There are no special points concerning the removal and refitting of the battery.

However, tests must be performed and precautions taken in order to ensure that it operates correctly.

A - CHECKING

The following must be checked and ensured:

- that there are no cracks or fractures of the battery tray and cover;
- that the battery top is clean;
- that the terminals are in good condition.

It is essential:

- to ensure that no salts have accumulated on the terminals and clips (sulphation);
- if necessary to clean and grease them;
- to check that the clips are tightened correctly on the terminals. Poor contact may result in starting or charging incidents which risk causing sparks which could cause the battery to explode;
- to check the electrolyte level.

For batteries provided with sets of plugs which can be dismantled:

- either remove the cover by hand or using a tool (for example a rigid spatula);
- check that the electrolyte level in all components is well above the separators;
- if necessary top up the levels with demineralised water.

Note: some batteries have transparent trays which enable the electrolyte level to be seen.

Never add electrolyte or other products to the battery.

B - PRECAUTIONS

It should be remembered that a battery:

- contains sulphuric acid which is a dangerous product;
- when charging, produces oxygen and hydrogen; the mixture of these two gases produces a detonating gas, hence the risk of explosion.

1 DANGER = ACID

The sulphuric acid solution is a highly aggressive, toxic and corrosive product. It attacks the skin, clothing and concrete and corrodes most metals.

Thus it is most important when handling a battery to take the following precautions:

- protect the eyes with goggles;
- wear anti-acid gloves and clothing.

> If any acid is splashed, rinse all the soiled parts with copious amounts of water. If acid is splashed in the eyes, consult a doctor.

2 – DANGER = RISK OF EXPLOSION

When a battery is charging (either in the vehicle or removed from the vehicle), oxygen and hydrogen are formed. The formation of gas is at its maximum when the battery is completely charged and the amount of gas produced is proportional to the intensity of the charging current.

Oxygen and hydrogen combine in open spaces, on the surface of plates and form a detonating mixture. This mixture is highly explosive.

The slightest spark, a cigarette or a scarcely lit match are sufficient to cause an explosion. The detonation is so strong that the battery may shatter and the acid be dispersed in the surrounding air. Any persons situated in the vicinity are in danger (from splinters and splashes of acid). Splashes of acid are dangerous to the eyes, the face and the hands. They also attack clothing.

> Protection against the danger of explosion which is possible with a carelessly handled battery must therefore be taken very seriously. Avoid all risks of sparks.

- Ensure that all accessories are switched off before disconnecting or reconnecting the battery.

- When charging a battery stop the charger before connecting or disconnecting the battery.

- Never place any metal objects on the battery otherwise a short circuit will be produced between the terminals.

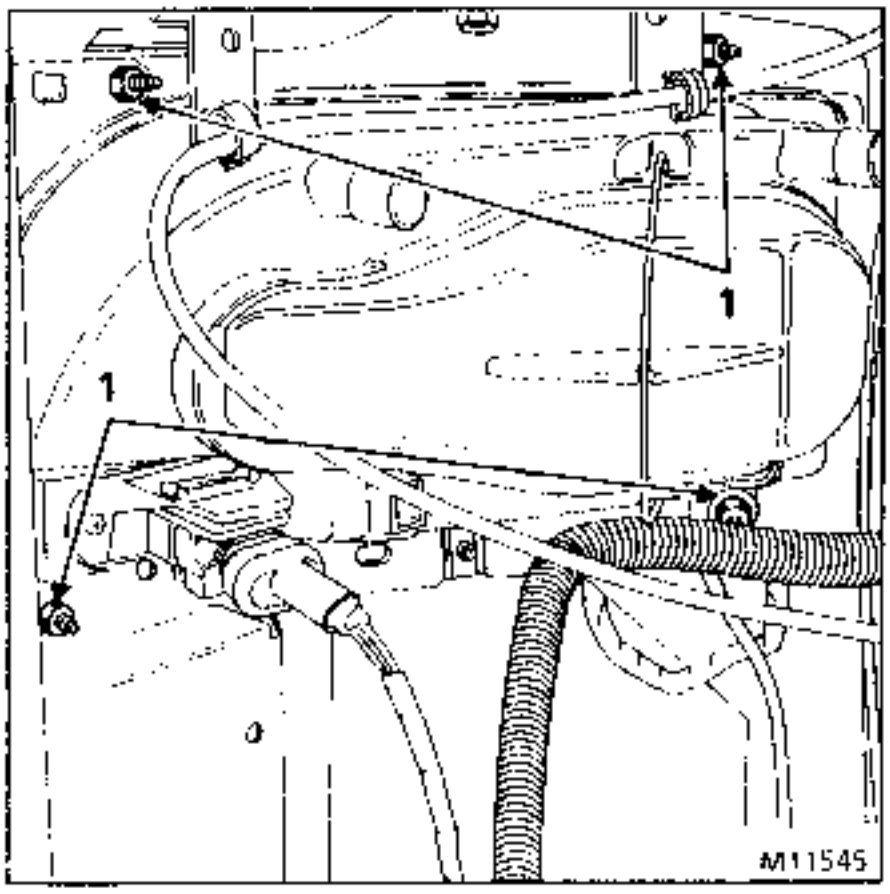
- Never bring a naked flame, blow lamp, hot air torch, cigarette or lighted match near a battery.

REMOVAL

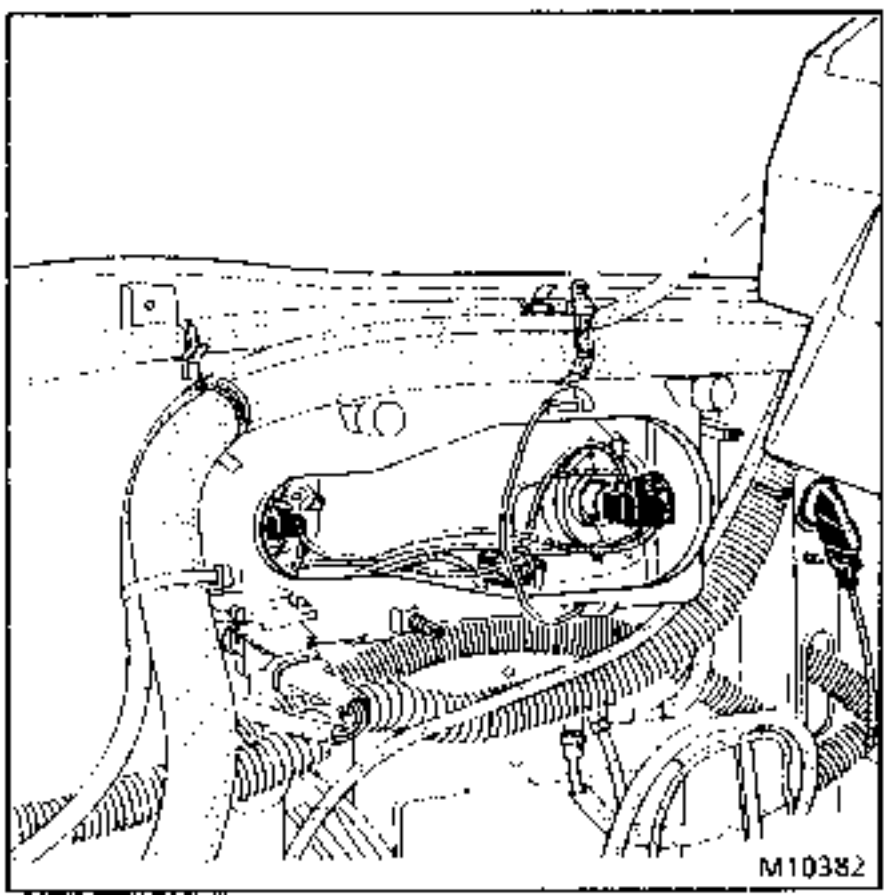
Disconnect:
- the battery;
- the light unit connectors from the direction indicator light.

Remove:
- the front grille mouldings (2 x 2 bolts) then the front grille (6 bolts);
- the direction indicator lights (clip) move it towards the front;
- the light unit by removing the four bolts (1).

Take the light unit out towards the front.



Unclip cover (2) to reach the bolts.



REFITTING

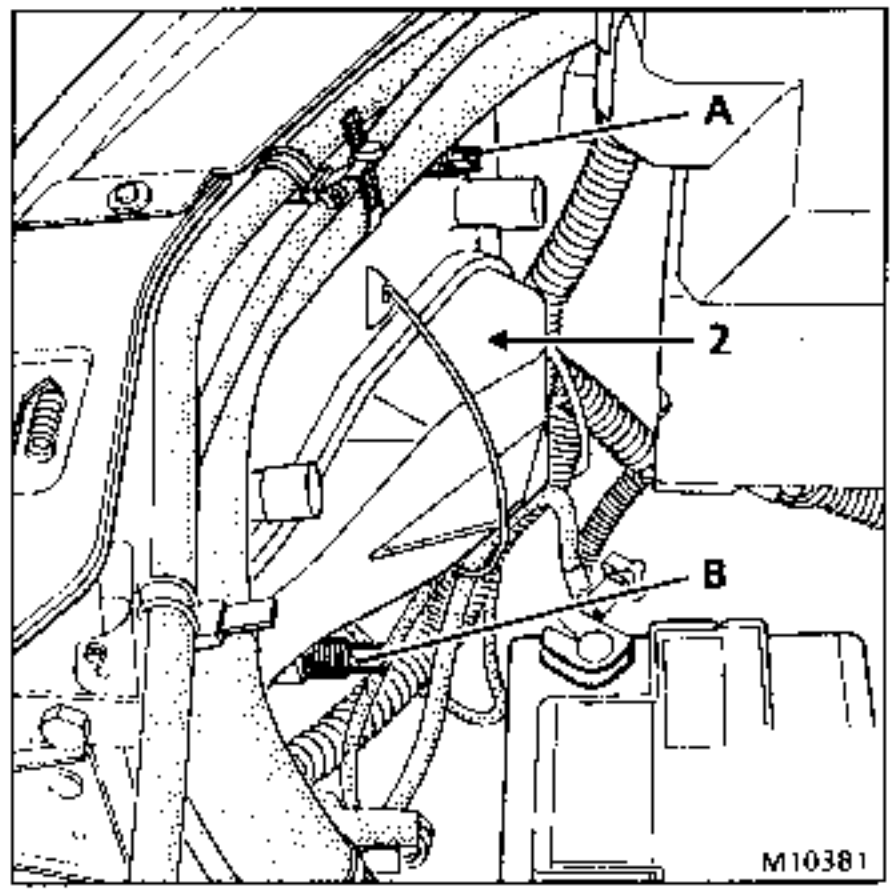
Proceed in a reverse order to removal.

After refitting the light unit, it must be adjusted.

ADJUSTING THE LIGHT UNITS

Vehicle unladen

Screw (A): beam height setting
Screw (B): beam direction setting

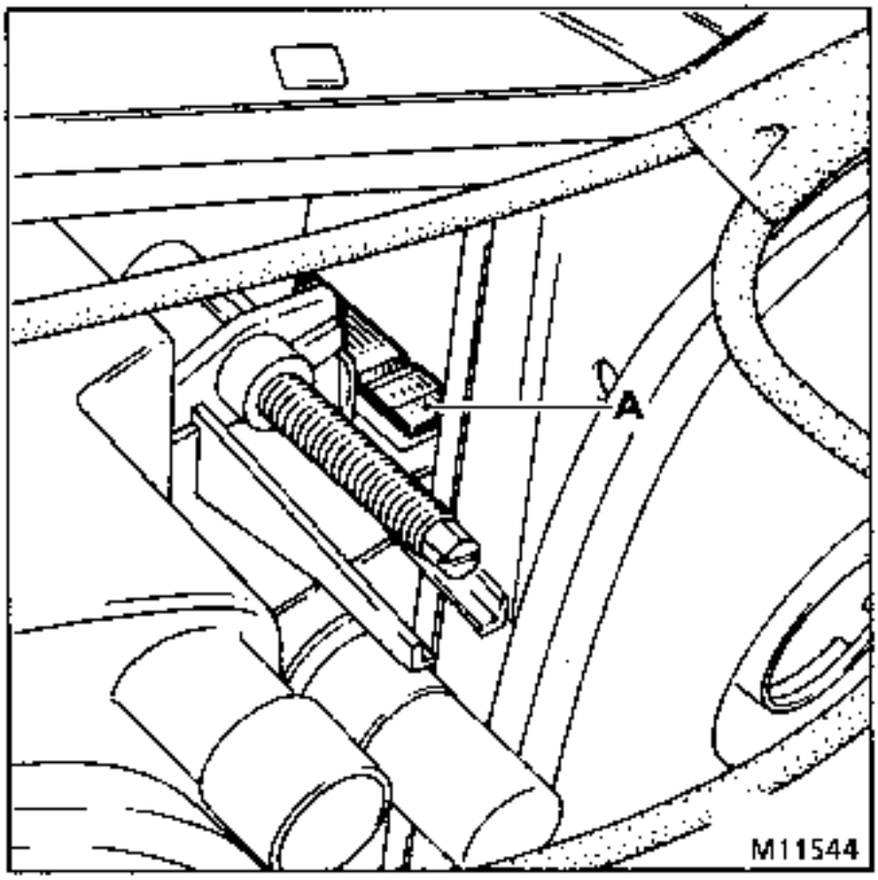


REMOVAL-REFITTING

Disconnect :

- the battery;
- the connector from the direction indicator light.

Pinch fastening (A) then release the light unit by moving it forwards.



On refitting, ensure that the direction indicator light is correctly clipped on the headlight.

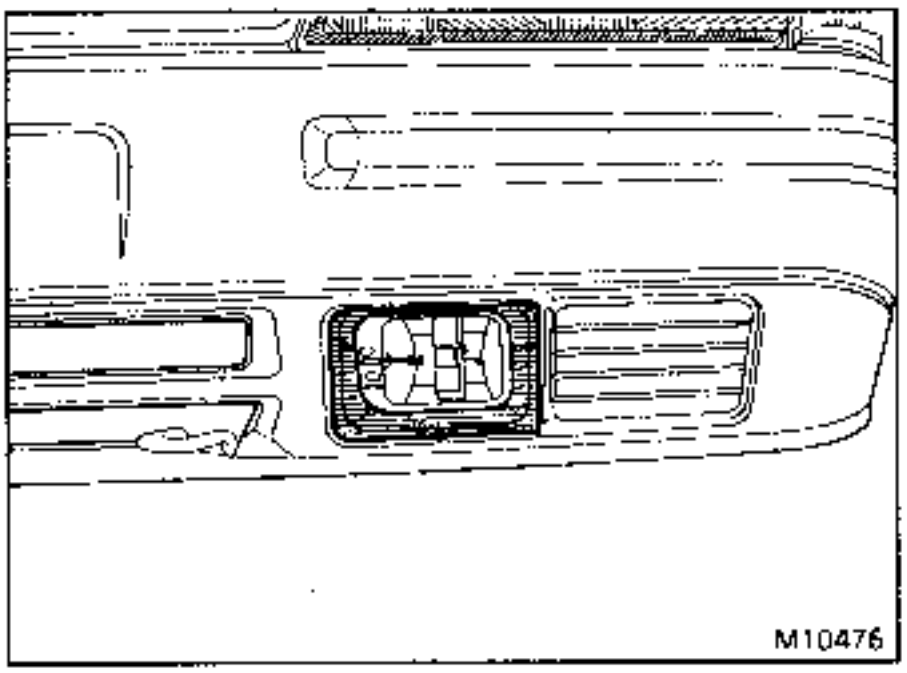
REPLACING THE BULB

With the light in place, turn the bulb holder one quarter of a turn and remove it.

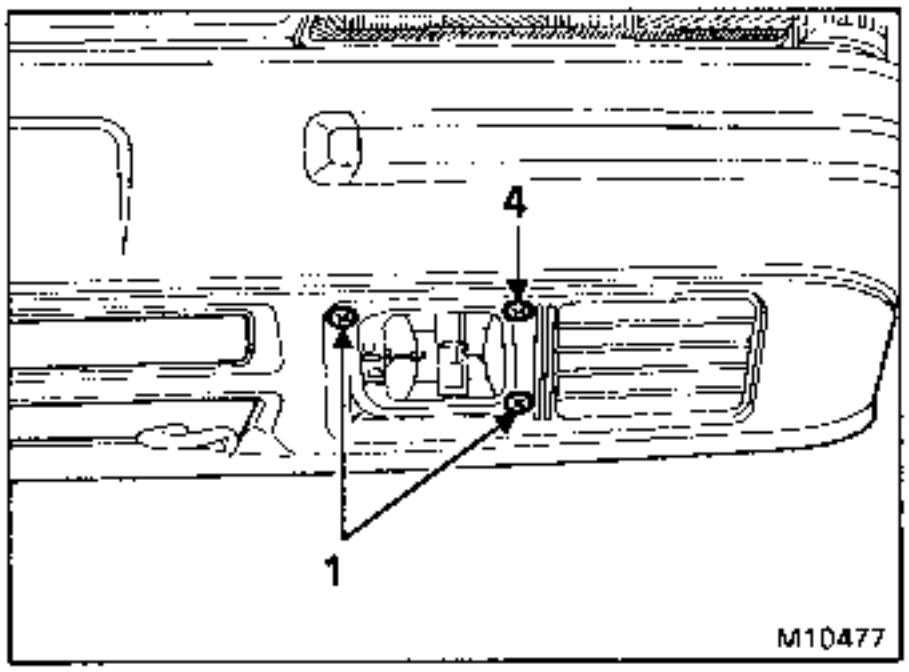
For versions equipped with front fog lights.

REMOVAL

Press the upper part of the moulding then tilt it forwards.



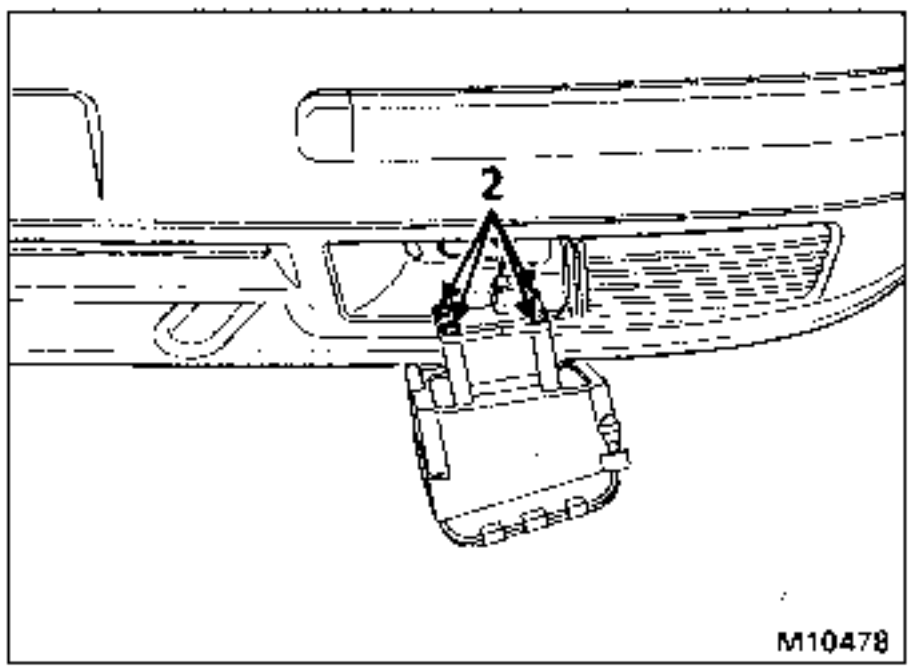
Unscrew the two mounting screws (1).



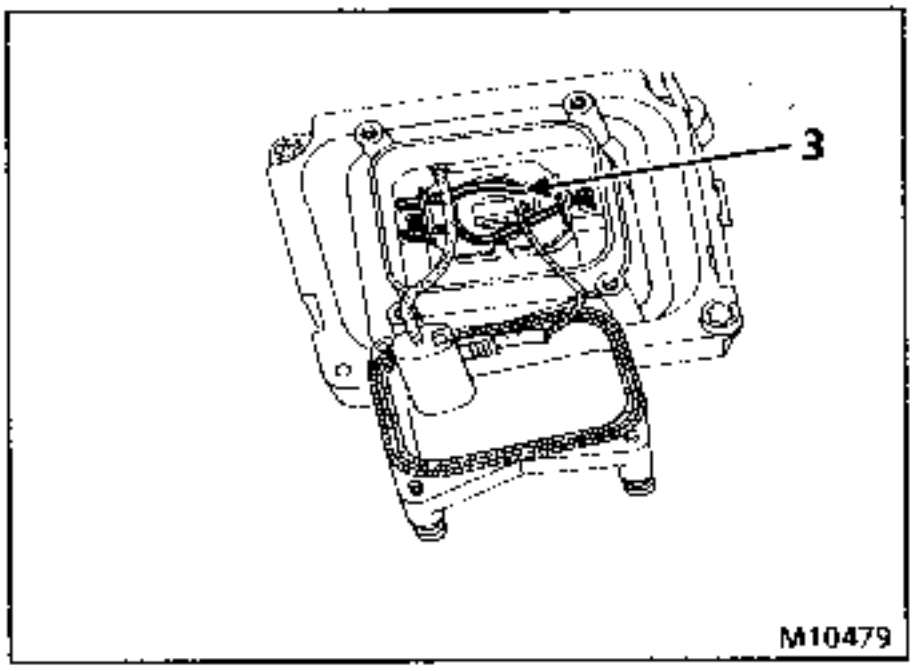
Take out the light unit towards the front of the vehicle then disconnect its connector.

CHANGING THE BULB

Unscrew the four screws (2) then remove the cover.



Unclip spring (3) then remove the bulb.

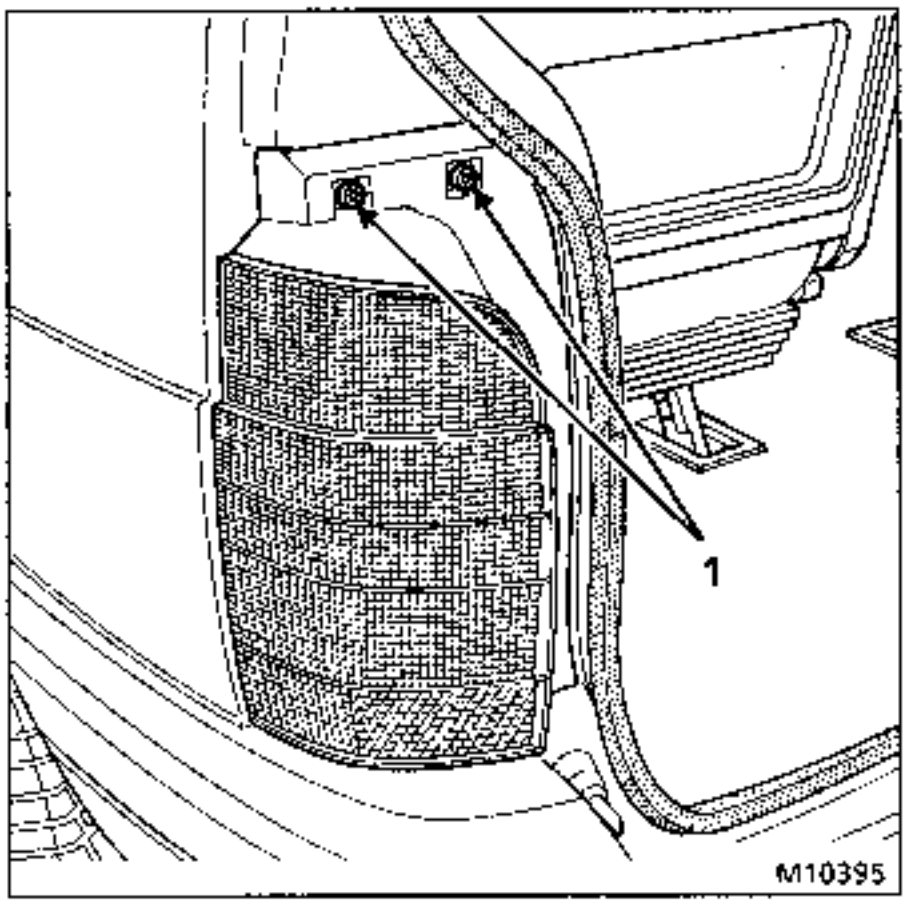


Hold the new bulb in a piece of cloth and place it on its mounting.

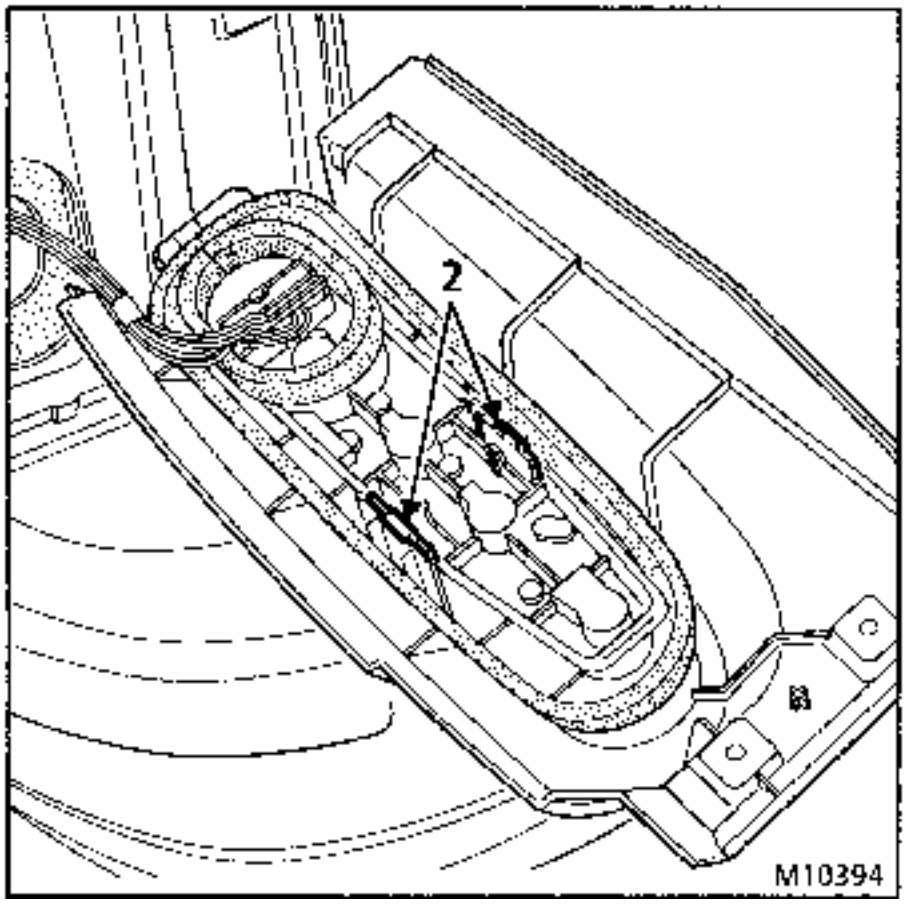
Turn screw (4) to adjust the beam height setting.

REMOVAL

Unscrew the two bolts (1).

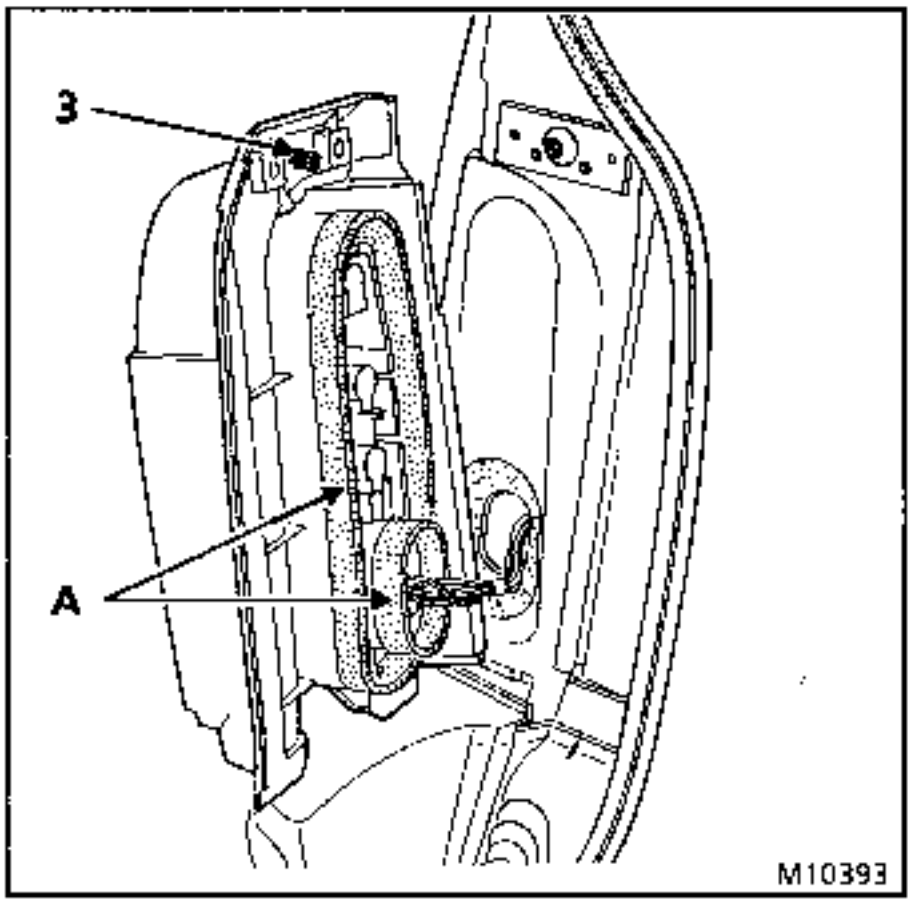


Remove the mounting plate by squeezing the two lugs (2).



REFITTING

Clip the plate on the light, pushing on each lug (2).
Position the light using centring pin (3). Take care not to pinch seals (A).
Secure the rear unit using two screws (1).



REAR LIGHT CONNECTIONS

Track	Description
2	direction indicator
3	reversing light
4	fog light*
5	earth
6	rear light
7	stop light

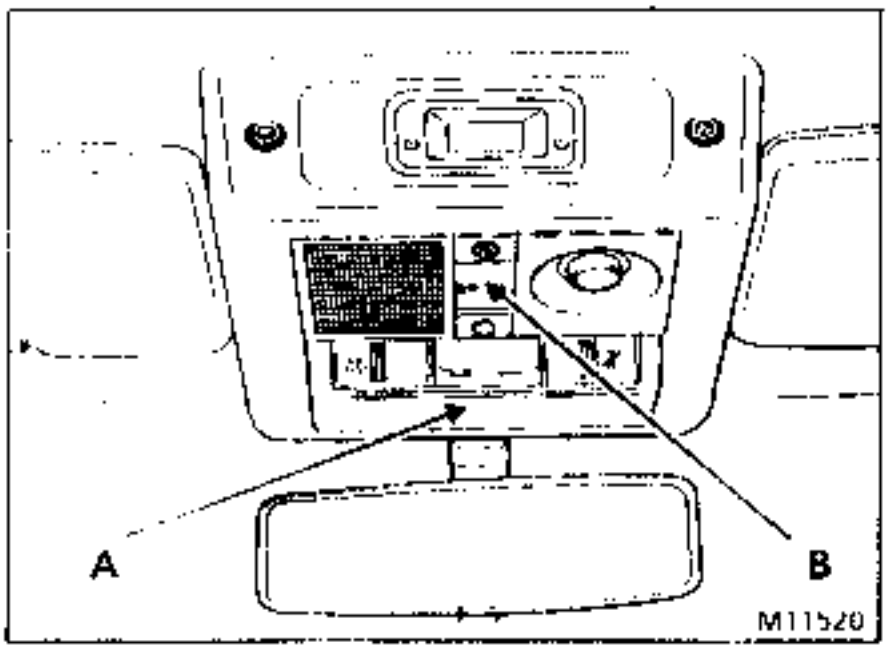
* on lefthand side only

The roof console must be removed in order to replace the map reading and interior light bulbs.

REMOVAL-REFITTING

Remove :

- plastic cover (A);
- blanking cover (B).



Remove the three screws which are then accessible.

REMOVING THE INTERIOR AND MAP READING LIGHTS

In both cases, the infra-red remote control receiver (if fitted) must be removed.

Disconnect the connectors.

INTERIOR LIGHT

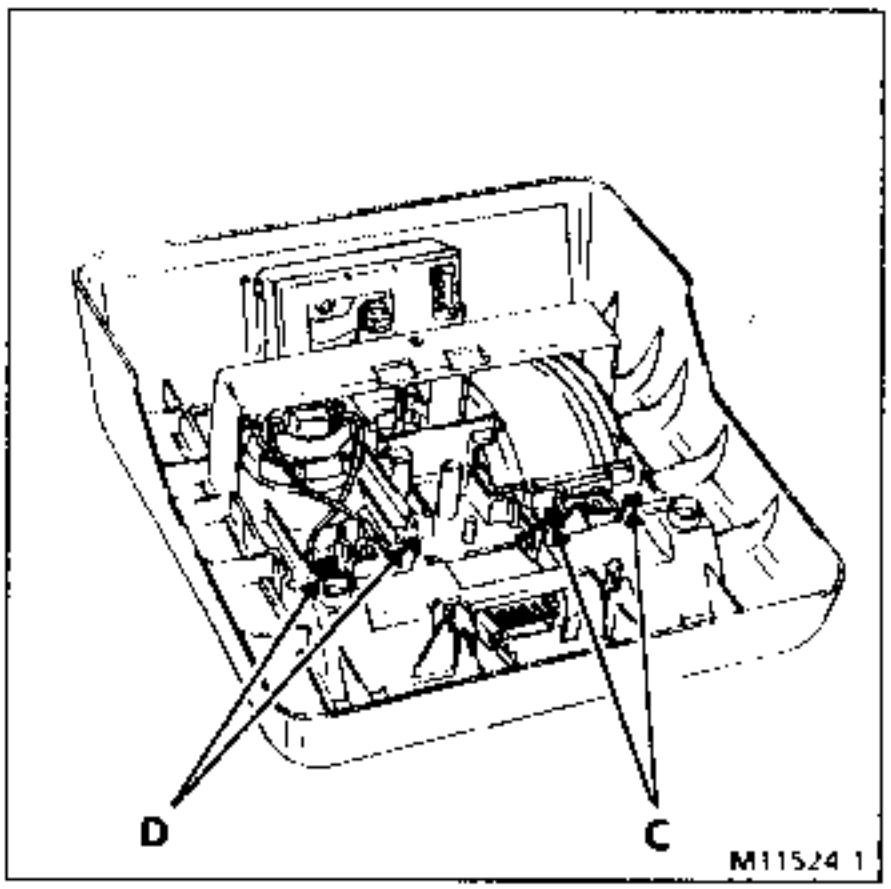
Carefully disengage lugs (C) and remove the switch light assembly.

NOTE: The switch cannot be dismantled.

MAP READING LIGHT

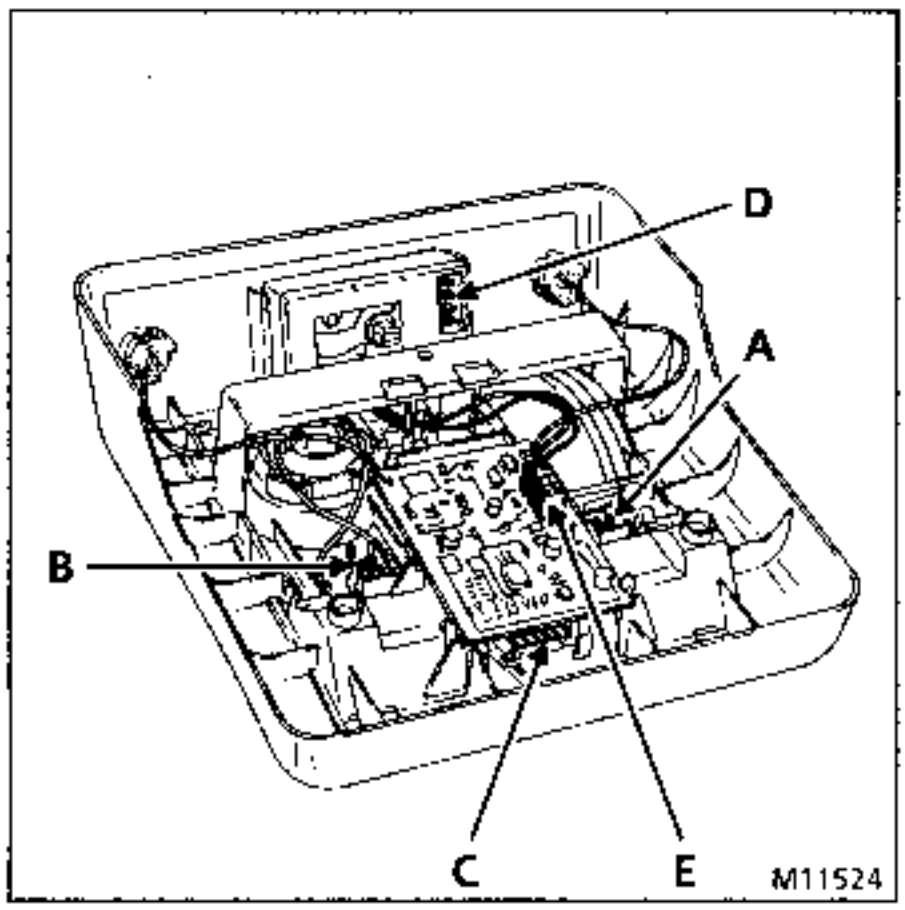
Gently separate lugs (D) and remove the switch-map reading light assembly.

NOTE: The switch cannot be dismantled.



Route the harness correctly on refitting.

CONNECTION



CONNECTORS

INTERIOR LIGHTING (A)

Track	Description
1	+ before ignition
2	interior light via timer
3	earth

MAP READING LIGHT (B)

Track	Description
1	· before ignition
2	earth
3	not used

INFRA-RED REMOTE CONTROL RECEIVER (C)

Track	Description
1	earth
2	opening switch
3	opening signal for alarm
4	closure signal
5	closure signal for alarm
6	+ before ignition

CLOCK (D)

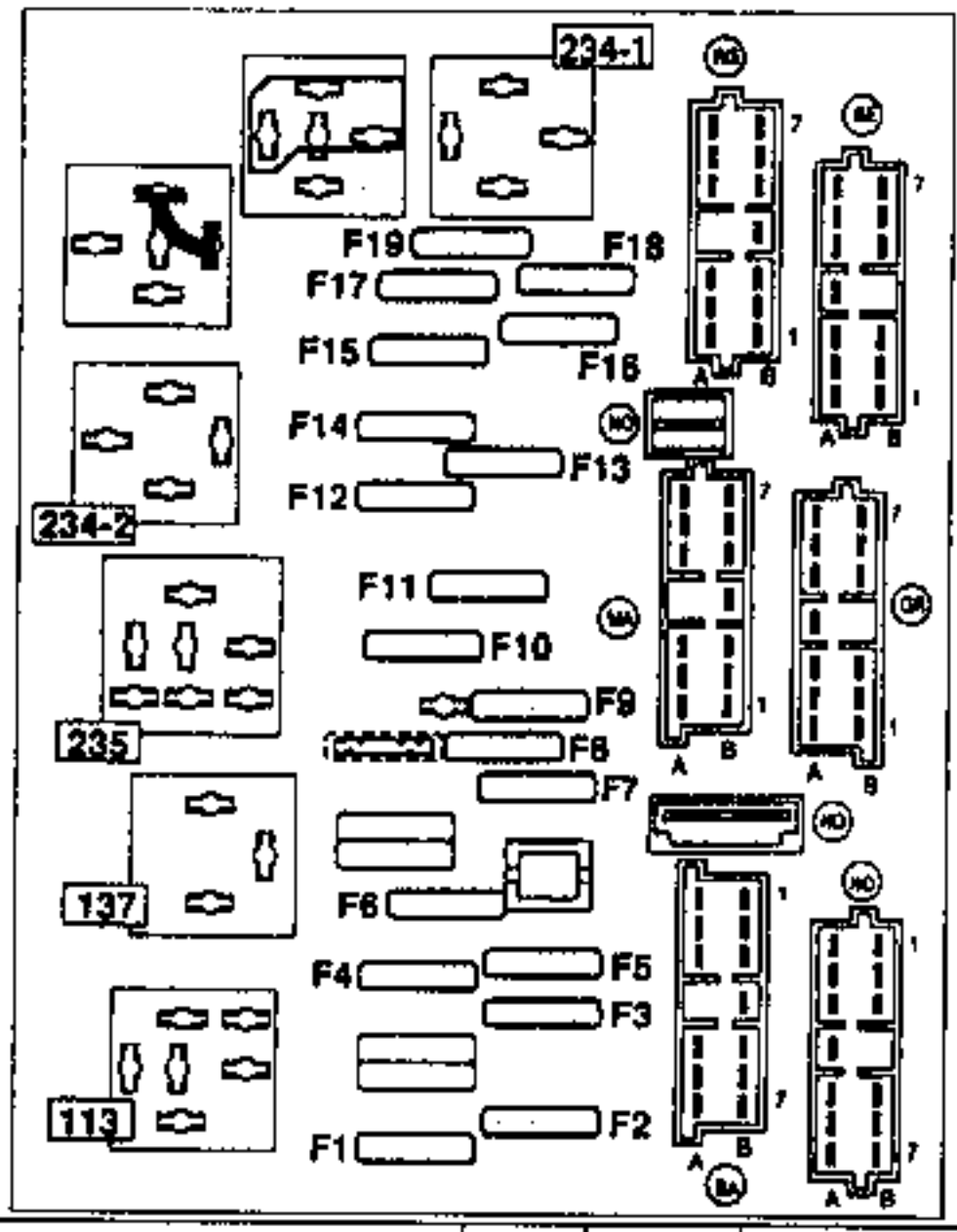
Track	Description
1	clock +
2	earth
3	+ after ignition
4	lighting +

INTERIOR LIGHT AND ALARM TIMER (E)

Track	Description
1	interior light
2	+ after ignition
3	ultra-sound sensing signal
4	ultra-sound feed
5	front lefthand pillar
6	+ before ignition
7	earth
8	alarm set warning light

FUSE BOX

This box is located in the glove box. Press on the two tabs to open it.



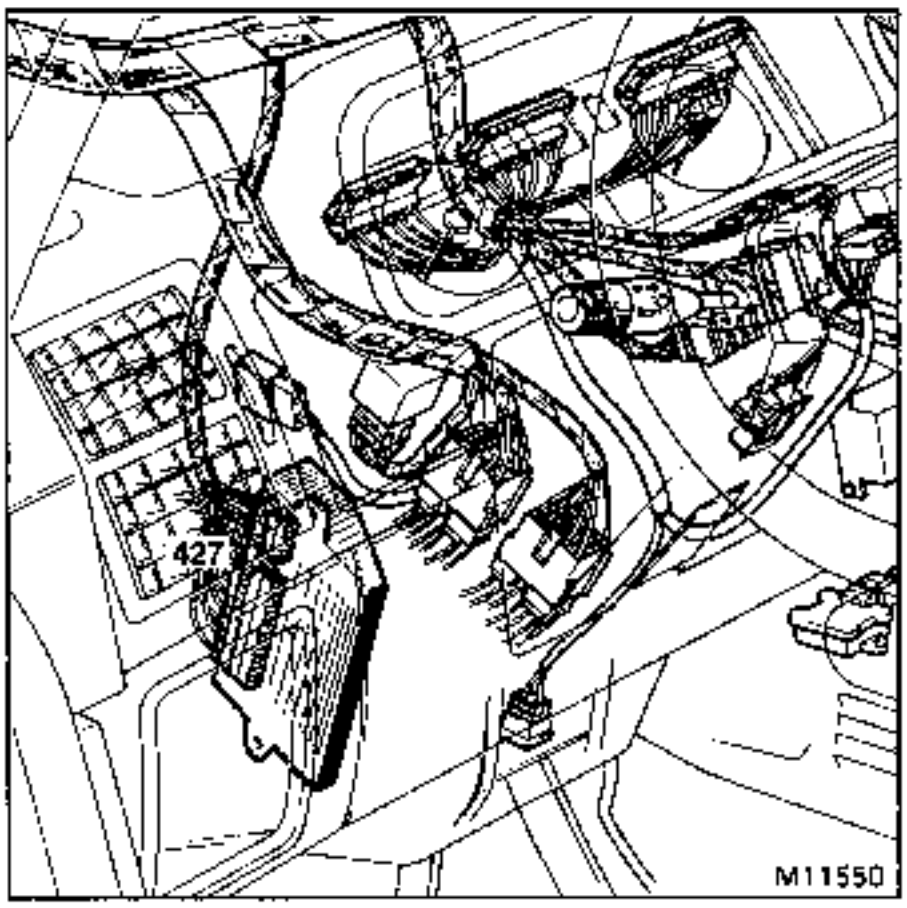
Fuse	Rating	Application
1	20A	Heated rear screen Heated rear view mirrors
2	5A	Righthand side and rear lights Trailer socket righthand side and rear lights (option)
3	5A	Rear fog light
4	10A	Lighting feed (El clock, radio, cigar lighter, glove box, heater control panel, headlight connector) switch lighting (console, passenger compartment)
5	20A	+ after ignition windscreen wiper contrined switch windscreen wiper relay reversing lights pneumatic suspension computer (optim)
6	15A	+ after ignition cigar lighter instrument panel assembly stop lights diesel heater alarm (option) El clock interior light timer E3
7	20A	radio + after ignition (option) windscreen wiper "park" rear screen wiper "park"
8	25A	+ before ignition lighting, main beam headlights, dipped beam headlights horn relay switch infra-red remote control (option) courtesy mirror (option) interior light console in roof (option) righthand and lefthand passenger compartment interior lights
9	5A	radio accessories + (option)
10	15A	accessories + alarm (option) hazard warning lights heater control panel
11	5A	lefthand side and rear lights trailer socket side and rear lights (option)
12	10A	front fog lights (E1-E2 option)
13	20A	heater fan 2nd speed
14	30A	electric front windows (E1-F2 option
15	20A	radiator thermal switch electric door locking relay
16	5A	spare fuse
17	7,5A	heater fan 1st speed
18	25A	electric rear window (E3)
19	7,5A	+ before ignition hazard warning lights electric rear view mirrors

1) DESCRIPTION

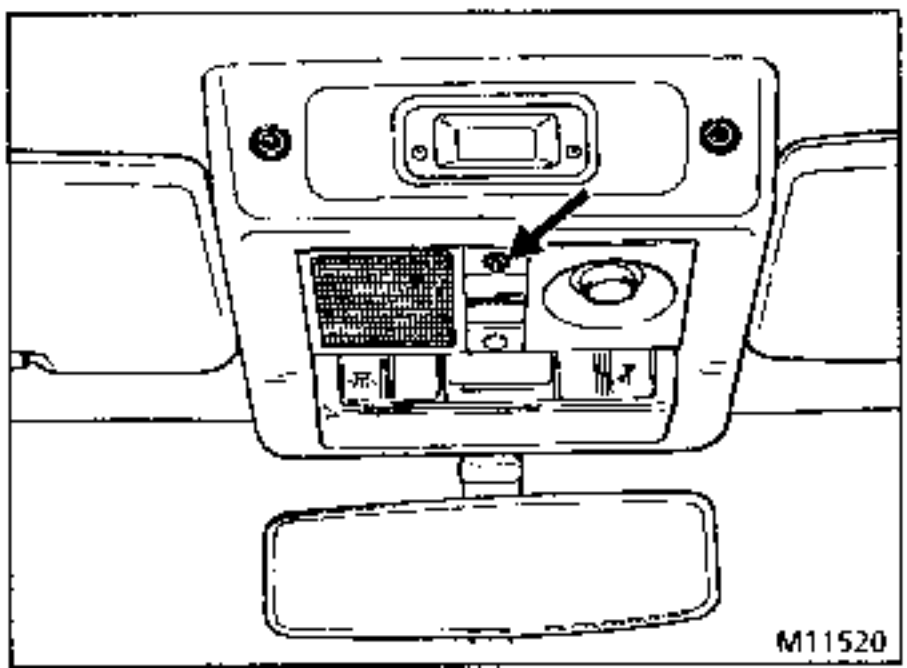
The burglar alarm consists of:
1 alarm computer for processing and managing data;
1 volumetric sensing unit (ultra-sound);
1 automatically fed siren.

2) LOCATION OF THE COMPONENTS

2.1 Alarm computer:
- Mounted on the lefthand side of the steering column mounting.



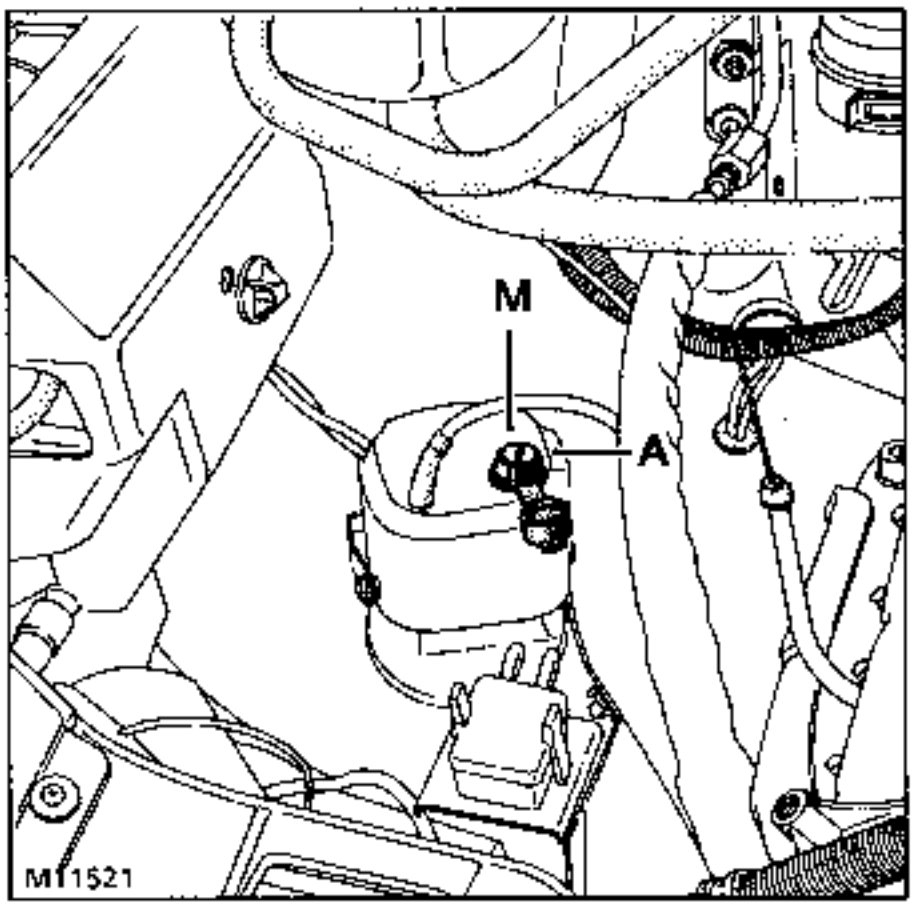
2.2 Volumetric sensing unit:
- on the central interior light with the infra-red remote control on which the warning light showing that the alarm is set is located.



2.3 Automatically fed siren:
- In the engine compartment on the lefthand side of the expansion chamber.

The siren is switched on and off by means of a lockable switch on the siren.

M: set
A: off



3) OPERATION

This alarm provides the vehicle with:
- volumetric protection of the passenger compartment via an ultra-sound field. Any alteration in the internal volume (disturbance of the ultra-sound emission and reception) will trigger the siren immediately;
- a perimetric protection system; as the alarm unit is connected to all the vehicle's opening elements (driver's door, passenger doors, tailgate and bonnet), if one of these units is opened the siren will also be triggered immediately.

4) LIGHT AND SOUND EFFECTS OF THE ALARM

In accordance with current legislation, once the alarm has been triggered, the dipped beam headlights, hazard warning lights, vehicle's siren operate alternately for twenty-five seconds. After thirty seconds' silence, the alarm is automatically re-armed and is again set.

NOTE: When the alarm has been triggered three times in succession it will be de-activated but the warning light will continue to flash as though the alarm were set.

5) SETTING THE ALARM

The alarm is set when the doors are locked using the infra-red remote control (it does not work if the door key is used). A closure signal is sent on track 6 of the alarm unit (15 track black MTIS connector)(see diagram).

This pulse activates the perimetric and volumetric sensing system. When the alarm is set the hazard warning lights will flash twice and the warning light on the interior light will illuminate. This light stays on for twenty seconds then flashes. This is the period during which the ultra sound sensor takes account of the volume of the passenger compartment. It will be reset whenever the alarm is set in order to take account of any changes in volume (if luggage or parcels are placed in the vehicle).

Whenever there is a change in volume after the alarm has been set (windows broken, foreign body braking into passenger compartment or any movement inside it) this will disturb the ultra sound emission field and trigger the alarm immediately. The same also applies for all the vehicle's opening elements which, when opened, earth the alarm unit via the door, bonnet and tailgate switches (see diagram).

Thus the alarm can only function normally if all the doors, the bonnet and tailgate as well as the windows are correctly closed.

ATTENTION. An animal left inside the vehicle may trigger the alarm when it moves.

If the alarm is triggered at the wrong time, check that the vehicle user has not hung any foreign objects from the rear view mirror. When setting the system, ensure that the hazard warning lights flash. If they do not, this indicates that the tailgate, bonnet or one of the doors is still open. In this case, the perimetric sensing system will not function.

When the tailgate, bonnet or door is closed the hazard warning lights will flash to indicate that the sensing system has been activated.

6) SWITCHING OFF THE ALARM

The alarm is switched off when the doors are unlocked using the infra-red remote control. An opening signal is emitted on track 3 of the infra-red remote control to track 5 of the alarm unit. This pulse switches off the perimetric and volumetric sensing systems (this also applies when the alarm is triggered). This is indicated by the hazard warning lights flashing and the warning light on the interior light going out.

ATTENTION: If the doors are opened using the key the alarm will not be switched off and it will not be cancelled if triggered.

7) DURATION OF OPERATION

If the alarm is set continuously for more than five weeks, there is a risk that the battery will no longer have sufficient power for the system and vehicle to operate correctly.

8) SIREN

When the siren is fitted, the vehicle must travel for 2½ hours in order for its internal battery to charge sufficiently to be triggered automatically.

9) TESTING THE ALARM

- Set the alarm using the infra-red remote control.
- Check that the hazard warning lights flash twice and the warning light illuminates.

10) PERIMETRIC SENSING TEST

- Unlock a door using the key and open it; the alarm should be activated (the dipped beam headlights, hazard warning lights and siren should operate alternately);
- stop the alarm using the infra-red remote control.

11) VOLUMETRIC SENSING TEST

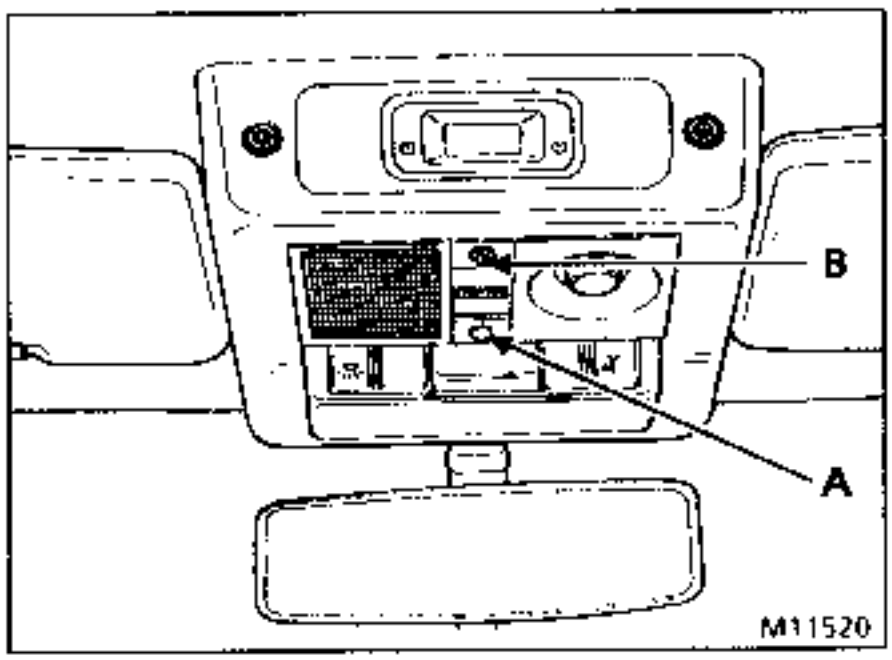
- Partially open a front or rear window.
- Set the alarm using the infra-red remote control and wait for the warning light to flash.
- Pass your arm through the opened window and move it about at mid-height in the passenger compartment; the alarm should be triggered; if it is not, adjust the sensitivity of the ultra-sound module.

12) TESTING THE SIREN

- Open the bonnet.
- Turn the siren switch to "M".
- Disconnect the siren. It should be activated.

13) ULTRA SOUND SENSITIVITY ADJUSTMENT

- Turn the ignition switch to the accessories position (1st notch); the warning light illuminates whenever movement is sensed but does not trigger the alarm.
- Remove rubber cover (A) which is located near the warning light.
- Using a small screwdriver, turn the potentiometer clockwise to increase the sensitivity or anti-clockwise to descrease it.
- Proceed in the same way until warning light (B) illuminates. When you stop, the warning light should extinguish.



14) CHECKING

- Open a window, get out of the vehicle and pass your arm through the window into the passenger compartment; the warning light should illuminate when you move your arm.
- Continue adjusting until the desired degree of sensitivity is reached. Refit the cover.

ATTENTION: Do not adjust the ultra sound system so that it is too sensitive as there is a risk of activating the alarm at the wrong time.

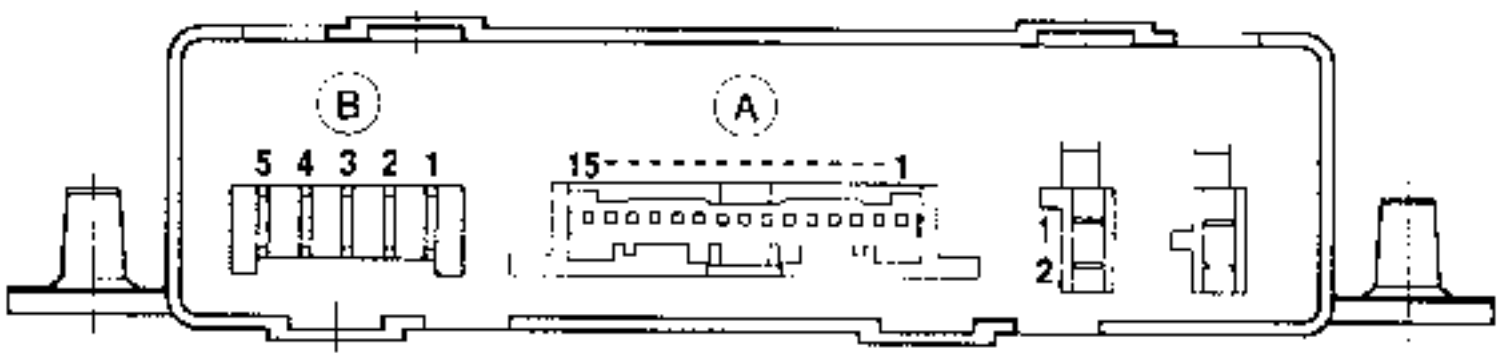
14) ALLOCATION OF ALARM UNIT CONNECTOR TRACKS

(A) 15 TRACK MTIS CONNECTOR

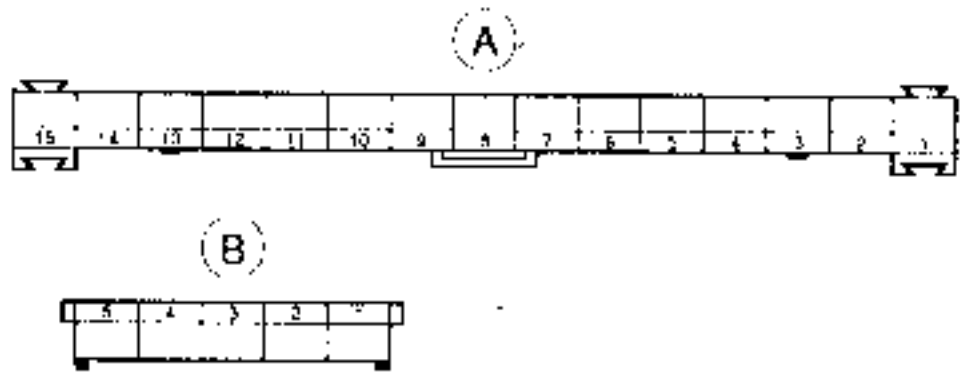
1	Automatically fed siren switch
2	+ 12V after ignition
3	Accessories + 12V (ignition 1st notch)
4	Earth
5	Plip opening signal
6	Plip closure signal
7	Driver's door switch
8	Not used
9	Passenger door switches
10	Tailgate switch
11	Bonnet switch
12	Not used
13	Ultra sound activation
14	Ultra sound detection
15	Warning light switch

(B) 5 TRACK CONNECTOR

1	Lefthand hazard warning lights
2	Righthand hazard warning lights
3	Dipped beam headlights
4	Not used
5	+ 12V before ignition



Alarm unit



Connectors at harness end

NOTE: The harness connectors are shown at the lead ends.

Check the condition of the fuses before performing any operations.

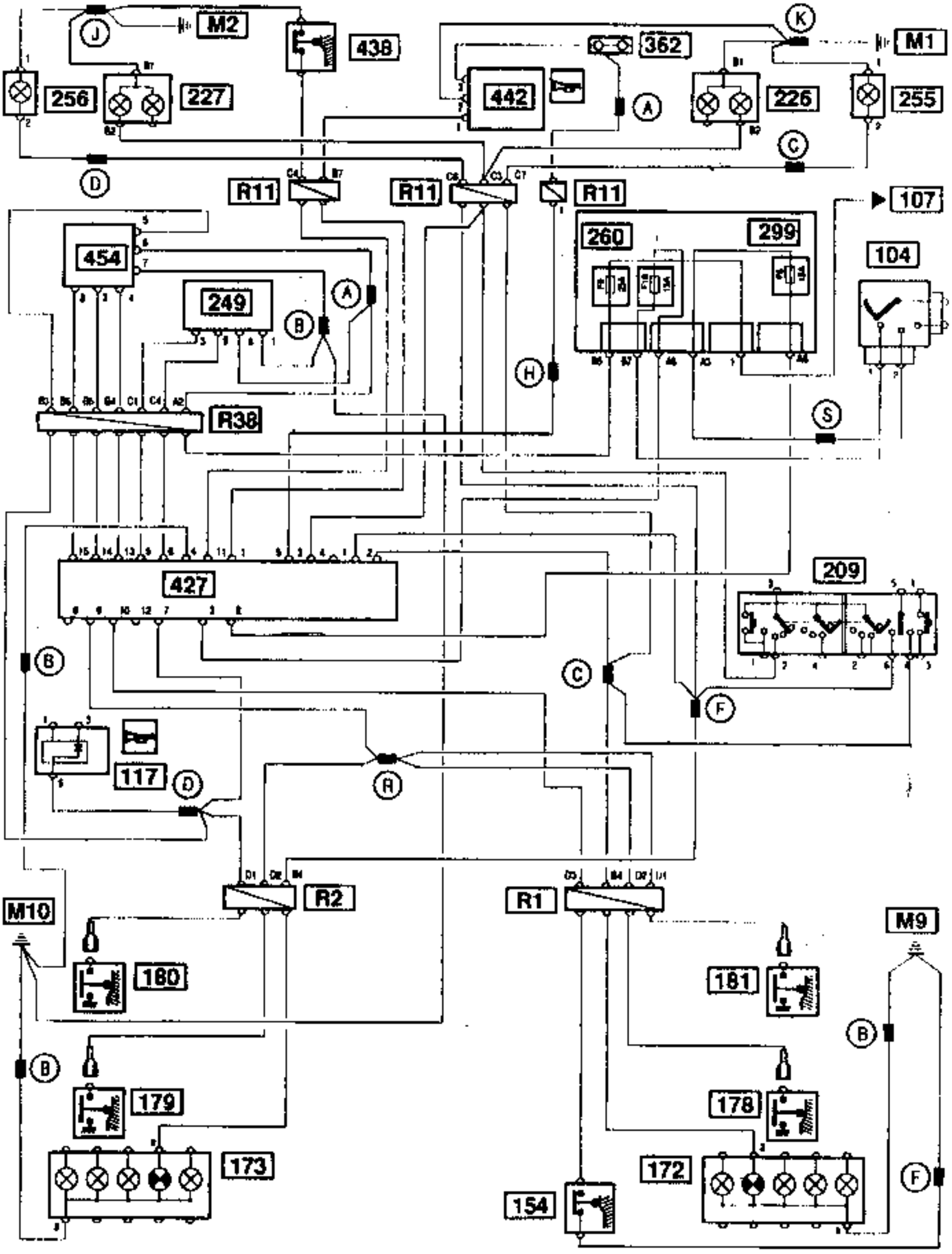
If an actuator does not operate (horn, dipped beam headlights, hazard warning lights): ensure that the activating element in question operates correctly when it is activated by the vehicle switch. If it operates correctly, change the alarm unit.

1 Impossible to set using plip	2 Impossible to switch off using plip	3 Triggered at wrong time without action on plip	4 Triggered at wrong time with action on plip	5 Impossible to switch off using switch	6 Warning light extinguishes	7 Warning light permanently illuminated	8 Impossible to adjust ultra sound sensitivity	9 Perimetric sensing system not operating	10 Ultra sound system not operating	11 Small squeaks coming from siren	POSSIBLE CAUSES
•	•	•							•		No plip earth
•	•										No + 12V on plip
							•		•		Ultra sound sensing lead earthed
							•		•		Ultra sound sensing lead connected to + 12V
			•				•		•		Ultra sound sensing lead removed
						•	•				Warning light switch lead earthed
					•		•				Warning light switch lead connected to + 12V
					•		•				Warning light switch lead removed
					•		•		•		Ultra sound trigger lead earthed
							•		•		Ultra sound trigger lead connected to + 12V at sensing unit
					•		•		•		Ultra sound trigger lead removed
	•										Clip opening lead earthed
•	•				•			•	•		Clip opening lead connected to + 12V
	•										Clip opening lead removed
•											Clip closure lead earthed
	•										Clip closure lead connected to + 12V
•											Clip closure lead removed
				•						•	Siren control lead earthed
				•							Siren control lead connected to + 12V
				•						•	Siren control lead removed
•	•						•	•	•		Accessories - permanently present
							•				Accessories + permanently absent
•								•	•		+ AFC permanently present
•											Alarm unit not earthed
•	•				•		•		•		Alarm unit has no permanent + 12V
		•		•						•	No siren + 12V
		•		•						•	Siren not earthed
•											Switch shorting
				•							Switch circuit open
			•					•			Switches shorting
								•			Switches circuit open
			•						•		Adjust ultra sound sensitivity

See Diagram

If the incident persists when all possible causes have been checked, apply the following solution for each particular case:

1	2	3	4	5	6	7	8	9	10	11	
		•		•						•	Change the siren
			•		•	•			•		Change volumetric sensing system
•	•			•	•	•	•	•	•	•	Change alarm unit
•				•							Change switch
•	•	•									Change plip

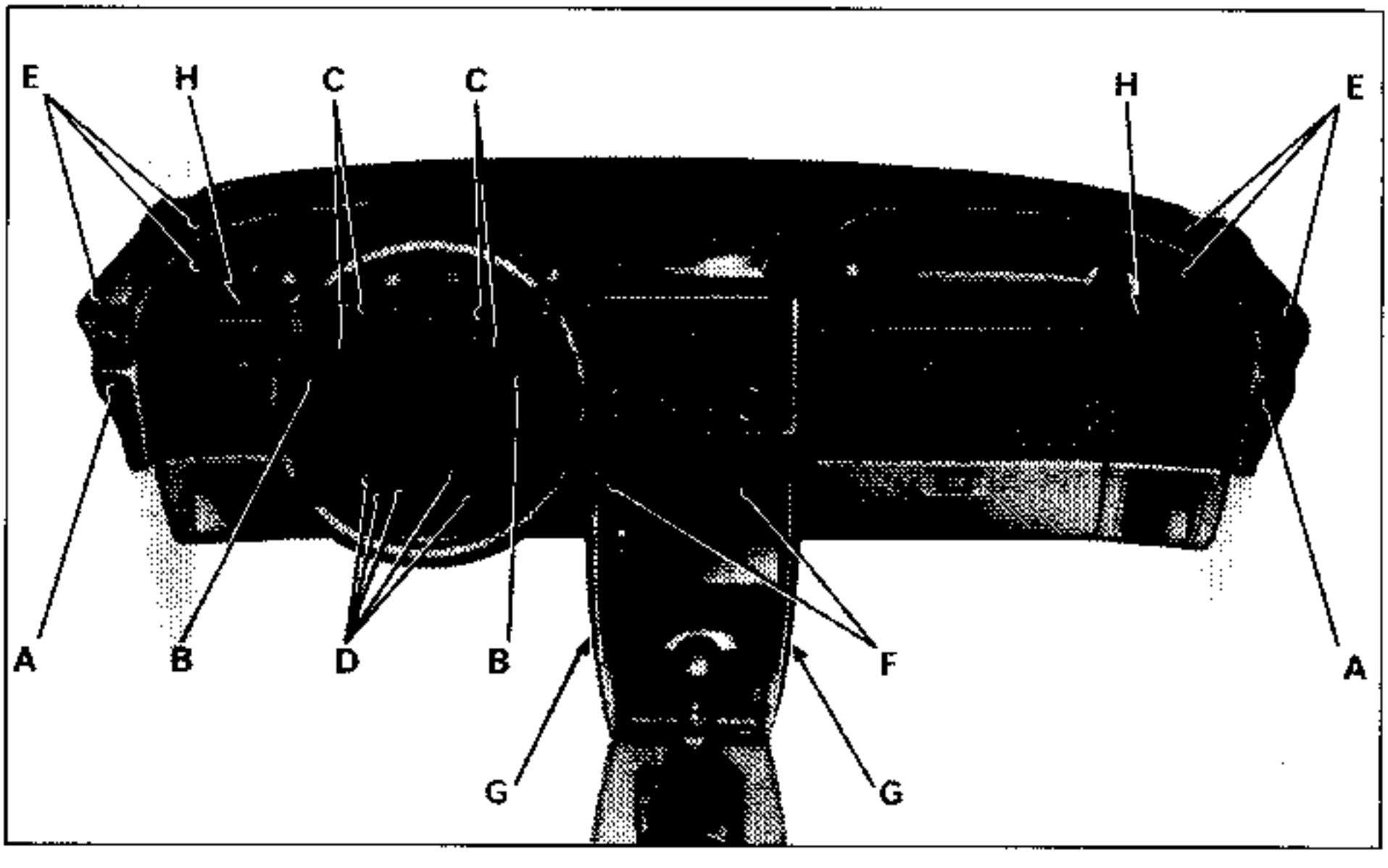

M2
438
362
M1
256
227
442
226
255
R11
R11
R11
107
454
260
299
104
249
R38
427
209
117
R2
R1
M10
M9
180
181
179
178
173
172
154

M10498

104	Ignition switch
107	Battery
117	Lights "on" reminder buzzer
154	Tailgate switch
172	Righthand rear light
173	Lefthand rear light
178	Rear righthand door switch
179	Rear lefthand door switch
180	Front lefthand door switch
181	Front righthand door switch
209	Switch stalk
226	Righthand headlight
227	Lefthand headlight
249	Infra-red remote control
255	Front righthand direction indicator
256	Front lefthand direction indicator
260	Fuse box
299	Accessories plate
362	Battery + terminal plate
427	Alarm computer
438	Bonnet switch
442	Siren
454	Ultra sound sensor

R1	Junction: dashboard harness/righthand passenger compartment harness
R2	Junction: dashboard harness/lefthand passenger compartment harness
R11	Junction: dashboard harness/engine compartment harness
R38	Junction: dashboard harness/flip and map reading light harness

M1	Front righthand earth
M2	Front lefthand earth
M9	Front righthand pillar earth
M10	Front lefthand pillar earth



REMOVAL (RÉSUMÉ OF THE SEQUENCE)

To remove the dashboard, several operations for removing parts of the sub-assembly must be performed before the bolts securing the dashboard to the chassis can be reached.

Disconnect the battery.

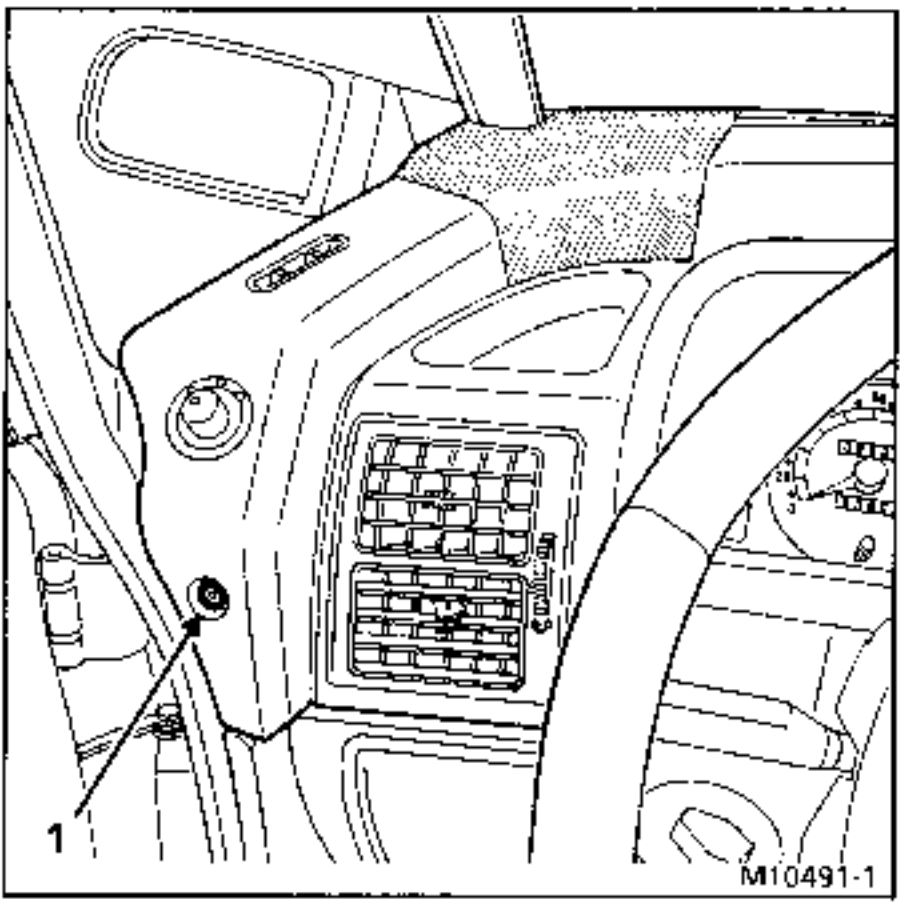
Remove:
- the steering wheel;
  the LH and RH dashboard outer trim sections (2 x 1 bolt (A).
- the two speaker grilles;
- the instrument panel casing (2 bolts (B))
- the instrument panel;
- the instrument panel support (4 bolts (C));
- the half-shell under the steering wheel (5 bolts (D));
- the half-shell from the steering wheel;
  the upper part of the dashboard (2 x 3 bolts (E)).

Disconnect the connectors:
- from the console switches;
- from the longitudinal sensor (ABS 4 x 4 version).

Remove:
- the accessories plate;
- the relay mounting plate (2 bolts);
- the console rear mounting bolts (2 bolts (F));
- the console side mounting bolts (2 x 1 bolt (G));
- the bolts securing the lower part of the dashboard to the cross member (2 x 3 bolts (H));
- the lower part of the dashboard.

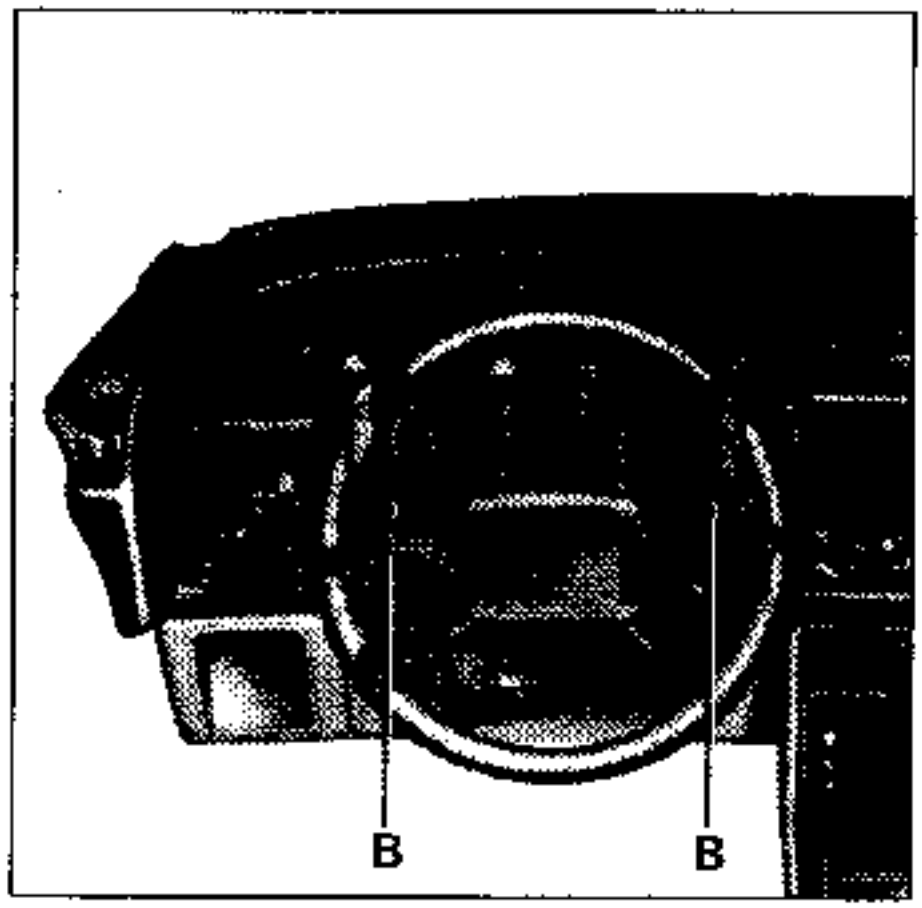
REMOVAL

- Disconnect the battery.
- Remove the steering wheel.
- Remove the dashboard outer trim sections : remove bolt (1) from each side then pull each trim section horizontally towards the rear of the vehicle. Unclip the side ventilator end pieces. Disconnect the connector from the electric rear view mirror control or unscrew the manual rear view mirror control (under the gaiter).

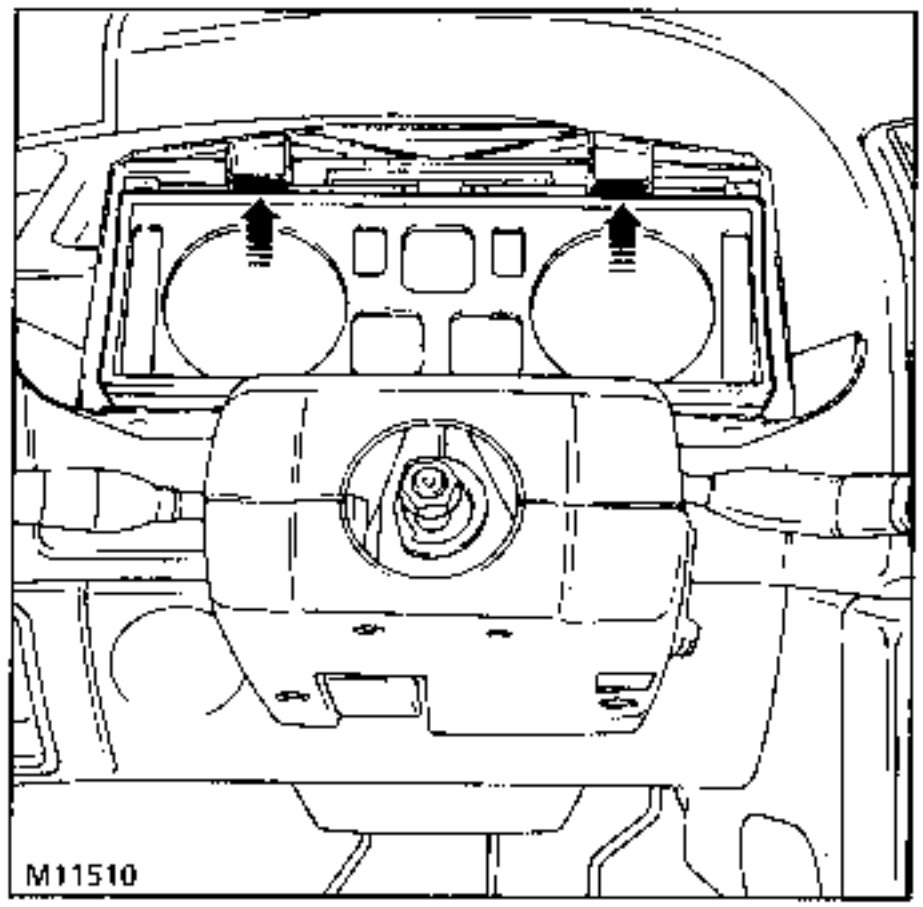


Unclip the front speaker grilles.

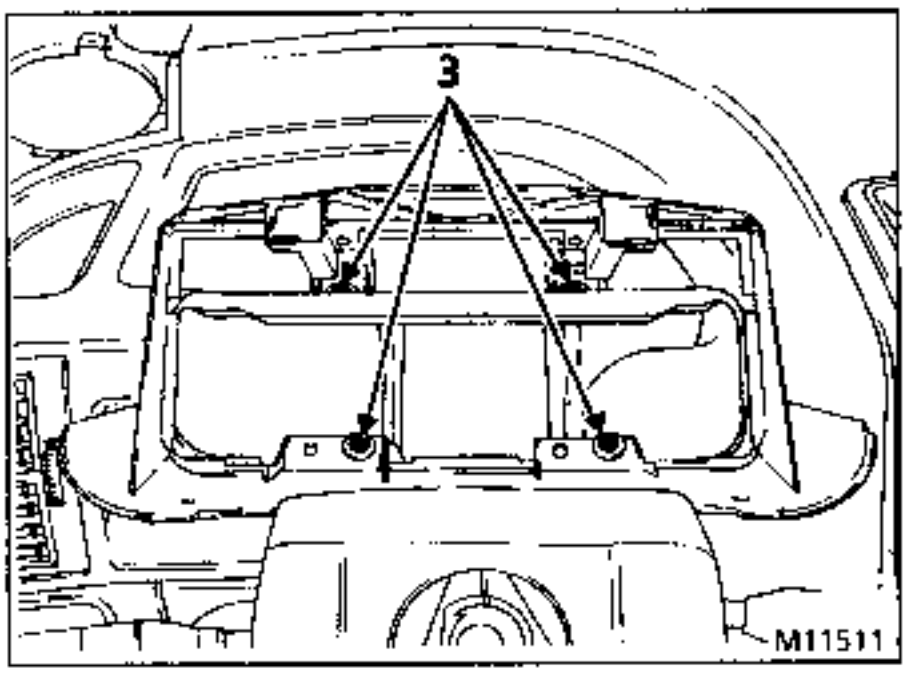
- Remove the speakers (if fitted).
- Remove the instrument panel casing:
  unscrew the two bolts (B).



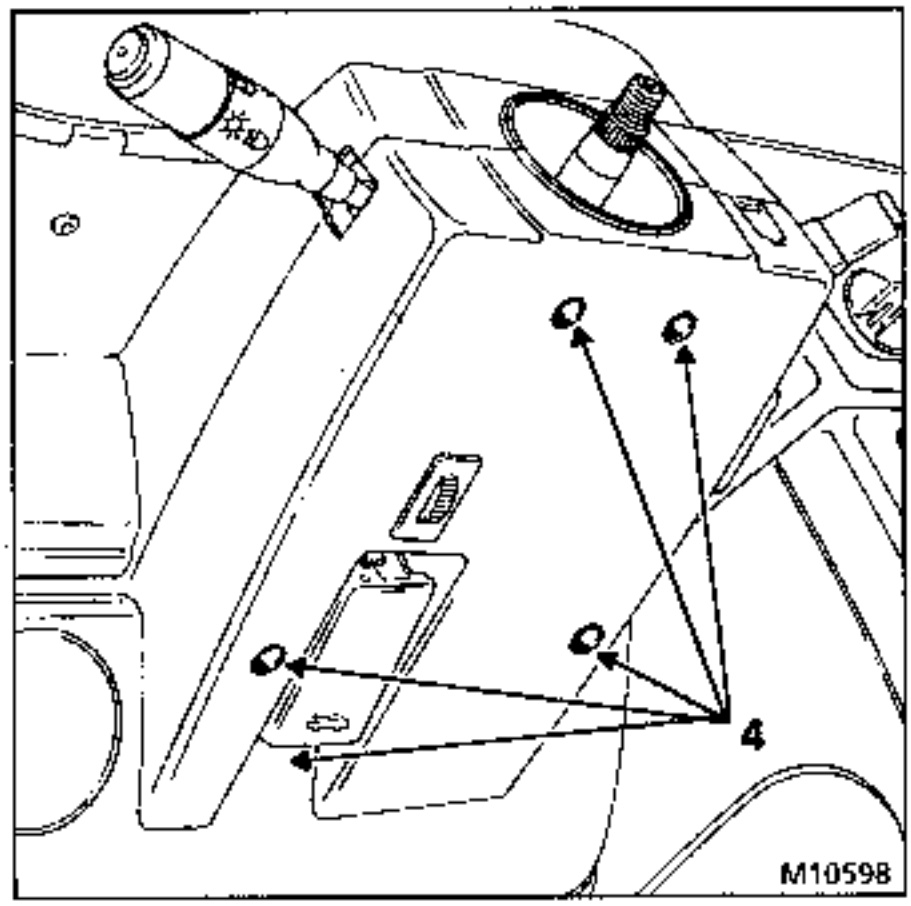
- Remove the instrument panel, for this purpose disconnect:
  the speedometer cable;
  the instrument panel connectors;
  the turbo pressure hose (depending on version);
  raise the instrument panel to free the 3 clips then pull it towards the inside of the vehicle.



Remove the mounting from the instrument panel by unscrewing the four bolts (3).

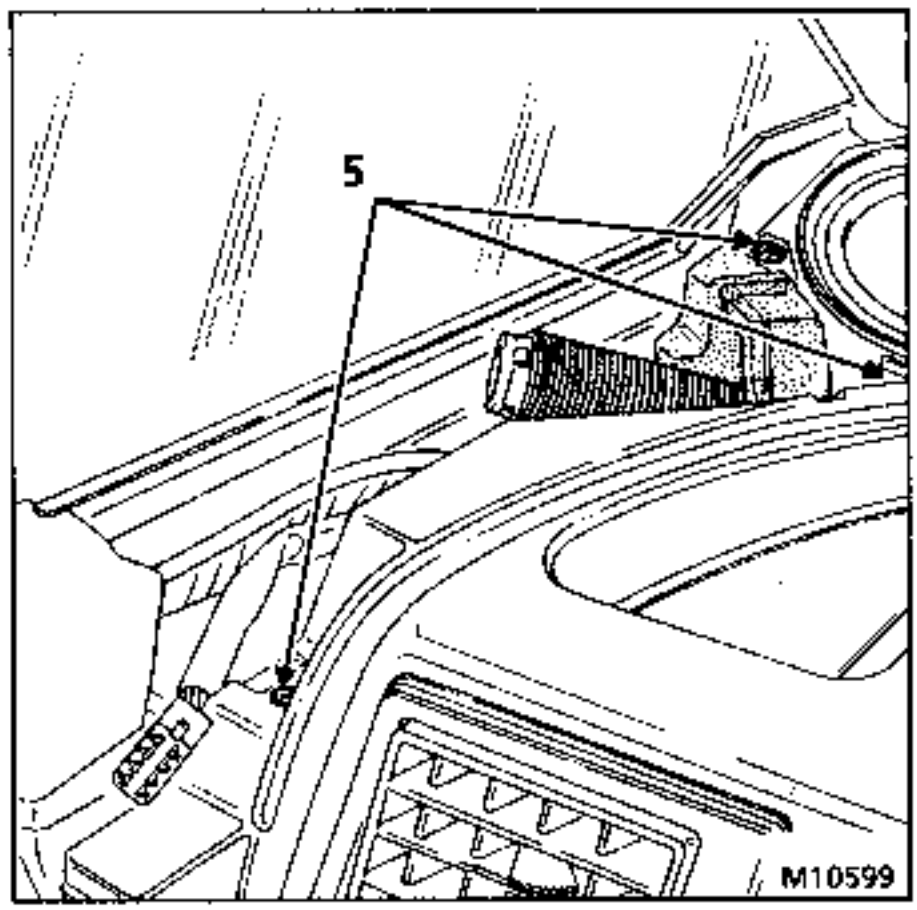


Remove the half-shell under the steering wheel: unscrew the five bolts (4), unscrew slightly the bolt securing the radio satellite (depending on version) and disconnect the lighting rheostat.



Remove the half-shell from the steering wheel.

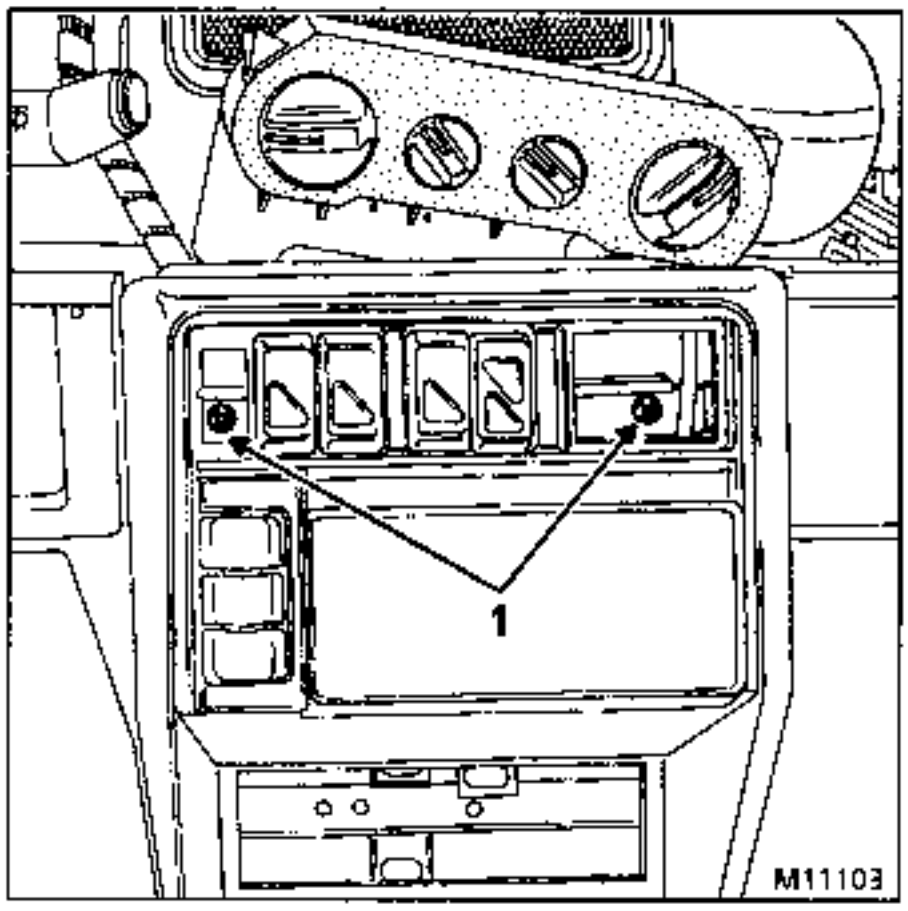
Remove the upper part of the dashboard:
unscrew the three bolts (5) on each side.



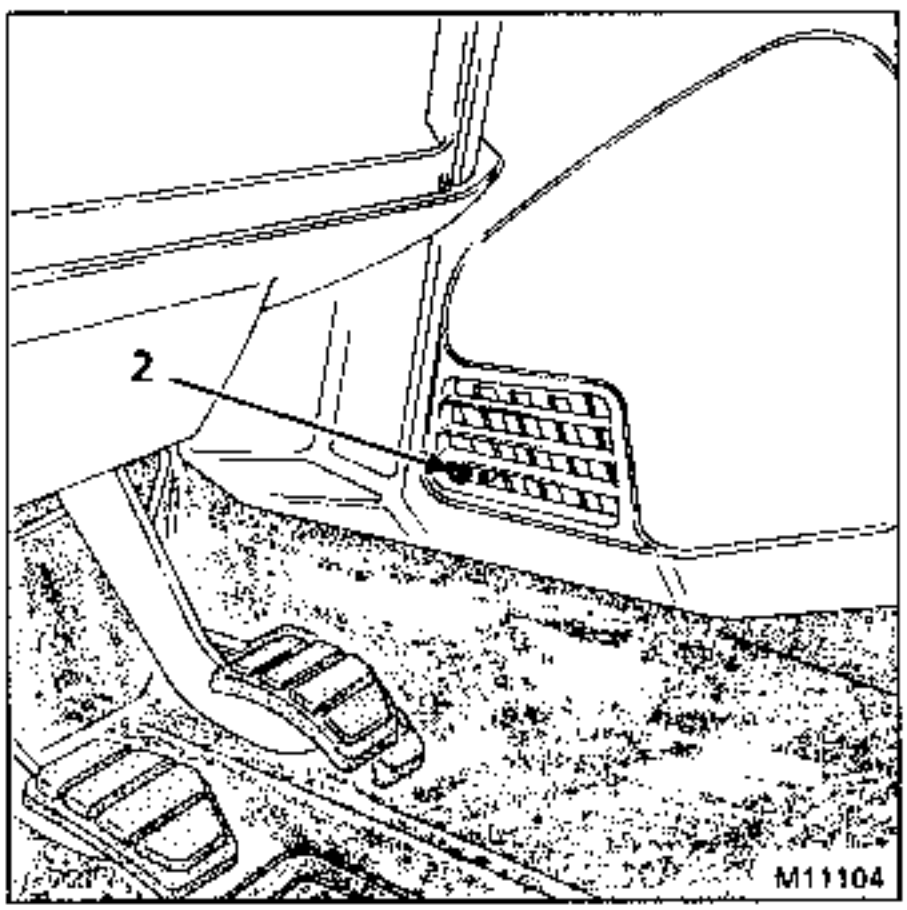
Raise the upper part of the dashboard then unclip the heater control panel, pushing on its front face.
Pull the upper part of the dashboard towards the inside of the vehicle.

REMOVAL(LOWER SECTION REMOVED)

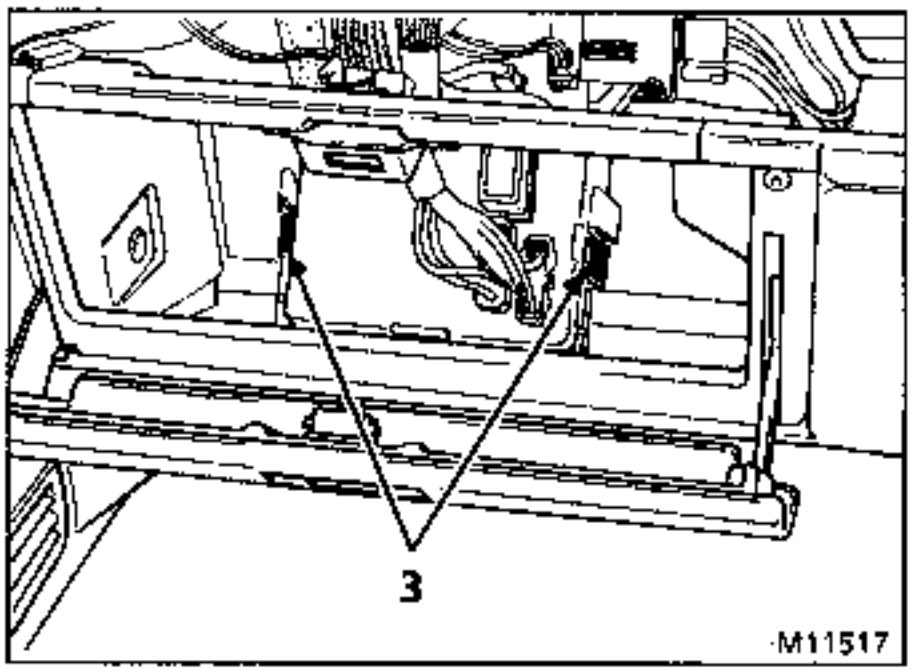
- Remove the radio (if fitted).
- Disconnect the connectors:
  from the console switches;
  from the longitudinal sensor (ABS 4x4).
- Unscrew the two bolts (1) securing the rear of the console.



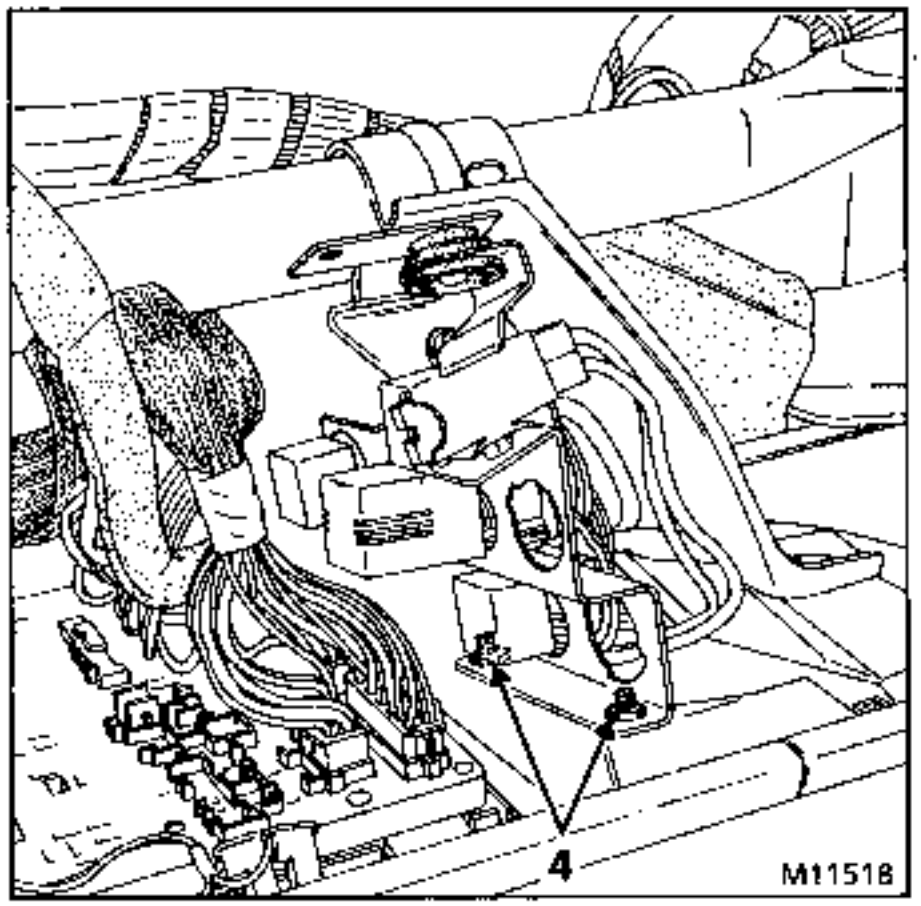
- On each side unscrew bolt (2) securing the console at the side.



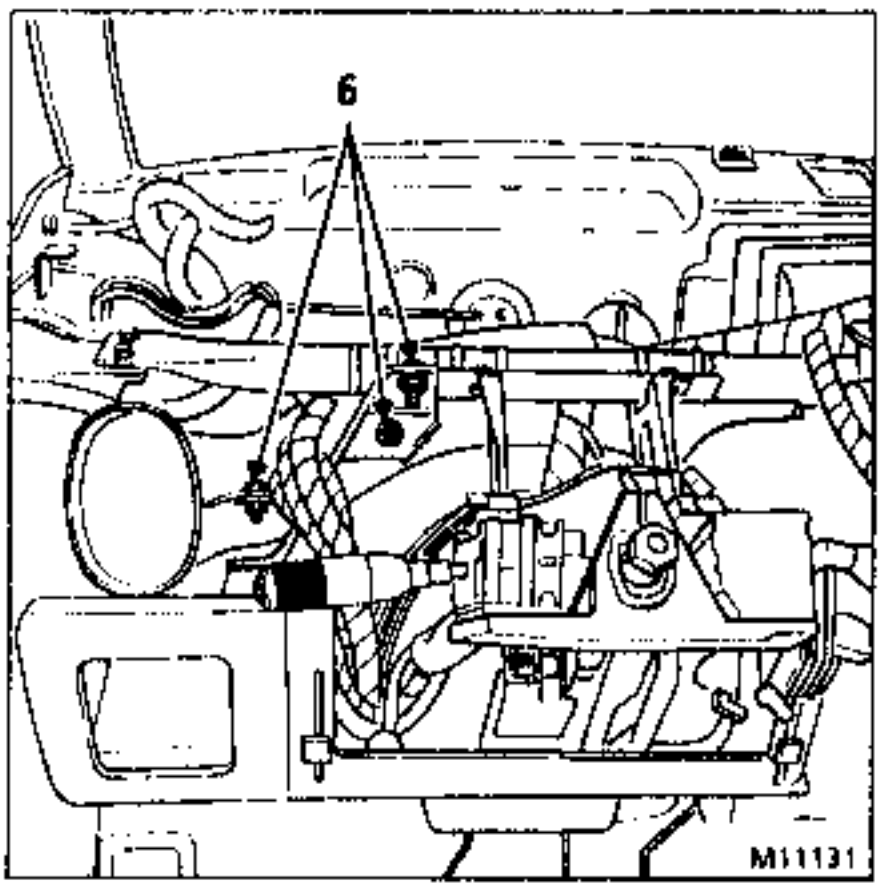
- Remove the accessories plate by pressing on tabs (3).



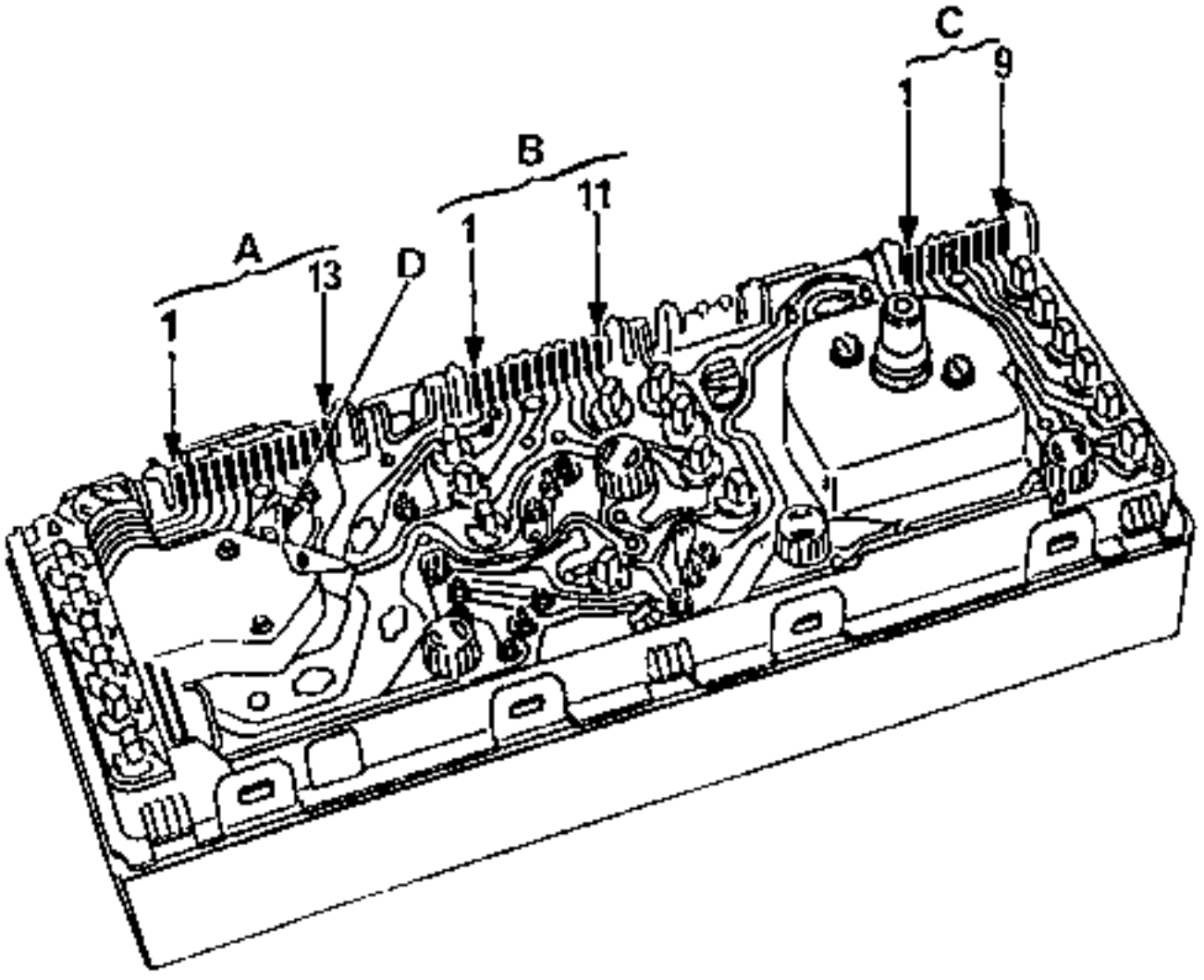
- Separate the relay support plate from the lower section of the dashboard by unscrewing the two bolts (4).



- On both sides unscrew the three bolts (6) securing the dashboard to the cross member, then gently pull the lower part of the dashboard towards the inside of the vehicle.



There are no special features regarding refitting of the dashboard. Proceed in the reverse order to removal.



90 467

Connector A

1 Hazard warning light signal tell-tale
2 Pneumatic suspension failure warning light
3 ABS
4 Not used
5 Preheating warning light*
6 Injection failure warning light*
7 Not used
8 Rev counter
9 Not used
10 Not used
11 Not used
12 Not used
13 Fuel level gauge

Connector B

1 Low fuel level warning light
2 Oil pressure warning light
3 + after ignition
4 Brake pad wear warning light
5 Lefthand direction indicator warning light
6 Not used
7 Righthand direction indicator warning light
8 Coolant temperature warning light*
9 Handbrake warning light
10 Not used
11 Charging circuit warning light

Connector C

1 Coolant temperature gauge
2 Instrument panel lighting
3 Main beam headlights warning light
4 Dipped beam headlights warning light
5 Side and rear lights warning light
6 Front fog light warning light
7 Rear fog light warning light
8 Heated rear screen warning light
9 Instrument panel earth

Connector D

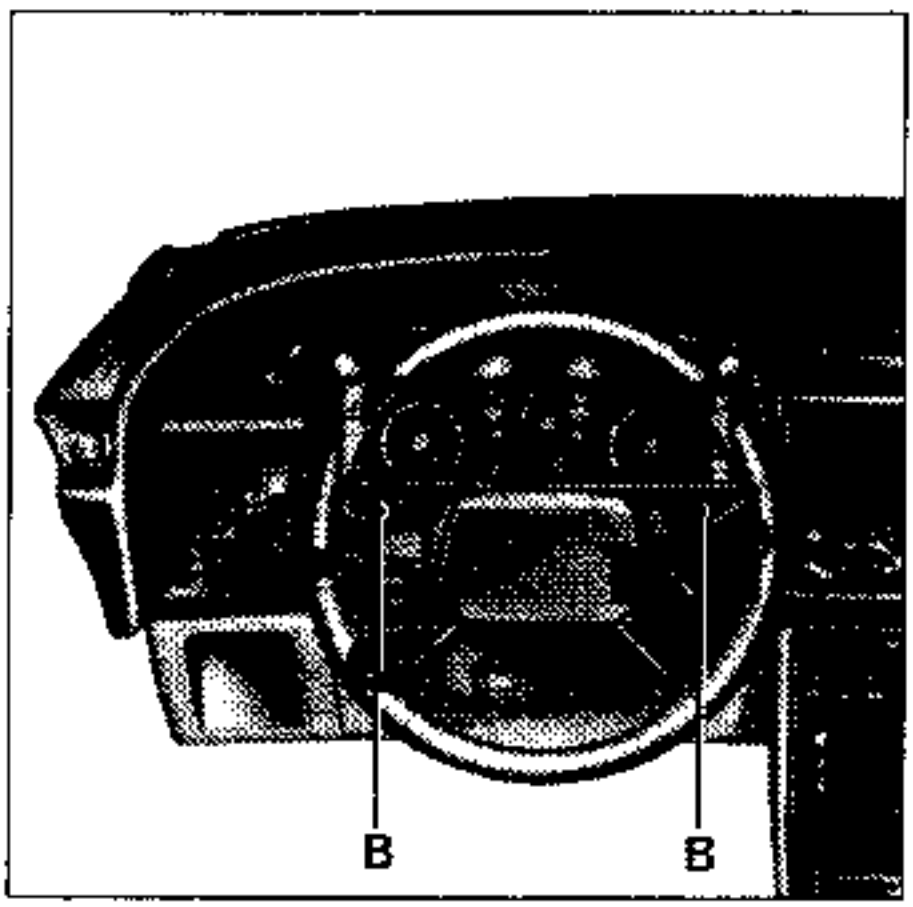
Oil level sensor
Oil level sensor

* Depending on version

REMOVAL-REFITTING

Disconnect the battery.

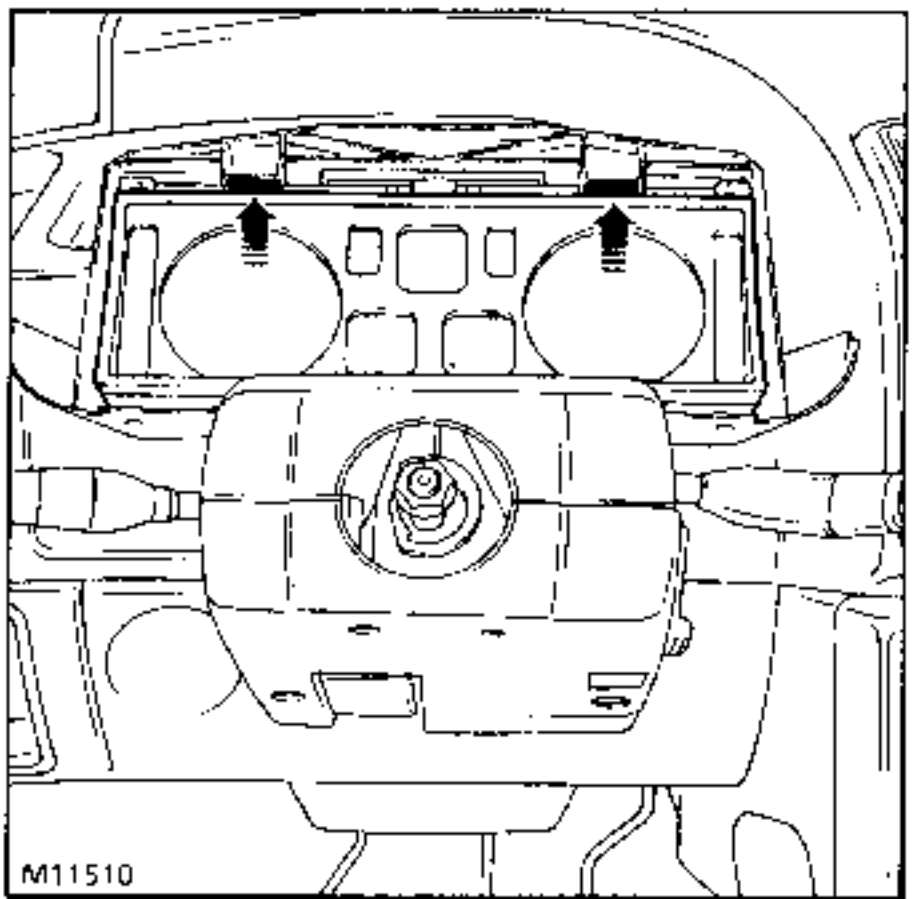
Unscrew the two screws (B) then remove the casing from the instrument panel.



Disconnect:

- the connectors;
- the speedometer cable;
- the turbo pressure hose (depending on version).

Raise the instrument panel to free the three clips, then pull it towards the inside of the vehicle.



GENERAL

The sender unit is of the rocker type equipped with a cup preventing it from becoming unprimed; it is mounted on a spring to enable the intake hose to remain as close as possible to the bottom of the fuel tank (the cup is in contact with the bottom) when the plastic fuel tank is deformed.

REMOVAL

The sender unit is removed when the fuel tank is removed.

Special points:

ATTENTION: Do not force the float: allow it to drop under its own weight (risk of internal damage).

A bead of sealing paste is applied between the seal and the tank when the sender unit is assembled.

NEVER USE A SCREWDRIVER AND HAMMER to remove the sender unit since there is a risk of damaging the notches on the plastic nut and damaging the sender unit.

Remove the plastic nut using a strap wrench or nut wrench (Mot.1221).

REFITTING

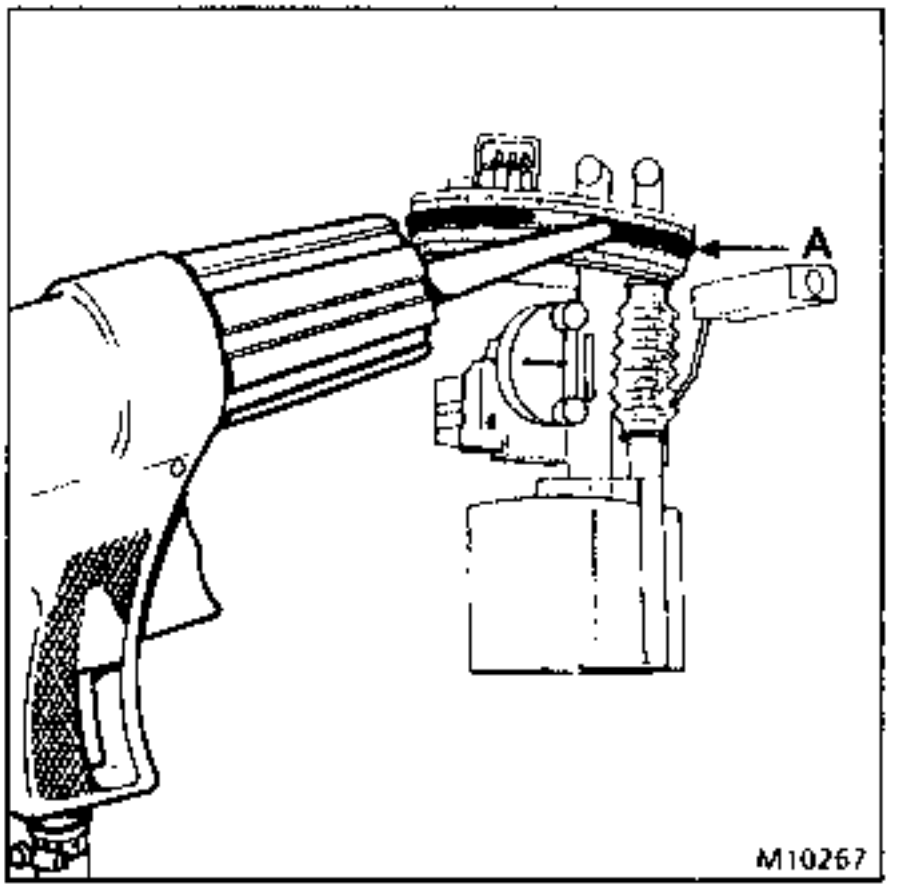
Consumables required:

Cartridge of BETASEAL 71190HV11 part no. 77 01 202 234

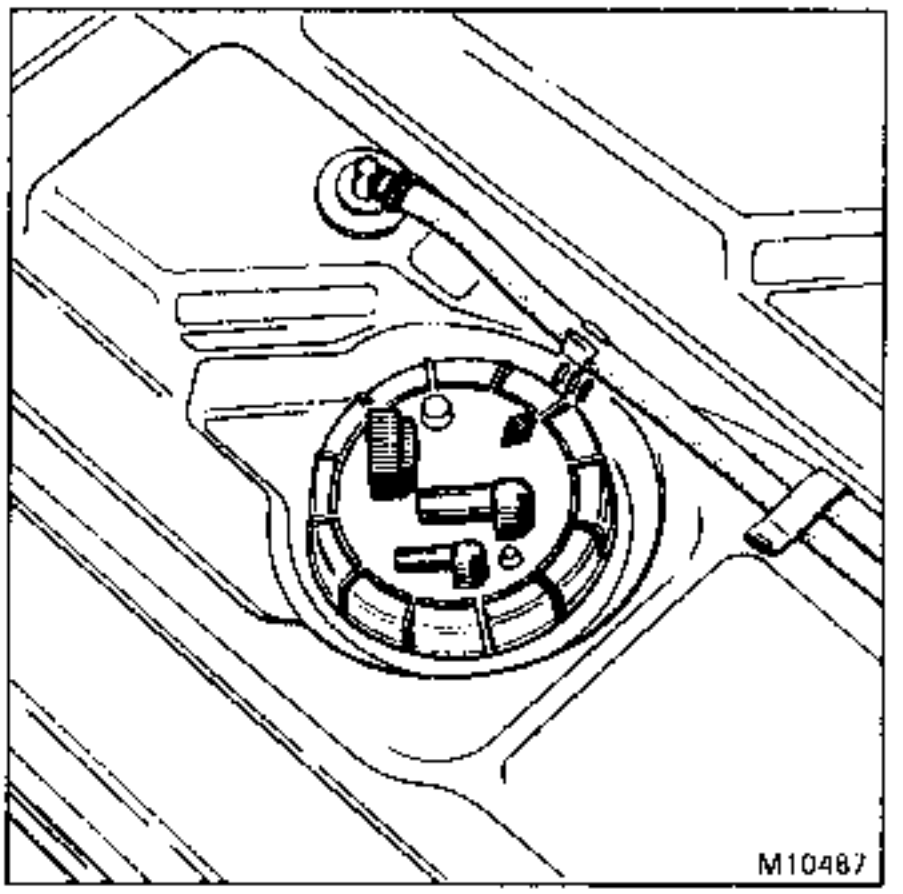
Tooling required:

Spray gun for 310 ml cartridge
Nut wrench Mot.1221.

Remove any mastic remaining on the tank, seal and sender unit.



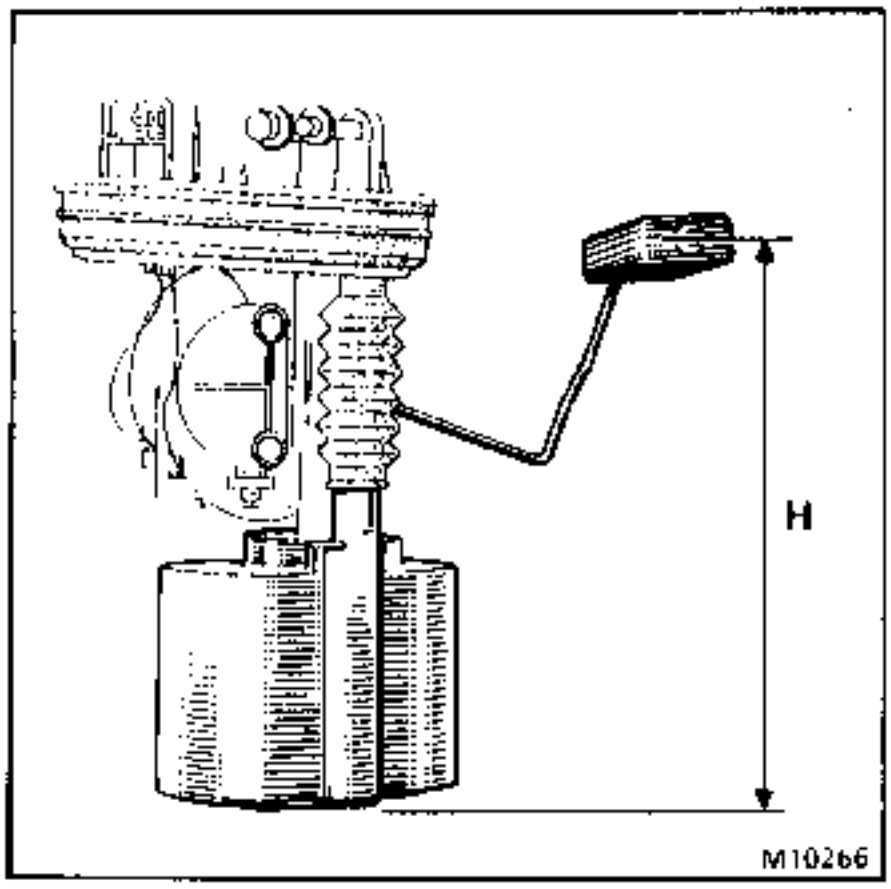
Extrude a 3 mm diameter bead (A) all around the seal.



Fit in place the assembly, positioning arrow (B) opposite mark (C).

Tighten nut (D).

CHECKING



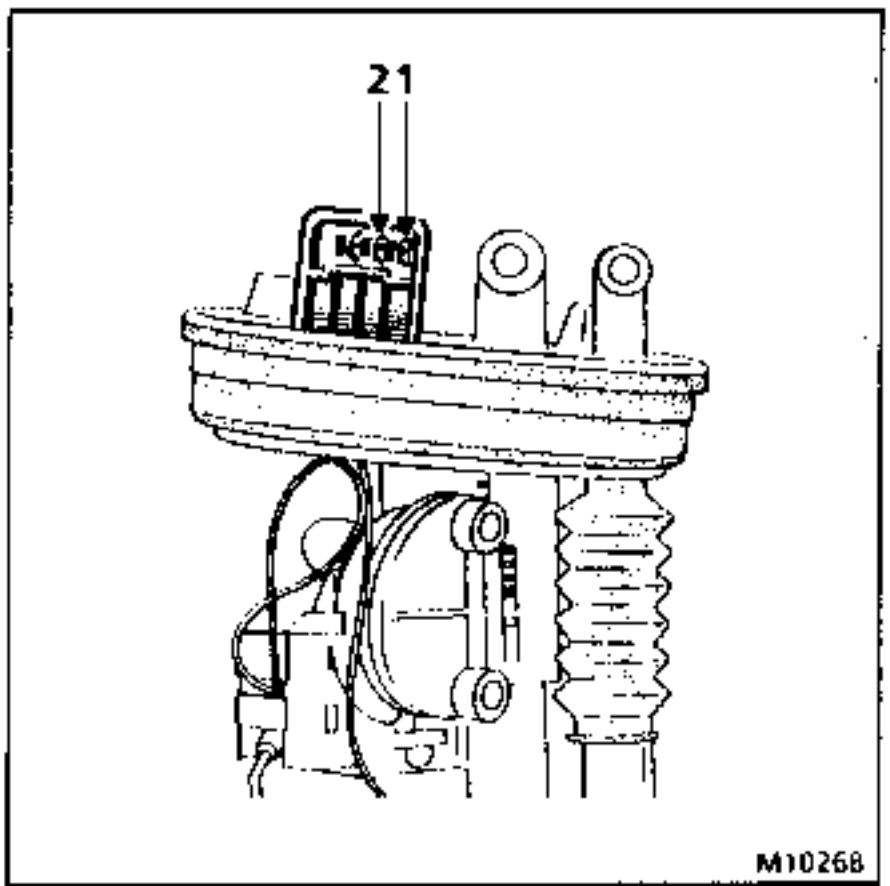
Place the sender unit cup on a flat surface.

Measure dimension (H) between the bearing face and the centre line of the float.

ATTENTION: Do not force the float, allow it to drop under its own weight (risk of internal damage).

Measure between terminals (1) and (2) with an ohmmeter (gauge).

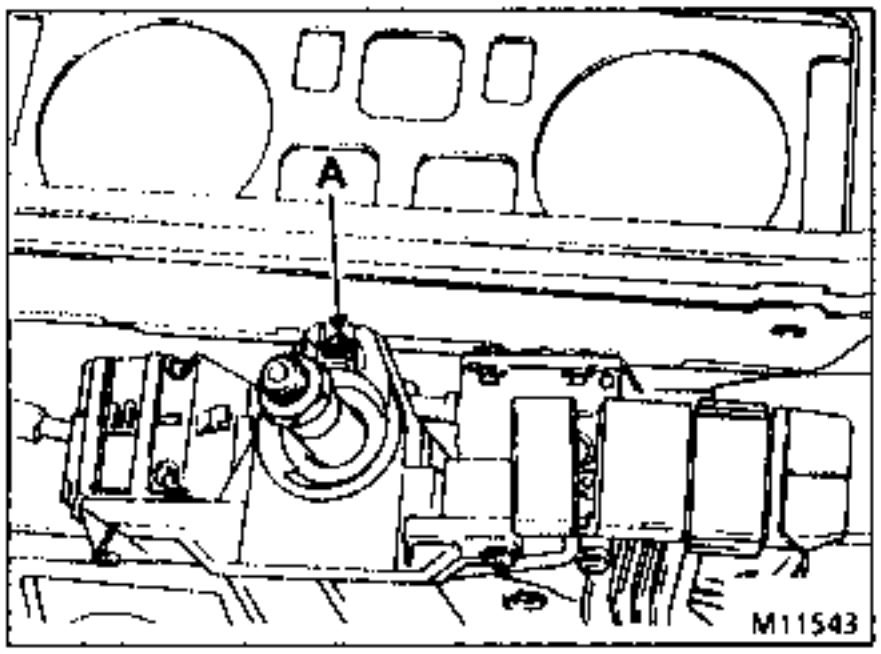
Indication on panel	Height (H) in mm	Resistance at terminals 1 and 2 (ohms)
4/4	196	0 - 7
3/4	155	43 - 55
1/2	117	89 - 103
1/4	79	149 – 169
Reserve warning light illuminates	34,5	295 - 305



REMOVAL-REFITTING

Disconnect the battery.

Remove:
- the steering wheel;
- the lower half-shell (5 bolts), pulling it downwards then disconnect the lighting rheostat;
- the upper half-shell;
- the switch stalk holder assembly, slackening screw (A) slightly.

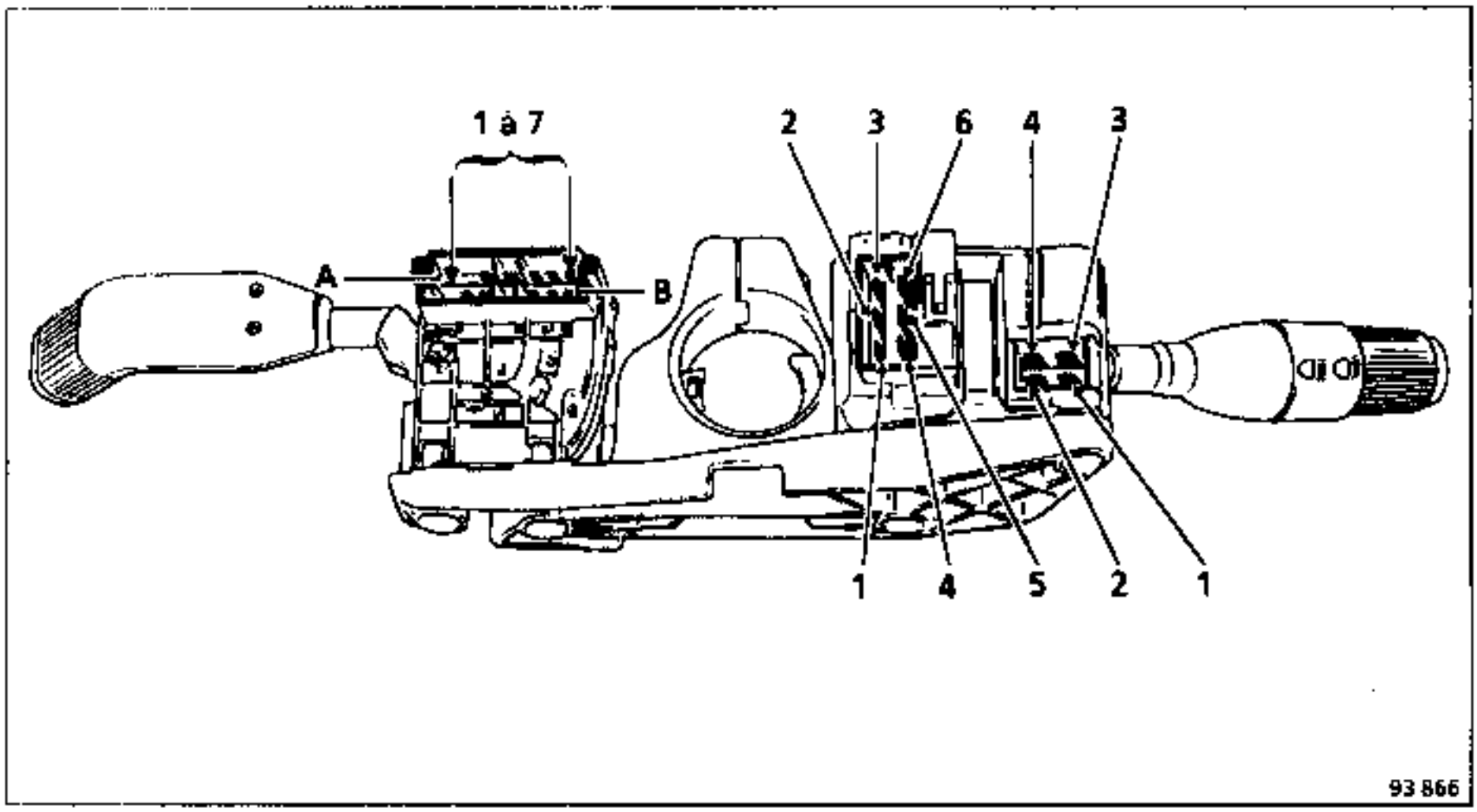


Disconnect the connectors from the switch stalks and pull the assembly towards the rear of the vehicle.

Remove the two screws holding the switch stalk which is to be removed.

Ensure that the harness is routed correctly on refitting.

CONNECTION (top of the range)



WINDSCREEN/REAR SCREEN WIPER COMBINED SWITCH STALK

13 Track Connector (A)

Track	Description
A1	+ after ignition
A2	fast speed
A3	normal speed
A5	timer +
A6	timer +
B1	rear timed operation
B2	earth
B3	+ after ignition
B4	front timed operation
B5	windscreen washer pump relay switch

LIGHT SWITCH STALK

4 Track Connector (B)

Track	Description
1	main beam headlights
2	dipped beam headlights
3	+ before ignition
4	side and rear lights

6 Track Connector (C)

Track	Description
1	horn +
2	rear fog light
3	+ before ignition
4	righthand direction indicators
5	flasher unit
6	lefthand direction indicators

REMOVAL-REFITTING

Disconnect the battery.

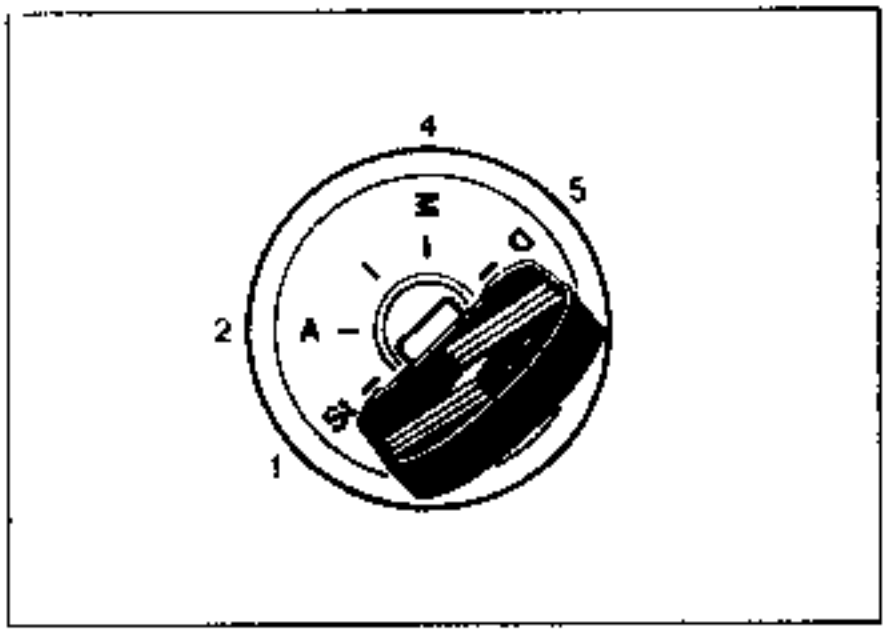
Remove :

- the steering wheel in a straight line;
- the lower half-shell (5 bolts);
- the upper half-shell.

Disconnect the two ignition switch connectors.

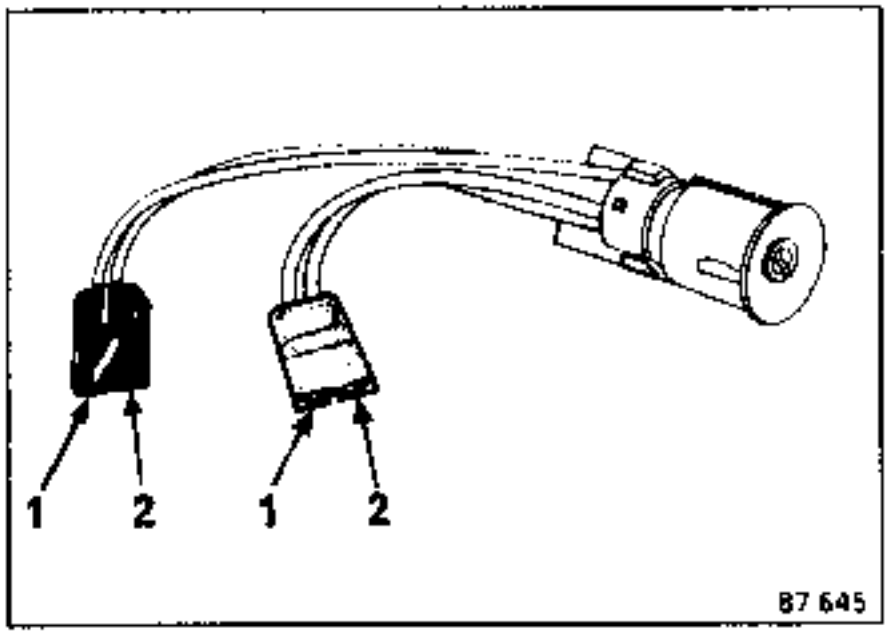
Turn the key to position (A).

Press on the retaining lugs and take out the ignition switch.



Ensure that the harness is routed correctly when refitting.

CONNECTION



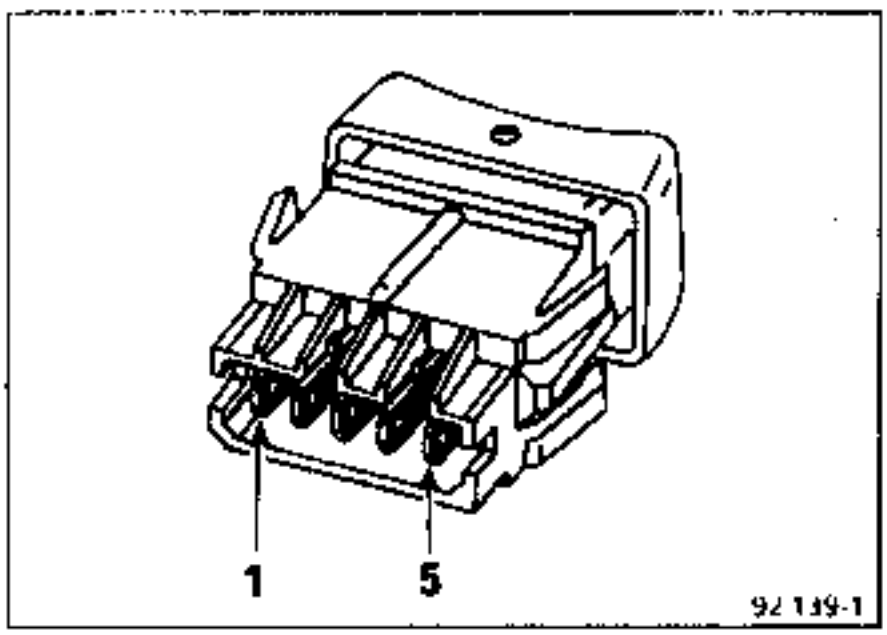
Black connector

Track	Description
1	+ before ignition
2	starter

Grey connector

Track	Description
1	accessories +
2	- after ignition

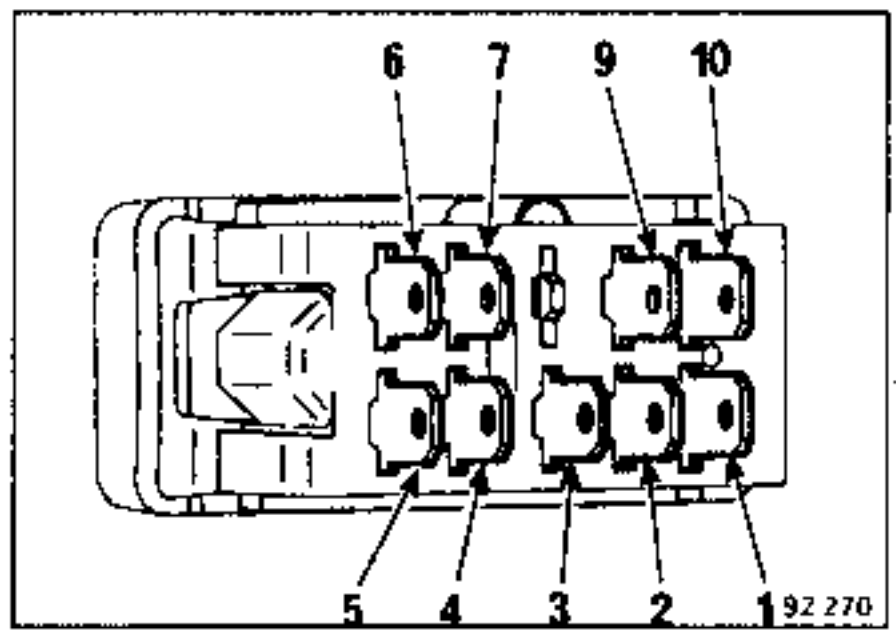
REAR FOG LIGHT



CONNECTION

Track	Description
2	rear fog light relay switch
3	rear fog light
4	lighting +
5	earth

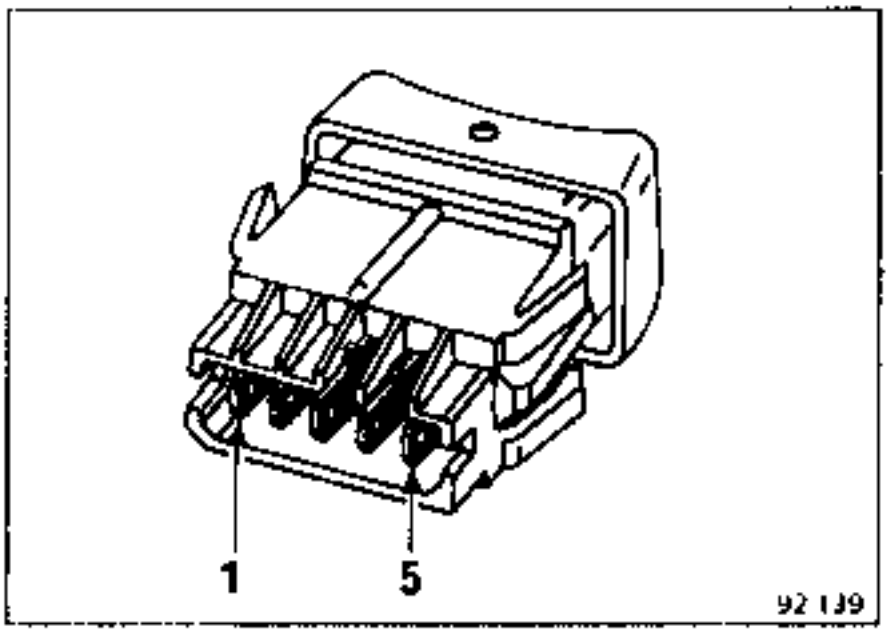
HAZARD WARNING LIGHTS



CONNECTION

Track	Description
1	lighting +
2	+ after ignition
3	+ before ignition
4	flasher unit
5	lefthand direction indicator
6	righthand direction indicator
7	hazard warning light tell-tale
9	hazard warning light switch
10	earth

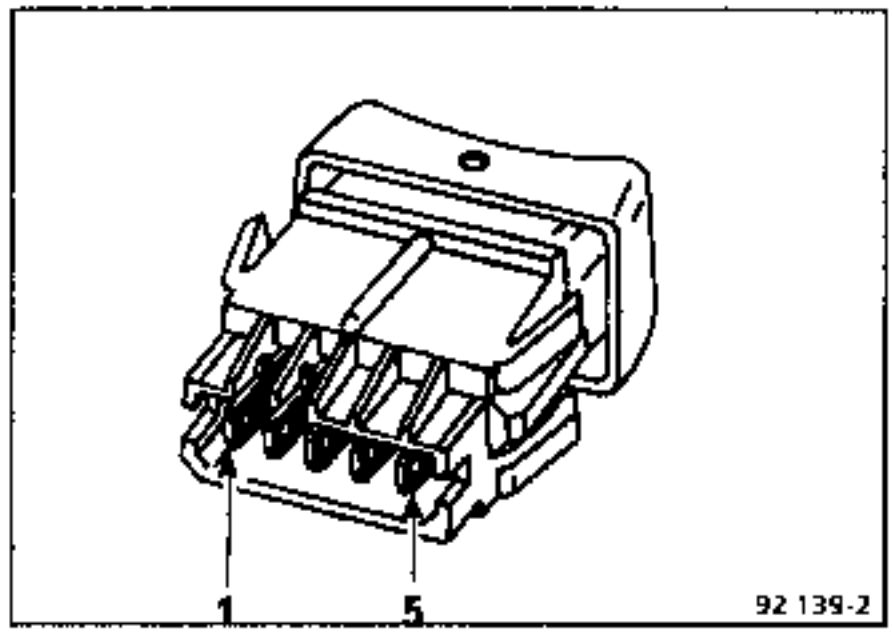
HEATED REAR SCREEN



CONNECTION

Track	Description
2	heated rear screen relay +
3	+ after ignition
4	lighting +
5	earth

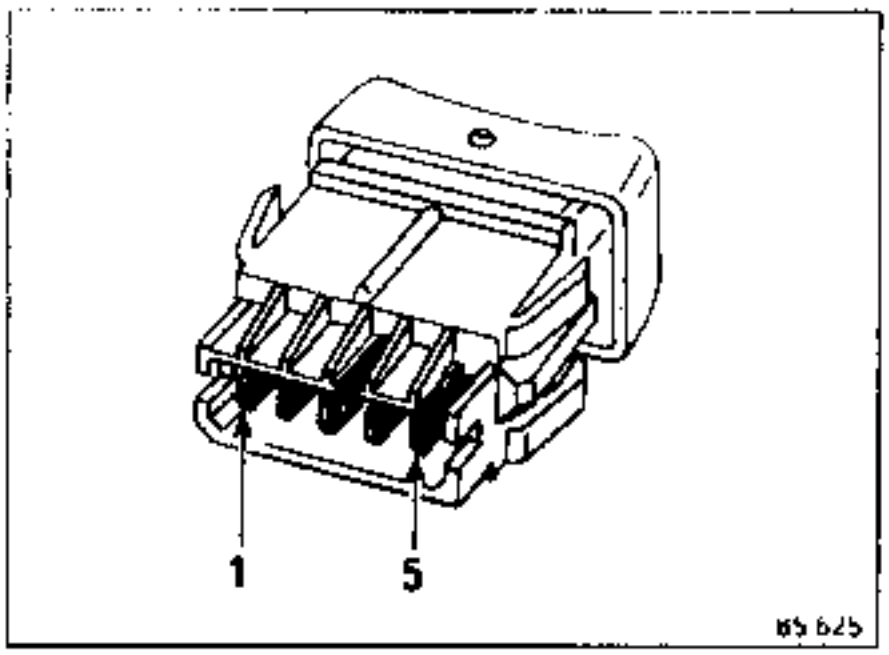
FRONT FOG LIGHT



CONNECTION

Track	Description
2	front fog light relay switch
3	front fog light
4	lighting +
5	earth

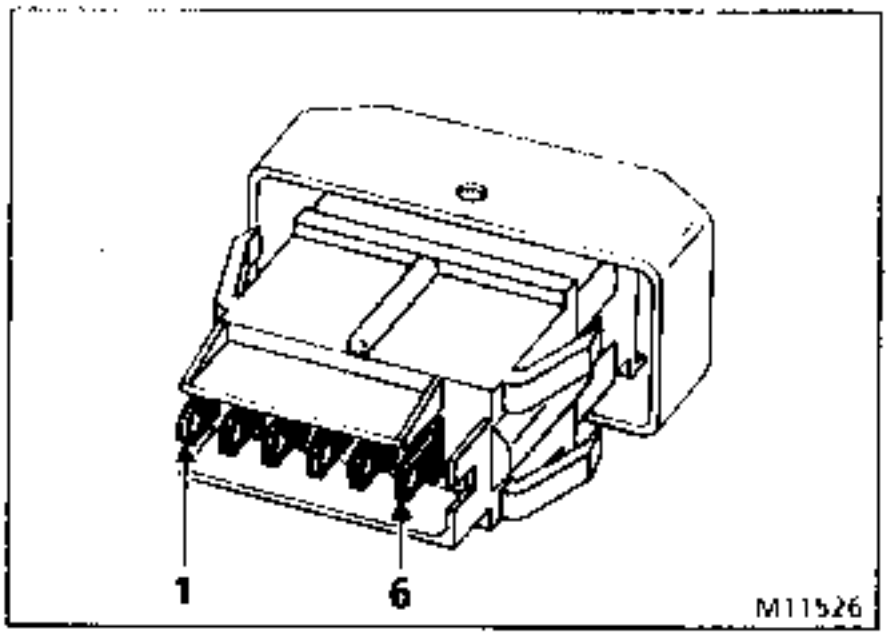
DOOR LOCKING



CONNECTION

Track	Description
1	door closure
2	lighting +
3	+ before ignition
4	earth
5	door opening

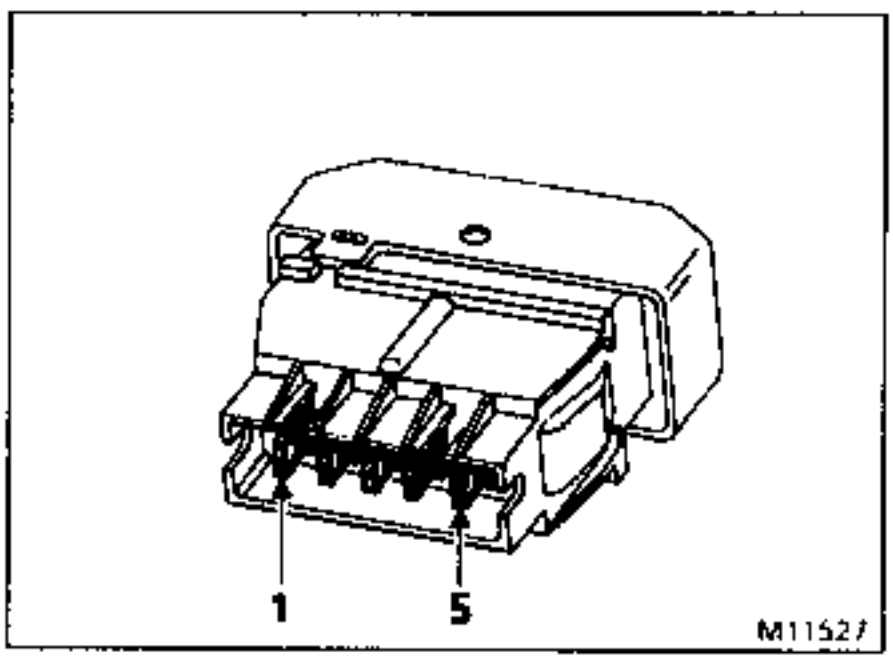
REAR WINDOW



CONNECTION

Track	Description
1	lighting +
2	motor
3	rear window shunt
4	earth
5	+ before ignition - rear window shunt
6	motor

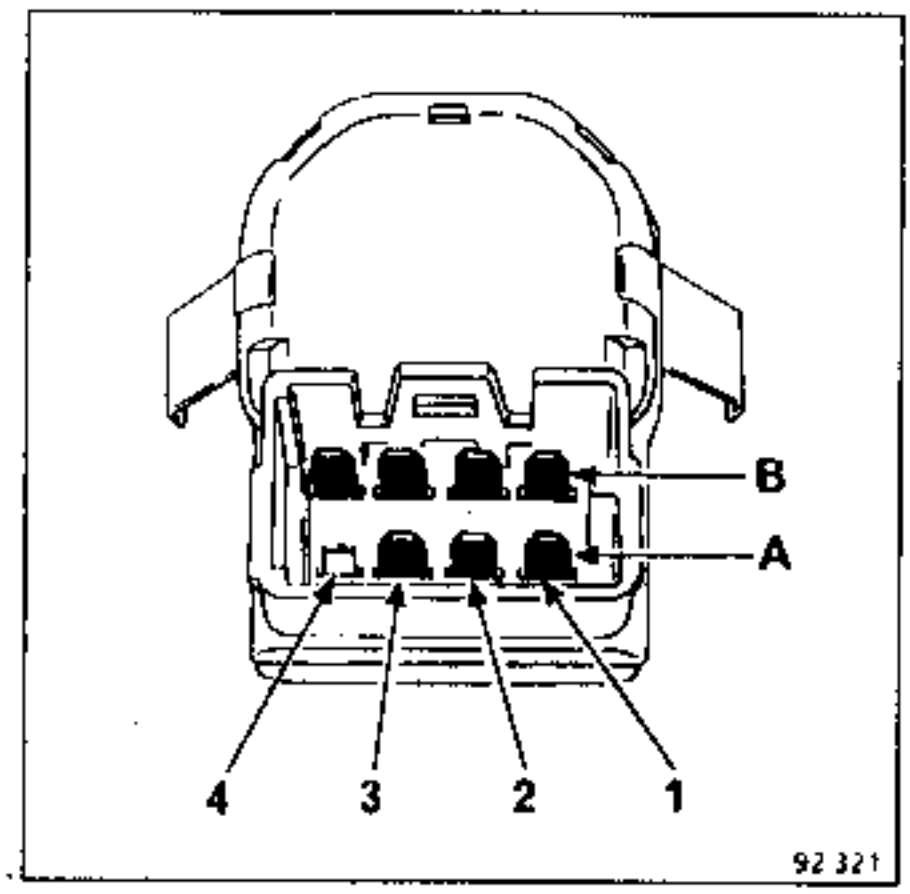
REAR WINDOW LOCKING



CONNECTION

Track	Description
2	earth
3	earth
4	earth
5	lighting +

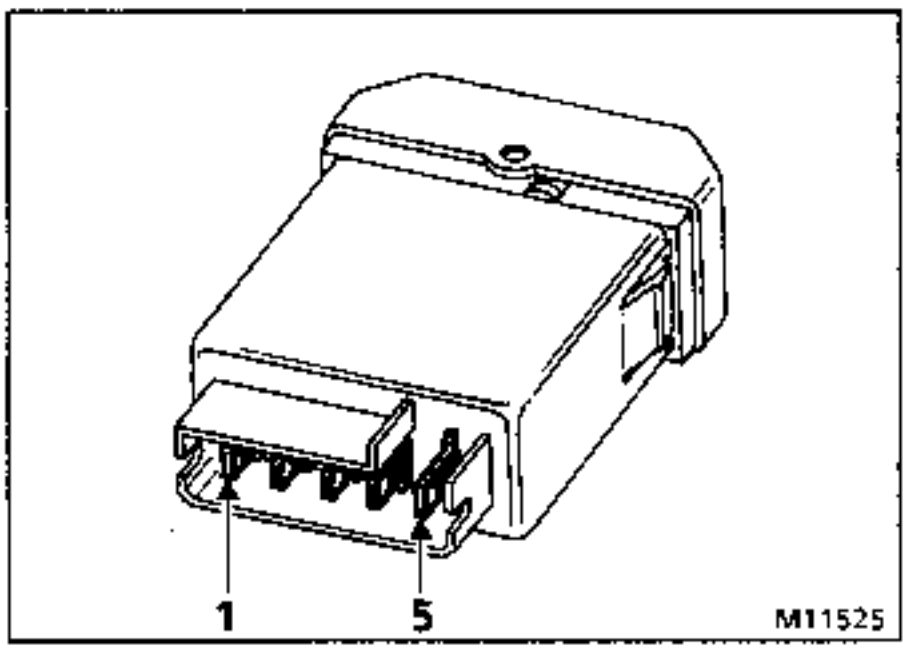
REAR VIEW MIRROR SWITCH



CONNECTION

Track	Description
A1	rear view mirror directing
A2	earth
A3	rear view mirror directing
B1	rear view mirror directing
B2	rear view mirror directing
B3	battery +
B4	rear view mirror combined switch

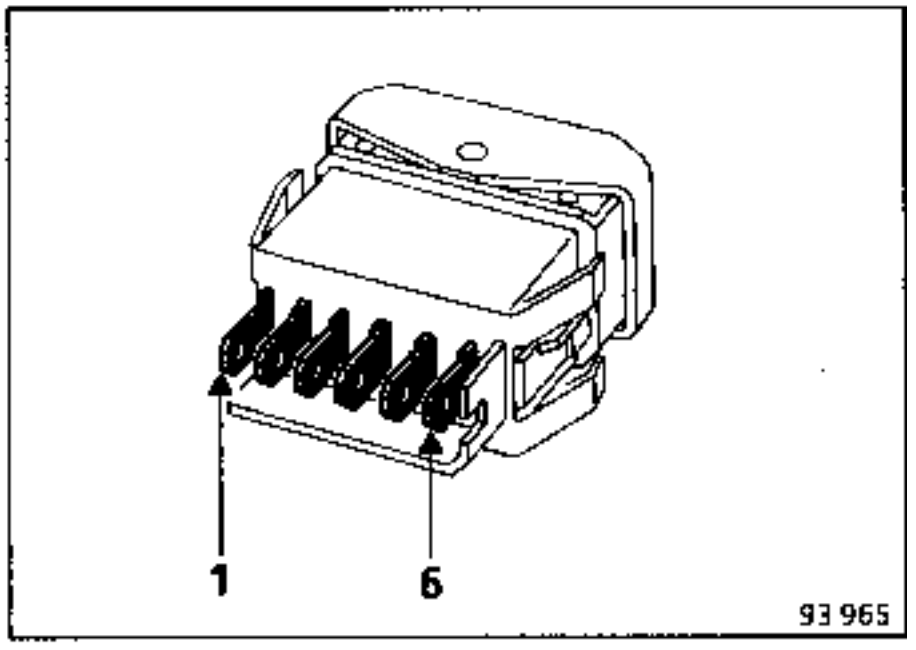
DRIVER'S WINDOW



CONNECTION

Track	Description
1	motor
2	earth
3	window winder -
4	lighting +
5	motor

PASSENGER WINDOW



CONNECTION AT PASSENGER SIDE

Track	Description
1	lighting -
2	motor
3	window winder +
4	earth
5	window winder +
6	motor

CONNECTION AT DRIVER'S SIDE

Track	Description
1	lighting +
2	motor
3	window winder + - shunt
4	earth
5	shunt
6	motor

REMOVAL

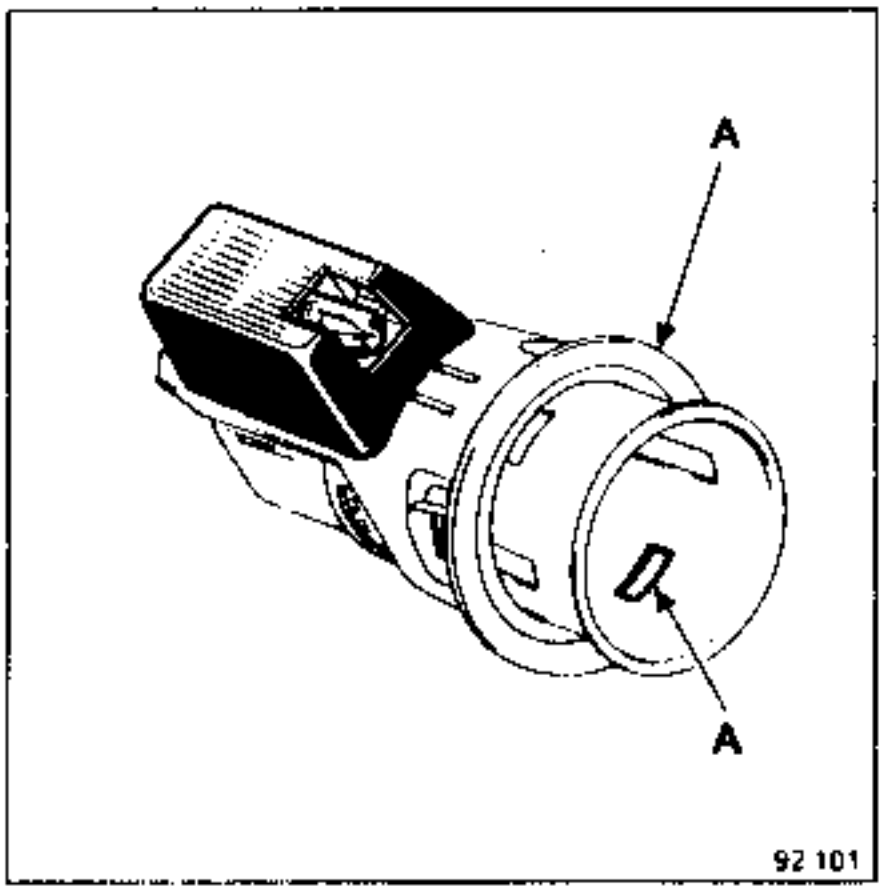
Disconnect the battery.

Remove the ashtray.

Remove the cigar lighter.

To remove the fixed section of the cigar lighter (metal section), push behind the cigar lighter whilst unclipping the two catches (A).

Disconnect the connector.



Take out the plastic part by pushing at the rear.

The mechanism does not have to be removed in order to remove the windscreen wiper motor.

REPLACING THE MOTOR

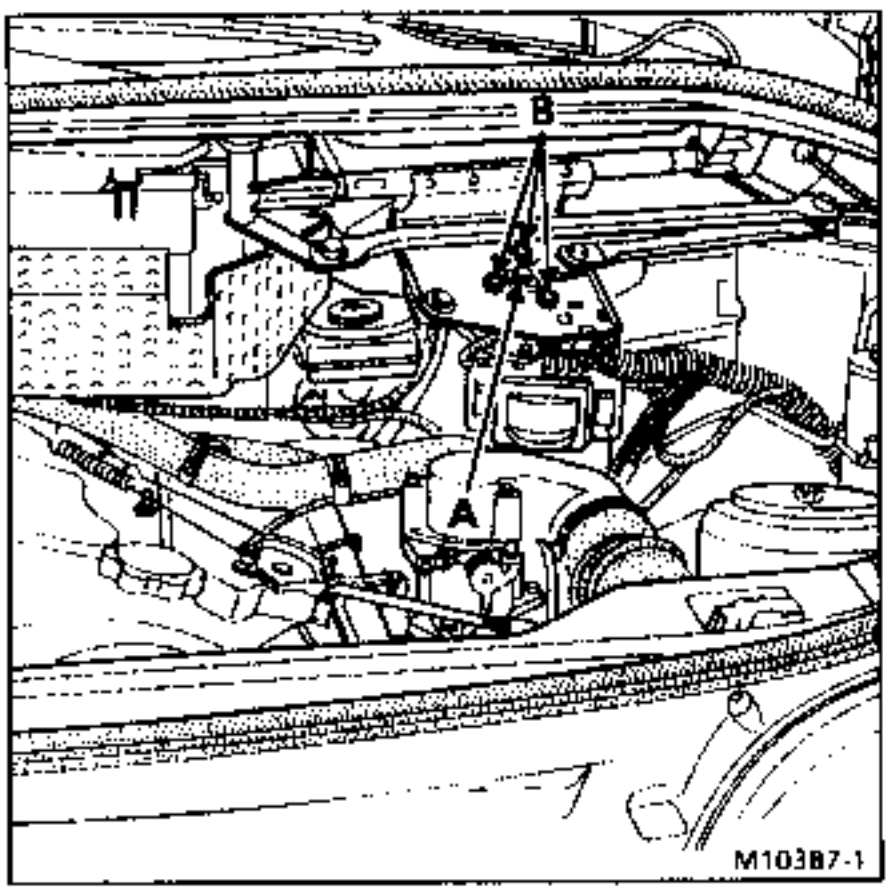
The assembly must be in the "park" position:

Disconnect the battery.

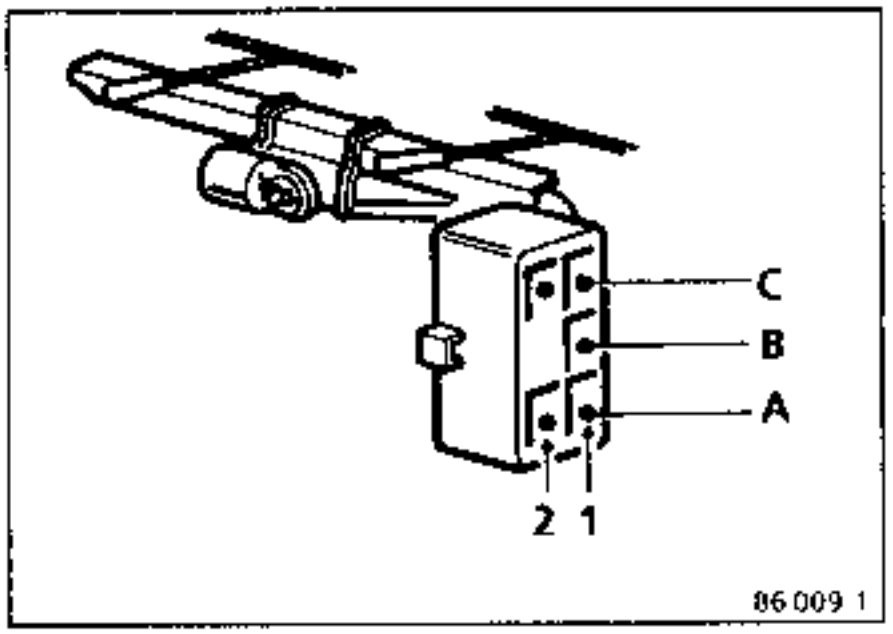
Disconnect the connector from the windscreen wiper motor.

Mark the position of the drive arm then unscrew its mounting nut (A).

Unscrew the three bolts (B) and take out the windscreen wiper motor.



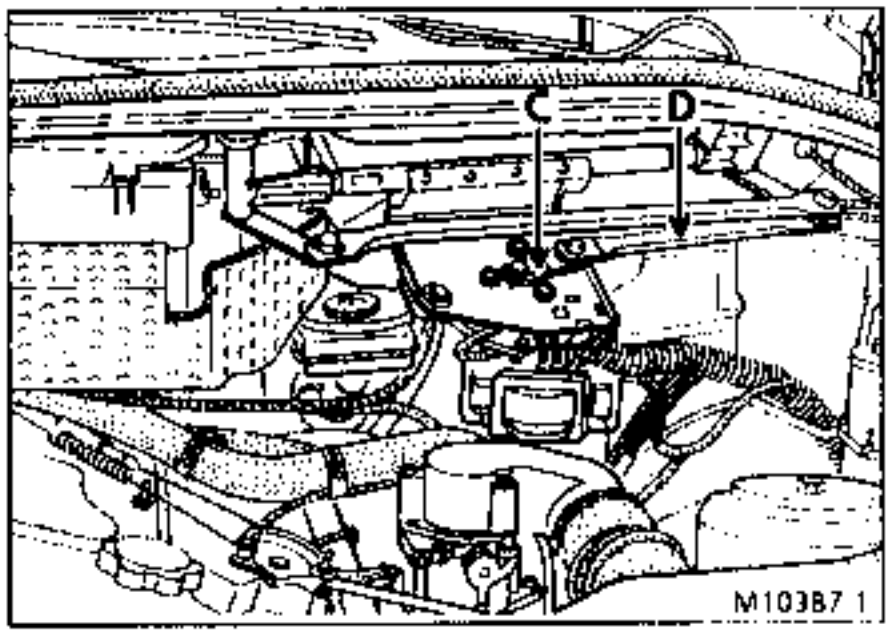
CONNECTION



Track	Description
A1	normal speed
A2	"park" via timer
B1	fast speed
C1	"park"
C2	earth

SPECIAL POINT ON REFITTING

Position the motor in the "park" position with the drive arm (C) aligned with rod (D).



REMOVAL-REFITTING

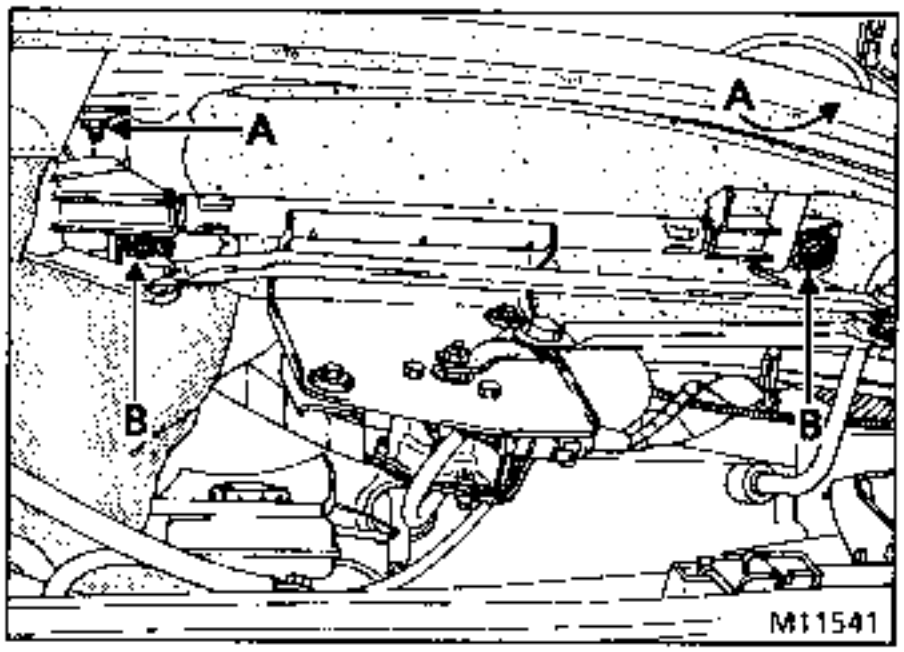
The assembly must be in the "park" position.

Disconnect the battery.

Disconnect the two windscreen washer hoses.
Remove:
- the two blade carriers;
- the scuttle grille.

Disconnect the connector from the windscreen wiper motor.

Unscrew the two upper mounting bolts (A).



Unscrew the two lower mounting bolts (B).

Take out the assembly from the mechanism.

Rear Screen Wiper

REMOVAL-REFITTING

Disconnect the battery.

Remove the blade carrier and windscreen wiper jet mounting nut.

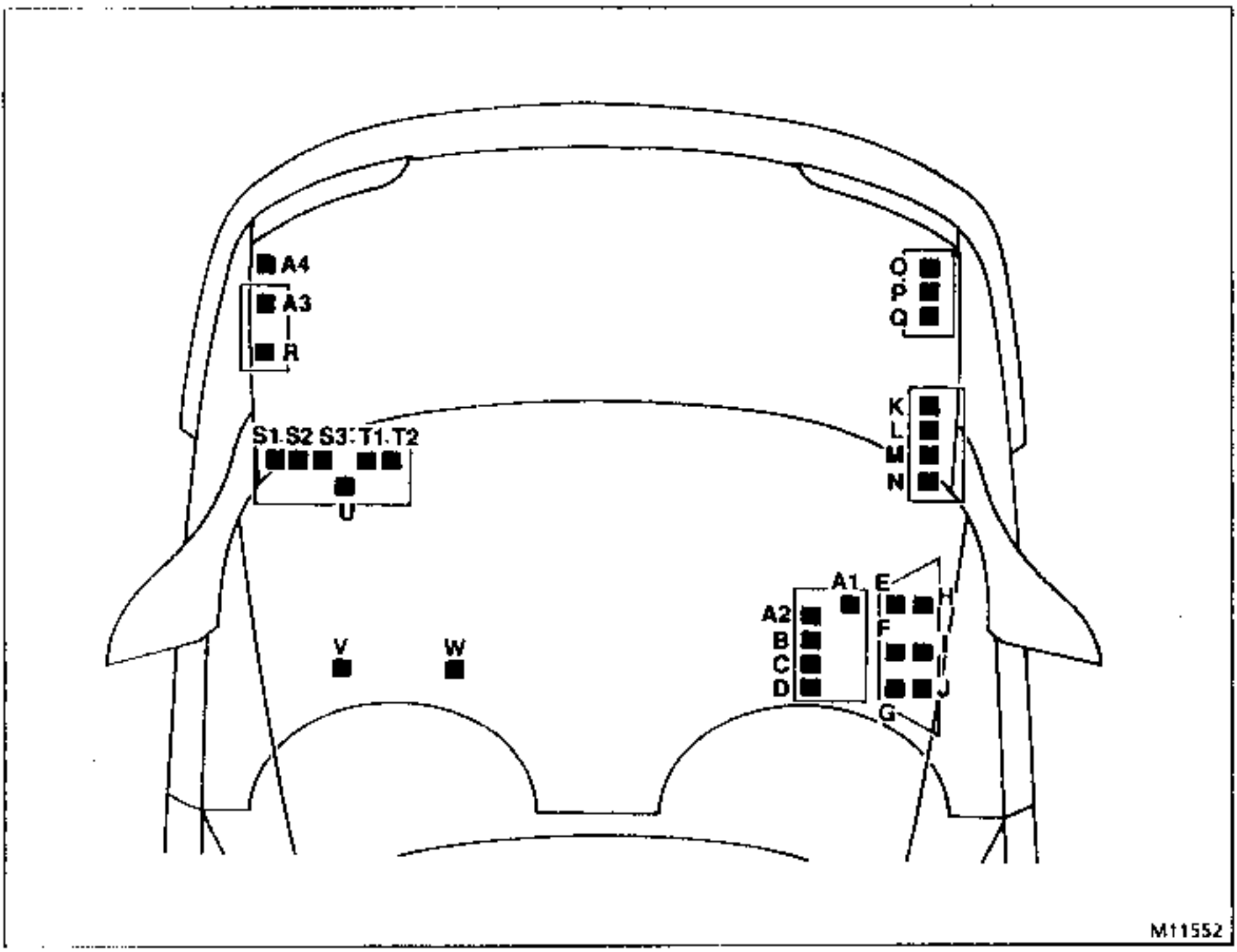
Remove the motor cover (1 clip).

Disconnect the connector from the rear screen wiper motor.

Remove the motor (2 bolts).

NOTE: Replace the clip whenever the motor cover is removed.

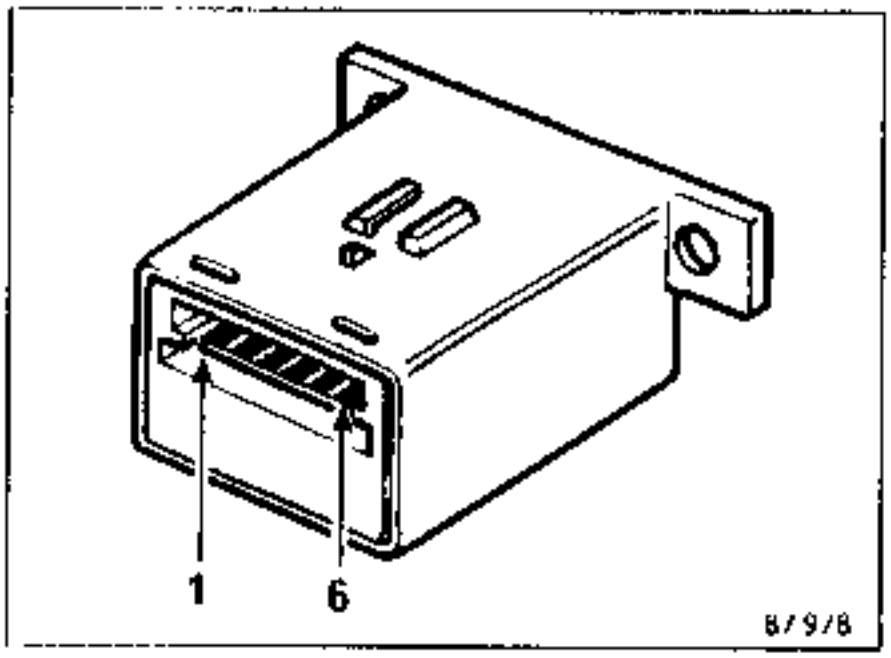
POSITION AND ALLOCATION (top range vehicles)



The relays are located on and around the accessories plate. To reach them, tilt the accessories plate mounting cover by pressing on the two tabs.

A1 Ventilation 1st speed relay (black) 234-1
A2 Ventilation 2nd speed relay (black) 234-2
A3 Ventilation 3rd speed relay 234-3
A4 Ventilation 4th speed relay 234-4
B Heated rear screen relay (black) 235
C Flasher unit (grey) 137
D Windscreen wiper timer relay (blue) 113
E Front window winder relay (yellow) 471
F Front fog light relay (brown) 231
G "Lights on" reminder buzzer (black) 117
H Rear window winder relay (brown) 471-a
I Rear fog light relay (blue) 230
J Circuit breaker relay (green) 312
K Starter relay (Mot.,8) 232
L Air conditioning compressor control relay (Mot6-7-5) 474
M Fuel pump relay (Mot.6-7-S)236
N Injection relay (Mot.6-7-8) 238
O ABS excess voltage protection relay 461
P Horn relay 229
Q Air conditioning compressor control relay (Mot.4-5) 474
R Headlight washer relay 116
S1 Cooling fan motor relay 335
S2 Cooling fan motor relay 336
S3 Cooling fan motor relay 337
T1 Germiane cut-off 334
T2 Germiane cut-off 334
U Diesel fuel reheater control relay (Mot.4 5) 450
V Windscreen wiper timer 113
W Rear screen wiper timer 112

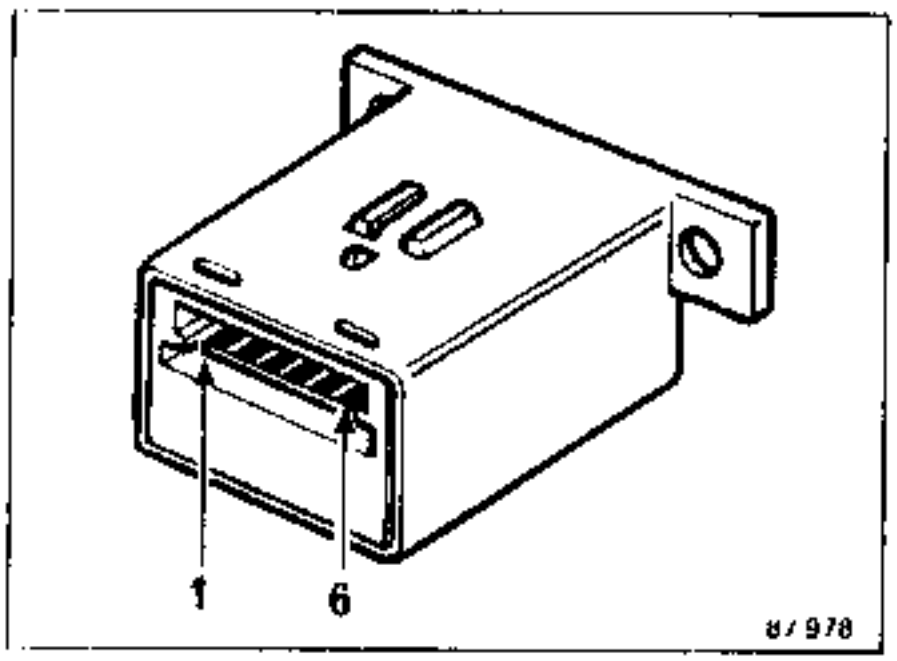
WINDSCREEN WIPER TIMER



CONNECTION

Track	Description
1	earth
2	windscreen washer pump +
3	timer switch
4	windscreen wiper "park"
5	+ after ignition
6	timed outlet to motor

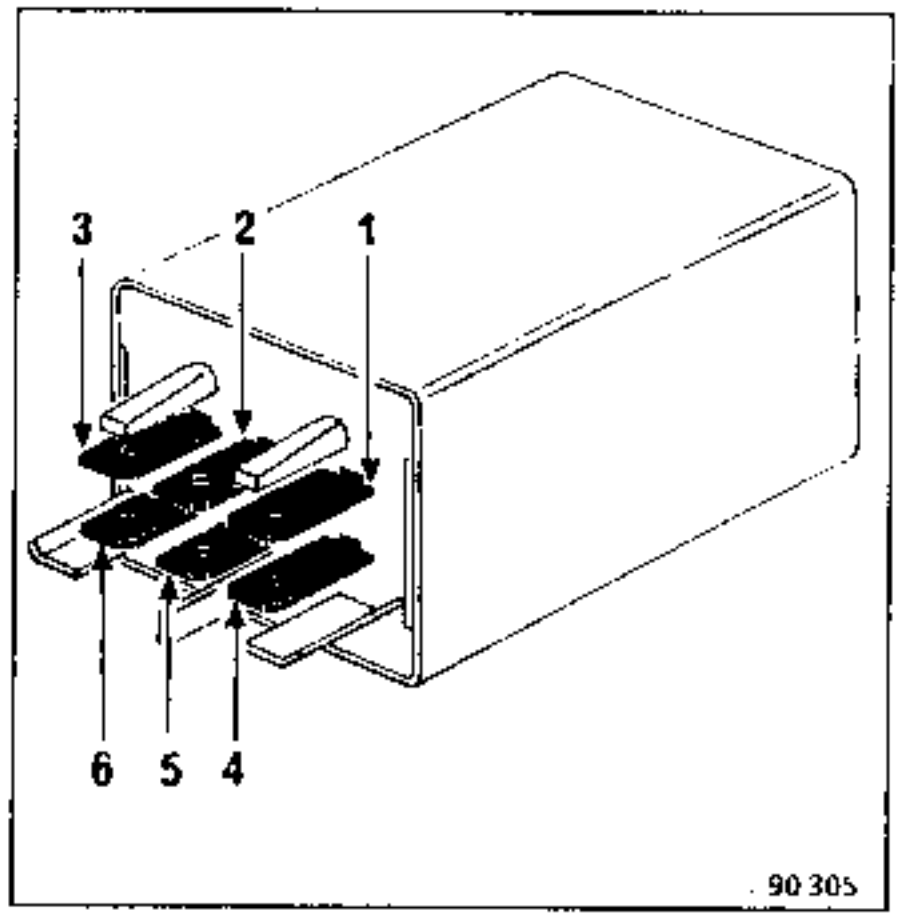
REAR SCREEN WIPER TIMER



CONNECTION

Track	Description
1	not used
2	screen washer pump +
3	timer switch
4	screen wiper "park"
5	+ after ignition
6	timed outlet to motor

DOOR LOCKING TIMER RELAY



Duration of time delay: 3 seconds ± 1

CONNECTION

Track	Description
1	closure switch
2	timer earth
3	opening switch
4	electric door locking motors closure feed
5	+ before ignition
6	electric door locking motors opening feed

The heating grid consists of a screen-printed resistor applied to the inside face of the glass. If this is accidentally damaged it will render the part of the circuit concerned ineffective.

The exact point of the break can be detected with a voltmeter.

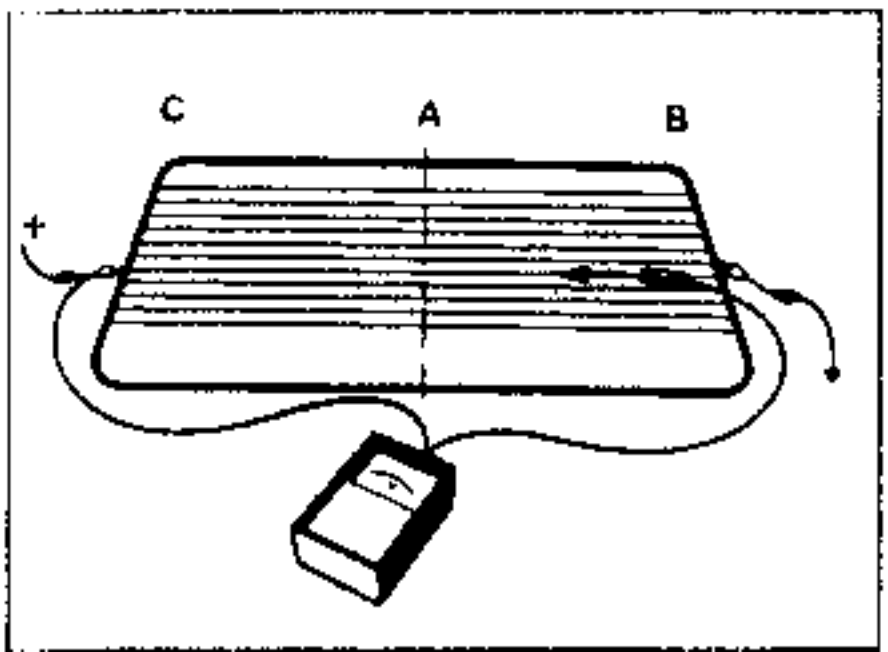
Such damage can be repaired using heated rear screen repair varnish supplied under part **no.77 01 421 135** (2 gr pack).

Switch on the ignition.
Switch on the heated rear screen.

Detecting between lines B and A

Connect the + wire of the voltmeter to the screen + feed wire.
Apply the - wire of the voltmeter to one of the resistor filaments on the negative side of the screen (line B).
The voltage noted should be approximately battery voltage.
Move the - wire towards line **A** (see arrow): the voltage should gradually drop.

If the voltage drops suddenly the filament is broken at that point (carry out the same operation on each filament).



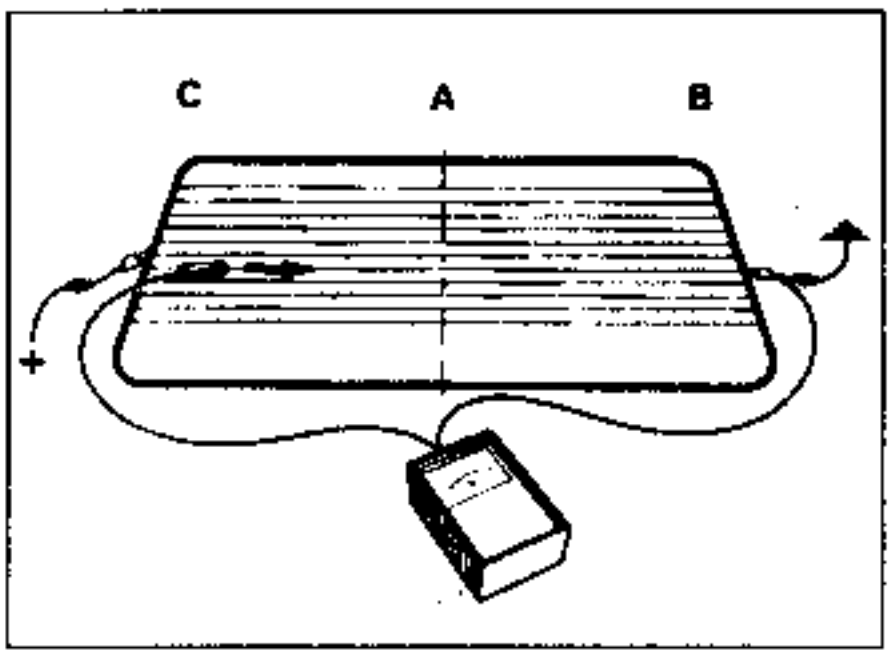
Detecting between lines C and A

Connect the voltmeter - wire to the - terminal on the screen.

Apply the voltmeter + to one of the filaments on the + terminal side of the screen (line **C**). The voltage noted should be approximately battery voltage.

Move the + wire towards line **A** (see arrow). The voltage should gradually drop.

If the voltage drops suddenly the filament is broken at that point (carry out the same operation on each filament).



REPAIRING A FILAMENT

Clean the area to be repaired to remove all dirt or grease, preferably using alcohol or a window cleaning compound. Dry the area with a clean, dry cloth.

To obtain a neat repair, apply adhesive tape, of the sellotape type, to either side of the area to be repaired, leaving the filament line bare.

Before applying the varnish, shake the flask to avoid leaving the silver particles as a deposit in the bottom of the flask.

Repair the filament with a small paintbrush, ensuring that the coat is thick enough. If more than one coat is required, leave time for each coat to dry before applying the next one. Do not apply more than three coats.

If a rough edge is left, it can be trimmed off with the point of a knife or razor blade, but only after several hours when the product has dried thoroughly.

The adhesive tape applied as a guide is not to be removed until approximately one hour after application. It is to be pulled off square with the resistor element in the direction shown by the arrow. When applied at an ambient temperature of 20°C the varnish will be fully dry within three hours. At lower temperatures the drying time will be a little longer.