, and switch on the ignition switch whilst depressing the small button on the alarm switch mounted in the fascia. Note that the ignition switch must be turned on and the button depressed within 10 seconds of opening the door.

The alarm system has switches on the bonnet, tailgate and each of the doors. It also has ultrasonic sensing, which detects movement inside the vehicle, via the sensors mounted on the top of each windscreen pillar trim panel. If required, the ultrasonic sensing facility of the system can be switched off, whilst retaining the switched side of the system. To switch off the ultrasonic sensing, with the ignition switch off, depress the alarm switch on the fascia for approximately 1 second, until the switch LED is continuously lit. Now, when the doors are locked using the remote central locking transmitter, and the alarm is armed, only the switched side of the alarm system is operational. This facility is useful, as it allows you to leave the windows/sunroof open, and still arm the alarm. If the windows/sunroof are left open with the ultrasonic sensing not switched off, the alarm may be falsely triggered by a gust of wind.

Should the alarm system become faulty, the vehicle should be taken to a Citroen dealer for examination.

25 "Dim-dip" lighting system (UK models only) - general information

1 To comply with UK regulations, a "dim-dip" lighting system is fitted to all UK models. The system is operated through a dim-dip relay, and a resistor unit situated at the front left-hand corner of the vehicle, above the horn assembly.

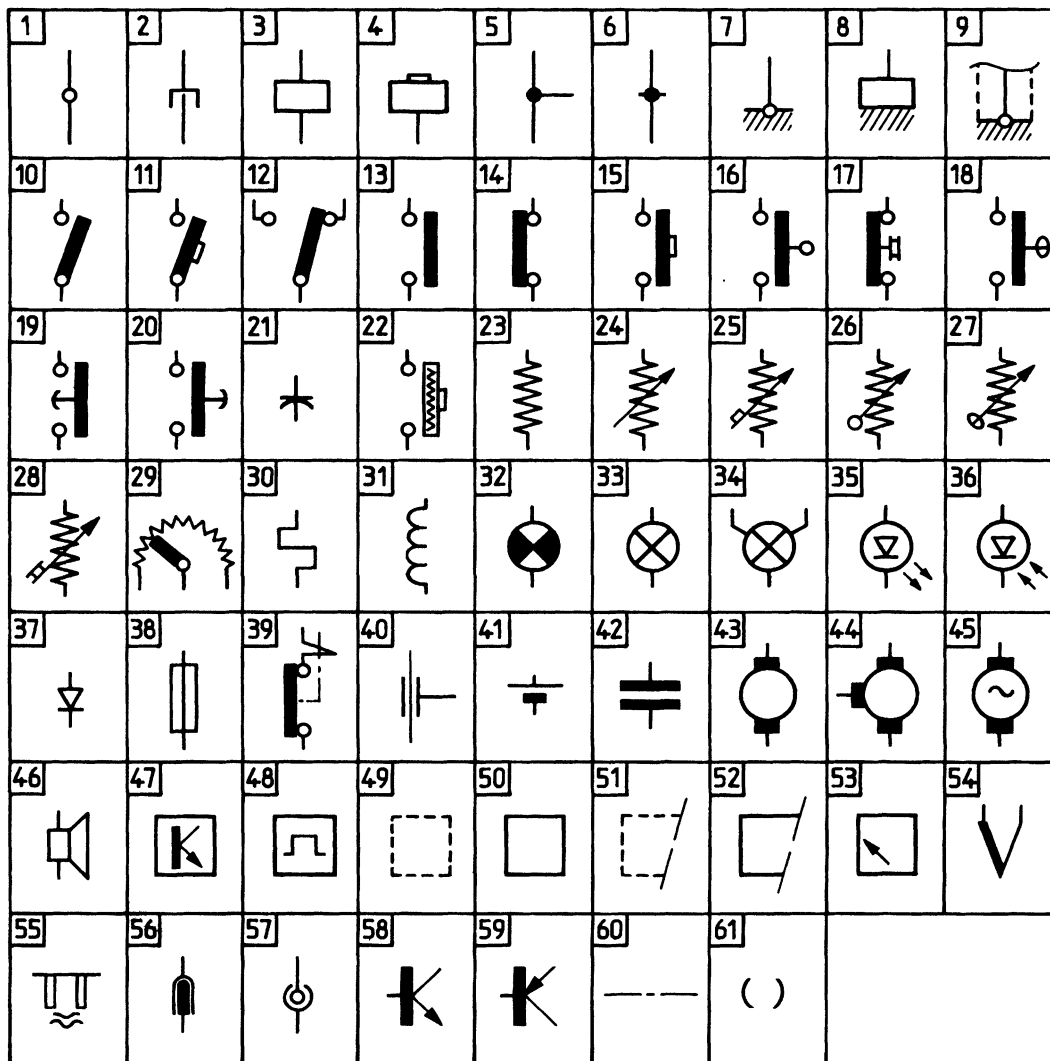
2 The dim-dip relay is supplied with current from the sidelight circuit, and energised by a feed from the ignition switch. When energised, the unit allows battery voltage to pass through the resistor unit to the headlight dipped-beam circuits; this lights the headlights with approximately one-sixth of their normal power, so that the car cannot be driven using sidelights alone.

26 Wiring diagrams - explanatory notes

The wiring diagrams in this manual represent typical examples of those available. To assist you in using the diagrams, here is an explanation of the various letters and their

use, in conjunction with the wiring diagram keys (**see illustration**).

- (a) **Large numbers** - identify the various components.
 - (b) **Capital letters printed in the middle of a wire** - indicate which harness the wire is located in.
 - (c) **Small letters located at the connection points** - indicates the colour of either the wire itself, or of the marking on the wire. If the letter has a line drawn above it, then this shows it indicates the colour of the wire itself; if there is no line above the letter, it indicates the colour of the marking on the wire.
 - (d) **Connecting blocks** - the first number and letter(s) inside the box indicates the size and colour of the connecting block. The second letter (where applicable) and last number gives the exact location of the relevant wire in that connecting block; the letter indicates which row the wire is situated in, and the number denotes its location in that row. For example:
- 3 BI 2** - shows that the wiring connector is blue in colour, and contains three wiring channels, the wire shown in the diagram being located in the second channel of the connector.
- 15 VA 2** - shows that the wiring connector is green in colour, and contains fifteen channels. The A shows that the wire shown in the diagram is in the upper row of the connector, and the 2 shows it to be in the second channel of that row.



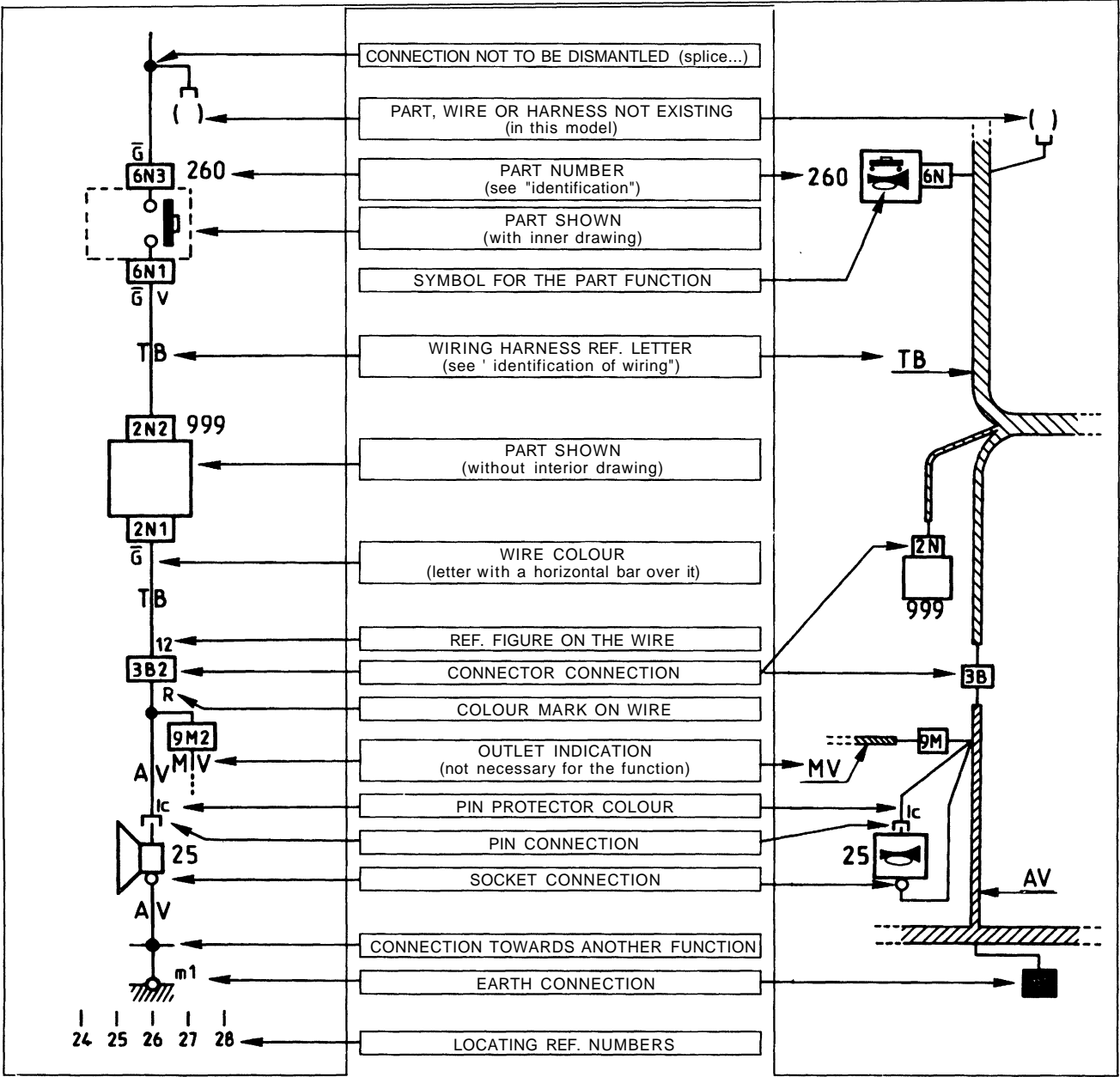
Symbols used in wiring diagrams

No.	Description	No.	Description	No.	Description
1	Socket connection	21	Friction contact switch	42	Suppressor
2	Pin connection	22	Manual contact switch (cigar lighter)	43	Motor
3	Connector connection	23	Resistance	44	Two-speed motor
4	Connector connection with index (for differentiation)	24	Rheostat	45	Alternative power generator
5	Junction not to be dismantled (splice)	25	Manual rheostat	46	Sound equipment (horn, loudspeaker)
6	Junction not to be dismantled (with other connection possibilities)	26	Mechanical rheostat	47	Electronic control unit
7	Socket earthing	27	Temperature rheostat (thermistor)	48	Delay unit
8	Connector earthing	28	Pressure rheostat	49	Part framing (with its circuit diagram)
9	Part body earth connection	29	Rheostat	50	Part framing (without its circuit diagram)
10	Switch (non-automatic return)	30	Shunt	51	Part extract
11	Manual switch	31	Coil (relay-solenoid)	52	Part extract
12	Selector switch	32	Warning light	53	Indicator
13	Switch on at-rest (automatic return)	33	Light bulb	54	Thermocouple
14	Switch off at-rest (automatic return)	34	Double-filament light bulb	55	Electrodes
15	Manual contact switch	35	Light-emitting diode (LED)	56	Oxygen sensor
16	Mechanical contact switch	36	Photo-diode	57	Supply socket
17	Pressure contact switch	37	Diode	58	NPN transistor
18	Thermal switch	38	Fuse	59	PNP transistor
19	Contact delayed on opening	39	Thermal circuit breaker	60	Connection indicating line
20	Contact delayed on closing	40	Screening	61	No extremity
		41	Battery cell		

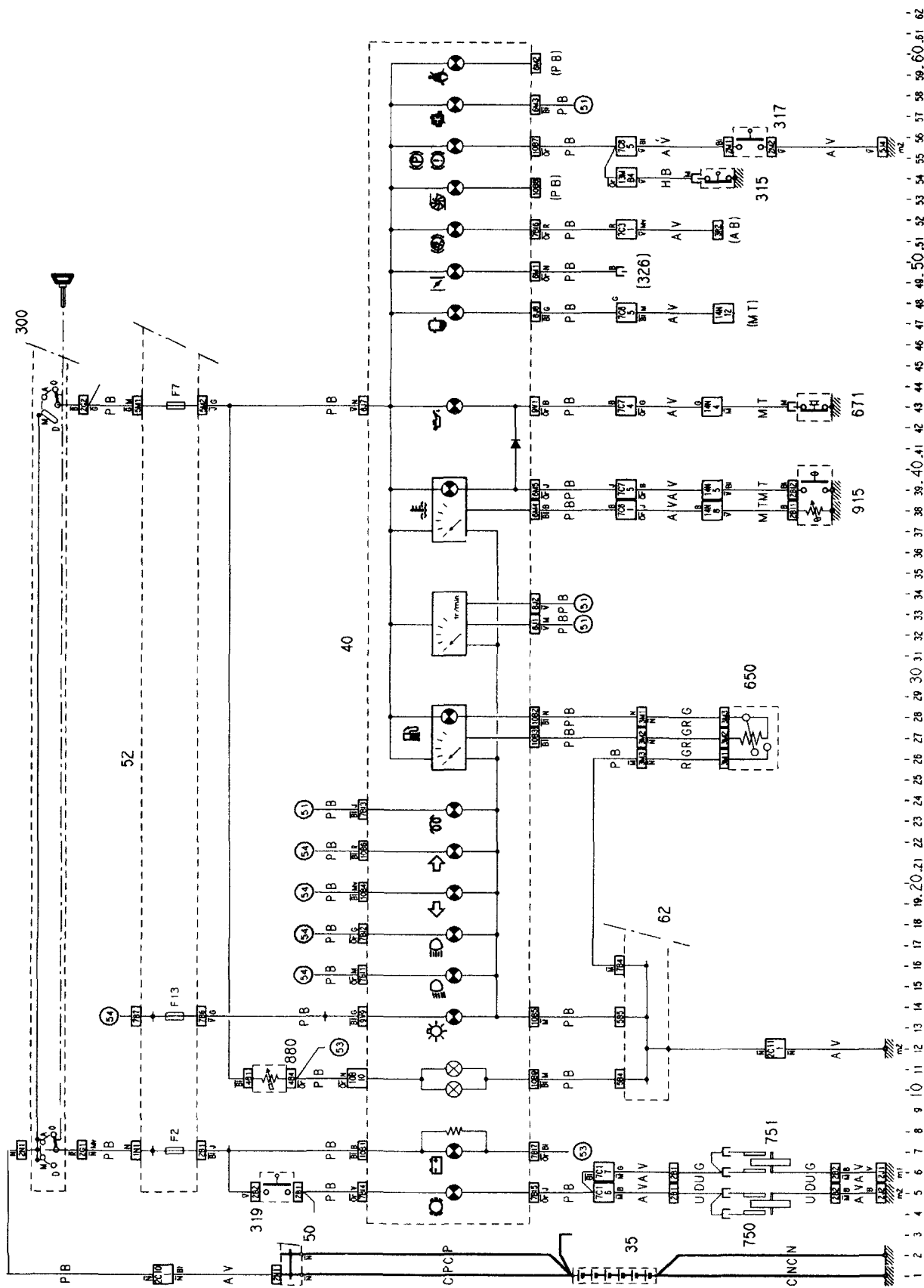
Key to wiring diagrams*Not all items fitted to all models*

No.	Description	No.	Description	No.	Description
5	Front cigar lighter	429	Fuel cut-off solenoid (stop solenoid)	715	LH headlight adjustment device motor
10	Ignition distributor	430	Canister discharge solenoid	716	RH headlight adjustment device motor
15	Alternator	431	Fast idling solenoid	720	Engine cooling fan (single, or LH of two)
20	LH horn	432	Idling actuator	721	RH engine cooling fan
21	RH horn	434	Canister solenoid	742	Central interior light
35	Battery	437	Exhaust gas recirculation solenoid	743	Rear interior light
40	Instrument cluster	441	Vacuum advance solenoid	750	LH front brake pads sensor
45	Ignition coil	443	Injection timing correction solenoid	751	RH front brake pads sensor
50	Supply connector box	480	LH rear light	755	Fuel pump
52	Junction box	481	RH rear light	757	Windscreen washer pump
53	Water temperature control unit	482	LH front foglight	758	Rear screen washer pump
55	Central door locking control unit	483	RH front foglight	765	Radio set
58	Remote control door locking receiver (PLIP)	484	LH rear foglight	770	Throttle spindle potentiometer
59	Pre-heater (glow plugs) control unit	485	RH rear foglight	772	Mixture adjustment potentiometer
62	Earth connection box	486	LH dipped beams	775	Pressure switch
100	Spark plugs	487	RH dipped beams	779	TDC sensor plug (petrol) or Water temp, sensor (Diesel)
101	Glow plugs	488	LH front direction indicator	781	ABS diagnostic socket
130	Lights-on warning buzzer	489	RH front direction indicator	783	Injection diagnostic socket
140	Anti-lock braking ECU	490	LH rear direction indicator	786	Headlight: LH main and dipped beams
141	Air conditioning ECU	491	RH rear direction indicator	787	Headlight: RH main and dipped beams
142	Fuel injection ECU	492	LH sidelight	790	Air blower motor
144	Exhaust gas recirculation ECU	493	RH sidelight	798	Injection timing cut-off relay
152	Engine speed sensor	496	LH tail light	804	Air conditioning relay
155	LH front wheel sensor (ABS)	497	RH tail light	805	Compressor cut-off relay (temperature)
156	RH front wheel sensor (ABS)	498	LH reversing light	806	Front foglight relays
157	LH rear wheel sensor (ABS)	499	RH reversing light	807	Injection double relay
158	RH rear wheel sensor (ABS)	500	LH direction indicator repeater	809	Front window relay
160	TDC sensor	501	RH direction indicator repeater	813	Engine cooling fan relay (fast speed)
170	Flasher unit	502	LH headlight	814	Engine cooling fan relay (slow speed)
180	Additional air control	503	RH headlight	815	Engine cooling fan speed switchover relay
183	Air blower control	504	LH stop-light	819	Rear foglight relays
211	LH column switch (lights, indicators, horn)	505	RH stop-light	820	Heated rear window relay
212	RH column switch (front and rear wipers)	550	LH front speaker	822	Compressor cut-off relay (injection)
215	Exterior mirror switch	551	RH front speaker	827	Dim-dip relay (UK only)
254	Air horn compressor	554	LH rear speaker	841	Window re-energising relay
255	Air con. compressor driving clutch	555	RH rear speaker	843	Air horn compressor relay
270	HT coil suppressor	570	Injector	844	ABS main relay
300	Ignition switch	582	Refrigerated air switch	845	Hydraulic fluid motor relay
302	Boot light switch	587	Front foglight switch	849	Post-heating cut-off relay
305	Driver's door locking switch	588	Rear foglight switch	857	Carburettor base heating resistance
306	Passenger's door locking switch	589	Hazard warning light switch	858	Dipped beams resistance (dim-dip)
307	LH rear door closing switch	590	Driver's window switch	859	Air blower speed resistor
308	RH rear door closing switch	591	Passenger's window switch (on driver's door)	860	Coding resistance
310	LH front door pillar switch	592	Passenger's window switch (on passenger's door)	862	Injector additional resistance
311	RH front door pillar switch	597	Heated rear window switch	876	RH rear view mirror
312	LH rear door pillar switch	608	Headlight adjustment device switch	880	Instrument lighting rheostat
313	RH rear door pillar switch	650	Fuel gauge	900	Oxygen sensor
314	Reversing light switch	660	Map reading light	902	Engine oil level sensor
315	Handbrake switch	671	Engine oil pressure switch	903	Injection air pressure sensor
317	Hydraulic fluid level switch	680	Ignition module	904	Engine oil pressure sensor
318	Throttle butterfly switch	681	Air blower control module	907	Injection air temperature sensor
319	Stop-light switch	685	Digital clock	909	Injection water temperature sensor
322	Atmospheric pressure switch	694	Windscreen wiper motor	910	Water temp, sensor (control unit)
326	Starter motor switch	695	Tailgate wiper motor	912	Evaporator temperature sensor
330	Post-heater switch	696	LH front window motor	915	Water temperature switch sensor
340	Airflow meter	697	RH front window motor	918	Engine oil temperature sensor
350	Starter motor	703	Driver's door locking motor	962	Windscreen intermittent wipe timer
385	Front ashtray illumination	704	Passenger's door locking motor	963	Tailgate intermittent wipe timer
389	Boot light	705	LH rear door locking motor	970	Coolant temp, warning thermal switch
391	Number plate LH light	706	RH rear door locking motor	971	Cooling fan thermal switch (radiator)
392	Number plate RH light	708	Tailgate locking motor	974	Water temperature switch
394	Air con. control illumination	712	Idling control stepper motor	990	Heated rear window
		714	ABS hydraulic pump motor		

Harness code				Colour code	
AB	ABS	PG	LH rear door	B	White
AV	Front	PJ	Headlight adjustment device	Bl	Blue
CL	Air conditioning	PL	Interior light	G	Grey
CN	Negative cable	PP	Passenger's door	Ic	Clear/transparent
CP	Positive cable	RD	RH rear	J	Yellow
EF	Boot lighting	RG	LH rear	M	Brown
FR	Rear lights	RL	Direction indicator side repeater	Mv	Purple
HB	Interior	TJ	Headlight adjustment device switch	N	Black
MT	Engine (and injection)	UD	RH brake pad wear	Or	Orange
MV	Electric cooling fan	UG	LH brake pad wear	R	Red
PB	Dashboard	VD	RH side tailgate	Ro	Pink
PC	Driver's door	VG	LH side tailgate	V	Green
PD	RH rear door			Vi	Lilac

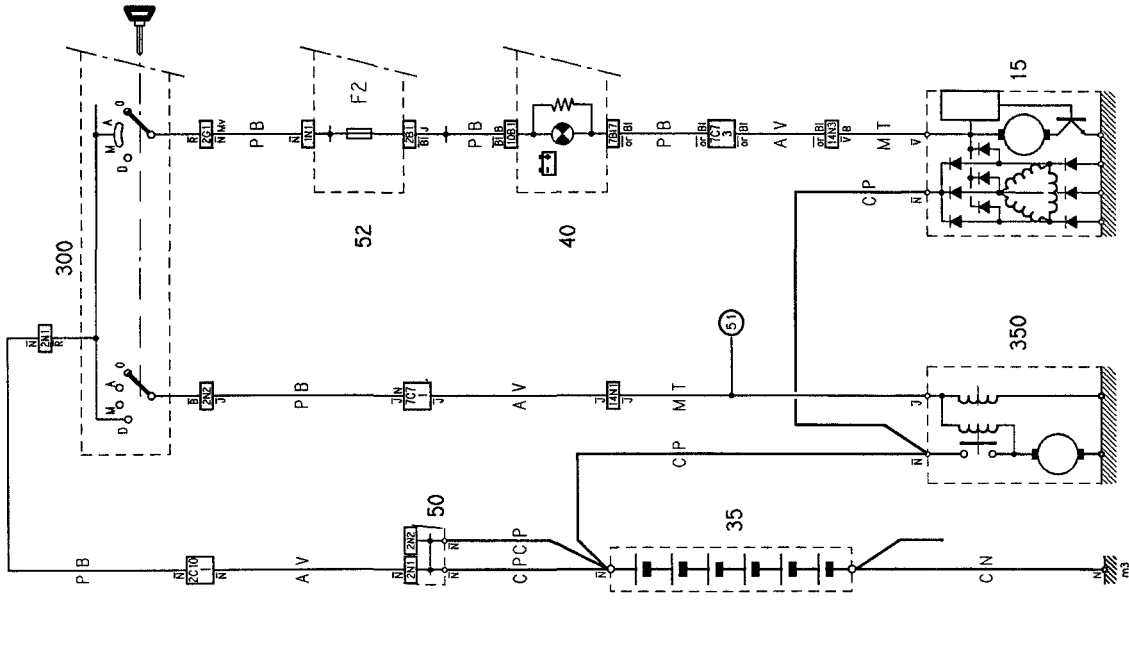


How to use the wiring diagrams



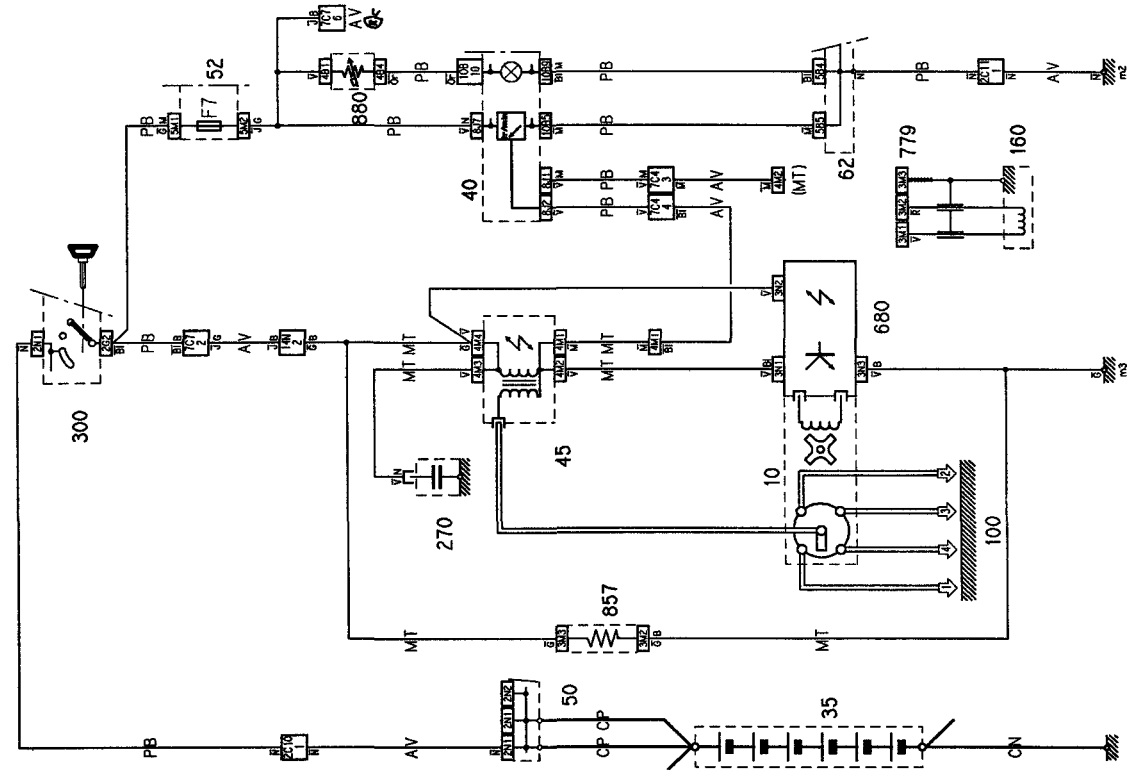
Instrument panel (low- to mid-specification models)





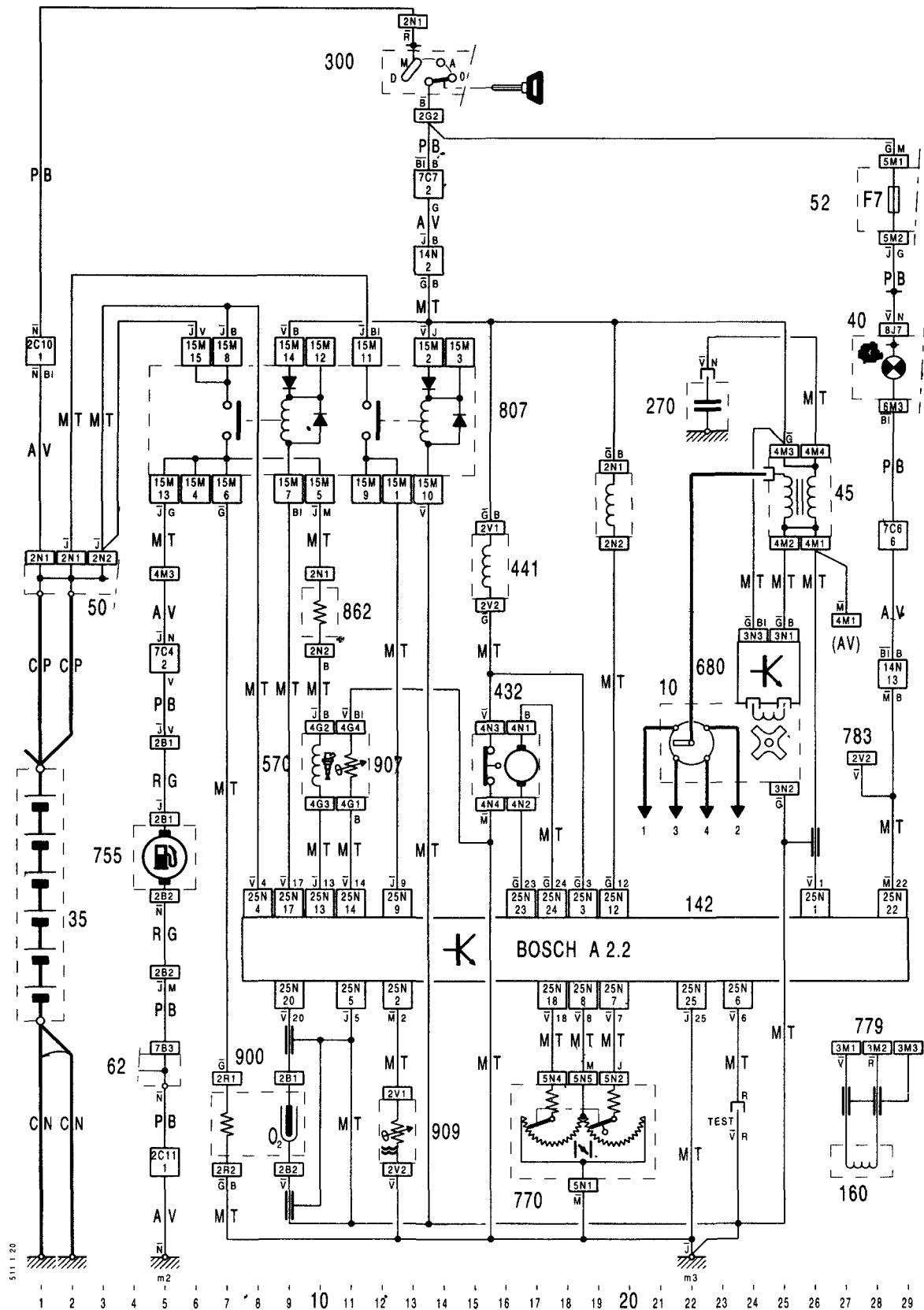
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Starting and charging systems

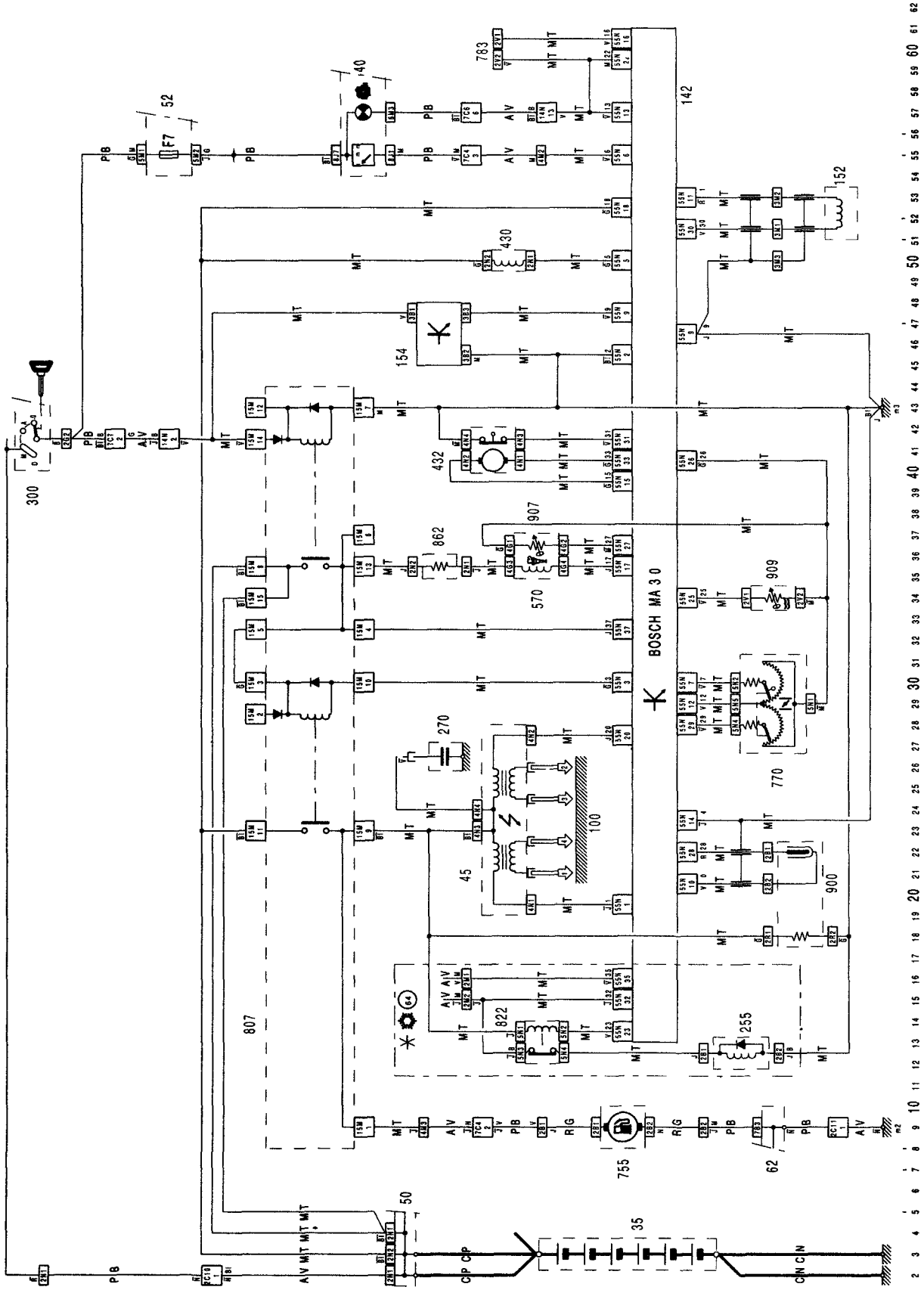


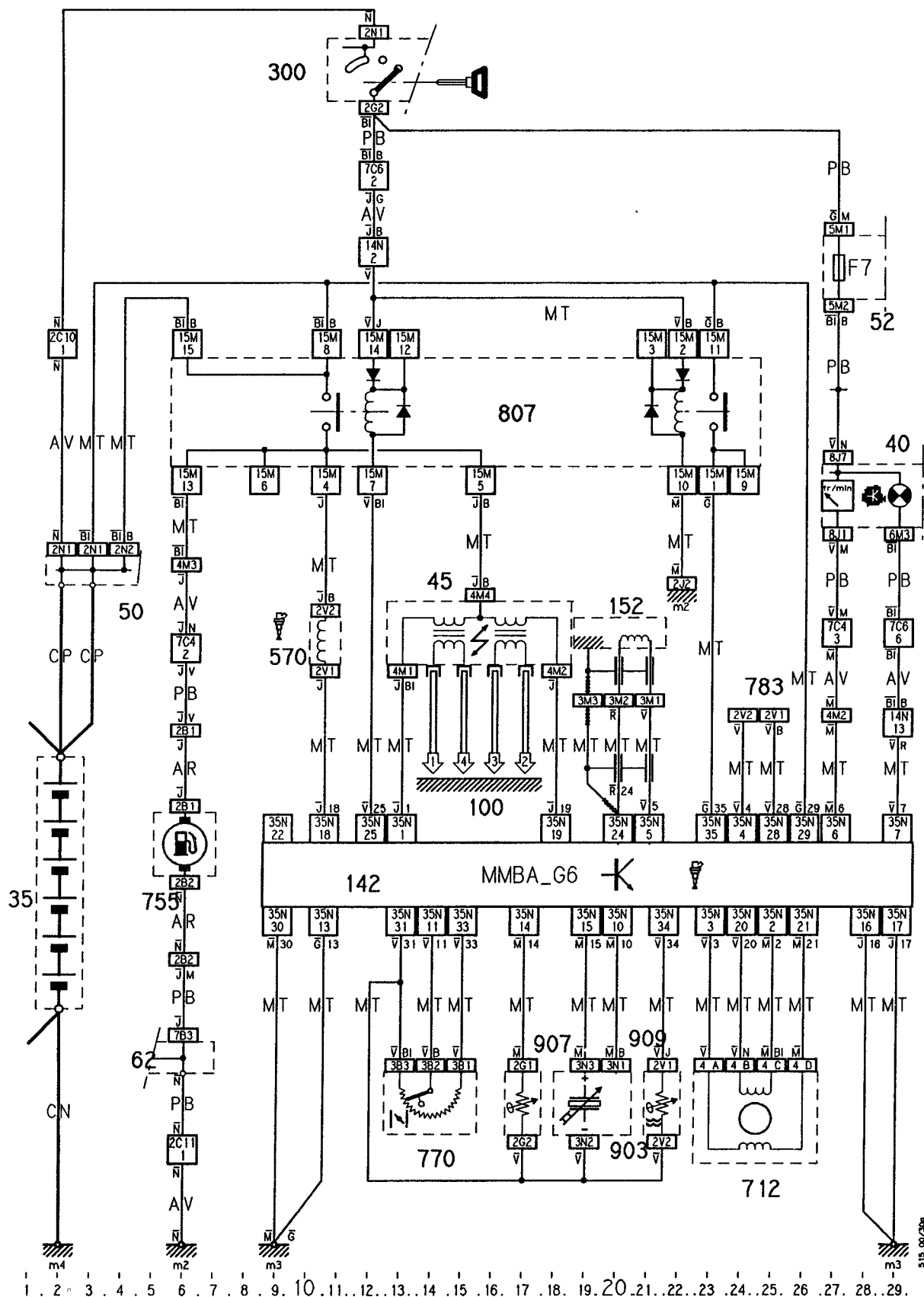
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

Engine electrical systems -1124 cc and 1360 carburettor (H1A/TU1K and K2D/TU3 2K)

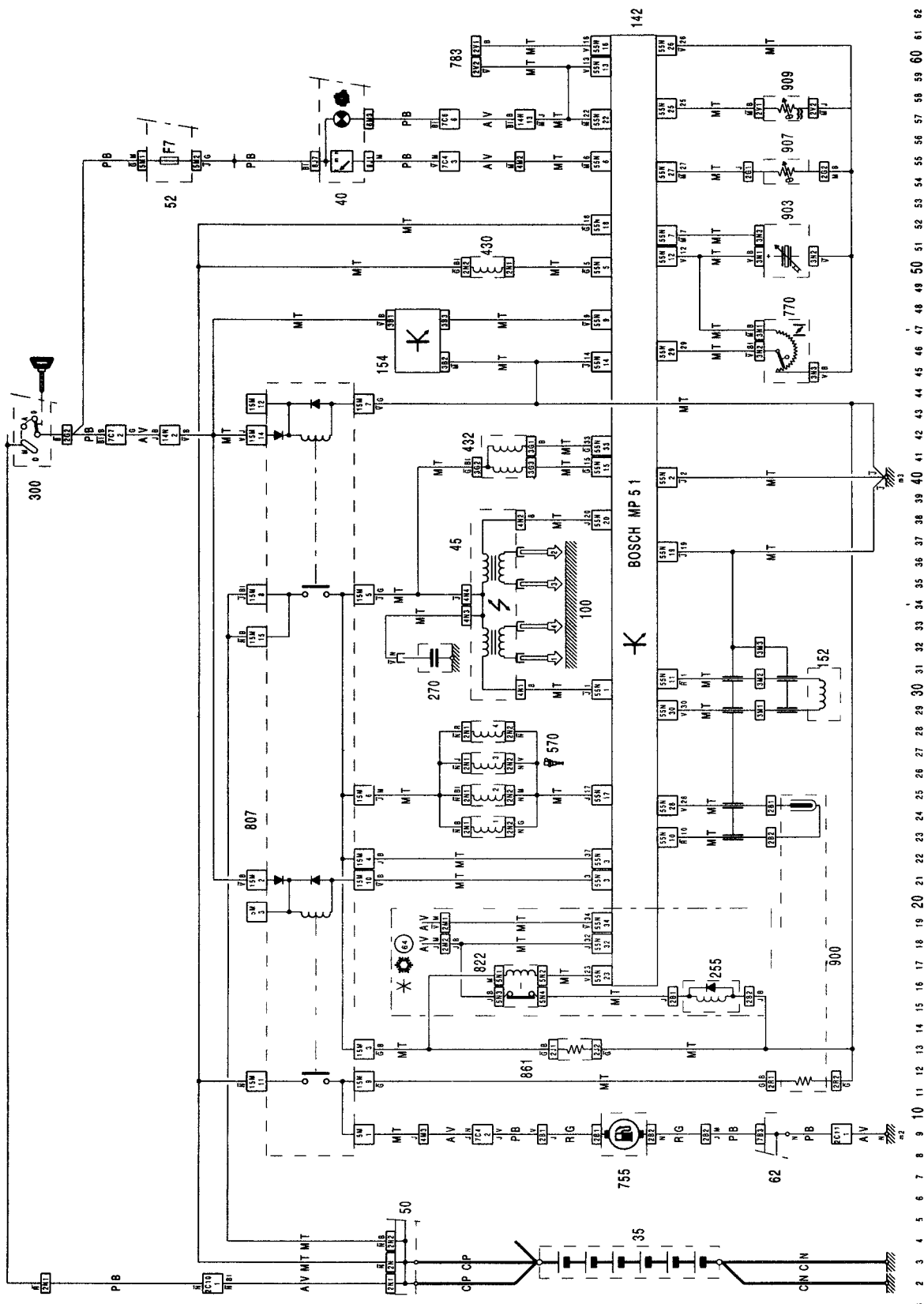


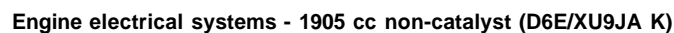
Engine electrical systems - 1124 cc fuel injection (HDZ/TU1M L/Z)

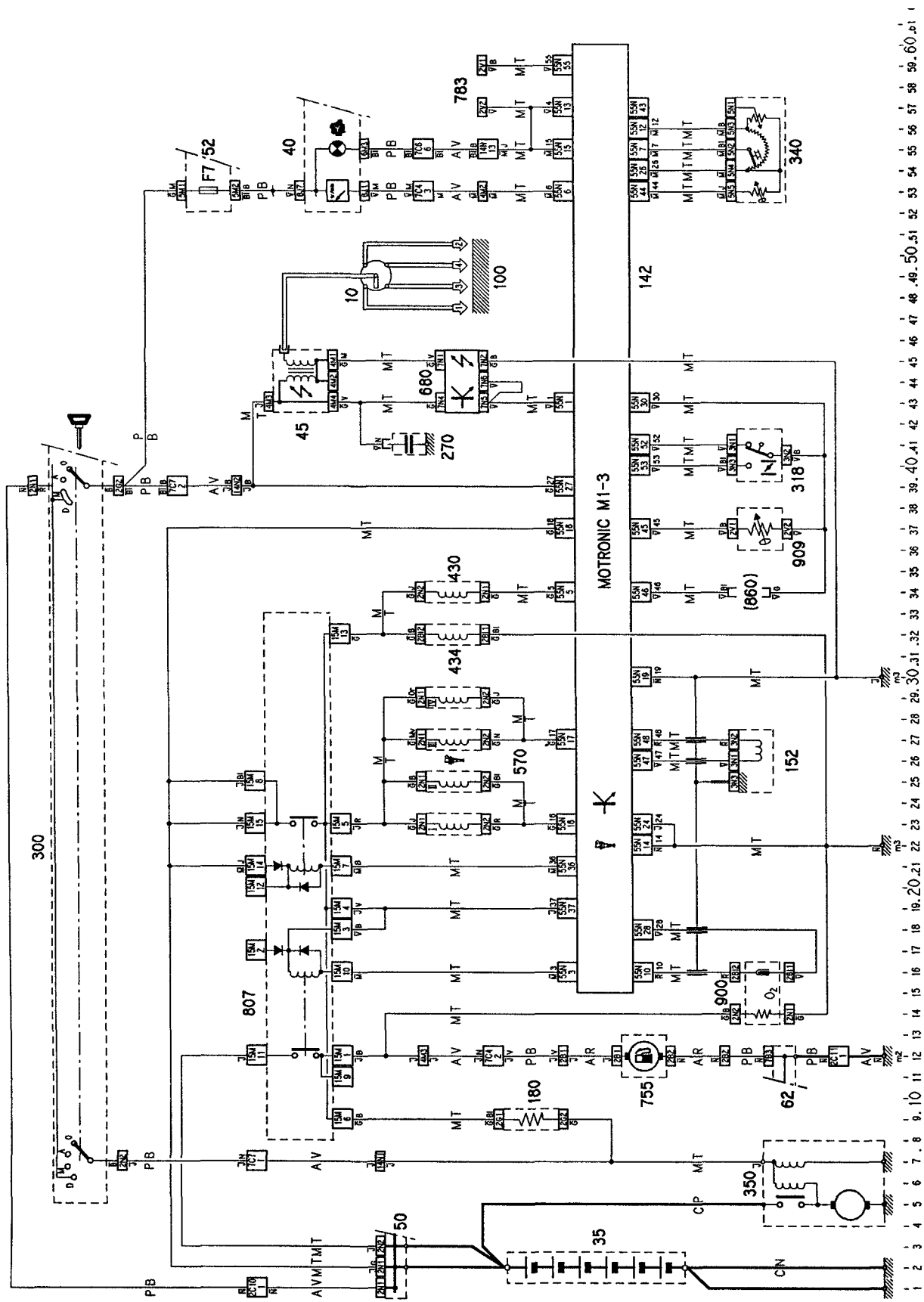


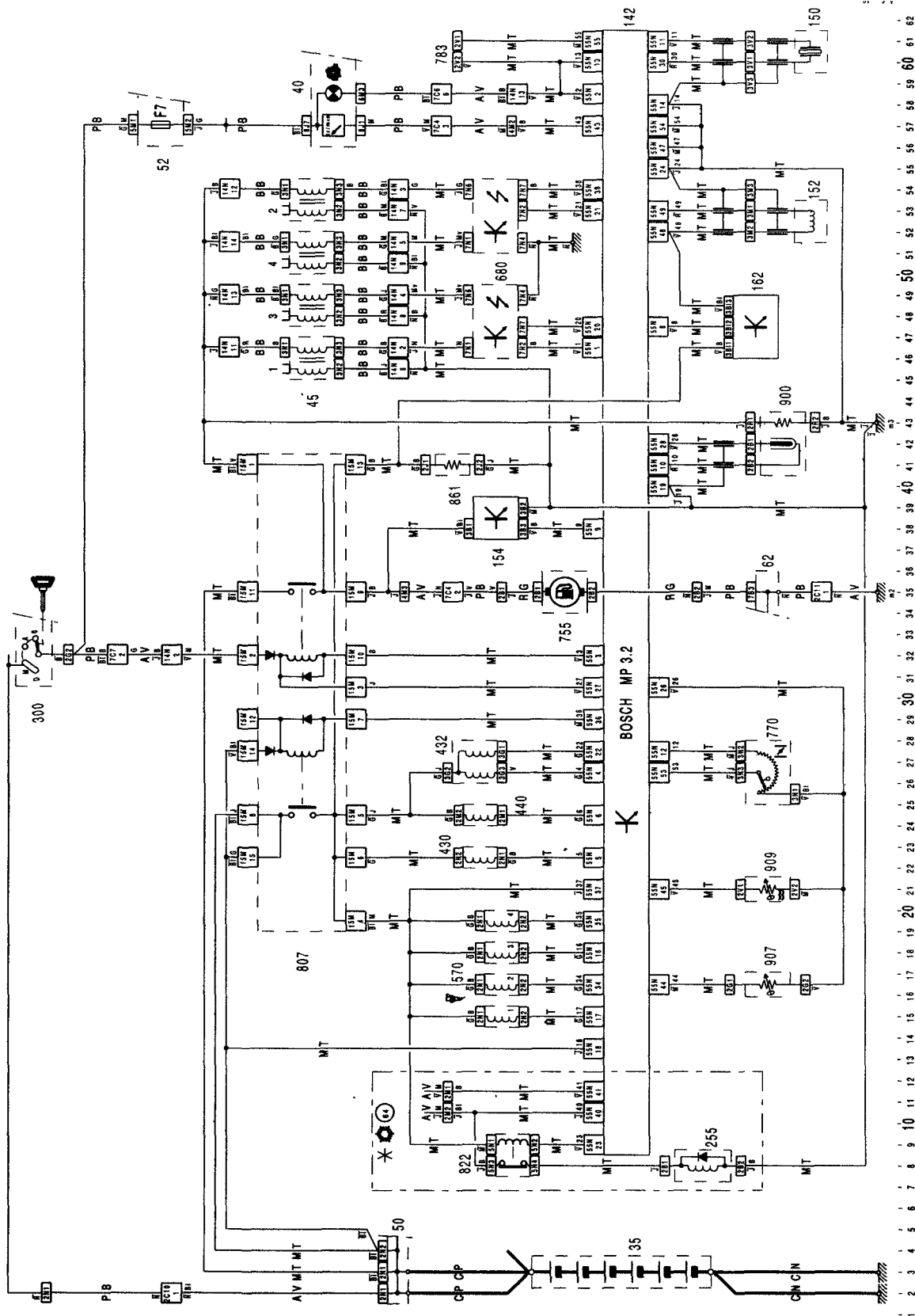


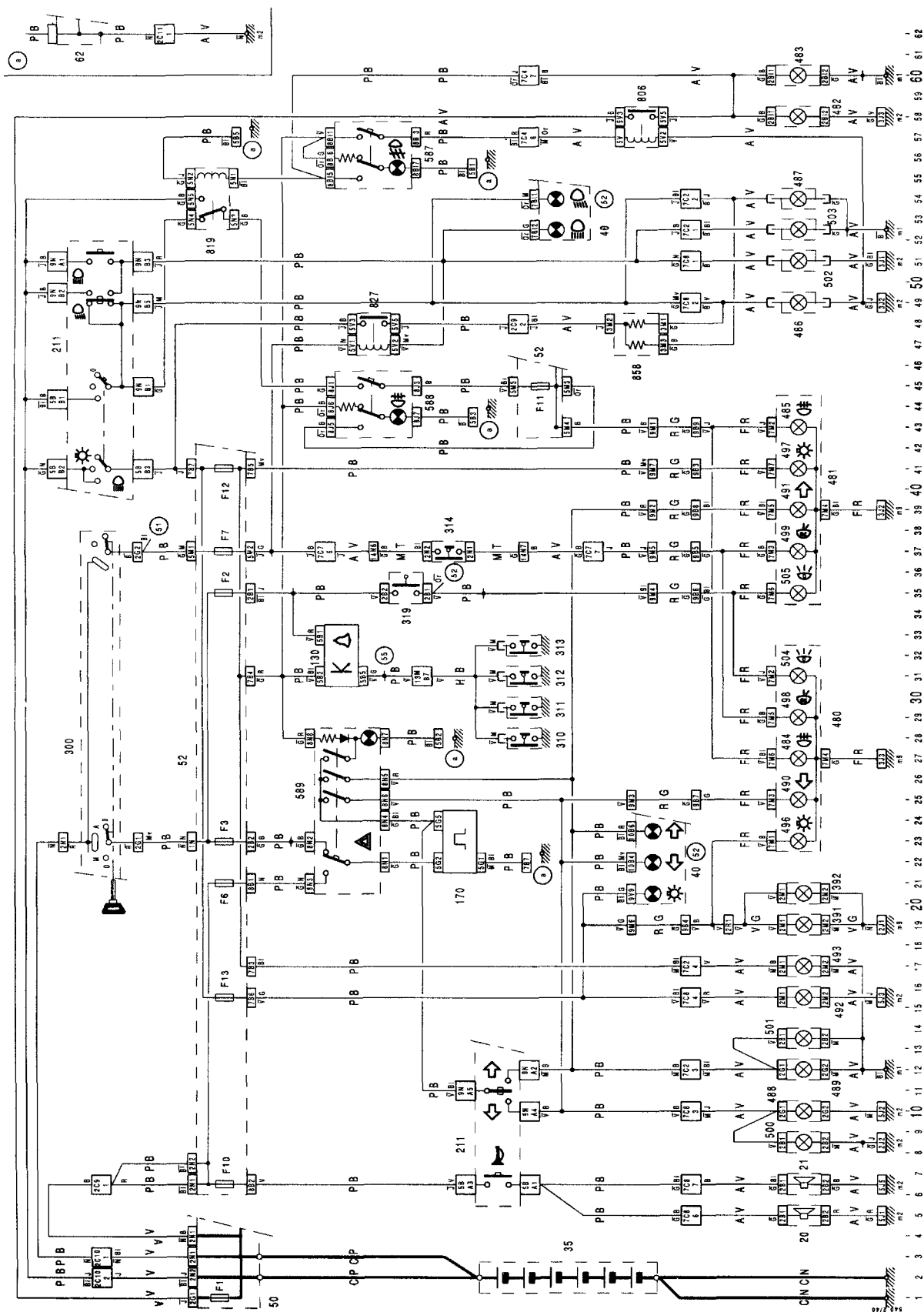


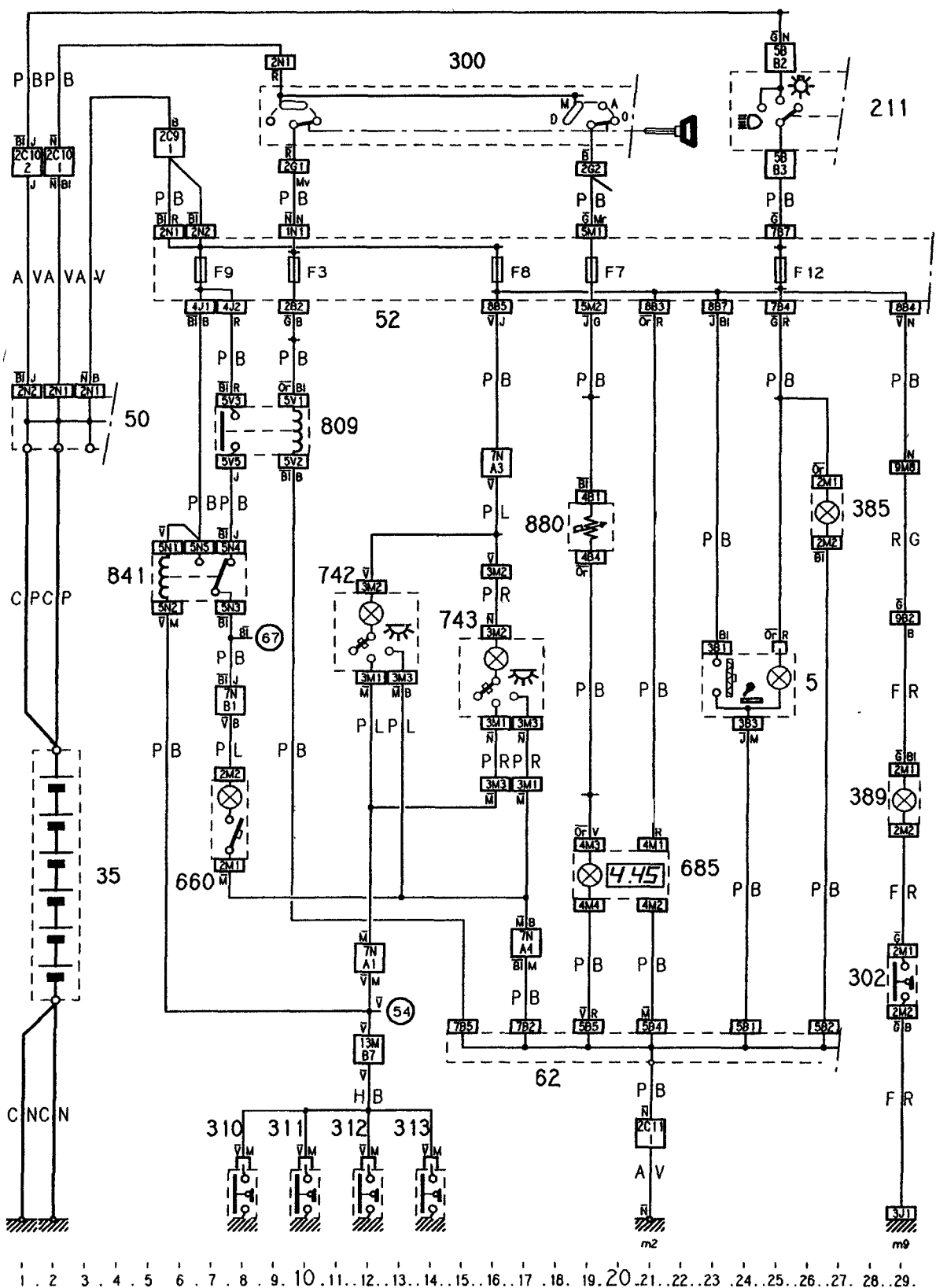




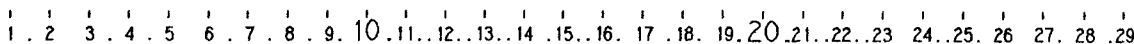




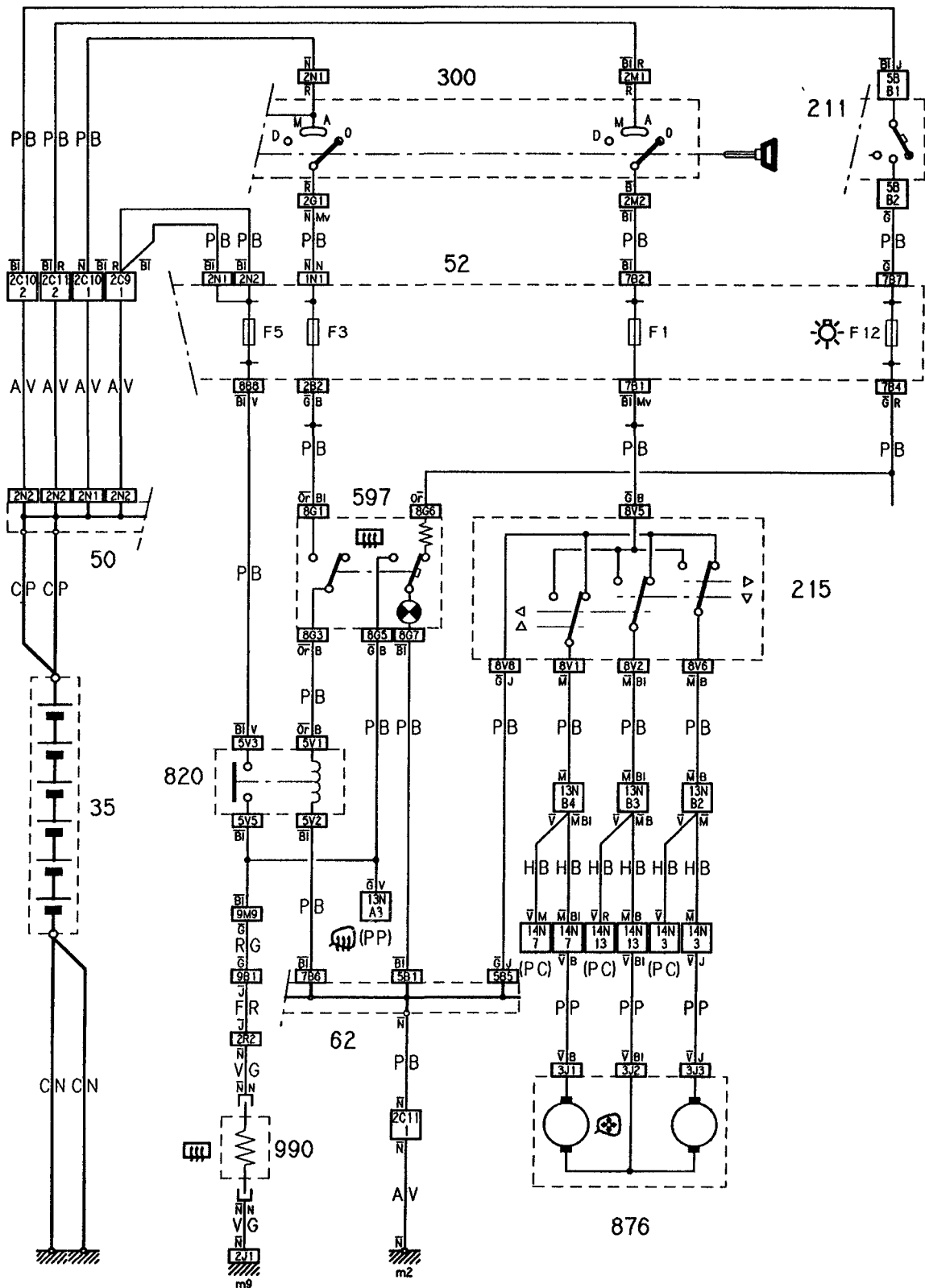




Interior lighting



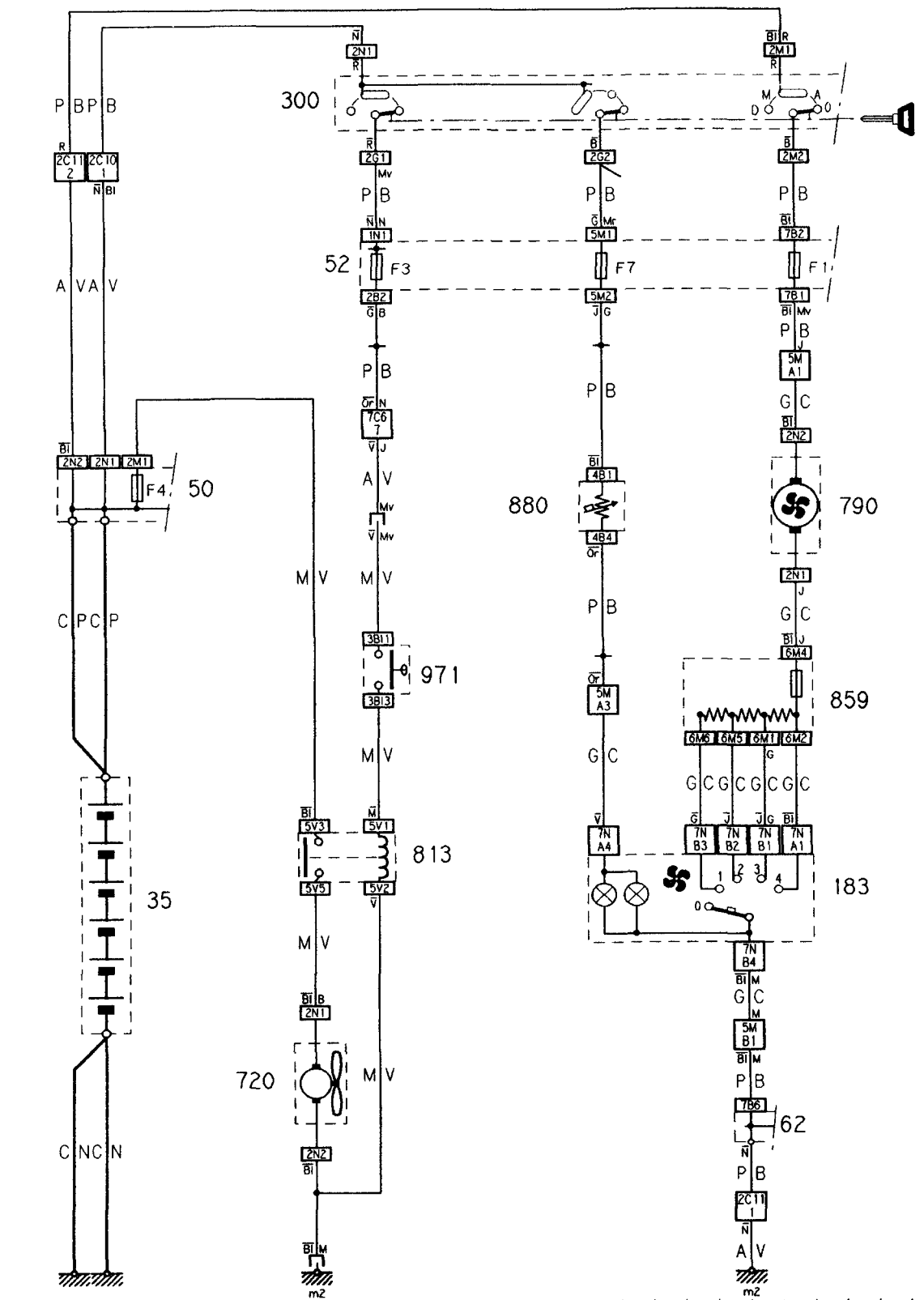
Wash/wipe systems



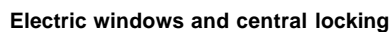
Heated rear window, electric mirror

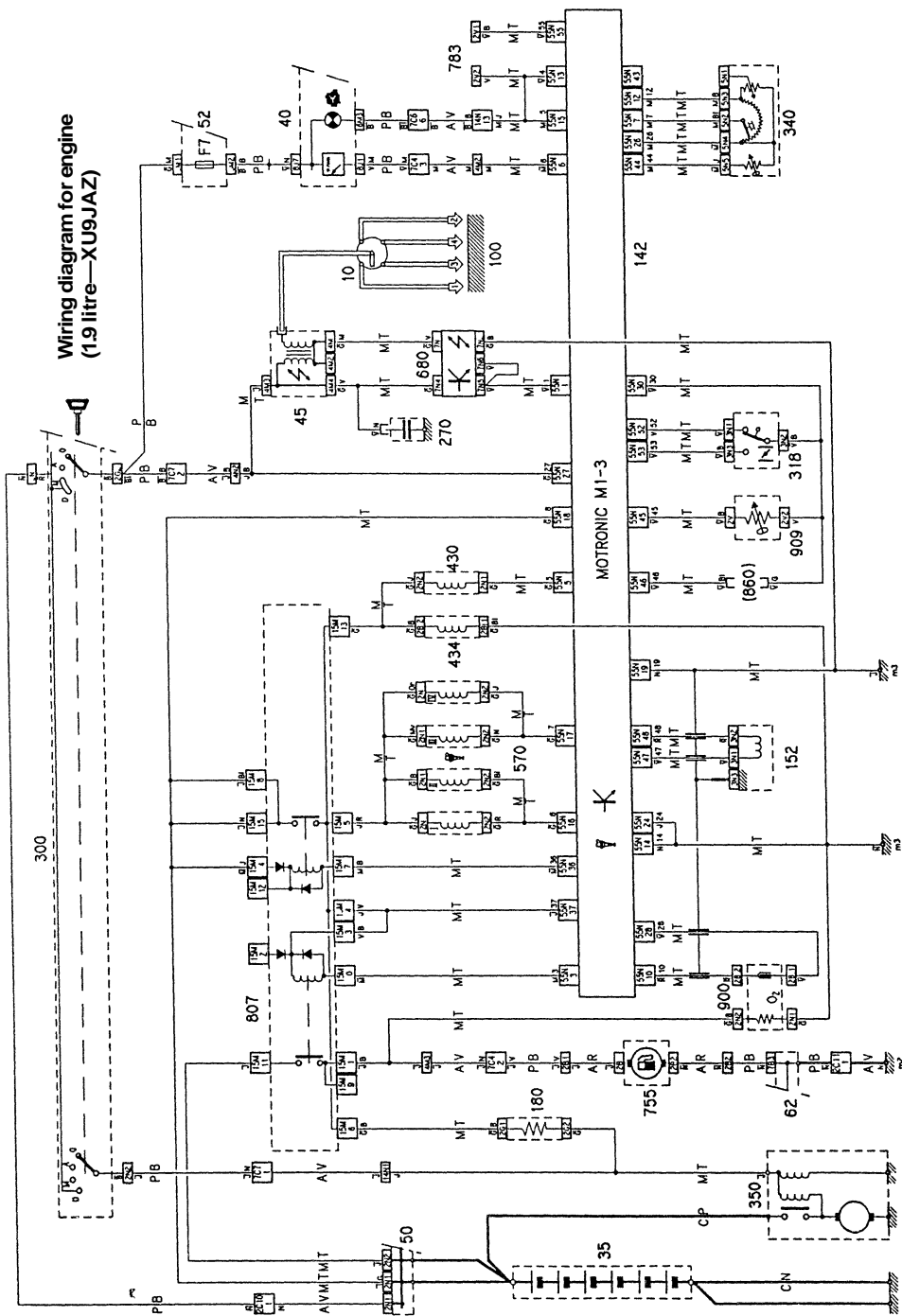


12•38 Wiring diagrams

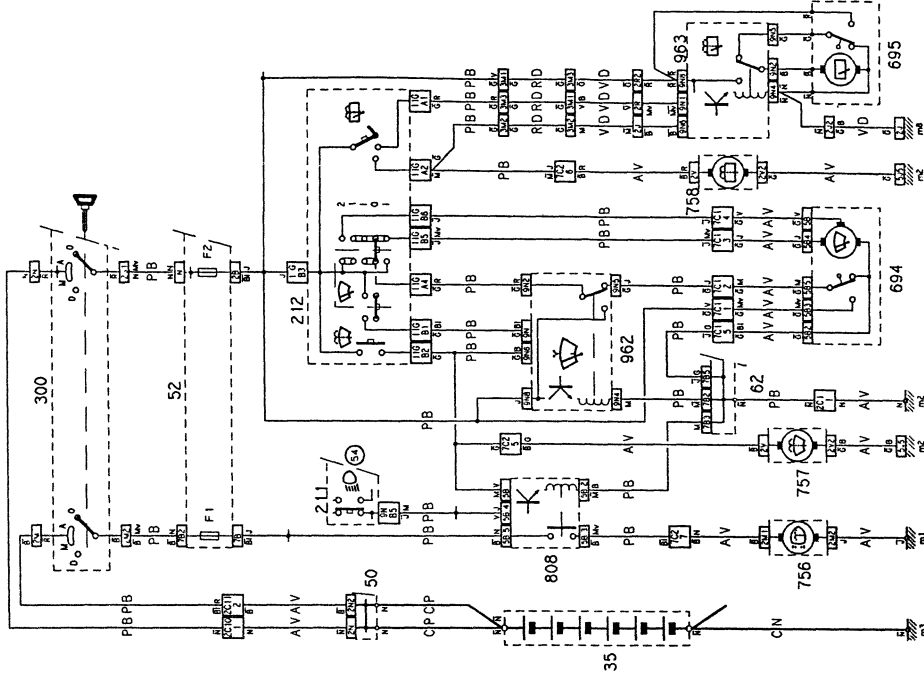


Engine cooling fan and heater blower

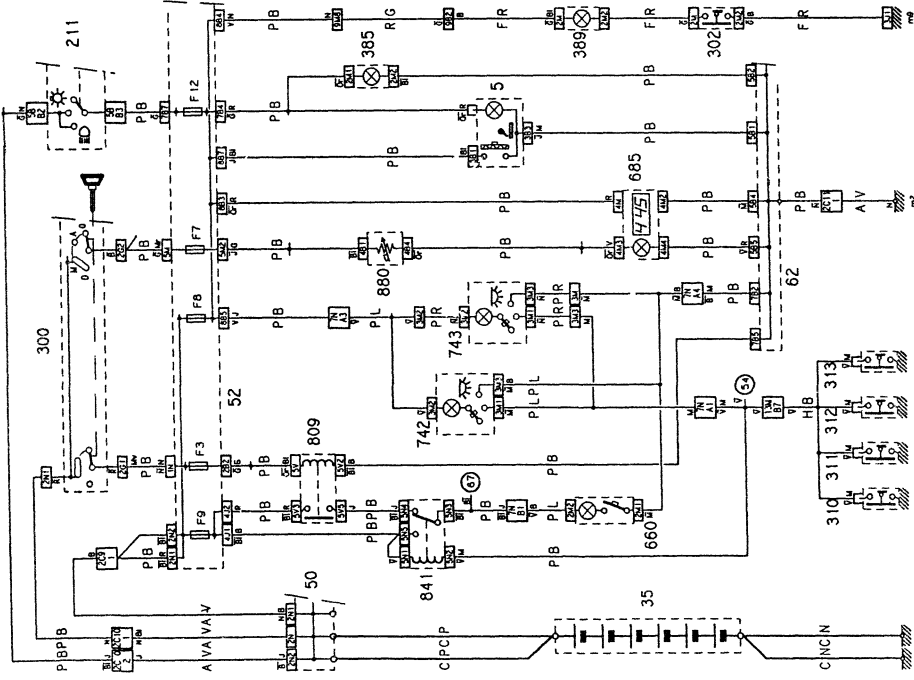




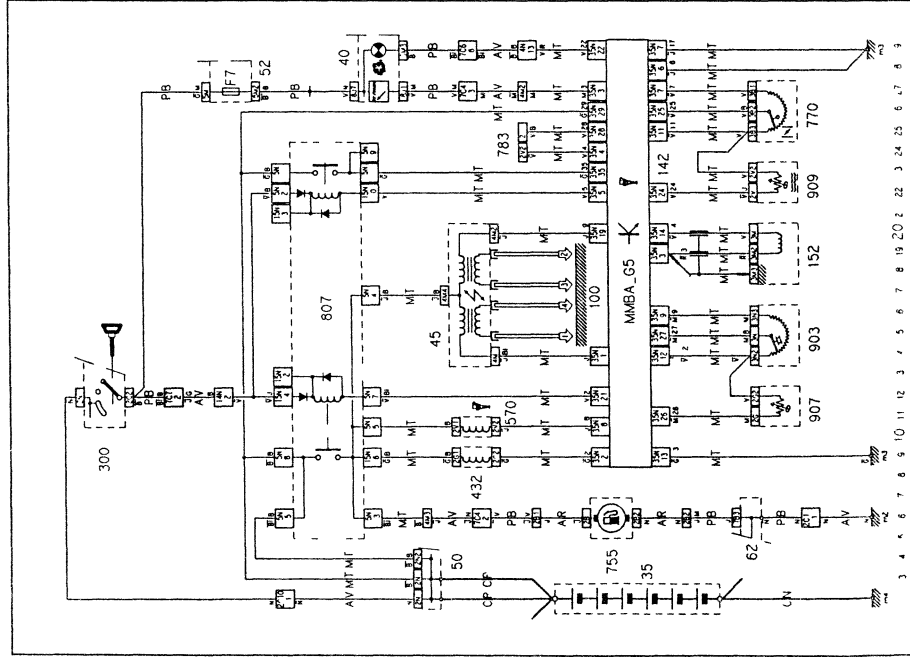
Wiring diagram for front and rearscreenwipers



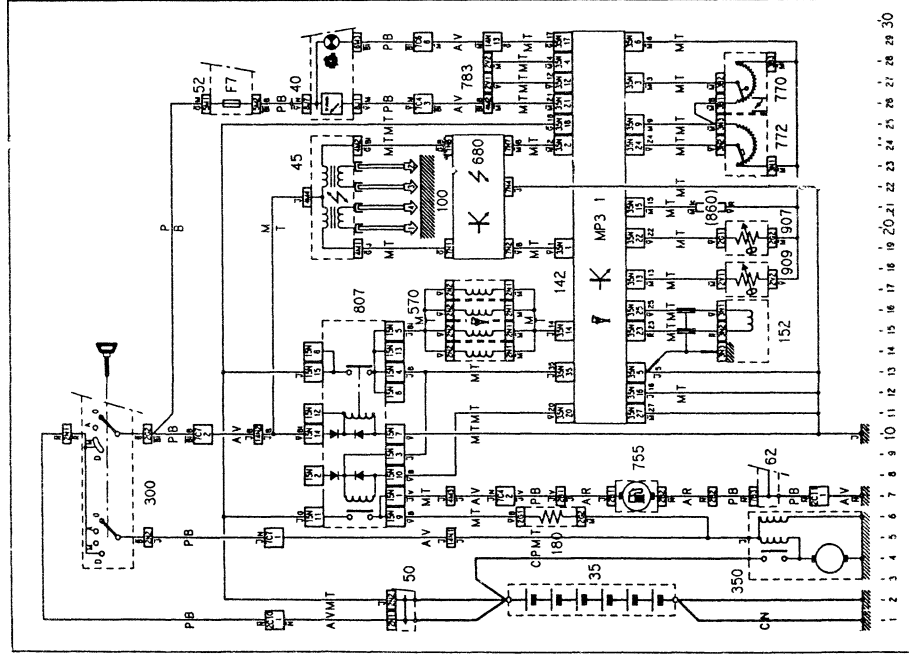
Wiring diagram for cigarette lighter and interior light



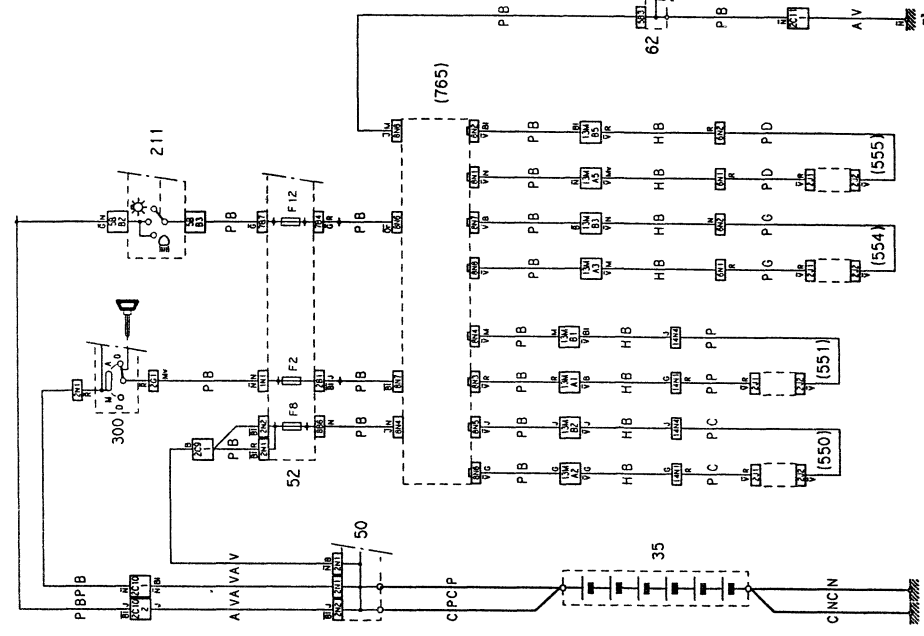
Wiring diagram for fuel injection system (1.6 litre without catalytic converter)



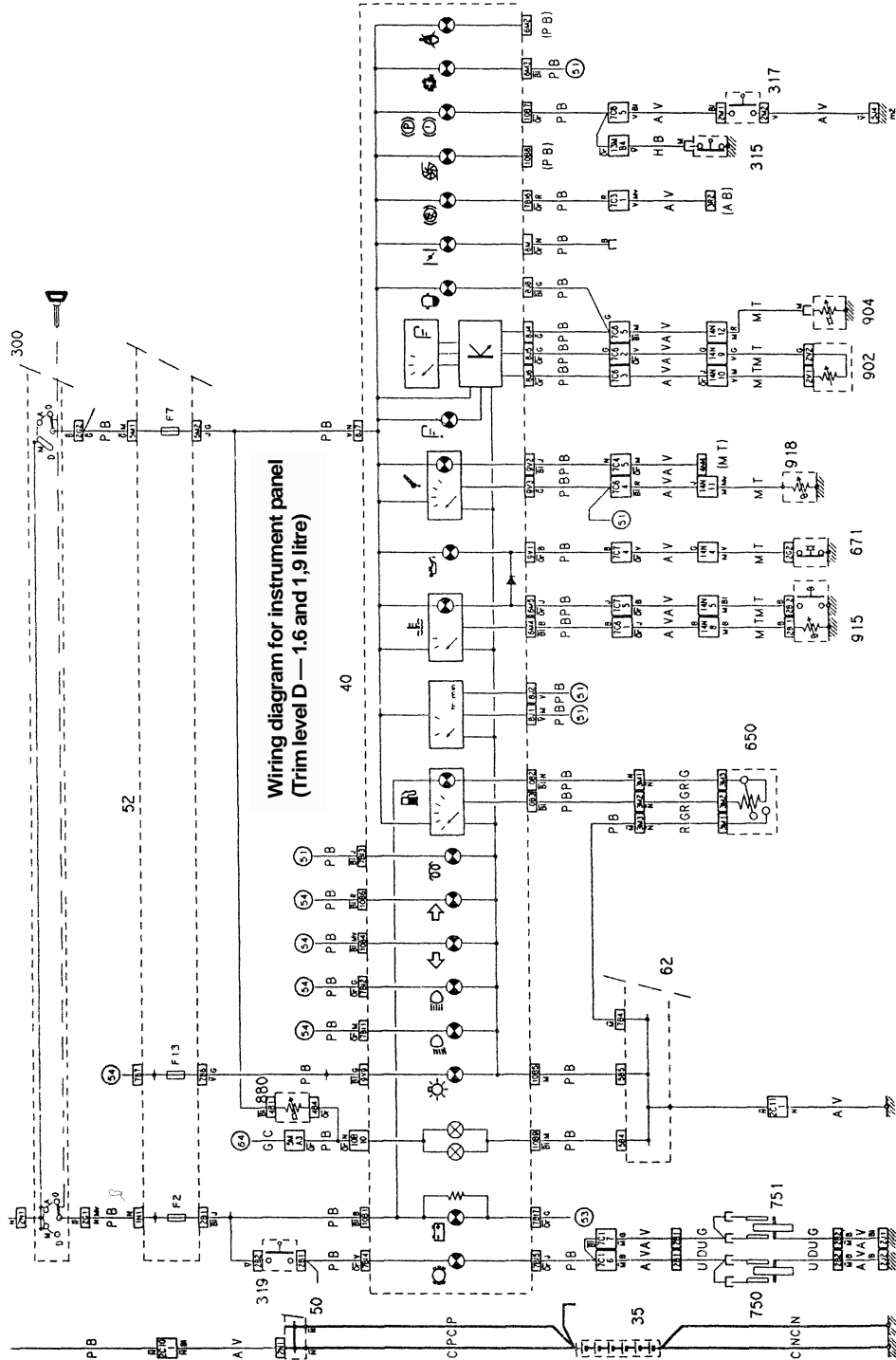
Wiring diagram for fuel injection and ignition system (1,9 litre)

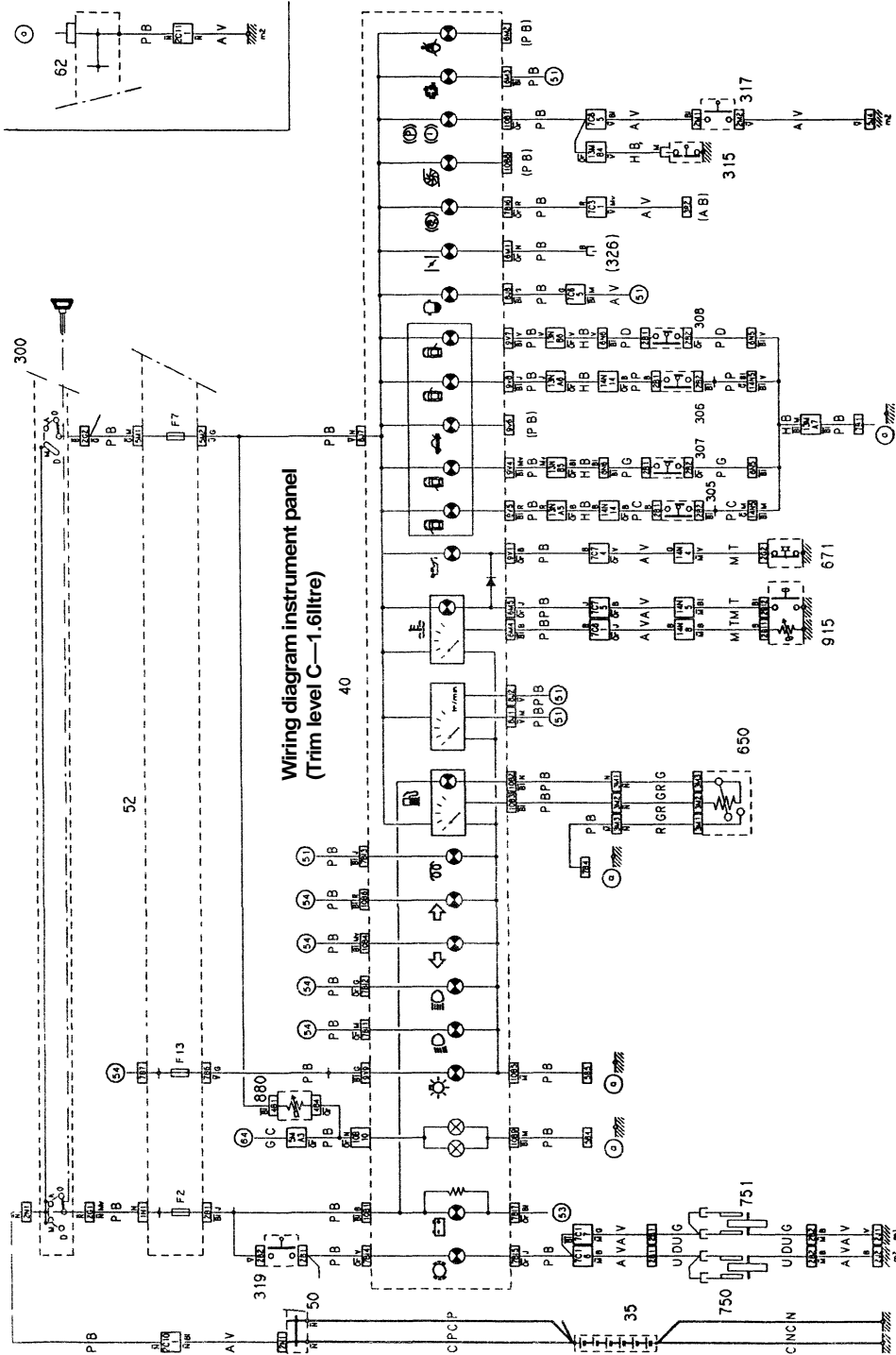


Wiring diagram radio installation

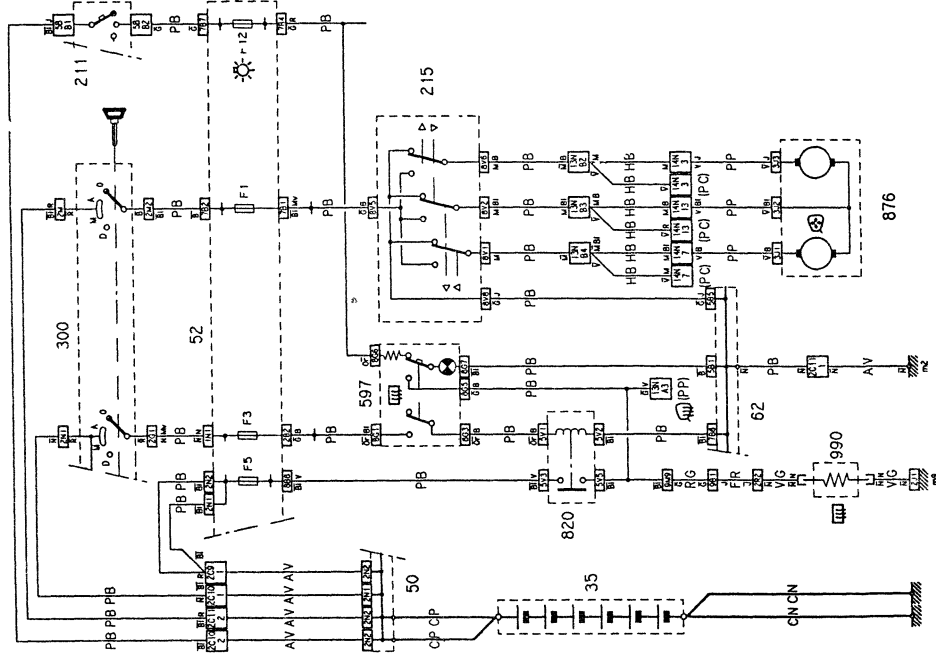


Wiring diagram for instrument panel
(Trim level D — 1.6 and 1.9 litre)

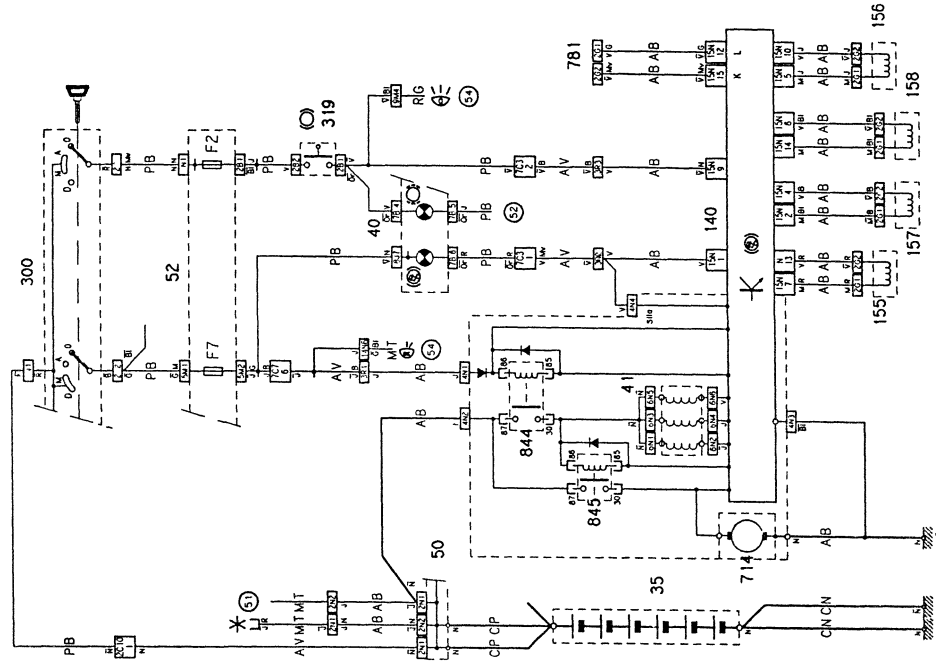




Wiring diagram for heated rear screen and adjustable mirrors



Wiring diagram for ABS



Wiring diagram forsignals and lighting
(1.6litre engine)

