

Chapter 13

Body electrical system

Contents

Air bag system – general information, precautions and system de-activation	20	Instrument panel and components – removal and refitting	9
Air bag system components – removal and refitting	21	Loudspeakers – removal and refitting	17
Anti-theft alarm system and engine immobiliser – general information	19	Radio aerial – removal and refitting	18
Bulbs (exterior lights) – renewal	5	Radio/cassette player – removal and refitting	16
Bulbs (interior lights) – renewal	6	Speedometer transducer – removal and refitting	11
Cruise control system – general information	22	Switches – removal and refitting	4
Electrical fault finding – general information	2	Tailgate wiper motor – removal and refitting	14
Electrical system check	See Weekly checks	Trip computer and auxiliary warning system – general information ..	23
Exterior light units – removal and refitting	7	Washer fluid level check	See Weekly checks
Fuses and relays – general information	3	Windscreen wiper motor and linkage – removal and refitting	13
General information and precautions	1	Windscreen/tailgate/headlight washer system components – removal and refitting	15
Headlight beam alignment – general information	8	Wiper arm – removal and refitting	12
Horn – removal and refitting	10	Wiper blade check	See Weekly checks

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



Specifications

General

System type 12-volt negative earth

Fuses

Refer to wiring diagrams

Bulbs

Headlight:

	Type	Wattage
Main beam	H1	55
Dipped beam	H1	55
Front sidelight	Push-fit	5
Front direction indicator light	Bayonet-fit	21
Front direction indicator side repeater light	Push-fit	5
Front foglight	H3	55
Tail light	Bayonet-fit	5
Stop light	Bayonet-fit	21
Rear direction indicator light	Bayonet-fit	21
Reversing light	Bayonet-fit	21
Rear foglight	Bayonet-fit	21
Number plate light	Push-fit	5
Kerb lights	Festoon	10
Courtesy light	Push-fit	5
Map reading lights	Push-fit	5
Luggage compartment light	Push-fit	5
Glovebox light	Push-fit	5
Vanity mirror light	Festoon	3

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 5A.

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: Before disconnecting the battery, refer to the information given in the preliminary Sections of this manual.

2 Electrical fault finding – general information

Note: Refer to the precautions given in Safety first! and at the beginning of Chapter 5A 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 bodyshell. A short-circuit fault will normally cause the relevant circuit fuse to blow.

Finding an open-circuit

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

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

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

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

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

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

Finding a short-circuit

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

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

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

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

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

Finding an earth fault

20 The battery negative terminal is connected to 'earth' – the metal of the engine/transmission 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.

3 Fuses and relays – general information

Fuses

1 Fuses are designed to break a circuit when a predetermined current is reached, in order to protect the components and wiring which could be damaged by excessive current flow. Any excessive current flow will be due to a fault in the circuit, usually a short-circuit (see Section 2).

2 The main fuses are located in the fusebox, below the left-hand side of the facia.

3 For access to the fuses, open the fusebox cover (see illustration).

4 A blown fuse can be recognised from its melted or broken wire.

5 To remove a fuse, first ensure that the relevant circuit is switched off.

6 Using the plastic tool provided, pull the fuse from its location (see illustration).

7 Before renewing a blown fuse, trace and rectify the cause, and always use a fuse of the correct rating. Never substitute a fuse of a higher rating, or make temporary repairs using wire or metal foil; more serious damage, or even fire, could result.

8 Note that the fuses are colour-coded as follows. Refer to the wiring diagrams for details of the circuits protected.

Colour	Rating
Orange	5A
Red	10A
Blue	15A
Yellow	20A
Clear or white	25A
Green	30A

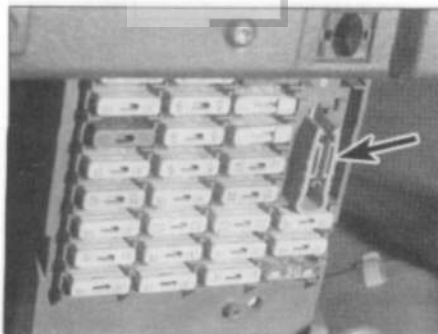
9 Additional fuses may be located in the auxiliary fusebox, at the front left-hand corner of the engine compartment, next to the battery (see illustration).

Relays

10 A relay is an electrically-operated switch, which is used for the following reasons:

- A relay can switch a heavy current remotely from the circuit in which the current is flowing, allowing the use of lighter-gauge wiring and switch contacts.
- A relay can receive more than one control input, unlike a mechanical switch.
- A relay can have a timer function – for example, the intermittent wiper relay.

11 The relays are positioned in various locations around the vehicle, according to model and equipment fitted.



3.3 Fusebox cover opened to reveal fuses – fuse removal tool arrowed

12 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 energised. If this is the case, the fault lies with the components or wiring of the system. If the relay is not being energised, 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.

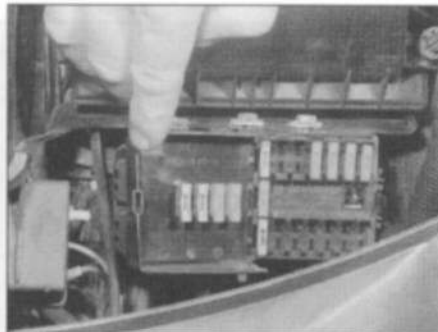
13 To remove a relay, first ensure that the relevant circuit is switched off. The relay can then simply be pulled out from the socket, and pushed back into position (see illustration).

4 Switches – removal and refitting

Note: Before removing any switch, using a screwdriver, release the securing clip, and remove the cover from the battery, then disconnect the battery negative lead. Reconnect the lead after refitting the switch.

Ignition switch/steering column lock

1 Refer to Chapter 11.



3.9 Opening the auxiliary fusebox cover in the engine compartment



3.6 Using the plastic tool to remove a fuse

Steering column combination switch assembly

Removal

2 Remove the lower steering column shroud, as described in Chapter 12.

3 Lift the upper steering column shroud as necessary to expose the two stalk switch securing screws.

4 Unscrew the two switch securing screws, then withdraw the switch from the steering column, and disconnect the wiring connector.

Refitting

5 Refitting is a reversal of removal.

Lighting switch – models up to 1994

Removal

6 Remove the lower steering column shroud, as described in Chapter 12.

7 Carefully prise the switch from the shroud.

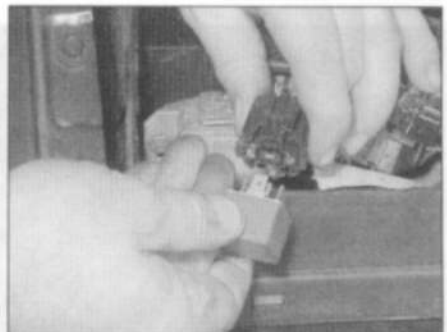
Refitting

8 Refitting is a reversal of removal.

Facia and centre console-mounted switches

Removal

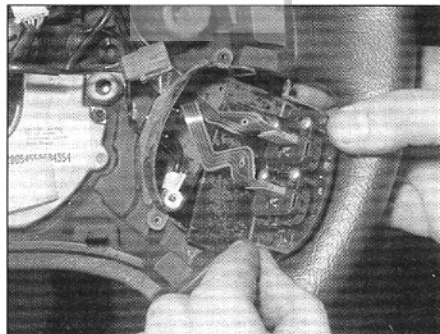
9 Carefully prise the relevant switch from the facia or console, as applicable. If necessary, use a small screwdriver, but take care not to



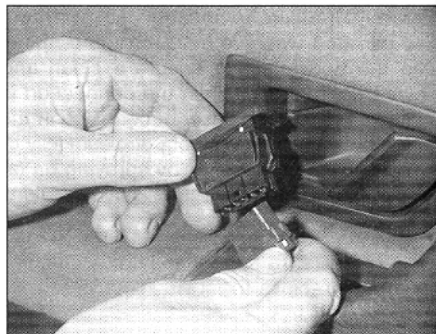
3.13 Removing a relay from the electronic control unit housing in the engine compartment



4.9 Removing a facia-mounted switch



4.15 Disconnecting a wiring plug from a steering wheel-mounted switch



4.17 Removing an electric window switch from the door

damage the surrounding panels (see illustration).

10 Withdraw the switch and disconnect the wiring plug(s).

Refitting

11 Reconnect the wiring plug(s) and push the switch into position until the securing clips engage.

Steering wheel-mounted switches

Removal

12 On models without an air bag, carefully prise the centre pad from the steering wheel.

13 On models with an air bag, remove the air bag as described in Section 21.

14 Unscrew the two securing screws, and withdraw the relevant switch from the steering wheel.

15 Carefully disconnect the wiring connectors from the rear of the switch, and withdraw the switch assembly (see illustration).

Refitting

16 Refitting is a reversal of removal.

Door-mounted electric window switches

17 Proceed as described previously in this Section for the facia and centre console-mounted switches (see illustration).

Heater blower motor switch

18 The heater blower motor switch is integral with the heater control panel, and cannot be renewed separately. Details of heater control panel removal and refitting are given in Chapter 3.

Sunroof switch

Removal

19 Carefully prise the lens from the courtesy light, for access to the four roof console securing screws (see illustration).

20 Unscrew the securing screws, and lower the roof console, taking care not to strain the wiring connectors.

21 Disconnect the sunroof switch wiring connector, then push the switch out through the front of the roof console (see illustration).

Refitting

22 Refitting is a reversal of removal.

Stop light switch and parking brake 'on' warning light switch

23 Refer to Chapter 10.

Courtesy light switches

Body-mounted switch

24 The front door courtesy light switches are mounted in the front sill panels, and the rear door courtesy light switches are mounted in

the body centre pillars. Carefully prise the grommet from the switch.

25 Unscrew the securing screw, then withdraw the switch from the body panel, and disconnect the wiring. It is advisable to tape the wiring to the body panel to prevent it from falling into the body aperture.

26 Refitting is a reversal of removal, but make sure that the grommet is correctly fitted.

Light-mounted switches

27 The light-mounted switches are integral with the lights, and cannot be renewed separately.

Glovebox light switch

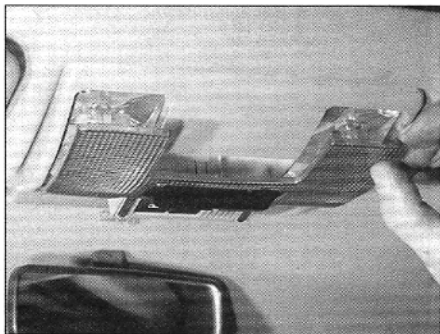
28 Proceed as described previously in this Section for the facia and centre console-mounted switches (see illustration).

Luggage compartment light switch - Hatchback models

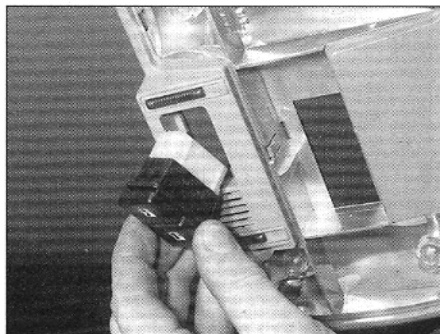
Removal

29 The switch is integral with the luggage compartment rear trim panel. If the switch is damaged, the complete trim panel must be renewed.

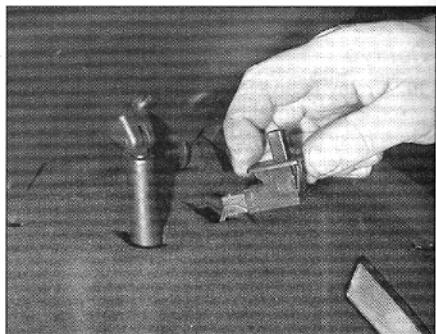
30 To remove the trim panel, open the tailgate, then prise out the cover plugs, and unscrew the four screws securing the luggage compartment rear trim panel. Lift off the panel, and disconnect the wiring from the luggage compartment light switch.



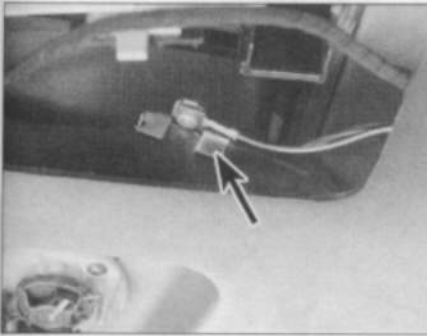
4.19 Prising the lens from the courtesy light



4.21 Removing the sunroof switch



4.28 Removing the glovebox light switch



4.36 Luggage compartment light switch location (arrowed) - Estate model

Refitting

31 Refitting is a reversal of removal.

Luggage compartment light switch - Estate models

Removal

32 The luggage compartment lights on Estate models are operated by a tilt-switch, mounted behind the tailgate trim panel.

33 Remove the securing screws, and withdraw the handle from the tailgate trim panel.

34 Work around the trim panel and remove the securing screws, then withdraw the trim panel.

35 The luggage compartment light switch is mounted on a bracket clipped to the right-hand side of the tailgate.

36 To remove the switch, unclip the bracket from the tailgate, then remove the securing screw, and disconnect the switch wiring (see illustration).

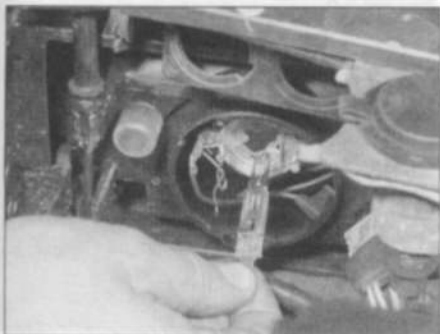
Refitting

37 Refitting is a reversal of removal.

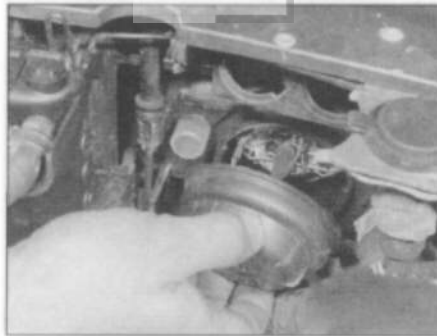
5 Bulbs (exterior lights) - renewal

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

a) Using a screwdriver, release the securing



5.5b ... and withdraw the bulb



5.3 Remove the headlight bulb cover ...

clip, and remove the cover from the battery, then disconnect the battery negative lead.

b) Remember that, if the light has just been in use, the bulb may be extremely hot.

c) 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 contact(s) 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 Separate main and dipped beam bulbs are fitted to the headlights.

3 To renew a bulb, working in the engine compartment, at the rear of the light unit, twist the relevant bulb cover approximately an eighth-of-a-turn anticlockwise and remove it from the rear of the light (see illustration).

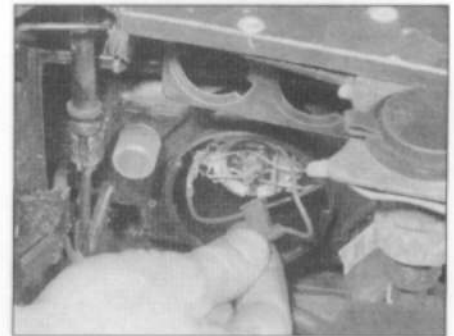
4 Disconnect the wiring from the rear of the bulb (see illustration).

5 Release the spring clip by compressing its ends, then withdraw the relevant bulb (see illustrations).

6 When handling the new bulb, use a tissue



5.9a Press the securing tab (arrowed) ...



5.4 ... then disconnect the wiring from the bulb ...

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.

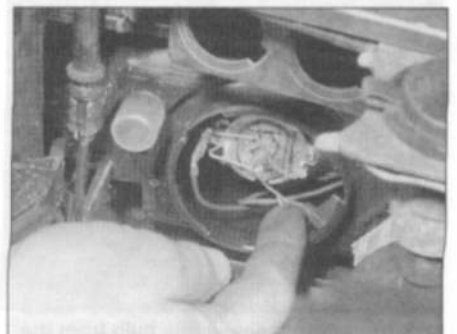
7 Fit the new bulb, ensuring that its locating tabs are correctly seated in the light cut-outs.

8 Secure the bulb in position with the spring clip, and reconnect the wiring plug, then refit the cover.

Front sidelight

9 Working in the engine compartment, at the rear of the sidelight assembly, press the securing tab to release the assembly, then push the assembly out from the front of the wing panel (see illustrations).

10 Twist the bulbholder anticlockwise, and remove it from the rear of the light unit.



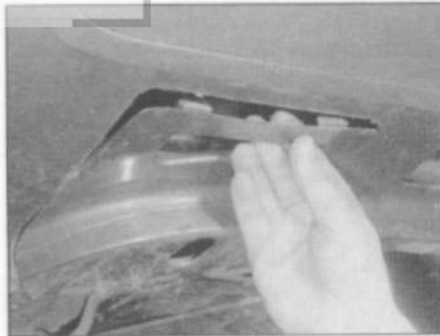
5.5a ... release the spring clip ...



5.9b ... then push the sidelight assembly from the wing panel



5.11 The bulb is a push-fit in the bulbholder



5.13 Unclip the cover for access to the spoiler-mounted lights (later model shown)



5.14 Twist the direction indicator bulbholder anti-clockwise

11 The bulb is a push-fit in the bulbholder (see illustration).

12 Fit the new bulb using a reversal of the removal procedure, then refit the light unit, ensuring that the locating lugs on the light unit engage correctly with the headlight and body panel.

Front direction indicator light

13 Working underneath the front spoiler, unclip the cover for access to the spoiler-mounted lights (see illustration).

14 Twist the direction indicator bulbholder anti-clockwise and remove it from the light (see illustration).

15 The bulb is a bayonet-fit in the bulbholder (see illustration).

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

Front foglight

17 Working underneath the front spoiler, unclip the cover for access to the spoiler-mounted lights.

18 Release the securing clip and lower the cover from the bottom of the foglight (see illustration).

19 Release the spring clip, and withdraw the bulb from the light unit (see illustrations).

20 Release the clips, and open the wiring connector cover, then separate the two halves of the wiring connector and withdraw the bulb (see illustration).

21 When handling the new bulb, use a clean cloth, to avoid touching the glass with the fingers; moisture and grease on 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.

22 Fit the new bulb, ensuring that its locating tabs are correctly seated in the light unit.

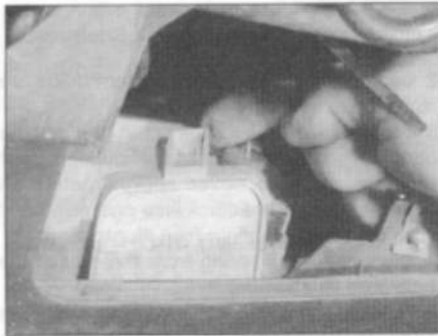
23 Further refitting is a reversal of removal.

Front direction indicator repeater light

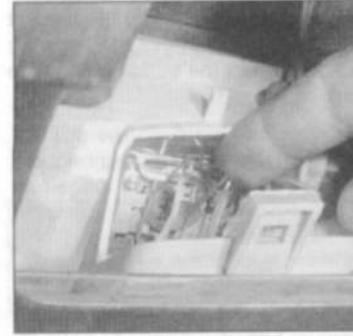
24 Push the light unit towards the front of the vehicle, then twist the



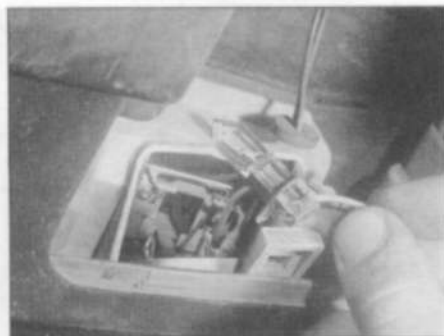
5.15 ... then remove the bulb from the bulbholder



5.18 Release the clip and lower the foglight cover



5.19a Release the spring clip



5.19b ... and withdraw the bulb



5.20 Release the clips and open the wiring connector cover



5.24a Push the light unit towards the front of the vehicle ...



5.24b ... then twist the bulbholder anti-clockwise

anticlockwise to remove it from the light unit (see illustrations).

25 The bulb is a push-fit in the bulbholder.

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

Rear lights – Hatchback models

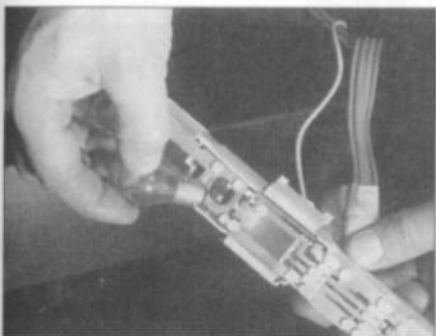
Rear wing-mounted lights

27 Working in the luggage compartment, unclip the light unit cover (see illustration).

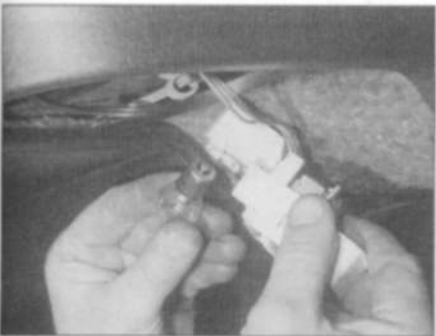
28 Squeeze the two securing lugs together, and remove the bulbholder from the light unit (see illustration).

29 The bulbs are a bayonet-fit in the bulbholder (see illustration).

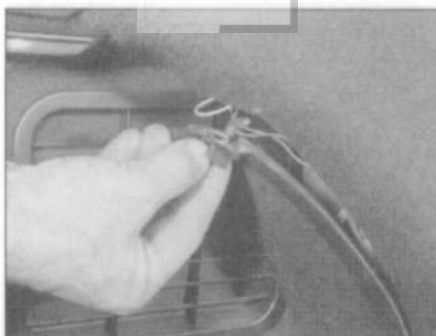
30 Fit the new bulb using a reversal of the removal procedure.



5.29 The bulbs are a bayonet-fit in the bulbholder – Hatchback model



5.32b ... then remove the bulb from the bulbholder – Hatchback model



5.27 Unclip the rear wing-mounted light cover – Hatchback model

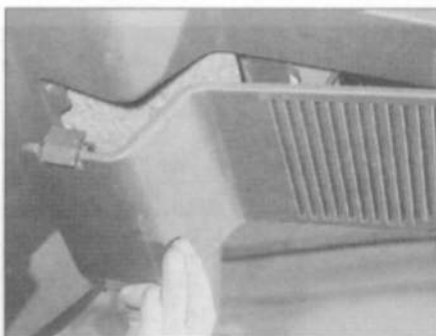
Tailgate-mounted lights

31 Open the tailgate, then depress the securing lugs, and remove the bulb cover (see illustration).

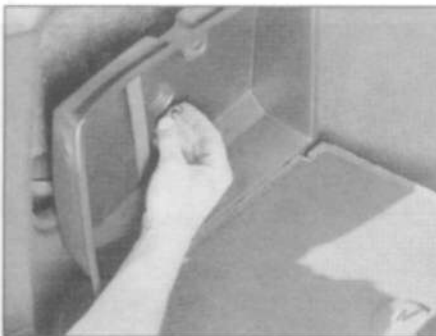
32 To remove the sidelight or foglight bulb, squeeze the securing tabs, and pull the bulbholder from the light unit. The bulbs are a bayonet-fit in the bulbholder (see illustrations).

33 To remove the reversing light bulb, pull out the foam pad to reveal the bulbholder, then twist the bulbholder anticlockwise, and remove it from the light unit. The bulb is a bayonet-fit in the bulbholder.

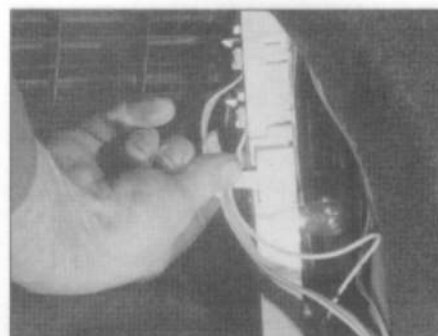
34 Fit the new bulb using a reversal of the removal procedure.



5.31 Remove the tailgate-mounted light cover – Hatchback model



5.36 Removing the storage box from the side of the luggage compartment – Estate model



5.28 Squeeze the two lugs and remove the bulbholder – Hatchback model

Rear lights – Estate models

Rear wing-mounted lights

35 Working at the rear corner of the luggage compartment, turn the securing clip, and lower the cover panel from the side of the luggage compartment.

36 Unscrew the securing nut, and withdraw the storage box from the side of the luggage compartment (see illustration).

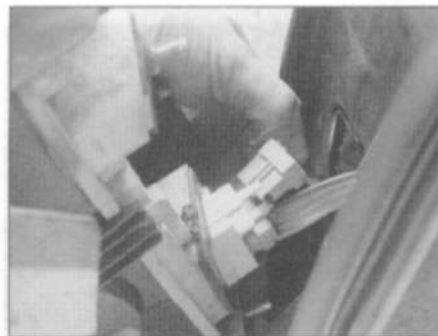
37 Unscrew the two light unit securing nuts, then lift the light unit away from the rear wing.

38 Disconnect the wiring plug from the rear of the bulbholder (see illustration).

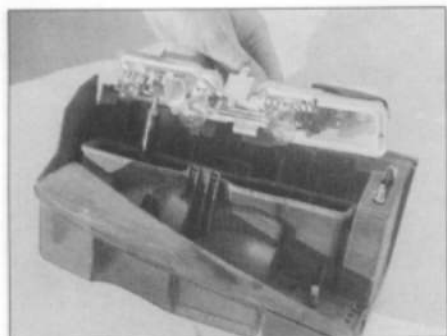
39 Squeeze the two securing lugs together,



5.32a Squeeze the bulbholder securing tabs ...



5.38 Disconnecting the wiring plug from the rear wing-mounted light bulbholder – Estate model



5.39 Removing the bulbholder from a rear wing-mounted rear light - Estate model

and withdraw the bulbholder from the rear of the light unit (see illustration). The bulbs are a bayonet-fit in the bulbholder.

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

Tailgate-mounted lights

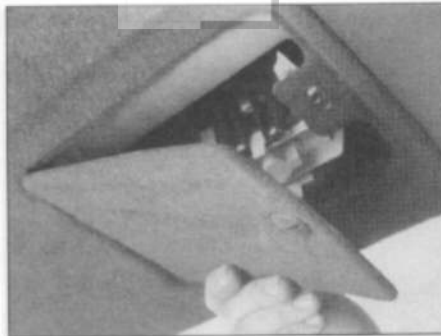
41 Open the tailgate, then release the clip, and remove the bulbholder cover from the tailgate trim panel (see illustration).

42 Squeeze the two securing lugs together, and withdraw the bulbholder from the rear of the light unit (see illustration). The bulbs are a bayonet-fit in the bulbholder.

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

Rear number plate light

44 Carefully prise the lens from the light unit,



5.41 Remove the bulbholder cover from the tailgate trim panel ...

using a small flat-bladed screwdriver, then pull out the bulb (see illustrations).

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

6 Bulbs (interior lights) - renewal

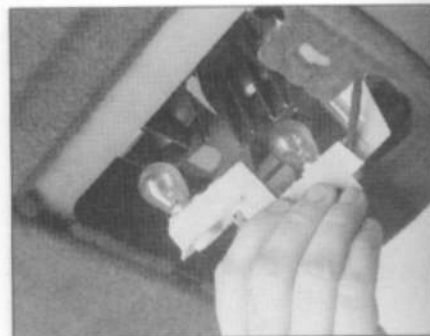
General

1 Refer to Section 5, paragraph 1.

Front courtesy light

2 Carefully prise the lens from the courtesy light assembly (see illustration).

3 Pull the relevant bulb from the bulbholder (see illustration).



5.42 ... then withdraw the bulbholder - Estate model

4 Push the new bulb into position, then refit the lens to the light assembly.

Rear courtesy and map reading lights

5 Carefully prise the light assembly from the roof, using a screwdriver if necessary (see illustration).

6 Twist the relevant bulbholder anti-clockwise to remove it from the light. The bulbs are a push-fit in the bulbholders (see illustration).

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

Kerb (door-mounted) lights

8 Carefully prise the light unit from the bottom edge of the door, then unclip the lens,



5.44a Prise the lens from the number plate light unit ...



5.44b ... then pull out the bulb - Hatchback models



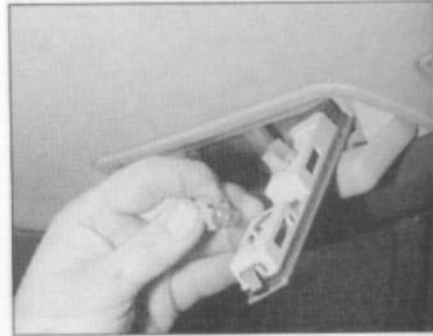
6.2 Prise the lens from the courtesy light ...



6.3 ... then pull the bulb from the bulbholder



6.5 Prise the rear courtesy light assembly from the roof ...



6.6 ... then twist the bulbholder anti-clockwise



6.8 Unclipping the lens from the kerb light

and pull the bulb from the contacts (see illustration).

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

Luggage compartment light – Hatchback models

10 Carefully prise the light unit out from the trim panel.

11 Twist the bulbholder anti-clockwise and pull it from the light unit. The bulb is a push-fit in the bulbholder (see illustration).

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

Glovebox light

13 Carefully prise the light assembly from the glovebox, using a screwdriver if necessary.

14 Twist the relevant bulbholder anti-clockwise to remove it from the light. The bulbs are a push-fit in the bulbholders.

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

Instrument panel illumination bulbs

16 Refer to Section 9.

Vanity mirror illumination bulbs

17 Open the mirror cover, then carefully prise off the lens.

18 Pull the relevant bulb from the contacts (see illustration).

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



6.11 The luggage compartment light bulb is a push-fit in the bulbholder – Hatchback models

7 Exterior light units – removal and refitting

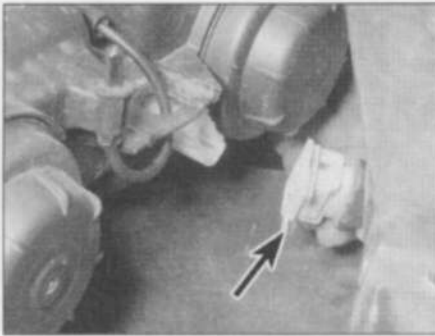
Note: Before removing any light unit, using a screwdriver, release the securing clip, and remove the cover from the battery, then disconnect the battery negative lead. Reconnect the lead after refitting the light unit.

Headlights

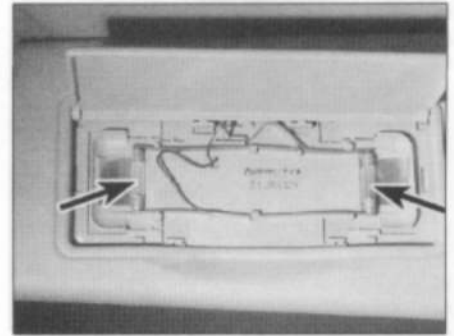
Removal

1 Remove the front grille panel as described in Chapter 12, section 20.

2 Working in the engine compartment,



7.2 Disconnect the wiring plug (arrowed) from the rear of the headlight



6.18 Vanity mirror lens removed to expose illumination bulbs (arrowed)

disconnect the wiring plug from the rear of the headlight (see illustration).

3 Where applicable, unclip the bonnet release cable from the top of the headlight (see illustration).

4 Pull the headlight adjuster knobs from the top of the front body panel (see illustration).

5 Unscrew the lower headlight securing bolt, located at the inboard lower corner of the light assembly. Note that the bolt may also secure other component brackets, such as the horn bracket – where applicable, note the orientation of the horn assembly, then disconnect the horn wiring plug(s) and withdraw the horn assembly (see illustration).

6 Unscrew the two upper headlight securing bolts, then lift the headlight from the front of the vehicle (see illustrations).



7.3 Releasing the bonnet release cable from the top of the headlight



7.4 Pull out the headlight adjuster knobs



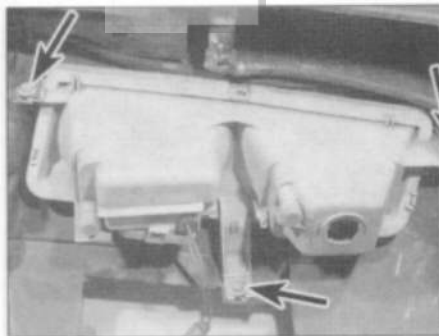
7.5 Unscrewing the lower headlight securing bolt



7.6a Unscrew the upper headlight securing bolts (arrowed) ...



7.6b ... then lift out the headlight



7.10 Front direction indicator/foglight assembly securing bolts (arrowed) - viewed with bumper removed



7.14a Unscrew the rear wing-mounted light upper securing nut ...

Refitting

7 Refitting is a reversal of removal, but have the headlight beam alignment checked at the earliest opportunity.

Front sidelights

8 Removal and refitting is described as part of the bulb renewal procedure in Section 5.

Front direction indicator light/foglight assembly

Removal

9 Remove the front bumper as described in Chapter 12.

10 Unscrew the three bolts securing the light assembly to the bumper, and remove the light assembly (see illustration).

Refitting

11 Refitting is a reversal of removal.

Rear lights - Hatchback models

Wing-mounted lights

12 Open the tailgate, then unclip the light unit cover.

13 Squeeze the two securing lugs together, and remove the bulbholder from the light unit.

14 Unscrew the two securing nuts and recover the washers, then withdraw the light unit from the outside of the wing panel (see illustrations).

15 If desired, the plastic trim panels can be unclipped from the light unit (see illustration).

16 Unscrew two nuts and remove light unit. (Recover washers).

17 Refitting is a reversal of removal.

Tailgate-mounted lights

18 Open the tailgate, then depress the securing lugs, and remove the bulb cover.

19 Squeeze the securing tabs, and pull the bulbholder from the light unit.

20 Unscrew the three securing nuts, then withdraw the light unit from the outside of the tailgate.

21 Refitting is a reversal of removal.

Rear lights - Estate models

Wing-mounted lights

22 The procedure is described as part of the bulb renewal procedure in Section 5.

Tailgate-mounted lights

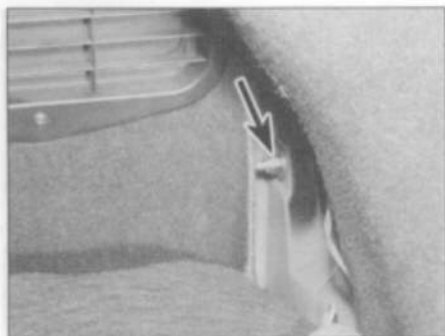
23 Open the tailgate, then release the clip, and remove the bulbholder cover from the tailgate trim panel.

24 Squeeze the two securing lugs together, and withdraw the bulbholder from the rear of the light unit.

25 Prise the plastic cover from the side of the tailgate, for access to the outer light unit retaining clip.

26 Using a screwdriver inserted through the access hole in the side of the tailgate, depress the outer light unit retaining clip, then release the two inner retaining clips by inserting the screwdriver through the aperture in the tailgate trim panel (see illustration).

27 Pull the light unit from the tailgate (see illustration).



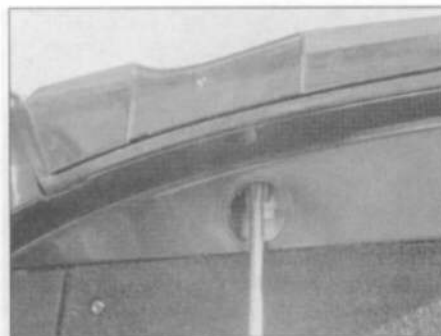
7.14b ... and lower securing nut (arrowed) ...



7.14c ... then withdraw the light assembly - Hatchback model



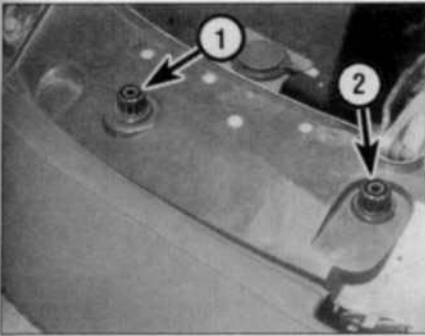
7.15 Unclipping a trim panel from a rear wing-mounted rear light - Hatchback model



7.26 Depressing the tailgate-mounted rear light outer retaining clip - Estate model



7.27 Removing a tailgate-mounted rear light unit - Estate model



8.2 Headlight beam alignment adjuster screws

- 1 Vertical adjuster screw
- 2 Horizontal adjuster screw

26 Refitting is a reversal of removal, but make sure that the retaining clips engage fully with the tailgate.

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 finely

adjusted by rotating the adjuster screws fitted to the top of each light unit. The screws protrude through the top of the body front panel. The horizontal adjustment screw is mounted at the inner end of the headlight. The vertical adjustment screw is mounted at the centre of the headlight (see illustration).

9 Instrument panel and components - removal and refitting

Instrument panel - models up to 1994

Removal

- 1 Using a screwdriver, release the securing clip, and remove the cover from the battery, then disconnect the battery negative lead.
- 2 Working at each side of the instrument panel in turn, prise out the cover plate, and unscrew the instrument panel surround securing screw.
- 3 Withdraw the instrument panel surround from the facia.
- 4 Unscrew the four instrument panel securing screws, then pull the instrument panel forwards from the facia, and disconnect the wiring plugs, noting their locations.
- 5 Where applicable, disconnect the speedometer cable from the rear of the instrument panel, then remove the instrument panel.

Refitting

- 6 Refit the panel following a reversal of the removal procedure.

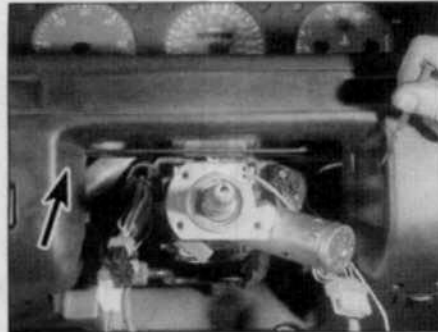
Instrument panel - models from 1995-on

Removal

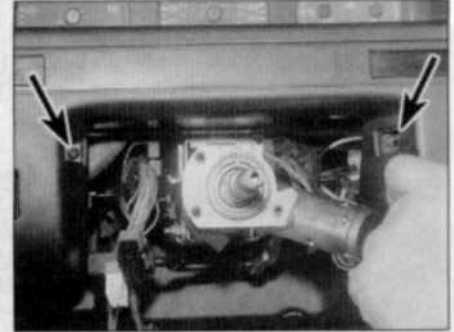
- 7 Remove the steering column shrouds as described in Chapter 12.
- 8 Carefully prise out the alarm bulb trim plate (or the blanking plate, as applicable) from the passenger's side end of the panel, to expose the upper switch/heater control/display trim panel securing screw (see illustration). Remove the screw.
- 9 Working on either side of the steering column, prise out the screw covers, then remove the remaining two upper switch/heater control/display trim panel securing screws (see illustrations).
- 10 Using a small flat-bladed screwdriver, carefully prise the heater control surround panel from the switch/heater control/display trim panel, then unscrew the four screws securing the heater control panel to the trim panel (see illustrations).
- 11 Unscrew the five lower securing screws from the bottom of the switch/heater control/display trim panel.
- 12 Lever the driver's side of the panel to release the securing clip, then withdraw the panel forward from the facia (see illustration).



9.8 Prise out the alarm bulb trim plate to expose the switch/heater control/display trim panel securing screw (arrowed)



9.9a Prise out the covers ...



9.9b ... then remove the remaining two upper switch/heater control/display trim panel securing screws (arrowed)



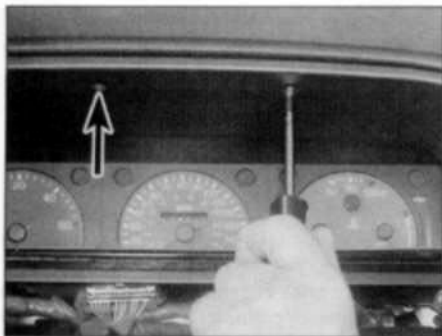
9.10a Prise out the heater control surround panel ...



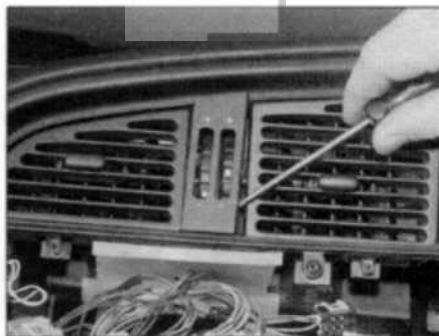
9.10b ... then unscrew the four heater control panel securing screws (arrowed)



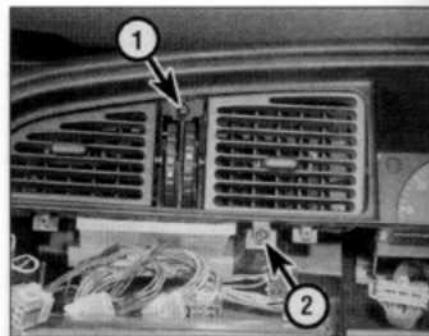
9.12 Withdraw the switch/heater control/display trim panel



9.13 Unscrew the two upper instrument panel shroud securing screws (arrowed)



9.14a Prise off the trim plate . . .



9.14b . . . to expose the remaining upper instrument panel shroud securing screw (1). Lower instrument panel securing screw (2) also shown

Working at the rear of the panel, disconnect the wiring plugs from the panel-mounted components, noting the locations of the plugs, and withdraw the panel.

13 Unscrew the two upper instrument panel shroud securing screws (see illustration).

14 Prise off the trim plate fitted between the centre heater vents, and unscrew the remaining upper instrument panel shroud securing screw (see illustrations).

15 Unscrew the lower instrument panel

shroud securing screw, located beneath the driver's side centre heater vent, then withdraw the shroud from the facia (see illustration).

16 Unscrew the centre pins, and prise out the two lower instrument panel securing clips (see illustration).

17 Using a socket, and an extension with a universal joint, unscrew the two upper instrument panel securing nuts (see illustration). Take care not to allow the washers to drop down into the facia.

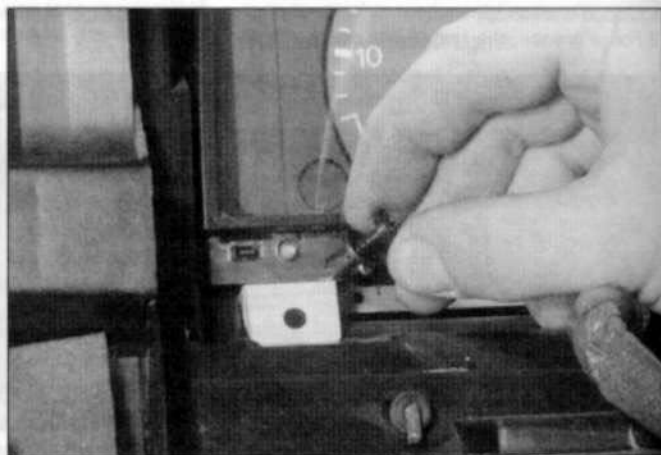
18 Carefully manipulate the washers from the upper instrument panel securing studs, then manipulate the instrument panel out from the facia, and disconnect the wiring plugs from the bottom of the panel, noting their locations (see illustration). Remove the instrument panel.

Refitting

19 Refit the panel following a reversal of the removal procedure. Refit the steering column shrouds with reference to Chapter 12.



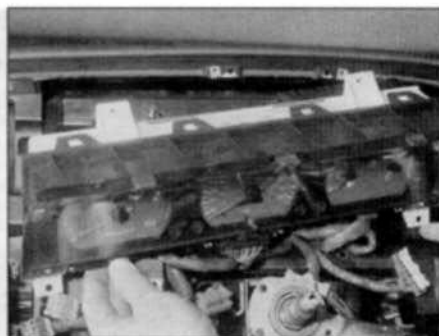
9.15 Withdrawing the instrument panel shroud



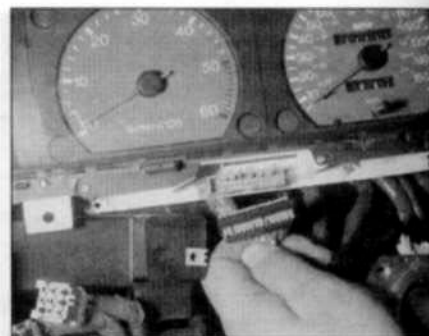
9.16 Removing a lower instrument panel securing clip



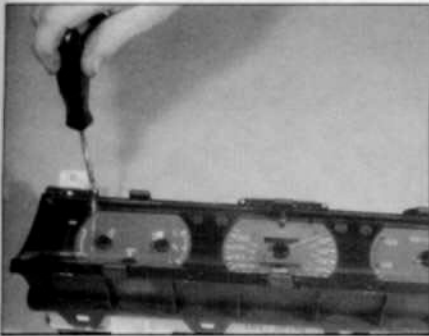
9.17 Unscrewing an instrument panel upper securing nut



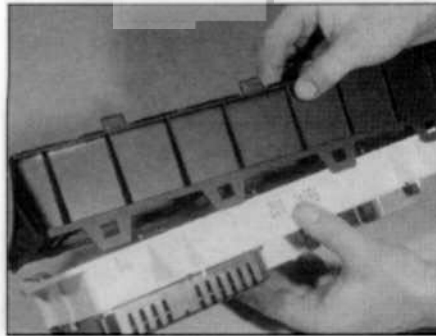
9.18a Withdraw the instrument panel . . .



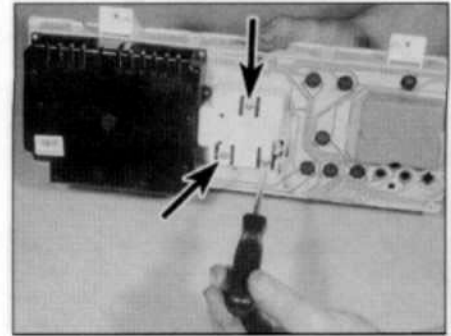
9.18b . . . and disconnect the wiring plugs



9.21a Removing an instrument panel lens securing screw



9.21b Removing the instrument panel lens



9.22 Remove the three rear speedometer securing screws (arrowed)

Speedometer

Removal

20 With the instrument panel removed as described previously in this Section, proceed as follows.

21 Remove the two securing screws, and release the securing clips, and withdraw the lens from the instrument panel (see illustrations).

22 Working at the rear of the instrument panel, remove the three speedometer securing screws (see illustration).

23 Working at the front of the panel, unscrew the two front speedometer securing screws, then lift the speedometer from the instrument panel and disconnect the wiring plug (see illustrations).

Refitting

24 Refitting is a reversal of removal.

Tachometer ("rev counter")

Removal

25 Proceed as described in paragraphs 20 and 21.

26 Unclip the plastic cover from the rear of the tachometer (see illustration).

27 Working at the rear of the instrument panel, unscrew the four securing nuts.

28 Working at the front of the instrument panel, unscrew the two securing screws, then lift the tachometer from the instrument panel.

Refitting

29 Refitting is a reversal of removal.

Fuel/temperature/oil level gauges

Removal

30 Proceed as described in paragraphs 20 and 21.

31 Working at the rear of the instrument panel, unscrew the four securing screws, and remove the plastic cover from the rear of the panel – take care, as the cover contains a circuit board, and the connector pins must be pulled out of the connector block without bending, as the cover is withdrawn (see illustrations).

32 Working at the front of the instrument

panel, unscrew the two securing screws, and carefully pull the gauge assembly from the panel.

Refitting

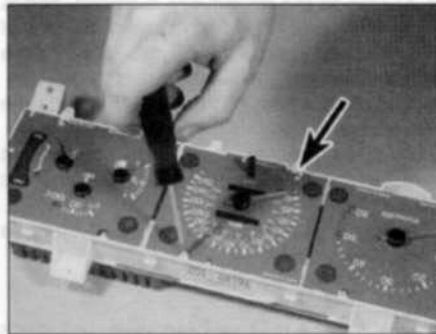
33 Refitting is a reversal of removal, but take great care not to bend the connector pins when refitting the cover to the rear of the instrument panel.

Instrument panel illumination bulbs

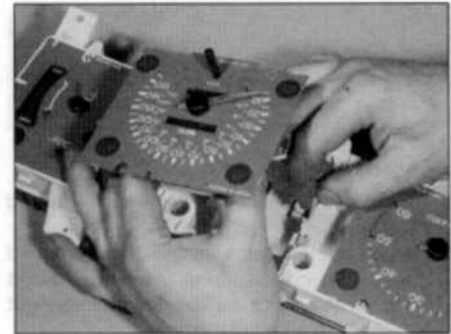
Removal

34 Remove the instrument panel as described previously in this Section.

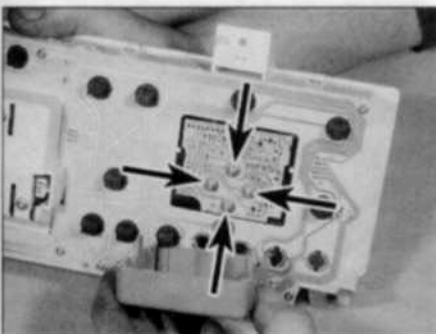
35 If the fuel/temperature/oil level gauge illumination bulbs are to be renewed, working at the rear of the instrument panel, unscrew



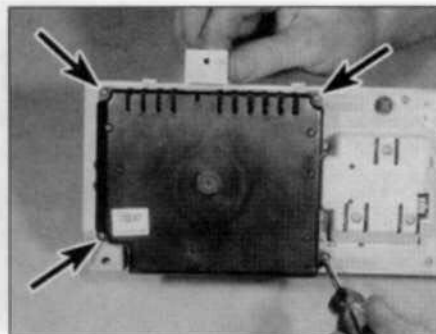
9.23a Unscrew the two front speedometer securing screws (arrowed) . . .



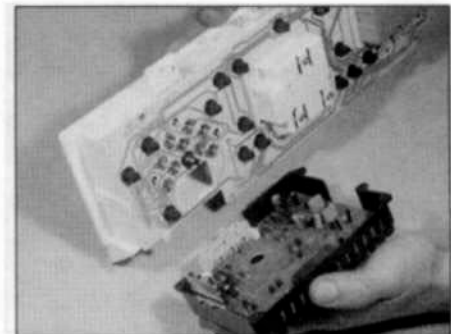
9.23b . . . and lift the speedometer from the instrument panel



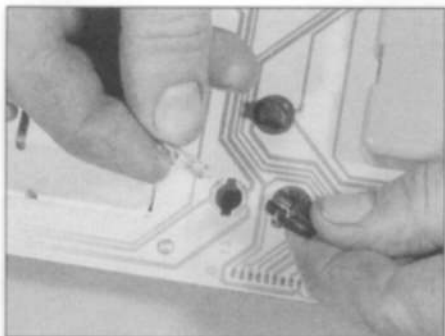
9.26 Unclip the plastic cover to expose the tachometer securing nuts (arrowed)



9.31a Unscrew the four securing screws (arrowed) . . .



9.31b . . . and remove the plastic cover from the rear of the instrument panel



9.36 The instrument panel bulbs are a push-fit in the bulbholders

the four securing screws, and remove the plastic cover from the rear of the panel – take care, as the cover contains a circuit board, and the connector pins must be pulled out of the connector block without bending, as the cover is withdrawn.

36 Working at the rear of the instrument panel, twist the relevant bulbholder anti-clockwise, and withdraw it from the rear of the panel. The bulbs are a push-fit in the bulbholders (see illustration).

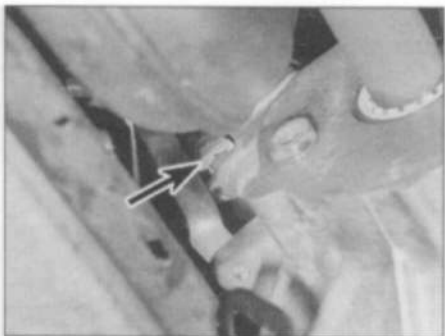
Refitting

37 Fit the new bulb using a reversal of the removal procedure but, where applicable, take great care not to bend the connector pins when refitting the cover to the rear of the instrument panel.

10 Horn – removal and refitting

Removal

- 1 Remove the front grille panel as described in Chapter 12.
- 2 Reach through the front grille aperture, and unscrew the bolt securing the horn bracket (the bolt also acts as the lower headlight securing bolt) (see illustration).
- 3 Lift out the horn and bracket assembly and disconnect the wiring plug (see illustration).



11.3 Speedometer transducer location (arrowed)



10.2 Unscrew the horn bracket securing bolt ...

Refitting

- 4 Refitting is a reversal of removal.

11 Speedometer transducer – removal and refitting

Removal

- 1 Using a screwdriver, release the securing clip, and remove the cover from the battery, then disconnect the battery negative lead.
- 2 Apply the parking brake, then jack up the front of the vehicle and support securely on axle stands (see *Jacking and Vehicle Support*).
- 3 Access to the transducer is limited, and is most easily obtained from behind the rear of the front suspension subframe (see illustration).
- 4 Disconnect the wiring plug from the transducer.
- 5 Unscrew the transducer securing bolt and, where applicable, remove the heat shield.
- 6 Carefully withdraw the transducer from the transmission.

Refitting

- 7 Refitting is a reversal of removal, but check the condition of the O-ring on the transducer, and renew if necessary.



12.3 Unscrew the wiper arm spindle nut ...



10.3 ... then remove the bracket and disconnect the horn wiring plug

12 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.

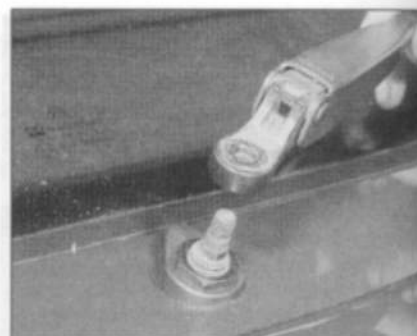


Stick a piece of masking tape on the windscreen in line with the edge of the wiper blade, to use as an alignment aid on refitting.

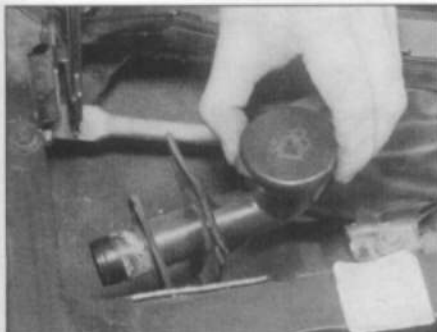
- 2 If removing a windscreen wiper arm, improved access can be obtained by removing the front scuttle trim panel as described in Chapter 12.
- 3 Unclip the wiper arm spindle nut cover, then slacken and remove the spindle nut. Where applicable, recover the washer (see illustration).
- 4 Lift the blade off the glass, and pull the wiper arm off its spindle. Note that on some models, the wiper arms may be very tight on the spindle splines – it should be possible to lever the arm off the spindle, using a flat-bladed screwdriver (take care not to damage the scuttle cover panel) (see illustration).

Refitting

- 5 Ensure that the wiper arm and spindle splines are clean and dry, then refit the arm to



12.4 ... then pull the arm from the spindle



13.4 Removing the washer fluid reservoir filler neck



13.5a Unscrew bolt (arrowed) securing the wiper motor bracket



13.5b Wiper linkage-to-scuttle securing bolt (arrowed)

the spindle. Where applicable, align the wiper blade with the tape fitted on removal.

6 Refit the spindle nut (where applicable ensure that the washer is in place), tightening it securely, and clip the nut cover back into position.

13 Windscreen wiper motor and linkage – removal and refitting



Removal

1 Using a screwdriver, release the securing clip, and remove the cover from the battery, then disconnect the battery negative lead.

2 Remove the front scuttle trim panel as described in Chapter 12.

3 Remove the windscreen wiper arms, with reference to Section 12.

4 Where applicable, unscrew the two securing screws, and withdraw the washer fluid reservoir filler neck from the scuttle (see illustration).

5 Unscrew the bolt securing the windscreen wiper motor bracket to the scuttle, then unscrew the two remaining bolts securing the ends of the linkage to the scuttle (see illustrations).

6 Where applicable, pull the protective cover from the motor assembly, then disconnect the motor wiring plug (see illustration).

7 Carefully prise the two linkage crank arms from their balljoints, using a screwdriver if necessary (see illustration).

8 Make alignment marks between the linkage drive arm and the motor spindle, then unscrew the nut securing the linkage drive arm to the motor spindle, and prise the drive arm from the spindle (see illustration).

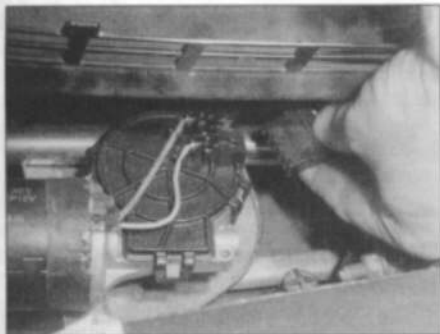
9 Unscrew the three securing bolts, then separate the motor from the linkage and lift the motor from the scuttle (see illustrations).

10 Carefully manipulate the linkage out from the scuttle, noting the orientation of the components (see illustration).

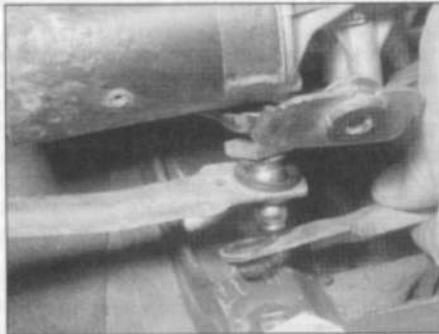
Refitting

11 Refitting is a reversal of removal, bearing in mind the following points.

a) Ensure that the linkage is orientated as noted before removal.



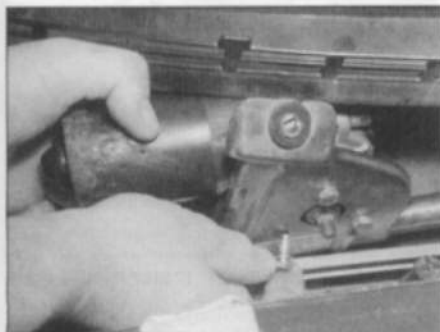
13.6 Disconnecting the windscreen wiper motor wiring plug



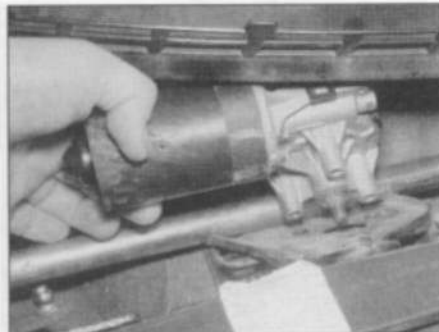
13.7 Carefully prise the two linkage crank arms from their balljoints



13.8 Unscrew the nut securing the linkage drive arm to the motor spindle



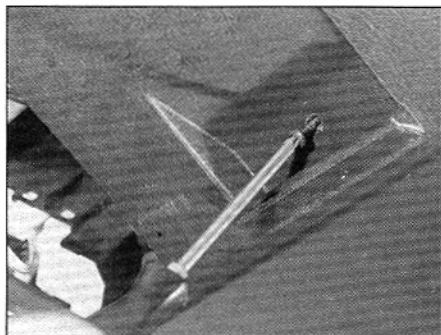
13.9a Unscrew the three securing bolts . . .



13.9b . . . and separate the motor from the linkage



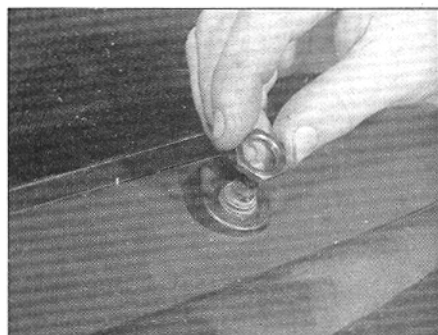
13.10 Manipulate the linkage out from the scuttle



14.3a Remove the securing screws . . .



14.3b . . . and withdraw the tailgate trim panel – Hatchback model



14.5 Unscrew the nut securing the motor spindle to the tailgate – Hatchback model

- b) Where applicable, check the condition of the washer fluid bottle filler neck O-ring and renew if necessary.
- c) Do not refit the windscreen wiper arms until the motor has been switched on and operated to set the linkage to the parked position.

14 Tailgate wiper motor – removal and refitting



Hatchback models

Removal

- Using a screwdriver, release the securing clip, and remove the cover from the battery, then disconnect the battery negative lead.
- Open the tailgate, and unclip the tailgate-mounted rear light covers.
- Remove the securing screws, and withdraw the tailgate inner trim panel (see illustrations).
- Working outside the tailgate, lift the cover, then unscrew the securing nut, and remove the tailgate wiper arm.
- Unscrew the nut securing the motor spindle to the tailgate (see illustration).
- Working inside the tailgate, unscrew the two securing bolts, then lower the motor from its location. Where applicable, recover the washers fitted between the motor and the tailgate (see illustrations).
- Disconnect the washer fluid hose from the nozzle, and feed the hose through the foam attached to the motor (see illustration).
- Disconnect the motor wiring plug, and withdraw the motor.

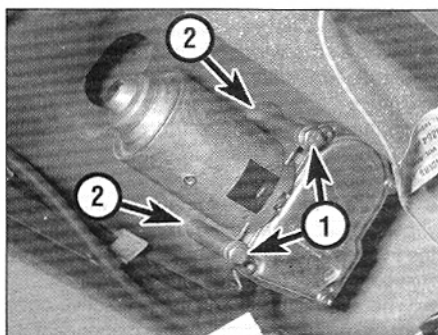
Refitting

- Refitting is a reversal of removal. Where applicable, make sure that the washers are in position between the motor and the tailgate. Make sure that the wiper arm is fitted in its correct 'parked' position.

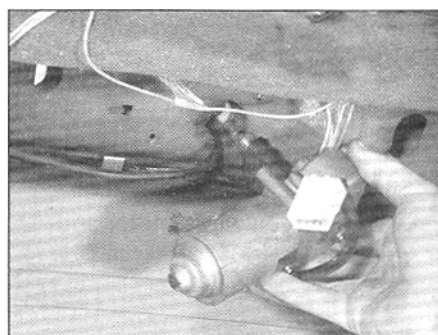
Estate models

Removal

- Using a screwdriver, release the securing clip, and remove the cover from the battery, then disconnect the battery negative lead.



14.6a Unscrew the two motor securing bolts (1) – note the washer locations (2) . . .



14.6b . . . and lower the motor from the tailgate – Hatchback model

- Remove the securing screws, and withdraw the handle from the tailgate trim panel.

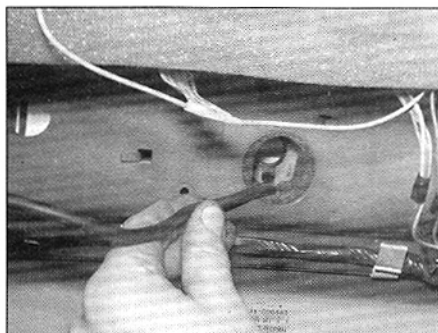
- Work around the trim panel and remove the securing screws, then withdraw the trim panel.

- Working outside the tailgate, lift the cover, then unscrew the securing nut, and remove the tailgate wiper arm.

- Working inside the tailgate, disconnect the washer fluid hose from the rear of the wiper motor (see illustration).

- Disconnect the motor wiring plugs and, where applicable, unclip the wiring from the tailgate.

- Unscrew the securing bolts, and withdraw the motor assembly from the tailgate.



14.7 Disconnect the washer fluid hose from the nozzle – Hatchback model

Refitting

- Refitting is a reversal of removal. Make sure that the wiper arm is fitted in its correct 'parked' position.

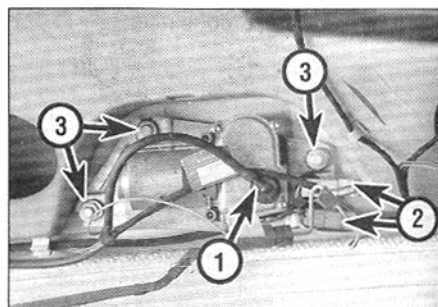
15 Windscreen/tailgate/headlight washer system components – removal and refitting



Washer fluid reservoir

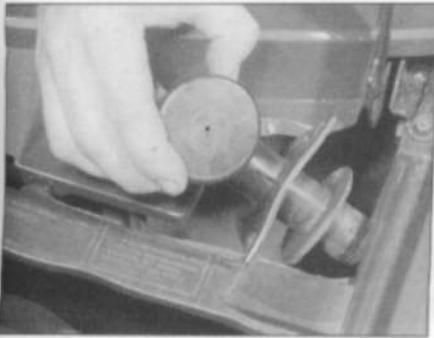
Removal

- The windscreen/tailgate washer fluid reservoir is located at the left-hand side of the

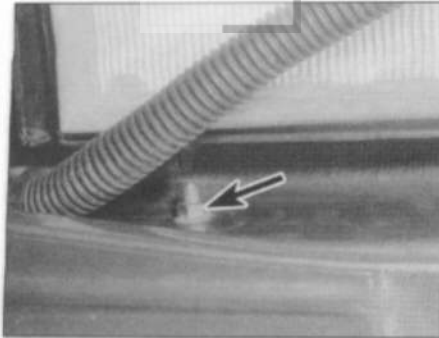


14.14 Tailgate wiper motor mounting details

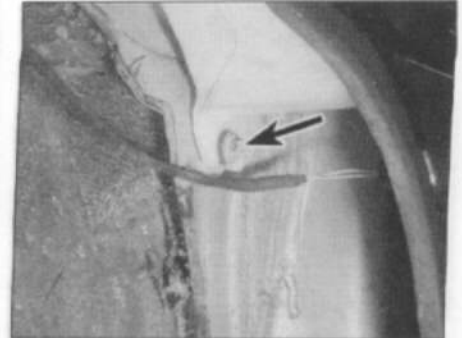
- Washer fluid hose connection
- Wiring plugs
- Securing bolts



15.3 Removing the washer fluid reservoir filler neck



15.6 Washer fluid reservoir front securing nut (arrowed)



15.7 Washer fluid reservoir rear securing bolt (arrowed)

engine compartment. On models fitted with headlight washers, a separate reservoir is located at the right-hand side of the engine compartment. It is advisable to allow the reservoir to become empty before removal.

2 Using a screwdriver, release the securing clip, and remove the cover from the battery, then disconnect the battery negative lead.

3 Working in the scuttle at the rear of the engine compartment, unscrew the two securing screws, and pull out the reservoir filler neck (see illustration).

4 Chock the rear wheels, then jack up the front of the vehicle and support securely on axle stands (see *Jacking and Vehicle Support*). Remove the relevant front roadwheel.

5 Remove the wheel arch liner with reference to Chapter 12.

6 Working in the engine compartment, unscrew the reservoir front securing nut (or bolt, as applicable), if necessary counterholding the bolt (or nut, as applicable) which fits from under the wheel arch (access is tricky). If the windscreen/tailgate washer fluid reservoir is being removed, it will be necessary to remove the air cleaner cover for access to the front reservoir securing nut or bolt (see illustration).

7 Working under the wheel arch, unscrew the reservoir rear securing bolt (see illustration).

8 Lower the reservoir, and disconnect the fluid pump wiring plugs and the fluid hoses,

noting their locations (see illustrations). Be prepared for fluid spillage if the reservoir still contains fluid.

9 Withdraw the reservoir from under the wheel arch.

Refitting

10 Refitting is a reversal of removal, bearing in mind the following points.

- Make sure that the rear end of the reservoir engages with the support bracket.
- Do not fully tighten the reservoir securing nut(s) and bolt until the filler neck has been refitted (this will ensure correct alignment of the reservoir and filler neck).
- Examine the filler neck O-ring and renew if necessary.

Washer fluid pump

Removal

11 Remove the fluid reservoir as described previously in this Section.

12 Disconnect the fluid hose(s) from the pump.

13 Pull the fluid pump from the grommet in the reservoir.

Refitting

14 Refitting is a reversal of removal, but check the condition of the rubber grommet in the reservoir, and renew if necessary. Refit the reservoir as described previously in this Section.

Windscreen washer nozzles

Removal

15 On models with heated windscreen washer nozzles, using a screwdriver, release the securing clip, and remove the cover from the battery, then disconnect the battery negative lead.

16 Remove the front scuttle trim panel as described in Chapter 12.

17 Where applicable, disconnect the washer nozzle heating element wiring plug, and release the plug from its retaining clip (see illustration).

18 Disconnect the fluid hose from the washer nozzle.

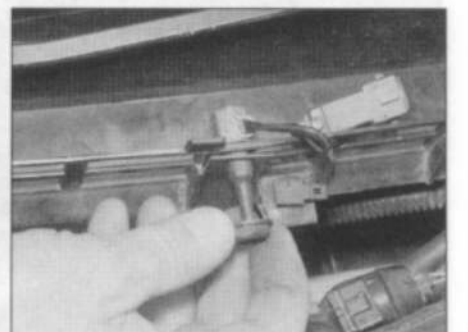
19 Unscrew the washer nozzle securing nut, then withdraw the washer nozzle and the nozzle mounting plate (see illustrations).



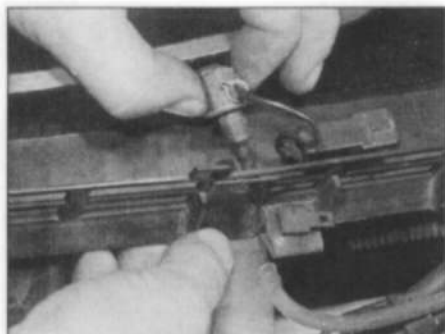
15.8b ... and disconnect the fluid pump wiring plugs and fluid hoses



15.17 Disconnecting a windscreen washer nozzle heating element wiring plug



15.19a Unscrew the securing nut ...



15.19b ... then withdraw the washer nozzle and mounting plate



15.26 Prise the headlight washer nozzle from the bumper, and prise off the circlip (arrowed)



15.27a Unscrew the two feed tube securing screws ...

Refitting

20 Refitting is a reversal of removal. Refit the scuttle trim panel with reference to Chapter 12.

Tailgate washer nozzle - Hatchback models

Removal

21 The washer nozzle is integral with the tailgate wiper motor spindle surround rubber.

22 Remove the tailgate wiper motor as described in Section 14.

23 Carefully pull the spindle surround rubber/washer nozzle from the outside of the tailgate.

Refitting

24 Push the spindle surround rubber/washer nozzle into position on the tailgate, then refit the wiper motor as described in Section 14.

Tailgate washer nozzle - Estate models

25 The nozzle is integral with the wiper arm. Refer to Section 12 for details of wiper arm removal.

Headlight washer nozzles

Removal

26 Carefully prise up the nozzle assembly

from the bumper and, using a small screwdriver, prise off the circlip securing the nozzle assembly to the fluid feed tube. Pull off the nozzle assembly (see illustration).

27 If desired, the fluid feed tube can be removed as follows. Note that when removing the left-hand feed tube, it may be necessary to remove the bumper as described in Chapter 12, to allow the fluid hose to be reconnected to the fluid feed tube (see illustrations).

- a) Unscrew the two feed tube surround plate securing screws, then carefully prise the feed tube assembly from the bumper.
- b) Disconnect the washer fluid hose from the feed tube, then withdraw the assembly.

Refitting

28 Where applicable, refit the fluid feed tube using a reversal of the removal procedure. Where applicable, refit the bumper as described in Chapter 12.

29 Ensure that the circlip is correctly refitted to the feed tube, then carefully prise up the sprung section of the feed tube, using a small screwdriver, and push the nozzle assembly onto the feed tube until the circlip engages.

30 Release the assembly, and check that the nozzle assembly sits flush on the bumper.

16 Radio/cassette player - removal and refitting

Models up to 1994

Removal

Note: Two DIN removal tools will be required for this operation.

1 Using a screwdriver, release the securing clip, and remove the cover from the battery, then disconnect the battery negative lead.

2 Open the hinged cover to expose the radio/cassette player.

3 Insert the DIN removal tools into the holes on each side of the radio/cassette player, and push them until they click into place. If necessary, pull the tools gently to the left and right to release the locking tangs.

4 Gently pull the radio/cassette player from the fascia, using the removal tools.

5 Disconnect the wiring plugs and the aerial lead, and withdraw the unit. If necessary, the oddments tray below the radio/cassette player can be pulled out to aid disconnection of the wiring.

Refitting

6 Reconnect the wiring plugs and the aerial



15.27b ... then prise out the feed tube assembly ...



15.27c ... and disconnect the washer fluid hose



16.10 Unclip the radio/cassette player surround panel – models from 1995

lead, then push the unit into its housing until the securing clips engage.

7 On completion, reconnect the battery negative lead, refit the battery cover and, where applicable, enter the security code.

Models from 1995

Note: Two DIN removal tools will be required for this operation.

Removal

8 Using a screwdriver, release the securing clip, and remove the cover from the battery, then disconnect the battery negative lead.

9 Open the oddments tray cover above the radio/cassette player.

10 Release the securing clips at the top of the radio/cassette player surround panel, tilt the top of the panel forwards, and remove the panel (see illustration).

11 Proceed as described in paragraphs 3 to 5,



16.11 Removing the radio/cassette player – models from 1995

ignoring the reference to the oddments tray (see illustration).

Refitting

12 Proceed as described in paragraphs 6 and 7.

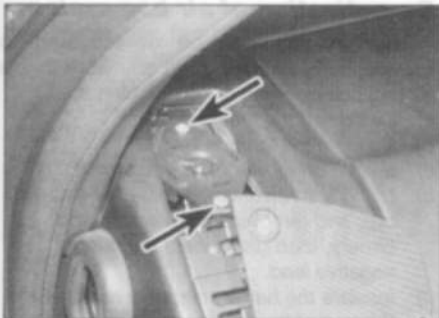
17 Loudspeakers – removal and refitting

Facia-mounted 'tweeter' speakers

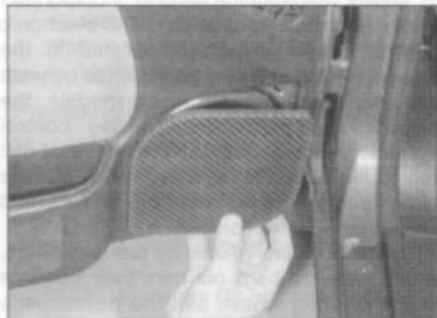
Removal

1 Using a screwdriver, release the securing clip, and remove the cover from the battery, then disconnect the battery negative lead.

2 Carefully prise the loudspeaker cover from the fascia (see illustration).



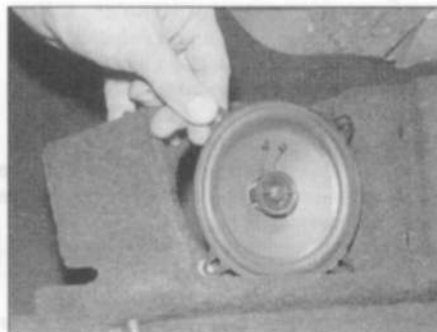
17.3 ... then unscrew the two loudspeaker securing screws (arrowed)



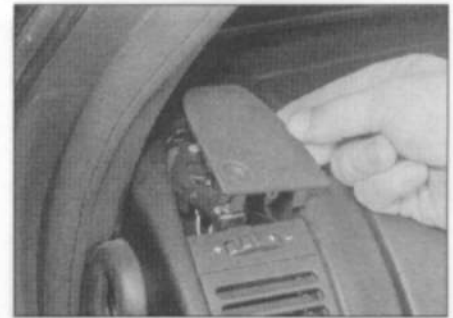
17.6a Unclip the loudspeaker cover panel ...



17.6b ... then remove the screws and withdraw the loudspeaker



17.9 Removing the rear loudspeaker – Hatchback models



17.2 Prise the 'tweeter' loudspeaker cover from the fascia ...

3 Unscrew the two securing screws, then withdraw the loudspeaker from the fascia, and disconnect the wiring (see illustration).

Refitting

4 Refitting is a reversal of removal.

Front door-mounted loudspeakers

Removal

5 Proceed as described in paragraph 1.

6 Unclip the loudspeaker cover panel from the door, then remove the securing screws, withdraw the loudspeaker, and disconnect the wiring plugs (see illustrations).

Refitting

7 Refitting is a reversal of removal.

Rear parcel shelf side support panel-mounted loudspeakers – Hatchback models

Removal

8 Remove the rear parcel shelf side support panel as described in Chapter 12.

9 Remove the securing screws and withdraw the loudspeaker (see illustration).

Refitting

10 Refit the loudspeaker using a reversal of the removal procedure.

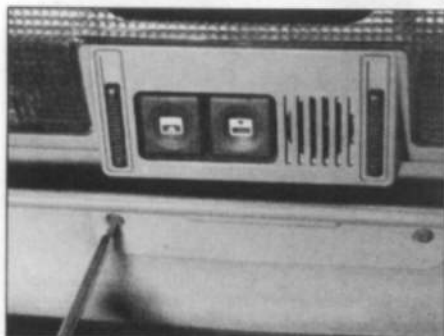
Rear loudspeakers – Estate models

Removal

11 Carefully prise the loudspeaker cover from the rear parcel shelf support panel (see illustration).



17.11 Removing a rear loudspeaker cover – Estate model



18.1 Unscrew the securing screws and remove the sun visor

12 Unscrew the four securing screws, then lift out the loudspeaker and disconnect the wiring plug.

Refitting

13 Refitting is a reversal of removal.

18 Radio aerial – removal and refitting

Removal

1 Unscrew the two securing screws, and remove the central sun visor from the roof panel to expose the bottom of the aerial (see illustration).

2 Using a small screwdriver, prise the cover from the bottom of the aerial (see illustration).

3 Unscrew the aerial securing nut, and disconnect the aerial lead, then lift the aerial assembly from the top of the roof.

Refitting

4 Refitting is a reversal of removal, but ensure that the cover is securely pushed into position at the bottom of the aerial.

19 Anti-theft alarm system and engine immobiliser – general information

Certain vehicles are equipped with an anti-theft alarm system and/or engine immobiliser system. Various types of system may be fitted depending on vehicle specification, and market.

The anti-theft alarm system, is automatically activated by the central locking system (manually, or via the remote control, where applicable). The engine immobiliser system is operated by a coded key pad mounted in the centre console – the engine can only be started after entering the correct security code using the key pad. On some models, an engine immobiliser may operate in conjunction with the alarm system.

The alarm system has switches on the bonnet, tailgate and each of the doors.

Any faults with the system should be referred to a Citroën dealer.



18.2 Prise the cover from the bottom of the aerial to expose the securing nut (arrowed)

20 Air bag system – general information, precautions and system de-activation

General information

A driver's side air bag is fitted as standard on some models, and is available as an option on others. The air bag is fitted to the steering wheel centre pad.

Similarly, a passenger's side air bag may be fitted as standard equipment, or as an option, depending on model.

The system is armed only when the ignition is switched on, however, a reserve power source maintains a power supply to the system in the event of a break in the main electrical supply. The system is activated by a 'g' sensor (deceleration sensor), incorporated in the electronic control unit. The electronic control unit may be incorporated in the steering wheel, or it may be mounted beneath the centre console. On some models, the driver's and passenger's airbag control systems are integrated with the front seat belt tensioners control system, and all are activated by a central control unit mounted beneath the centre console.

The air bags are inflated by gas generators, which force the bags out from their locations in the steering wheel, and the passenger's side facia, where applicable.

Precautions

Warning: The following precautions must be observed when working on vehicles equipped with an air bag system, to prevent the possibility of personal injury.

General precautions

The following precautions must be observed when carrying out work on a vehicle equipped with an air bag.

- Do not disconnect the battery with the engine running.
- Before carrying out any work in the vicinity of an air bag, removal of any of the air bag components, or any welding work on the vehicle, de-activate the system as described in the following sub-Section.

- Do not attempt to test any of the air bag system circuits using test meters or any other test equipment.
- If the air bag warning light comes on, or any fault in the system is suspected, consult a Citroën dealer without delay. **Do not** attempt to carry out fault diagnosis, or any dismantling of the components.

Precautions to be taken when handling an air bag

- Transport the air bag by itself, bag upward.
- Do not put your arms around the air bag.
- Carry the air bag close to the body, bag outward.
- Do not drop the air bag or expose it to impacts.
- Do not attempt to dismantle the air bag unit.
- Do not connect any form of electrical equipment to any part of the air bag circuit.

Precautions to be taken when storing an air bag unit

- Store the unit in a cupboard with the air bag upward.
- Do not expose the air bag to temperatures above 80°C.
- Do not expose the air bag to flames.
- Do not attempt to dispose of the air bag - consult a Citroën dealer.
- Never refit an air bag which is known to be faulty or damaged.

De-activation of air bag system

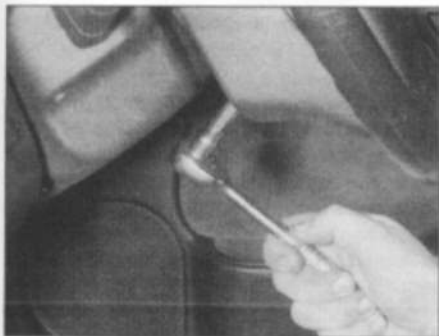
The system must be de-activated as follows, before carrying out any work on the air bag components or surrounding area.

- Switch off the ignition.
- Remove the ignition key.
- Switch off all electrical equipment.
- Using a screwdriver, release the securing clip, and remove the cover from the battery, then disconnect the battery negative lead.
- Insulate the battery negative terminal and the end of the battery negative lead to prevent any possibility of contact.
- Wait for at least ten minutes before carrying out any further work.

System re-activation

When the battery has been reconnected, switch on the ignition as follows.

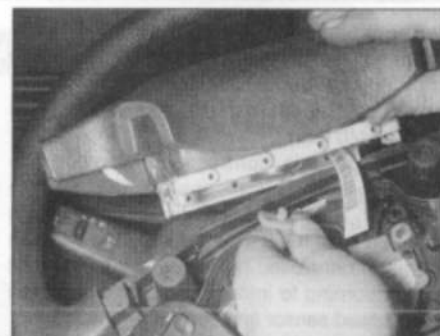
- Open the driver's window, then close the driver's door.
- Reach in through the window, and switch on the ignition.
- Observe the air bag warning light. When the ignition is first switched on, the air bag warning light (mounted on the instrument panel) should come on, and then go out 3 to 5 seconds later. If the warning light remains on, blinks continuously, or does not come on at all, consult a Citroën dealer without delay.



21.4 Unscrew the airbag unit securing screws ...



21.5 ... then ease the airbag unit from the steering wheel ...



21.6 ... then disconnect the wiring connector

21 Air bag system components – removal and refitting

Driver's side air bag unit



Warning: Refer to the precautions given in Section 20 before attempting to carry out work on the air bag components.

Removal

- 1 The air bag unit is an integral part of the steering wheel centre pad.
- 2 De-activate the air bag system as described in Section 20.
- 3 Move the steering wheel as necessary for access to the two air bag unit securing screws. The screws are located at the rear of the steering wheel centre pad.
- 4 Remove the two air bag unit securing screws (see illustration).
- 5 Gently ease the air bag unit from the steering wheel (see illustration).
- 6 Lift the air bag unit from the steering wheel, then disconnect the wiring connector from the rear of the air bag unit (see illustration).
- 7 Withdraw the air bag unit, and store it in a safe place, with reference to the precautions given in Section 20.

Refitting

- 8 Refitting is a reversal of removal, but make sure that the wiring connector is securely reconnected.

Driver's side air bag rotary switch

Removal

Note: During this procedure, take note of the routing of all wiring to aid correct refitting.

- 9 Remove the driver's air bag as described previously in this Section.
- 10 Remove the steering wheel as described in Chapter 11.
- 11 Working under the lower steering column shroud, unscrew the five screws securing the shroud, then lower the lower shroud from the steering column. Where applicable, unclip the steering lock illumination bulb from the lower shroud, and remove shroud.

- 12 Move the steering column height adjuster to fully lower the steering column.

- 13 Where applicable, depress the three securing tabs, then pull the rotary switch assembly from the centre of the steering column – take care not to strain the wiring (see illustrations).

- 14 Trace the wiring harness(es) back from the rotary switch, then separate the two halves of the wiring connector(s). Withdraw the rotary switch assembly, noting the routing of the wiring harness.

Refitting

- 15 Refitting is a reversal of removal, bearing in mind the following points.

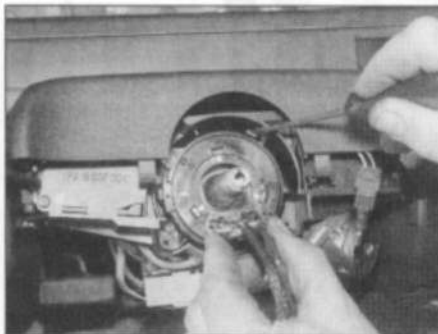
- a) Ensure that the wiring harness is routed correctly, as noted before removal.
- b) Make sure that the direction indicator self-cancelling mechanism engages correctly.
- c) Refit the steering wheel with reference to Chapter 11.
- d) Refit the air bag as described previously in this Section.

Passenger's side air bag unit

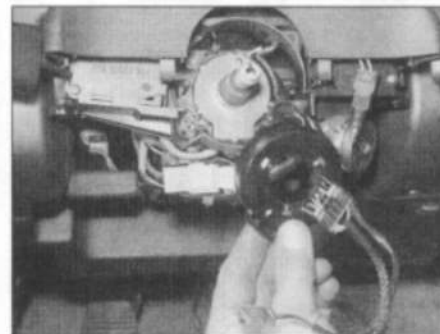
- 16 At the time of writing, no information was available regarding the removal and refitting of the passenger's side air bag unit. If it is necessary to remove the air bag unit for any reason, the work should be entrusted to a Citroën dealer.



Warning: Do not attempt to remove the passenger's side air bag yourself, without consulting a Citroën dealer.



21.13a Depress the securing tabs ...



21.13b ... then pull the rotary switch assembly from the steering column

Electronic control unit

- 17 Various different types of control system have been used for airbag systems on XM models. On some models with a driver's side air bag, but no passenger's side air bag, the electronic control unit is integral with the steering wheel. On other models, the electronic control unit is mounted beneath the centre console, and may also control the passenger's side airbag and the seat belt tensioners, where fitted.

- 18 Removal and refitting of the steering wheel is described in Chapter 11.

- 19 If the control unit is mounted beneath the centre console, it should **not** be disturbed. If a fault is suspected, consult a Citroën dealer immediately – refer to the precautions given for working with airbags, in Section 20.

22 Cruise control system – general information

The cruise control system is vacuum-operated, and comprises the following components.

- a) Vacuum pump.
- b) Vacuum-operated throttle actuator.
- c) Electronic control unit (ECU).
- d) Road speed sensor.
- e) Control switches mounted on the facia, steering wheel and brake and clutch pedals.

13•22 Body electrical system

The system allows a constant road speed to be maintained without the need to operate the throttle pedal. The desired 'cruising' speed can be set manually at speeds above 25 mph (40 km/h).

The speed is controlled by moving the throttle lever, by means of the throttle actuator. The throttle actuator is supplied with vacuum from the vacuum pump. The vacuum pump is controlled by the electronic control unit according to information provided by the road speed sensor and control switches.

The system does not affect the operation of the throttle pedal (although the pedal will move in accordance with the movement of the

throttle actuator), and the system can be overridden at any time by depressing the accelerator, brake or clutch pedals, or using the main control switch.

23 Trip computer and auxiliary warning systems – general information

Certain models are fitted with a trip computer, which provides information on fuel consumption, average speed, range, and ambient temperature. The unit analyses information supplied by various sensors.

The trip computer display is mounted in the fascia, below the instrument panel.

Similarly, some models are fitted with an auxiliary warning system, which provides visual warnings on a dot-matrix display panel, accompanied by an audible alarm chime. A variety of messages can be displayed using information from various existing sensors fitted to the vehicle (eg, washer fluid level sensor, front brake pad wear warning sensor, etc).

If problems are experienced with either the trip computer or the auxiliary warning system, consult a Citroën dealer or specialist for advice.