

# 155

## REPAIR MANUAL

### ● BODY



GROUP 40 - ELECTRICAL SYSTEM



GROUP 43 - INSTRUMENT PANEL AND  
ELECTRONIC INSTRUMENTS



GROUP 49 - BODYWORK



GROUP 55 - DOORS



GROUP 56 - BOOT AND BONNET



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## GROUP 40

## ELECTRICAL SYSTEM

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\* (Chapter not available at time of publication)



## ELECTRICAL SYSTEM

### STANDARDS AND PRECAUTIONS

**CAUTION**

Read the **STANDARDS AND PRECAUTIONS** section before removing or refitting the components of the electrical system.

Before beginning work ensure that the ignition key is at the "parking" position and that the earth cable of the battery has been disconnected and:

- avoid connecting the control unit outputs directly to the power supply;
- avoid working on devices when cables are connected to "positive" or earth without having previously disconnected the control units;
- avoid short-circuiting the sensors unless otherwise specified;
- before carrying out electrical welding, disconnect the control units in order to avoid damaging the electrical components by induced current.

**WARNING**

Calculate the possible outcome of any interventions and avoid working on components when the characteristics are not perfectly understood.

When reassembling and/or refitting, reverse the procedures given for disassembly and/or removing unless otherwise specified and reconnect the battery.

Components of the electrical system should only be substituted with genuine Alfa Romeo spare parts. Using non-specified spares with slightly different characteristics may affect the operational reliability and safety of the vehicle.

Never touch the halogen light bulbs. When replacing handle by the metal parts only.



## FUSES

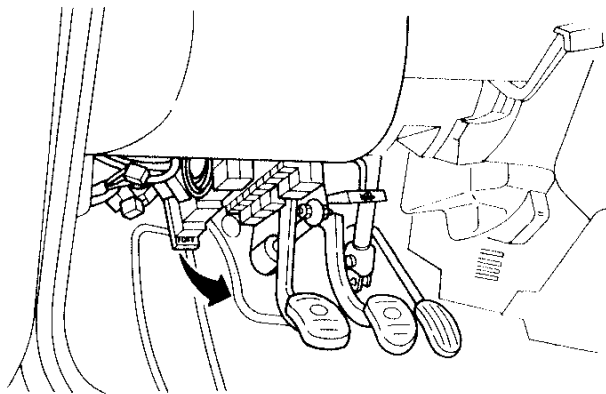
To facilitate location these have been grouped in the following housings:

- in the passenger compartment in the main fusebox;
- in the passenger compartment, in an auxiliary fusebox;
- in the engine compartment.

### LOCATION AND ACCESS WITHIN THE PASSENGER COMPARTMENT

The fuses pertaining to the main devices are arranged in the main fusebox which is located under the dashboard to the left of the steering column.

To gain access to the fusebox, pull the lever marked "FUSE" downwards so that the fusebox can easily be reached.

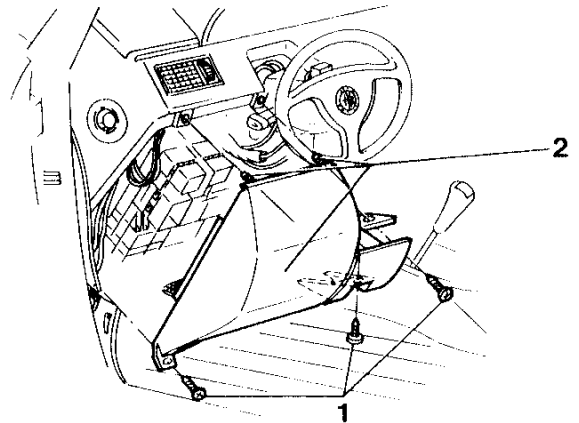


The fuses pertaining to the devices fitted as optionals are contained within an auxiliary fusebox located under the dashboard to the left of the main fusebox.

To gain access it is necessary to remove the cover as follows:

1. Loosen the three screws securing the cover to the stanchion.
2. Detach the buttons and remove the cover by freeing it from the clips.

Before refitting the cover ensure that the anti-friction pads have been correctly fitted in order to prevent squeaking.

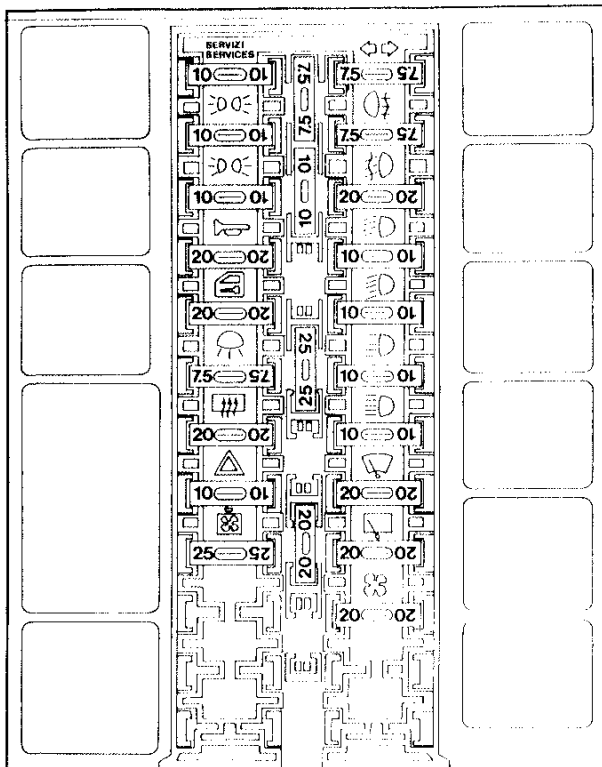




**LOCATION WITHIN THE MAIN FUSEBOX**

Some "electromechanical devices, timers and flasher units" have been installed in the main fusebox. For information regarding these, refer to the relative paragraph.

The ideograms representing the electrical component protected by the fuse are stamped onto the fuse itself. In the centre of the fusebox, in a vertical position in relation to the installed fuses, are four spare fuses.



**List of fuses**

**SERVIZI SERVICES** (10 A) Power supply for instrument panel, windscreen/headlight washer pump, reversing lights.



(10 A) Dashboard lighting, rear left-hand sidelight, left-hand numberplate light, front right-hand sidelight.



(10 A) Dashboard lighting, rear right-hand sidelight, right-hand numberplate light, front left-hand sidelight.



(20 A) Horns, cigar lighter, stoplights.



(20 A) Door locking system.



(7.5 A) Internal lights, clock.



(20 A) Heated rear window and relative warning lamp, door mirror defroster device.



(10 A) Hazard warning lights.



(25 A) Electric fan for radiator cooling.



(7.5 A) Direction indicators, adjustment of electric door mirrors.



(7.5 A) Rear foglights and relative warning lamp



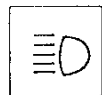
(20 A) Front foglights and relative warning lamp.



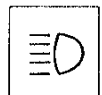
(10 A) Right-hand dipped-beam headlight.



(10 A) Left-hand dipped-beam headlight.



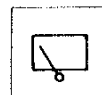
(10 A) Left-hand main-beam headlight and warning lamp.



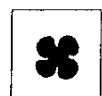
(10 A) Right-hand main-beam headlight.



(20 A) Windscreen wiper.



(20 A) Rear-windscreen wiper.

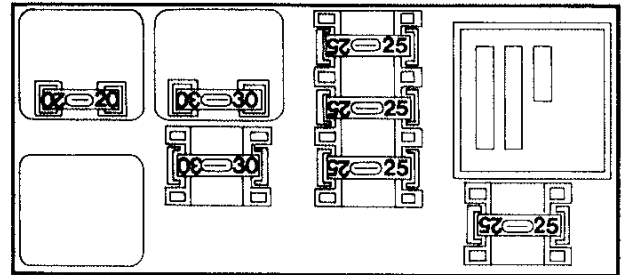


(20 A) Electric passenger compartment fan-heater.

**LOCATION IN THE AUXILIARY FUSEBOX**

Some electromechanical devices and timers are located in the auxiliary fusebox. Information regarding these can be found in the relative paragraph.

To identify the fuse, refer to the colour of the base, given in brackets in the key.



Fuse 20 A (black) Headlight washer intermittence.

Fuse 25 A (brown) Passenger side power window.

Fuse 25 A (white) Front power window.

Fuse 10 A (red) ABS.

Fuse 25 A (blue) Rear power windows.

Fuse 30 A (green) Electric seat adjustment.



**LOCATION IN ENGINE COMPARTMENT**

The fuses relevant to the following systems are located in the engine compartment:

- Ignition and injection system.
- Heating-ventilation system.
- Heating-ventilation control unit and radiator cooling fan.

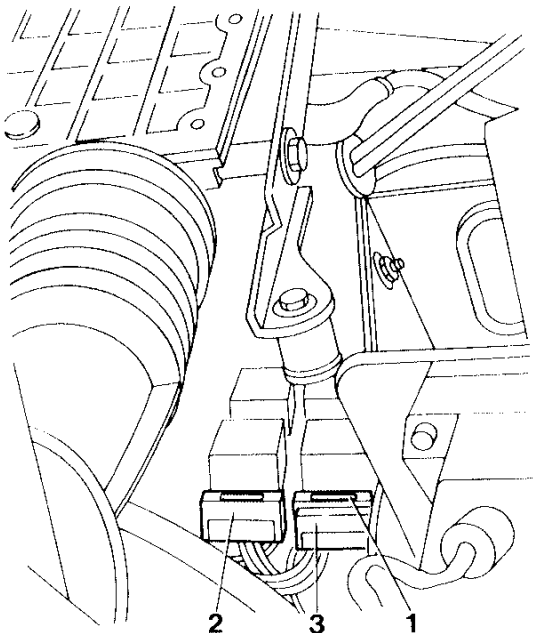
**INJECTION AND IGNITION SYSTEM**

Depending on the model the fuses relative to the injection-ignition system are arranged as follows:

**1.8 - 2.0 TS Model**

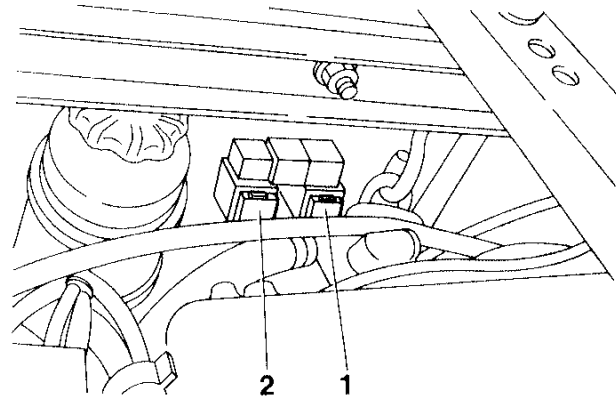
The following fuses are housed on a bracket located between the battery and the air-flow meter:

1. Fuse for control unit power supply.
2. Fuse for lambda probe (for vehicles equipped with catalytic converter).
3. Fuse for fuel pump.

**2.4 V6 model**

The following fuses are located in a box located on the rear wall of the engine compartment next to the tank:

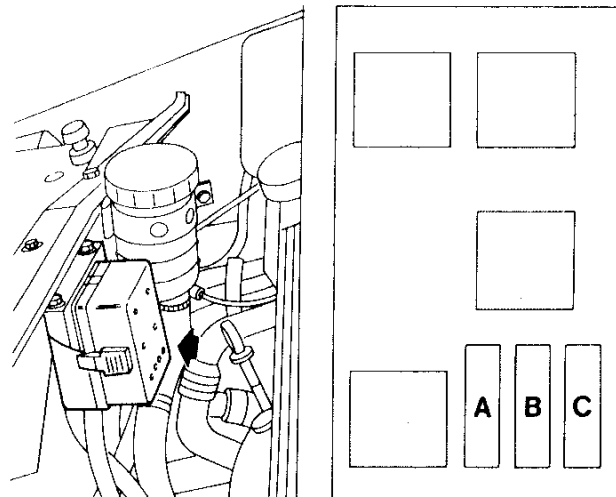
1. Fuse for Lambda probe (for vehicles equipped with catalytic converter).
2. Fuse for fuel pump.

**HEATING-VENTILATION SYSTEM**

For vehicles equipped with a heating-ventilation system, the fuses relating to the specific parts are housed in a container located on the front wall of the engine compartment. To remove the cover from the container, pull on the cover at the same time as holding the two lateral tabs down.

Some electromechanical devices and timers are located in the container. For further information regarding these, refer to the relative paragraph.

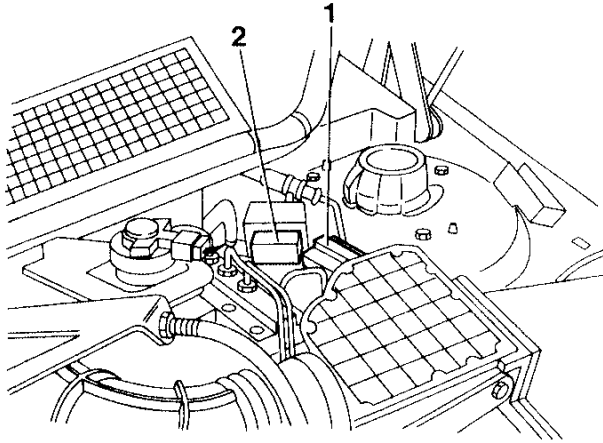
- A. Fuse 30 A (blade type) for passenger compartment electric fan.
- B. Fuse 40 A (blade type) for engine cooling liquid radiator electric fan (only for 2.4 V6 model).
- C. Fuse 15 A for air conditioning system compressor.





The following fuses are housed in the rear left-hand part of the engine compartment next to the brake-clutch fluid reservoir:

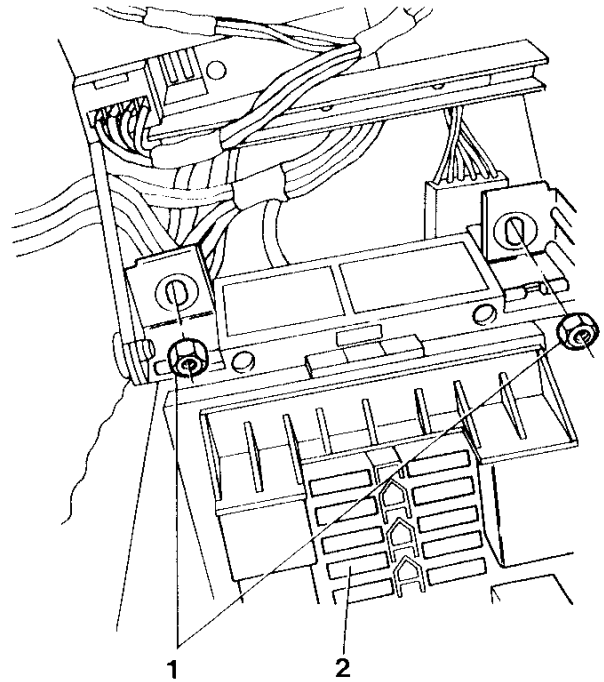
1. Fuse **50 A** (blade type) for heating-ventilation system control unit.
2. Fuse **40 A** (blade type) for engine cooling liquid radiator fan (only for 1.8 - 2.0 TS model).



**REMOVAL AND REFITTING OF MAIN FUSEBOX**

**Removal**

1. Loosen the two nuts securing the brackets to the chassis.
2. Remove the fusebox.



**Refitting**



To refit, reverse the procedure followed for removal.



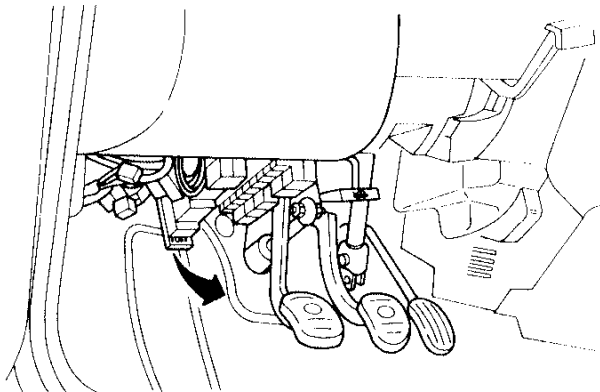
## ELECTROMECHANICAL DEVICES, TIMERS AND FLASHER UNITS

To facilitate location, most of these have been installed in the following housings:

- In the passenger compartment in the main fusebox;
- In the passenger compartment, in the auxiliary fusebox;
- in the engine compartment.

### LOCATION AND ACCESS IN THE PASSENGER COMPARTMENT

The protection and control relays of the main users are arranged in the main fusebox located under the dashboard to the left of the steering column. To gain access, pull the lever marked "FUSE" downwards so that the box can be reached easily.

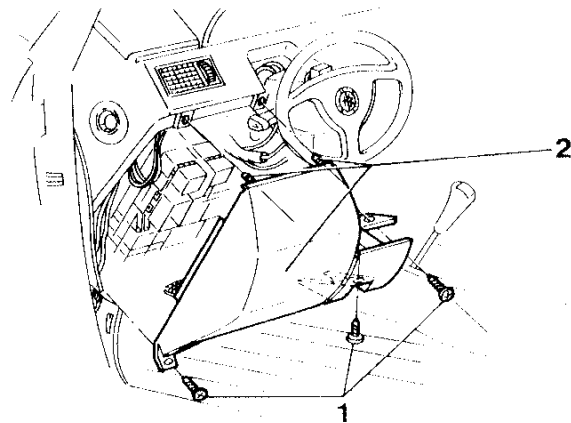


The control relays regarding the normal users and particular users supplied as an optional, are housed in the auxiliary fusebox located under the dashboard to the left of the main fusebox.

To gain access it is necessary to remove the cover as follows:

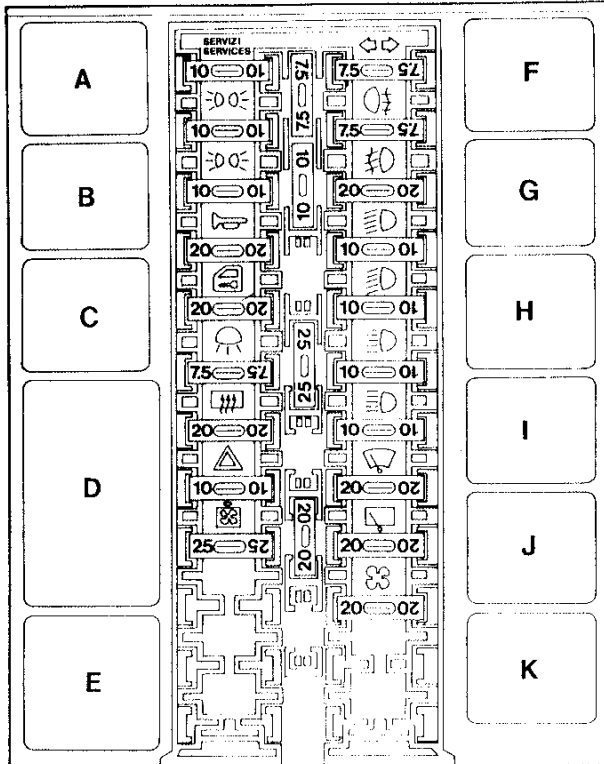
1. Loosen the three screws securing the cover to the stanchion.
2. Detach the buttons and remove the cover by freeing it from the clips.

Before refitting the cover ensure that the anti-friction pads have been correctly fitted in order to prevent squeaking.





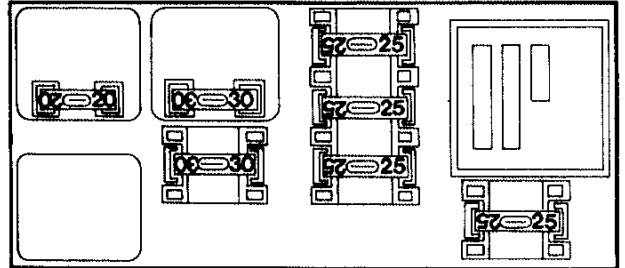
## LOCATION IN MAIN FUSEBOX



- A - Intermittence
- B - Sidelights
- C - Horns
- D - Door locking system control unit
- E - Timer for heated rear window
- F - Direction indicators - hazard warning lights
- G - Rear foglights
- H - Front foglights
- I - Dipped-beam headlights
- J - Main-beam headlights
- K - Starting services cut-off

## LOCATION IN AUXILIARY FUSEBOX

To identify each component refer to the colour on the base of the fuse given in brackets in the key.



Timer for headlight washer (black).

Relay for radiator fan (only for TS model) (green).

Relay with 30 A fuse (red) for boot release.

Relay with 20 A fuse (brown) for controlled damping suspension.

Relay with 30 A fuse (white) for sunroof.



### LOCATION AND ACCESS IN ENGINE COMPARTMENT

The relays relative to the following systems are contained in the engine compartment:

- Injection and ignition system.
- Heating-ventilation system.
- Heating-ventilation system control unit and radiator fan.

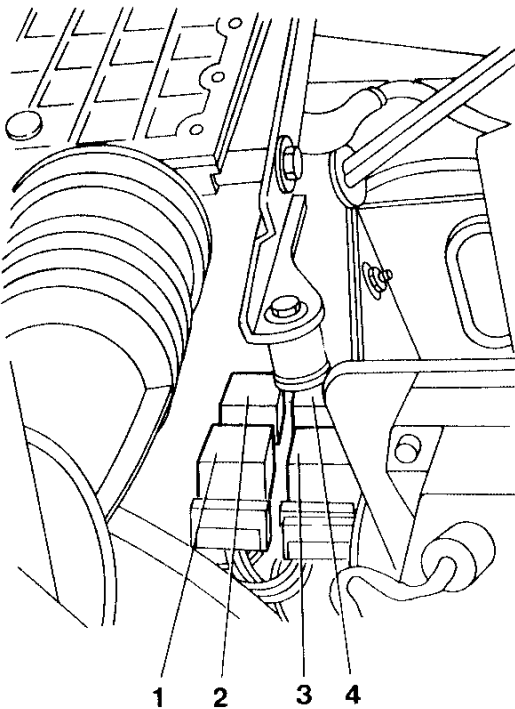
### INJECTION AND IGNITION SYSTEM

Depending on the model, the relays relative to the injection and ignition system are arranged as follows:

#### 1.8 - 2.0 TS model

The following relays are housed on a bracket located between the battery and the air-flow meter:

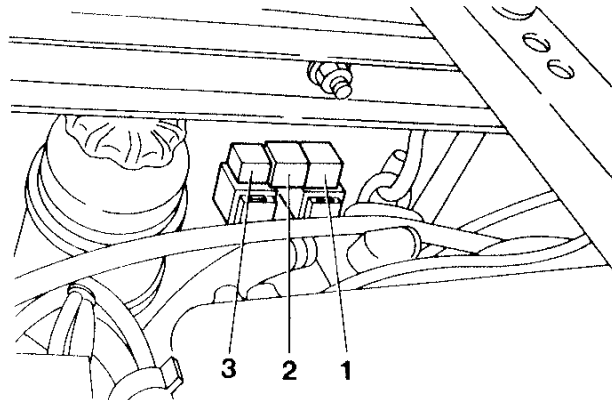
1. Fuel pump relay.
2. Main relay.
3. Timing variator relay.
4. Relay for services.



#### 2.4 V6 models

The following relays are housed in a box located on the rear wall of the engine compartment to one side of the tank:

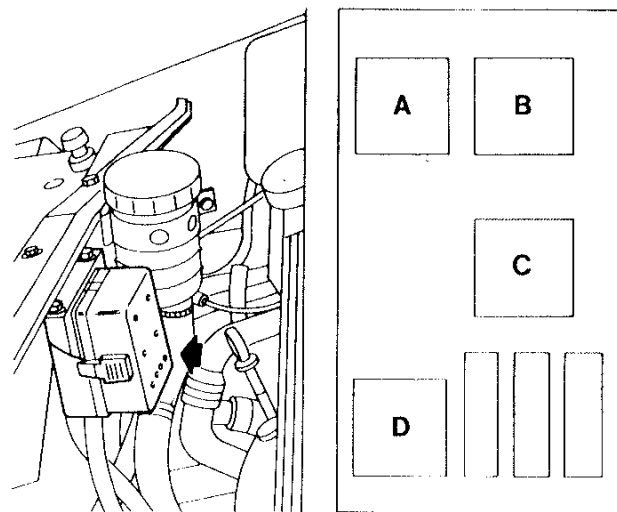
1. Fuel pump relay.
2. Main relay.
3. Relay for services.



### HEATING-VENTILATION SYSTEM

For vehicles equipped with a heating-ventilation system, the fuses relating to the specific parts are housed in a container located on the front wall of the engine compartment. To remove the cover from the container, pull on the cover at the same time as holding the two lateral tabs down.

- A. Relay for engine cooling liquid radiator fan (only for 2.4 V6 model).
- B. Slug for engine cooling liquid radiator fan.
- C. Relay for air conditioning compressor cut-in.
- D. Supplementary relay.





## EXTERNAL LIGHTING

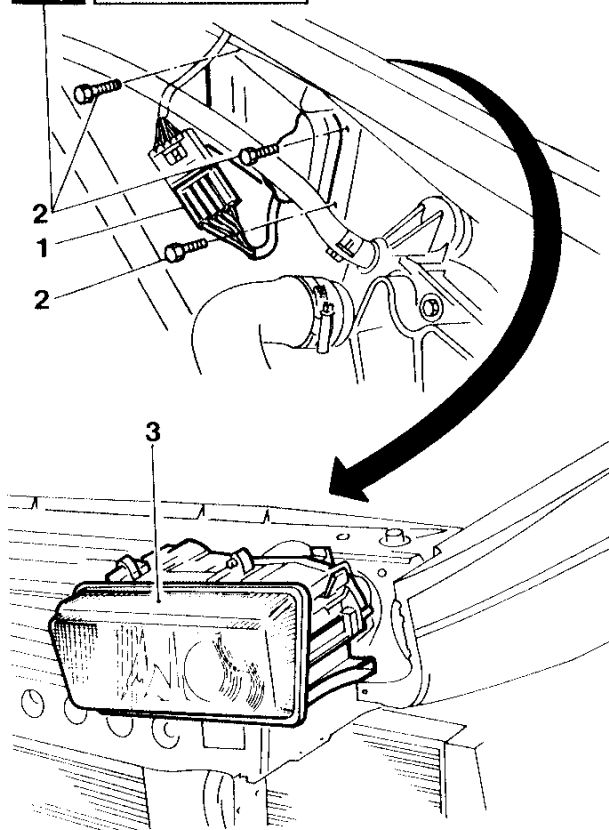
### FRONT HEADLIGHT

#### Removal

- Remove the front direction indicator (see: FRONT DIRECTION INDICATOR).
- 1. Disconnect the headlight power supply connector.
- 2. Loosen the three screws securing the headlight to the headlight support crossmember.
- 3. Remove the headlight by withdrawing the centering pins from their seats.



5.5 + 6.8 Nm  
(0.56 + 0.69 kgm)



#### Refitting



To refit, reverse the procedure followed for removal.

#### Supplementary indications for refitting

- For components and/or parts dealt with in other parts of this or other groups, refer to the relative warnings and procedures regarding refitting (see: FRONT DIRECTION INDICATOR).
- Before reconnecting the electrical connector, check that the cables have been correctly inserted.
- When refitting, tighten the screws to the correct torque.

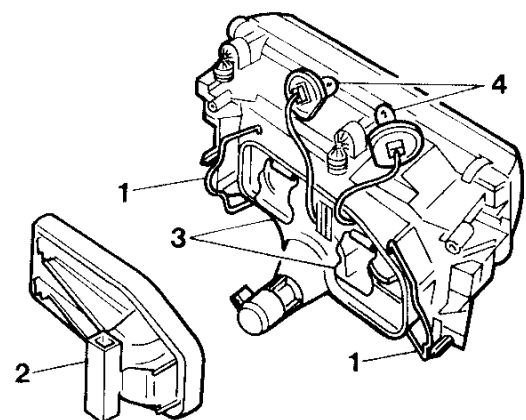
#### REPLACING BULB OF FRONT HEADLIGHT

1. Working from the engine compartment unhook the rear protection mountings.
  2. Remove the rear protection.
  3. Free the spring securing the bulb-holder and remove the bulb-holder.
  4. Withdraw the bulb.
- Fit a new bulb and install by reversing the order followed for removal. Check that the electrical cables are correctly inserted in their connectors.



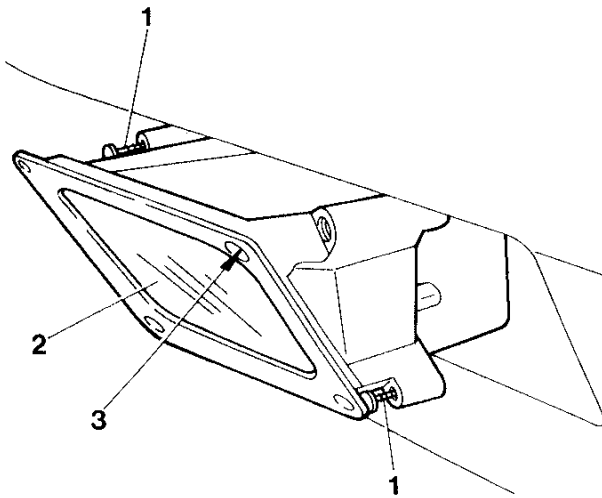
#### WARNING

Never touch the glass of the headlight bulbs. If touched, clean with methylated spirit.



**FRONT FOGLIGHT UNIT****Removal**

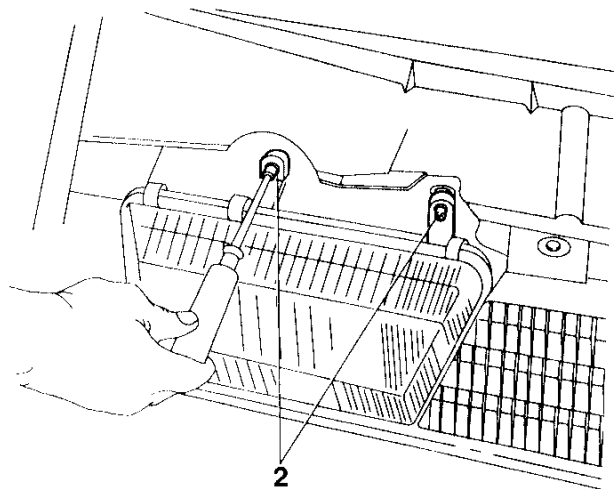
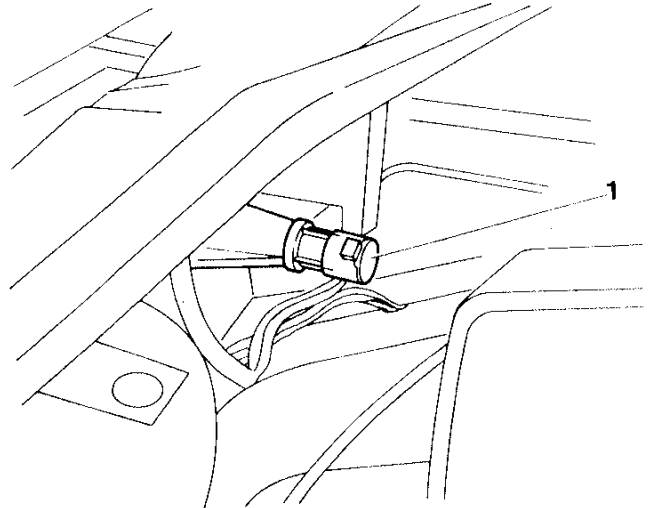
1. Loosen the two retaining screws.
2. Remove the headlight and disconnect the electrical connectors.
3. To adjust the direction of the beam, act on the adjustment screw.

**Refitting**

To refit, reverse the procedure followed for removal.

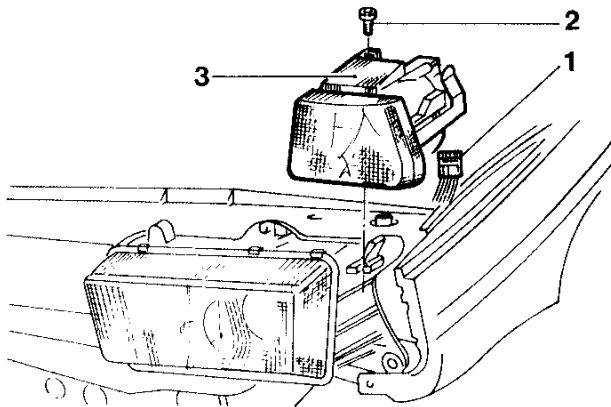
**ADJUSTING BEAM OF DIPPED-BEAM HEADLIGHT**

1. Rotate the headlight position variator either right or left when the vehicle is fully loaded or completely empty.
2. Act on the two upper screws to direct the beam of the dipped-beam headlight.



**FRONT DIRECTION INDICATOR****Removal**

1. Disconnect the Indicator power supply connector.
2. Loosen the screw securing the front direction indicator.
3. Remove the indicator by acting on the relevant lever.

**Refitting**

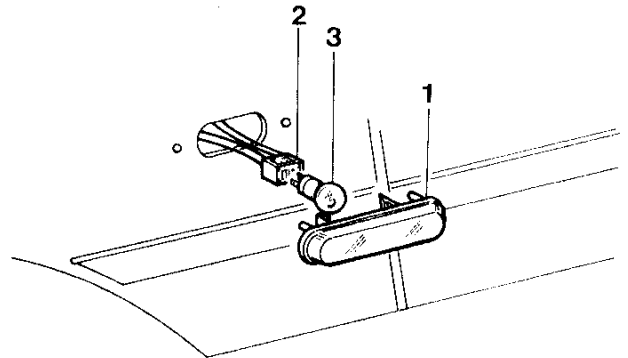
To refit, reverse the procedure followed for removal.

**Supplementary Indications for refitting**

- Before reconnecting the electrical connectors check that the cables are fitted in correctly.

**SIDE DIRECTION INDICATORS****Removal**

1. Remove the side direction indicator from the front bumper by pressing downwards and pulling outwards.
2. Withdraw the bulb-holder from the direction indicator.
3. Withdraw the bulb by pulling on the glass.

**Refitting**

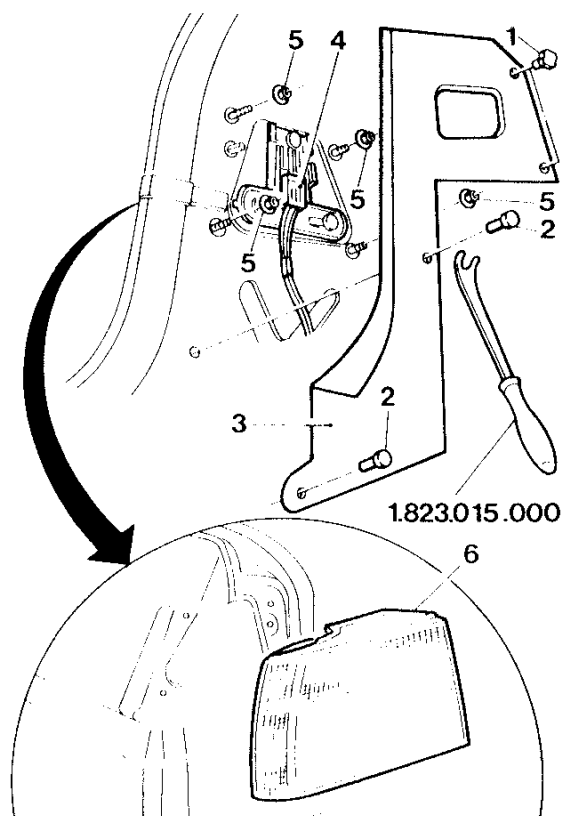
To refit, reverse the procedure followed for removal.



**REAR LIGHT ASSEMBLIES****Removal**

Working from inside the luggage compartment, proceed as follows:

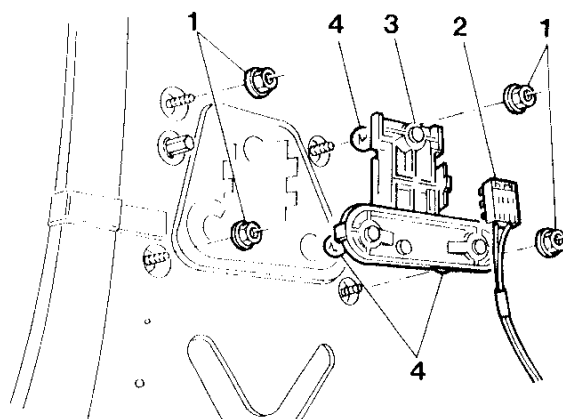
1. Loosen the two plastic nuts of the luggage compartment rear interior trim.
2. Using tool No. 1.823.015.000, disconnect the plastic button of the luggage compartment rear interior trim.
3. Remove the luggage compartment rear interior trim.
4. Disconnect the rear light unit power supply connector.
5. Loosen the four nuts securing the rear light assembly.
6. Remove the rear light assembly.

**REPLACING BULBS OF REAR LIGHT ASSEMBLY**

1. Loosen the two plastic nuts of the luggage compartment inner rear trim and lift the trim to gain access to the bulb-holder unit.
2. Disconnect the rear light unit power supply connector.
3. Unhook and remove the bulb-holder unit.
4. Withdraw the bulb.

Fit a new bulb and reinstall by reversing the procedure followed for removal.

Check that the electrical cables are correctly fitted into the power supply connector.

**Refitting**

To refit, reverse the procedure followed for removal.

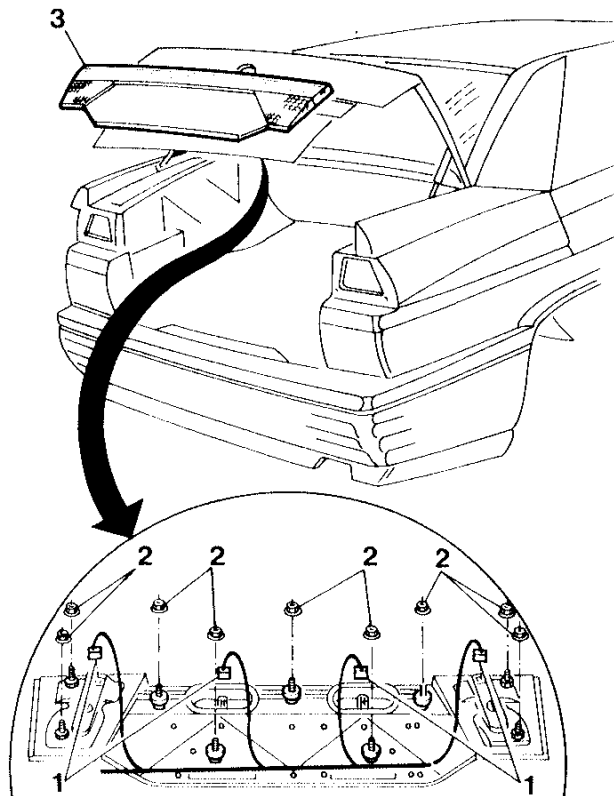


## REAR LIGHT ASSEMBLY WITH NUMBERPLATE HOLDER

### Removal

Operating from within the luggage compartment lid proceed as follows:

- Remove the boot lid trim (see GROUP 66 - BOOT LID TRIM).
- 1. Disconnect the four rear light assembly power supply connectors.
- 2. Loosen the nine nuts securing the rear light assembly to the boot lid.
- 3. Remove the rear light assembly.



### Refitting



To refit, reverse the procedure followed for removal.

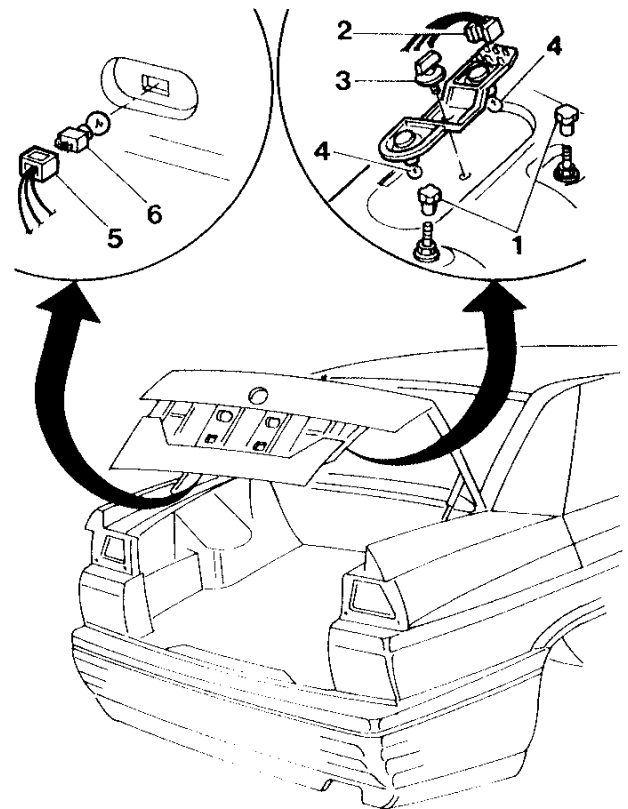
### Supplementary Indications for refitting

- Before reconnecting the electrical connectors check that the cables are correctly inserted in them.

## REPLACING BULBS OF REAR LIGHT ASSEMBLY AND NUMBERPLATE HOLDER.

Working from the inside of the luggage compartment lid, proceed as follows:

- Reversing light and rear foglight bulbs.
- 1. Loosen the two plastic nuts of the boot lid trim and lift it to gain access to the bulb-holders.
- 2. Disconnect the bulb-holder power supply connection.
- 3. Loosen the plastic fitting of the bulb-holder and remove the bulb-holder.
- 4. Withdraw the bulb.  
Fit a new bulb and install by reversing the procedure followed for removal. Check that the electrical cables are correctly inserted in the power supply connector.
- Numberplate holder bulb.
- 5. Withdraw the bulb-holder from its seating.
- 6. Substitute the bulb and fit the bulb-holder back into its seating.



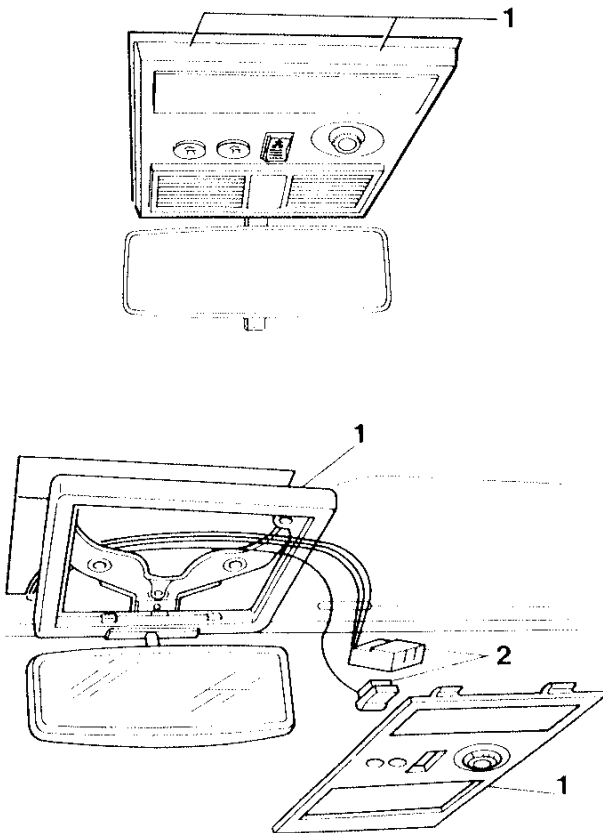


## INTERNAL LIGHTING

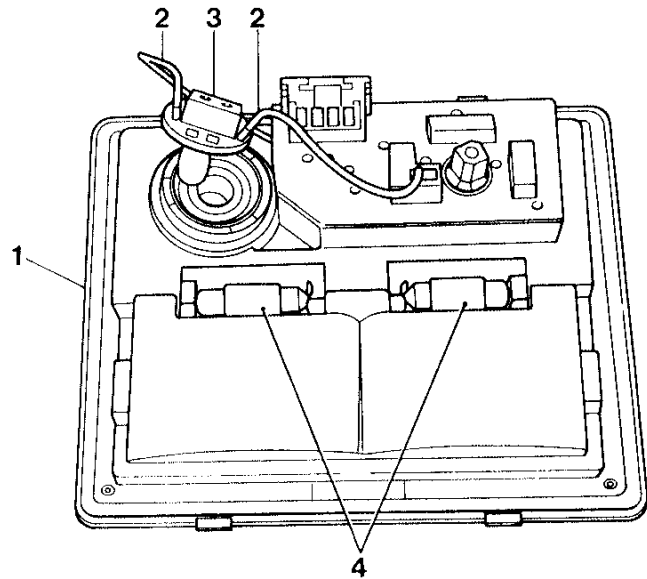
### FRONT CENTRAL ROOF LIGHT

#### Removal and substitution of light diffuser bulb.

1. Detach the front central roof lamp from the moulding by applying leverage to the slots on the front or rear sides (not laterally).
2. Disconnect the bulb power supply connector and if present, the sunroof control switch connector.



1. Turn the roof light over.
2. Disconnect the two reading lamp bulb power supply cables.
3. Remove the reading lamp bulb-holder from its seat in the roof light by rotating it anti-clockwise. The all-glass bulb is held in the bulb-holder by pressure.
4. Withdraw the two tubular bulbs by pulling them outwards and freeing them from the lateral contacts.



#### Refitting

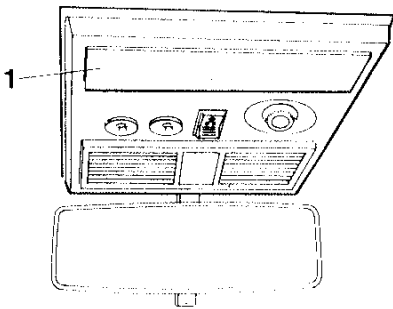


- Insert the two tube-type bulbs ensuring that they are correctly positioned and are locked between the contacts.
- Insert the all-glass spotlight bulb in the bulb-holder.
- Insert the bulb-holder and keeping it pushed against its seating, rotate it clockwise.
- Reinstall the roof light ensuring that the electrical cables are arranged correctly and are not pinched, Adjust the roof light to the correct position and press until the retaining tabs click home.

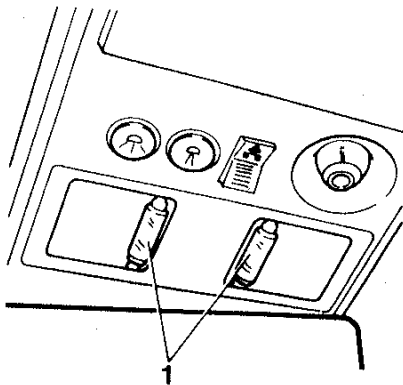


### REPLACING LIGHT DIFFUSOR BULB, FRONT CENTRAL ROOF LIGHT FOR VEHICLES EQUIPPED WITH SUNROOF

1. Remove the clear plastic from the roof light by applying leverage to one of the two lateral slots.

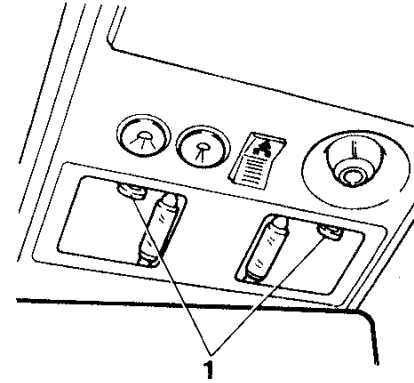


1. Remove the cylindrical-type bulb by pulling it outwards and freeing it from the lateral contacts. Insert a new bulb ensuring that they are correctly positioned and firmly fixed between the two contacts. Refit the clear plastic strip by placing it in the correct position on one side and then pressing down the other until the retaining tabs click home.

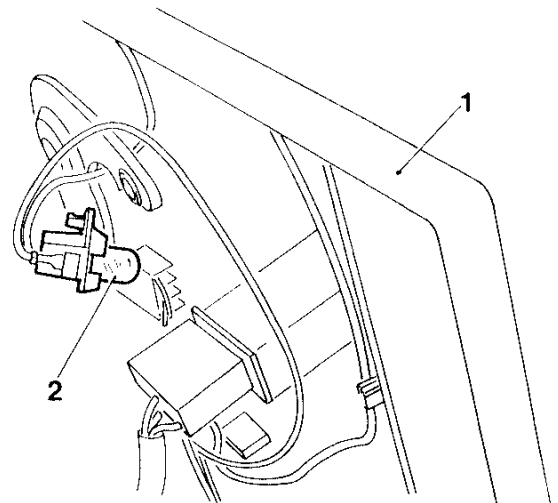


### REPLACING THE BULB OF THE READING LAMP

1. To substitute the bulb of the spotlight, detach the complete roof light by unscrewing the two screws located underneath the clear plastic strip.



1. Turn the roof light over. Withdraw the bulb-holder by rotating it anticlockwise and removing it from its seating.
2. The all-glass bulb is held in by pressure and should be removed by pulling on it. Insert a new bulb and install the bulb-holder keeping it pressed against its seating and rotating it clockwise. Refit the complete roof light and secure it by tightening the two screws. Ensure that the electrical cables are arranged correctly and do not get trapped between the edges of the roof light or by the screws. Refit the clear plastic strip placing it in the correct position on one side and pushing on the other until the retaining tabs click home.

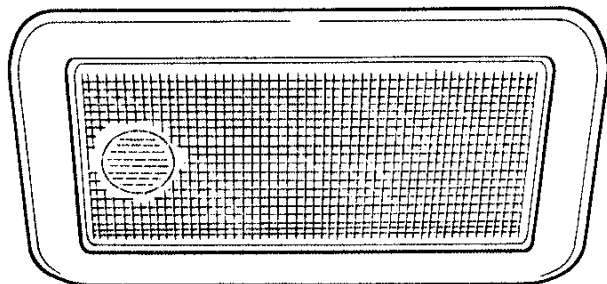




### REAR CENTRAL ROOF LIGHT

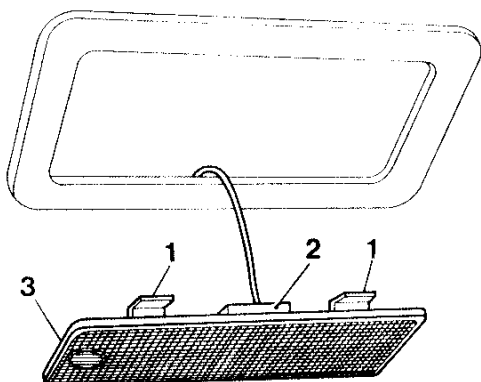
The rear lighting is composed of a central roof light which comes on automatically for a pre-set time when any of the doors are opened.

The roof light can be switched on and off manually by pressing the circular imprint on the clear plastic strip.



### Removal

1. Using a thin-bladed screwdriver with a maximum thickness of 2 mm, press on the retaining tabs and detach the complete unit.
2. Disconnect the electrical connectors.
3. Remove the roof light.



### Refitting



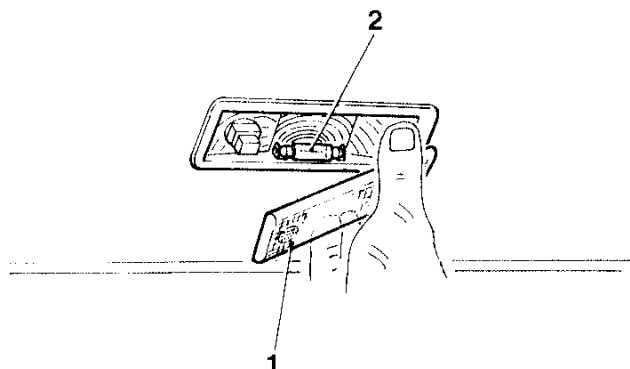
To refit, reverse the procedure followed for removal.

### REPLACING THE BULBS OF THE REAR CENTRAL ROOF LIGHT

1. Remove the clear plastic strip by applying leverage to one of the sides.
2. Remove the cylindrical-type bulbs by pulling it outwards and freeing it from the lateral contacts. Insert a new bulbs ensuring that they are correctly positioned and firmly fixed between the two contacts.

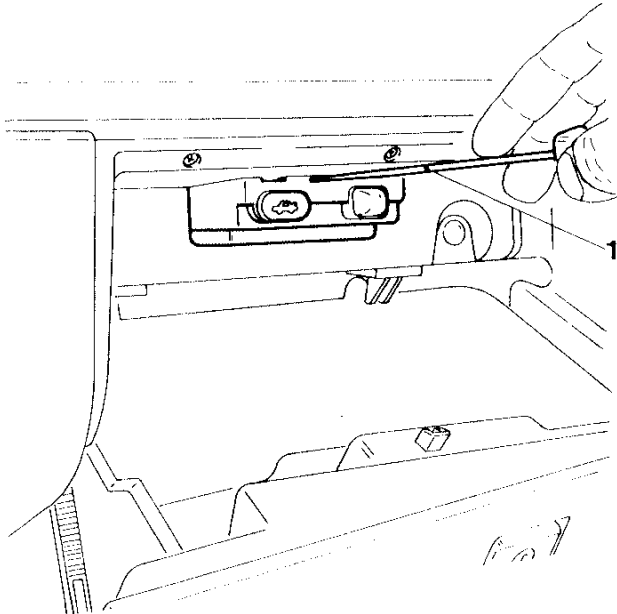
Refit the clear plastic strip by placing it in the correct position on one side and then pressing down the other until the retaining tabs click home.

Check that everything is correctly positioned and test the light by pressing the circular imprint on the plastic strip.

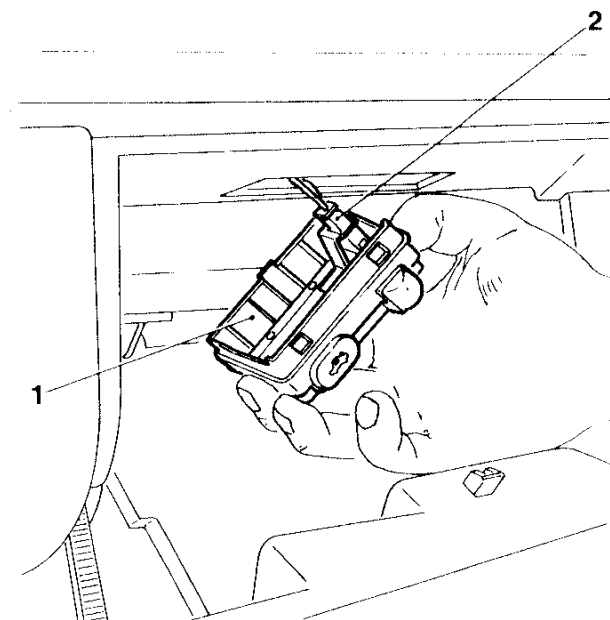


**GLOVEBOX LIGHT AND SWITCH****Removal**

1. Apply leverage with a thin bladed screwdriver.



1. Remove the light unit from its seating.
2. Disconnect the electrical connector.

**Refitting**

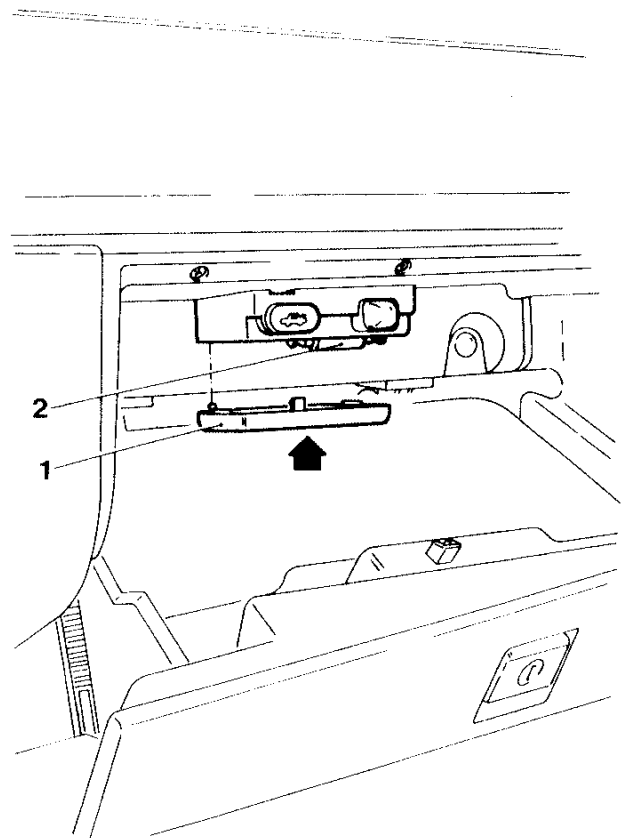
To refit, reverse the procedure followed for removal.

**REPLACING THE BULB OF THE GLOVEBOX LIGHT**

1. Remove the clear plastic strip by exerting a light pressure on the front and rotating it downwards.
2. Remove the tubular-type bulb by pulling it outwards and freeing it from the contacts.

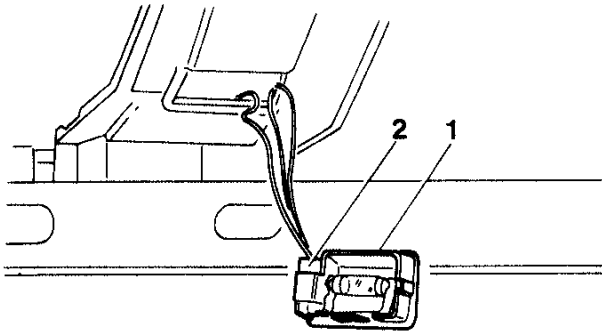
Insert a new bulb and check that it is correctly positioned and fixed firmly in place.

Refit the clear plastic strip by first inserting the rear edge and then pressing on the front edge until the retaining tabs click home.



**LUGGAGE COMPARTMENT LIGHT****Removal**

1. From behind, press on the light unit located on the central part of the luggage compartment.
2. Disconnect the connector and remove the light unit.

**Refitting**

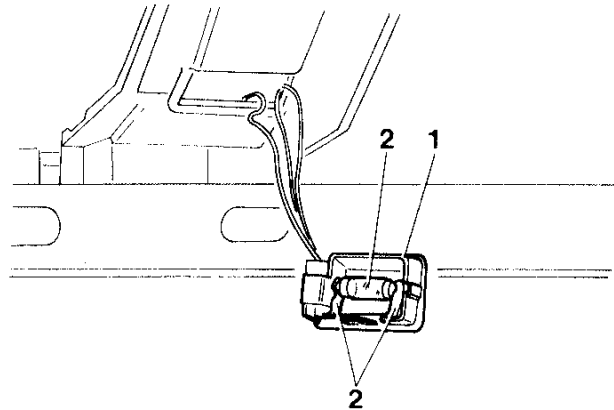
To refit, reverse the procedure followed for removal.

**REPLACING THE BULB OF THE LUGGAGE COMPARTMENT LIGHT**

1. Remove the clear plastic strip by applying leverage to the slot on the right-hand side.
2. Remove the tubular bulb by pulling it outwards from the contacts.

Insert a new bulb checking that it is correctly positioned and firmly fixed.

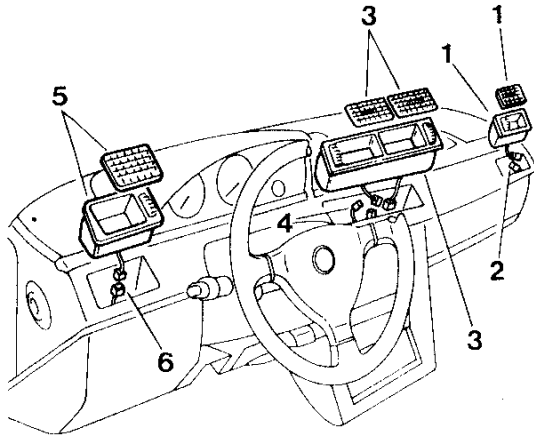
Refit the clear plastic strip by pressing it into its seating.



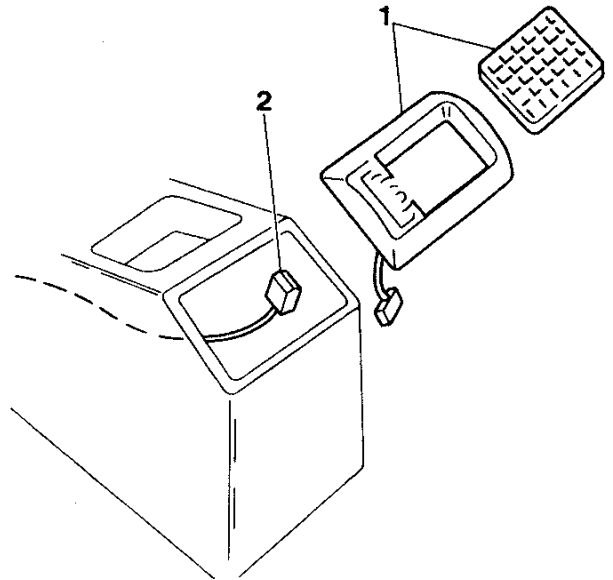


**REPLACING BULBS ON RIGHT,LEFT,CENTRAL AND TUNNEL AIR VENTS**

1. Apply leverage with a screwdriver to remove the right-hand air vent and grill.
2. Disconnect the connector and substitute the bulb.
3. Apply leverage with a screwdriver to remove the central air vent and grill.
4. Disconnect the connectors and substitute the bulbs.
5. Apply leverage with a screwdriver to remove the left-hand air vent and grill.
6. Disconnect the connector and substitute the bulb.



1. Apply leverage to remove the tunnel air vent and grill.
2. Disconnect the connector and substitute the bulb.

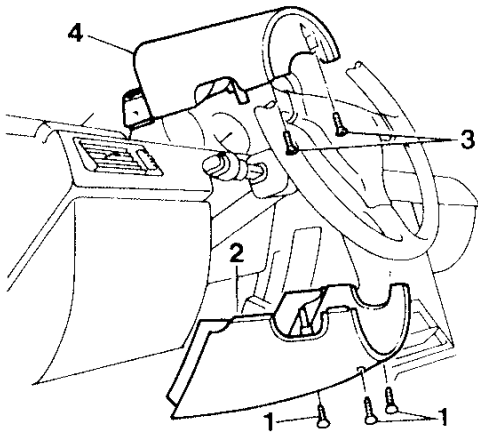




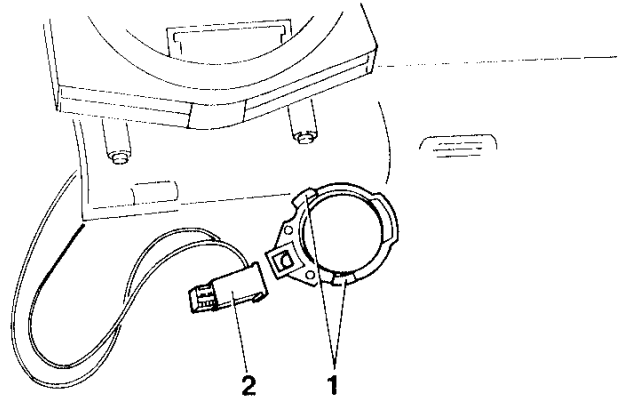


**REPLACING THE BULB LIGHTING THE IGNITION SWITCH**

1. Unscrew the three screws securing the lower steering column cover.
2. Remove the lower steering column cover.
3. Loosen the two screws securing the upper steering column cover.
4. Remove the upper steering column cover.



1. Acting on the tabs, remove the bulb-holder diffusor.
2. Disconnect the connector and replace the bulb.





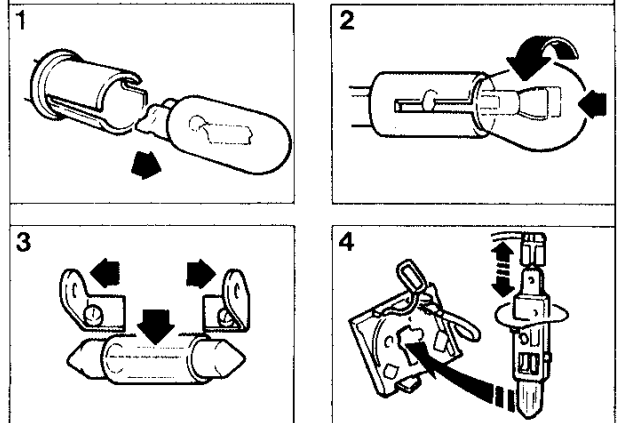
## TABLE OF LIGHTING SYSTEM BULBS

SERVICE	ELECTRICAL POWER (W)	TYPE
MAIN-BEAM HEADLIGHT	55	4
DIPPED-BEAM HEADLIGHT	55	4
FRONT SIDELIGHT	5	1
FRONT DIRECTION INDICATOR	21	2
SIDE DIRECTION INDICATOR	5	1
REAR DIRECTION INDICATOR	21	2
STOPLIGHTS/SIDELIGHTS	21/5	2
EAR SIDELIGHTS	5	2
REVERSING LIGHT	21	2
REAR FOGLIGHT	21	2
ROOF LIGHTS	10	3
NUMBERPLATE LIGHT	5	1
FRONT FOGLIGHT	55	4
READING LAMP	5	1

**WARNING**

Replace the bulbs with others of the same characteristics.

## TYPE OF BULB



Name	Type	Method of removing from bulb-holders
All-glass bulbs	1	These are held by pressure. Pull to release.
Bayonet-type bulbs	2	Press the bulb, rotate it anticlockwise and remove.
Cylindrical bulbs	3	Free them from the contacts.
Halogen bulbs	4	Release the retaining clip.

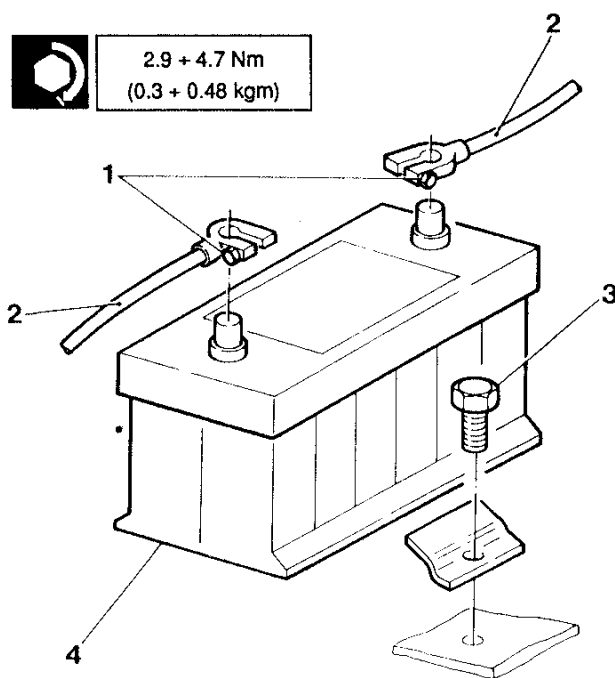


## ELECTRIC MOTORS AND BATTERY

### BATTERY

#### Removal

1. Loosen the nuts securing the power supply cables.
2. Free the two power supply cables from the clamps.
3. Loosen the screw on the plate securing the battery to the support in the engine compartment.
4. Remove the battery.



#### Refitting



To refit, reverse the procedure followed for removal.

#### Supplementary Indications for refitting

- Tighten the nuts to the correct torque.

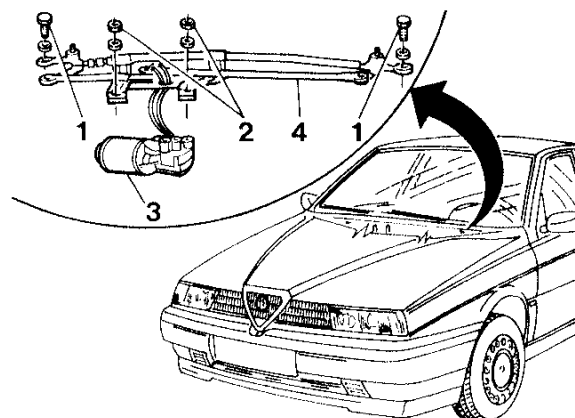
### WINDSCREEN WIPER UNIT

#### Removal

- Remove air intake moulding (see: GROUP 75 - AIR INTAKE MOULDING)
1. Loosen the two end screws securing the unit to the windscreen air intake reservoir.
  2. Loosen the two nuts (central) securing the unit to the windscreen air intake reservoir.
  3. Disconnect the windscreen wiper motor power supply connector.
  4. Remove the windscreen wiper unit.



2.9 + 4.7 Nm  
(0.3 + 0.48 kgm)



#### Refitting



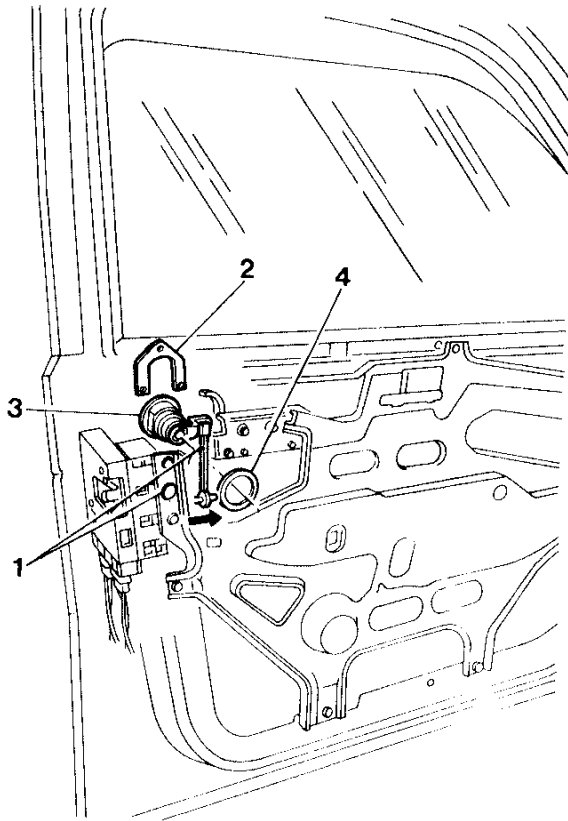
To refit, reverse the procedure followed for removal.

#### Supplementary Indications for refitting

- For components and/or parts dealt with in other pages of this or other groups refer to the relative warnings and procedures for refitting (see: GROUP 75-AIR INTAKE MOULDING).
- Before reconnecting the electrical connectors, check that the cables have been correctly inserted in them.
- When refitting tighten the screws and nuts securing the windscreen wiper unit to the correct torque.

**LOCKS****Removal**

- Remove the door panel (see: GROUP 55) and laterally remove the cellophane.
- 1. Disconnect the lock lever from the lock device.
- 2. Using a screwdriver as a lever withdraw the lock retaining clip.
- 3. Remove the lock from the outside of the door.
- 4. Remove the catch ring-nut from the inside of the door.

**Refitting**

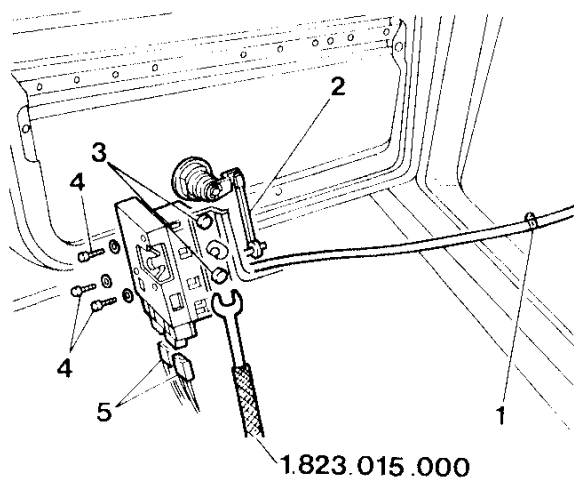
To refit, reverse the procedure followed for removal

**Supplementary indications for refitting**

- for components and/or parts dealt with in other pages of this or other groups, refer to the relevant warnings and procedures.

**LOCKING DEVICE****Removal**

- Remove the door panel (see: GROUP 55) and laterally remove the cellophane.
- 1. Cut the clamp securing the lock control rod to the frame.
- 2. Disconnect the lock rod from the lock.
- 3. Using tool No. 1.823.015.000 remove the two buttons connecting the lock device to the frame.
- 4. Loosen the three screws securing the lock device to the door and remove them together with their washers.
- 5. Disconnect the two door opening and Check Panel wiring connectors from the lock device and remove the lock device together with the rod.



7.1 + 9 Nm  
(0.72 + 0.92 kgm)

**Refitting**

To refit, reverse the procedure followed for removal

**Supplementary indications for refitting**

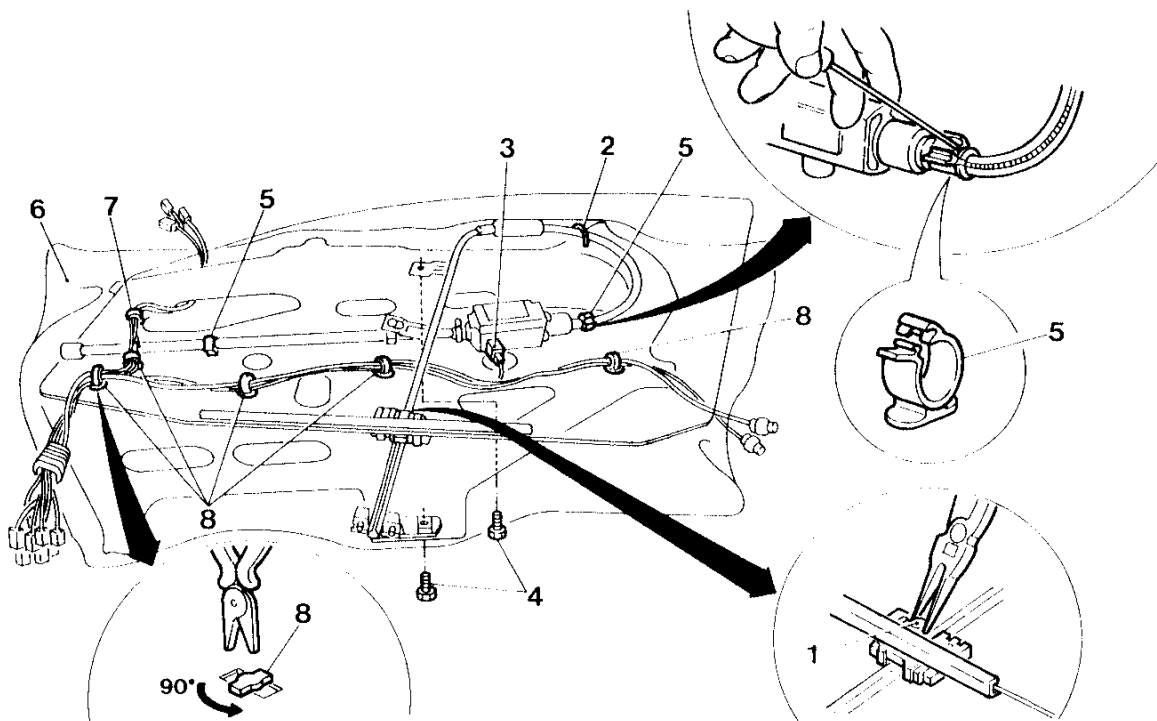
- Before reconnecting the electrical connectors, check that the cables are correctly fitted into them.
- Before installing the panel check that the buttons are not damaged.
- Tighten the screws to the correct torque.
- If necessary after refitting adjust the lock device on the door pillar.

**WINDOW AND RAISING DEVICE****Removal**

- Remove the door panel (see: GROUP 55) and laterally remove the cellophane.
  - Remove the door frame (see: GROUP 49) and place on a bench.
1. Disconnect the window from the frame by acting on the button fixing it to the support using a pair of pliers.
  2. Cut the clamp holding the window raising device to the frame.
  3. Disconnect the window raising motor supply connector.
  4. Loosen the two screws securing window raising device to the frame.
  5. Using a screw driver, free the two supports and separate the window raising device from the frame.
  6. Remove the cellophane protection.
  7. Cut the clamp securing the the wiring to the frame.
  8. Free the five clamps securing the wiring to the door frame by rotating them through 90°.

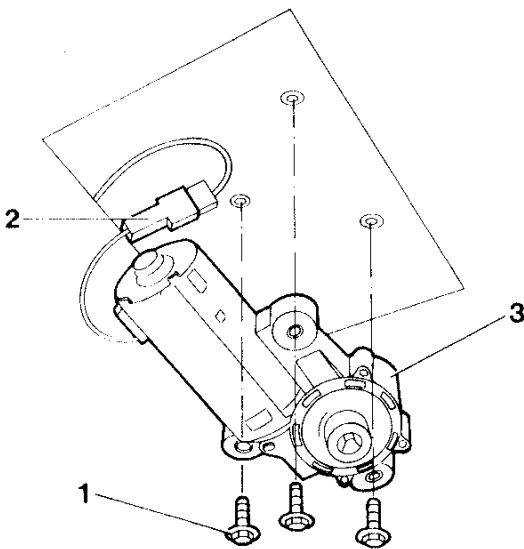
**Refitting**

To refit, reverse the procedure followed for removal.



**SUNROOF MOTOR****Removal**

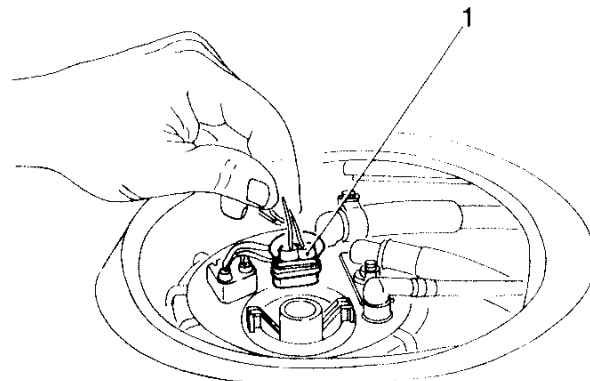
- After removing the front central roof light perform the following operations in order:
- 1. Loosen the three screws securing the roof to the frame.
- 2. Disconnect the electrical connector.
- 3. Remove the motor.

**Refitting**

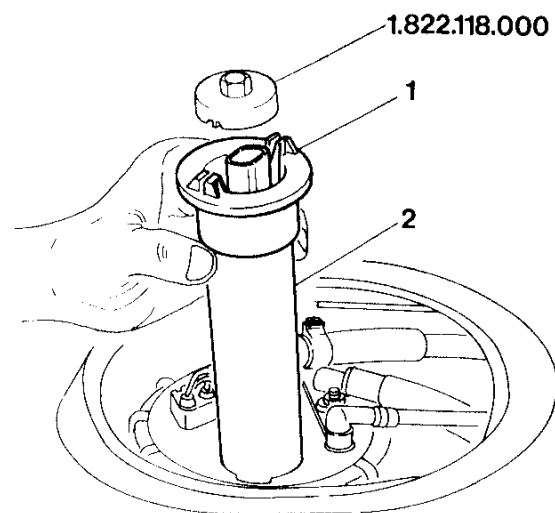
To refit, reverse the procedure followed for removal.

**ELECTRIC FUEL PUMP****Removal**

1. Disconnect the electrical connector from the fuel level gauge sender (TELEVEL).

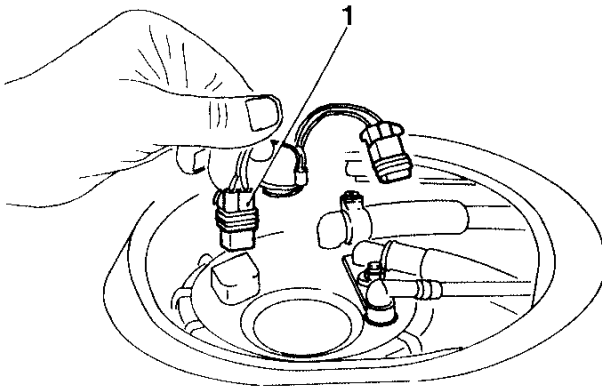


1. Loosen the ring-nut using tool No. 1.822.118.000.
2. Remove the sender.

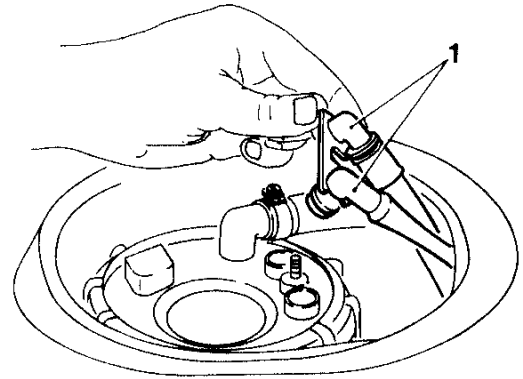




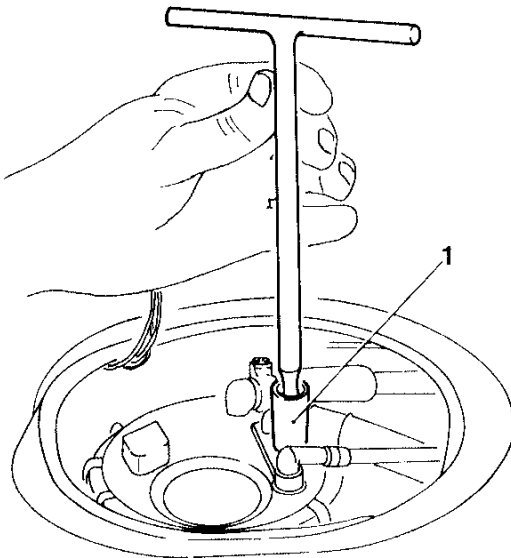
1. Disconnect the connector.



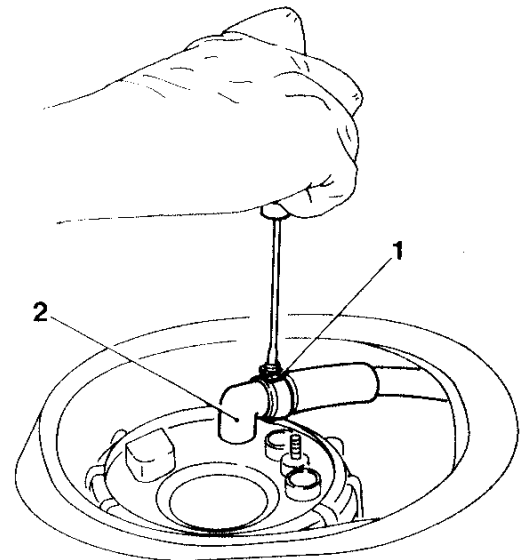
1. Remove the hoses.



1. Loosen the nut securing the fuel tank delivery and return hoses clip.



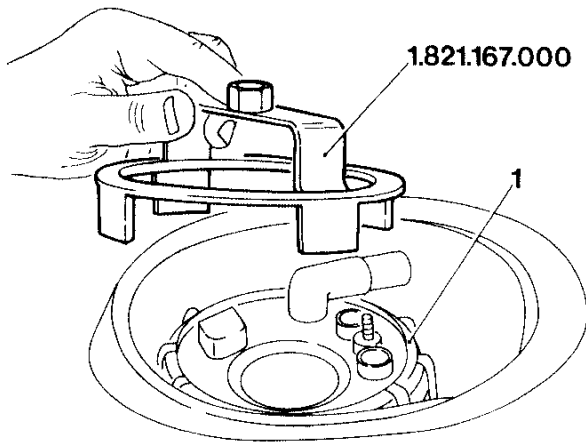
1. Loosen the metal clamp securing the breather pipe.
2. Remove the pipe.



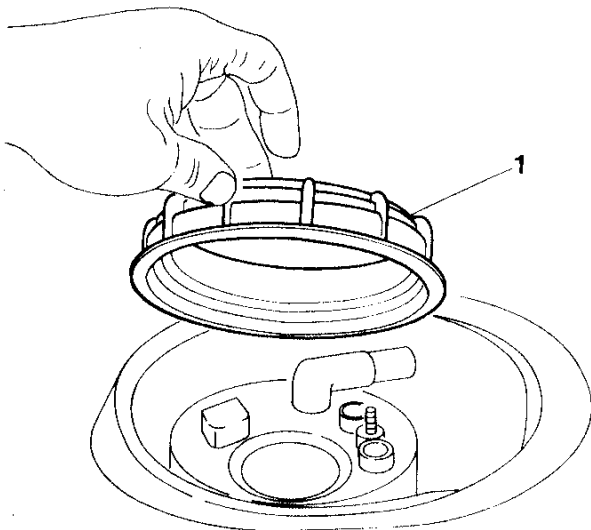




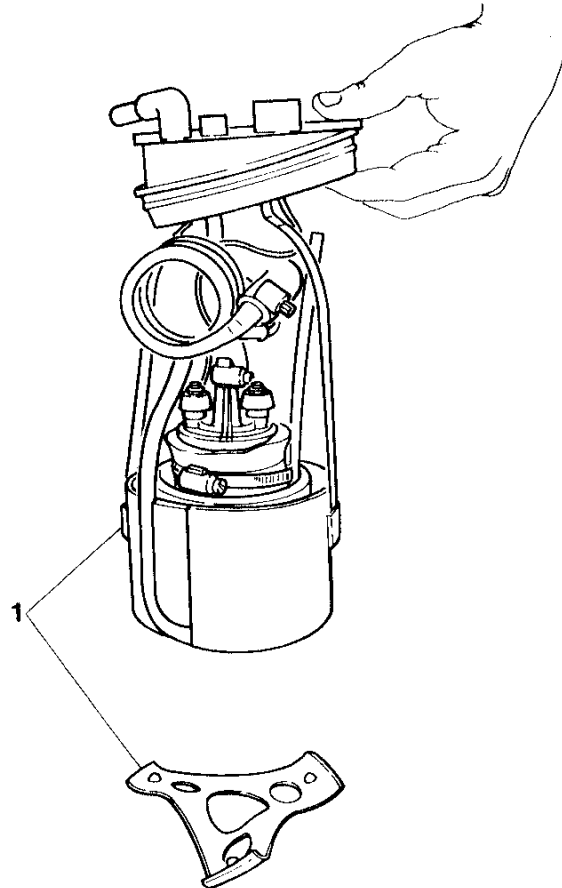
1. Loosen the ring-nut securing the pump using tool No. 1.821.167.000 and a 19 mm spanner.



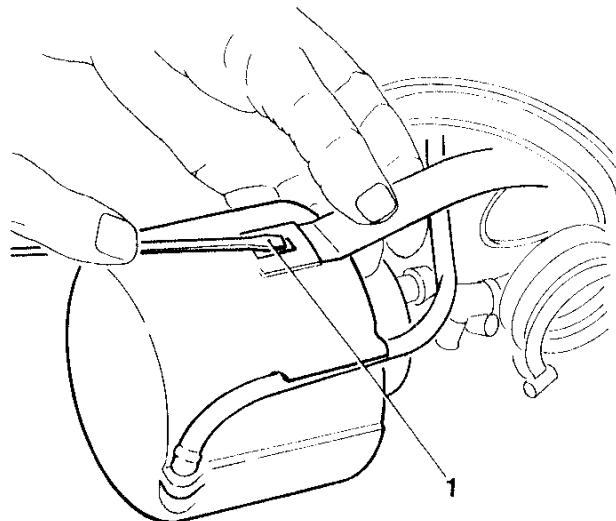
1. Remove the ring-nut.



1. Remove the electric pump and rubber gasket.

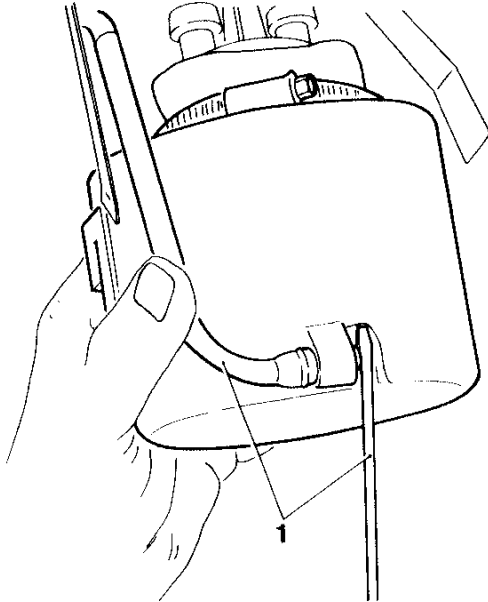


1. Free the container housing the pump from the metal levers by pressing on the retaining clips with a screwdriver.

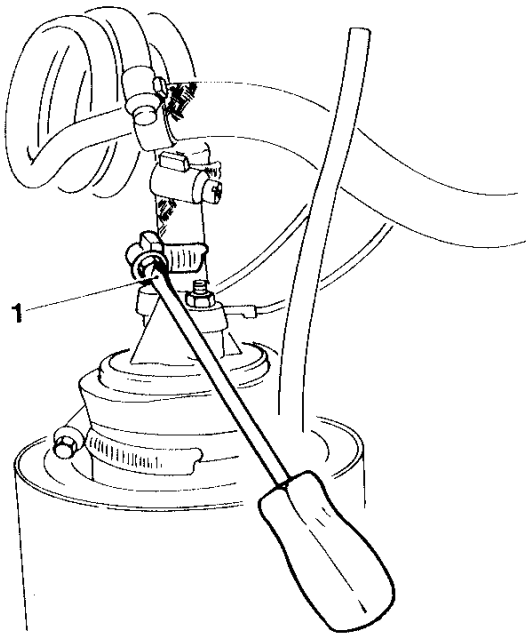




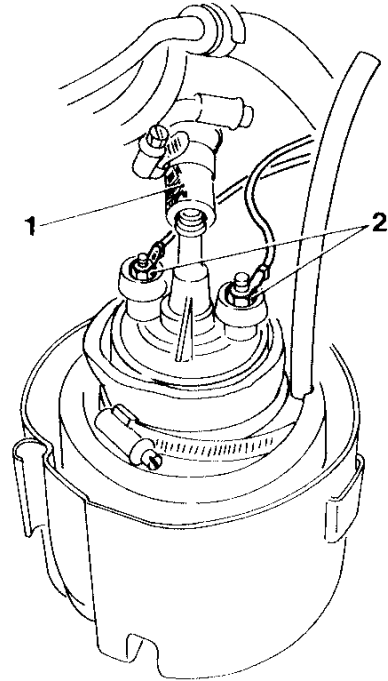
1. Remove the pump return hose by using a screwdriver as a lever.



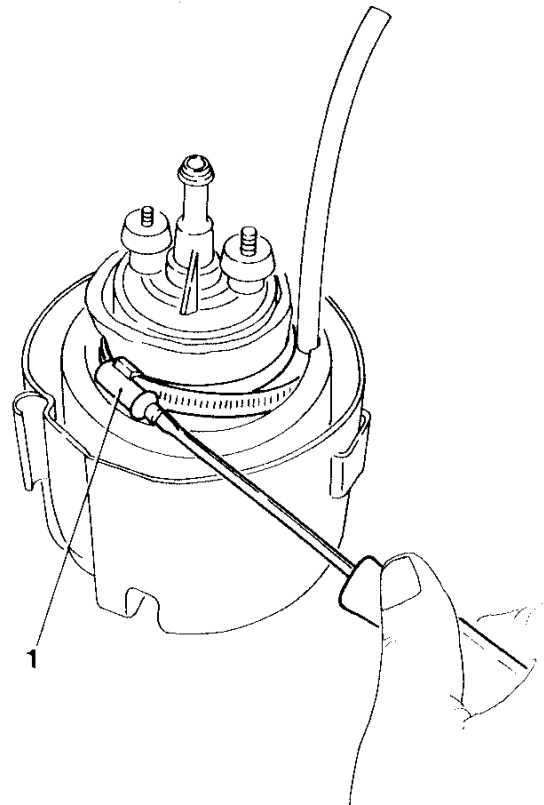
1. Loosen the metal clamp securing the pump delivery hose.



1. Remove the pump delivery hose.
2. Take note of the polarity of the electrical cables, unscrew the two nuts and disconnect the cables.

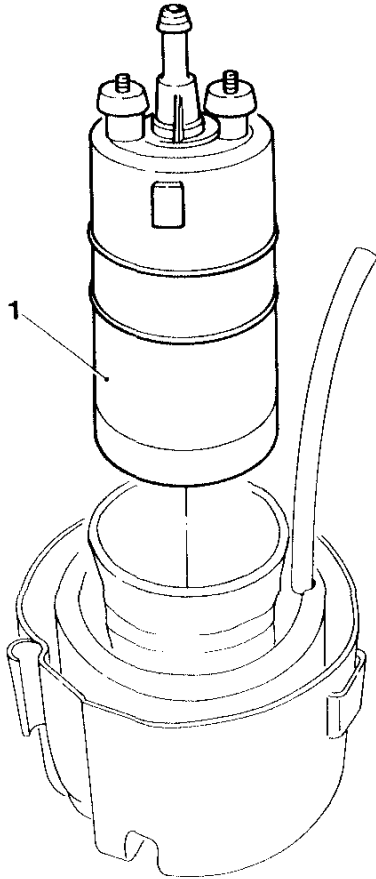


1. Loosen the metal clamp.





1. Remove the pump from the container.



**Refitting**



To refit, reverse the procedure followed for removal.

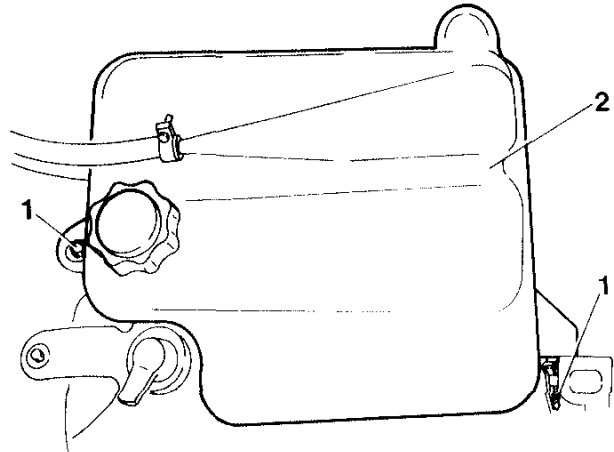
**Supplementary indications for refitting**

- The two connecting electric cables must be reconnected with the same polarity.

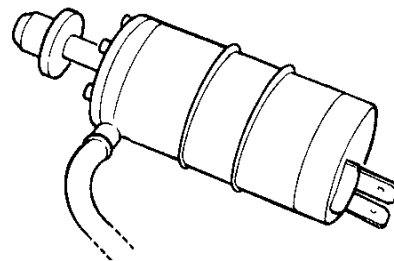
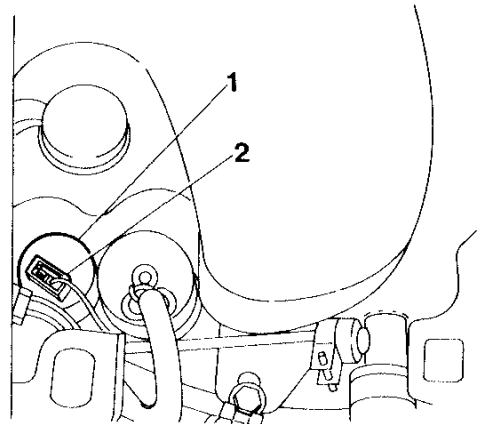
**ELECTRIC WINDSCREEN WASHER PUMP**

**Removal**

1. Loosen the screws securing the engine cooling liquid reservoir.
2. Remove the reservoir.



1. Remove the electric pump from its seating.
2. Disconnect the electrical connector.



**Refitting**



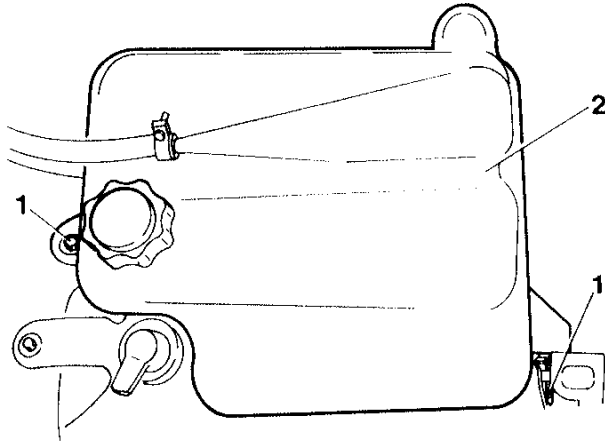
To refit, reverse the procedure followed for removal.



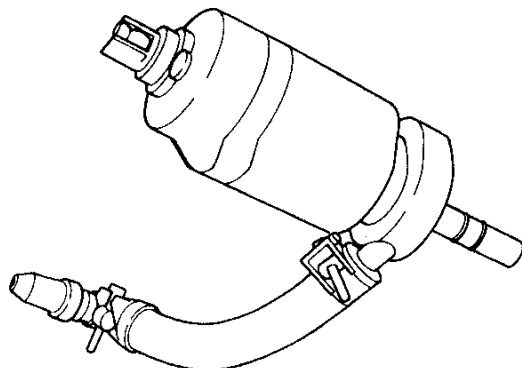
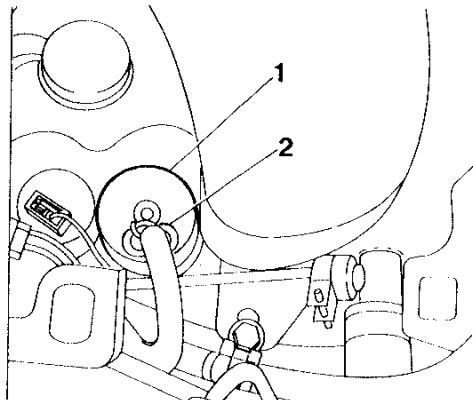
### ELECTRIC HEADLIGHT WASHER PUMP

#### Removal

1. Loosen the screws securing the engine cooling liquid reservoir.
2. Remove the reservoir.



1. Remove the electric pump from its seating.
2. Disconnect the electrical connector.



#### Refitting

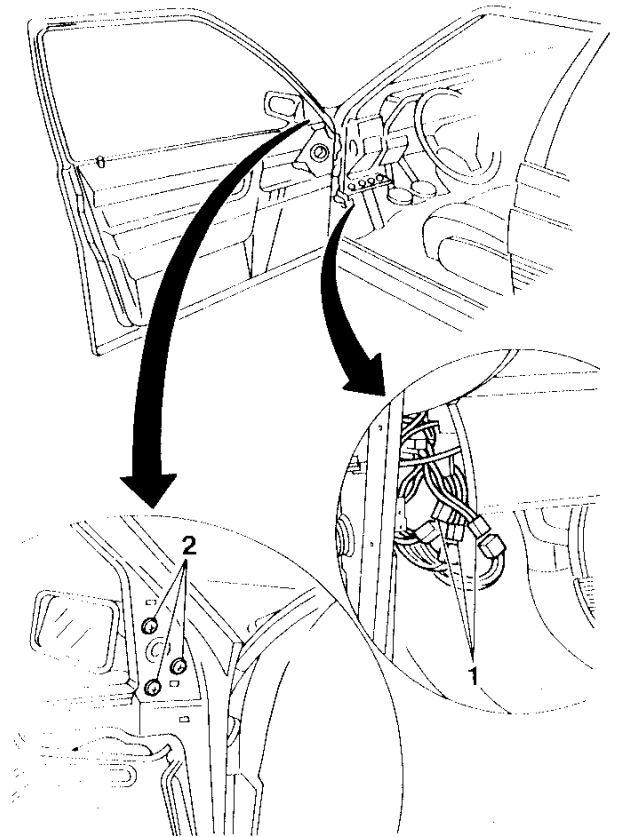


To refit, reverse the procedure followed for removal.

### DOOR MIRROR MOTOR, DOOR MIRROR DEFROSTER, EXTERNAL AIR TEMPERATURE SENSOR

#### Removal

- If one of the components of a door mirror gets broken, the entire mirror must be replaced.
  - Remove the door panel (see: GROUP 55) and laterally detach the cellophane.
1. Working inside the vehicle, disconnect the connectors from the device located in the mirror (direction, heating and external air temperature sensor).
  - Free the electrical cables of the device working inside the door frame.
2. Loosen the three screws and remove the mirror.



#### Refitting



To refit, reverse the procedure followed for removal.

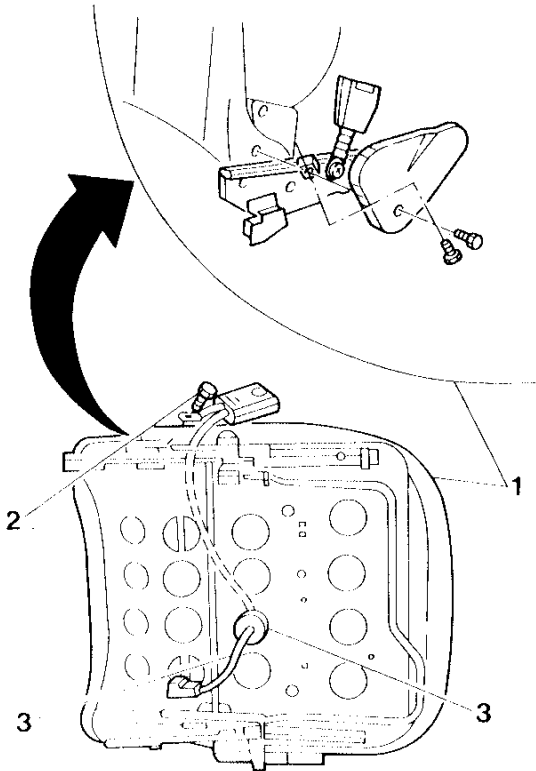


## SENSORS AND SENDERS, ELECTRICAL ACCESSORIES, USERS

### SEAT BELT SENSOR

#### Removal

- If a sensor gets broken it is necessary to replace the entire block.
- 1. Remove the seat (see: GROUP 66).
- 2. Loosen the retaining screw.
- 3. Disconnect the connector and free the seat cable (see: GROUP 66).



#### Refitting



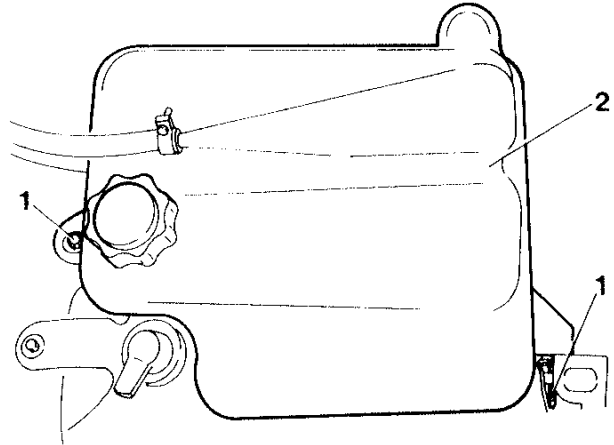
To refit, reverse the procedure followed for removal.

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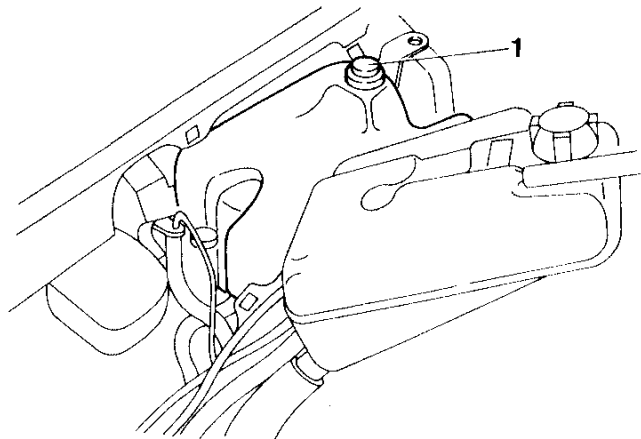
### WINDSCREEN AND HEADLIGHT WASHER LIQUID LEVEL SENSOR

#### Removal

1. Loosen the four screws securing the engine cooling liquid reservoir.
2. Remove the reservoir.



1. The sensor is installed in the reservoir. Pull upwards to remove.



#### Refitting



To refit, reverse the procedure followed for removal.

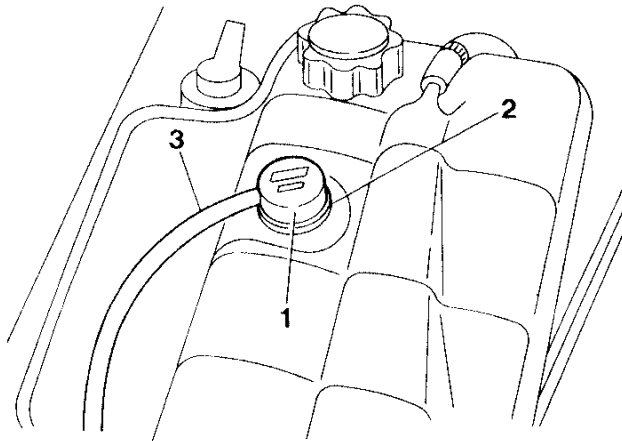
07 - 1991



**RADIATOR LIQUID LEVEL SENSOR**

**Removal**

1. The sensor is fitted on the radiator liquid reservoir.
2. Remove by applying leverage with a screwdriver.
3. Disconnect the connector and remove the sensor.



**Refitting**

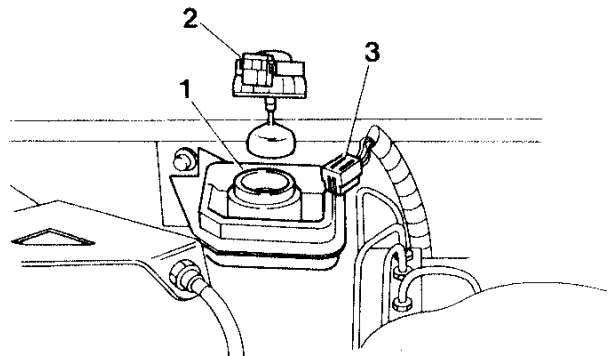


To refit, reverse the procedure followed for removal.

**BRAKE-CLUTCH FLUID MINIMUM LEVEL SENSOR**

**Removal**

1. Disconnect the connector from the brake-clutch fluid reservoir.
2. Unscrew and remove the sensor.
3. Disconnect the connector.



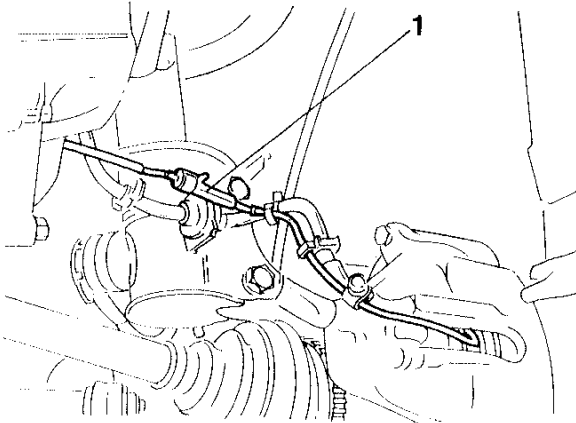
**Refitting**



To refit, reverse the procedure followed for removal.

**FRONT LEFT BRAKE PAD SENSOR****Removal**

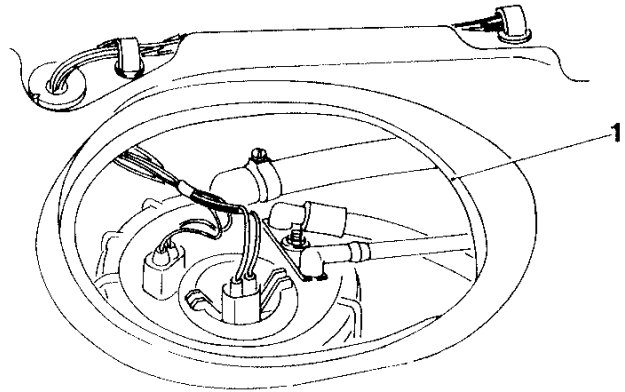
- The sensor is installed inside the brake pad.
- 1. Disconnect the connector and replace the brake pad (see: REPAIR INSTRUCTIONS - MECHANICAL UNITS - GROUP 22).

**Refitting**

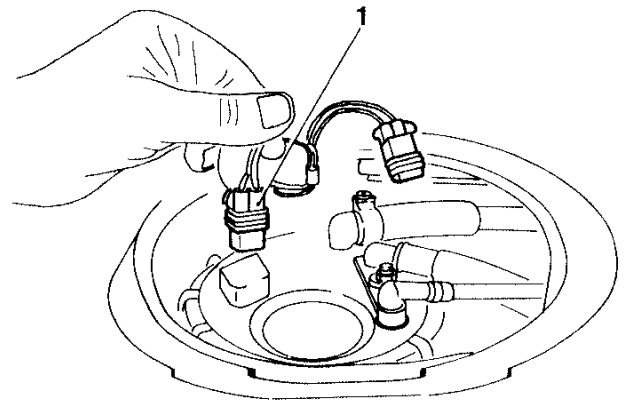
To refit, reverse the procedure followed for removal.

**SENDER FOR FUEL LEVEL GAUGE****Removal**

1. Working on the tank from the electric fuel pump side.

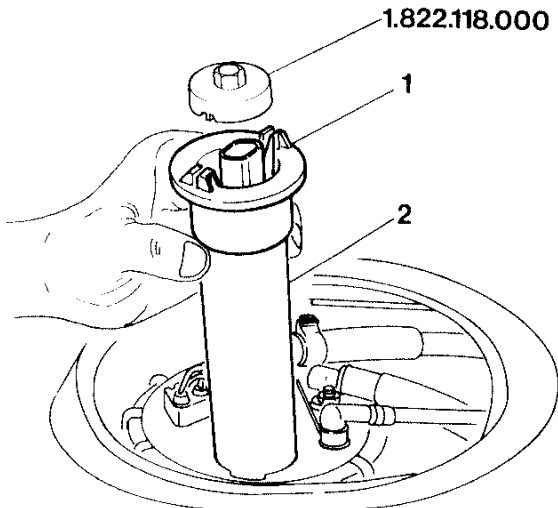


1. Disconnect the fuel level gauge sender electrical connector (TELEVEL).





1. Loosen the ring-nut using tool No. 1.822.118.000.
2. Remove the sender.



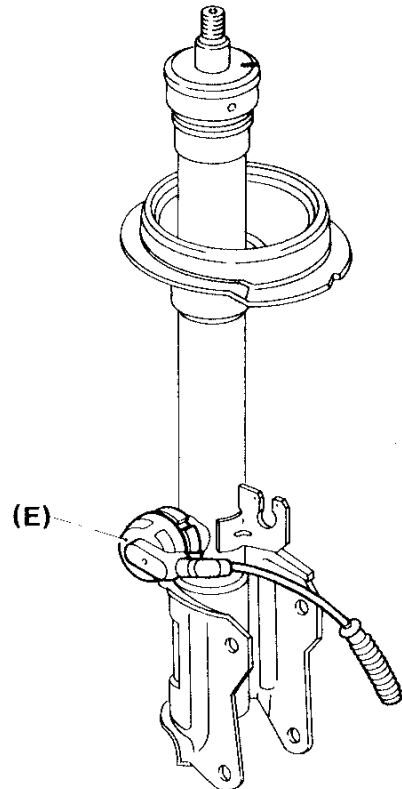
### Refitting



To refit, reverse the procedure followed for removal.

### CONTROLLED DAMPING SUSPENSION SOLENOID VALVES

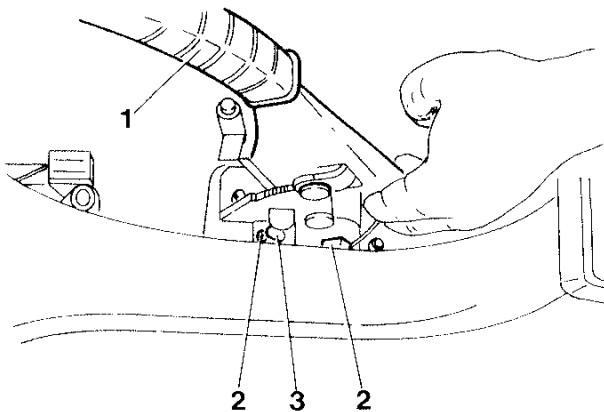
- If one of the solenoid valves installed on the shock absorbers is inefficient (E) replace the entire shock absorber (see: REPAIR INSTRUCTIONS - MECHANICAL UNITS - GROUP 21 and GROUP 25).





**"HANDBRAKE ON" INDICATOR SWITCH****Removal**

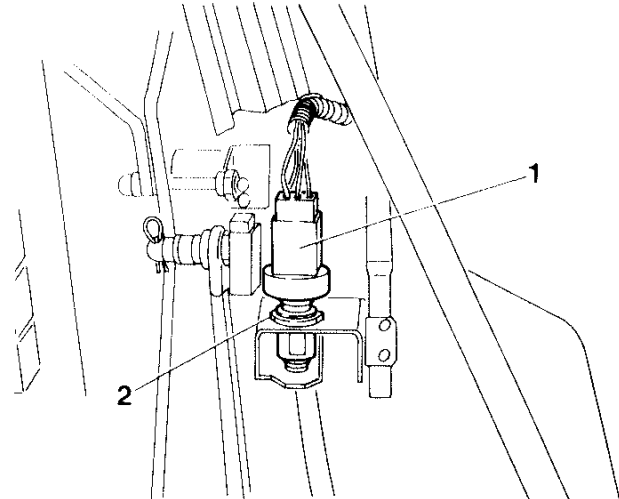
- Remove the tunnel covering (see: GROUP 66).
- 1. Pull the handbrake on to its maximum position.
- 2. Disconnect the electrical connector and loosen the two screws securing the switch.
- 3. Free the switch from its housing.

**Refitting**

To refit, reverse the procedure followed for removal.

**STOPLIGHT SWITCH****Removal**

1. Disconnect the electrical connector.
2. Rotate the switch through 90° anticlockwise and remove it by pulling upwards.

**Refitting**

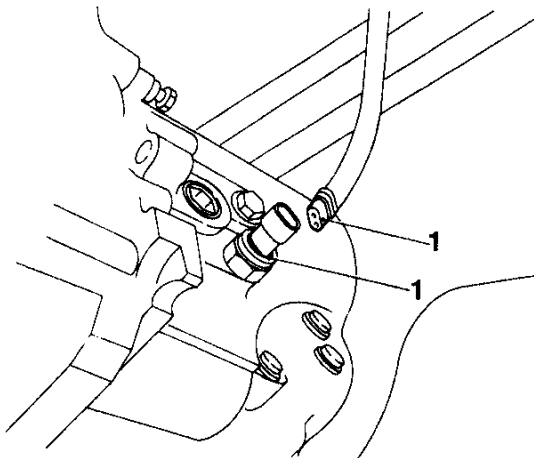
To refit, reverse the procedure followed for removal.



### REVERSING LIGHT SWITCH

#### Removal

- The switch is located on the gearbox and access can only be gained when the vehicle is raised on a lift.
- 1. Disconnect the electrical connector; unscrew and remove the switch.



#### Refitting

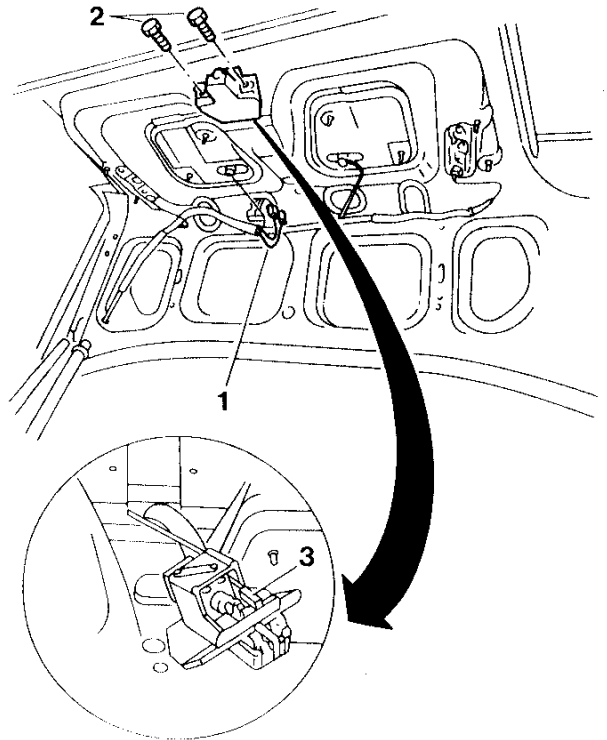


To refit, reverse the procedure followed for removal.

### LUGGAGE COMPARTMENT LIGHT SWITCH

#### Removal

1. Disconnect the two electrical connectors located behind luggage compartment light switch.
2. Loosen the two boot lid retaining screws.
3. Remove the switch.



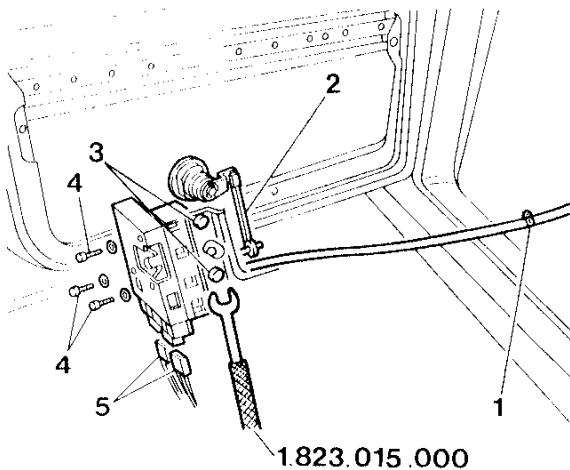
#### Refitting



To refit, reverse the procedure followed for removal.

**FRONT DOOR OPEN INDICATOR SWITCH****Removal**

- If a fault is found in the front door switch the entire lock device must be replaced.
- Remove the door panel (see: GROUP 55) and laterally detach the cellophane.
- 1. Cut the clamp securing the lock control rod to the body.
- 2. Disconnect the lock rod from the lock device.
- 3. Using tool No. 1.823.015.000, remove the two buttons securing the lock device to the body.
- 4. Together with the washers, loosen and remove the three screws securing the lock device to the door.
- 5. Disconnect the two connectors of the door open and Check Panel wiring from the lock device and remove the device together with the rod.



7.1 + 9 Nm  
(0.72 + 0.92 kgm)

**Refitting**

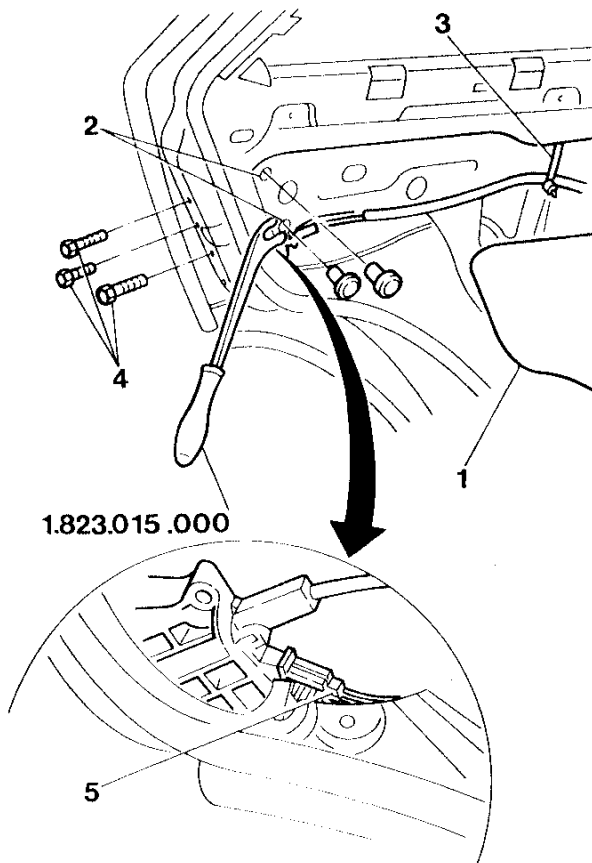
To refit, reverse the procedure followed for removal.

**Supplementary Indications for refitting**

- Before reconnecting the electrical connectors check that the cables are correctly inserted in them.
- Before refitting the panel, check that the retaining buttons are not damaged.
- After refitting adjust the locks if necessary.
- Tighten the screws to the correct torque.

**REAR DOOR OPEN INDICATOR SWITCH****Removal**

- If a fault is found in the rear door switch the entire lock device must be replaced.
- 1. Remove the door panel (see: GROUP 55) and detach the upper edge of the cellophane.
- 2. Using tool No. 1.823.015.000, remove the two buttons securing the lock device to the body.
- 3. Cut the clamp securing the lock control rod to the body. Disconnect the handle rod from the lock device.
- 4. Together with the washers, loosen and remove the three screws securing the lock device to the door.
- 5. Disconnect the two connectors of the door open and Check Panel wiring from the lock device and remove the device together with the rod.



7.1 + 9 Nm  
(0.72 + 0.92 kgm)

**Refitting**

To refit, reverse the procedure followed for removal.

**Supplementary Indications for refitting**

- Before reconnecting the electrical connectors check that the cables are correctly inserted in them.
- Before refitting the panel, check that the retaining buttons are not damaged.
- After refitting adjust the locks if necessary.
- Tighten the screws to the correct torque.



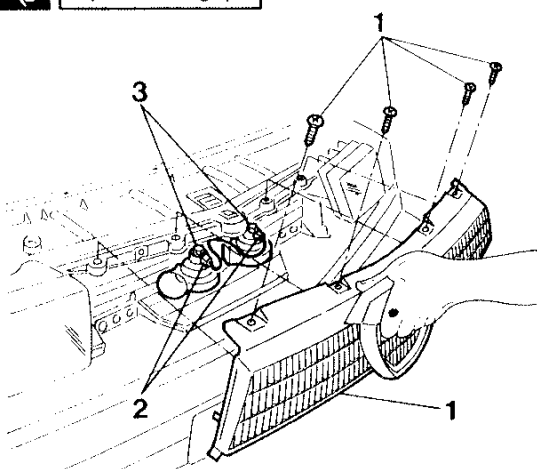
### HORNS

#### Removal

1. Loosen the four screws securing the grill to the body and remove the grill.
2. Disconnect the two electrical connectors.
3. Loosen the two nuts securing the horns to the engine compartment frame and remove the two horns.



2.9 + 4.7 Nm  
(0.3 + 0.48 kgm)



#### Refitting



To refit, reverse the procedure followed for removal.

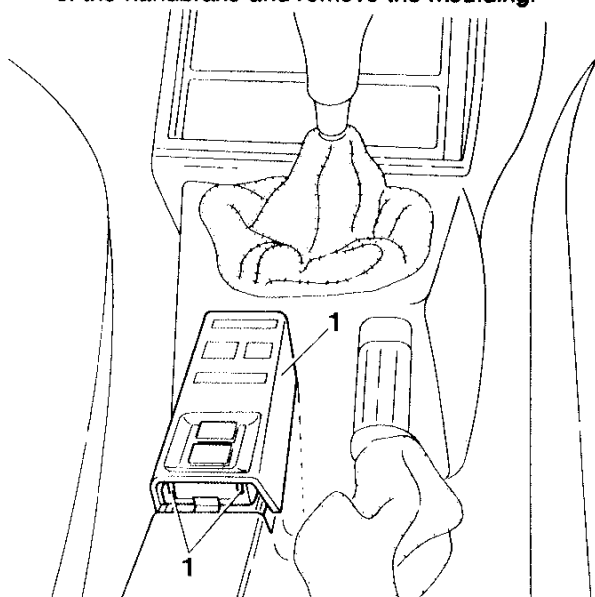
#### Supplementary Indications for refitting

- Tighten the nuts to the correct torque.

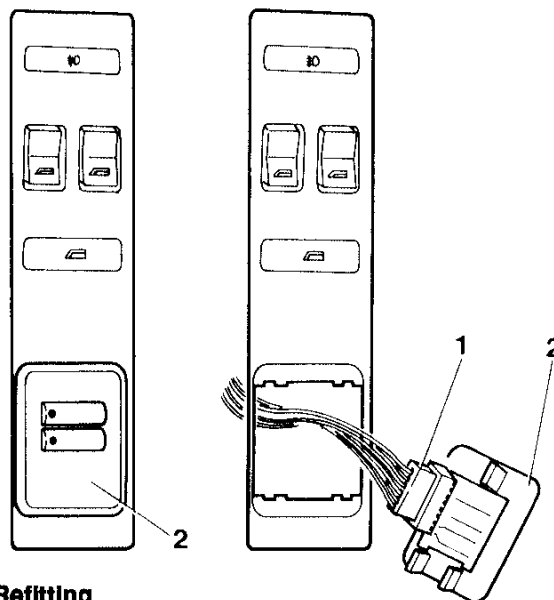
### CONTROLLED DAMPING SUSPENSION SYSTEM CONTROL PANEL

#### Removal

1. With a thin-bladed screwdriver apply leverage to the edge of the moulding located on the tunnel to the left of the handbrake and remove the moulding.



1. Disconnect the electrical connector.
2. Apply leverage with a screwdriver on the retaining tabs and remove the switch from the moulding.



#### Refitting



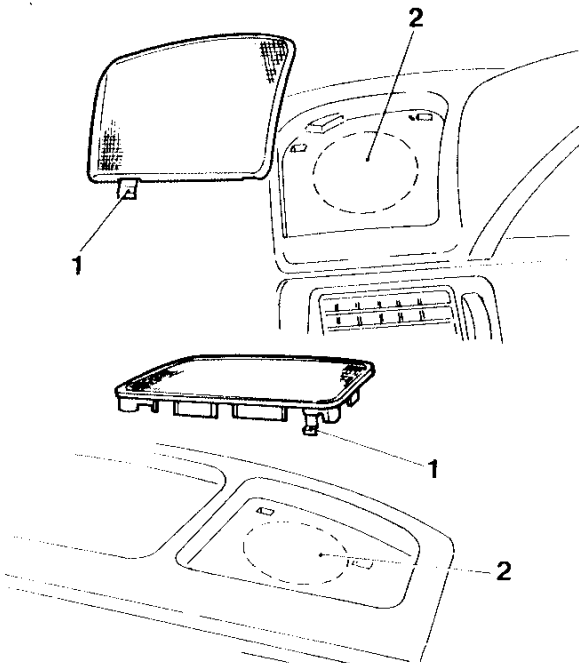
To refit, reverse the procedure followed for removal.

**FRONT LOUDSPEAKERS**

- The vehicle has provision for the installation of front loudspeakers.

**Initial installation and subsequent substitution**

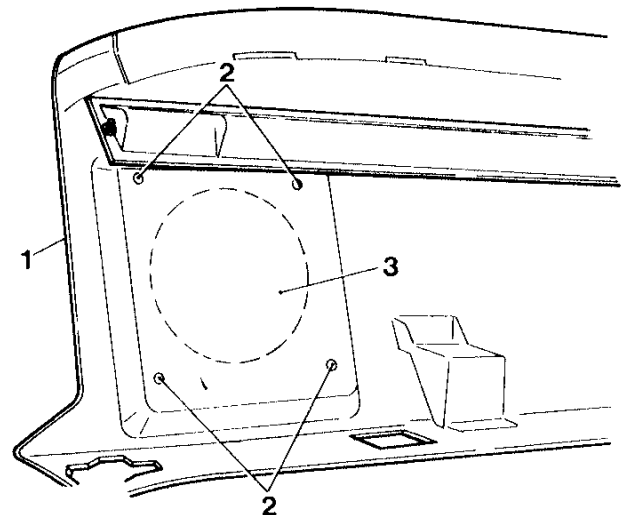
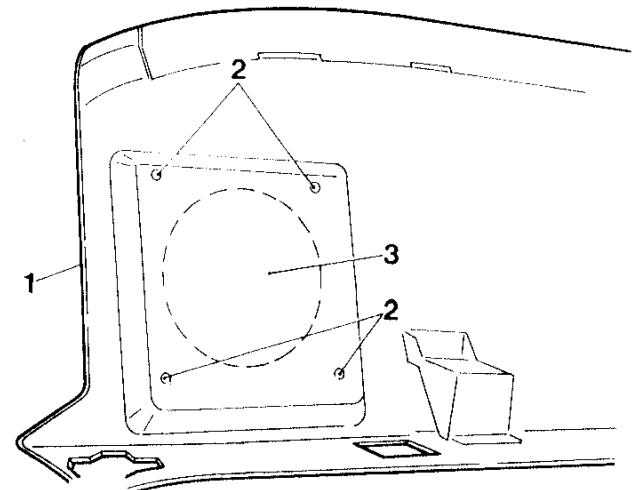
1. Using a thin-bladed screwdriver apply leverage to the tabs in order to raise the speaker protection grill.
2. Make a hole as shown in the diagram below. Connect the electrical connectors to the loudspeaker and install the speaker in the hole. Refit the grill. If it is necessary to replace an inefficient loudspeaker, remove the grill, disconnect the connectors, replace the speaker, connect the connectors and refit the grill.

**REAR LOUDSPEAKERS**

- The vehicle has provision for the installation of rear loudspeakers.

**Initial installation and subsequent substitution**

1. Remove the shelf.
2. Loosen the four screws located under the moulding and remove the moulding.
3. Make a hole as shown in the diagram below. Connect the electrical connectors to the loudspeaker and install the speaker in the hole. If it is necessary to replace an inefficient loudspeaker, remove the grill, disconnect the connectors, replace the speaker, connect the connectors and refit the grill.

**Model with sun-screens****Models without sun-screens**

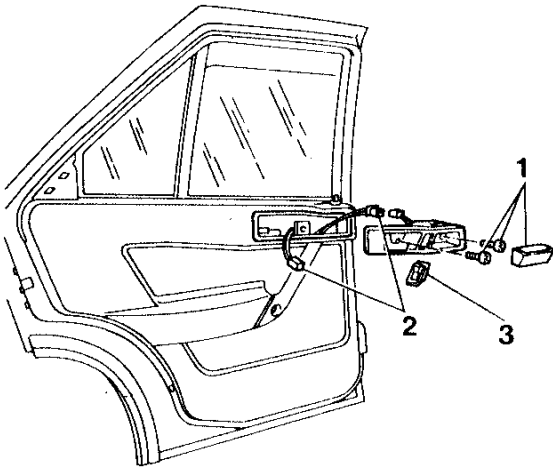


## MANUAL ELECTRICAL CONTROLS

### REAR POWER WINDOW SWITCHES

#### Removal

1. Remove the ashtray by withdrawing it from its seating in the door opening control lever support moulding and loosen the screws securing the moulding.
2. Disconnect the electrical connector.
3. Remove the power window switch.



#### Refitting

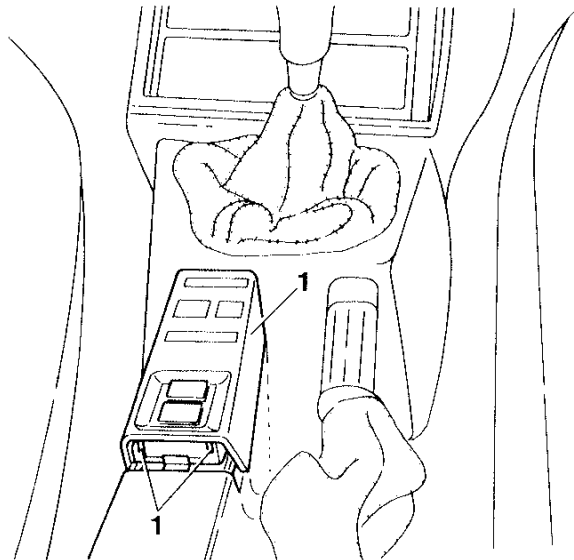


To refit, reverse the procedure followed for removal.

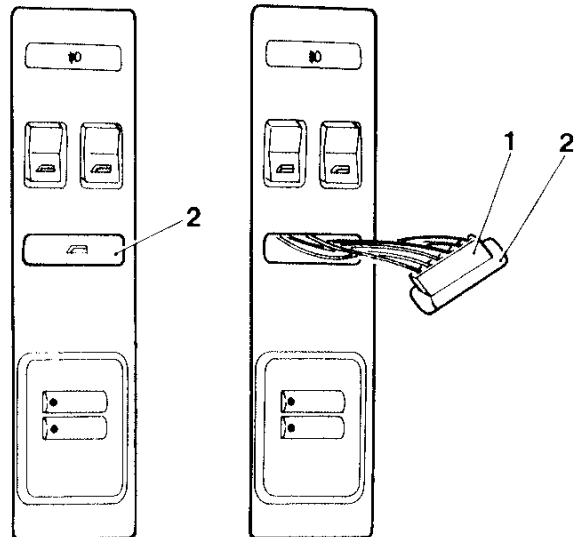
### REAR POWER WINDOW PERMIT SWITCH

#### Removal

1. Using a thin-bladed screwdriver apply leverage to the edge of the moulding located on the tunnel to the left of the handbrake and remove the moulding.



1. Disconnect the electrical connector.
2. Using a screwdriver, apply leverage to the retaining tab and remove the switch.



#### Refitting



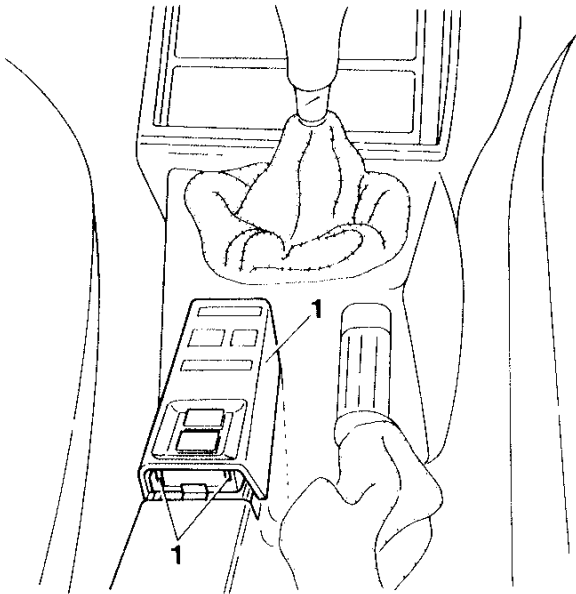
To refit, reverse the procedure followed for removal.



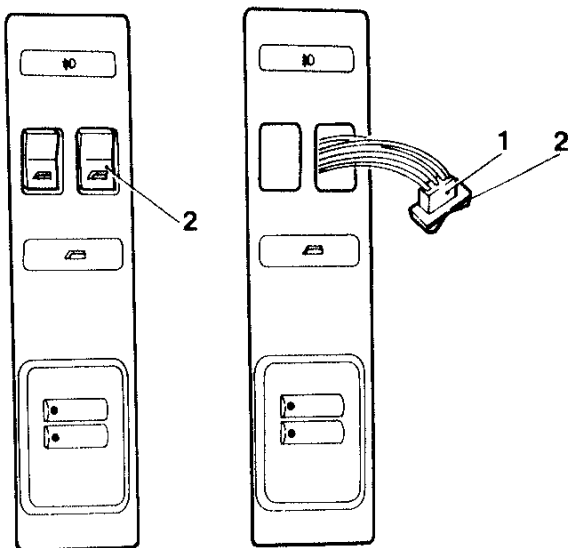
### REAR POWER WINDOW SWITCHES LOCATED IN THE MOULDING ON THE TUNNEL

#### Removal

1. Using a thin-bladed screwdriver apply leverage to the edge of the moulding located on the tunnel to the left of the handbrake and remove the moulding.



1. Disconnect the electrical connectors.
2. Using a screwdriver, apply leverage to the retaining tabs and remove the switches.



#### Refitting



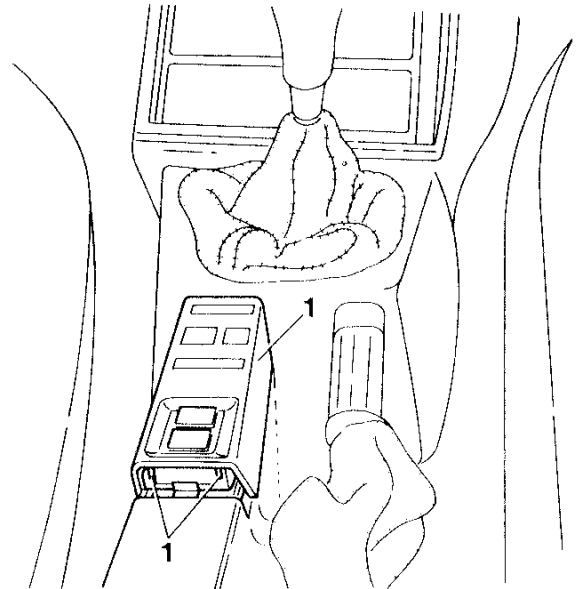
To refit, reverse the procedure followed for removal.

PA4655D1000000

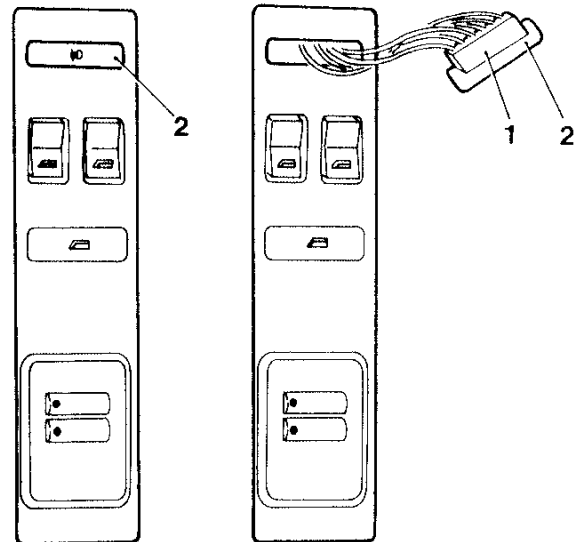
### FOGLIGHT SWITCH

#### Removal

1. Using a thin-bladed screwdriver apply leverage to the edge of the moulding located on the tunnel to the left of the handbrake and remove the moulding.



1. Disconnect the electrical connector.
2. Using a screwdriver, apply leverage to the retaining tabs and remove the switch.



#### Refitting



To refit, reverse the procedure followed for removal.

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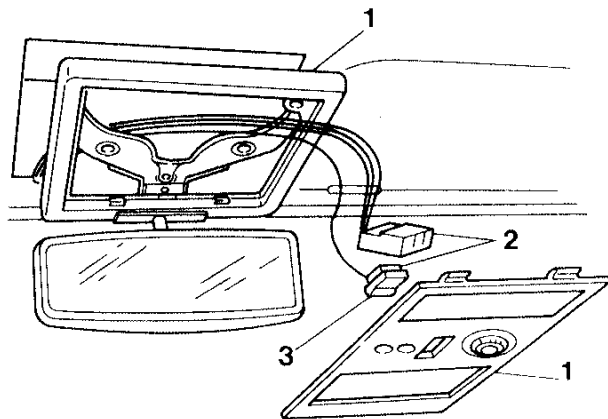




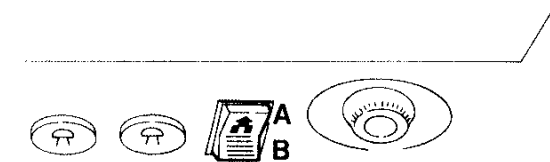
### SUNROOF SWITCH

#### Removal

1. Apply leverage with a thin-bladed screwdriver to remove the front central roof light.
2. Disconnect the electrical connectors.
3. Remove the sunroof control switch.



Detail showing roof light moulding with sunroof control switch.



- A. Open roof
- B. Close roof

#### Refitting

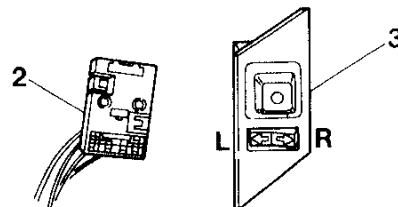
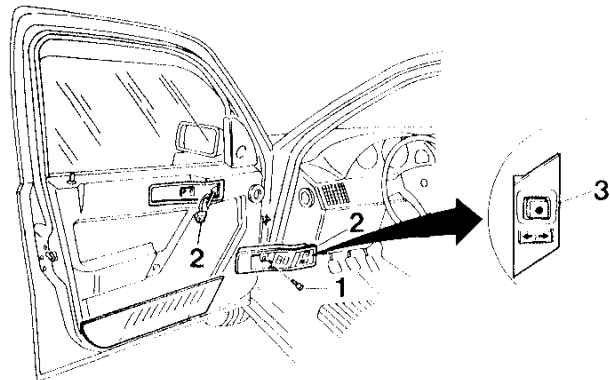


To refit, reverse the procedure followed for removal.

### DOOR MIRROR ADJUSTMENT DOUBLE SWITCH

#### Removal

1. Loosen the screw securing the door panel moulding.
2. Withdraw the moulding from the panel and disconnect the electrical connectors of the door mirror adjustment button and the power window connectors.
3. Remove the switch from the moulding by applying leverage with a thin-bladed screwdriver.



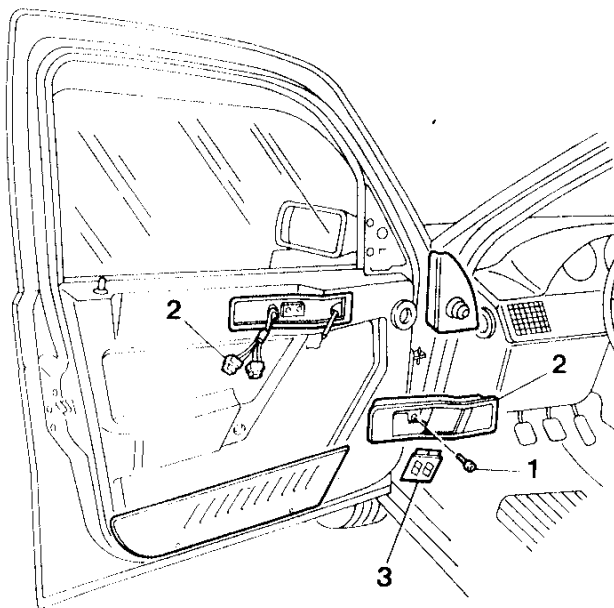
#### Refitting



To refit, reverse the procedure followed for removal.

**FRONT POWER WINDOW SWITCHES****Removal**

1. Loosen the screw securing the door panel moulding.
2. Withdraw the moulding from the panel and disconnect the connectors from the power window control buttons.
3. Remove the switches from the moulding by applying leverage with a thin-bladed screwdriver.

**Refitting**

To refit, reverse the procedure followed for removal.

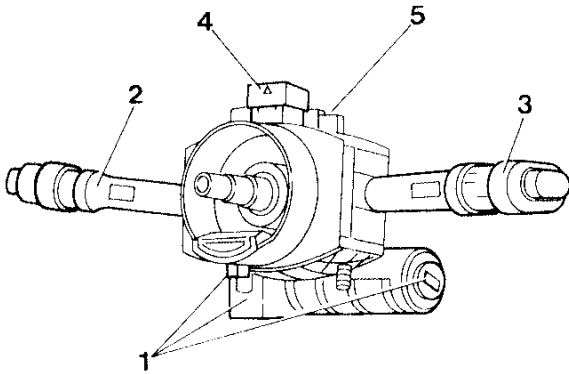


### STALK UNIT

#### FUNCTIONAL DESCRIPTION

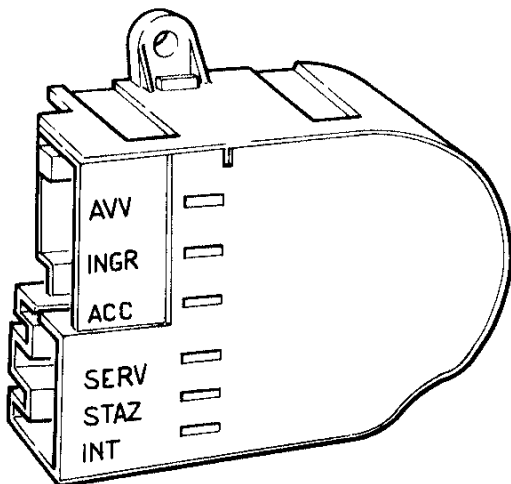
The controls relative to the following services are located on a single support on the steering column under the steering wheel:

1. Ignition switch and steering lock.
2. General control lever for external lights, direction indicators, rear foglights.
3. General control lever for windscreen wiper/washers (headlight washer optional), heated rear window and door mirror defroster.
4. Hazard warning light switch.
5. Instrument panel lighting rheostat.

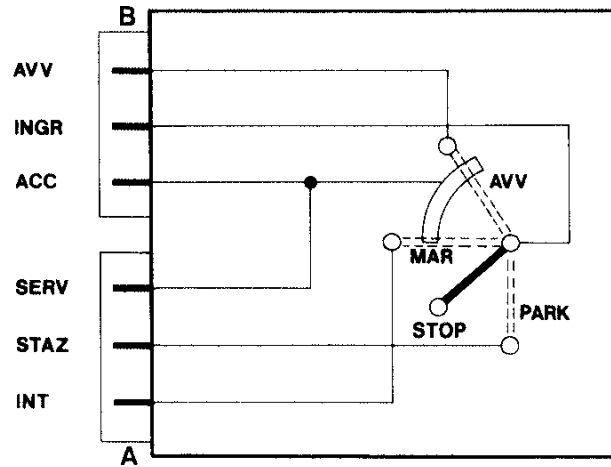


### IGNITION SWITCH

Detail showing ignition switch



Ignition switch wiring diagram.



Rotating the key in the ignition switch the six blades (marked by a code) terminating in two connectors are connected in accordance with the table given on the following page.



Ignition switch Internal connections

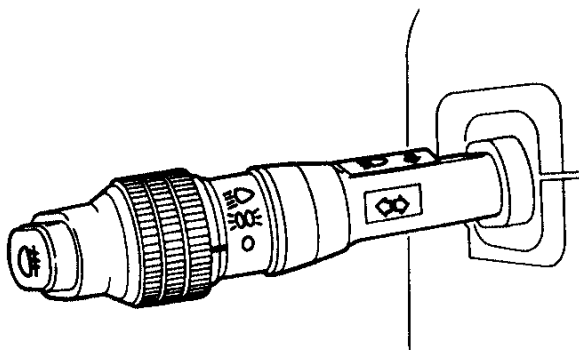
Blade Identification codes	POSITION OF THE IGNITION KEY			
	PARK key can be withdrawn	STOP key can be withdrawn	MAR key cannot be withdrawn	AVV key cannot be withdrawn

EXTERNAL LIGHTS, DIRECTION INDICATORS AND REAR FOGLIGHT CONTROL LEVER

The lever located on the left-hand side of the steering column enables the various functions to be used only when the ignition key is at the MAR position. When the ignition key is at the PARK position only the sidelights (parking) are switched on and are separate from all other systems.

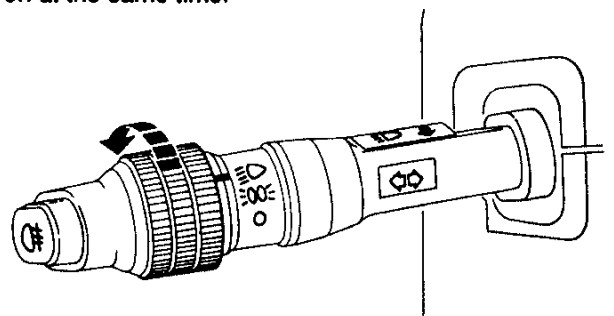
Lights out

When the pointer of the knurled switch is at 0.



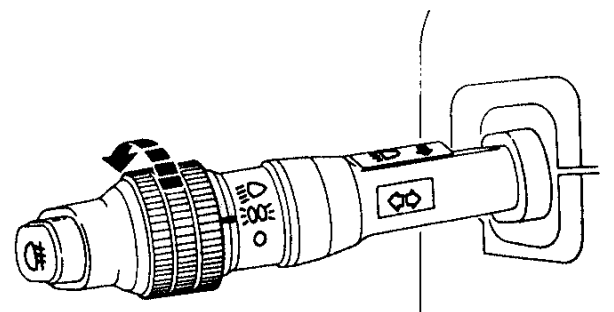
Sidelights

Rotate the knurled switch so that the pointer is at ; the Instrument panel and relative warning light will come on at the same time.




Dipped-beam headlights

Rotate the knurled switch to the symbol . Both the sidelights and the dipped-beam headlights will come on.

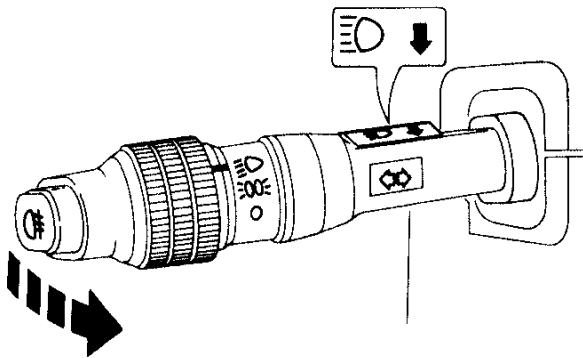




**Main-beam headlights**

With the dipped-beam headlights on (pointer to ) , pull the lever towards the steering wheel and release it. In this setting the the main and dipped beams and the sidelights will be on.

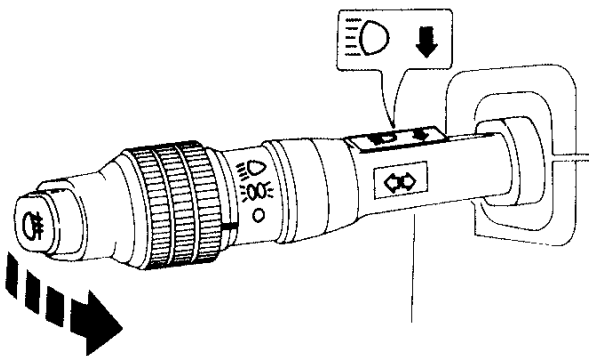
To return to the dipped-beam only setting, pull the lever towards the steering wheel and release it. When the dipped-beam headlights are on the instrument panel and relative warning lamp will also be on.



**Flashing**

This can be operated even when the lights are off by pulling the lever towards the steering wheel to the first detent (unstable position).

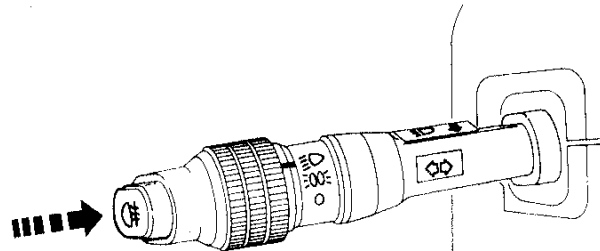
The relative warning lamp will come on on the instrument panel.



**Rear foglights**

To switch on the rear foglights, press the button at the tip of the lever when the dipped-beam lights are on. With the rear foglights on the relative warning lamp on the instrument panel will come on.

Press the button again to switch the lights off.





**Direction indicators**

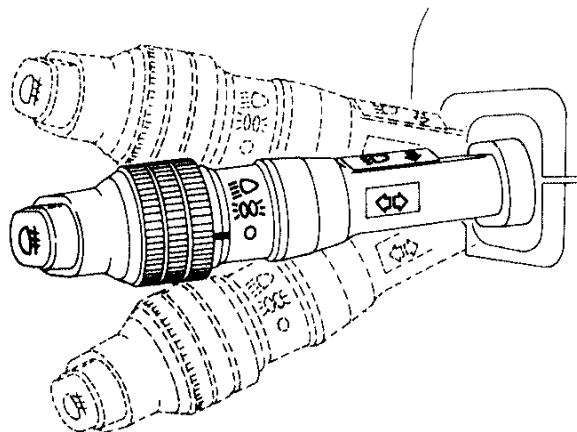
These are switched on by moving the lever vertically to one of the stable positions (stop limit):

Down: for the left-hand indicators.

Up: for the right-hand indicators.

With the direction indicators on one of the warning lamps on the instrument panel will flash on and off (  or  ).

The lever is returned and the indicators switched off when the steering wheel is straightened. To indicate a brief change of direction involving only a minimum rotation of the steering wheel it is possible to move the lever to the first detent (unstable position). When released the lever will return to the central position.





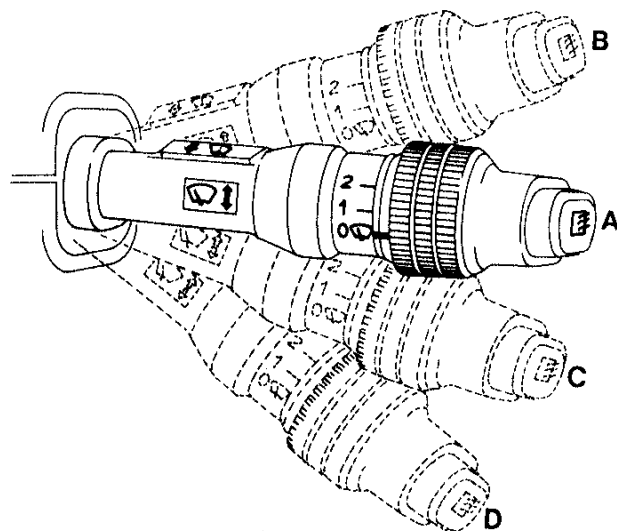
## WINDSCREEN WIPER-WASHER, HEATED REAR WINDOW (HEADLIGHT WASHERS AND DOOR MIRROR DEFROSTING)

Only with ignition key at the MAR position.

### Windscreen wipers

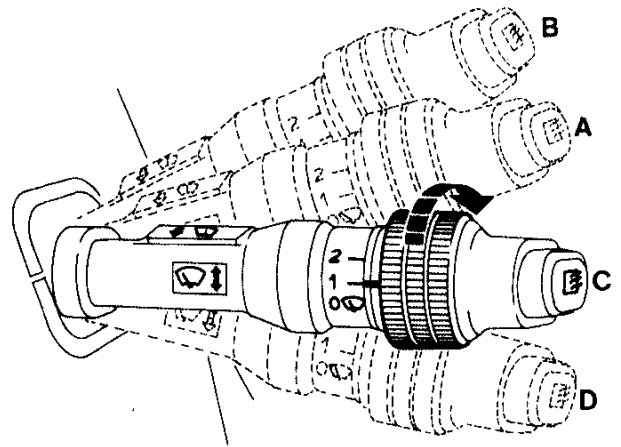
- A. Windscreen wiper stationary.
- B. Continuous operation (unstable position).
- C. Intermittent operation.
- D. Continuous operation.

The operation in position B is limited to the time the lever is held manually in position.



For the intermittent operation of the wipers, with the lever in position C, rotate the knurled switch to:

- 0 Slow intermittent operation.
- 1 Normal intermittent operation.
- 2 Fast intermittent operation.



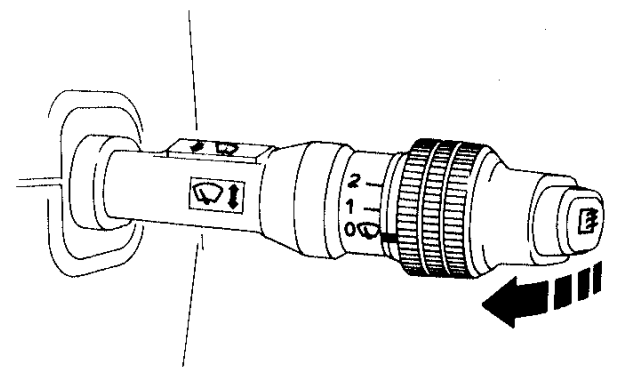
### Windscreen washer

To activate the windscreen washer pull the lever towards the steering wheel. The windscreen wipers will also come on for a few seconds.

The windscreen washer will only work as long as the lever is held in position.

If the windscreen wipers are already operating it will briefly pass to the continuous operation mode whatever the position of the lever (A - B - C - D) or knurled switch (0-1-2).

The vehicle is also equipped with a headlight washing system employing pressurized jets which are activated when the sidelights are on and the windscreen washer is activated.



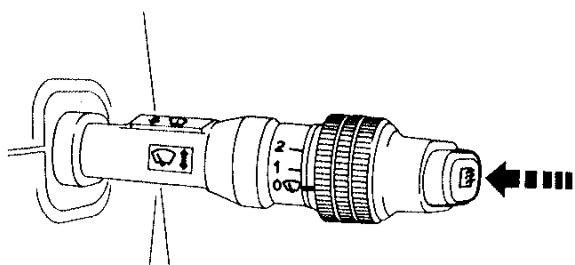


**Heated rear window**

To demist the rear window, press the button at the tip of the lever.

The relative warning lamp will come on on the instrument panel. The operation is timer controlled and will switch itself off after a few minutes.

To switch it off manually, press the button again.

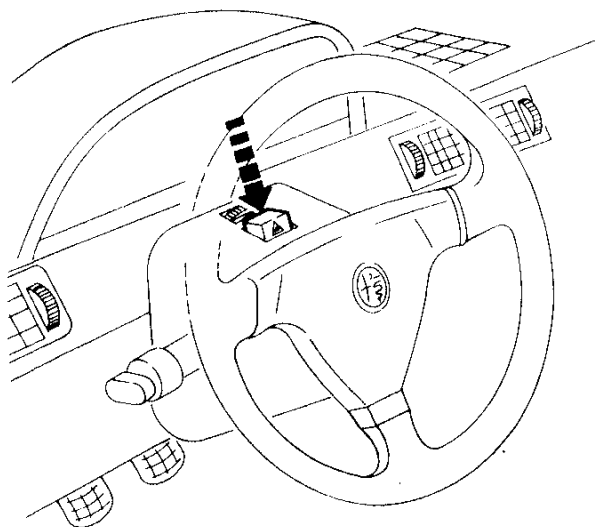


**HAZARD WARNING LIGHT SWITCH**

The hazard warning lights are switched on by pressing the red button located on the steering column, regardless of the position of the ignition key.

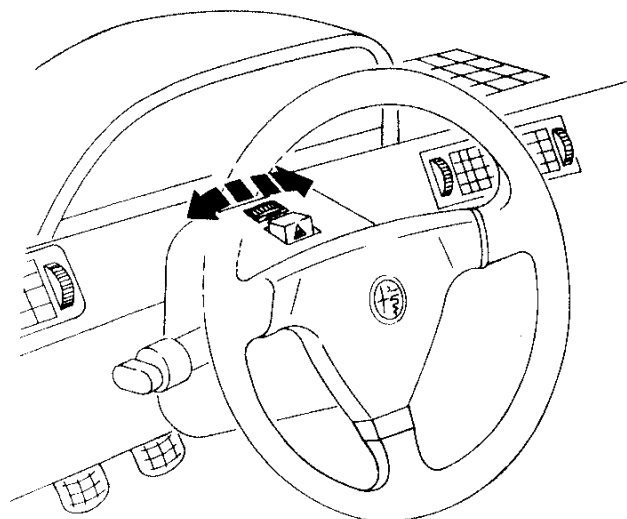
The relative hazard warning light warning lamps and the direction indicators on the instrument panel will come on when the hazard warning lights are switched on.

To switch the hazard warning lights off, press the button again.



**INSTRUMENT PANEL LIGHTING RHEOSTAT**

The intensity of the dashboard lighting can be adjusted so that the instruments can be easily read whatever the external lighting conditions. Rotate the wheel located on the steering column to adjust the intensity.

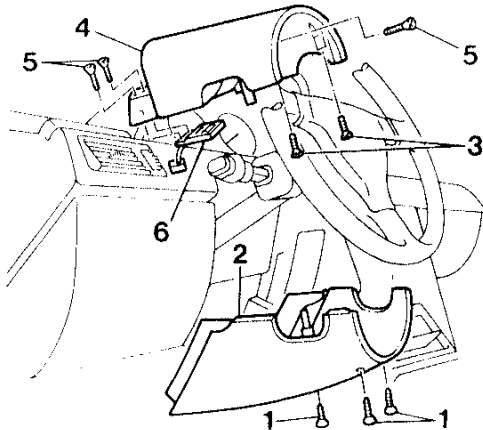




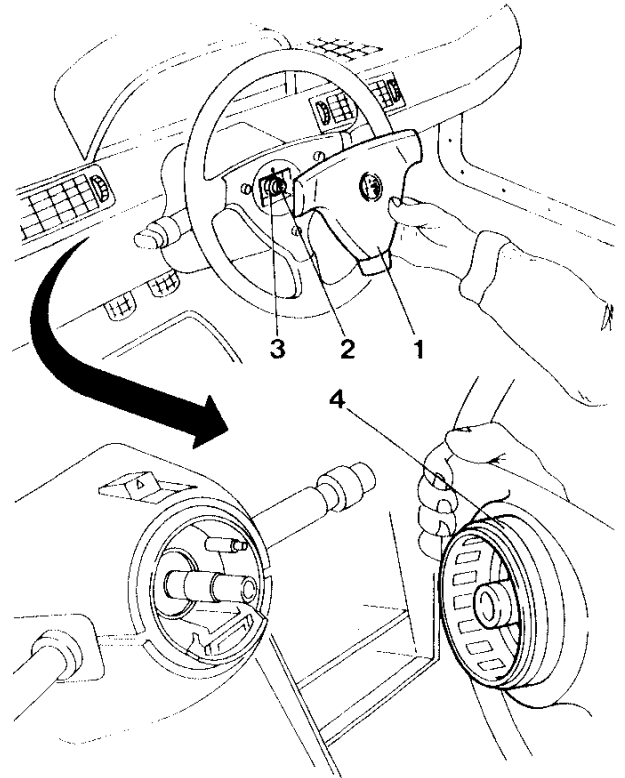
## DISASSEMBLY AND REASSEMBLY OF THE STALK UNIT

### Disassembly

1. Loosen the three lower screws securing the lower steering column cover.
2. Remove the steering column cover.
3. Loosen the two screws securing the upper steering column cover.
4. Remove the upper steering column cover.
5. Loosen the three screws securing the rheostat to the steering column cover.
6. Remove the rheostat and disconnect the relative connector.



1. Applying leverage with a screwdriver remove the horn button.
2. Disconnect the underlying connector.
3. Loosen the nut securing the steering wheel.
4. Remove the steering wheel by pressing on each side alternately.

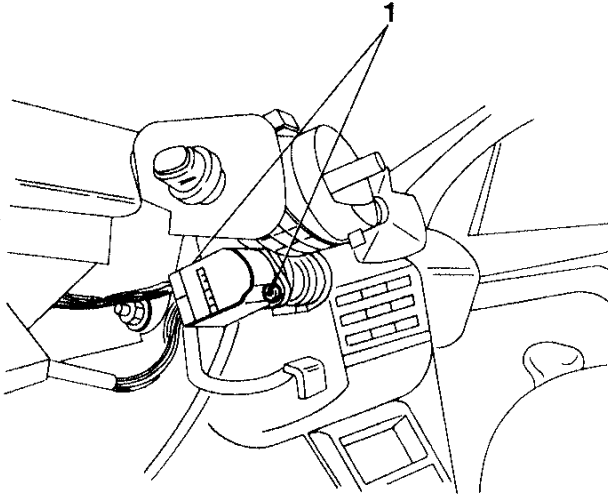




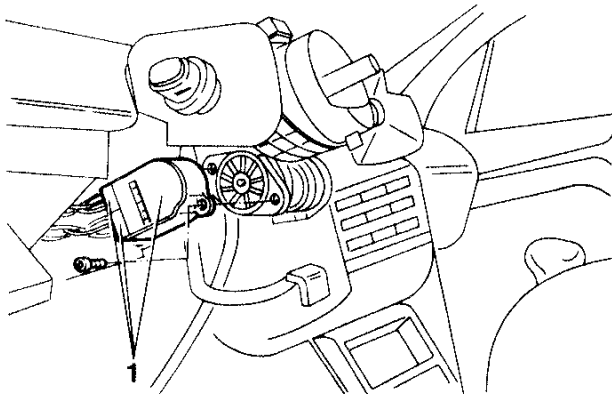


**Ignition switch**

1. Loosen the two screws securing the ignition switch to the stalk unit under the steering wheel.

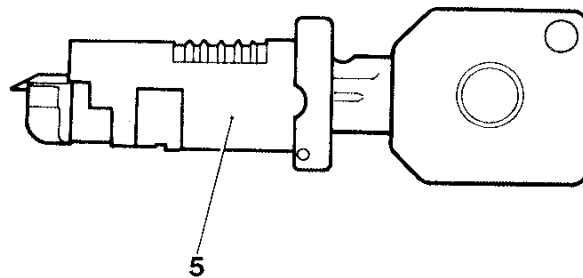
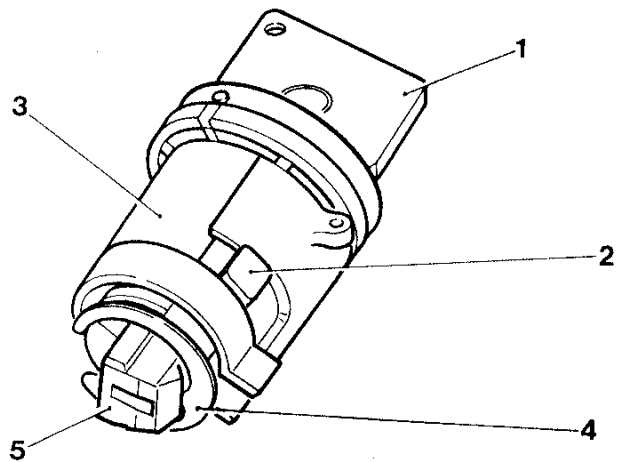
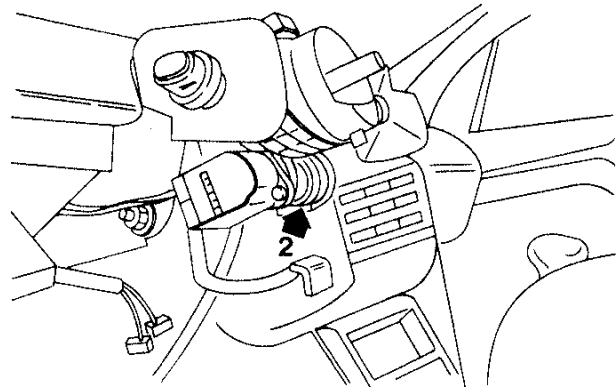


1. Disconnect the two connectors from the ignition switch.



**Ignition key and steering lock**

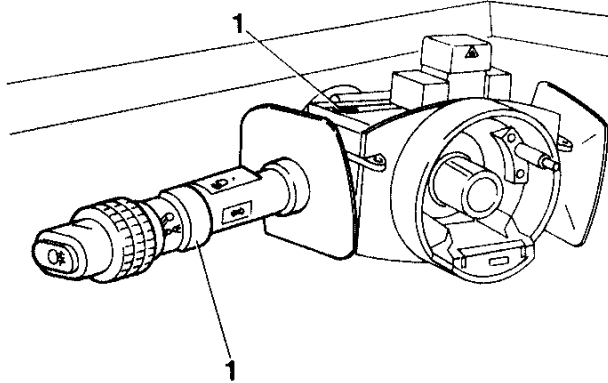
1. Insert the key in the ignition and turn it to the MAR position.
2. Working through the opening located in the rear part of the cylinder housing the lock, press the teeth of the lock down.
3. Withdraw the lock from its housing.
4. Remove the Seeger ring.
5. Withdraw the cylinder with the key.





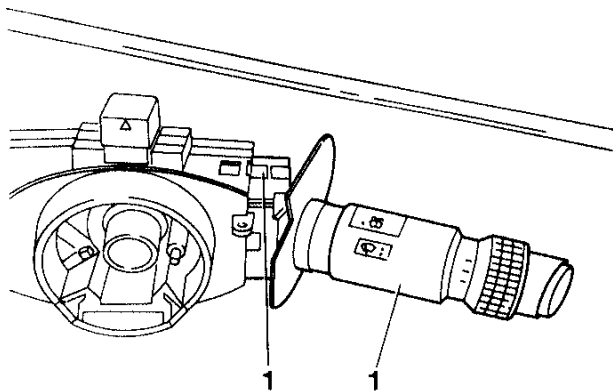
**Left-hand control lever**

1. Press both the retaining tabs down at the same time and pull the lever outwards to remove.



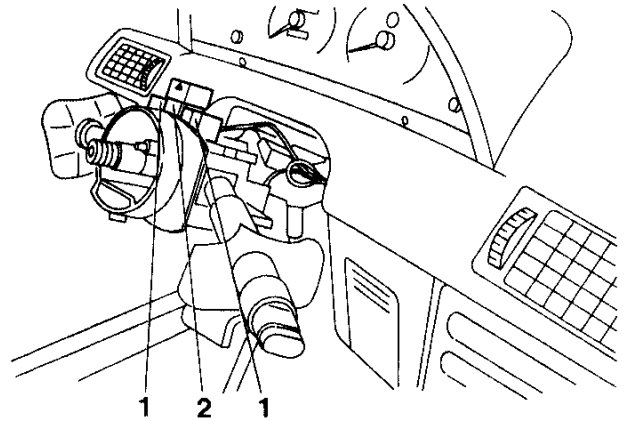
**Right-hand control lever.**

1. Press both the retaining tabs down at the same time and pull the lever outwards to remove.



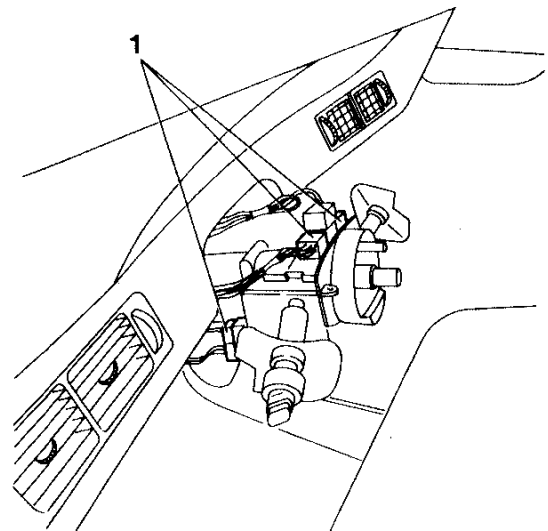
**Hazard warning light switch**

1. Disconnect the two lateral connectors.
2. Pull upwards and withdraw the switch.



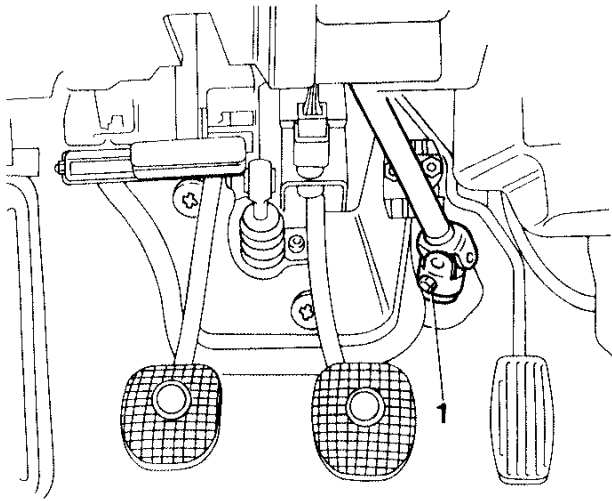
**Steering column and stalk unit**

1. Disconnect the connectors from the hazard warning lights, ignition block and ignition switch.

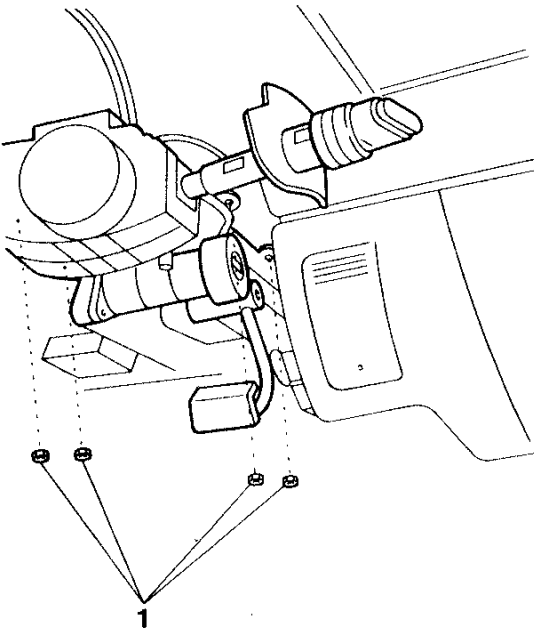





1. Remove the screw and the nut securing the lower shaft to the pin of the steering box.




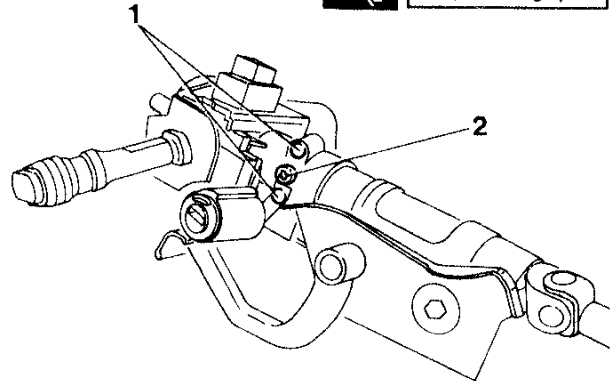
1. Loosen the four nuts securing the steering column to the body and remove the complete column.



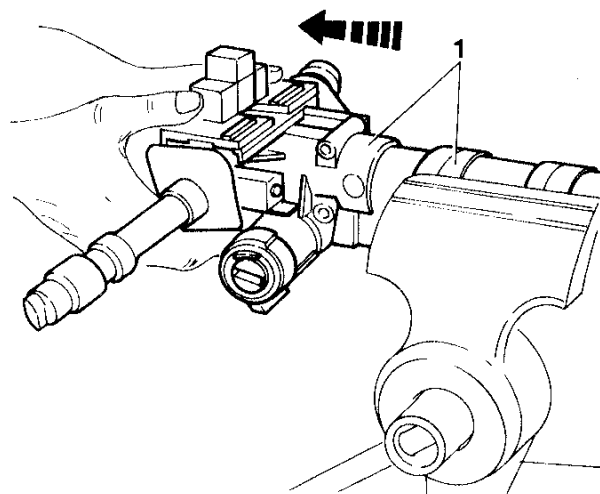
 5.6 + 8.8 Nm  
(0.57 + 0.9 kgm)

- To proceed with the removal operations it is necessary to secure the complete steering column in a vice.
1. Loosen the two lateral screws using a punch.
  2. Loosen the central screw positioning and securing the stalk unit to the support.

 23 + 29 Nm  
(2.3 + 3 kgm)



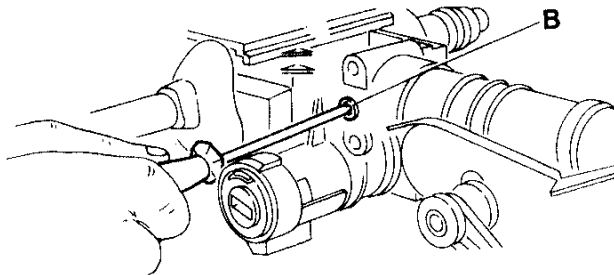
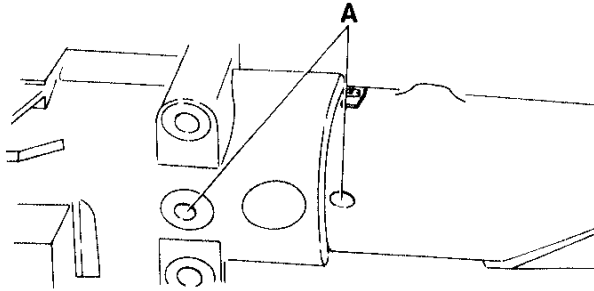
1. Remove the stalk unit from the upper steering control shaft support.



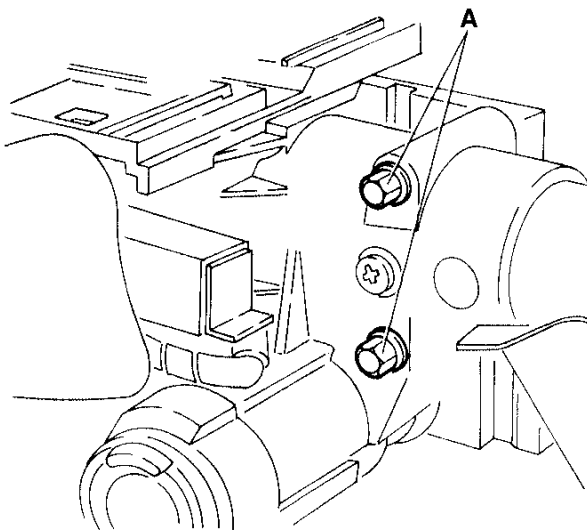
**Refitting**

To refit reverse the procedure followed for removal and:

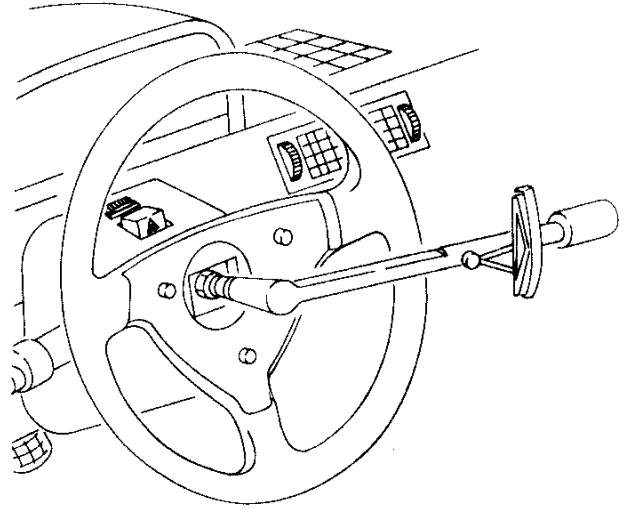
- When installing the stalk unit in the upper steering control shaft support, the clip located on support (A) must coincide with the hole of positioning screw (B) and be locked in place using this.



- When installing the fracture screws securing the stalk unit to the support they must be tightened until the hexagonal head (A) breaks off.



- When installing the steering wheel, tighten the nut to the correct torque.



48 + 62 Nm  
(4.9 + 6.3 kgm)

- When installing the steering column, tighten the nuts to the correct torque.



## TECHNICAL CHARACTERISTICS AND SPECIFICATIONS

### TIGHTENING TORQUES

#### STEERING

Description	N·m	kg·m
Self braking nut E with polyamide ring for securing steering wheel to steering column	48 + 62	4.9 + 6,3
TE conical tip screw with flexible washer securing steering column to support	5.6 + 8.8	0.57 + 0.9
EAUF nut for screws securing steering column to support	23 + 29	2.3 + 3

#### MOBILE BODYWORK PARTS

Description	N·m	kg·m
TE screw securing side door lock	7.1 + 9	0.72 + 0.92

#### ELECTRICAL SYSTEM

Description	N·m	kg·m
Nut securing lead positive terminal to battery	2.9 + 4.7	0.3 + 0.48
Nut securing lead negative terminal to battery	2.9 + 4.7	0.3 + 0.48

#### ELECTRICAL APPARATUS

Descrizione	N·m	kg·m
Hexagonal nut securing fixed part of light unit	5.5 + 6.8	0.56 + 0.69
Nut securing horns to body	2.9 + 4.7	0.3 + 0.48
Nut securing windscreen wiper arm to unit	15 + 20	1.5 + 2

**SPECIFIC TOOLS**

TOOL NUMBER	DESCRIPTION
1.822.118.000	Spanner for TELEVEL ring nut
1.823.015.000	Puller for plastic buttons
1.821.167.000	Spanner for ring nut securing fuel pump.

**GROUP 43****INSTRUMENT PANEL AND ELECTRONIC INSTRUMENTS****INDEX**

- |  |  |
|--|--|
| <p><b>INSTRUMENT PANEL AND ELECTRONIC INSTRUMENTS</b> ..... 43-2</p> <ul style="list-style-type: none"><li>- <b>STANDARDS AND PRECAUTIONS</b> 43-2</li><li>- <b>ELECTRONIC INSTRUMENT PANEL</b> ..... 43-3<ul style="list-style-type: none"><li>- 2.4 V6 model ..... 43-3</li><li>- 1.8 - 2.0 TS model ..... 43-4</li><li>- Services warning lamps ..... 43-5</li><li>- Removal and refitting ..... 43-6</li><li>- Bulb replacement ..... 43-6</li></ul></li><li>- <b>CHECK PANEL AND CLOCK</b> .... 43-7<ul style="list-style-type: none"><li>- Removal and refitting ..... 43-8</li><li>- Replacing bulbs and clock ..... 43-8</li><li>- Disassembled Check Panel ..... 43-9</li></ul></li><li>- <b>HEATING-VENTILATION CONTROL UNIT</b> ..... 43-9<ul style="list-style-type: none"><li>- Removal and refitting ..... 43-9</li></ul></li><li>- <b>CONTROLLED DAMPING SUSPENSION A CONTROL UNIT</b> ..... 43-10<ul style="list-style-type: none"><li>- Removal and refitting ..... 43-10</li></ul></li><li>- <b>"MOTRONIC" ELECTRONIC IGNITION CONTROL UNIT</b> ..... 43-11<ul style="list-style-type: none"><li>- Removal and refitting ..... 43-11</li></ul></li></ul> | <ul style="list-style-type: none"><li>- <b>ELECTRONIC IGNITION MODULE "A" AND MODULE "B"</b> ... 43-11<ul style="list-style-type: none"><li>- Removal and refitting ..... 43-11</li></ul></li><li>- <b>WINDOW RAISING DEVICE CONTROL UNIT</b> ..... 43-12<ul style="list-style-type: none"><li>- Removal and refitting ..... 43-12</li></ul></li><li>- <b>ROOF-LIGHT TIMER CONTROL UNIT</b> ..... 43-12<ul style="list-style-type: none"><li>- Removal and refitting ..... 43-12</li></ul></li><li>- <b>"ABS" CONTROL UNIT</b> ..... 43-13<ul style="list-style-type: none"><li>- Removal and refitting ..... 43-13</li></ul></li><li>- <b>"ABS" CONTROL UNIT RELAY</b> .... 43-14<ul style="list-style-type: none"><li>- Removal and refitting ..... 43-14</li></ul></li><li>- <b>DOOR LOCKING DEVICE CONTROL UNIT</b> ..... 43-14<ul style="list-style-type: none"><li>- Removal and refitting ..... 43-14</li></ul></li><li>- <b>HEATED REAR WINDOW AND ANTENNA CONTROL UNIT</b> ..... 43-15<ul style="list-style-type: none"><li>- Removal and refitting ..... 43-15</li></ul></li></ul> <p><b>TECHNICAL CHARACTERISTICS AND SPECIFICATIONS</b> ..... 43-16</p> <ul style="list-style-type: none"><li>- <b>TIGHTENING TORQUES</b> ..... 43-16<ul style="list-style-type: none"><li>- Bosch Antiskid (attachments) .... 43-16</li></ul></li></ul> |
|--|--|



## INSTRUMENT PANEL AND ELECTRONIC INSTRUMENTS

### STANDARDS AND PRECAUTIONS

**CAUTION**

Before disconnecting or reconnecting the components of the electrical system read the section STANDARDS AND PRECAUTIONS.

Before beginning work ensure that the ignition key is at the "parking" position and that the earth cable of the battery has been disconnected and:

- avoid connecting the control unit outputs directly to the power supply;
- avoid working on devices when cables are connected to "positive" or earth without having previously disconnected the control units;
- avoid short-circuiting the sensors unless otherwise specified;
- before carrying out electrical welding, disconnect the control units in order to avoid damaging the electrical components by induced current.

**WARNING**

Calculate the possible outcome of any interventions and avoid working on components when the characteristics are not perfectly understood.

When reassembling and/or refitting, reverse the procedures given for disassembly and/or removing unless otherwise specified and reconnect the battery.

Components of the electrical system should only be substituted with genuine Alfa Romeo spare parts. Using non-specified spares with slightly different characteristics may affect the operational reliability and safety of the vehicle.



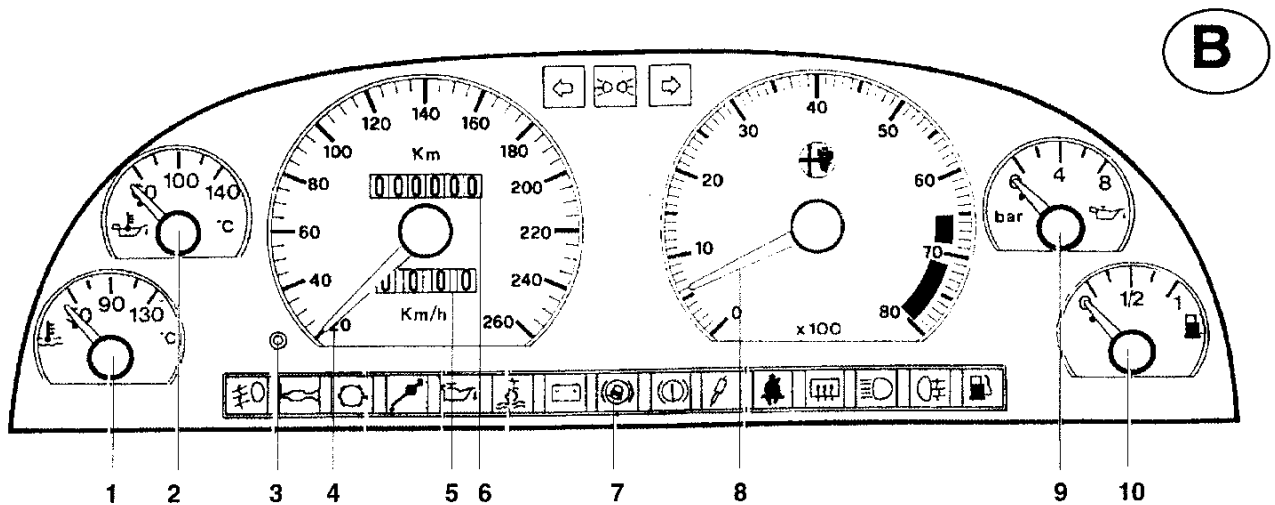
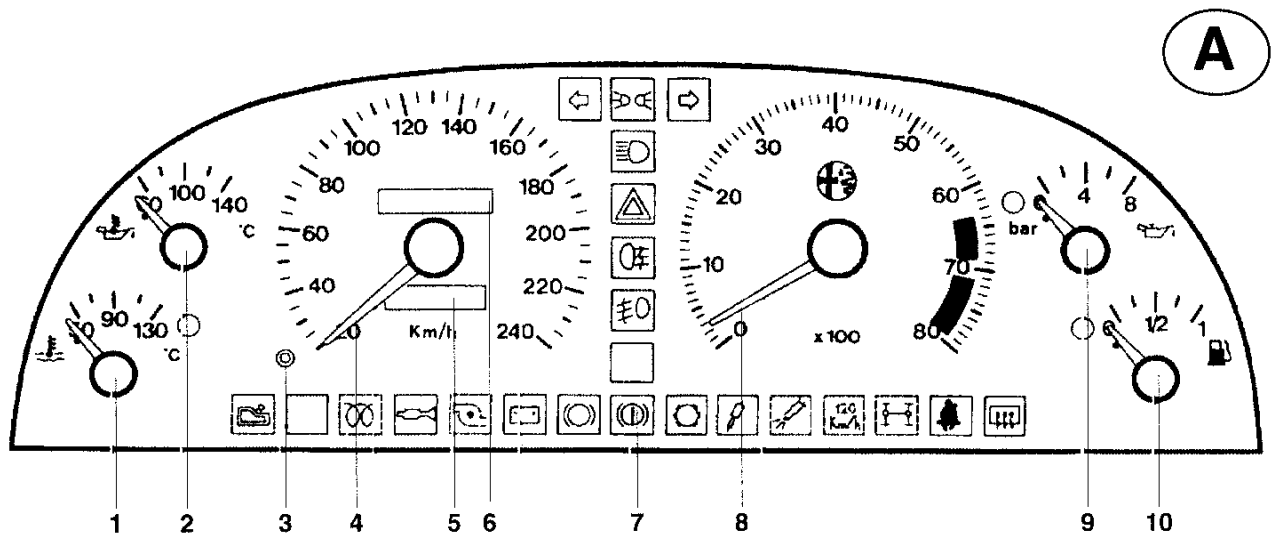


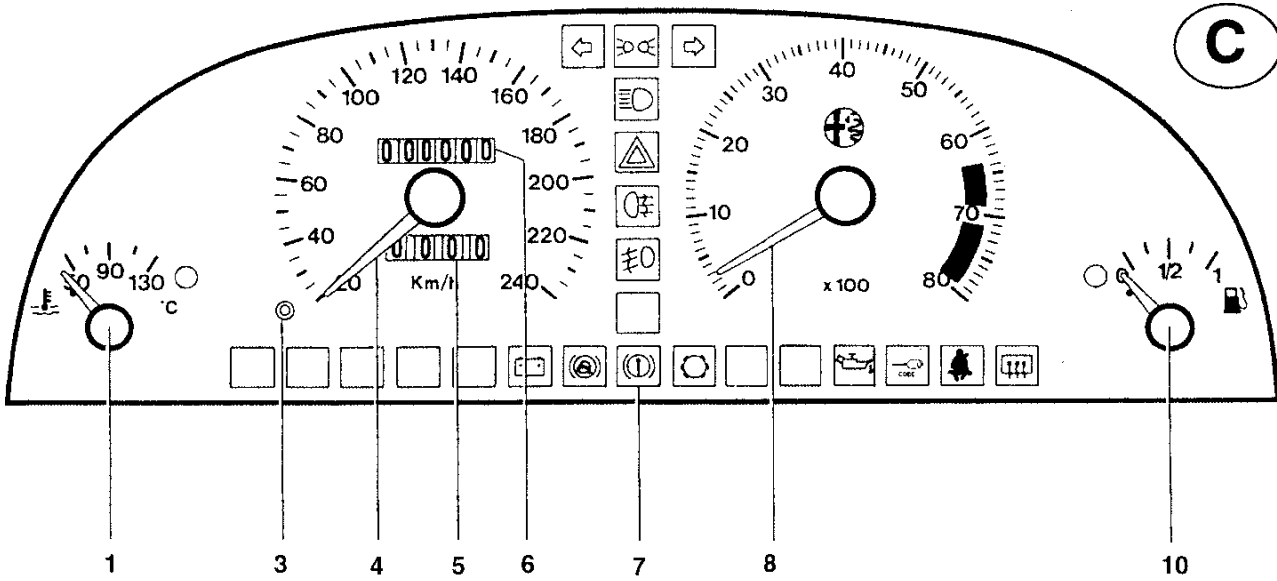
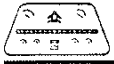
### ELECTRONIC INSTRUMENT CLUSTER

The 155 is fitted with different ELECTRONIC INSTRUMENT CLUSTERS depending on the versions; up to now the following 4 types have been defined:

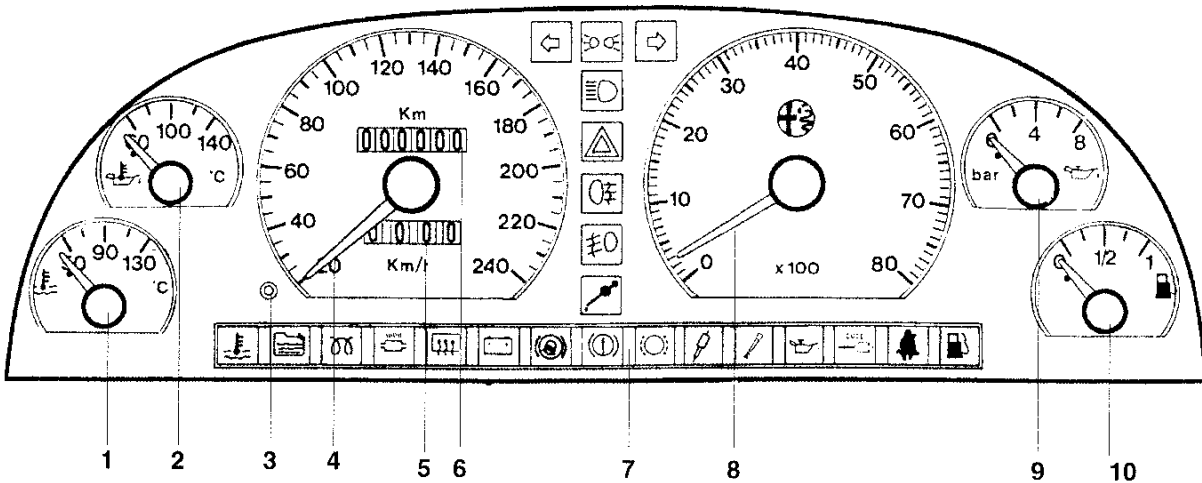
- "Base" cluster (A): installed up to chassis no. ....
- "Sporty" cluster (B): with instruments with depth effect, installed on the "higher" versions.

- Simplified cluster (C): with the number of warning lights and indicators reduced to the minimum, installed on the "lower" versions.
- Cluster for '95 Version (D): replaces cluster B for vehicles starting from chassis no. ....





D



- |   |  |
|---|--|
| <ul style="list-style-type: none"><li>1. Engine coolant temperature gauge</li><li>2. Oil temperature gauge (not included in cluster C)</li><li>3. Trip meter reset</li><li>4. Speedometer</li><li>5. Trip meter</li></ul> | <ul style="list-style-type: none"><li>6. Mileage recorder</li><li>7. Services warning lights (see details on next page)</li><li>8. Rev counter</li><li>9. Engine oil pressure gauge (not included in cluster C)</li><li>10. Fuel level gauge</li></ul> |
|---|--|

**N.B.:** The different engines also differ with regard to the ratings on the speedometer and rev counter.



**WARNING LIGHTS(\*)**



Left-hand direction indicator



Parking lights and low beams



Right-hand direction indicator



High beams



Hazard warning lights



Rear fog guards



Fog lamps



Low engine oil level



High engine coolant fluid temperature



Water in fuel oil filter



Glow plugs



Catalytic silencer temperature



Rearscreen heating



Generator warning light



ABS anti-lock system



Low brake fluid level and handbrake engaged



Worn brake pads



Electronic suspension control



Injection system



Low engine oil pressure



ALFA ROMEO CODE



Seat belts



Fuel reserve



High supercharging pressure

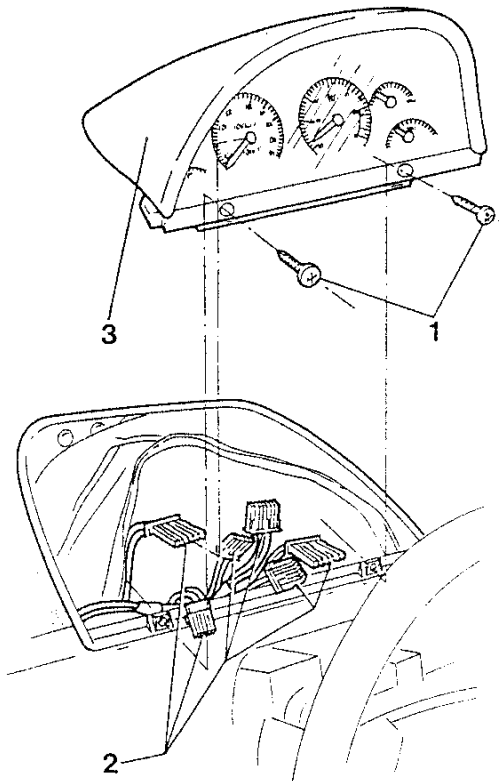
**(\*) NB: All the warning lights shown are present on the instrument cluster, but some of them may be disconnected depending on the version, engine and trim level.**



**REMOVAL AND REFITTING**

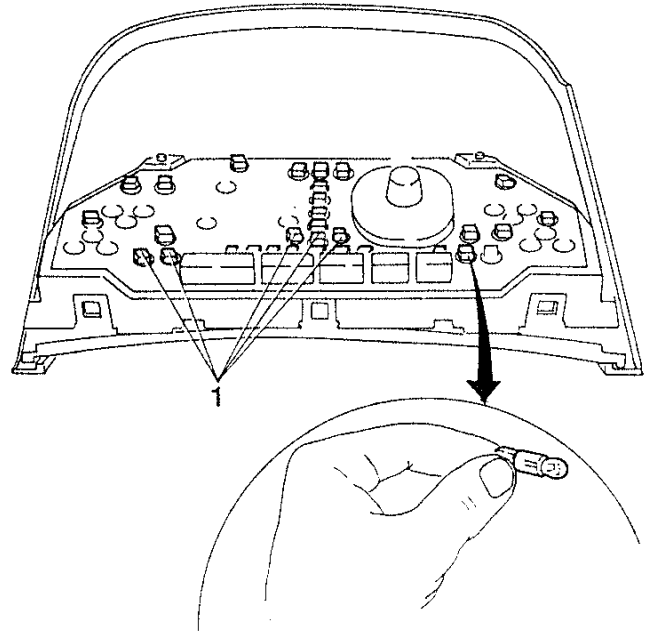
**Removal**

1. Loosen the two screws securing the central covering.
2. Disconnect the electrical connectors.
3. Remove the instrument panel.



**BULB REPLACEMENT**

1. Working from the rear of the instrument panel it is possible to replace all the bulbs. To extract them, rotate anticlockwise.



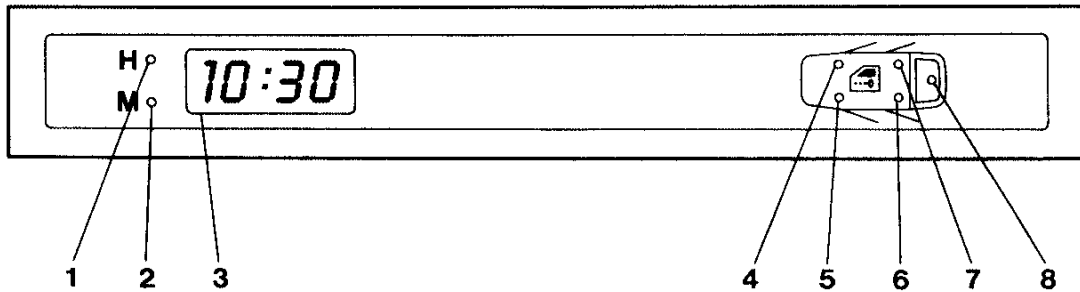
**Refitting**



To refit, reverse the procedures followed for removal.



## CHECK PANEL AND CLOCK



1. Button for setting hours
2. Button for setting minutes
3. "LCD" digital clock
4. Front right-hand door closed warning light

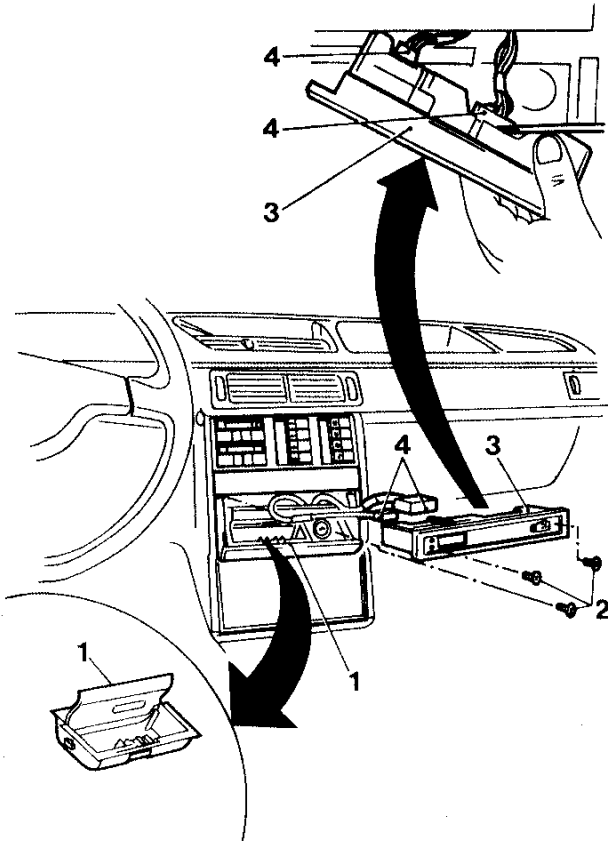
5. Front left-hand door closed warning light
6. Rear left-hand door closed warning light
7. Rear right-hand door closed warning light
8. Boot lid closed warning light



**REMOVAL AND REFITTING**

**Removal**

1. Remove the ashtray.
2. Loosen the three screws securing the Check Panel.
3. Remove the Check Panel.
4. Disconnect the two connectors and remove the Check Panel.



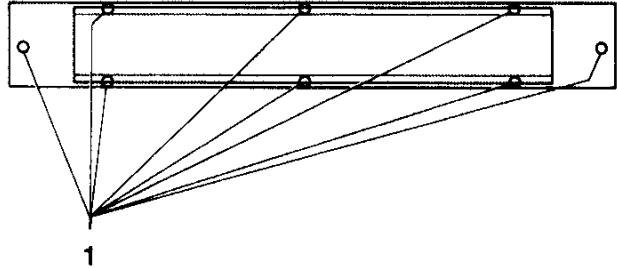
**Refitting**



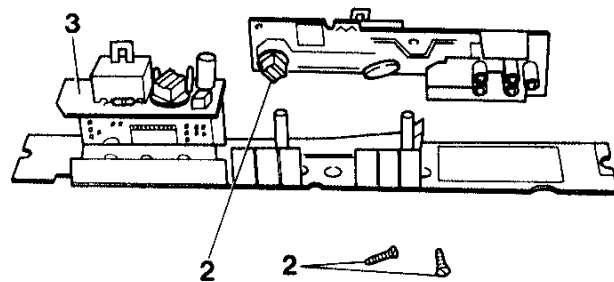
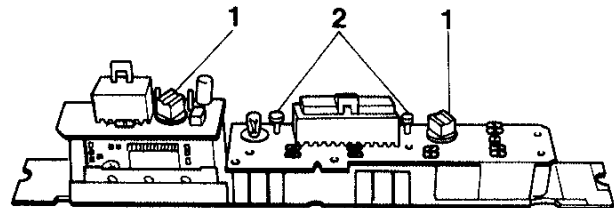
To refit, reverse the procedures followed for removal.

**REPLACING BULBS AND CLOCK**

1. Loosen the eight screws securing the rear cover of the Check Panel and remove it.

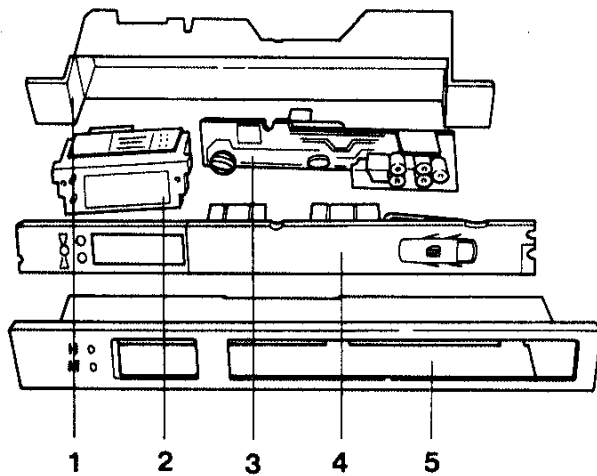


1. The panel has three bulbs lighting the clock, vehicle outline and ashtray. For the first two, remove the rear cover to reach the bulbs. Remove by rotating anticlockwise.
2. To replace the ashtray light, loosen the two screws securing the printed circuit and remove it. Rotate the bulb anticlockwise to remove.
3. The clock is fitted to the Check Panel. Withdraw it from its seating and replace.





**Disassembled Check Panel**



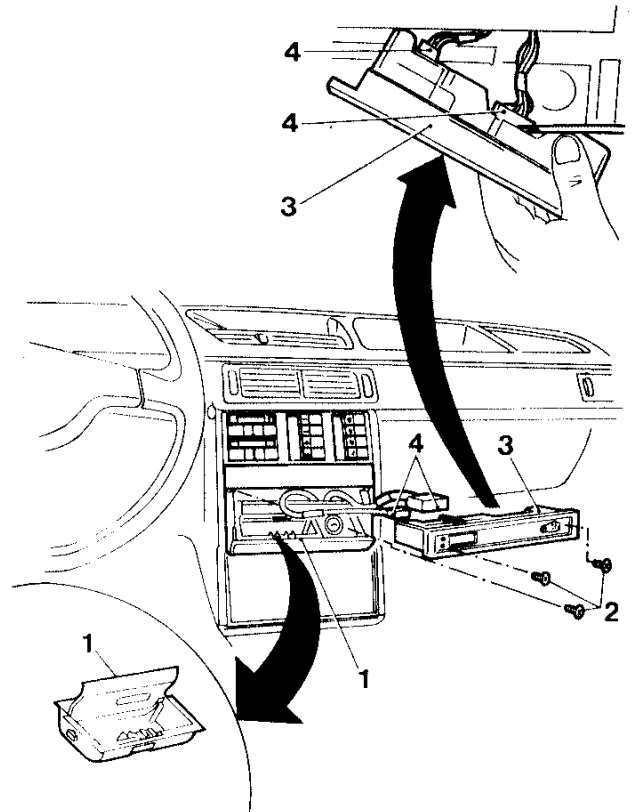
- 1. Rear cover
- 2. Clock
- 3. Printed circuit
- 4. Check Panel display glass
- 5. Front moulding

**HEATING-VENTILATION CONTROL UNIT**

**REMOVAL AND REFITTING**

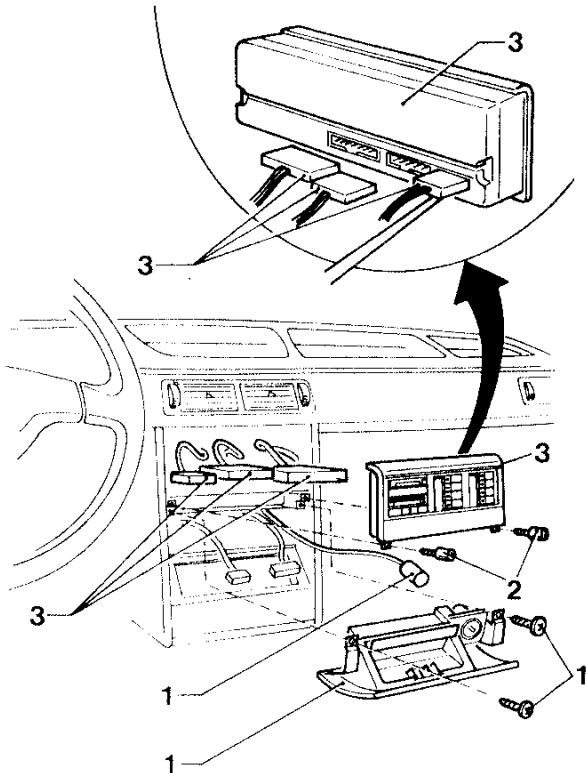
**Removal**

- 1. Remove the ashtray.
- 2. Loosen the three screws securing the Check Panel.
- 3. Remove the Check Panel.
- 4. Disconnect the two connectors and remove the Check Panel.





1. Loosen the two screws securing the ashtray to the front covering forming the central tunnel. Disconnect the cigar-lighter connector and remove the ashtray unit.
2. Loosen the two screws securing the electronic control unit to the front covering.
3. Disconnect the three connectors and remove the electronic control unit.



**Refitting**



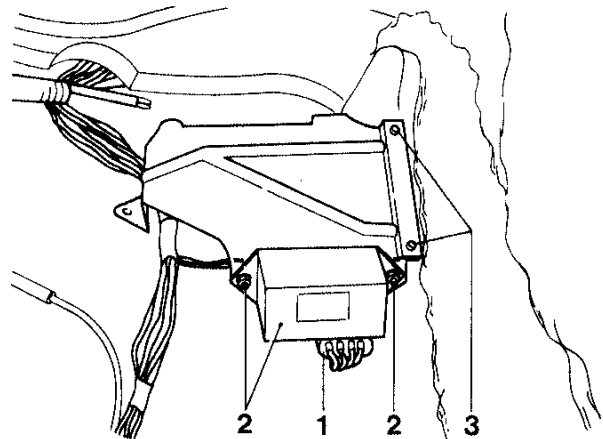
To refit, reverse the procedures followed for removal.

**CONTROLLED DAMPING  
SUSPENSION CONTROL UNIT**

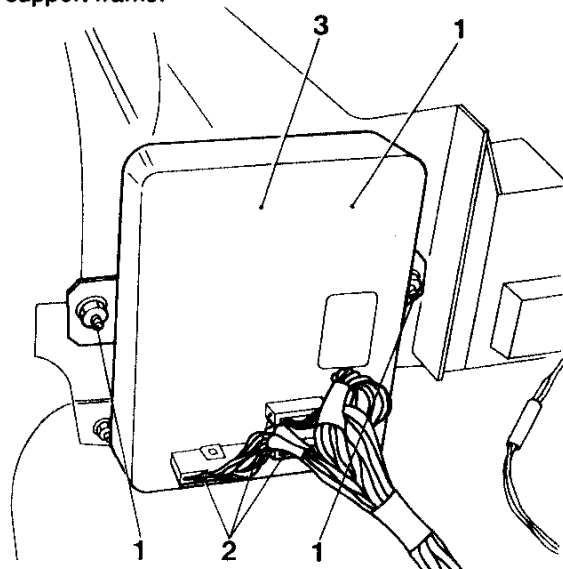
**REMOVAL AND REFITTING**

**Removal**

- The control unit is located under the rear seat.
- 1. Disconnect the connector.
- 2. Loosen the two nuts and remove the control unit first block.
- 3. Loosen the two bolts fixed to the support frame.



1. Lift the second control unit block from the support frame.
2. Disconnect the three connectors.
3. Remove the second control unit block from the support frame.



**Refitting**



To refit, reverse the procedures followed for removal.



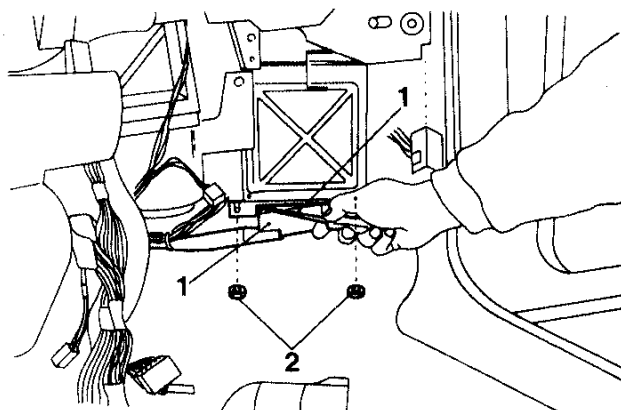


## " MOTRONIC "ELECTRONIC IGNITION CONTROL UNIT

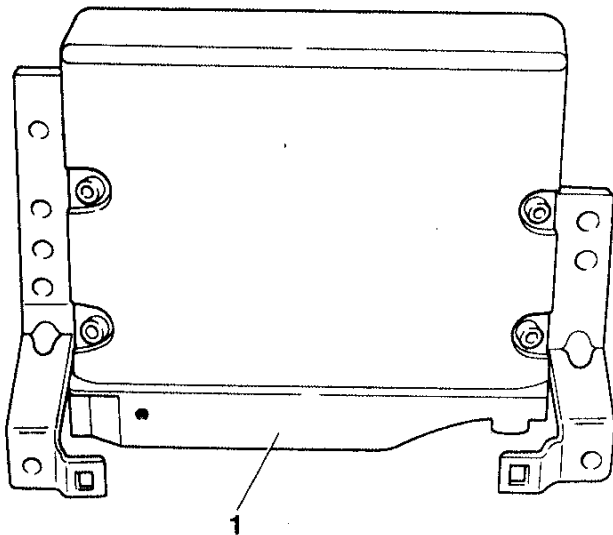
### REMOVAL AND REFITTING

#### Removal

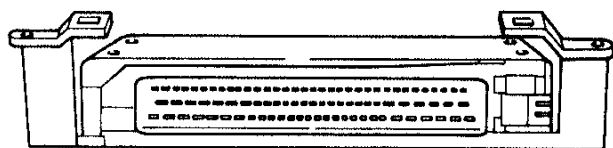
- The control unit is located under the dashboard on the passenger side.
- 1. Disconnect the electrical connector using a screwdriver as a lever.
- 2. Loosen the two nuts securing the brackets to the frame.



1. Remove the Motronic control unit.



Rear view of electrical connector attachment.



#### Refitting



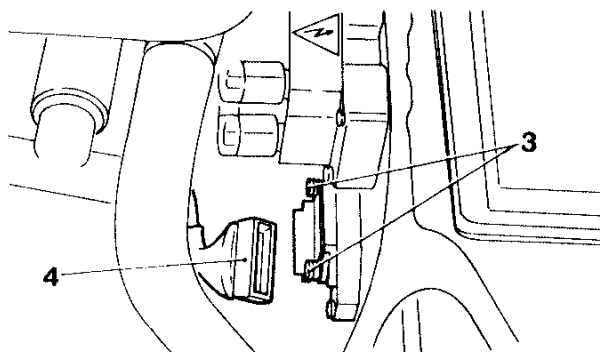
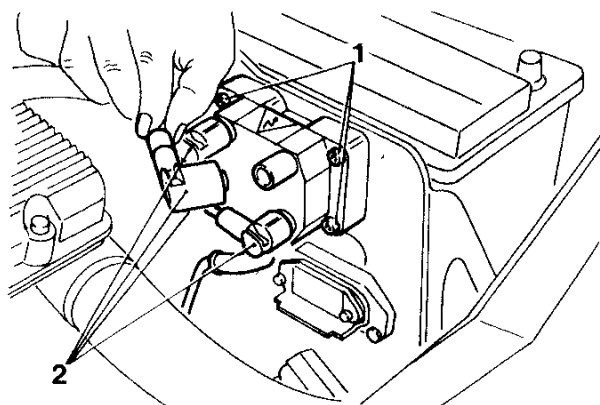
To refit, reverse the procedures followed for removal.

## ELECTRONIC IGNITION MODULE "A" AND MODULE "B".

### REMOVAL AND REFITTING

#### Removal

- The modules are located in the engine compartment to one side of the battery support.
- 1. Loosen the four screws securing the two ignition coils.
- 2. Disconnect the four connectors from the coils.
- 3. Loosen the two screws securing the two ignition modules.
- 4. Disconnect the two connectors from the modules.



#### Refitting



To refit, reverse the procedures followed for removal.

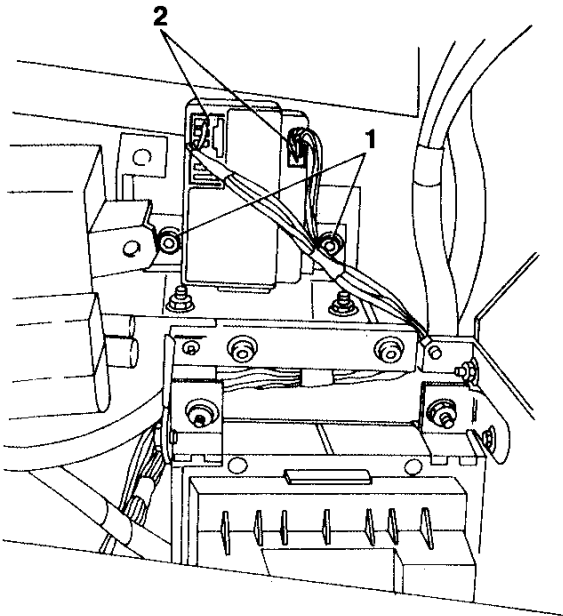


## WINDOW RAISING DEVICE CONTROL UNIT

### REMOVAL AND REFITTING

#### Removal

- The control unit is located in the passenger compartment above the main fusebox which can be found under the dashboard to the left of the steering column.
- 1. Loosen the two nuts securing the support.
- 2. Disconnect the two electrical connectors and remove the control unit.



#### Refitting



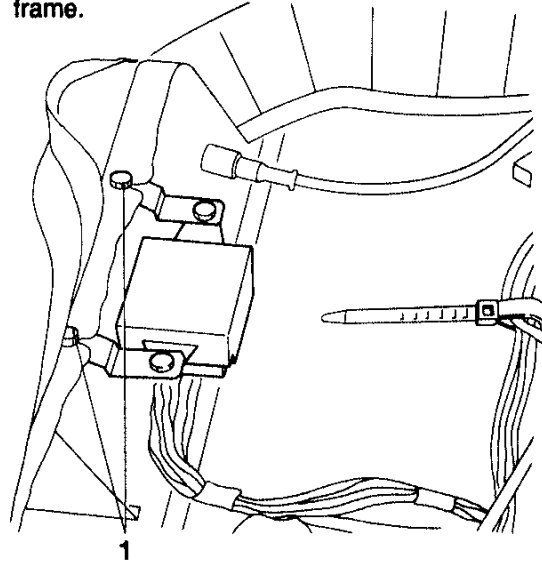
To refit, reverse the procedures followed for removal.

## ROOF-LIGHT TIMER CONTROL UNIT

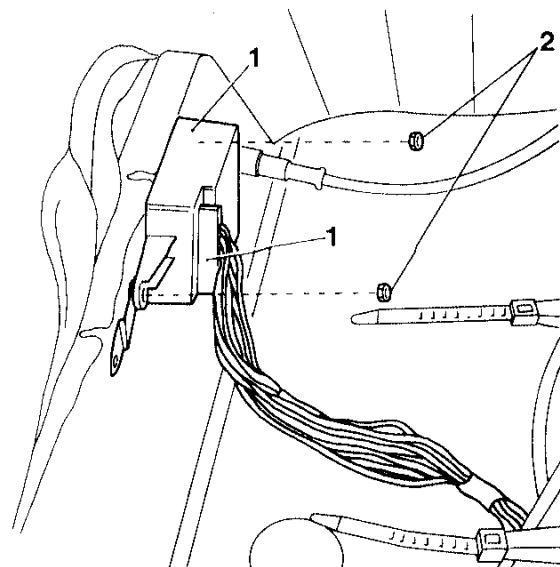
### REMOVAL AND REFITTING

#### Removal

- The control unit is located under the rear seats.
- 1. Loosen the two bolts securing the brackets to the frame.



- 1. Lift the control unit and remove the connector.
- 2. Loosen the two nuts from the bracket and remove the control unit.



#### Refitting



To refit, reverse the procedures followed for removal.



## "ABS" CONTROL UNIT

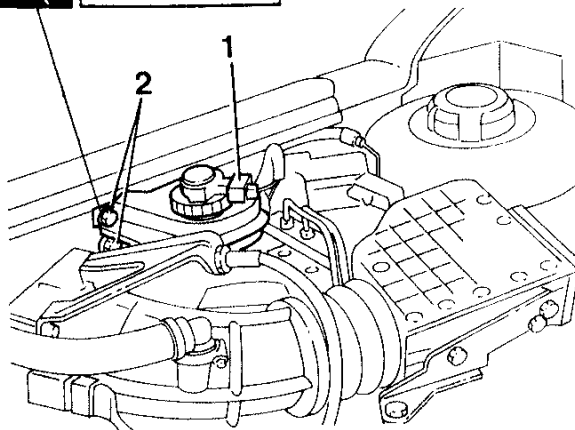
### REMOVAL AND REFITTING

#### Removal

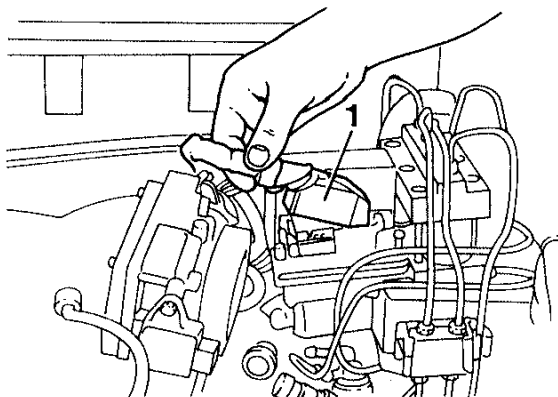
- The control unit is located in the engine compartment under the windscreen wiper unit.
  - Disconnect and remove the battery and the battery support. (see: GR. 40).
  - Remove air-flow meter (see: REPAIR INSTRUCTIONS - ENGINES - GROUP 04).
1. Disconnect the connector from the brake-clutch fluid level sensor.
  2. Loosen the two screws securing the brake-clutch fluid reservoir.



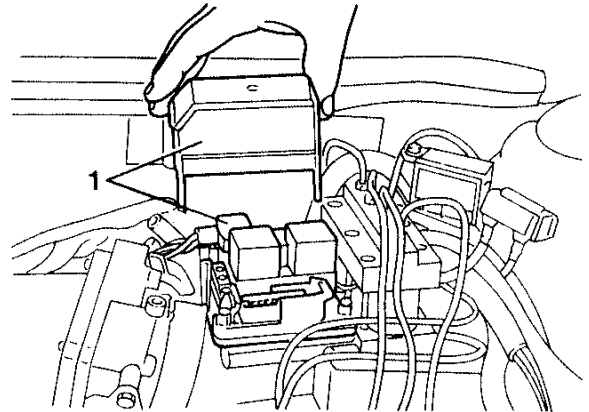
3.7 + 4.8 Nm  
(0.38 + 0.49 kgm)



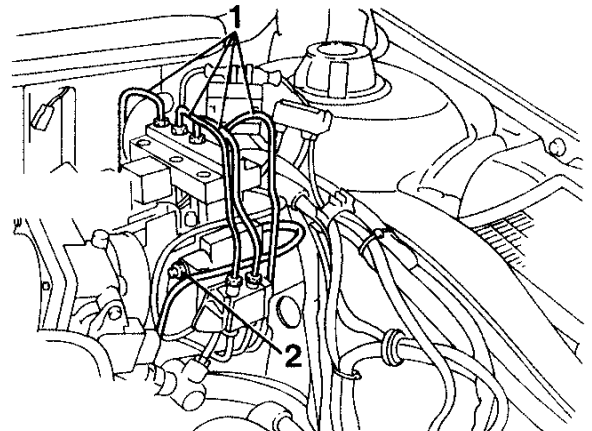
1. Remove the electrical connector comb from the control unit.



1. Loosen the screw securing the cover of the electronic control unit and remove the four-pin connector.



1. Disconnect the hydraulic connections from the control unit and from the four-way distributor.
2. Loosen the three nuts of the control unit support and remove the unit.



3.8 + 4.9 Nm  
(0.39 + 0.5 kgm)

#### Refitting



To refit, reverse the procedures followed for removal.

#### Supplementary Indications for refitting

- Tighten the screws and nuts to the correct torque.

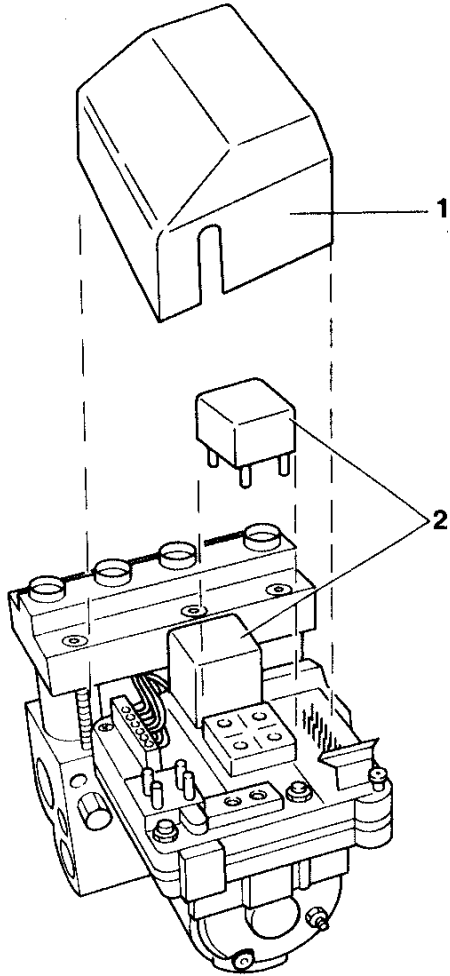


### "ABS" CONTROL UNIT RELAY

#### REMOVAL AND REFITTING

##### Removal

1. Remove the relay cover by lifting it upwards.
2. Disconnect the two relays.



##### Refitting



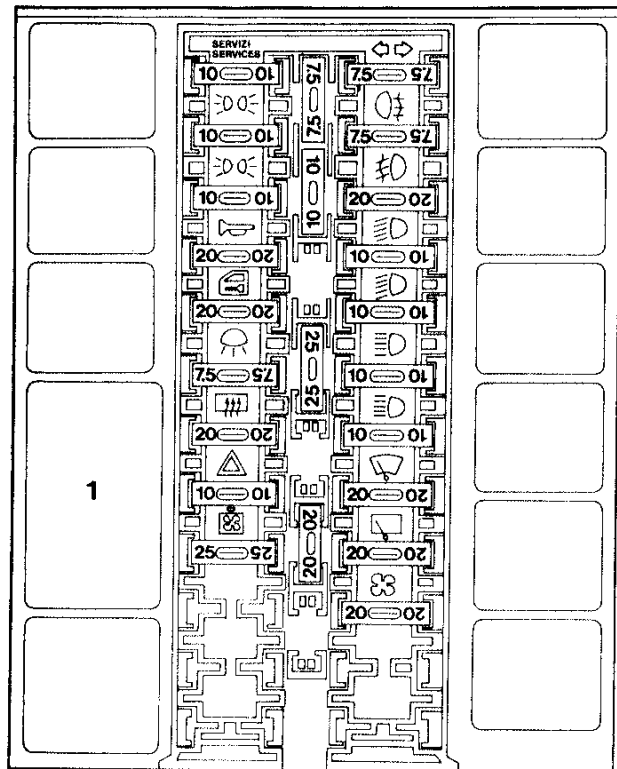
To refit, reverse the procedures followed for removal.

### DOOR LOCKING DEVICE CONTROL UNIT

#### REMOVAL AND REFITTING

##### Removal

1. The control unit is located in the main fusebox. To remove pull upwards.



##### Refitting



To refit, reverse the procedures followed for removal.

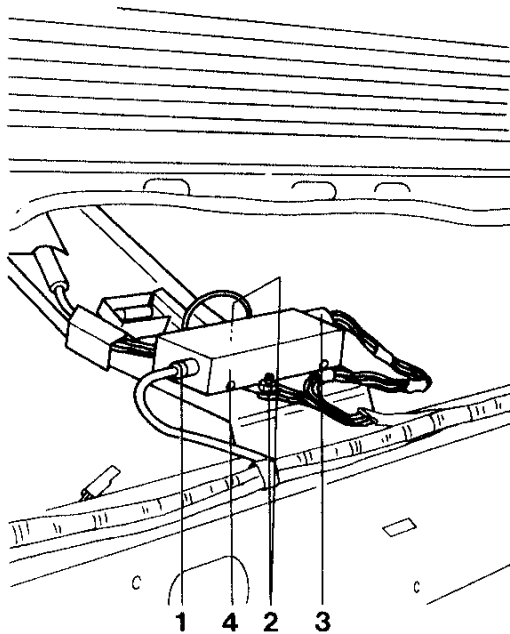


## HEATED REAR WINDOW AND ANTENNA CONTROL UNIT

### REMOVAL AND REFITTING

#### Removal

- The control unit is located inside the luggage compartment.
- 1. Disconnect the connector from the antenna.
- 2. Loosen the two nuts securing the support.
- 3. Disconnect the electrical connector.
- 4. Remove the control unit.



#### Refitting



To refit, reverse the procedures followed for removal.



## TECHNICAL CHARACTERISTICS AND SPECIFICATIONS

### TIGHTENING TORQUES

#### BOSCH ANTISKID (attachments)

Description	N·m	kg·m
Screw TE securing brake-clutch fluid reservoir to body (models with ABS)	3.7 + 4.8	0.38 + 0.49
Screw E securing hydraulic control unit to bracket	3.8 + 4.9	0.39 + 0.5