

MEGANE

8 Electrical equipment

80A BATTERY

80B HEADLIGHTS

80C XENON BULBS

81A REAR LIGHTING

81B INTERIOR LIGHTING

81C FUSES

82A IMMOBILISER

82B HORN

82C ALARM

83A INSTRUMENT PANEL

83C ON-BOARD TELEMATICS SYSTEM

X84, and B84 or C84 or S84

83D**CRUISE CONTROL****84A****CONTROLS - SIGNALS****85A****WIPING / WASHING****86A****RADIO****87B****PASSENGER COMPARTMENT CONNECTION
UNIT****87C****OPENING ELEMENTS MANAGEMENT****87D****ELECTRIC WINDOWS - SUNROOF****87G****ENGINE INTERCONNECTION UNIT****88A****WIRING HARNESS****88B****MULTIPLEXING****88C****AIRBAG AND PRETENSIONERS**

X84, and B84 or C84 or S84

77 11 318 102

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Edition Anglaise

"The repair methods given by the manufacturer in this document are based on the technical specifications current when it was prepared.

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Mégane II / Section 8

Contents

80A	BATTERY			80C	XENON BULBS		
	Battery : Removing - Refitting	80A-1			Front height sensor		80C-9
	Safety	80A-3			Front height sensor: CONNECTION		80C-10
	Check	80A-4			Rear height sensor		80C-11
					Rear height sensor: CONNECTION		80C-12
					Xenon headlights: Adjustment		80C-13
80B	HEADLIGHTS			81A	REAR LIGHTING		
	Automatic headlights	80B-1			High level brake light		81A-1
	Halogen or Xenon headlight	80B-2			Rear light		81A-2
	Halogen headlight: CONNECTION	80B-4			Rear light: CONNECTION		81A-3
	Halogen headlights Adjustment	80B-5			Registration plate light		81A-4
	Halogen bulbs: Replacement	80B-6					
	Fog lights	80B-8					
	Remote adjustment control	80B-9					
	Remote adjustment control: Connection	80B-10		81B	INTERIOR LIGHTING		
	Headlight remote adjustment actuator	80B-11			Operating principle		81B-1
	Headlight remote adjustment actuator: CONNECTION	80B-12			Courtesy light: General		81B-2
					Courtesy light		81B-3
					Vanity light: General		81B-4
					Courtesy light		81B-5
					Lower door light		81B-6
					Lower door light switch		81B-7
80C	XENON BULBS						
	Headlights: Description	80C-1					
	Headlights	80C-4					
	Headlights: CONNECTION	80C-5					
	Xenon bulb: Replacement	80C-6					
	Xenon lamp computer	80C-8					

Contents

81C	FUSES		83A	INSTRUMENT PANEL	
	Passenger Compartment Fuse and Relay Box	81C-1		Dashboard	83A-1
	Engine Compartment Fuse and Relay Box	81C-3		Instrument panel: General	83A-11
	Battery protection fuses	81C-8		Instrument panel: Operating description	83A-16
				Instrument panel: Warning and indicator lights	83A-18
				Instrument panel: Indicator lights and text messages	83A-19
				Instrument panel: Defect modes	83A-21
				Instrument panel: Configuration	83A-24
				Instrument panel	83A-25
				Instrument panel: Connection	83A-27
				Fuel level sensor: Operating principle	83A-28
				Fuel level sensor: CONNECTION	83A-30
				Oil level sensor	83A-31
82A	IMMOBILISER				
	General	82A-1			
	Description	82A-2			
	Operating principle	82A-3			
	System operation diagram	82A-5			
	Operating diagram	82A-8			
	Programming:	82A-9			
	Steering column lock	82A-12			
	Steering column electric lock: Connection	82A-14			
	Engine start/stop button	82A-15			
	Starter push button: Connection	82A-17			
	Card reader: Connection	82A-18			
	Starter aerials	82A-19			
			83C	ON-BOARD TELEMATICS SYSTEM	
				General	83C-1
				"Entry Level" Navigation system: System description	83C-2
				"Entry level" navigation system: Operation	83C-4
				"Entry Level" navigation system: Self-test	83C-6
				"Entry level" Navigation system	83C-8
				"Entry level" navigation system: Connections	83C-9
				"Entry Level" Navigation system: Security code	83C-10
				"Entry level" Navigation system: Enter security code	83C-11
				"Entry level" Navigation system: Settings	83C-13
82B	HORN				
	Horn: CONNECTION	82B-1			
82C	ALARM				
	General	82C-1			

Contents

83C ON-BOARD TELEMATICS SYSTEM

"Entry Level" Navigation system: Localisation	83C-14
Navigation: Screen	83C-15
"Entry Level" Navigation: Display connection	83C-16
"Top of the range" navigation system: Operation	83C-17
"Top of the range" navigation system: operating description	83C-19
"Top of the Range" navigation system: Central Communication Unit	83C-21
"Top of the range" Navigation system: Central Communication Unit connections	83C-22
"Top of the range" Navigation system: Central Deployment Unit connection	83C-24
"Top of the Range" navigation system: Console	83C-25
"Top of the range" navigation system: Computer operation	83C-26
"Top of the range" Navigation: Computer connections	83C-27
"Top of the Range" navigation system: Computer	83C-28
"Top of the range" navigation system: Screen operation	83C-29
Navigation: Screen	83C-30
"Top of the range" Navigation: Screen connection	83C-31
"Top of the Range" navigation system: Aerial	83C-32
"Top of the Range" navigation system: Loudspeaker	83C-33
"Top of the Range" navigation system: Initialisation	83C-34
"Top of the Range" navigation system: Change language	83C-35

83C ON-BOARD TELEMATICS SYSTEM

"Top of the Range" navigation system: Localisation	83C-36
"Top of the Range" navigation system: Navigation menus	83C-37
Aerial	83C-42

83D CRUISE CONTROL

Cruise control / speed limiter	83D-1
Connectors: CONNECTION	83D-4
Speed limiter: Operating principle	83D-6
Cruise control: Operating principle	83D-7

84A CONTROLS - SIGNALS

Column switch control assembly	84A-1
Under steering wheel control assembly: Connection	84A-3
Under steering wheel control assembly: Operating principle	84A-4
Central door locking and hazard warning lights switch	84A-6
Central door locking and hazard warning lights switch: Connection	84A-8
Remote adjustment control	84A-9
Lighting dimmer control: Connection	84A-10
Electric door mirror: Operating principle	84A-11
Electric door mirror: CONNECTION	84A-12
Door mirror controls	84A-13
External temperature sensor	84A-15

Contents

84A CONTROLS - SIGNALS

Temperature sensor resistance: Check	84A-16
Interior rear-view mirror	84A-17

85A WIPING / WASHING

Operating principle	85A-1
Rain and light sensor	85A-2
Rain and light sensor: CONNECTION	85A-3
Windscreen wiper	85A-4
Windscreen wiper motor	85A-7
Windscreen wiper motor: CONNECTION	85A-8
Rear screen wiper motor	85A-9
Rear screen wiper	85A-12
Headlight washers: Operating principle	85A-13
Headlight washer nozzle	85A-14
Windscreen washer: Operating principle	85A-15
Windscreen washer pump	85A-16

86A RADIO

Car radio: General	86A-1
"entry level": General information	86A-2
"Entry level": Code protection	86A-3
"Entry level": Configuration	86A-4
"Entry Level": Self-test	86A-5
"entry level": connection	86A-6
"entry level": Compact disc changer	86A-7

86A RADIO

"entry level": Compact disc changer connector	86A-8
"top of the range": General information	86A-9
"top of the range": Operation	86A-10
"top of the range": configuration	86A-12
"top of the range": Protection code	86A-13
"top of the range": enter security code	86A-14
Self diagnosis procedure	86A-17
"top of the range": Compact disc changer	86A-18
"top of the range": Compact disc changer connector	86A-19
"top of the range": tuner-amplifier	86A-20
"top of the range": tuner-amplifier connection	86A-21
Display	86A-23
"Entry level" display	86A-24
Top-of-the-range display	86A-25
Tweeter	86A-26
Front speakers	86A-27
Rear speakers	86A-28
Understeering control	86A-29
Aerial Operating principle	86A-30
Aerial	86A-31

87B PASSENGER COMPARTMENT CONNECTION UNIT

UCH: General	87B-1
UCH	87B-4
UCH: Configuration	87B-8
UCH: Connection	87B-10

Contents

87C OPENING ELEMENTS MANAGEMENT

Keyless vehicle: Description	87C-1
Keyless vehicle:	87C-2
Keyless vehicle: Operating principle	87C-13
Starter aerials	87C-16
Opener aerials	87C-18
Opener aerials CONNECTION	87C-19
Tailgate exterior opening control	87C-20
Keyless vehicle: Tailgate opening control connection	87C-21
Door locks: Connection	87C-22
Tailgate lock	87C-24
Keyless vehicle: Tailgate lock connection	87C-25
Keyless vehicle: Tailgate locking button	87C-26
Keyless vehicle: Fuel filler flap	87C-27

87D ELECTRIC WINDOWS - SUNROOF

Electric windows Operating principle	87D-1
Front electric window switches on driver's door	87D-2
Front electric window switches on driver's door Connection	87D-3
Front electric window switch on the passenger door	87D-10
Front electric window switch on the passenger door: Connection	87D-11
Rear electric window switches on rear doors	87D-13
Rear electric window switches on rear doors: Connection	87D-14
Child lock switch	87D-15

87D ELECTRIC WINDOWS - SUNROOF

Front electric window motor	87D-16
Front electric window motor: Connection	87D-17
Rear electric window motor	87D-18
Rear electric window motor: Connection	87D-19
Electric sunroof: Operating principle	87D-20
Electric sunroof control	87D-22
Sunroof opening motor Initialisation	87D-23
Electric sunroof motor: CONNECTION	87D-24
Sunroof control: Connection	87D-25

87G ENGINE INTERCONNECTION UNIT

Protection and Switching Unit: General	87G-1
Switching and protection unit	87G-2
Protection and Switching Unit: Connection	87G-3

88A WIRING HARNESS

Diagnostic socket	88A-1
COMPUTER POSITIONS	88A-2
Headlining wiring	88A-3

88B MULTIPLEXING

Description	88B-1
Multiplex network configuration	88B-6

Contents

88B MULTIPLEXING

Computers which support fault finding configuration	88B-8
Interpreting multiplex network test results	88B-9

88C AIRBAG AND PRETENSIONERS

General	88C-1
Operating principle	88C-4
Precautions during repair	88C-5
Airbag computer locking procedure	88C-7
Airbag computer	88C-8
Airbag computer: CONNECTION	88C-11
Airbag computer: Configuration	88C-15
Side impact sensors	88C-16
Seat position sensor	88C-17
Inhibitor switch: Operating principle	88C-18
Inhibitor switch	88C-19
Front buckle pretensioner	88C-20
Rear pyrotechnic inertia reel	88C-22
Lap belt pretensioner and anti-submarining airbag	88C-23
Front lap belt pretensioner	88C-24
Anti-submarining airbag	88C-26
Driver's front airbag	88C-27
Passenger's airbag	88C-29
Front (chest) side airbag	88C-31
Rear side airbag (chest)	88C-33
Curtain side airbag	88C-35
Destruction procedure	88C-38

Essential equipment

Diagnostic tool

Tightening torques

battery mounting bracket to a torque of **0.7 daNm**

fuse on the battery terminal to a torque of **0.5 daNm**

battery terminals to a torque of **1.2 daNm**

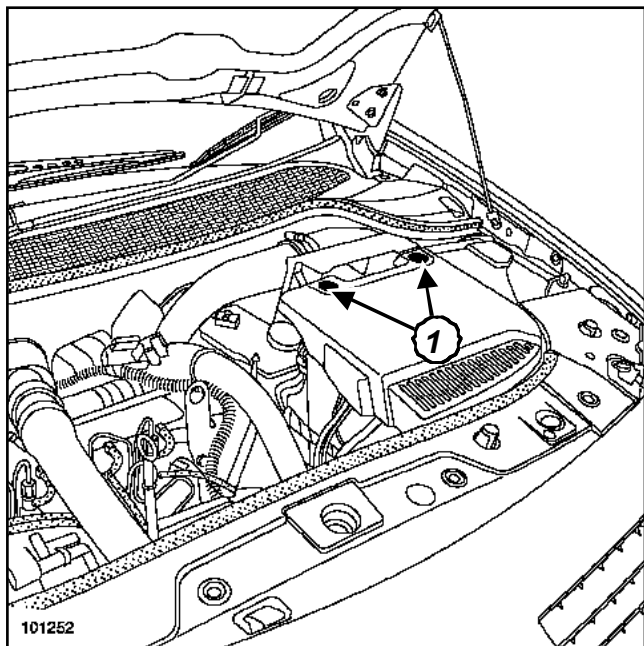
WARNING

These vehicles are equipped with a battery with low water consumption. Topping up the electrolyte is therefore prohibited.

Note:

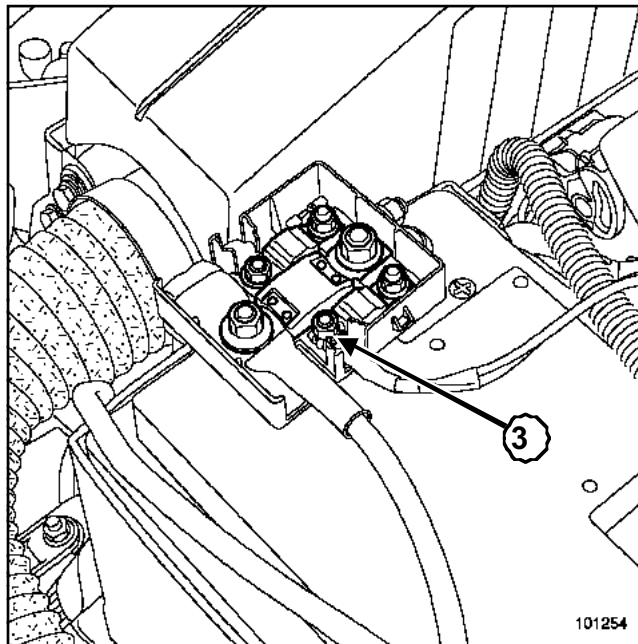
The electric steering column lock can be locked with the airbag computer using **Diagnostic tool**.

REMOVAL

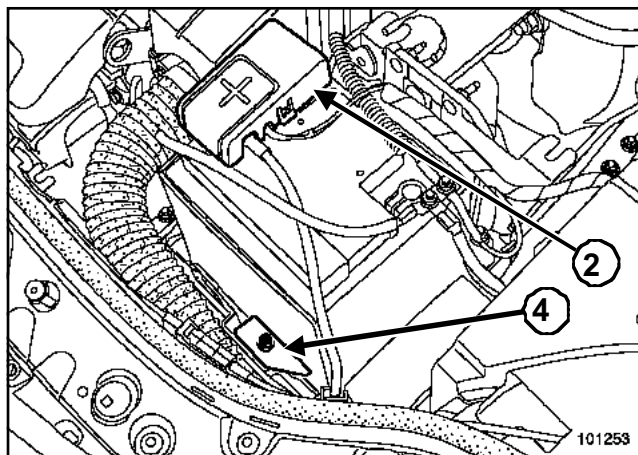


- Switch off all the consumers.
- Remove:
 - the battery cover mountings (1),
 - the battery cover.

- Disconnect the battery starting with the negative terminal.



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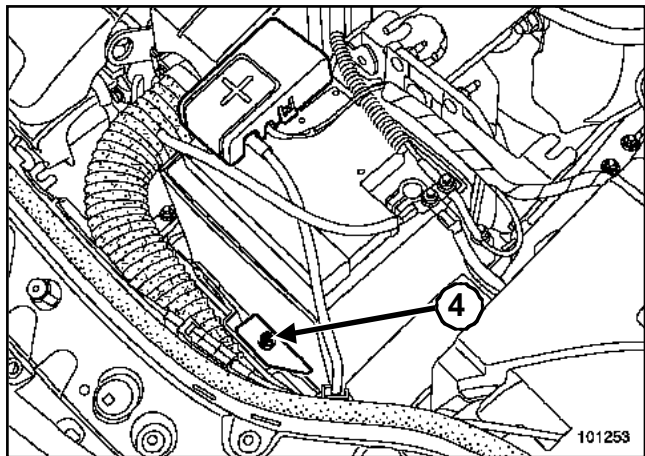
- Remove the cover (2).
- Disconnect:
 - the cover (3),
 - the positive terminal.

WARNING

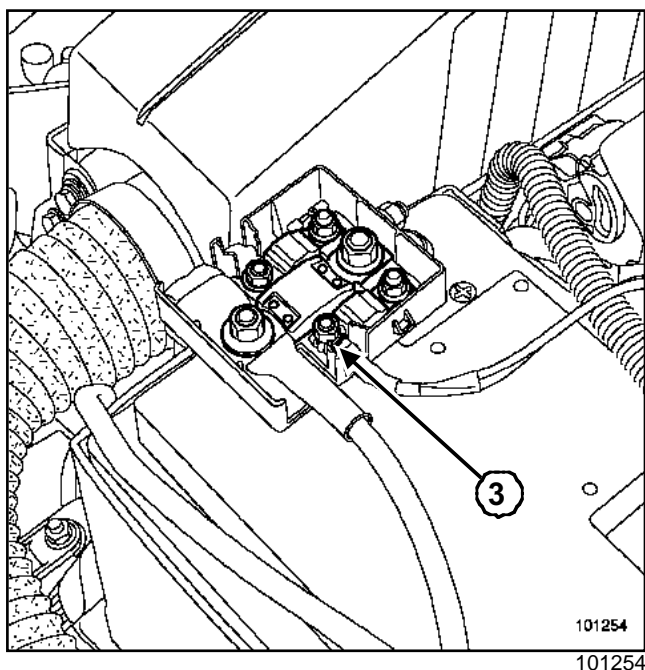
The fuse attachment is fragile.

- Remove the battery mounting bracket (4).

REFITTING



- Correctly position the battery in the battery tray.
- Tighten the **battery mounting bracket to a torque of (0.7 daNm)(4)**.



- Connect:
 - the positive battery terminal
 - the fuse (3).
- Tighten the **fuse on the battery terminal to a torque of (0.5 daNm)**.
- Connect the negative terminal.
- Tighten the **battery terminals to a torque of (1.2 daNm)**.
- Fit:
 - the battery positive terminal cover,
 - the battery cover.

When the battery is refitted and after every time it has been disconnected, a certain number of simple programming operations, which do not require the diagnostic tool, will have to be carried out for the vehicle to work properly:

- setting the time on the clock (except radio navigation),
- entering the four-digit radio or radio navigation code,
- initialising the one touch electric window motors,
- initialising the electric sunroof motor (depending on the nature of the work carried out),
- initialising the electric power assisted steering.

Note:

To set the radio navigation time, enter the four-digit code, put in the navigation CD-ROM, then go for a drive to capture the satellite signals. The time can then be set.

IMPORTANT

- A battery contains sulphuric acid, a hazardous substance.
- When a battery is charging, oxygen and hydrogen are produced. The mixture of these two gases is explosive.

I - WARNING: « ACID »

Sulphuric acid is a highly aggressive and toxic substance which corrodes most metals.

When handling batteries, it is very important to take the following precautions:

- protect your eyes with goggles,
- wear acid-proof gloves and clothing.

IMPORTANT

- If acid splashes on to your clothing, rinse all contaminated areas thoroughly in water.
- If it comes into contact with the skin or eyes, seek medical attention immediately.

II - WARNING: « RISK OF EXPLOSION »

When a battery is charging, oxygen and hydrogen are released. Gas generation is at a maximum when the battery is completely charged and the quantity of gas produced is proportional to the strength of the charging current.

The oxygen and hydrogen mix in the open air and on the surface of the plates and form an explosive mixture. This mixture is highly explosive.

The smallest of sparks or heat sources can cause an explosion. The explosion is so strong that the battery can shatter and spray the acid into the surrounding atmosphere.

People nearby are at risk (shattered casing parts, acid splashes). Acid splashes are dangerous. Acid also attacks clothing.

Safeguarding against the danger of explosion, which can be caused by handling a battery carelessly, must therefore be taken very seriously.

IMPORTANT

To avoid any risk of sparks:

- ensure that all consumers are completely switched off,
- when a battery is being charged indoors, switch off the charger before connecting or disconnecting the battery,
- do not place any metallic items on the battery, as to do so would cause a short circuit across the terminals,
- never hold a naked flame, a welding gun, hot air gun, a cigarette or a lighted match near to a battery.

BATTERY Check

80A

Essential special tooling

Ele. 1593 Battery tester. Midtronics R 330

Tightening torques

battery mounting flange **0.7 daNm**

terminal nuts **1.2 daNm**

I - BATTERY CHECK

1 - Visual check of the mounting

- Check that the battery is correctly mounted (**battery mounting flange (0.7 daNm)**) :

- excessive tightening of the battery flange is dangerous, the battery tray may be damaged or broken,

- insufficient tightening of the battery mounting flange leaves a clearance, the battery tray may become worn through the resulting friction or break from impact.

2 - Visual cleanliness check

- Check that there are no crystallising salts (sulphation) on the battery terminals.
- Clean the battery terminals.
- Grease the battery terminals if necessary.

- Check that the **terminal nuts (1.2 daNm)** sur les bornes.

IMPORTANT

- Poor contact may cause starting or charging faults, create sparks and cause the battery to explode.

- If acid splashes on to your clothing, rinse all contaminated areas thoroughly in water.

- If it gets onto your skin or into your eyes, see a doctor.

WARNING

These vehicles are equipped with a battery with low water consumption. Topping up the electrolyte is therefore prohibited.

II - BATTERY CHARGE

- The battery check is made using tool (Ele. 1593).

1 - Charger validation test reminder.

- It is essential to use a constant voltage charger so that heating is proportional to the intensity of the charge.

2 - test

- Set the charge intensity adjustment potentiometer to maximum.
- Read off the voltage displayed on your charger or at the battery terminals.

WARNING

If the voltage displayed is above **15 V**, the charger is not direct current (use is dangerous for the battery).

- You must stop charging if the charger is not direct current.

III - CHECKING PROCEDURE

1 - Checking the battery

- Check that the cause of the fault is not:
 - an abnormal electrical consumer,
 - an alternator charge problem.
- Replace any battery which is three or more years old.

2 - Test condition

- The check must be carried out with the vehicle stationary and the ignition switched off.
- Put the battery into test state if the engine has been running in the last hour:
 - with the engine off,
 - light up the dipped beam headlights for **two minutes**,
 - set the passenger compartment fan to maximum position for **two minutes**,
 - switch off the dipped headlights, the side lights and the passenger compartment cooling fan,
 - wait **two minutes**,
 - Switch off the ignition.
- Switch off all the consumers.

3 - Display

- Six messages are possible during the test:

BATTERY Check

80A

a - « good battery »



Note:

The battery is not the cause of the problem.

- Check the charge circuit and make sure there is no abnormal electrical consumer.

b - « Batt. OK + Recharge »



Note:

The battery is good a priori , but requires another charge)

- Charge the battery.
- Repeat the test.
- Recharge the battery using a direct current charger.

c - « charge + re-test »

- Recharge the battery, then repeat the test.
- Replace the battery if the message displayed after recharging is the same.
- Repeat the test on a new battery.

d - « Replace batt. »

- Replace the battery
- Repeat the test on a new battery.

e - « Defective component »

- A battery component is short-circuited.
- Replace the battery
- Repeat the test on a new battery.

f - « Test impossible »

- Check that the engine is switched off and that all the electrical accessories are switched off.
- Check that the tool (Ele. 1593) is correctly and directly connected on the battery terminals.
- Repeat the test. If the message is the same, carry out the test with the battery disconnected.

HEADLIGHTS

Automatic headlights

80B

I - AUTOMATIC HEADLIGHTS WHEN THE VEHICLE IS STATIONARY (SEE-ME-HOME FUNCTION).

Depending on the version, vehicles may be fitted with dipped headlights that come on automatically (when the engine is switched off) to light the area in front of the vehicle.

This function is only available when the ignition is switched off and operates in timed periods of **30 seconds** (maximum **2 minutes**).

Activation

It is switched on with the lighting stalk:

- switch off the ignition,
- turn on the main beam headlights twice using the stalk,
- the instrument panel beeps,
- the dipped beam headlights are supplied for **30 seconds**.

Note:

Each request for main beam headlights using the lighting stalk will add a timed period of **30 seconds** (maximum **2 minutes**).

Switching on the side lights or switching on the ignition will exit the function.

II - AUTOMATIC LIGHTING OF THE VEHICLE LIGHTS WHILE DRIVING

The lighting stalk is used for activating or inhibiting the function, if the UCH is configured correctly (Section Passenger compartment connection unit, page **87B-1**):

- engine stopped,
- press and hold the « Auto » button on the lighting stalk,
- if the function has changed status, the instrument panel beeps.

Note:

For special notes on replacing the light sensor, (Section Wiping / Washing, page **85A-1**).

The system operates in automatic mode.

Perform the same operation to return to manual mode.

HEADLIGHTS

Halogen or Xenon headlight

80B

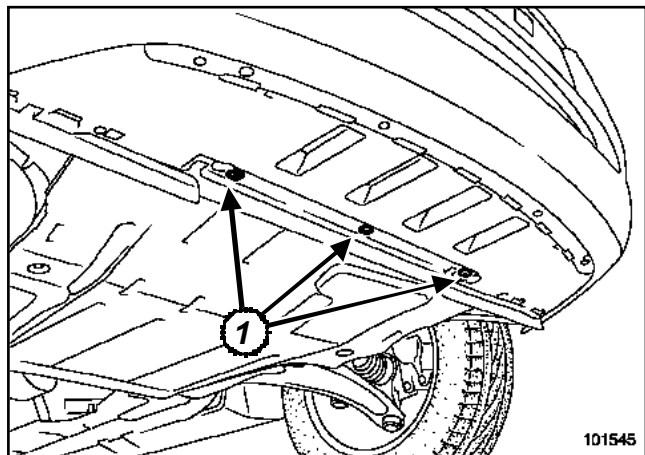
The headlight and the direction indicator are one unit.

IMPORTANT

The rules of safety for xenon headlights must be observed (Section Xenon bulbs, page 80C-1).

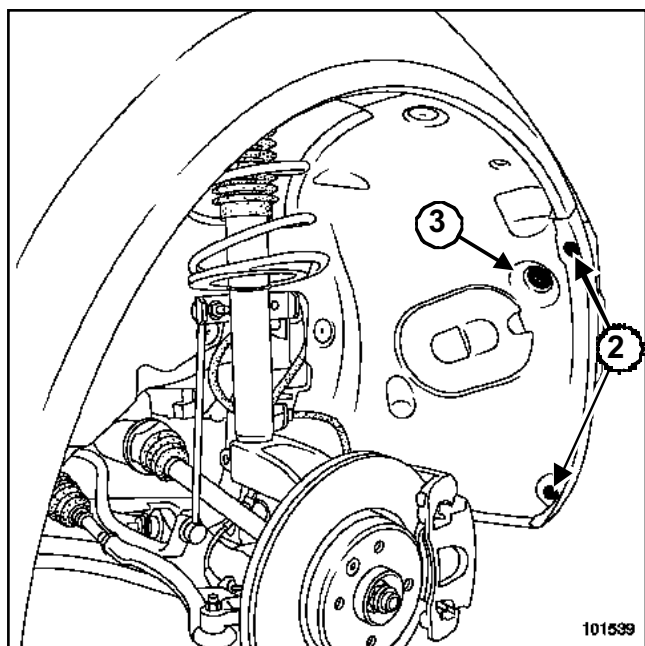
REMOVAL

- Disconnect the battery.



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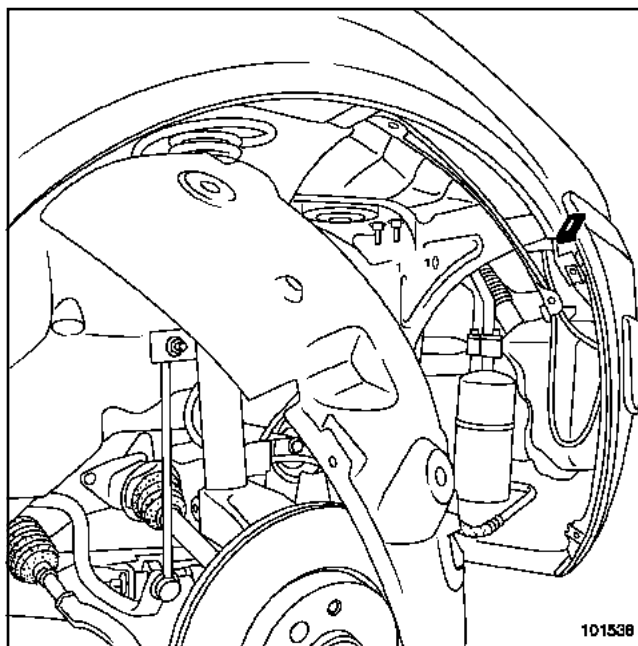
- Remove the bolts (1).



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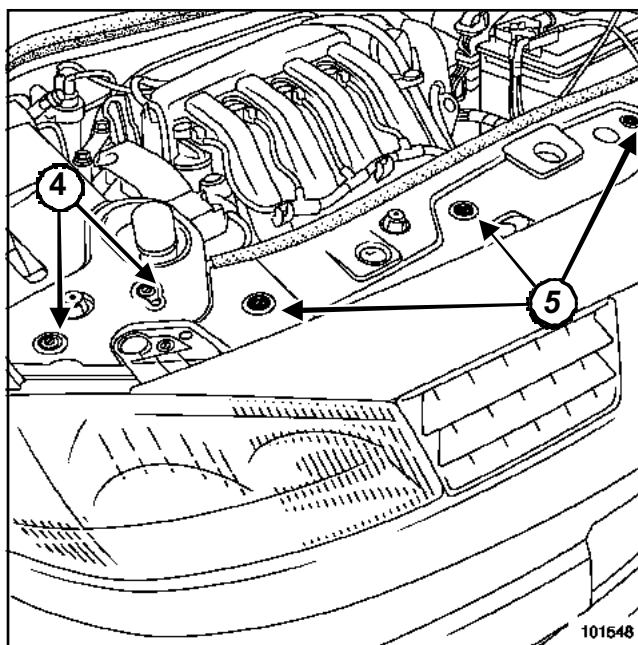
- Remove:

- the bolts (2),
- the clip (3),
- the front bumper.



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- Unclip the side section of the bumper.



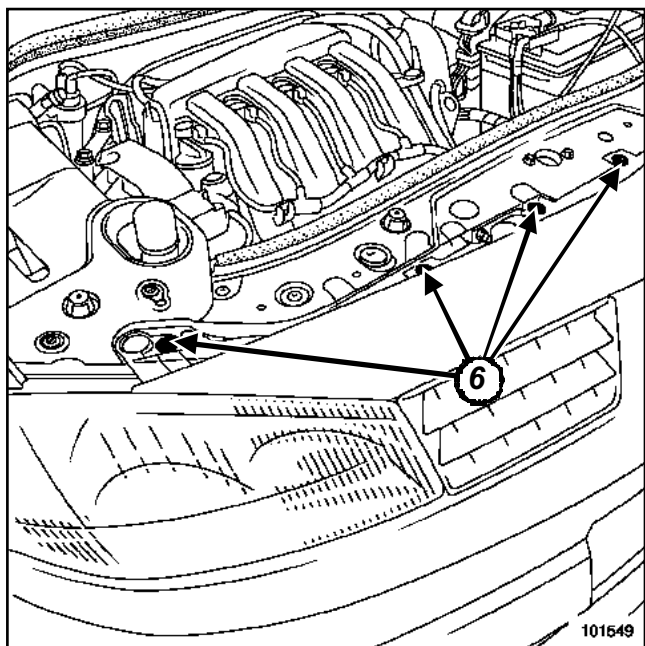
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- Unclip the plastic rivets (4).
- Release the side trim.
- Unclip the plastic rivets (5).
- Release the centre trim.

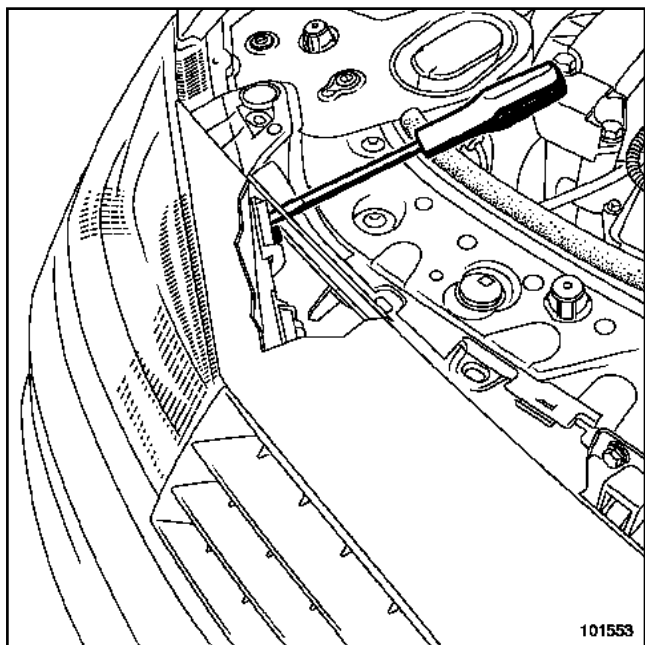
HEADLIGHTS

Halogen or Xenon headlight

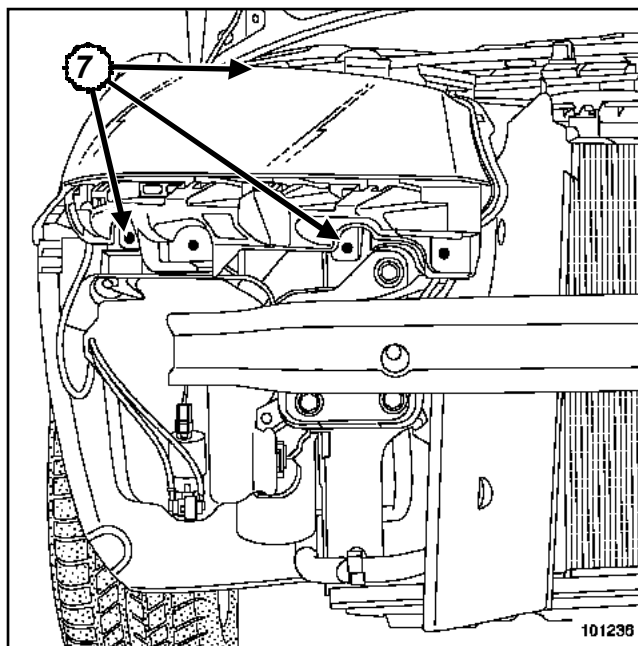
80B



- Remove the plastic rivets (6).



- Apply pressure to the clip using a flat screwdriver and release the bumper towards the front of the vehicle.
- Partially detach the bumper.
- Disconnect:
 - the fog light connectors,
 - the headlight washer jets supply (if fitted).
- Remove the bumper.



- Remove the headlight mounting bolts (7).
- Disconnect the headlight connector.
- Remove the headlight.

REFITTING

- To refit, proceed in the reverse order of removal.

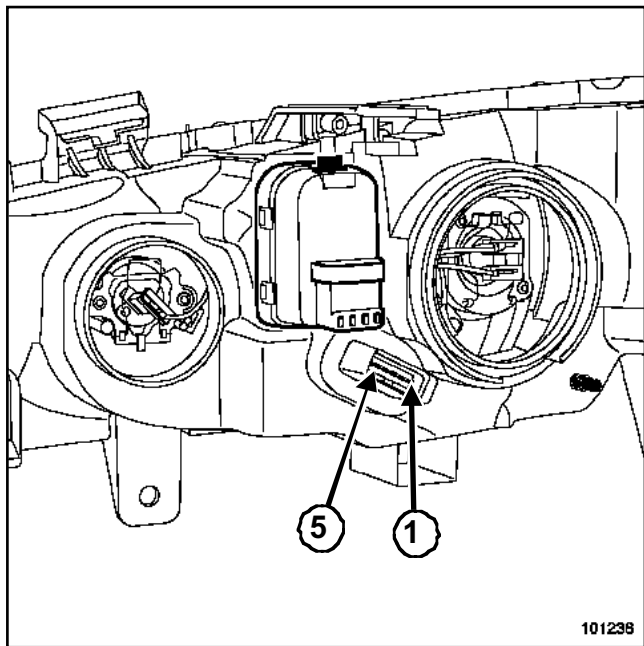
WARNING

- Connect the battery; carry out the necessary programming (Section Battery, page 80A-1).
- Adjust the headlight(s) removed.

HEADLIGHTS

Halogen headlight: CONNECTION

80B



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Connector

Track	Description
1	Earth
2	+ dipped beam
3	+ direction indicator
4	+ main beam headlight
5	+ side light

HEADLIGHTS

Halogen headlights Adjustment

80B

- Position the vehicle on a flat level surface.
- Inflate the tyres to the recommended pressure.
- Open the bonnet.
- Ensure that the vehicle luggage compartment is empty.

Note:

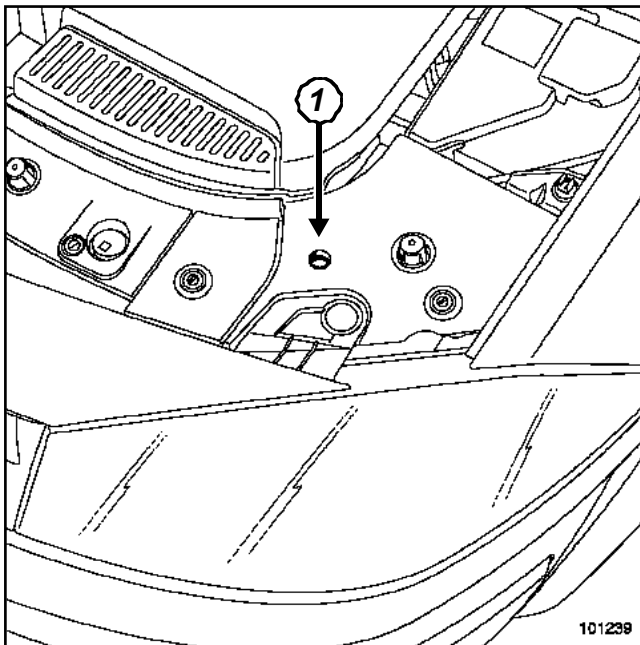
Do not apply the parking brake.

- Set the remote adjustment control to « 0 ».
- Position a headlight adjustment tool in front of the vehicle according to the written value (-1.0 %) depending on the equipment level.

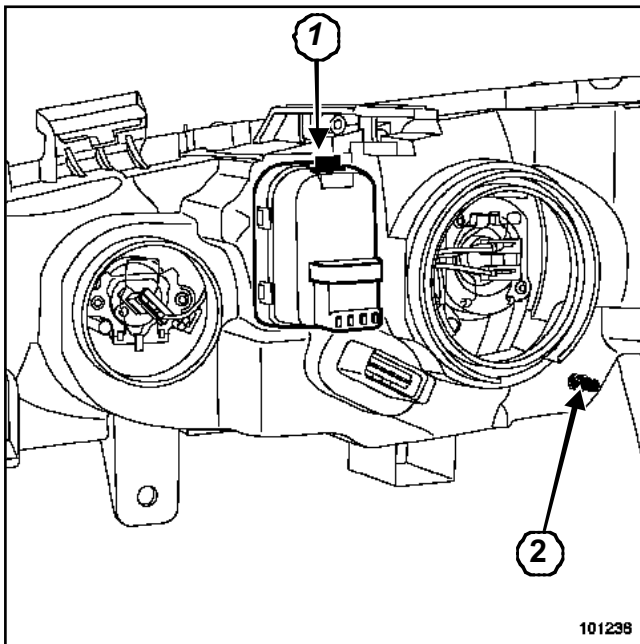
- Turn screw (1) for vertical adjustment.
- Turn screw (2) for horizontal adjustment.

Note:

To access the horizontal adjustment screw (2), use a **6 mm** Allen key through the wheel arch access flap.



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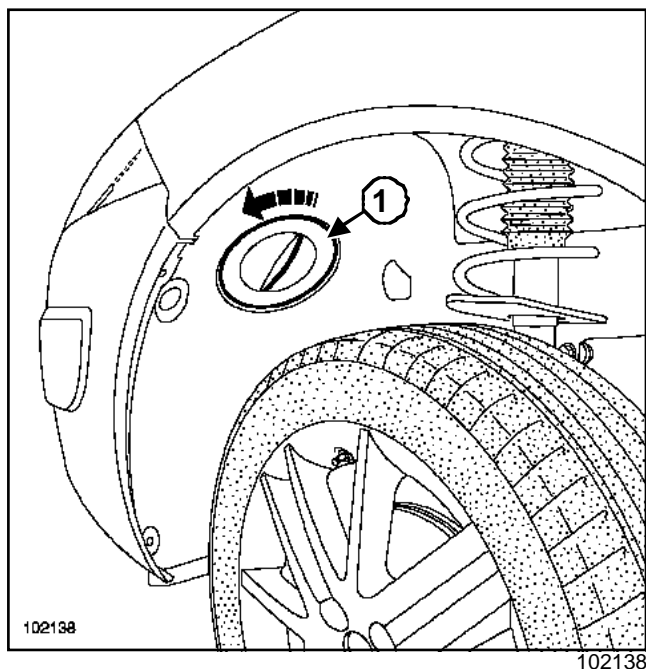
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HEADLIGHTS

Halogen bulbs: Replacement

80B

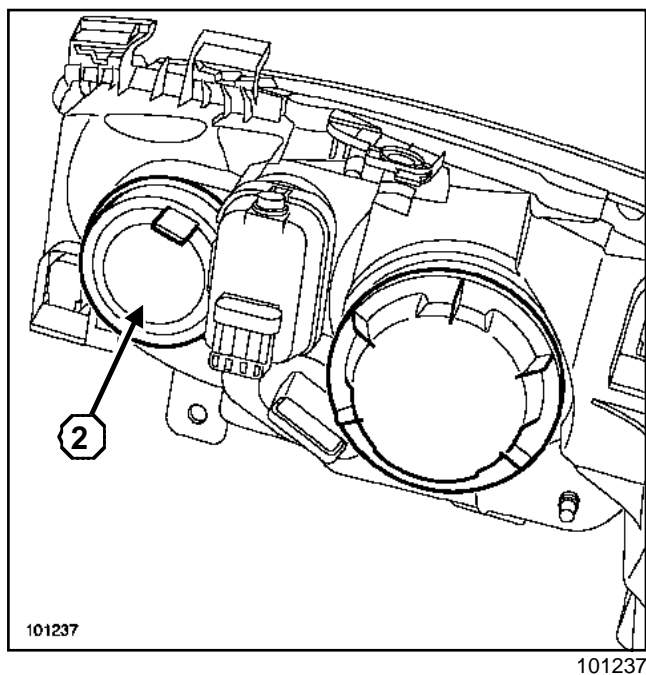
REPLACEMENT



- ❑ The bulbs are replaced following various procedures depending on the engine:

- via the mud guard access flap (1),
- through the engine compartment,
- by removing the headlight unit.

I - MAIN BEAM BULBS



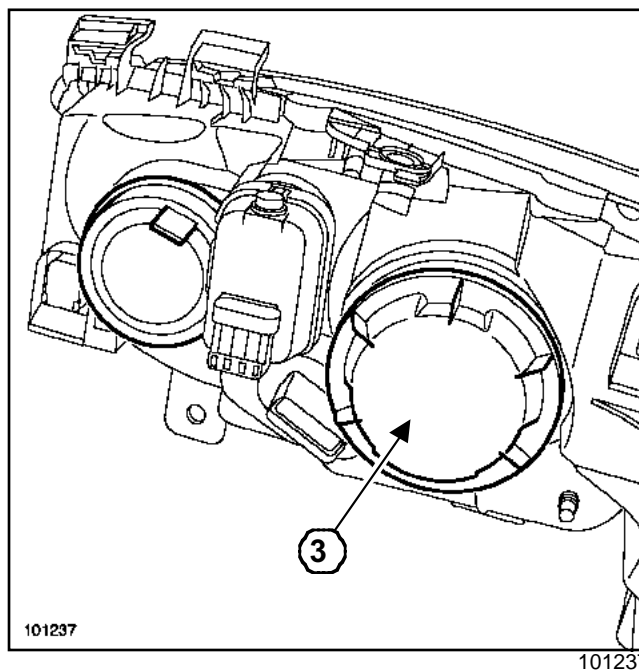
- ❑ Remove:
 - the plastic cover (2),

- the bulb.

Note:

Only use approved H1 bulbs.

II - SIDE LIGHT BULBS



- ❑ Remove:
 - the plastic cover (3),
 - the bulb.

Note:

Only use approved W5W bulbs.

III - DIPPED BEAM HEADLIGHT BULB

- ❑ Remove:
 - the plastic cover (3),
 - the bulb.

Note:

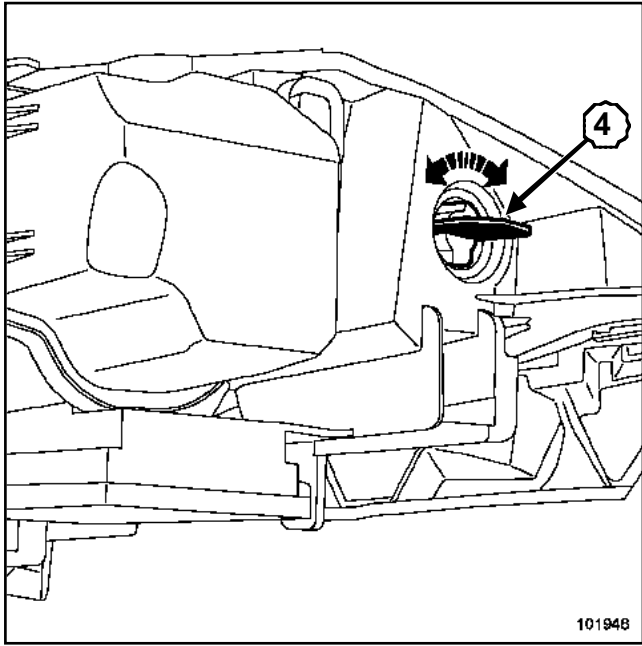
- Only use approved H7 bulbs.
- For replacing Xenon headlight bulbs (Section Xenon bulbs, page 80C-1).

HEADLIGHTS

Halogen bulbs: Replacement

80B

IV - DIRECTION INDICATOR BULB

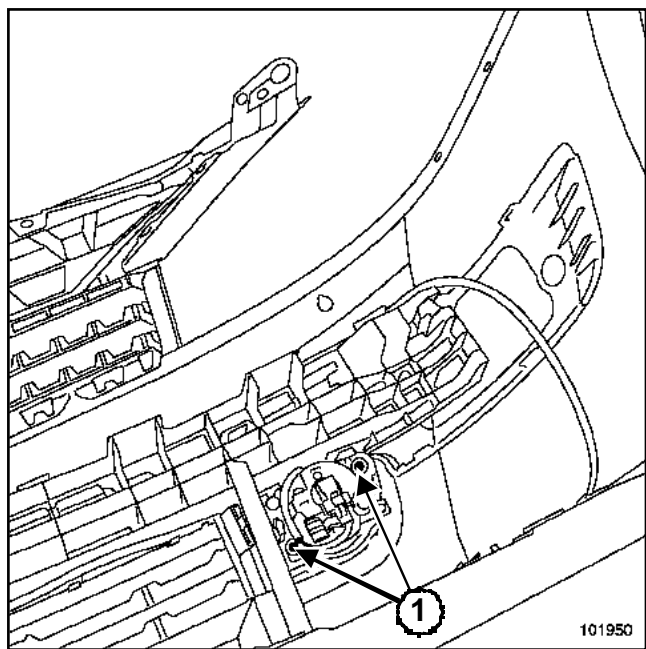


- ❑ Remove:
 - the plastic cover (4),
 - the bulb.

WARNING

Only use approved **PY21W** bulbs.

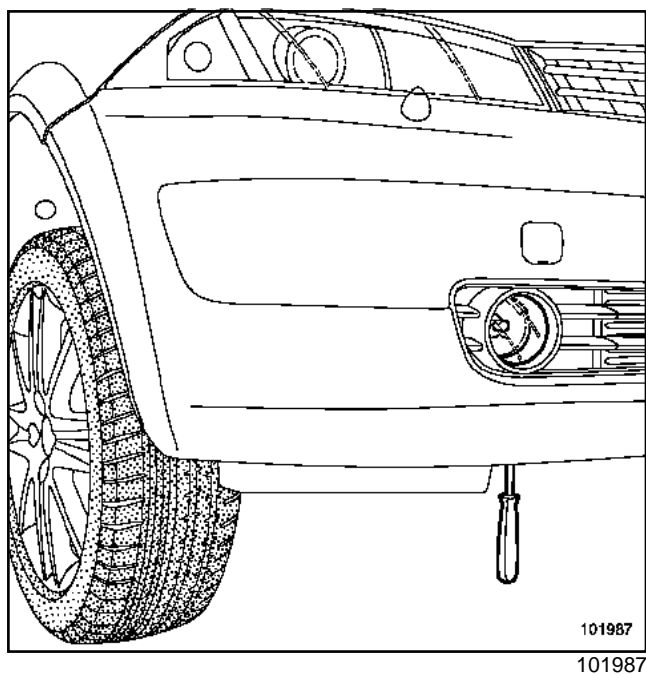
REMOVAL



Remove:

- the front bumper,
- fog light mounting bolts (1) (front).

REFITTING



- To refit, proceed in the reverse order of removal.
- Adjust the fog lights using a screwdriver.

WARNING

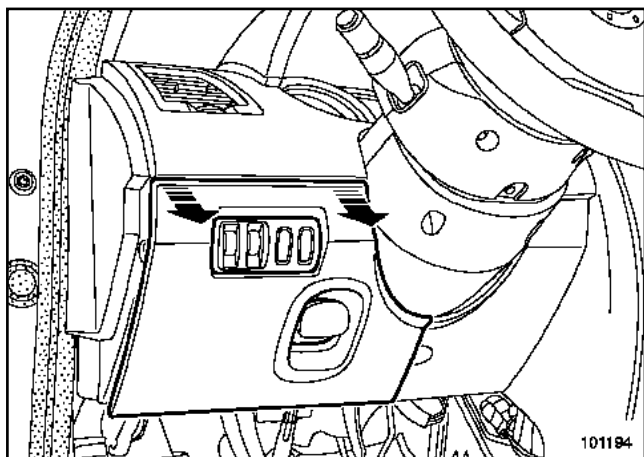
Two versions are available:

- with an « entry level » lighting dimmer for manual heating and ventilation systems,
- with a « top of the range » lighting dimmer for climate control.

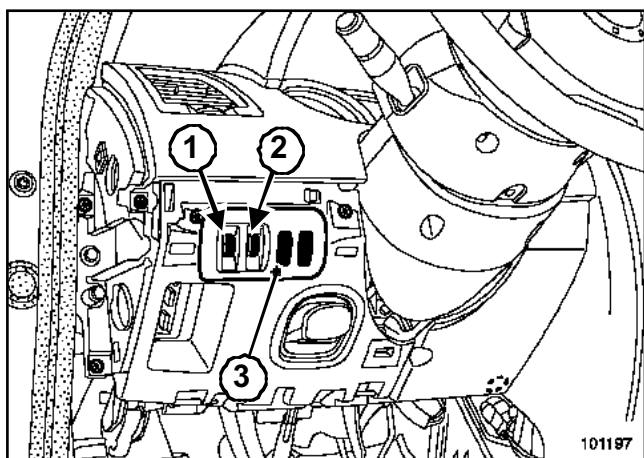
Note:

The beam adjustment part is the same, regardless of heating and ventilation system.

REMOVAL



101194



101197

□ Remove:

- the trim underneath the driver's side of the dashboard,

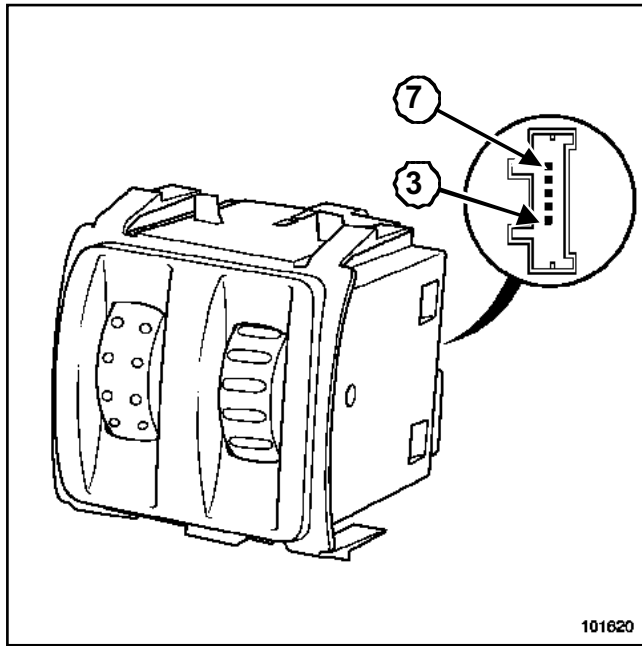
- the switch plate (3) using a small screwdriver.

Note:

The lighting dimmer (1) and beam adjustment control (2) form a single unit

- Disconnect the connector.
- Separate the « adjustment control - dimmer » from its support.

Remote adjustment control: Connection



101620
101620

Track	Description
1	Not used
2	Not used
3	Side lights signal (from the Protection and Switching Unit)
4	Earth
5	Dimmer output
6	Beam adjustment actuator control
7	Supply (via Protection and Switching Unit)
8	Not used

TUMBLEWHEEL POSITION

Check the « beam adjustment command » section (command connected on the vehicle, using a voltmeter between tracks 4 and 6)

Position of the tumblewheel	Beam adjustment output (track 6)	
	Minimum value	Maximum value
0	0.95 V	1.14 V
1	3.61 V	4.17 V
2	5.62 V	6.29 V
3	8.35 V	8.97 V
4	10 V	11.18 V

Headlight remote adjustment actuator

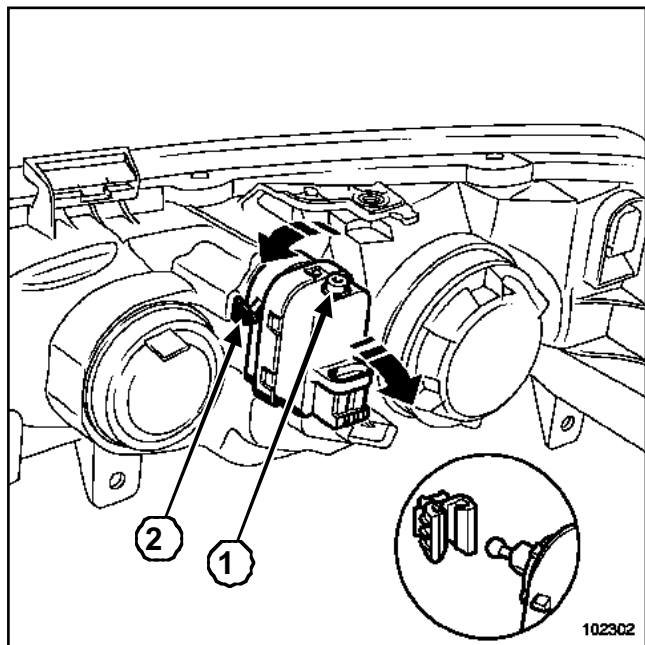
It is necessary to remove the lens unit to remove the beam adjustment actuator.

Note:

For information regarding the xenon headlights (Section Xenon bulbs, page 80C-1).

REMOVAL

- Remove the headlight.



102302

- Turn the motor one eighth of a turn to the outside to release it from the headlight.

WARNING

Detach the catch (2) carefully to avoid breaking it

- Disconnect the ball joint from the parabola by tilting the actuator slightly.

Note:

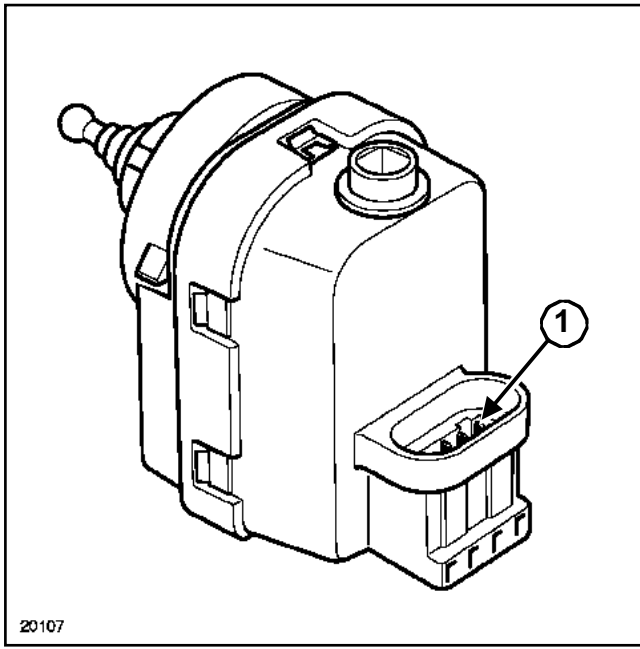
To facilitate this tighten screw (1) by several turns.

REFITTING

- Keep the parabola towards the rear of the lens unit while pulling on the base of the bulb.
- Click the ball joint into the headlight clip.
- Position the motor on the headlight.
- Turn the motor one eighth of a turn so that it engages in the headlight.
- Reconnect the connector itself.
- Refit the sealing cover.

- Adjust the headlights.

Headlight remote adjustment actuator: CONNECTION



Track	Description
1	Earth
2	Motor control
3	Supply (via Protection and Switching Unit)

XENON BULBS

Headlights: Description

80C

These vehicles are required to have the following fitted:

- an automatic beam adjustment system for each headlight based on vehicle attitude, acceleration, braking and vehicle speed,
- headlight washers.

IMPORTANT

- Never light a bulb which is not fitted in its headlight unit (can damage eyesight).
- Xenon bulbs operate at a voltage of **20000 V** when switched on then at **85 V** alternating current when in operation.
- Wait until the « computer / power unit » assemblies have cooled before removing them.
- The battery must be disconnected before carrying out any operation.

Note:

- The height of the beam varies with vehicle speed.
- Above **20 mph (30 km/h)**, the headlight range is larger.

The bulbs do not contain a filament. The light from these bulbs is generated by two electrodes in a quartz bulb which contains high-pressure gas (Xenon) and Mercury.

Each headlight unit has a computer integrated into the power unit (ballast).

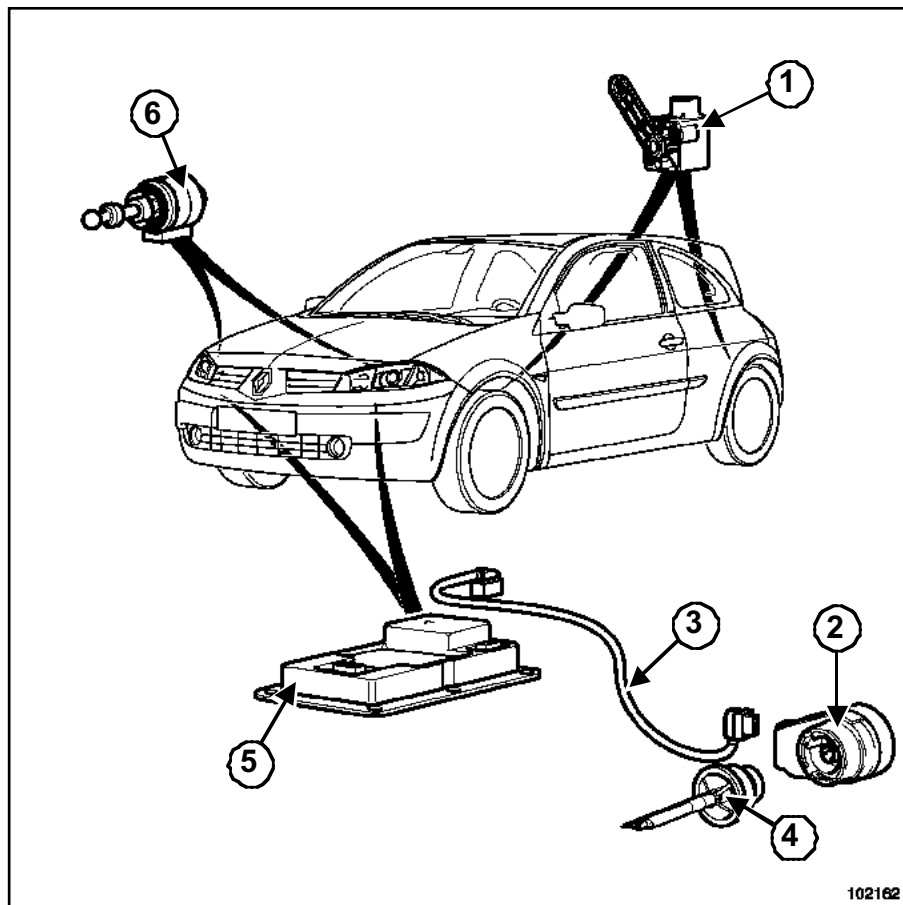
Fault finding tools are compatible with this system .

The « computer - power unit » assembly and the Xenon bulb may be replaced independently of the lens unit.

WARNING

The actuator (stepping motor) cannot be removed from the headlight unit.

If the actuator is defective, replace the headlight unit.



102162

102162

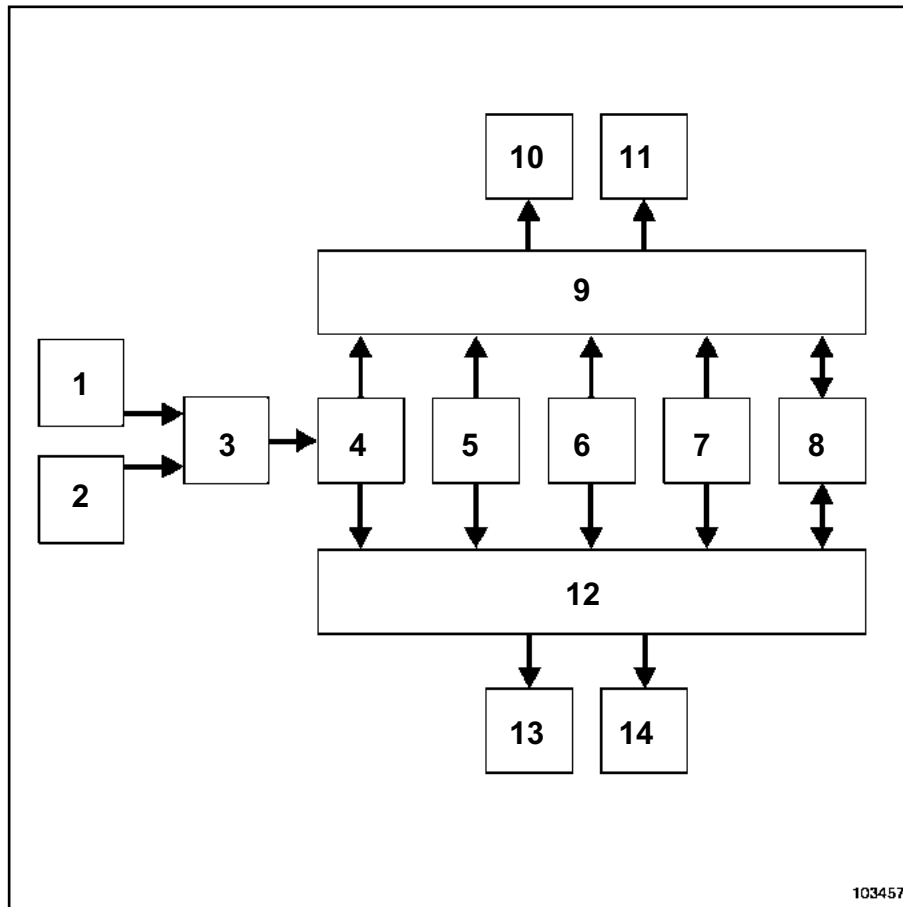
XENON BULBS

Headlights: Description

80C

- | | | | |
|-----|------------------------------|-----|---------------------------|
| (1) | Front and rear height sensor | (4) | Xenon bulb |
| (2) | Capacitor | (5) | Computer - power unit |
| (3) | High voltage wiring harness | (6) | Actuator (stepping motor) |

Schematic diagram



103457
103457

1	Rain and light sensor
2	Lighting stalk
3	UCH
4	Main beam headlights / dipped beam headlight signal (Protection and Switching Unit)
5	Vehicle speed signal (ABS computer)
6	Front height (front sensor)
7	Rear height (rear sensor)
8	Diagnostic line K

XENON BULBS

Headlights: Description

80C

9	Computer + power unit (left-hand headlight)
10	Bulb
11	Left-hand height adjustment actuator
12	Computer + power unit (right-hand headlight)
13	Right-hand height adjustment actuator
14	Bulb

REMOVAL / REFITTING

- The method for removing/refitting headlights with xenon bulbs is the same as the method for halogen headlights (Section Headlights, page **80B-1**).

IMPORTANT

- Never light a bulb which is not fitted in its headlight unit (can damage eyesight).
- Xenon bulbs operate at a voltage of **20000 V** when switched on then at **85 V** alternating current when in operation.
- Wait until the « computer / power unit » assemblies have cooled before removing them.
- The battery must be disconnected before any operation is performed.

Note:

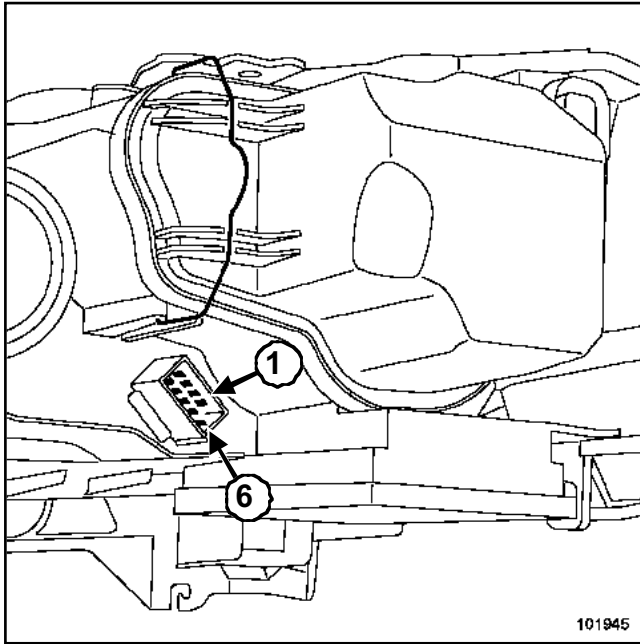
It is essential to initialise the xenon bulbs system (Section Xenon bulbs, Xenon headlights: Adjustment, page **80C-13**) and then to adjust the headlights.

XENON BULBS

Headlights: CONNECTION

80C

CONNECTION



101945

Track	Description
1	Not used
2	Diagnostic line
3	+ Dipped beam headlight
4	Earth (dipped beam headlight)
5	+ Main beam headlight
6	Height signal (front and rear sensors)
7	Vehicle speed signal
8	Direction indicator
9	Side light
10	Earth

XENON BULBS

Xenon bulb: Replacement

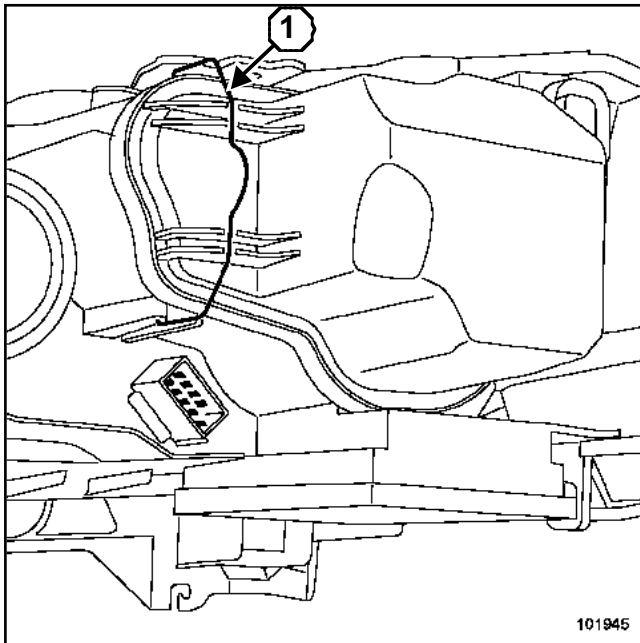
80C

IMPORTANT

- Never switch on a bulb which is not fitted into the headlight (can be dangerous for the eyes).
- Xenon bulbs operate at a voltage of **20000 V** as they are switched on, then at **85 V AC** while operating.
- Wait for the « computers / power unit » to cool down before removing them.
- The battery must be disconnected before any operations are performed

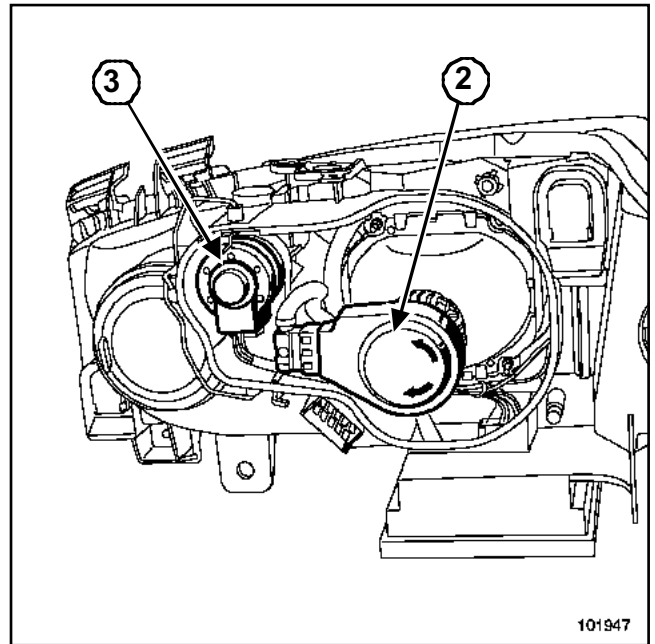
It is preferable to remove the headlight before replacing a xenon bulb.

REMOVAL



101945
101945

- Release the retaining clip (1).
- Remove the sealing cover.



101947
101947

- Remove the high-voltage unit (2) by turning it one eighth of a turn anti-clockwise.
- Unclip the retaining latch holding the bulb.

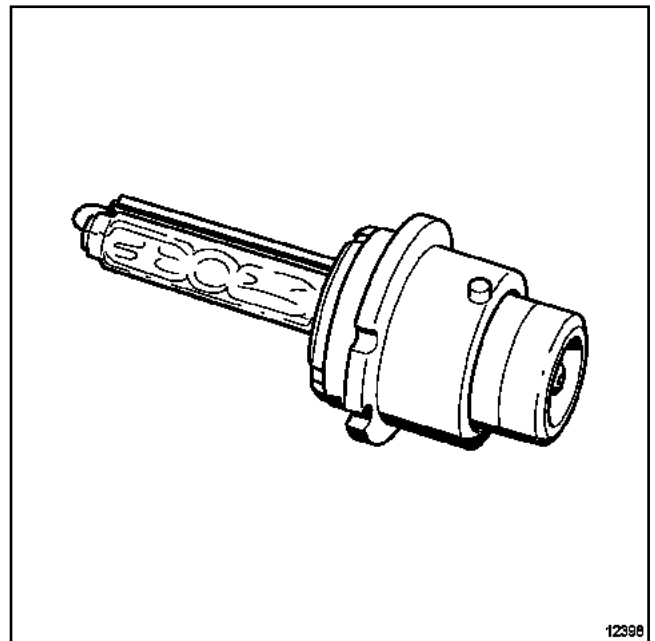
WARNING

The actuator (3) (stepper motor) can not be removed from the headlight.

If the actuator is faulty replace the headlight.

REFITTING

- Hold the bulb by the base (if you touch the bulb, you must clean it with alcohol and a soft lint-free cloth).



12398
12398

XENON BULBS

Xenon bulb: Replacement

80C

□ Fit:

- the bulb, the lug must be lined up with the groove in the headlight,
- the bulb locking bolt,
- the high-voltage unit,
- the supply connector.

Note:

- It is essential to initialise the xenon headlight system (Section Xenon bulbs, Xenon headlights: Adjustment, page **80C-13**) and then to adjust the headlights.
- Only use D2S approved bulbs.

XENON BULBS

Xenon lamp computer

80C

Tightening torques

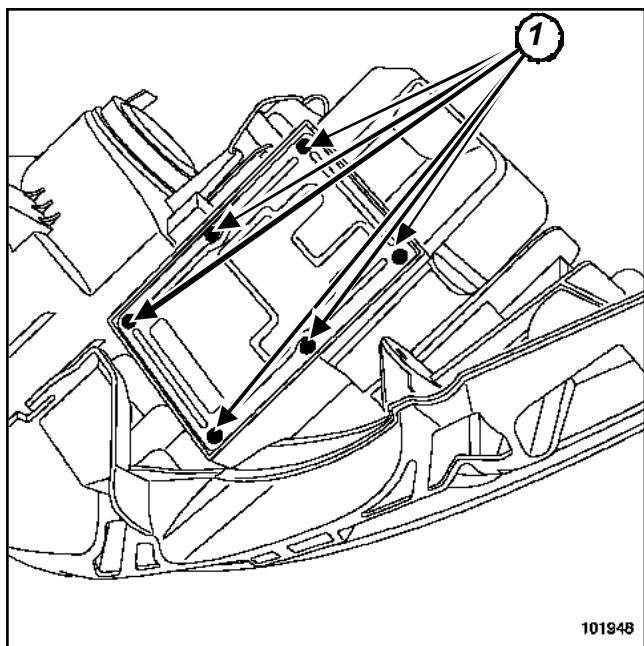
power computer	1.2 daNm
----------------	----------

IMPORTANT

- Never switch on a bulb which is not fitted into the headlight (dangerous to the eyes).
- Xenon bulbs operate at a voltage of **20000 V** as they are switched on, then at **85 V AC** while operating.
- Wait for the « computers / power unit » to cool down before removing them.
- The battery must be disconnected before any operations are performed

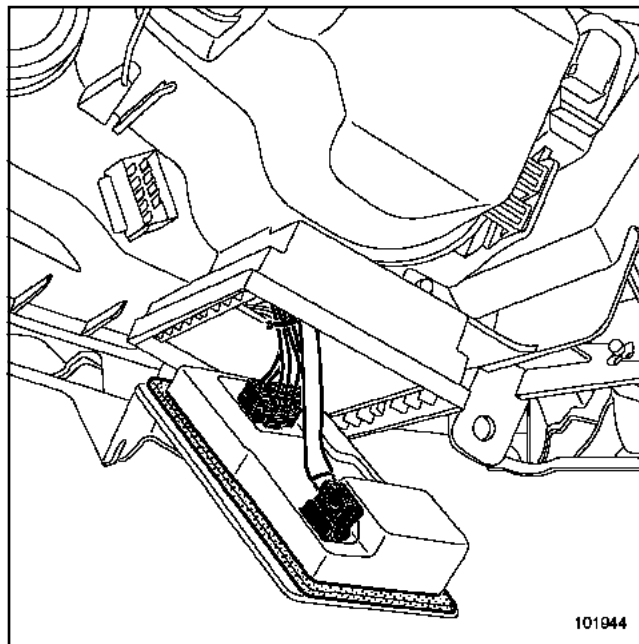
REMOVAL

- Disconnect the battery.
- Remove the headlight.
- Place the headlight on a clean cloth so as not to scratch it.



- Remove the power computer mounting bolts (1).
- Disconnect the connectors.

REFITTING



WARNING

- The left and right-hand headlight high-voltage wiring harnesses are different (brown connector for the left-hand headlight and blue for the right-hand headlight).
- The seal must always be replaced when a computer is replaced.

- Tighten to torque the **power computer (1.2 daNm)**.

WARNING

After computer has been replaced, it must be programmed with:

- position **CF004** (example, left-hand lens unit),
- configuration **CF003** (example B - C - K - E).
- Turn off the dipped headlights so that the computer can check the configuration.
- Switch on the lights.
- Go into fault finding mode.
- Check that the configurations have been accepted.

Note:

It is essential to initialise the xenon headlight system (Section Xenon bulbs, Xenon headlights: Adjustment, page **80C-13**) and then to adjust the headlights.

XENON BULBS

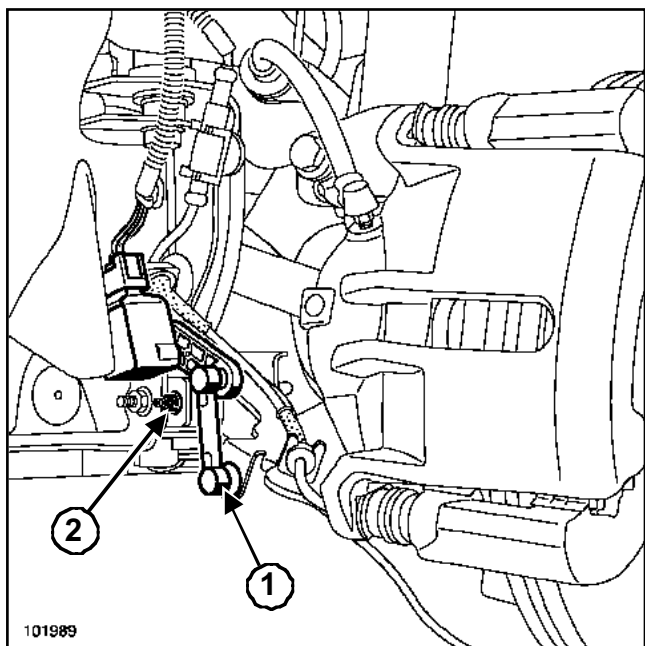
Front height sensor

80C

Tightening torques

front height sensor mounting bolt	8 Nm
-----------------------------------	------

REMOVAL



- Disconnect the connector.
- Remove:
 - clip (1),
 - the front height sensor mounting bolt (2).

REFITTING

- Position the sensor and its mounting on the vehicle.
- Tighten to torque the **front height sensor mounting bolt (8 Nm)**.

WARNING

The clip (1) must be replaced whenever it is removed.

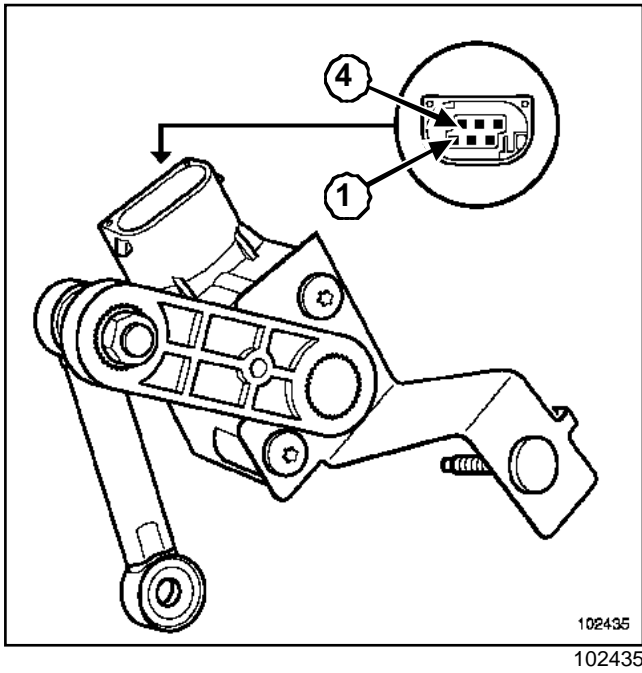
Note:

- Since the front sensor does not have the same electronic specifications as the rear sensor, it is very important not to confuse them.
- The front sensor has a yellow mark.
- It is essential to initialise the xenon headlight system (Section Xenon bulbs, Xenon headlights: Adjustment, page **80C-13**) and then to adjust the headlights.

XENON BULBS

Front height sensor: CONNECTION

80C



Track	Description
1	Earth
2	Connection to rear sensor track 6
3	Not used
4	Height signal (output)
5	Supply (dipped headlights)
6	Connection to rear sensor track 2

XENON BULBS

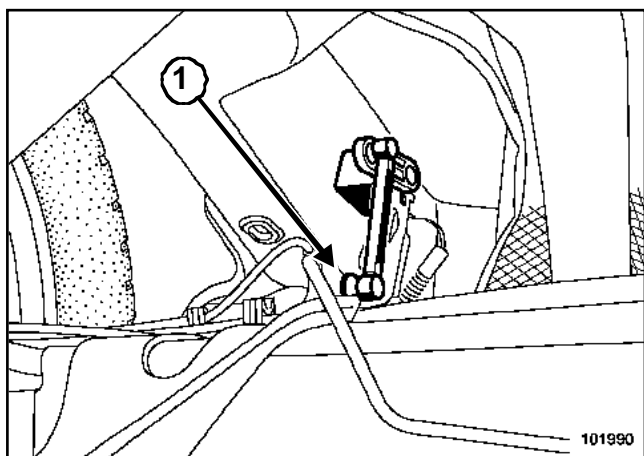
Rear height sensor

80C

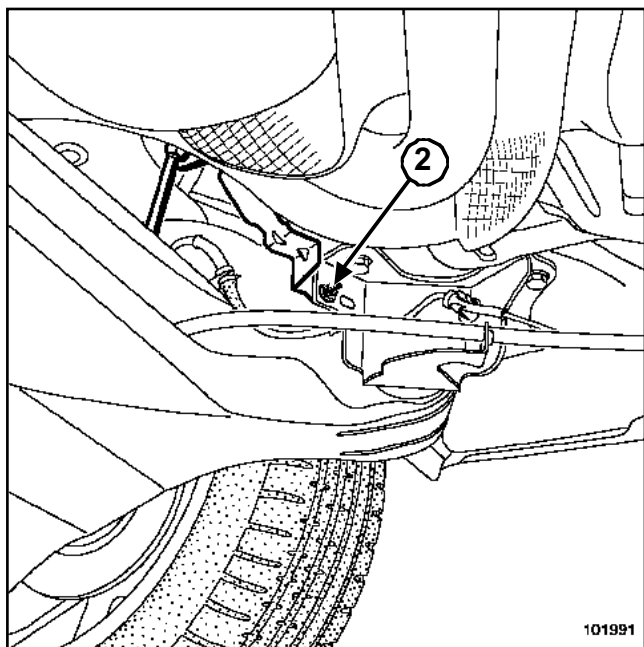
Tightening torques

rear height sensor mounting bolt	8 Nm
----------------------------------	------

REMOVAL



101990



101991

Remove:

- clip (1),
- the rear height sensor mounting bolt (2).

REFITTING

- Position the sensor and its mounting on the vehicle.

Tighten to torque the **rear height sensor mounting bolt (8 Nm)**.

WARNING

Clip (1) must be replaced each time it is removed.

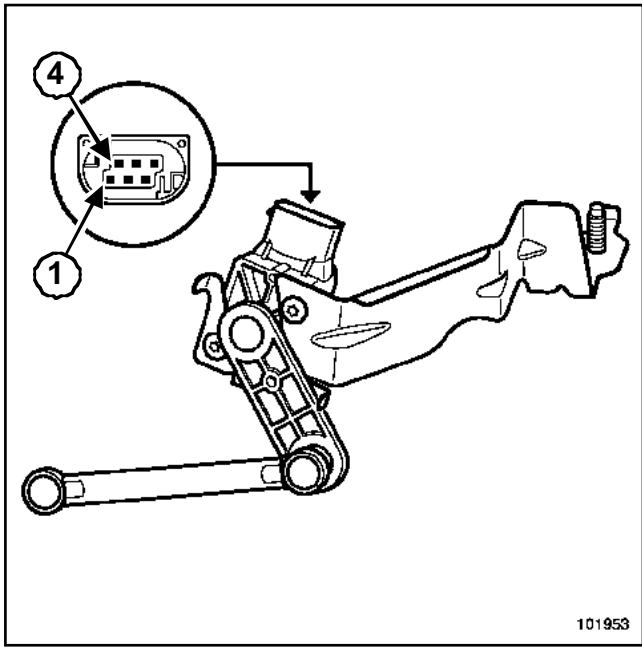
Note:

- Since the rear sensor does not have the same electronic specifications as the front sensor, it is very important not to mix them up.
- The front sensor has a green mark.
- It is essential to initialise the Xenon bulbs system (Section Xenon bulbs, Xenon headlights: Adjustment, page **80C-13**) and to then adjust the headlights.

XENON BULBS

Rear height sensor: CONNECTION

80C



101953

Track	Description
1	Earth
2	Connection to front sensor track 3
3	Connection to front sensor track 2
4	Height signal (output)
5	Supply (dipped headlights)
6	Not used

XENON BULBS

Xenon headlights: Adjustment

80C

Essential equipment

Diagnostic tool

WARNING

Any job on a Xenon headlight unit, sensor or axle assembly component requires initialisation followed by headlight adjustment.

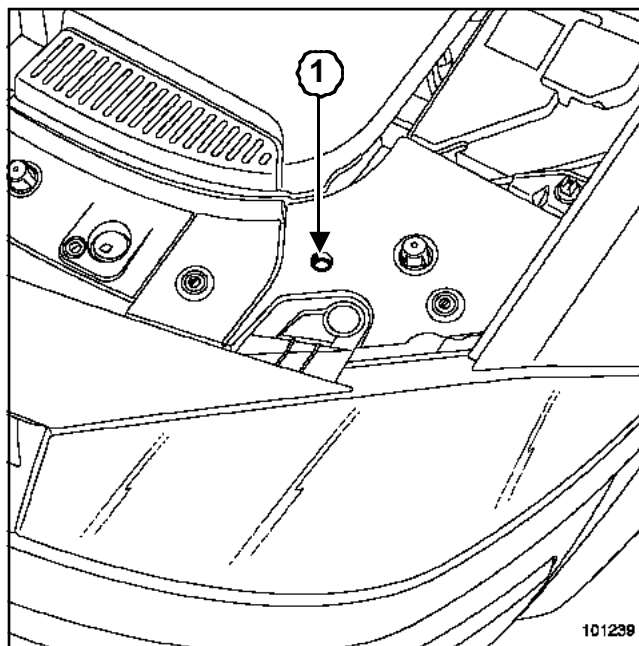
- Place the vehicle on a level horizontal surface.
- Inflate the tyres to the recommended pressure.
- Open the bonnet.
- Ensure that the vehicle luggage compartment is empty.

Note:

- Do not apply the parking brake.
- Do not get into the vehicle throughout the operation.

ADJUSTMENT

- Turn on dipped beam headlights.
- Connect the **Diagnostic tool**.
- On the **Diagnostic tool**, select the «discharge bulb » system of one of the headlights (left-hand or right-hand).
- Check that there are no faults.
- Select command **CF001 « Computer calibration »**.
- Exit fault finding mode.
- Switch off the dipped beam headlights, (the computer will confirm initialisation).
- Start the procedure again for the other headlight.



101239

101239

- Turn the dipped headlights back on.
- Position a headlight adjustment tool at **-1.3 %** (value written on the headlight) in front of the vehicle.
- Adjust the headlights via access (1).

Note:

Initialisation may not be successful:

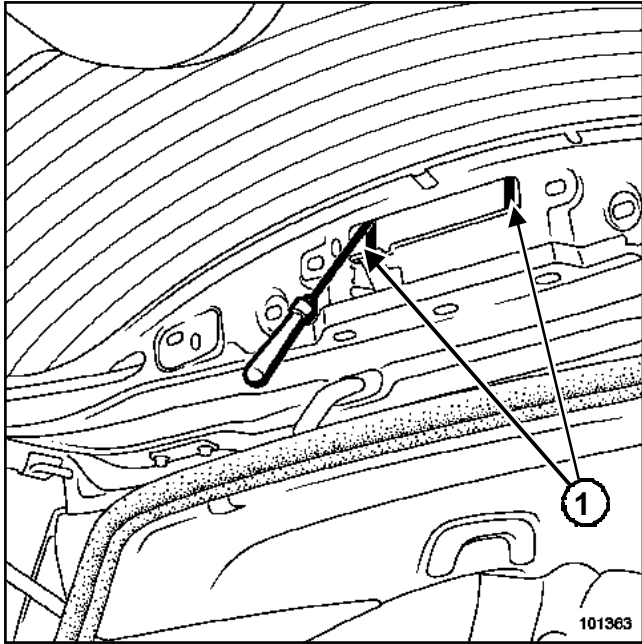
- if the computer(s) configured in the headlight(s) is/are not in position (alignment),
- if the vehicle speed is not zero,
- if there is a sensor fault (no signal or inconsistent signal),
- if there is no configuration in the computer (vehicle type: K,L,E, etc.).

REAR LIGHTING

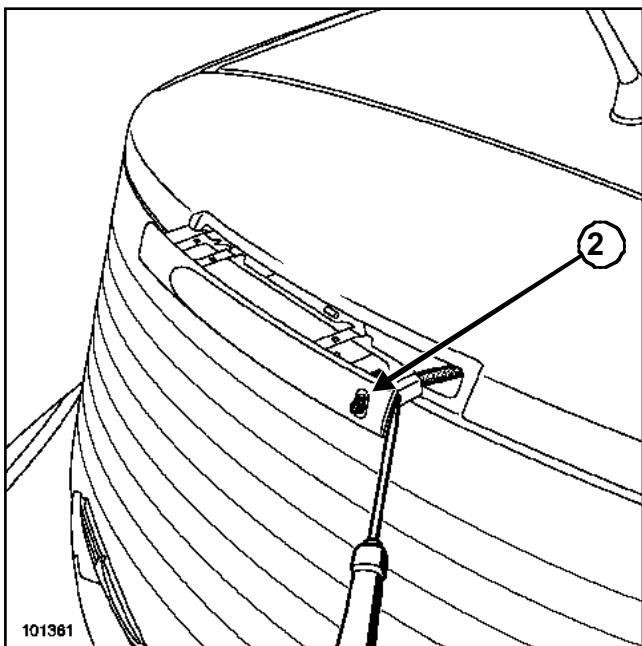
High level brake light

81A

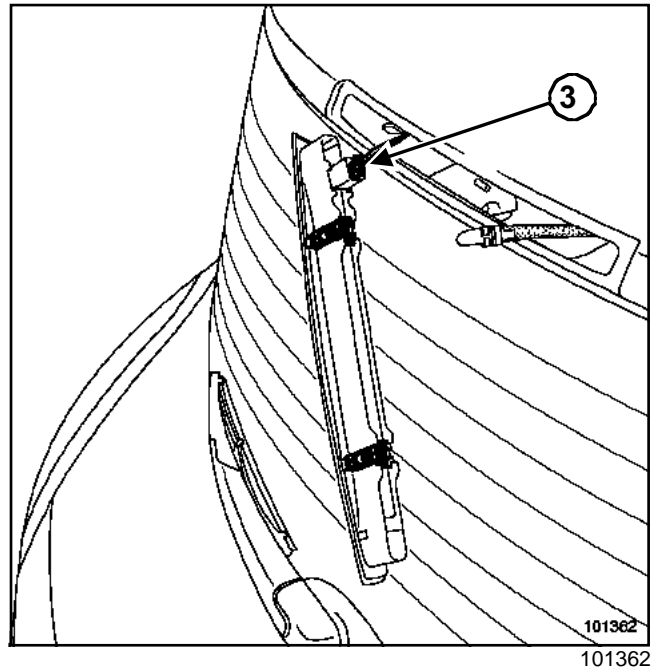
REMOVAL



- ❑ Remove the interior tailgate trim (see **Tailgate lining**) in **Workshop Repair Manual 365 - Bodywork**.
- ❑ Unclip the light by pressing on the lugs (1) with a flat screwdriver.



- ❑ Unclip the washer jet (2).



- ❑ Disconnect the connector (3).
- ❑ Remove the third brake light.

Note:

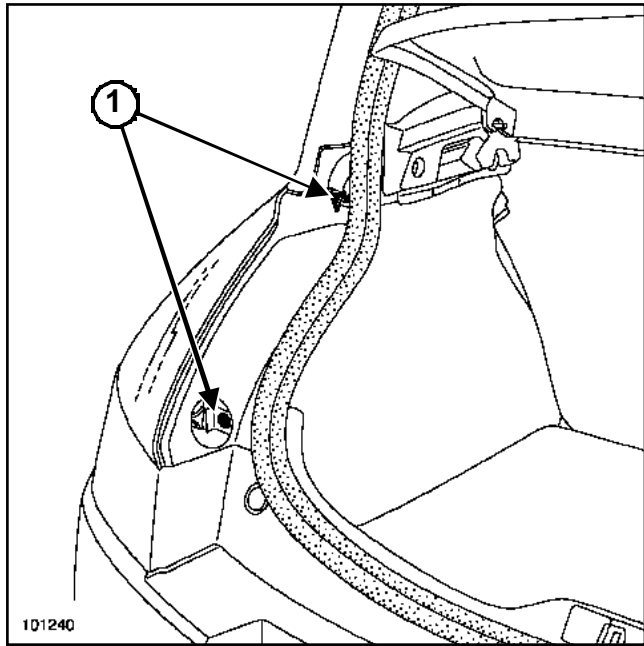
The vehicles are fitted with a brake light containing diodes.

REFITTING

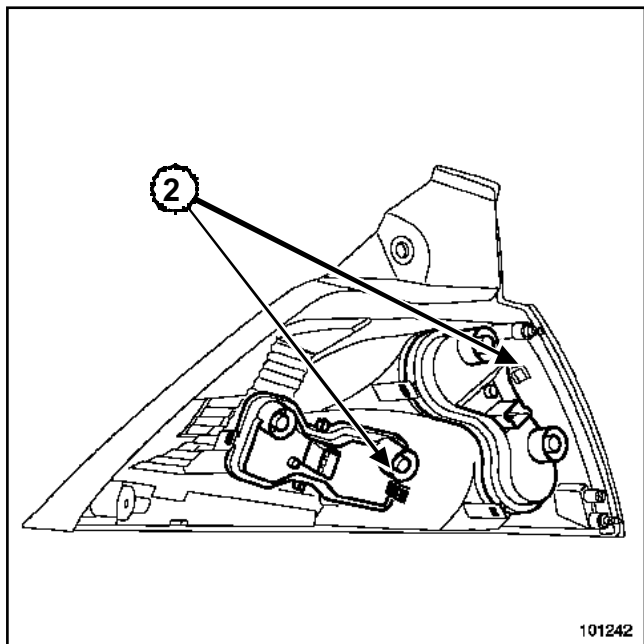
- ❑ To refit, proceed in the reverse order of removal.

To access the bulbs, unclip the bulb mountings by pressing the tabs (1).

REMOVAL



- Remove the two nuts (1).
- Unclip the rear light.
- Disconnect the rear light connectors.



- Unclip the bulb mountings by pressing the tabs (2) to access the bulbs.

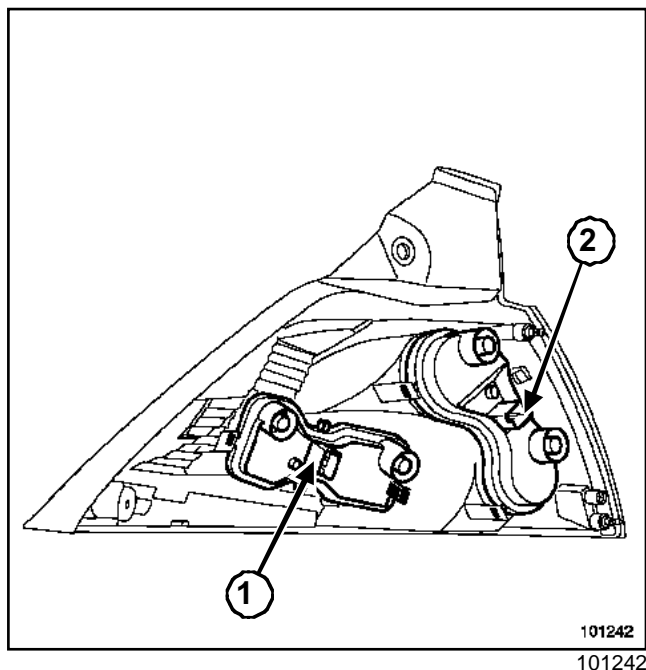
REFITTING

- To refit, proceed in the reverse order of removal.

REAR LIGHTING

Rear light: CONNECTION

81A



101242
101242

Connector (1)

Track	Description
1	Side lights
2	Indicator
3	Earth
4	Brake light

Note:

The grey bulb mounting connection (1) is identical on the left and right-hand side.

Connector (2) left-hand side

Track	Description
1	Earth
2	Fog light
3	Reversing light
4	Not used

Connector (2) right-hand side

Track	Description
1	Not used
2	Reversing light
3	Fog light
4	Earth

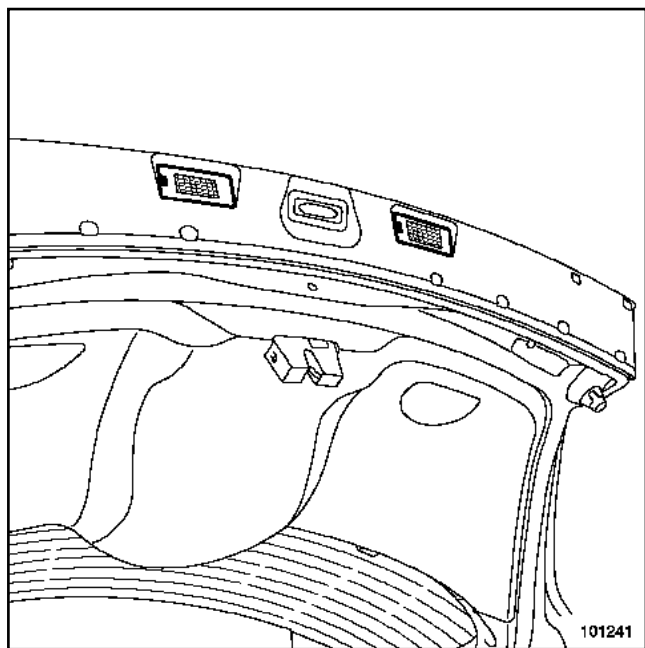
Note:

The black bulb mounting connection (2) is different on the left and right-hand side.

REAR LIGHTING

Registration plate light

81A



101241
101241

The registration plate lights are clipped onto the tailgate on either side of the opening control.

INTERIOR LIGHTING

Operating principle

81B

I - SPECIAL FEATURES

Vehicles can have:

- independent lights at the bottom of the doors (lit when the door or luggage compartment under the floor concerned is opened,
- timed courtesy lights (front and rear);
- lights in the luggage compartment;
- interior lights under each sun visor.

II - TIMER OPERATION

The interior lights are switched on Immediately by the UCH:

- when a door or the tailgate is opened,
- when the doors are unlocked with the remote control (or the hands-free function),

The UCH switches the interior lights off after a delay

- switch off without delay: when the doors or boot are locked using the remote control (doors and boot closed)
- switch off with delay:
 - after the last door or the boot is closed,
 - when the doors or boot are unlocked with the remote control,
 - when the ignition is switched on (« progressive »).

Note:

The UCH switches off the interior lights after approximately **20 minutes**.

INTERIOR LIGHTING

Courtesy light: General

81B

Depending on the position of the courtesy light and the vehicle equipment, the lighting may have:

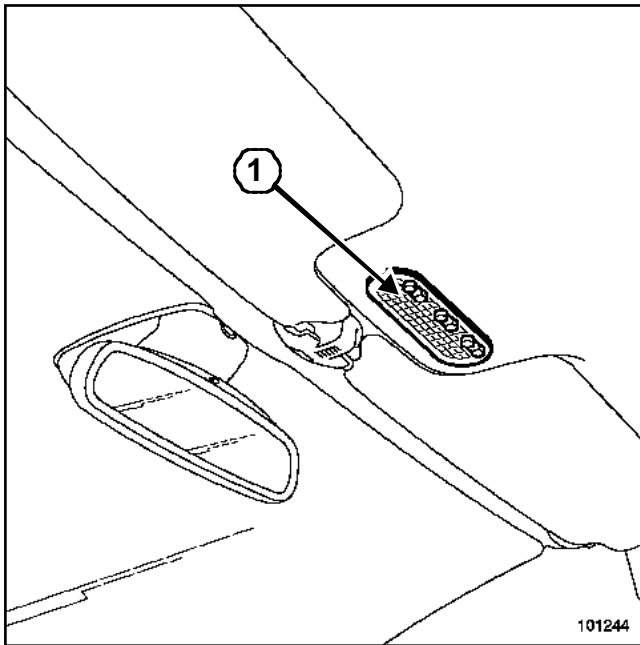
- a single centre light switch,
- a centre light switch and a reading light,
- a centre light switch and two reading lights,
- a centre light switch with brightness adjustment and two reading lights.

Essential special tooling

Car. 1597

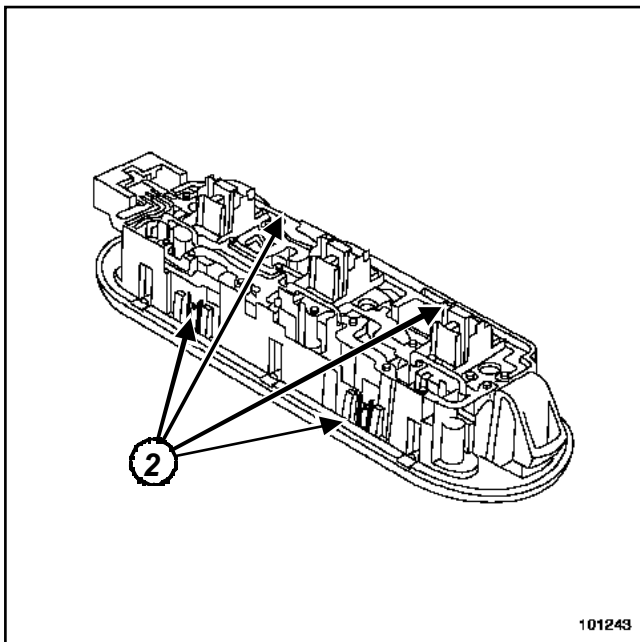
Lever for removing rear turning handle clips

REMOVAL



101244

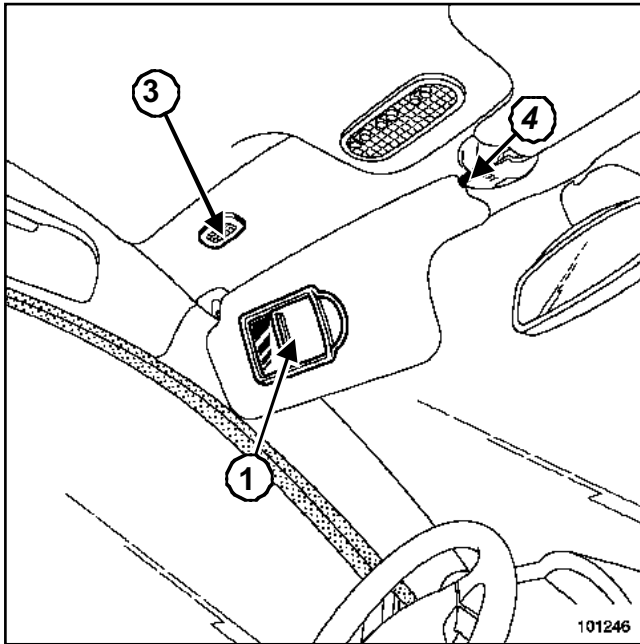
- Unclip the translucent cover (1) using tool (Car. 1597) by positioning it on the right-hand side of the courtesy light.



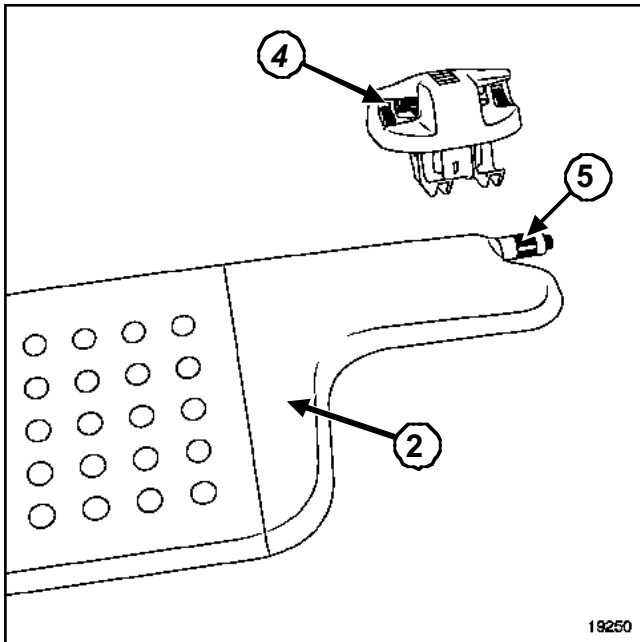
101243

- Pull on the mounting tabs (2).
- rotate to release the connector.

The courtesy mirrors may be fitted with a light incorporated into the headlining.



101246



19250

The switch is located on the sun visor mirror cover (1) (2). The current is supplied to the light (3) by the sun visor central mounting (4).

Note:

The operation of the switch can be checked by connecting a multimeter to (5):

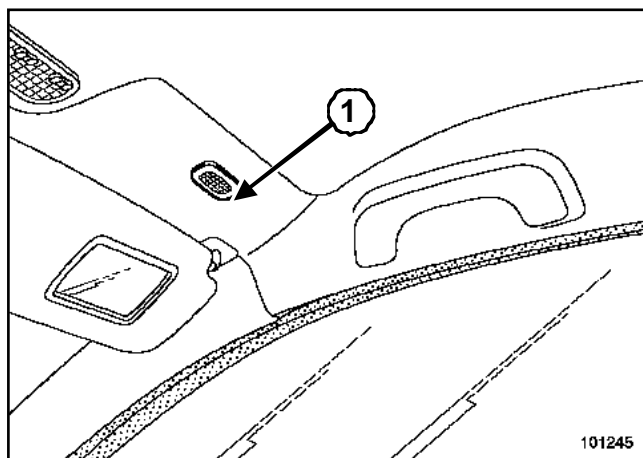
- mirror cover closed (switch open) = light out = infinite resistance,
- mirror cover open (switch closed) = light on = zero resistance.

Essential special tooling

Car. 1597

Lever for removing rear turning handle clips

REMOVAL



101245

- Position the tool (Car. 1597) on the opposite side of the centre light(1).
- Remove the courtesy light.

REFITTING

- Move the connector towards the central courtesy light.
- Press the side opposite the light to fit it into place.

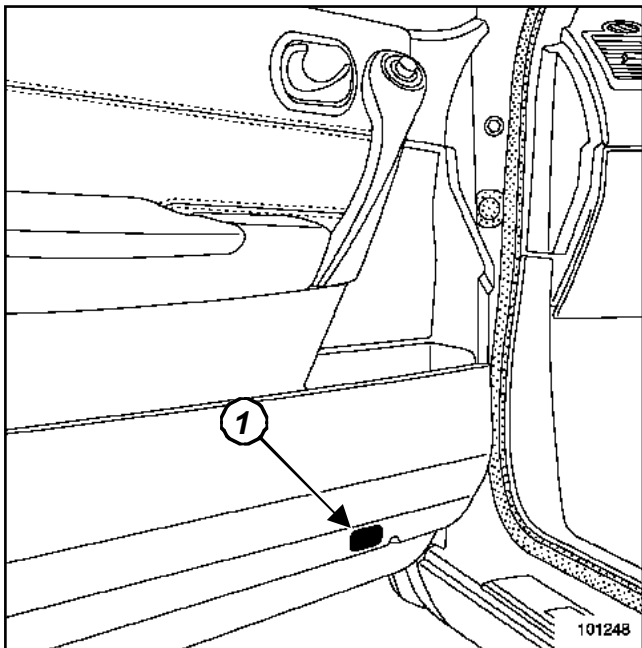
Essential special tooling

Car. 1597

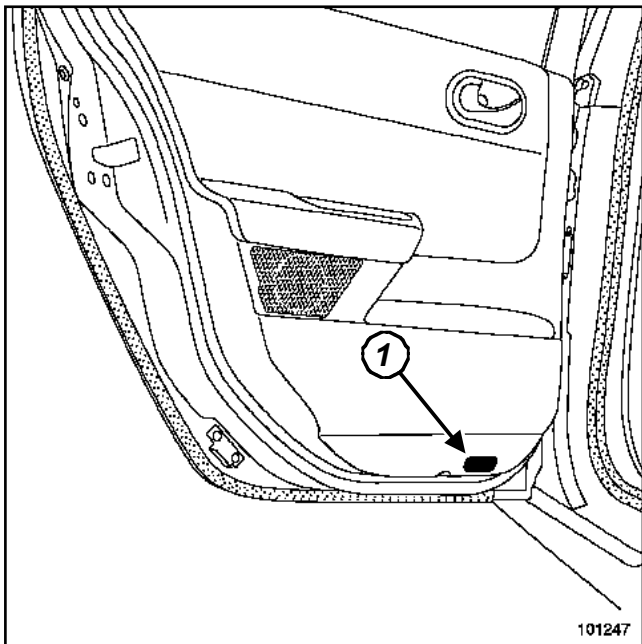
Lever for removing rear turning handle clips

Depending on the version, some vehicles may have independent lights controlled by the UCH when the luggage compartment under the floor on either the driver's or passenger side is opened; only the light on that side comes on.

REMOVAL



101248



101247

101247

- Position the tool (Car. 1597) on the light side(1).
- Remove the lower door light.

REFITTING

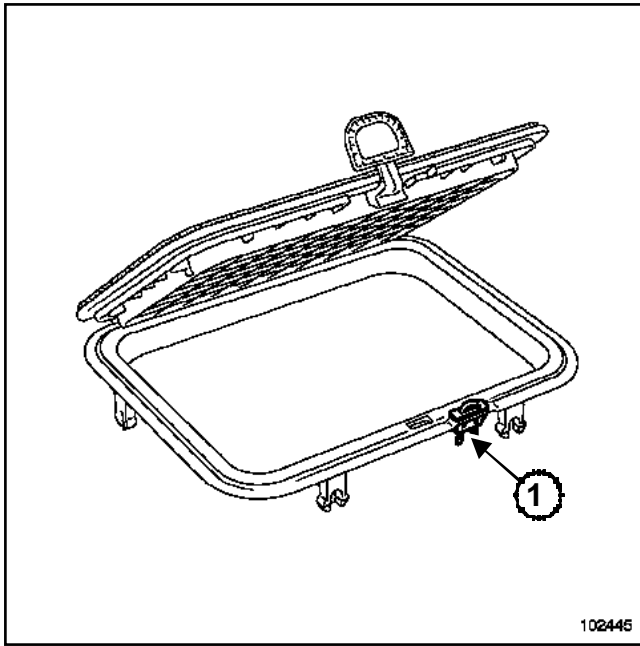
- Move the connector towards the interior of the door.
- Press on the side opposite the light to fit it in place.

INTERIOR LIGHTING

Lower door light switch

81B

REMOVAL



102445
102445

- Remove:
 - the compartment cover,
 - the switch (1) by pressing on the tabs.

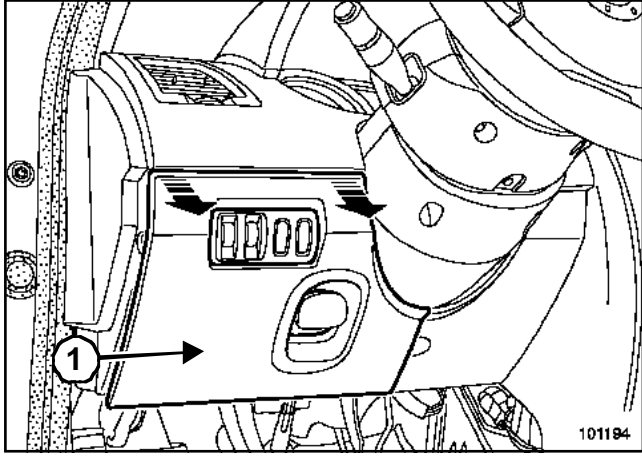
REFITTING

- To refit, proceed in the reverse order of removal.

Passenger Compartment Fuse and Relay Box

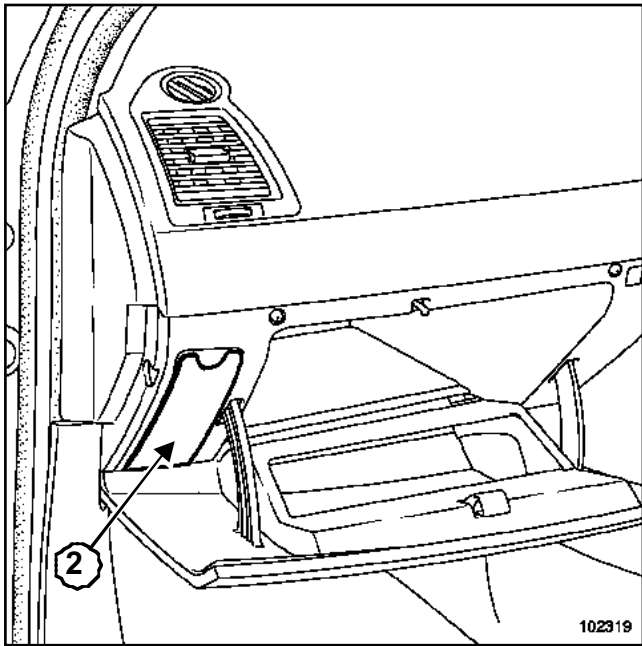
This fuse box is located in the passenger compartment on the left-hand side.

LEFT-HAND DRIVE

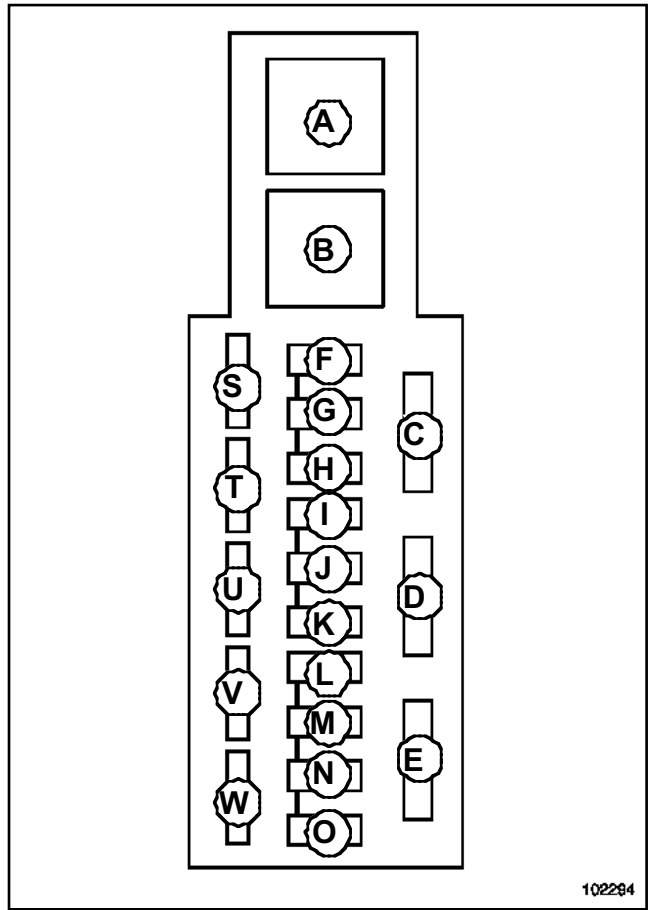


The unit is located behind the flap (1).

RIGHT-HAND DRIVE



The unit is located behind the flap (2).



102294

102294

Passenger Compartment Fuse and Relay Box

Relay

Mark	Nominal current	Description
(A)	30 A	Electric window relay
(B)	40 A	Accessories relay

Fuses

Mark	Nominal current	Description
(C)	40 A	Passenger compartment ventilation
(D)	40 A	One-touch rear windows or electric window relay
(E)	20 A	Electric sunroof
(F)	10 A	Anti-lock Braking System and Electronic Stability Program computer
(G)	15 A	Radio - offset display - headlight washer pump relay - first row cigarette lighter - heated seats - screen washer pump - diesel fuel heater relay - air conditioning control panel - AC control unit - auto-dimming rear-view mirror - Protection and Switching Unit
(H)	15 A	Brake lights
(I)		Not used
(J)	25 A	Driver's window lift
(K)	25 A	Passenger electric window
(L)	20 A	Consumer cut-out fuse : radio - offset display - heated door mirror control - alarm - instrument panel
(M)	15 A	Horn - diagnostic socket - headlight washer pump relay - rear wiper motor
(N)	15 A	Rear screen wiper
(O)	20 A	UCH - instrument panel - AC control unit - accessories relay
(T)	20 A	Heated seats
(S)	3 A	Passenger compartment temperature sensor and fan - autodimming rear-view mirror - rain and light sensor (depending on version)
(U)	20 A	Central door locking or deadlocking
(V)		Not used
(W)	7.5 A	Heated door mirrors

Engine Compartment Fuse and Relay Box

The engine fuses are grouped:

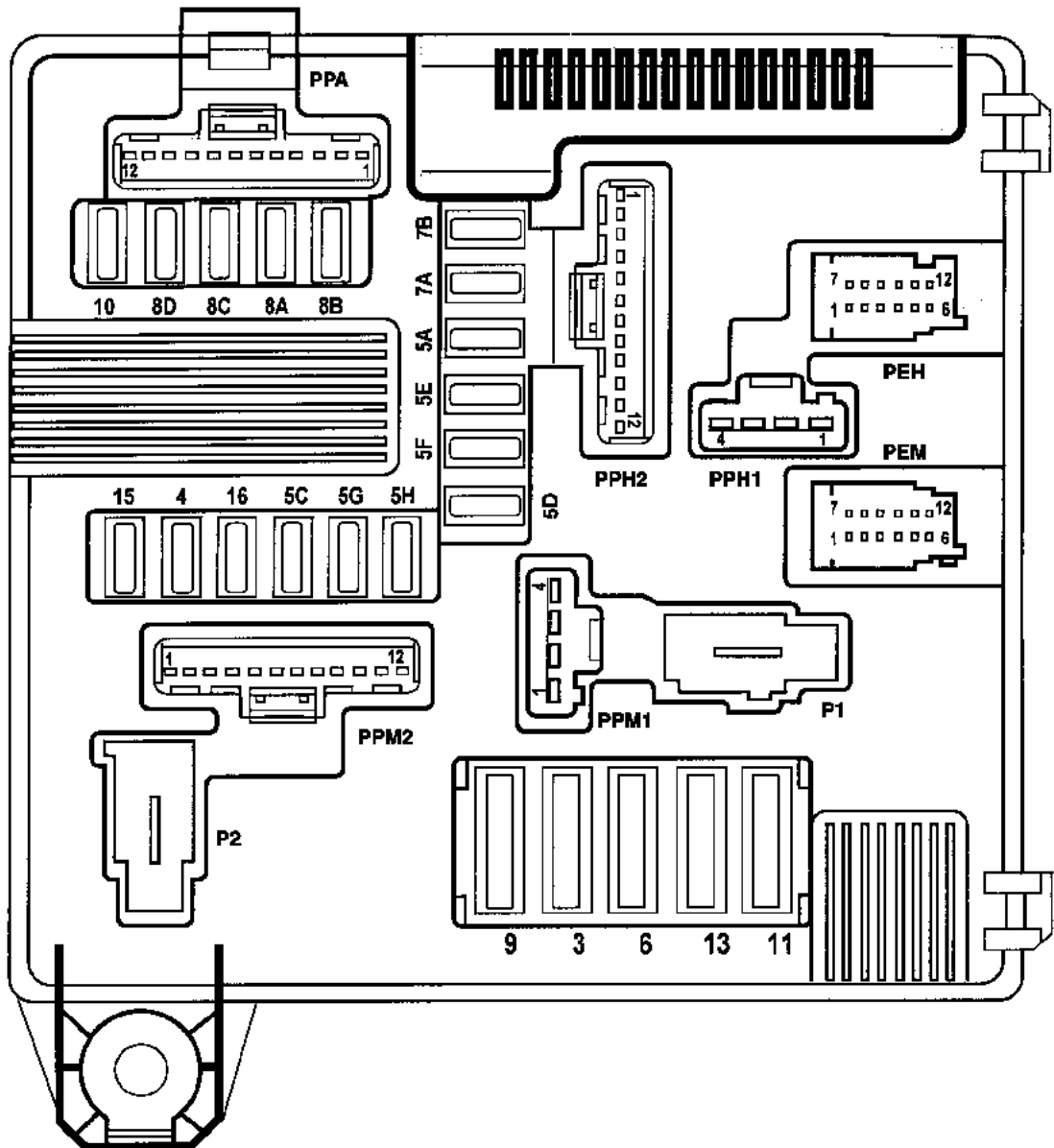
- in the Protection and Switching Unit located in the engine compartment,
- in a fuse and relay box located under the Protection and Switching Unit.

For instructions on removing the protection and switching unit, (Section Engine interconnection unit, page **87G-1**).

FUSES

Engine Compartment Fuse and Relay Box

81C



102290
102290

Engine Compartment Fuse and Relay Box

Fuse allocation on the Protection and Switching Unit (depending on the equipment level)

Number	Nominal current	Description
3	25 A	Starter solenoid
4	10 A	Air conditioning compressor clutch
5A	15 A	Electric steering column lock
5C	10 A	Reversing lights
5D	5 A	Injection computer - electric steering column lock (+ after ignition)
5E	5 A	Airbag and electric power assisted steering computer (+ after ignition)
5F	7.5 A	+ After ignition passenger compartment: gear lever display - ECO/PERF switch - cruise control and speed limiter - driving instructor's control unit - passenger compartment relay and fuse unit - passenger compartment auxiliary heater relay - diagnostic socket - hands-free carphone microphone - rear-view mirror, rain and light sensor (depending on version)
5H	5 A	Automatic gearbox (+ after ignition)
5G	10 A	Not used
6	30 A	Heated rear screen
7A	7.5 A	Right-hand side lights - cruise control and speed limiter - Electronic Stability Program - gear lever display - heated seat controls
7B	7.5 A	Left-hand side lights - cigarette lighter - hazard warning lights and door locking switch - headlight adjustment rheostat - air conditioning control panel - radio - offset display - Central Communications Unit - CD changer - driver's electric window control - electric door mirror control - rear electric window locking control - passenger electric window controls - rear electric window control
8A	10 A	Main beam headlights right-hand side
8B	10 A	Main beam headlights left-hand side
8C	10 A	Right-hand dipped beam headlights - rear height sensor - front height sensor - headlight beam adjustment rheostat - right-hand headlight beam adjustment switch
8D	10 A	Left-hand dipped headlights - left-hand headlight beam adjustment switch
9	25 A	Windscreen wiper motor
10	20 A	Front fog lights
11	40 A	Cooling fan assembly
13	25 A	Anti-lock Braking System and Electronic Stability Program computer
15	20 A	+ battery automatic gearbox
16	10 A	Not used

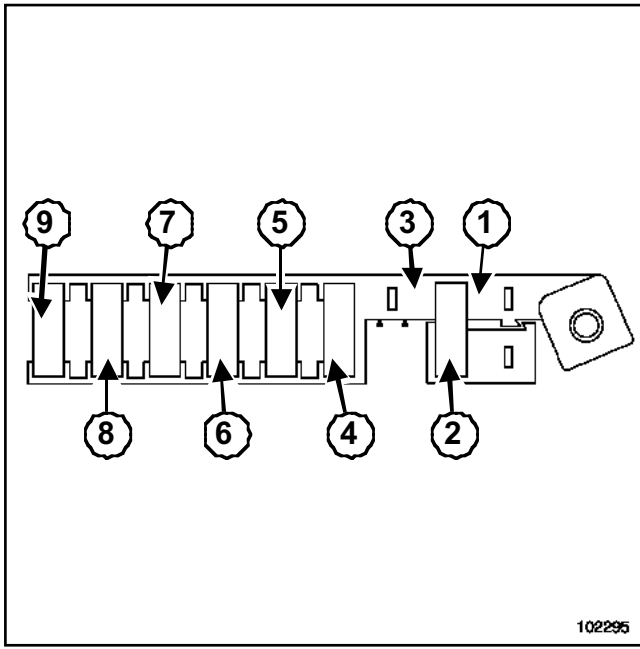
Fuse allocation in fuse and relay box

|

FUSES

Engine Compartment Fuse and Relay Box

81C

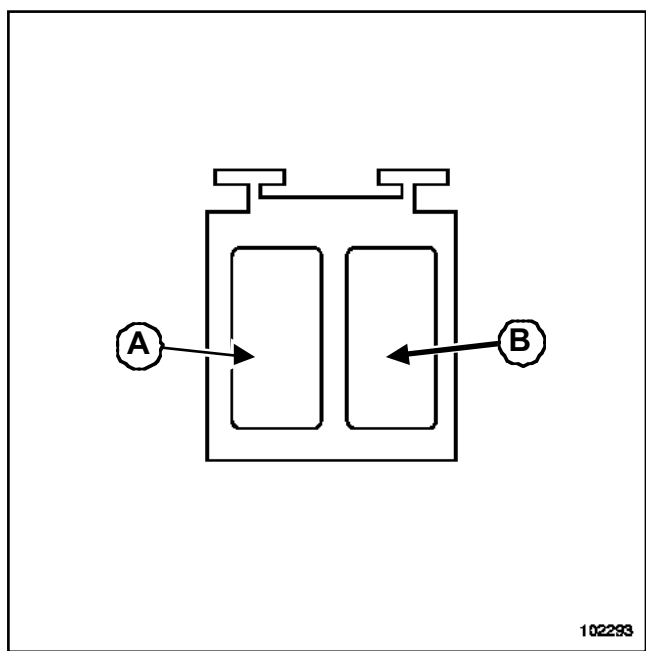


102295
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Engine Compartment Fuse and Relay Box

Allocation of fuses (depending on equipment level)

Mark	Nominal current	Description
(1)	-	Not used
(2)	40 A	Preheating unit
(3)	-	Not used
(4)	70 A	Passenger compartment fuse and relay supply
(5)	50A	Anti-lock braking system computer
(6)	70 A	Electric power assisted steering
(7)	40 A	Additional heater relay
(8)	60 A	Passenger compartment fuse and relay supply
(9)	70 A	Passenger compartment auxiliary heating relay



102293

Allocation of relays (depending on equipment level)

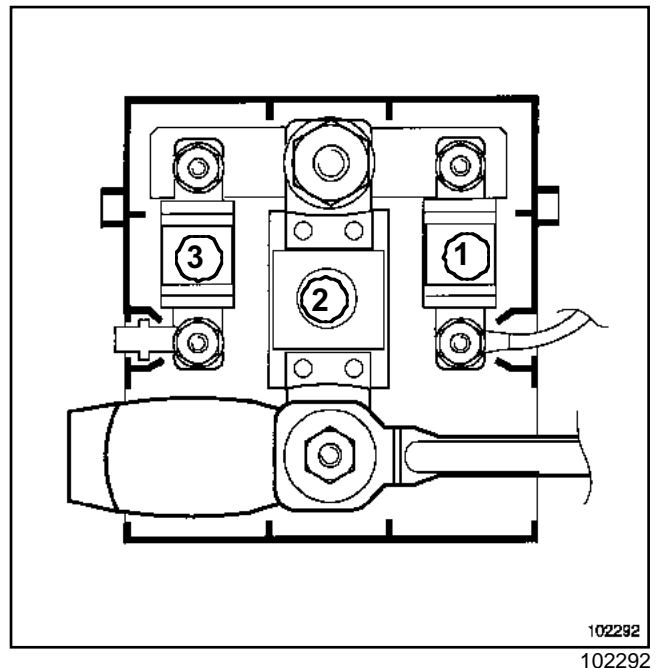
Mark	Nominal current	Description
(A)	20 A	Diesel heating relay
(B)	-	Not used

FUSES

Battery protection fuses

81C

These fuses are located on the positive battery terminal.



Allocation of fuses (depending on equipment level)

Mark	Nominal current	Description
(1)	30 A	+ protected battery for fuse box - passenger compartment and UCH relay (tightening torque 4.5 Nm)
(2)	350 A (Petrol) 400 A (Diesel)	+ protected battery for starter - alternator - power supply fuse board - Protection and Switching Unit (tightening torque 11 Nm)
(3)	30 A	+ protected battery for engine functions via Protection and Switching Unit - diesel fuel heater relay (tightening torque 4.5 Nm)

The Mégane II engine immobiliser is controlled by a random rolling code card authentication system (V3 encrypted).

The immobiliser system no longer has a security code, instead it has a lifetime repair code assigned to the vehicle when it is manufactured.

This system can have up to four cards. The « Basic » and « hands free » codes are different and cannot be used on a vehicle which is not suitably equipped for them.

In the event of loss, or theft from a vehicle, a card can be de-allocated. It can be re-allocated to the same vehicle if necessary.

WARNING

With this system, it is not possible to replace more than one component at the same time (e.g. UCH and card, or UCH and injection computer). These parts are sold uncoded.

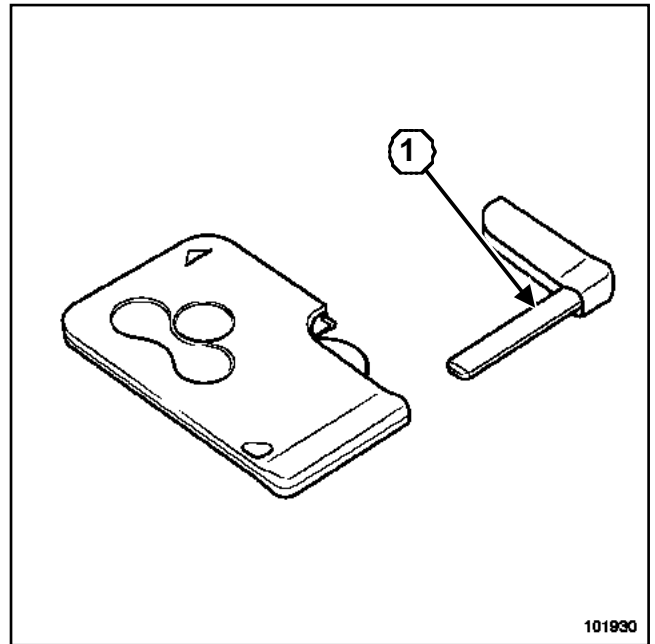
When replacing a component, one of the system components must have the original vehicle code in memory (see component assignment table).

The code programmed into the system components cannot be erased.

Note:

The Protection and Switching Unit is not coded. For special notes on the UCH and the PSU (Section Passenger compartment connection unit, page **87B-1**) and (Section Engine interconnection unit, page **87G-1**).

For special notes on opening/closing the doors and windows (Section Opening elements management, page **87C-1**).



101930

101930

The cards have an emergency key (1) for opening the door in the event of an operating fault.

Cards supplied as replacement parts are blank. A cover is fitted in the place of the emergency key.

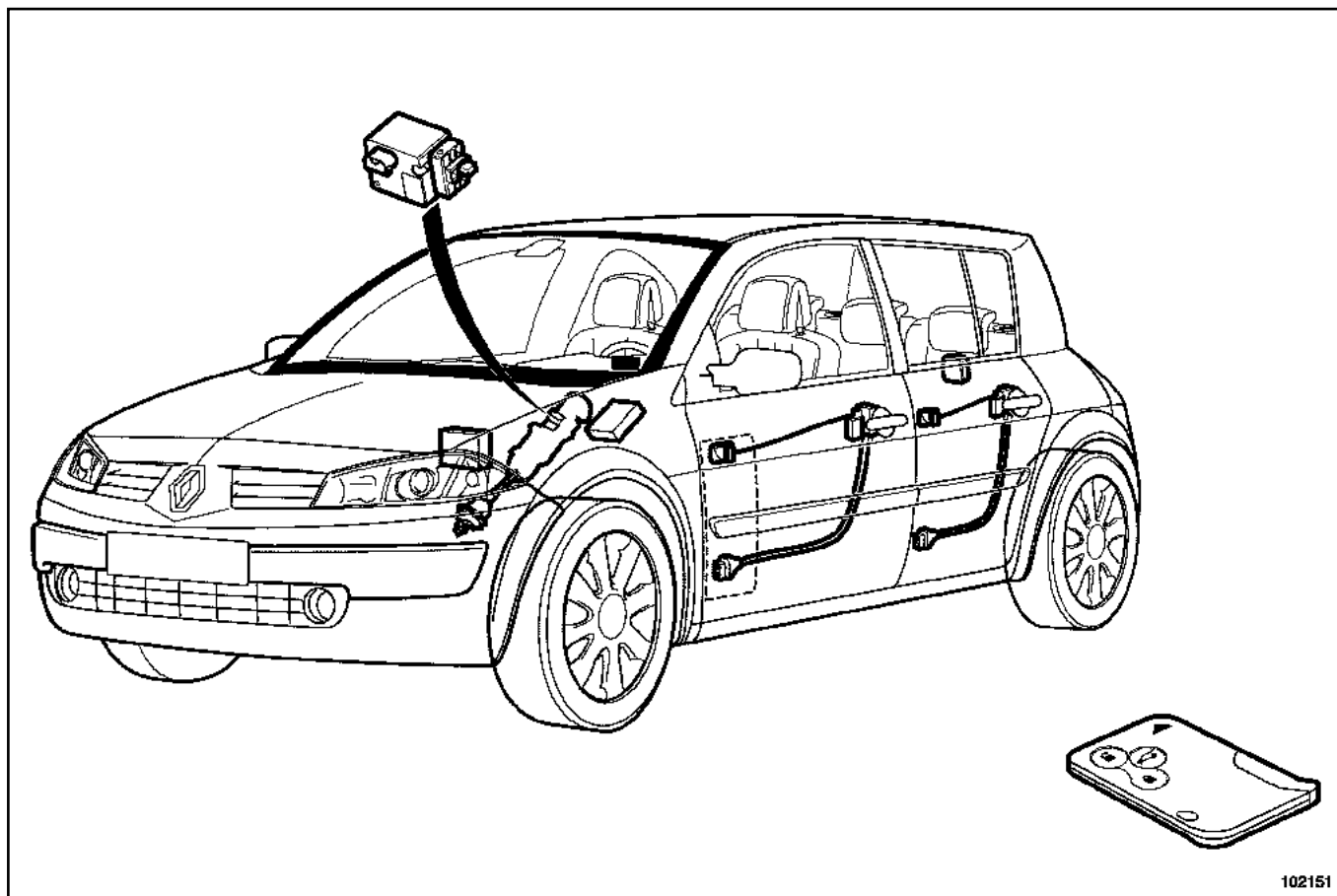
Note:

An emergency key can be ordered from the Parts Department by mentioning the security and vehicle identification numbers.

IMMOBILISER

Description

82A



102151

102151

The system consists of:

- two cards (the system may have up to four),
- a card reader,
- a starter push-button (« Start »),
- an electric steering column lock,
- the UCH located in the passenger compartment,
- the Protection and Switching Unit located in the engine compartment,
- three low frequency aeriels connected to the UCH (« Hands-Free » version),
- an injection computer,
- an automatic gearbox computer (if fitted),
- a manual gearbox neutral sensor (if fitted),
- a clutch pedal sensor (if fitted),
- a brake pedal switch.

IMMOBILISER

Operating principle

82A

I - BASIC OPERATION

When the engine immobiliser is on, the red immobiliser warning light flashes. The electric steering column lock is locked.

- When the start button or brake pedal is pressed, the UCH interrogates the card reader.
- The reader reads the code on the inserted card and transmits it to the UCH.
- If the code is authenticated by the UCH, the UCH sends a coded signal to the electric steering column lock via the multiplex network.
- If the coded signal received by the electric lock is identical to the one it has in its memory, the lock releases the steering column and sends a confirmation message to the UCH.
- When the UCH receives this message, it establishes the « circulation » power feed and turns the red immobiliser warning light off.
- When the « Circulation » feed is established, the UCH and the injection computer exchange coded signals through the multiplex network.

- If the signals issued by the UCH and the injection computer match, the UCH authorises the engine to start and the injection is unlocked.

1 - SPECIAL CASES

- If the injection computer or the electric steering column lock do not have a stored reference code, the code sent is stored in the memory.
- If the codes do not match, the system remains locked. The red immobiliser light flashes or is lit continuously and the instrument panel displays messages. See warning light activation table.
- If the UCH is blank, the immobiliser warning light stays off.

WARNING

When the vehicle battery has a low charge, the drop in voltage caused by operating the starter could reactivate the immobiliser. If the voltage is too low, the engine cannot be started, even by pushing the vehicle.

2 - Warning light activation table.

Indicator light coming on	Instrument panel message	Ignition on	Possible cause
Indicator	Apply brakes + start or declutch	No	Immobiliser on (unrecognised card in reader)
Flashing (the card reader flashes)	Reader out of order or card not detected	No	Unrecognised card in reader. The card does not match the vehicle or has been de-allocated from it.
Indicator	Steering not locked or card not recognised	No	Faulty electric steering column lock or multiplex connection.
Lit	Faulty injection - Faulty engine immobiliser	Yes	The electric steering column lock is unlocked. There is a problem with the vehicle's injection system.
On permanently (3 seconds) then goes out	-	Yes	Starting the engine.

II - « HANDS-FREE » OPERATION

When the engine immobiliser is on, the red immobiliser warning light flashes. The electric steering column lock is locked.

- When the start button is pressed, the vehicle interrogates the reader via the (125 kHz) starting aerials.

- the card responds on frequency of 433 MHz or 315 MHz (depending on country).
- The UCH receives the card's code.
- If the code is authenticated by the UCH, the UCH sends a coded signal to the electric steering column lock via the multiplex network.

IMMOBILISER

Operating principle

82A

- If the coded signal received by the electric lock is identical to the one it has in its memory, the lock releases the steering column and sends a confirmation message to the UCH.
- When the UCH receives the message from the electric steering column lock, it establishes the « Circulation » power feed and turns the red immobiliser warning light off.
- When the « circulation » feed is established, the UCH and the injection computer exchange coded signals through the multiplex network.
- If the signals issued by the UCH and the injection computer match, the UCH authorises the engine to start and the injection is unlocked.

1 - Special cases

- The « hands free » card uses a battery. If the battery fails, the card can still be inserted into the reader. The vehicle operates as a « basic » vehicle (without « hands-free » function).

- If the injection computer or the electric steering column lock do not have a stored reference code, the code sent is stored in the memory.
- If the codes do not match, the system remains locked. The red immobiliser light flashes or is continuously lit and the instrument panel displays messages. See warning light activation table.
- If the UCH is blank, the immobiliser warning light flashes.

WARNING

When the vehicle battery has a low charge, the drop in voltage caused by operating the starter could reactivate the immobiliser. If the voltage is too low, the engine cannot be started, even by pushing the vehicle.

2 - Warning light activation table.

Indicator lights up	light	Instrument panel message	Ignition on	Possible cause
Indicator		Apply brakes + start or declutch	No	Immobiliser on (unrecognised card in reader).
Indicator		Reader out of order or card not detected	No	Unrecognised card in reader. The card does not match the vehicle or has been de-allocated from it.
Indicator		Steering not locked or card not recognised	No	Faulty electric steering column lock or multiplex connection.
Lit		Faulty injection - Faulty engine immobiliser	Yes	The electric steering column lock is unlocked. there is a problem with the vehicle's injection system.
On permanently (3 seconds) then off			Yes	Starting the engine.

III - CONDITIONS NECESSARY FOR STARTING THE ENGINE

1 - Special features of the « basic » version

- Card in card reader,
- Transponder (built into card reader), electric steering column lock and injection computer authenticated,
- Clutch pedal or brake pedal depressed and manual transmission in neutral,
- Brake pedal depressed and automatic transmission in « Neutral » or « Park » position.

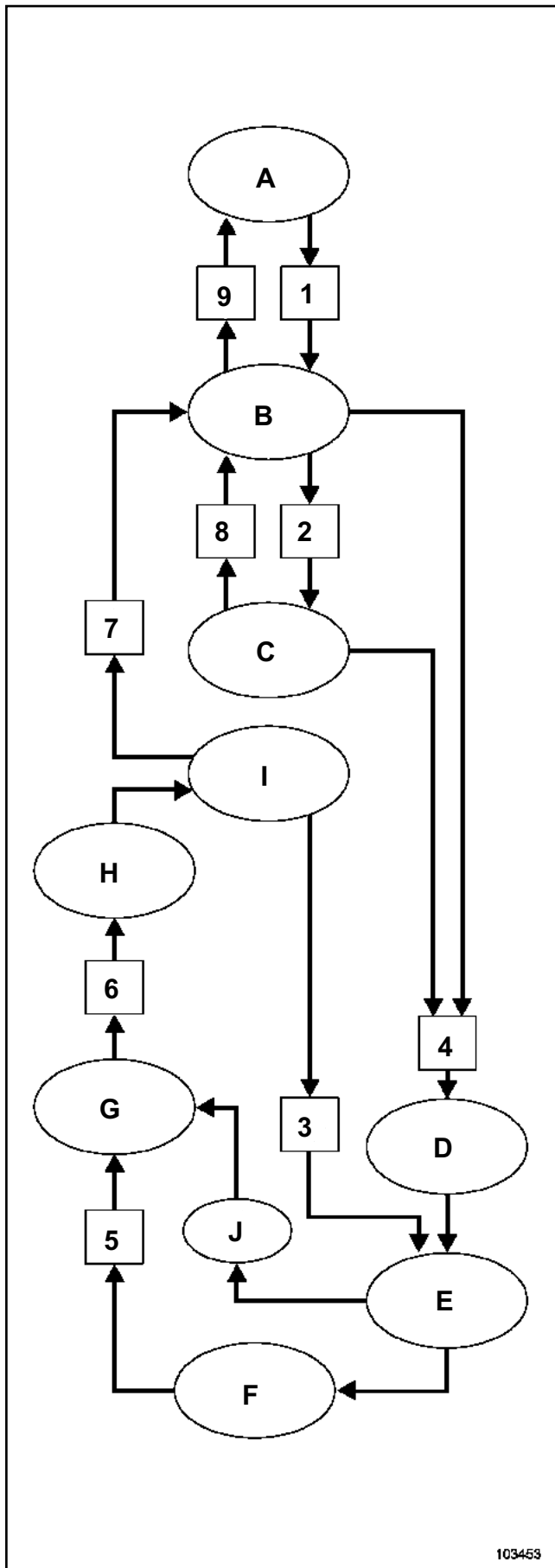
2 - Features of the « hands-free » system

- Card in start zone,
- Card, electric steering column lock and injection computer authenticated,
- Clutch pedal or brake pedal depressed and manual transmission in neutral,
- Brake pedal depressed and automatic transmission in « Neutral » or « Park » position.

IMMOBILISER

System operation diagram

82A



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IMMOBILISER

System operation diagram

82A

User action

Key	User action
1	<ul style="list-style-type: none">- unlocking the vehicle (radio remote control or hands-free),- or opening driver's door,- or pressing the starter button (« start »),- or pressing the hazard warning lights button,- or pressing the child locks button,- or pressing the passenger compartment locking button,- or using the stalks (lighting or wipers).
2	<ul style="list-style-type: none">- pressing the starter button (« start »),- and card verified by the UCH (card in the card reader or operating in « hands-free » mode).
3	<ul style="list-style-type: none">- pressing the starter button (« start »),- and card verified by the UCH (card in the card reader or operating in « hands-free » mode),- and depressing the brake pedal (with the gearbox in neutral or « N » or « P ») or clutch disengaged.
4	<ul style="list-style-type: none">- pressing the starter button (« start »),- and card verified by the UCH (card in the card reader or operating in « hands-free » mode),- and depressing the brake pedal (and neutral) or clutch disengaged.
5	<ul style="list-style-type: none">- pressing the starter button (« start ») if the card is confirmed by the UCH (card in the card reader or operating in « hands-free » mode) or pressing the starter button (« start ») twice if the card is not confirmed.
6	<ul style="list-style-type: none">- removing the card from the card reader (without affecting operation in « hands-free » mode).
7	<ul style="list-style-type: none">- opening the driver's door,- or locking the vehicle (radio remote control or « hands-free »),- or period of 20 minutes without user action.
8	<ul style="list-style-type: none">- pressing the starter button (« start »),- or locking the vehicle (radio remote control or « hands-free »),- or period of 20 minutes without user action.
9	<ul style="list-style-type: none">- locking the vehicle (radio remote control or « hands-free »),- or period of 5 minutes without user action.

IMMOBILISER

System operation diagram

82A

Vehicle state

Key	Vehicle state	Automatic action	Possible action
A	timed feed	- immobiliser activated, - all functions are inhibited.	- use of the audio equipment (timed 20 minutes), - hazard warning lights, - fold-in door mirrors, - electric childproof lock, - automatic parking brake.
B	wake-up multiplex network	- immobiliser activated, - switch on the interior lighting.	- use of the audio equipment (timed 20 minutes), - side lights, dipped beam and main beam headlights, - electric windows and sunroof.
C	+ accessories before switching to after ignition	- switching on the audio equipment automatically, - passenger compartment fan.	- wipers, - navigation,
D	-	- unlocking the steering column electric lock.	-
E	starting (timed starter supply)	-	-
F	+ after ignition engine running	- all vehicle functions are available.	-
G	+ accessories card in the card reader	- audio equipment on, - passenger compartment fan off.	- wipers, - navigation, - electric childproof lock.
H	-	- locking the steering column electric lock.	-
I	+ accessories after ignition switched off	- immobiliser activated, - switch on interior lighting	- use of the audio equipment (timed 20 minutes), - side lights, dipped beam and main beam headlights, - electric windows and sunroof.
J	-	- starting or unlocking failure.	-

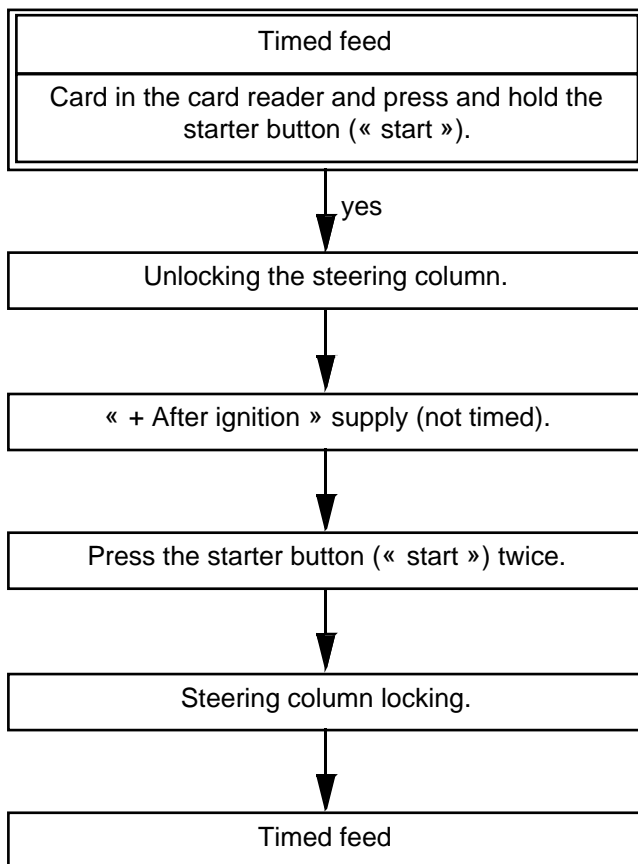
IMMOBILISER

Operating diagram

82A

CHART 1	Powering computers for fault finding
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NOTES	<p>The vehicles have no « + after ignition » position. To power the computers, insert the card into the card reader and hold down the starter button (« start »).</p> <p>Note:</p> <ul style="list-style-type: none">- There is no timer on computer power in diagnostic mode. To switch off the supply, press the starter button (« start » twice),- This function does not work with a blank UCH.
--------------	--



Essential equipment

Diagnostic tool

New parts are not coded. Once they are fitted to the vehicle, program a code into the replacement parts to make them operational.

Certain parts of the immobiliser system must be pre-coded (with the vehicle code). See allocation table.

WARNING

If a part is programmed, it is permanently allocated to the vehicle.

The programmed code cannot be erased.

Allocation table

After-Sales operation	Status of components				Repair code needed
	UCH	Card	Injection computer	Electric steering column lock	
Programming the UCH	Blank	Coded	Coded	-	Yes
Card allocation or cancellation	Coded	Blank*	-	-	Yes
Programming the electric steering column lock	Coded	Coded	-	Blank	No
Programming the injection computer	Coded	Coded	Blank	Coded	No

*The card allocated to the vehicle must be blank or already programmed into the vehicle.

Note:

A card can be programmed for the vehicle but is not operational (unallocated).

WARNING

A card not submitted during allocation will no longer be operational.

I - UCH PROGRAMMING PROCEDURE

- Turn on the side lights.
- Enter the serial number using the **Diagnostic tool**.
- Perform the « Multiplex network test ».
- Select the « Multiplex network result » icon.
- Select the following tabs:
 - « information », then
 - « UCH », then
 - « perform fault finding ».

- Select the following icons:

- « repair », then
- « programming ».

- Perform the **SC004 « UCH programming »**.

- The tool displays « Please enter the After-Sales code ».

- Remove the card from the reader.

- Click on « Next ».

- Take the card out of the card reader.

- Enter the repair code.

Note:

The code consists of 12 hexadecimal characters in upper case.

- Confirm.

WARNING

Once a UCH has been programmed with a card code, the code cannot be deleted or overwritten.

- If the code format is correct, the tool displays « Insert card fully into reader ».

- Insert a card allocated to the vehicle.

Note:

This procedure cannot be carried out with a blank card.

- Confirm.

- The tool displays « Programming in progress ».

WARNING

Do not remove the card until you see the message: « One card programmed ».

Note:

This procedure can take a few seconds

- The tool displays « Programming completed. Start the card allocation procedure ».

WARNING

- The maximum period between each operation is **5 minutes**; if this period is exceeded, the procedure is cancelled. If a card has been submitted, the UCH is no longer blank.

Note:

- The UCH is coded. You must now enter card programming mode to allocate the other cards (maximum of four).

- Perform the card programming procedure.
- Carry out UCH configuration and programming of the valves of the tyre pressure monitoring system.
- Enter the multiplex network architecture.

II - PROGRAMMING AND ALLOCATION PROCEDURE FOR RENAULT CARDS

-

WARNING

In the event that not all the cards are available, a reallocation procedure will have to be carried out subsequently using all the cards.

- Select the « Repair » icon.
- Select the « Programming » icon.
- Perform the **SC006 « Allocation of cards »**.
- The tool displays « Remove card from cardholder ».
- Click on « Next ».

- The tool displays « Warning: any badges programmed before the current procedure will be permanently cancelled after programming the first card. Be sure to insert all cards to be allocated to the vehicle during the programming »"

- Click on « Next ».

- The tool displays « Please enter the After-Sales code ».

- Enter the repair code.

Note:

The code consists of 12 hexadecimal characters in upper case.

- Confirm.

- If the code format is correct, the tool displays « Insert card fully into reader ».

- Insert a blank card or one belonging to the vehicle.

- Confirm.

- The tool displays « Programming in progress ».

WARNING

Do not remove the card until you see the message: « Number of cards programmed = 1 ».

- The tool displays « Do you want to program another card? ».

Note:

The vehicle can have no more than four cards.

1 - To allocate another card:

- Select « Yes ».

- The tool displays « Remove card from reader ».

- Remove the card from the reader.

- The tool displays « Insert card fully into reader ».

- Insert another blank card or one belonging to the vehicle.

- Confirm.

Note:

If the same card is submitted twice, the system ignores it and the immobiliser warning light stays off.

2 - To complete the programming:

- Select « No ».

- Confirm.

Note:

The cards are allocated to the vehicle and the vehicle serial number is stored in the cards and in the UCH.

- The tool displays « Writing data to memory » and then « End of test ».
- Test starting the vehicle and door locking with all the cards.
- Check the operation of the « hands-free » cards.

WARNING

- The maximum period between each operation is **5 minutes**; if this period is exceeded, the procedure is cancelled.
- If only one card is submitted, only that card will work.
- If no card is submitted, the old cards will work.

3 - Special note regarding remote control units:

- Synchronisation of the radio frequency remote controls is not necessary, this is performed every time the ignition is switched on.

IMMOBILISER

Steering column lock

82A

Tightening torques

steering column lock securing bolt	0.8 daNm
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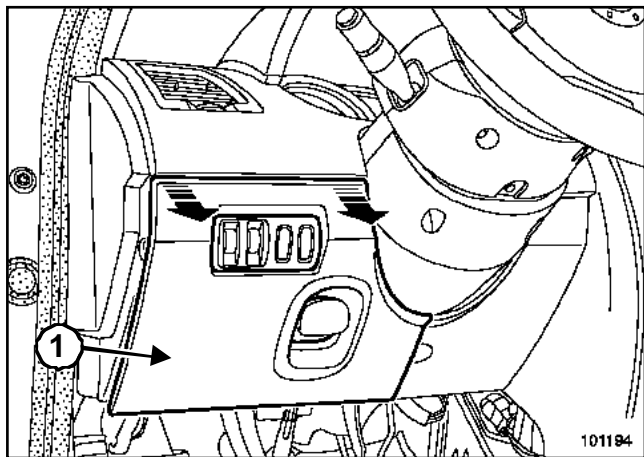
The electric steering column lock is mounted on the steering column.

Note:

The lock can only be removed if the steering column is unlocked.

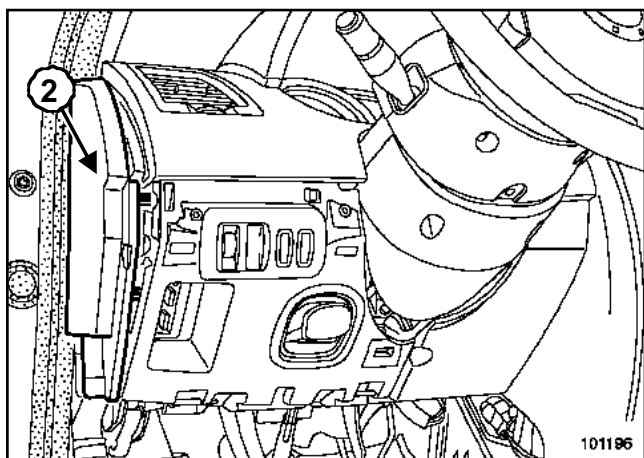
REMOVAL

- ❑ Shift the steering column to its highest position.



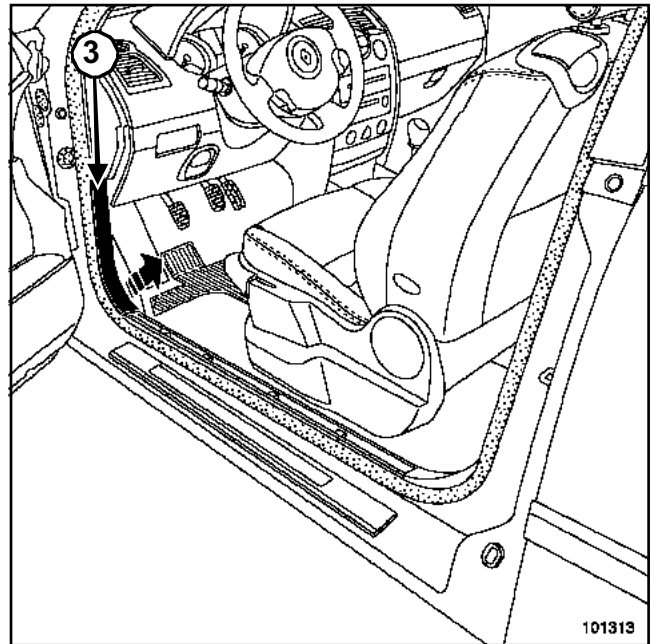
101194

- ❑ Remove the fuse box cover (1).



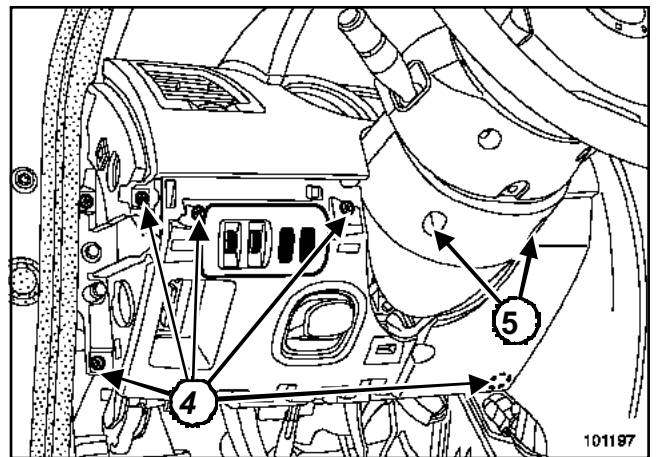
101196

- ❑ Remove the instrument panel face (2).



101313

- ❑ Unclip the sill lining on the front doors (3).



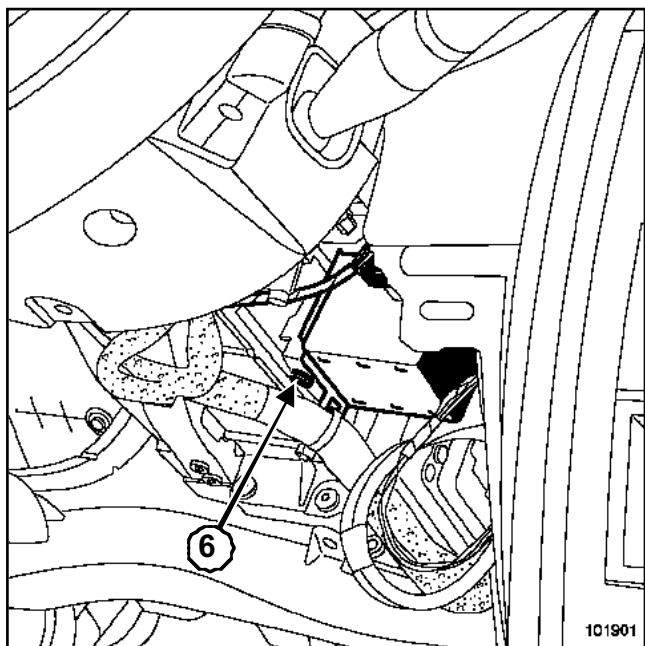
101197

- ❑ Remove:
 - the lighting rheostat support plate fastening bolts (4),
 - the lighting rheostat support plate,
 - the half cowling fastening bolts (5),
 - the half cowlings.

IMMOBILISER

Steering column lock

82A



- Remove the electric steering column lock mounting bolt (6).

Note:

The electric steering column lock mounting bolt has a left-hand thread.

REFITTING

- Proceed in the reverse order to removal
- Tighten to torque the **steering column lock securing bolt (0.8 daNm)**

CODING OF THE ELECTRIC STEERING COLUMN LOCK

-

Note:

The electric lock is supplied uncoded. The electric lock must be programmed with the immobiliser system code when it is fitted to allow the ignition to be switched on.

- Insert the card into the reader.
- Press the « start » button.

-

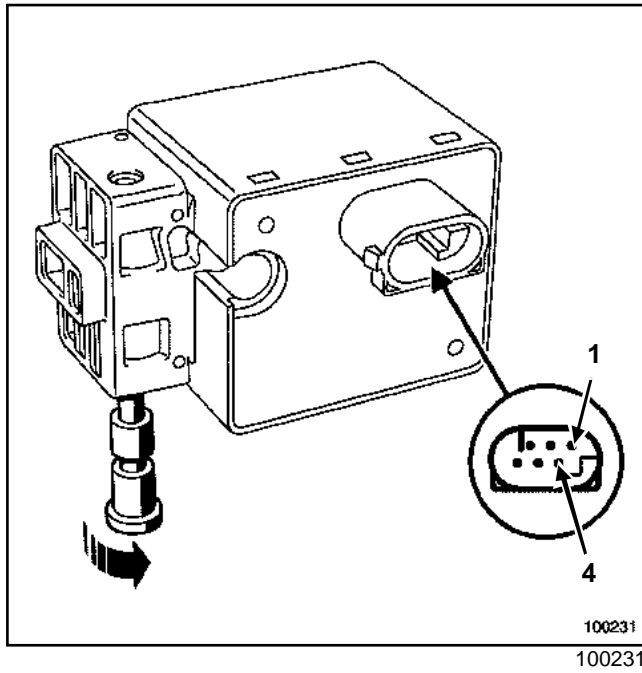
Remove the card from the reader to switch off the ignition.

Note:

- The electric steering column lock locks the steering column after a few seconds. Coding is then complete.
- The red immobiliser indicator light flashes to indicate that the immobiliser function is active.

WARNING

- The injection computer retains its immobiliser code for life.
- The system has no security code.
- It is prohibited to carry out tests with computers borrowed from Parts Stores and which are subsequently returned.
- These computers cannot be recoded.



Track	Description
1	Earth
2	UCH connection (control +)
3	UCH multiplex connection (CAN H)
4	UCH connection (control -)
5	Engine running signal coming from the Protection and Switch Unit
6	UCH multiplex connection (CAN L)

IMMOBILISER

Engine start/stop button

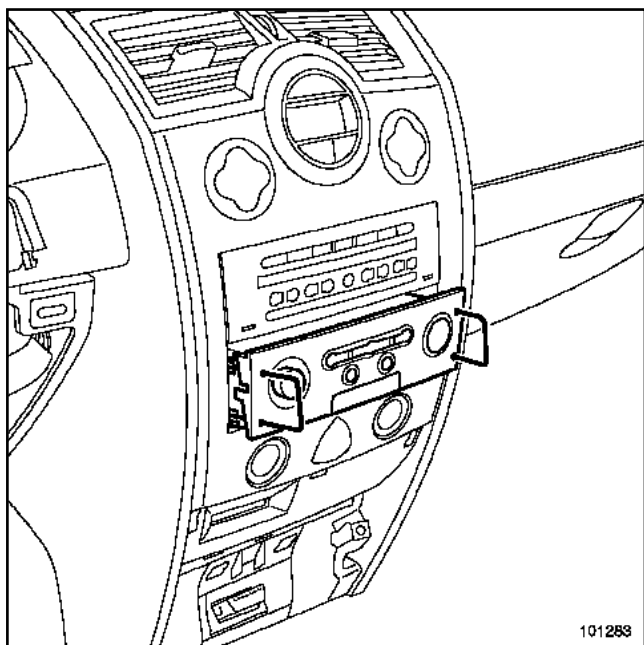
82A

Essential special tooling

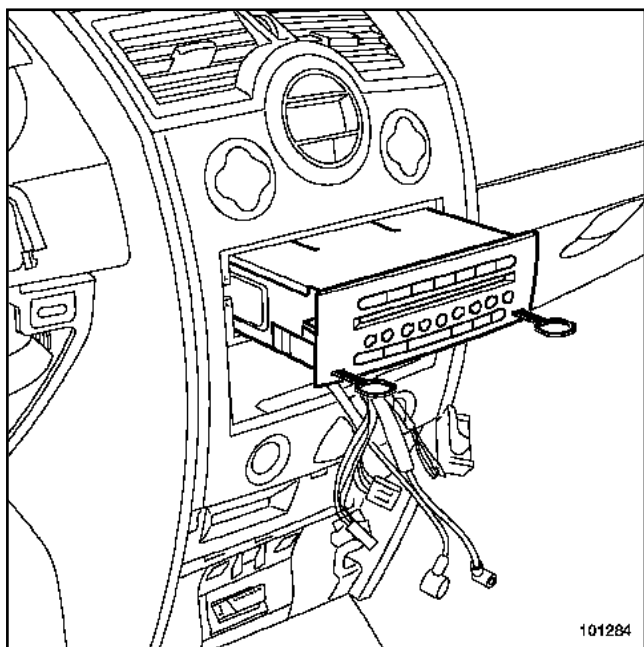
Ms. 1373	Philips radio removal tool
Ms. 1639	Tool for removing radio - CD player
Ms. 1544	Tool for removing Carminat Becker radio

REMOVAL

- Disconnect the battery.

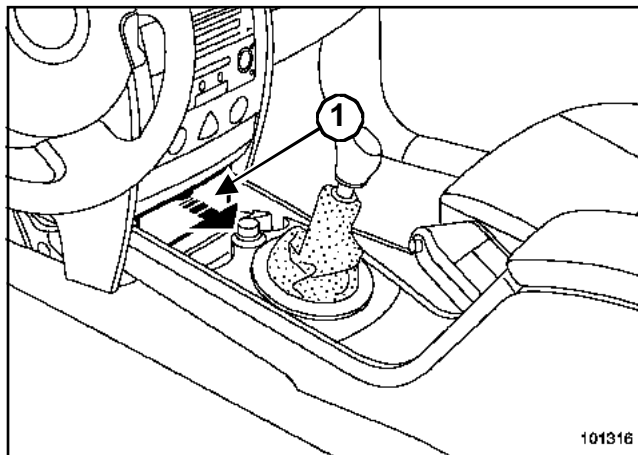


101283
101283



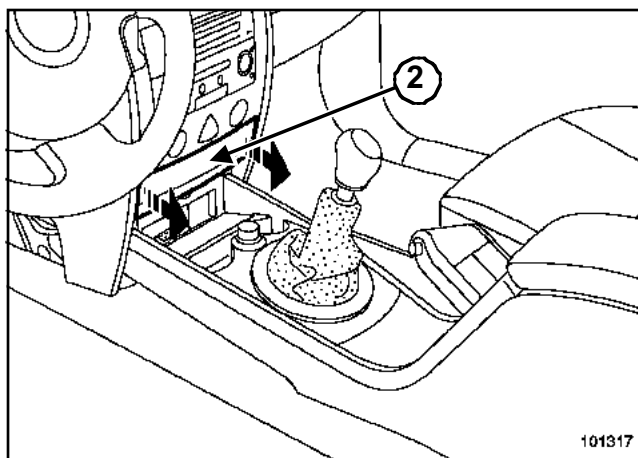
101284
101284

- Remove:
 - the radio with tool (Ms. 1373) (if fitted to the vehicle),
 - the CD changer with tool (Ms. 1639) (if fitted to the vehicle),
 - the UCH with tool (Ms. 1373) (if fitted to the vehicle),
 - the radio navigation with tool (Ms. 1544) (if fitted to the vehicle).



101316
101316

- Unclip cover (1).



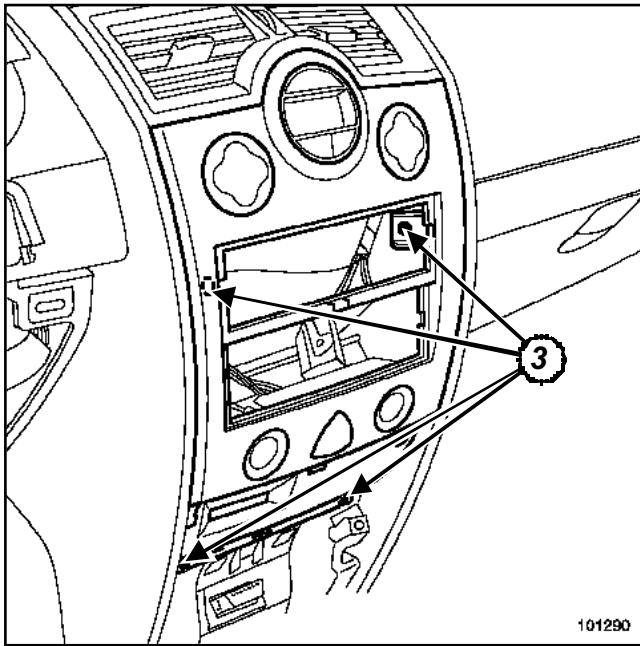
101317
101317

- Unclip cover (2).

IMMOBILISER

Engine start/stop button

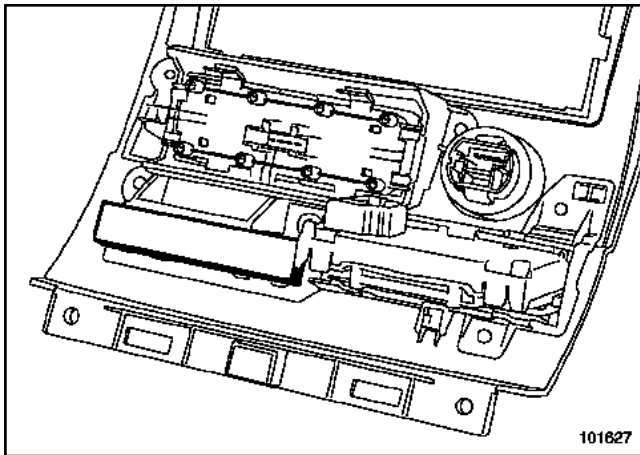
82A



101290

101290

- Remove the screws (3).



101627

101627

- Unclip the front panel.

REFITTING

- To refit, proceed in the reverse order to removal.

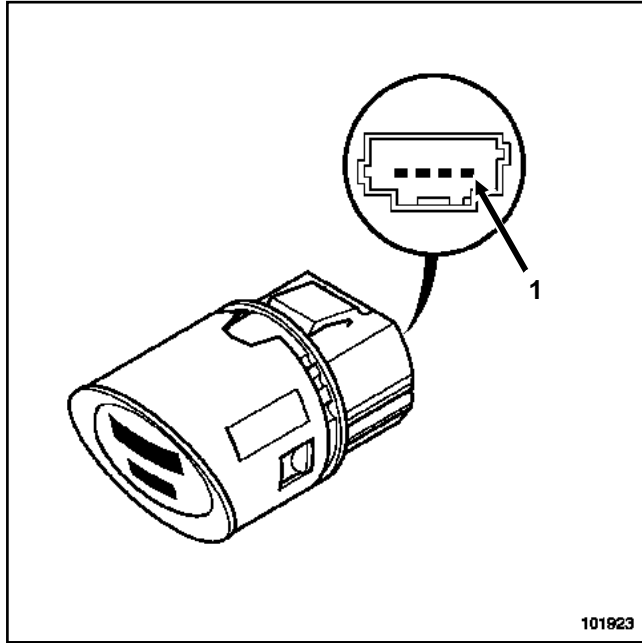
Starter push button: Connection

The starter button (« Start») is the same on « entry level » vehicles and on vehicles fitted with the « hands-free » function.

The starter button (« start ») is used to start and stop the engine.

The starter button is backlit in two ways:

- low backlighting when the lights are on;
- bright backlighting as an invitation to start the engine.



Track	Description
1	Starting control
2	Earth
3	Not used
4	+ lighting (5V lights on, 12V invitation to start the engine)

Test by ohmmeter

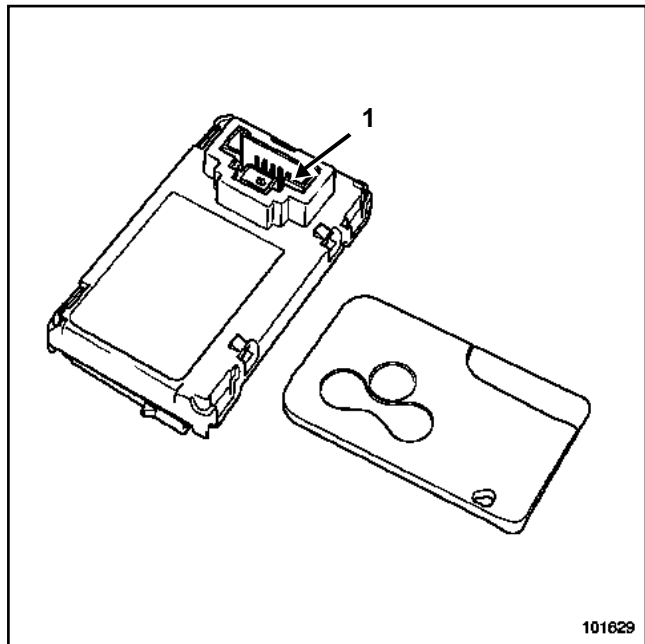
Track	Sensor	Description
1 and 2	0 Ω	« Start or stop » pulse
1 and 2	infinite	Idle

IMMOBILISER

Card reader: Connection

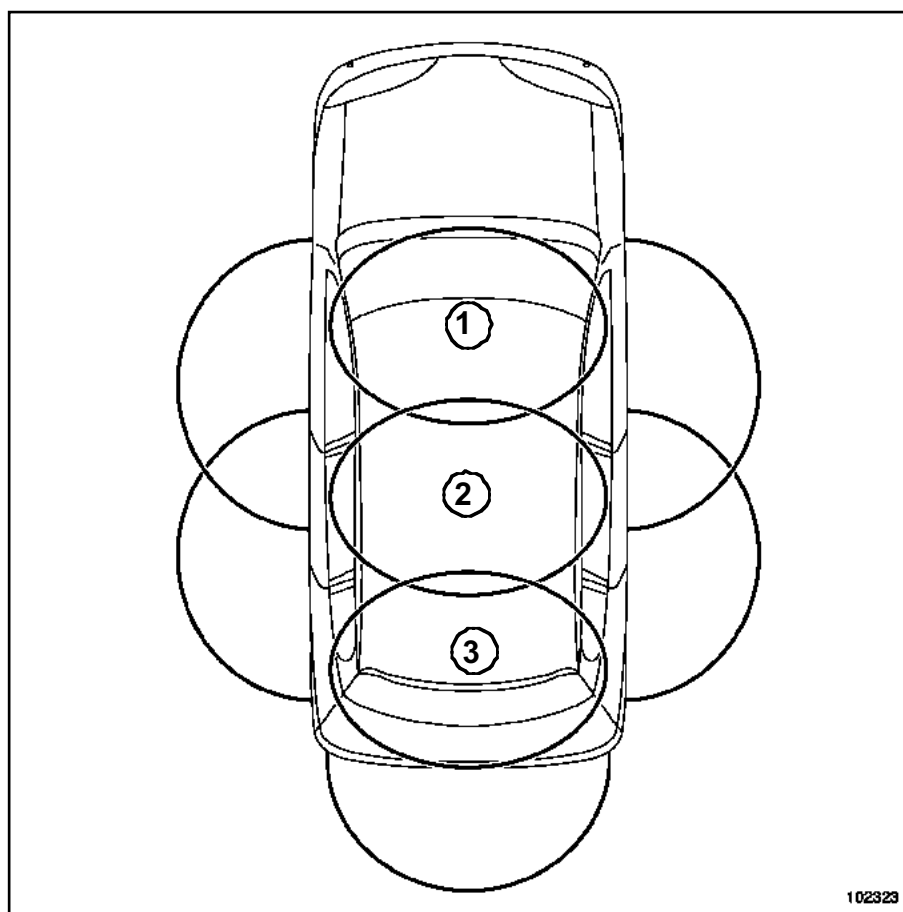
82A

The card reader is the same on « entry level » vehicles and those fitted with the « hands-free » function.



101629

Track	Description
1	Not used
2	UCH connection
3	Supply
4	UCH connection
5	Earth
6	UCH connection
7	Not used
8	Not used



102323

102323

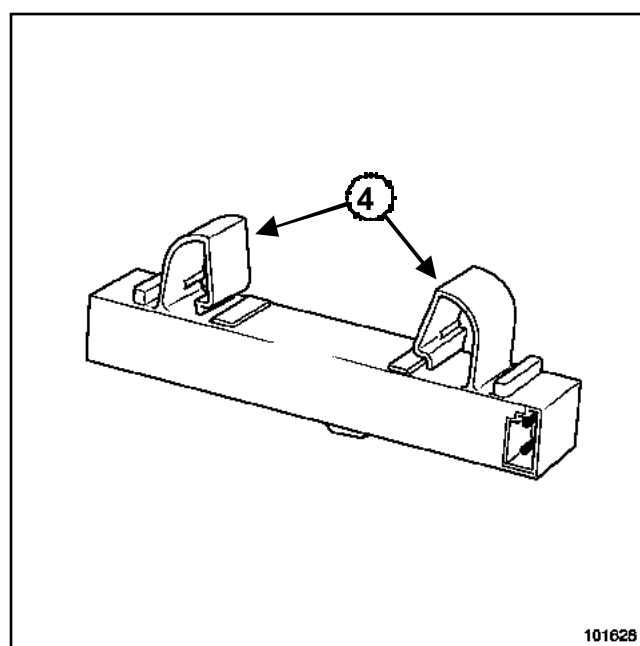
Vehicles with the « hands-free » system have three starter aerials for the card:

- a front detection aerial (1) located behind the front panel of the dashboard,
- an aerial (2) at the back of the centre console,
- an aerial (3) at the back of the floor.

Note:

- The remote control opening aerials have no effect on the engine immobiliser system (Section Opening elements management, page 87C-1).
- The aerials are identical and interchangeable. They require no programming.

REMOVAL



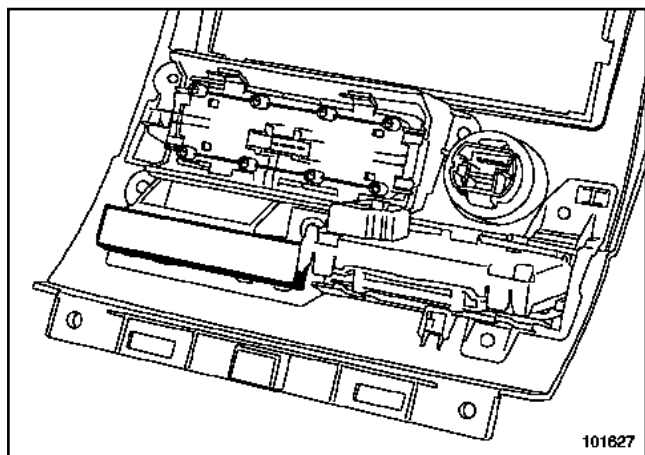
101628

101628

- Unclip the aerial by moving the clips (4).

WARNING

The starter aerial clips (4) are fragile.

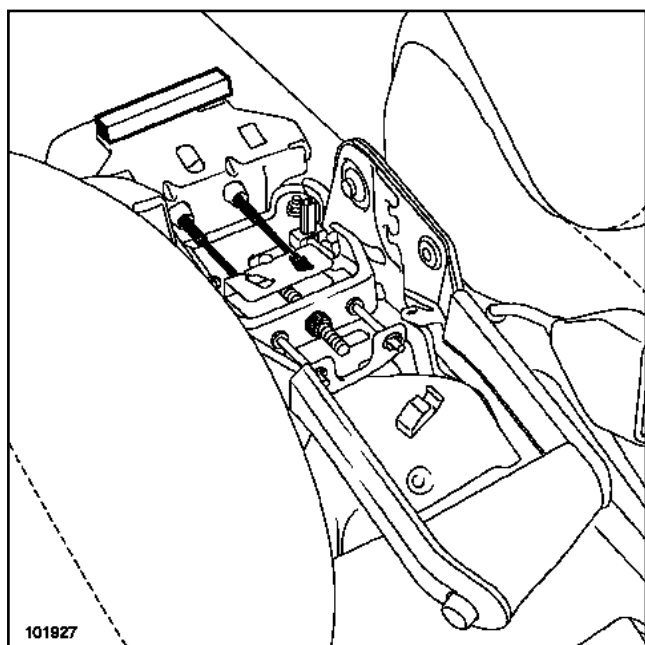


101627

101627

- Unclip the front panel (Section Immobiliser, Engine start/stop button, page **82A-15**).

I - CENTRE AERIAL



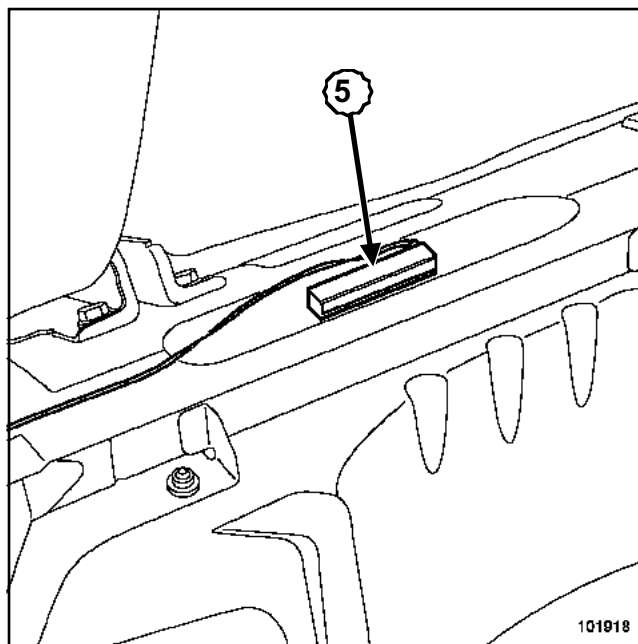
101927

101927

- Remove the central console (see **Central console**).

II - REAR AERIAL

- Partially remove the carpet in the boot.



101918

101918

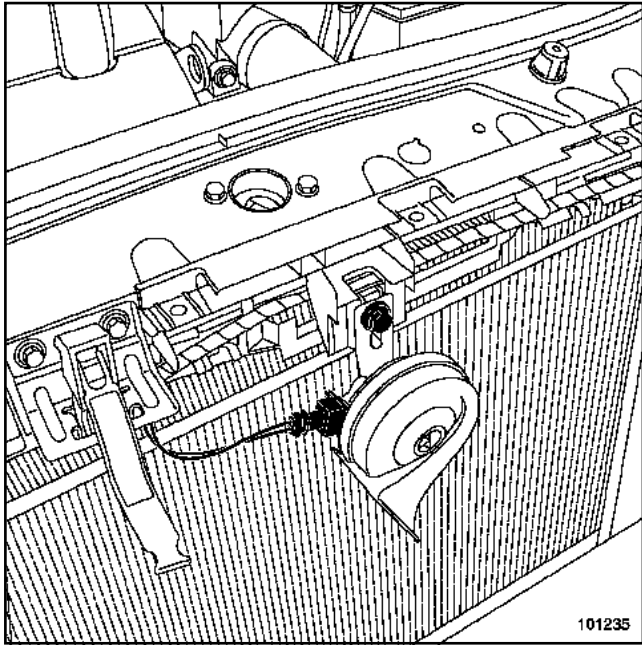
- Unclip aerial (5) by moving the clips.

HORN

Horn: CONNECTION

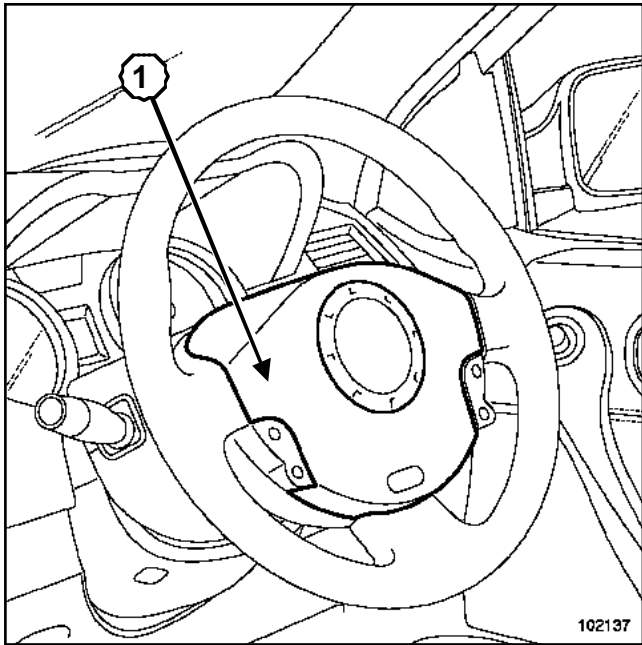
82B

I - DESCRIPTION



101235

The horn is located behind the front bumper (Section Headlights, page **80B-1**).



102137

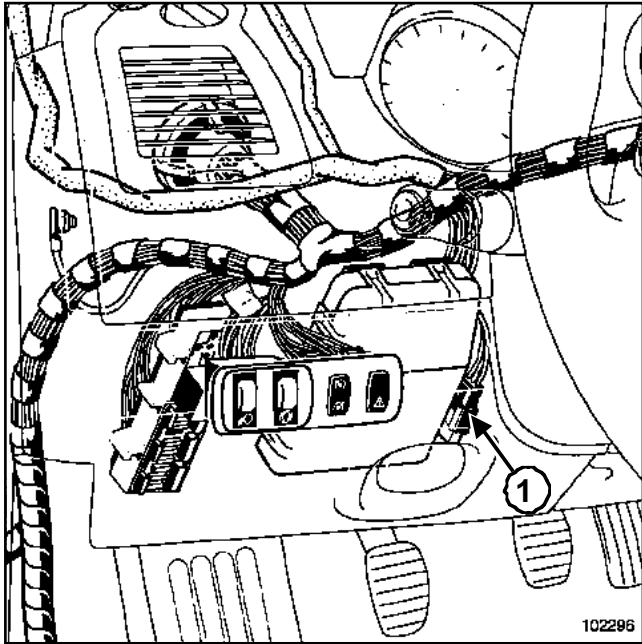
The horn is operated by a control (1) on the steering wheel.

II - CONNECTION

Track	Description
1	Feed (control on the steering wheel)
2	Earth

I - DESCRIPTION

Vehicles are pre-wired to be fitted with a RENAULT-approved alarm.



102296

102296

The special connector (1) is next to the UCH.

II - CONNECTION

Track	Description
1	+ battery
2	+ accessories or + after ignition (depending on vehicle version)
3	Indicator light control
4	Immobiliser warning light

INSTRUMENT PANEL

Dashboard

83A

Essential special tooling

Ms. 1373	Philips radio removal tool
Ms. 1639	Tool for removing radio - CD player
Car. 1597	Lever for removing rear turning handle clips

Essential equipment

Diagnostic tool

Tightening torques

steering wheel bolt	4.4 daNm
bolt	2 Nm

REMOVAL

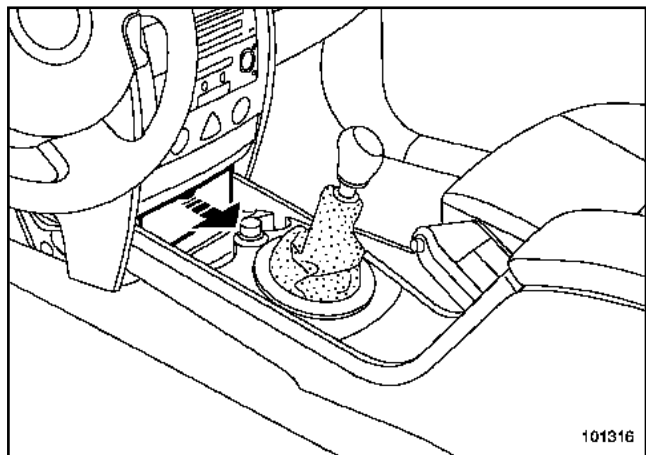
IMPORTANT

Never handle pyrotechnic systems (pretensioner or airbag) near to a source of heat or a flame; there is a risk of triggering.

WARNING

It is essential to lock the airbag computer before removing it. Locking the airbag computer also unlocks the electric steering column lock.

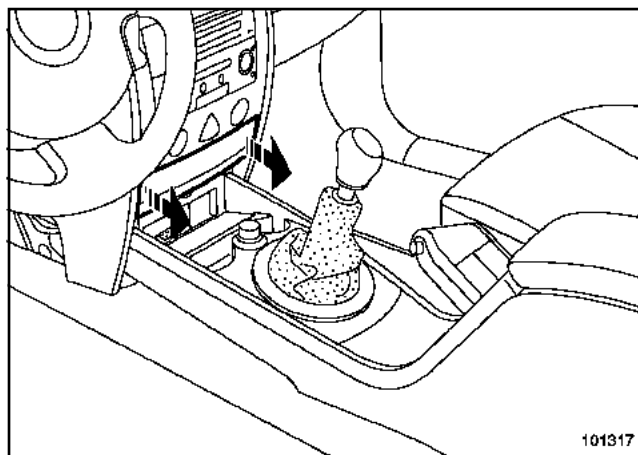
- Disconnect the battery.



101316

101316

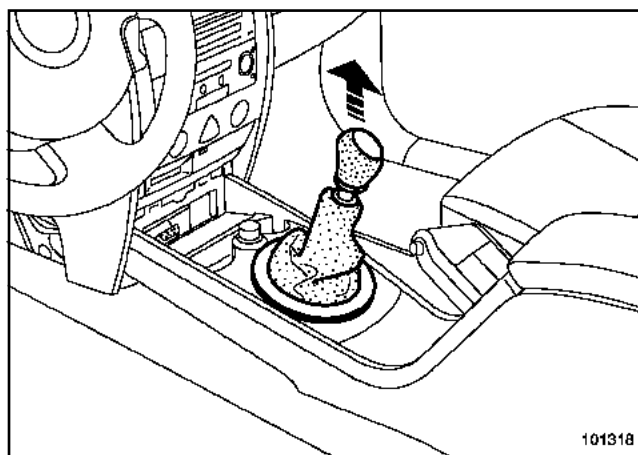
- Remove the diagnostic socket access cover.



101317

101317

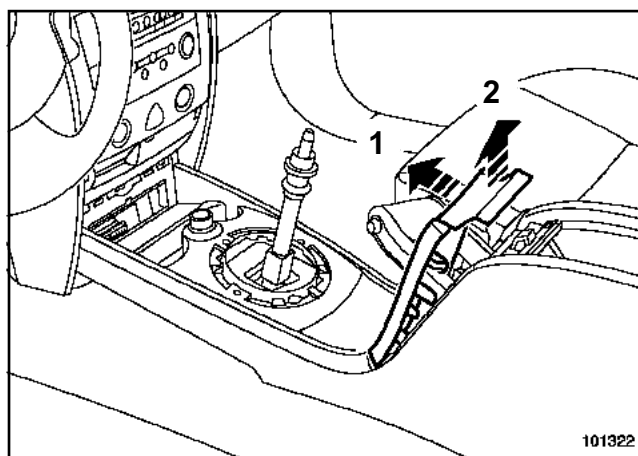
- Unclip the card reader access cover.



101318

101318

- Unclip:
 - the gear lever gaiter,
 - the knob.



101322

101322

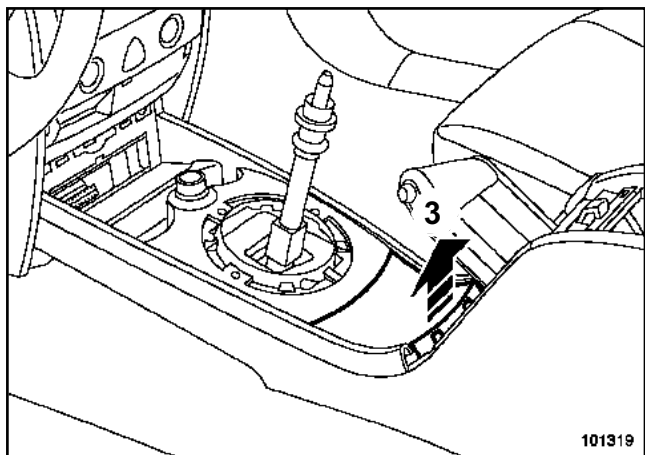
- Open the glove compartment.
- Unclip the handbrake surround trim in the direction of arrows (1) and (2) in succession.

INSTRUMENT PANEL

Dashboard

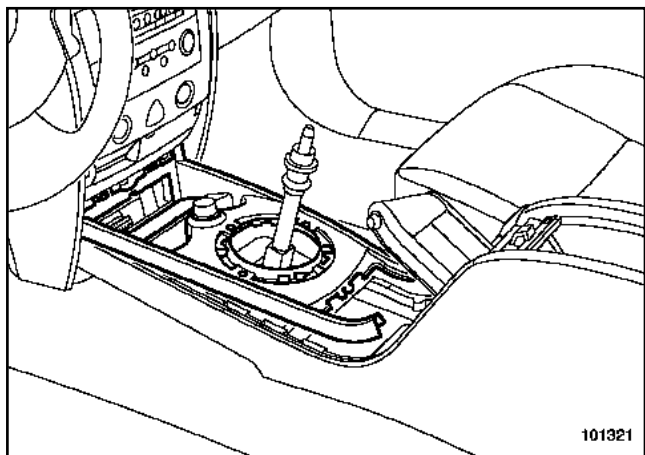
83A

- ❑ Disconnect the heated seat connectors (if installed).



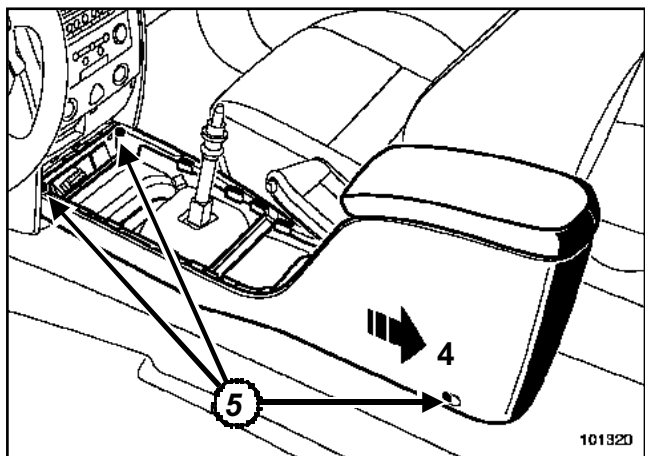
101319

- ❑ Unclip the lower cover (3).



101321

- ❑ Unclip the cigarette lighter mounting.
- ❑ Disconnect the connector from the cigarette lighter mounting.

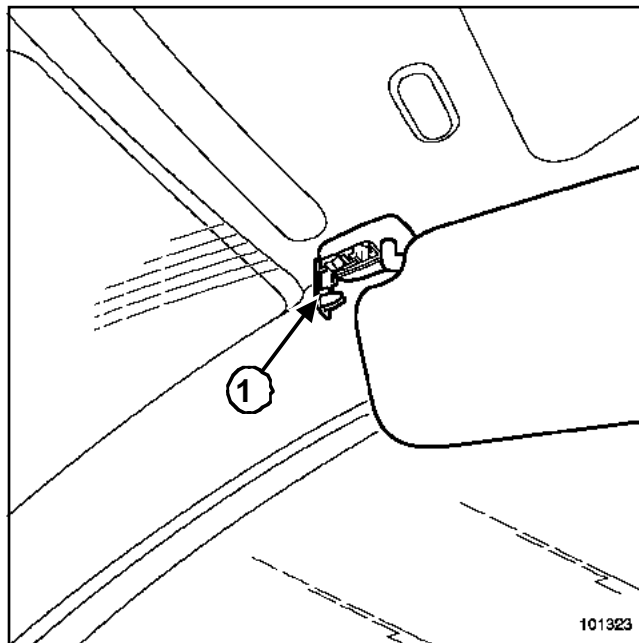


101320

- ❑ Move the front seats forward.
- ❑ Remove the screws (5).

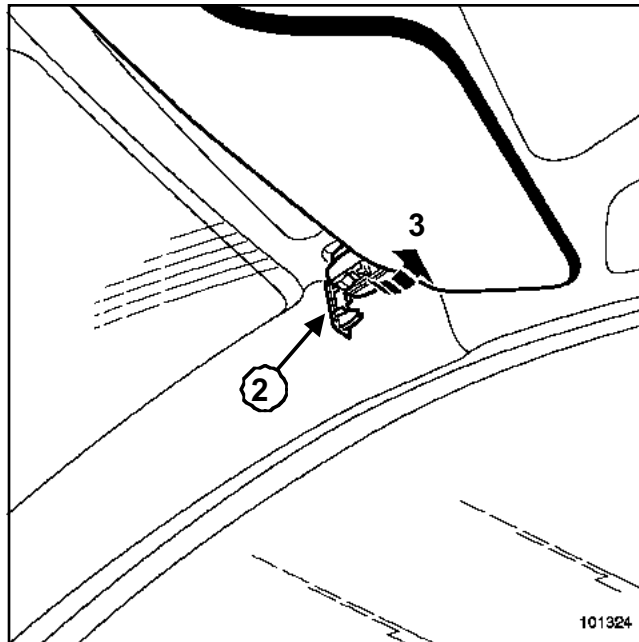
- ❑ Release:

- the console gently following the arrow (4),
- the gear lever console.



101323

- ❑ Unclip the mounting clip (1).



101324

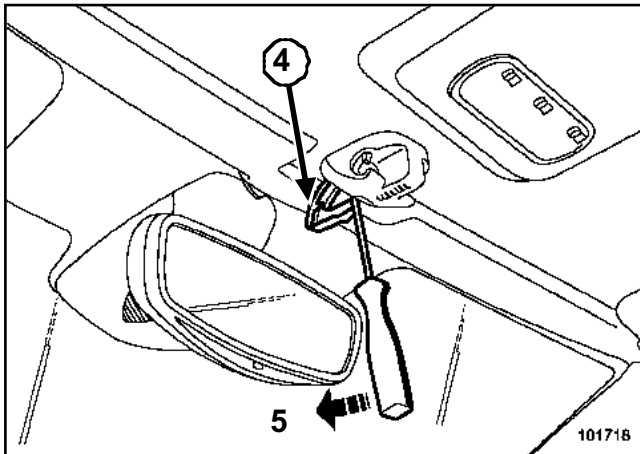
- ❑ Release:

- the clip (2),
- the sun visor (3).

INSTRUMENT PANEL

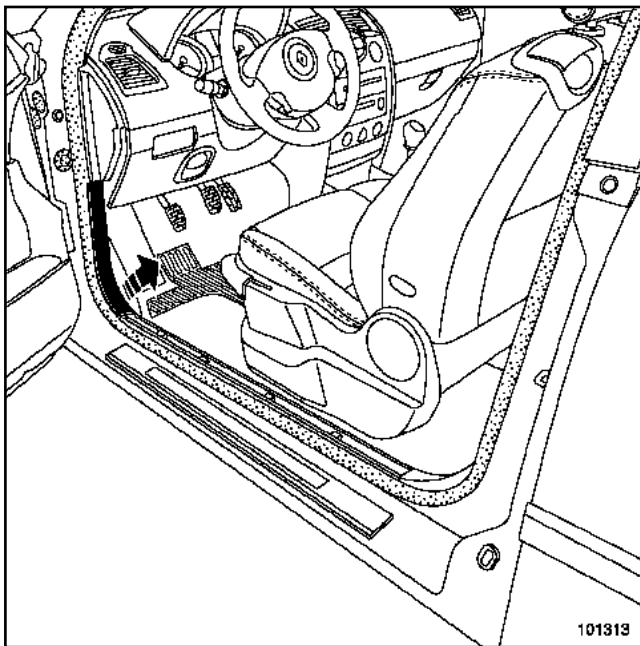
Dashboard

83A



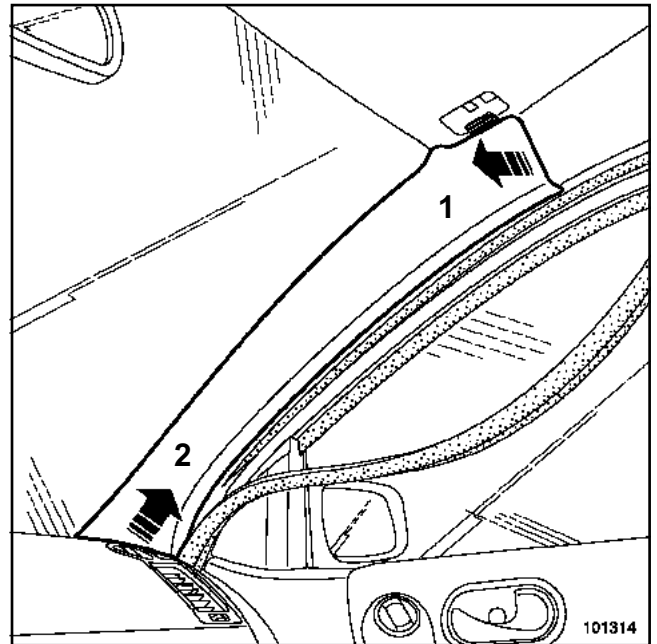
101718

- Unclip the mounting clip (4).
- Press on the screwdriver (5).
- Unfasten the clip.
- Release the assembly.
- Disconnect the different connectors (depending on the equipment level).



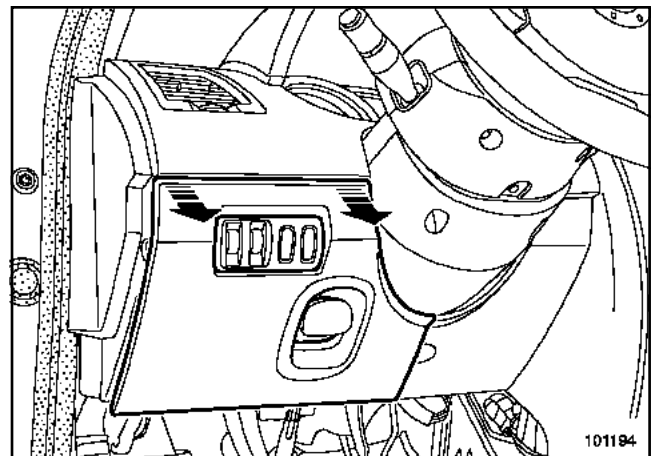
101313

- Release the front inner sill trim.



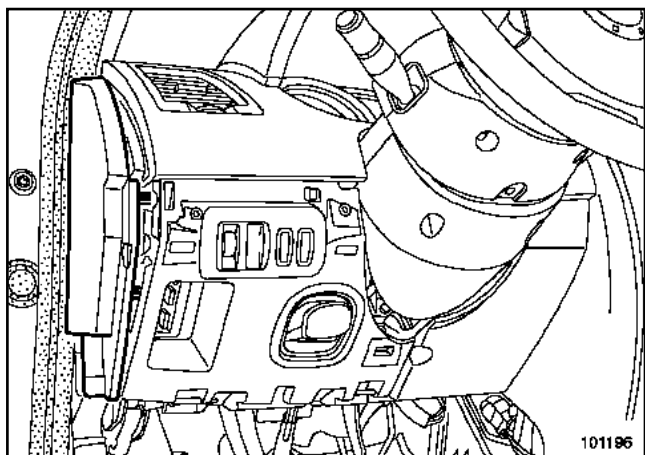
101314

- Unclip the windscreen pillar trim (1) and (2).
- Remove:
 - the tweeter speaker grilles,
 - the tweeters.



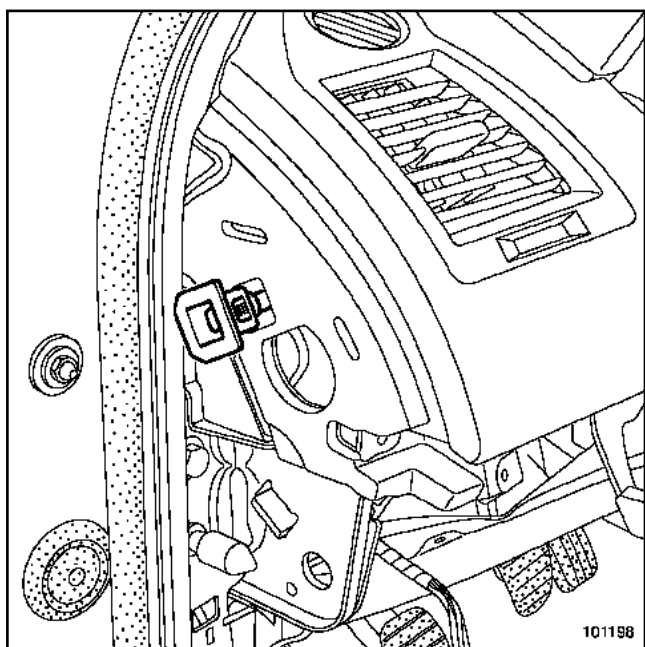
101194

- Unclip the sump access flap.



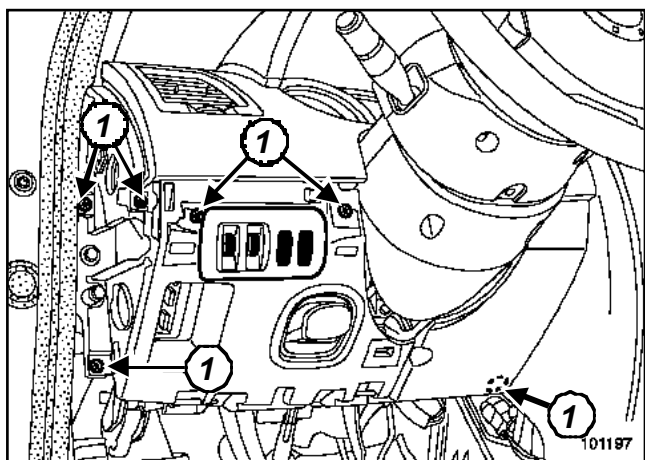
101196
101196

- Unclip the side panel.



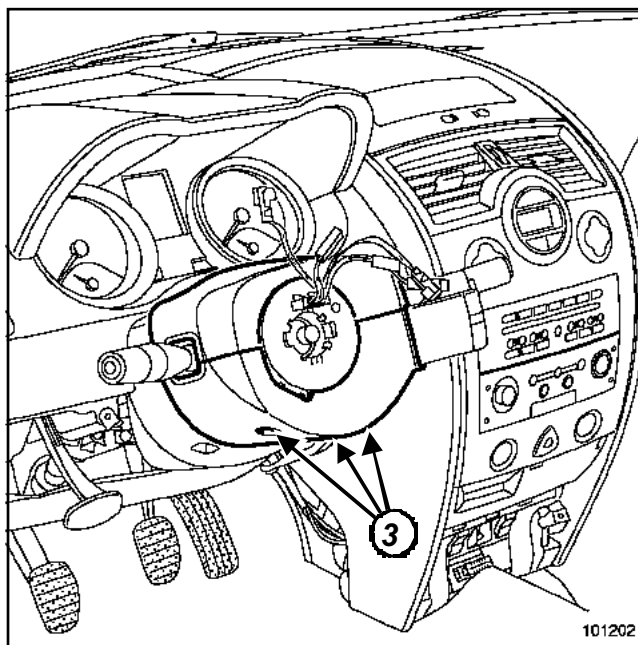
101198
101198

- Unclip the anti-rotation clip.



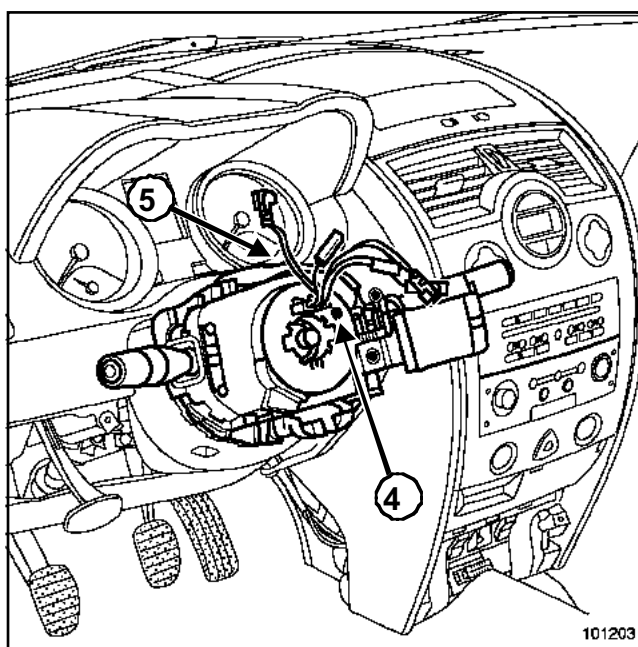
101197
101197

- Unclip the headlight beam adjustment and dimmer control.
- Remove the screws(1).
- Remove the driver's airbag (Section Airbag and Pre-tensioners, Driver's front airbag, page 88C-27).
- Remove the steering wheel (see **Steering wheel**).



101202
101202

- Remove:
 - the three lower bolts,
 - the upper and lower steering column shells.



101203
101203

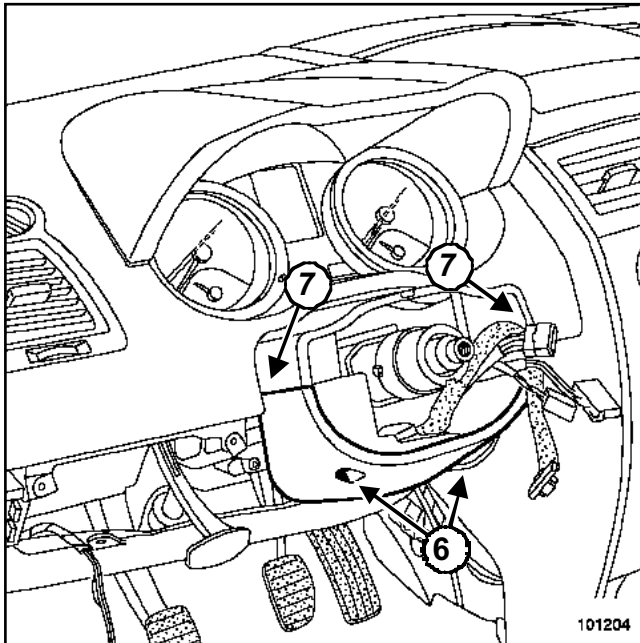
- Mark the position of the column switch assembly.

INSTRUMENT PANEL

Dashboard

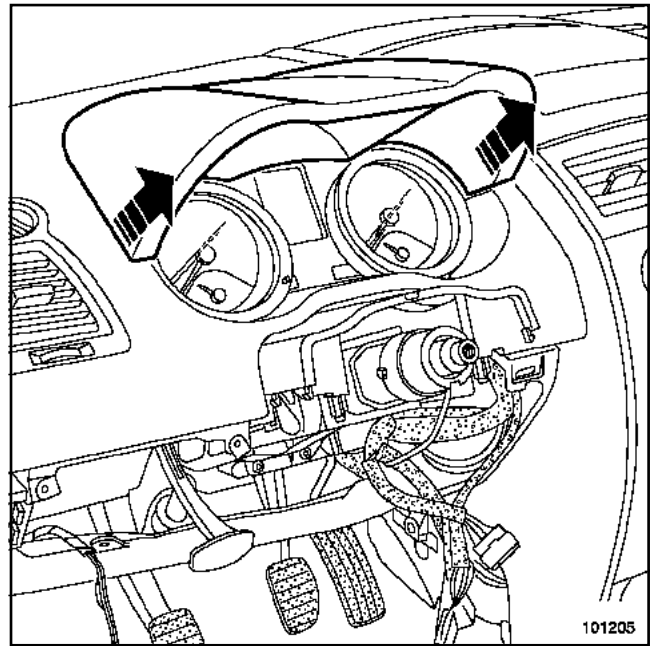
83A

- Check that mark « 0 » on the rotary switch (4) is correctly positioned opposite the indexing mark.
- Remove the column switch assembly.
- Release bolt (5).
- Unclip the steering column assembly.
- Disconnect:
 - the different connectors (wiper, radio control and lighting),
 - the rotary switch connector.



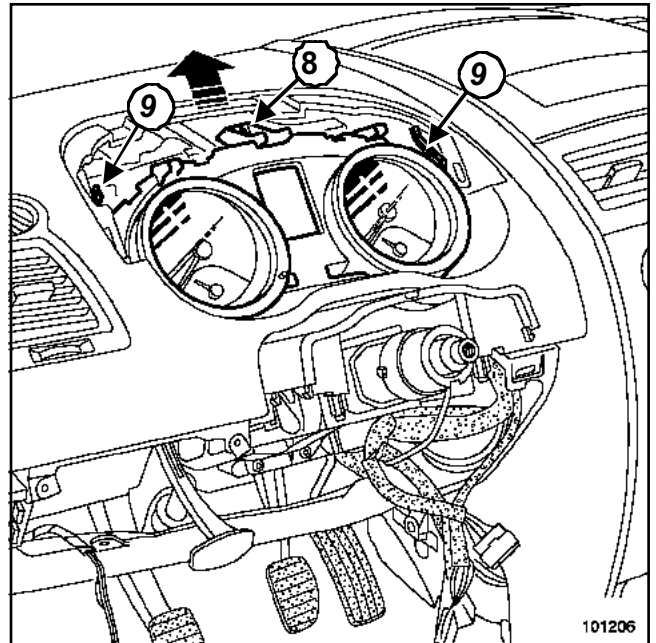
101204
101204

- Remove the two bolts (6).
- Unclip the two top clips (7).
- Remove the second lower shell casing.



101205
101205

- Unclip the top of the dashboard (partially).
- Disconnect the Carminat system speaker connector.



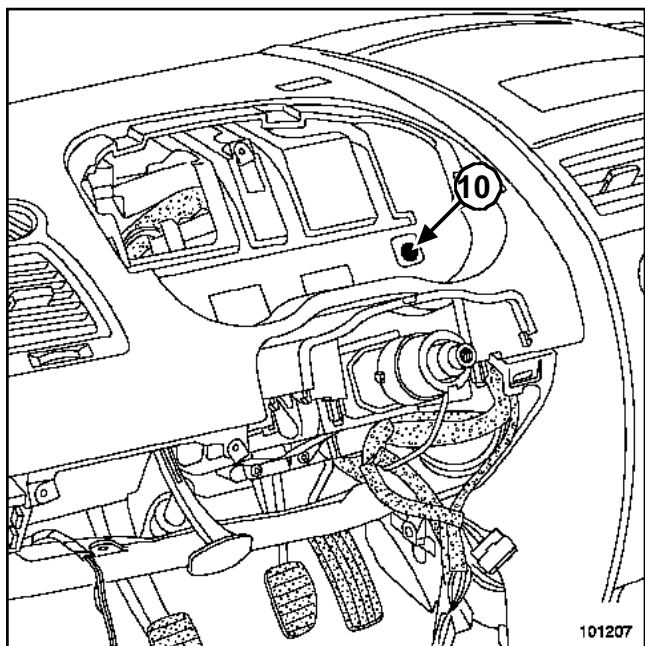
101206
101206

- Remove the upper bolt (8).
- Press the two clips (9).
- Remove the instrument panel.

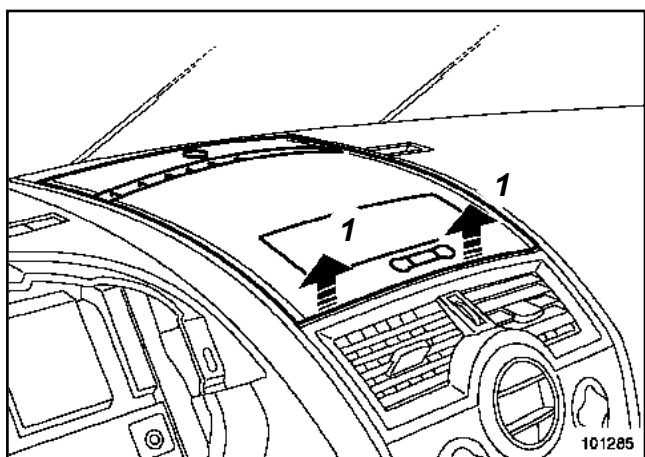
INSTRUMENT PANEL

Dashboard

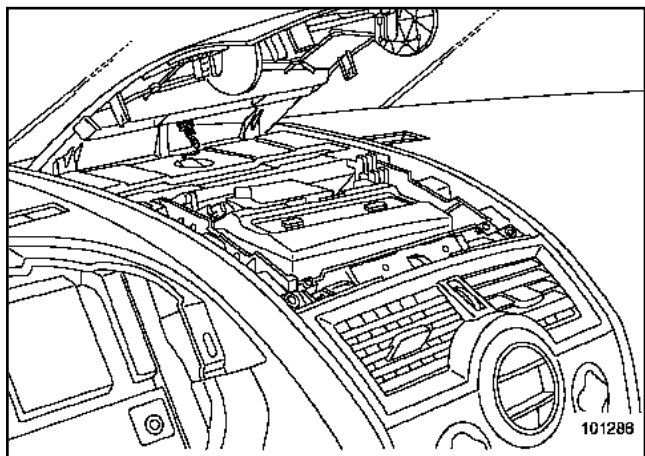
83A



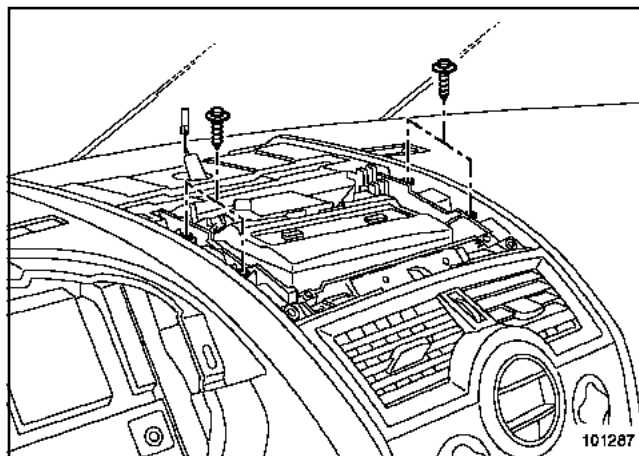
- ❑ Remove the bolts (10).



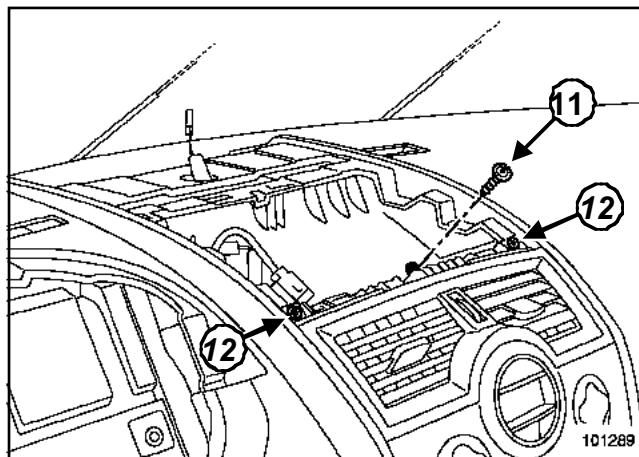
- ❑ Unclip the upper cover (1) or the display mounting (basic version).



- ❑ Disconnect the insulation sensor.



- ❑ Remove the bolts and Carminat screen (if installed).
- ❑ Disconnect the connector.

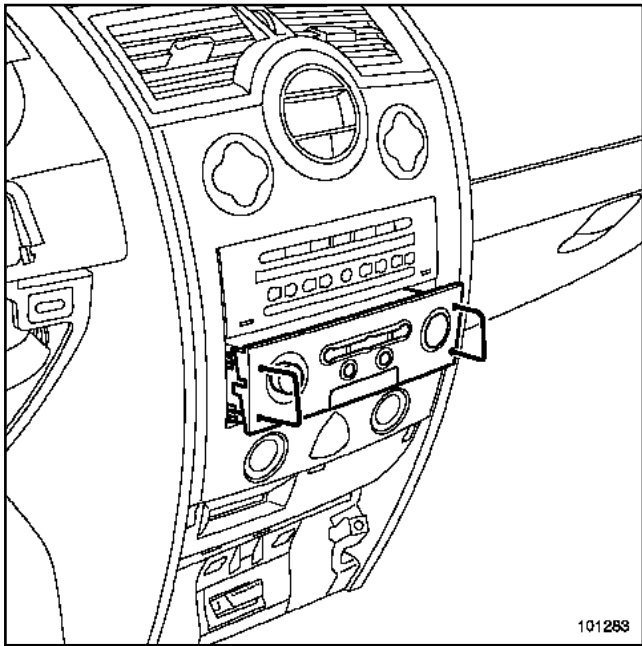


- ❑ Remove:
 - the bolt (11),
 - the bolts (12).

INSTRUMENT PANEL

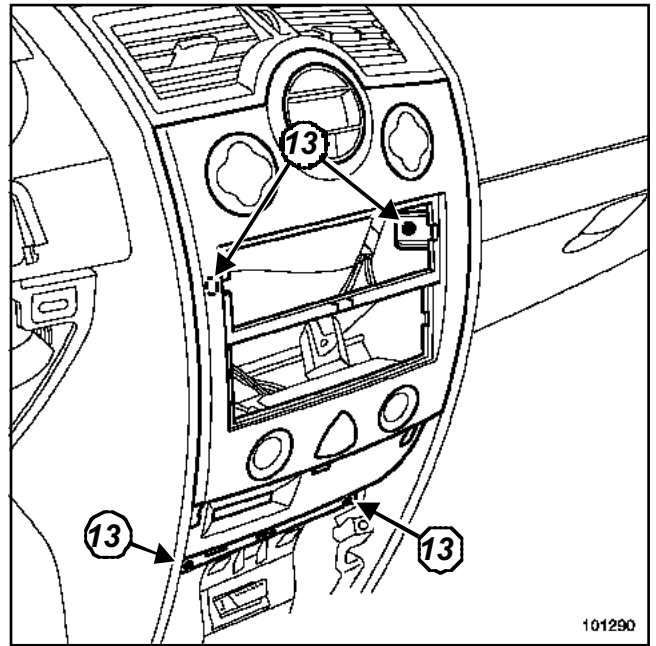
Dashboard

83A



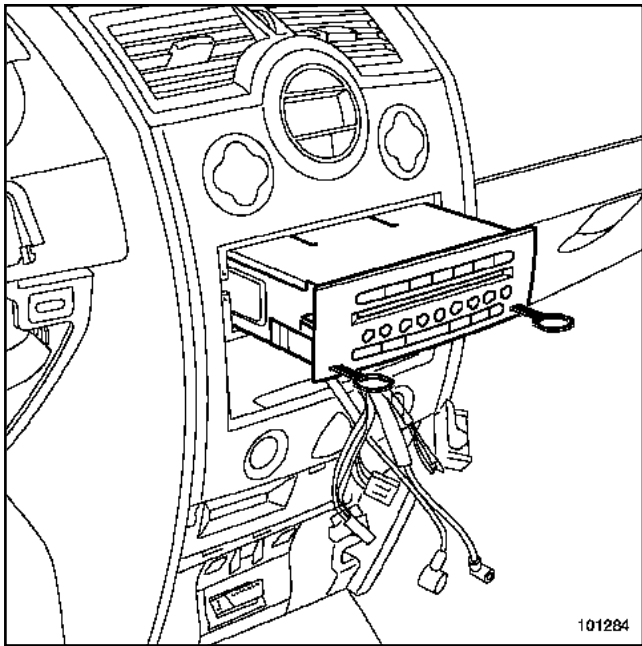
101283
101283

- ❑ Remove the Carminat control (if installed), using the tool (Ms. 1373).
- ❑ Disconnect the different connectors.



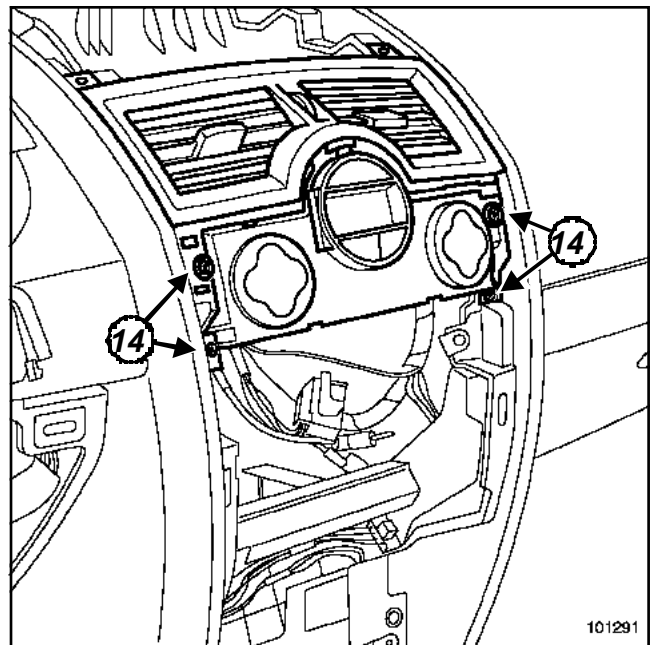
101290
101290

- ❑ Remove the screws(13).
- ❑ Unclip the card reader, using the tool (Car. 1597).
- ❑ Disconnect the various connectors.



101284
101284

- ❑ Remove the radio with the tool (Ms. 1639).
- ❑ Disconnect the various connectors.



101291
101291

- ❑ Remove the screws(14).

INSTRUMENT PANEL

Dashboard

83A

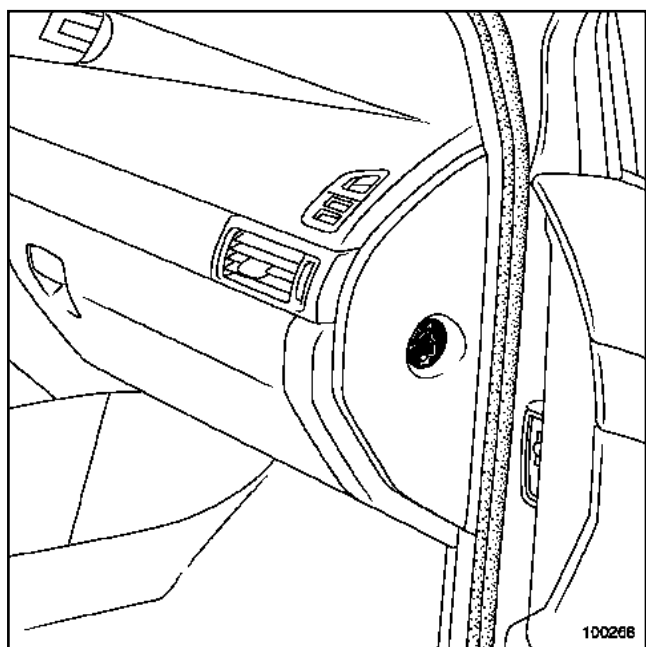
- ❑ Remove the «centre air vent / air conditioning control».

Note:

On vehicles without climate control:

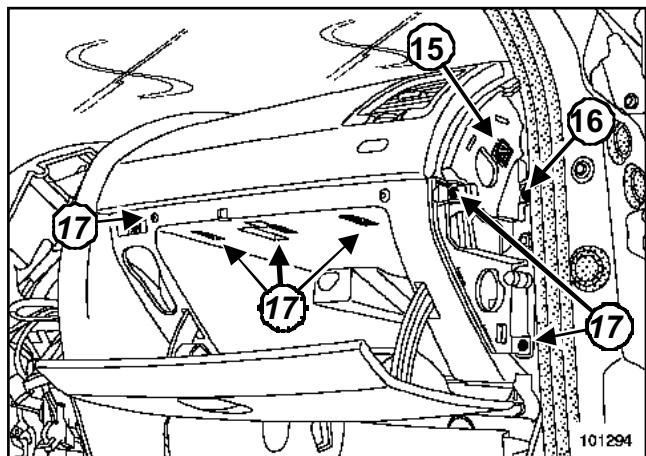
- remove the screws (14),
- loosen the centre air vent from the air conditioning or heating control,
- release the vent.

- ❑ Place the air conditioning control so that it does not interfere with removal of the dashboard.
- ❑ Disconnect the various connectors.



100268

- ❑ Open the glove compartment.
- ❑ Unclip the side panel.
- ❑ Disconnect the passenger front airbag deactivation connector.



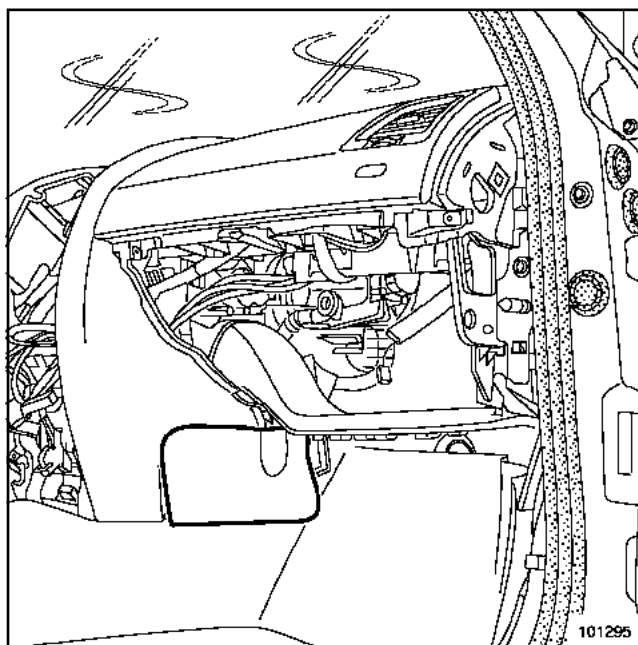
101294

- ❑ Unclip the anti-rotation clip (15).

WARNING

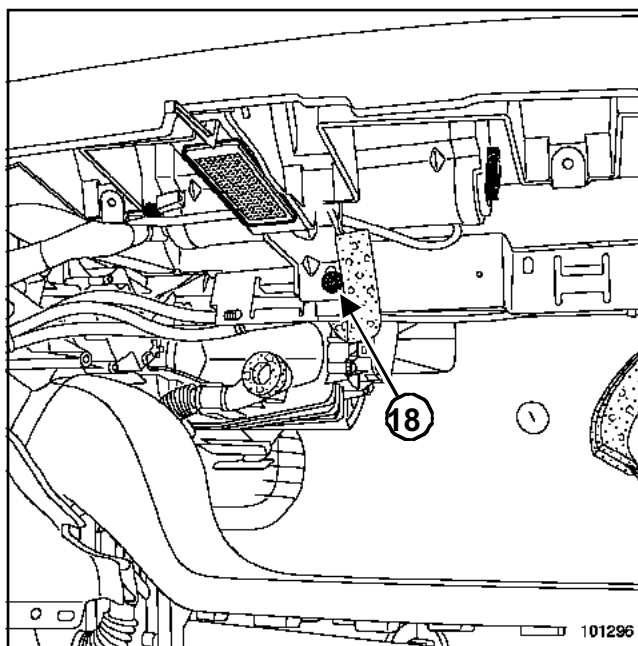
The two anti-rotation clips must be replaced after each removal.

- ❑ Remove:
 - the bolt (16),
 - the bolts (17).
- ❑ Release the storage compartment.



101295

- ❑ Unclip the two lower covers.



101296

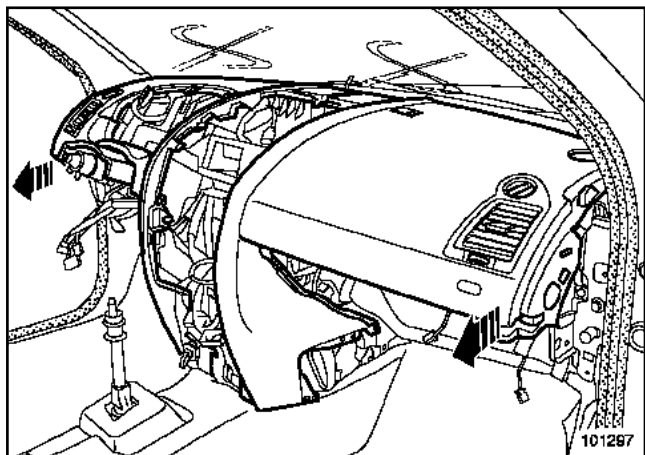
- ❑ Unclip the glovebox light.

INSTRUMENT PANEL

Dashboard

83A

- Disconnect the glovebox light.
- Remove the bolt (18).
- Disconnect the two passenger airbag connectors.



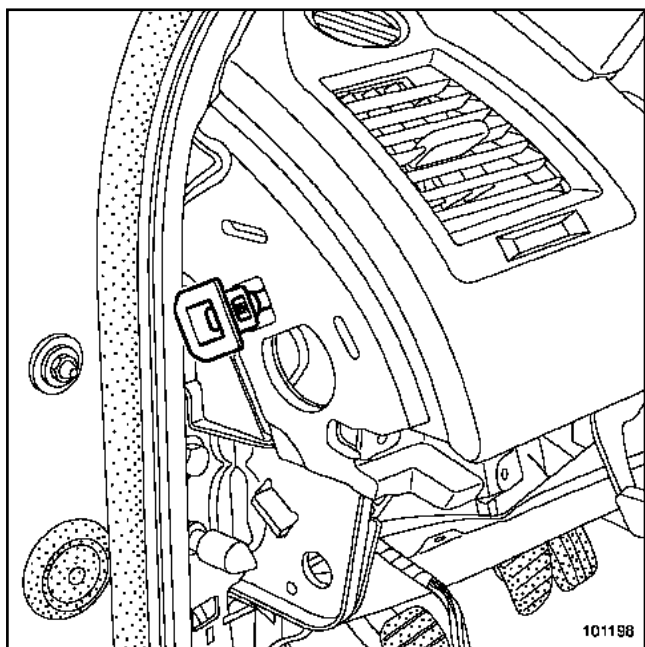
101297

WARNING

Before removing the dashboard, check the harness wiring routing. When removing the dashboard, the gear lever blocks the lower section of the dashboard.

- Remove the dashboard. This operation requires two people.
- Remove the passenger airbag (Section Airbag and Pretensioners, Passenger's airbag, page 88C-29).

REFITTING



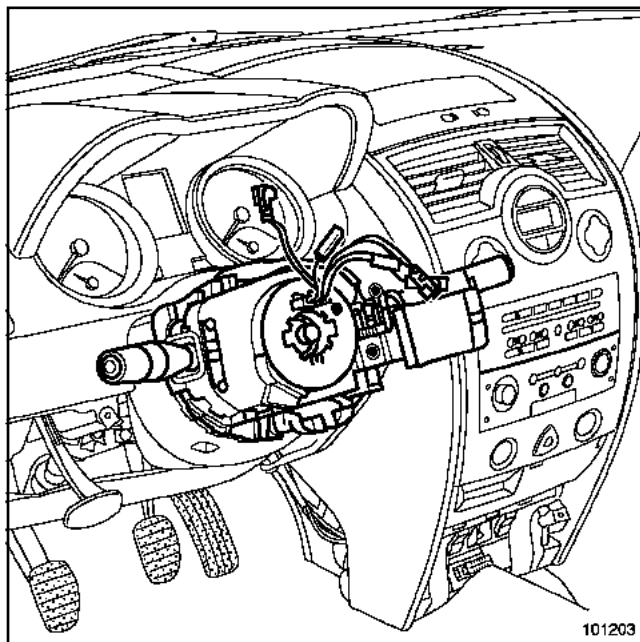
101198

- Refit the two anti-rotation clips.

WARNING

It is essential to replace both anti-rotation clips (Part Number 82 00 155 867) after each removal.

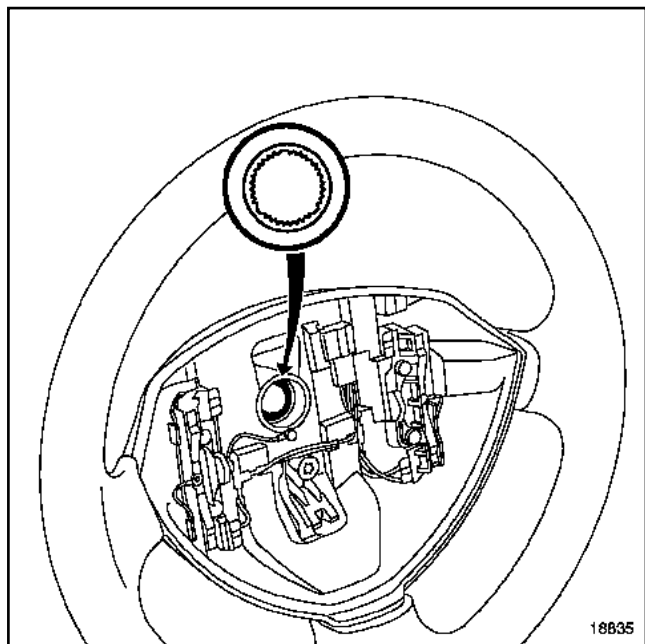
I-SPECIAL FEATURES OF THE UNDERSTEERING CONTROL



101203

- Before refitting, check:
 - the wheels are still straight,
 - the column switch is properly on the « 0 » mark.

II - SPECIAL NOTES ON THE STEERING WHEEL



18835

WARNING

- The column switch should enter the splines freely (the splines have location notches).
- Do not damage the spline location notches.
- It is essential to replace the steering wheel bolt each time it is removed.

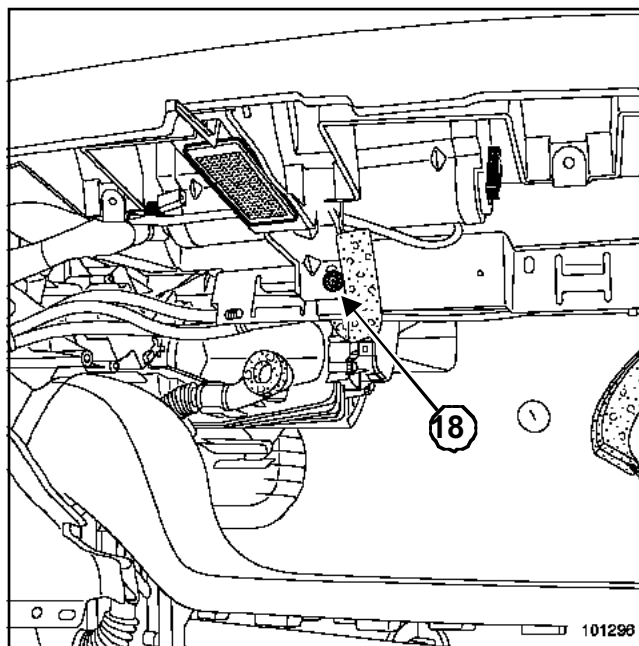
- Tighten to torque the **steering wheel bolt (4.4 daNm)**.

III - SPECIAL NOTES ON THE AIRBAG

- Unlock the computer if everything is correct otherwise refer to **Workshop Repair Manual-366 Fault finding**.

IMPORTANT

- Check the airbag computer using **Diagnostic tool**.
- If these instructions are not followed the system may not operate normally and the airbags could even be triggered accidentally.



101296

- Tighten to torque **bolt (2 Nm)(18)**.

WARNING

Connect the battery; carry out the necessary programming (Section Battery, page **80A-1**).

INSTRUMENT PANEL

Instrument panel: General

83A

Three types of instrument panel can be found on vehicles:

- « entry level » instrument panel,

- « mid-range » instrument panel,

- « top of the range » instrument panel.

		Entry level	Mid-range	Top of the range
Multiplex connection (vehicle)		X	X	X
Multiplex connection (multimedia)		-	-	X
Fault finding procedure		X	X	X
Self-test procedure		X	X	X
Needle gauge	Vehicle speed	X	X	X
	Rev counter	X	X	X
	Coolant temperature	X	X	X
	Fuel	X	X	X
Display	Total mileage	X	X	X
	Trip mileage	X	X	X
	Oil level	X	X	X
	Door and tailgate status	X	-	-
	ADAC Computer	X	X	X
	Mileage before oil change	X	X	X
	Cruise control or speed limiter setting	-	X	X
	Fault message	X	X	X
Additional display	Door location	-	X	X
	Tyre pressure monitor	-	X	X
	Automatic transmission gear display	-	X	X ⁽¹⁾
Large-screen display	Time	-	-	X
	External temperature	-	-	X
	Radio display	-	-	X
text messages	Overspeed feature (Saudi Arabia)	X	X	X
	LPG data display (not used)	X	X	X
	Warning light display	X	X	X
	Acoustic warning signal	X	X	X

⁽¹⁾ Special instrument panel

INSTRUMENT PANEL

Instrument panel: General

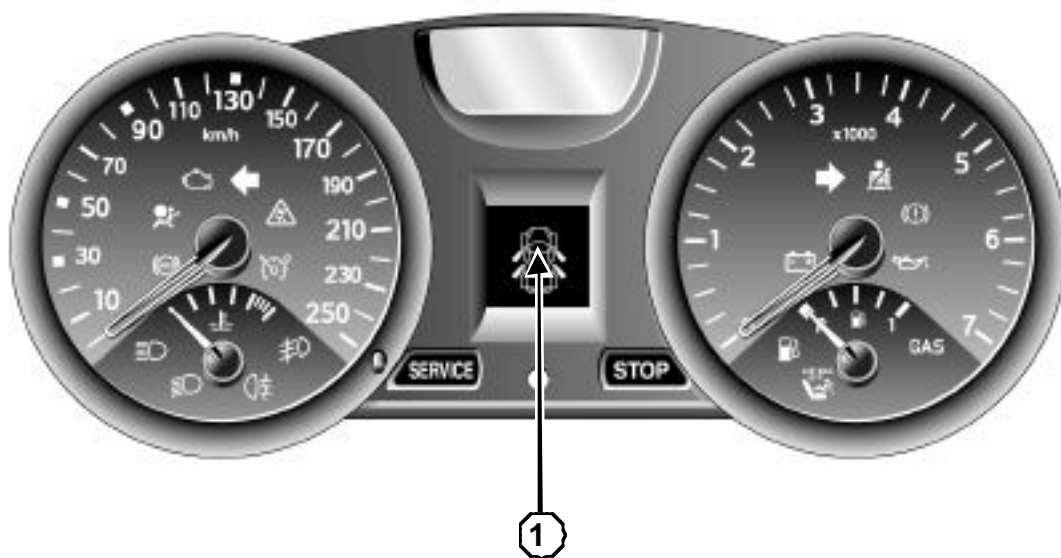
83A

On all types, fault finding can be run manually (self-test) or with the diagnostic tool.

Note:

Never work on the instrument panel. Only the glass may be replaced.

I - « BASIC » INSTRUMENT PANEL

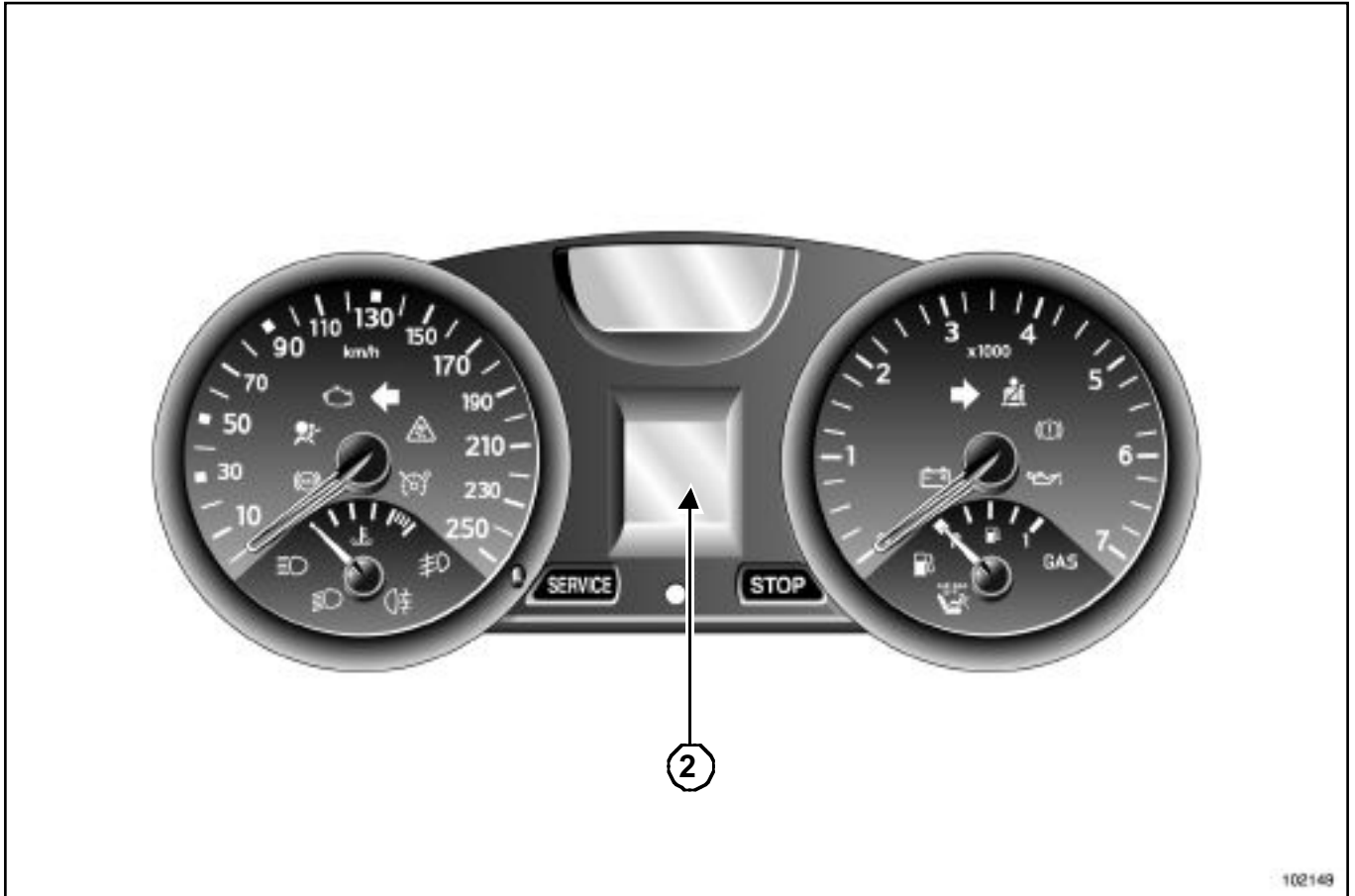


102140

102148

- (1) « Doors and boot status » indicator light

II - « MID-RANGE » INSTRUMENT PANEL



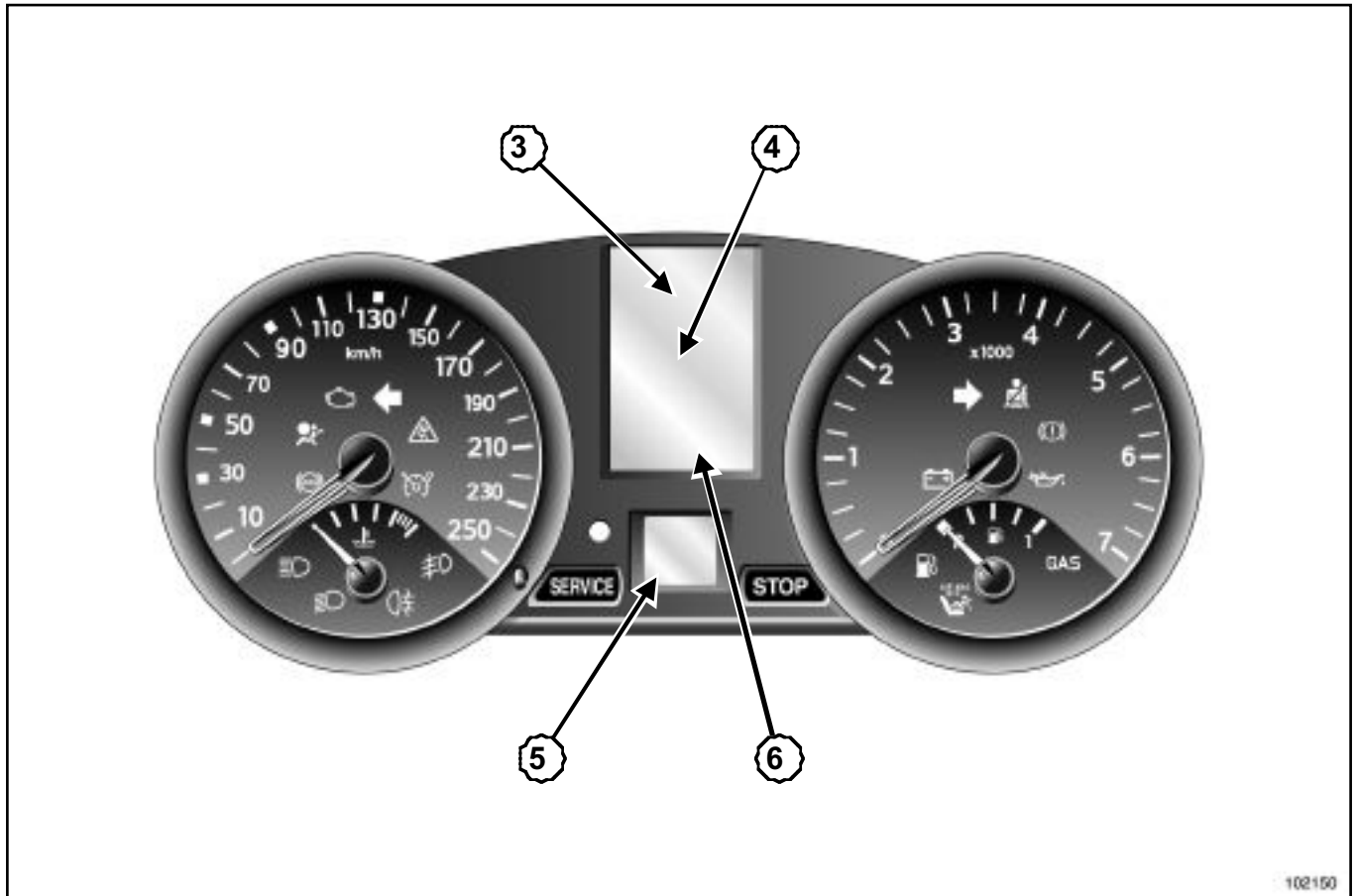
(2) « Doors and boot location » display

INSTRUMENT PANEL

Instrument panel: General

83A

III - « TOP OF THE RANGE » INSTRUMENT PANEL



102150

102150

IV - TABLE OF WIRING AND MULTIPLEX INPUTS

- (3) Radio information display
- (4) Written message display
- (5) Automatic gearbox display
- (6) Clock and external temperature display

Data	Computer	CONNECTION
Fuel level	Level sensor in the tank	Wire
Heated seat warning light	Switch	
Engine oil level	Engine sensor	
Brake fluid level warning light	Level sensor	
Parking brake indicator light	Ignition switch	
Lighting dimmer	Dimmer	
Vehicle speed	Anti-lock braking system computer	Multiplexing
Electronic Stability Program indicator light		

INSTRUMENT PANEL

Instrument panel: General

83A

Data	Computer	CONNECTION
Engine speed	Injection computer	Multiplexing
Coolant temperature		
Fuel consumed		
Preheating, injection, etc. indicator lights		
Cruise control/speed limiter:		
Gear engaged	Automatic gearbox computer	Multiplexing
Tyre pressure monitoring system	UCH	Multiplexing
Direction indicators and lights		
Audible alarm		
Engine immobiliser (messages)		
Doors (status and location)		
« Trip computer and warning system » scroll button		
Wiper fault		
Engine immobiliser (indicator light)	UCH	Wire
Engine oil pressure	Switching protection unit	Multiplexing
Battery charge		
Seat belt warning light	Airbag computer	Multiplexing
Fault and inhibitor warning lights		
radio display	Central Communication Unit	Multiplexing (multimedia)
Time		
External temperature		
Instrument panel alarm	Central Communication Unit	Wire

* The audible alarm confirms activation of the passenger compartment functions.

Instrument panel: Operating description

I - SELF DIAGNOSIS PROCEDURE

All instrument panels are fitted with a self-test function.

To start the self-test:

- insert the card into the card reader,
- press the « ADAC » button (driving assistance),
- press and hold the starter button (**2 seconds** approximately).

The instrument panel enters « test » mode.

The « test » mode consists of:

- displaying the message « test » mode,
- the gauge needles moving by stages,
- lighting of all of the indicator and warning lights,
- all segments of the display lighting up,
- display of the program version (« soft »),
- display of the « gauge reading » measured in the tank (in litres),
- display of the « hourly flow »,
- displaying stored faults or « test OK ».

Note:

To exit self-test mode (« test mode »), press the trip mileage reset button.

II - MILEAGE BEFORE OIL CHANGE

Note:

The mileage and intervals between services may be configured using the **Diagnostic tool**.

Setting the service interval

- display the driving assistance page: « oil change »,
- hold down the trip mileage reset button,
- the oil change interval flashes then returns to its initial setting,
- release the reset button,
- the interval is now set.

III - OPERATION OF THE DISPLAY

1 - Oil level indicator

This function is displayed when the ignition is switched on or after the engine has been started for approximately **30 seconds**.

If the level is between the authorised minimum and maximum limits, the message « oil level correct » appears on the display.

If during these **30 seconds** the trip mileometer reset button is pressed, the blocks indicating the level disappear from the display.

The blocks as the oil level drops and are replaced by a dash.

If the oil level is at minimum, the message « top-up oil level » is displayed, the oil level blocks are replaced by dashes and the « service » warning light on the instrument panel lights up.

To take readings of the trip computer and warning system, press the starter button once more.

WARNING

The oil level must be topped up as soon as possible.

Note:

- In normal operating conditions, the oil level is only measured if the the ignition has been switched off for more than **one minute** ; otherwise, the previous value will be displayed.
- However, if a gauge fault is detected, the display switches directly to the mileometer function when the ignition is switched on.
- Irregularities with the oil level are normal. Various parameters are involved:
 - parking on a slope,
 - too short a wait after running the engine for a short time (especially when the oil is cold), etc.

2 - Trip mileage

Mileometers and trip meters

Mileometers and trip meters will be displayed for approximately **30 seconds** after the ignition has been switched on (after the oil level signal). Pressing the « ADAC » button once (button located at the end of the wiper stalk), shortens the delay.

The trip meter can be reset by pressing the « RESET » button once. Resetting the trip meter is different to resetting the « ADAC » (distance travelled).

Note:

It is not possible to configure the display in kilometres or miles. The instrument panel must be replaced if it is replaced.

Instrument panel: Operating description

IV - TRIP COMPUTER AND WARNING SYSTEM

The various sequences of the trip computer and warning system can be displayed instead of the mileage by pressing the « ADAC » button (located at the end of the wiper stalk). It is reset by pressing the « RESET » button).

The information from the trip computer is displayed after the trip meter as follows:

- fuel consumption since last reset (in litres or gallons*),
- average consumption (in l/100 km or mpg*) since the last reset,

Note:

- This is only displayed once the vehicle has travelled approximately **400 m**.
- This takes into consideration the distance covered and the fuel consumption since the last time the reset button was pressed.

- current consumption (in l/100 km),

Note:

- This is only displayed when the vehicle speed is above approximately **18 mph (30 km/h)**.
- With the accelerator pedal in the no load position, if the speed is above **18 mph (30 km/h)**, the current consumption is equal to « 0 ».
- This function is not available on the UK version.

- estimated range with remaining fuel (in kilometres or in miles*),

Note:

- This is only displayed once the vehicle has travelled approximately **400 m**.
- This is the potential distance remaining calculated by taking into account the distance travelled, the amount of fuel remaining in the tank and the fuel consumed.
- The range remaining is not displayed if the low fuel warning light is lit.

- distance travelled since the last reset,

- average speed since the last reset,

Note:

- This is only displayed once the vehicle has travelled approximately **400 m**.
- This is obtained by dividing the distance travelled by the time elapsed since the last time the reset button was pressed.
- The time base is generated in the trip computer.

- mileage to next oil change informs the driver of the distance (in Km or in miles*) which can be travelled before the next oil change,

- Cruising speed

Note:

- If the vehicle is fitted with the « Cruise control / Speed limiter » function, the display shows the setting in Km/h or in mph*.
- Each time the setting is changed or if it cannot be respected, this information replaces the « ADAC » information selected (Section Cruise control, page **83D-1**).

WARNING

If the trip computer displays flashing dashes, this means that the computer has detected a fault (Section Instrument panel, Instrument panel: General, page **83A-11**).

- * UK version.

Instrument panel: Warning and indicator lights

I - AUDIBLE WARNING SIGNAL

The buzzer is used to indicate:

- operation of the turn signals,
- the lights on reminder,
- the driver's seat belt reminder,
- the RENAULT « hands-free » card has fallen out of the reader with the engine running,
- automatic locking turned on or off while driving,
- automatic lighting has been turned on or off,
- the authorised speed has been exceeded (Saudi Arabia),
- a fault in the child safety system,
- cruise control/speed limiter operating state,
- failure to detect the « hands-free » RENAULT card,
- the minimum fuel level warning light has come on,
- an important alert from the tyre pressure monitor,
- the start of a message on the instrument panel (brake circuit, oil pressure, severity level 2 first injection system, power assisted steering, coolant temperature warning).

II - SERVICE INDICATOR LIGHT

The service indicator light comes on at the same time as the following indicators:

- the anti-lock braking system,
- airbag,
- electronic stability program,
- injection,
- engine immobiliser.

The service indicator light is associated with the buzzer in the event of a fault on:

- the child safety system,
- the automatic locking system while driving,
- the wiper system.

III - BRAKE WARNING LIGHT

The brake warning light comes on at the same time as the following indicators:

- brake fluid level,
- oil pressure warning,
- tyre pressure monitor,
- battery.

INSTRUMENT PANEL

Instrument panel: Indicator lights and text messages

83A

I

Written message	BRAKE SERVICE light	Audible warning signal
Faulty steering	Stop	X
Faulty injection	Stop	X
Check injection	Service	-
Engine overheating	Stop	X
Check steering	Service	-
ESP out of order	Service	-
ESP disconnected	-	-
Check gearbox	Service	-
Gearbox overheating	Service	-
Faulty engine immobiliser	Service	-
Heated seat ON	-	-
Insert card	-	-
Card not detected	Service	X
Hands-free out of order	Service	-
Change card battery	-	-
Depress the brake + « start »	-	-
Declutch + « start » / depress brake + « start »(alternative)	-	-
Steering locked	Service	-
Steering not locked	Service	-
Gear shift in P or N / press on brake + « start » (depending on equipment)	-	-
Press the brake pedal.	-	-
Adjust oil level	Service	-
Door open	-	-
Luggage compartment open	-	-
Underinflation: slow down	-	-
Adjust tyre pressure	Service	-
Puncture: change the wheel	Stop	X
Tyre pressure sensor not working	Service	-
Limiters	-	-

INSTRUMENT PANEL

Instrument panel: Indicator lights and text messages

83A

Written message	BRAKE / SERVICE light	Audible warning signal
Cruise control	-	-
XXX km (or miles) in memory	-	-
Speed limiter out of order	Service	-
Cruise control not working	Service	-
Electronic failure	Service	-
Roof out of order (convertible)	Service	-
Automatic lighting OFF	-	-
Automatic lighting out of order	Service	-
No message stored	-	-
Boot open / insert card (depending on equipment)	-	-
Confirm engine stop / press « stop » twice (depending on equipment)	-	-
Remove card	-	-
Shift into neutral	-	-
Automatic wipers OFF	-	-
Automatic wipers out of order	-	-
Card reader not working	Service	-
Card reader not working / Electronic fault (depending on equipment)	Service	-
Electronic failure	Stop	X
Restricted card mode	-	-
Oil level	-	-
Check diesel filter	Service	-
Regenerate particle filter	-	-

INSTRUMENT PANEL

Instrument panel: Defect modes

83A

Wire connection

Wire inputs	Condition for fault confirmation	Condition for return to normal	Fault information (before management of display priorities)		
			Indicator light and message	Electronic failure	Audible alarm and memorisation
Oil level signal	R > 20 Ω	20 > R > 3 Ω	-	-	« oil sensor fault » during the self-test procedure
	R < 3 Ω				
	earth sensor				
Fuel gauge	R > 350 Ω	350 > R > 5 Ω	Service and « minimum » warning light flashing	Travelling without filtering to the original position on the graph	« fuel sensor fault » in the self-test
	R < 5 Ω	350 > R > 5 Ω	Service	-	
Brake fluid level	short circuit or open circuit	-	-	-	-
	Earth	-	Brake and brake fault warning light	-	Audible alarm upon fault detection
Parking brake	short circuit or open circuit	-	« Brake fault » warning light never lit up	-	-
	Earth	-	« Brake fault » warning light constantly lit	-	-
Instrument panel reactivated by central communication unit	short circuit or earth	-	-	Radio alarm impossible	-
	Permanent +	-	-	Instrument panel cannot be turned off until battery discharges	-

INSTRUMENT PANEL

Instrument panel: Defect modes

83A

Multiplex connection

Input multiplex	Fault	Fault information (before management of display priorities)		
		Indicator light and message	Electronic failure	Audible warning signal
Frame Air bag	Missing frame	« Airbag fault » and « service » lights	-	-
Gearbox frame	Missing frame	« Service » and message indicator light	No gear engaged	-
	Parameter speed engaged	-		
Anti-lock braking system frame	Missing frame	Message and indicator lights - « brake fault » - « ABS fault » - « Electronic stability program system » - « Brake »	Speedometer needle and odometer no longer working	X
	Parameter speed Vehicle	-		-
General injection frame	Missing frame	« Service » indicator light and « electronic fault » message	Coolant temperature needle stays at 0	-
	Engine coolant temperature setting	-	-	-
	Cruise control or speed limiter setting	Symbol steadily lit	-	-
Injection frame	Missing frame	Indicator lights: - « Service » and « electronic fault » message - « Oil pressure warning » - « Battery charge » - « Coolant temperature warning »	tachometer needle stays at 0	-
	Engine speed setting	-		-

INSTRUMENT PANEL

Instrument panel: Defect modes

83A

Input multiplex	Fault	Fault information (before management of display priorities)		
		Indicator light and message	Electronic failure	Audible warning signal
ESP frame	Missing frame	« Service » indicator light and « faulty steering » message	-	-
Tyre pressure monitoring system frame	Missing frame	« Service » indicator light and « faulty tyre sensors » message	On the symbol, the wheels disappear	-
UCH frame	-	- « Service » indicator light - Dipped beam headlights, main beam headlights, fog lights indicator light always off - Turn signals indicator light lit	Open doors symbol remains lit	
	Flashing states parameter	turn signals indicator light lit		-
	Trip Computer scroll setting	« Service » indicator light	-	
Retractable roof frame (convertible)	-	« Service » indicator light and « roof not working » message	-	-
Protection and Switch Unit frame	-	« Service » indicator light and « electronic fault » message	-	-
Multiplex network failure (all frames missing)	No network before + after ignition	« Service » indicator light and « electronic fault » message	Open doors symbol remains lit	-
	no network while driving	« Service » and « brake » indicator light and « electronic fault » message		

INSTRUMENT PANEL

Instrument panel: Configuration

83A

Possible configuration		Default value
CF002 « Language setting » *	French, English, Italian, German, Spanish, Dutch, Portuguese, Turkish (LC060)	French
CF140 « Unit of distance »	Kilometres, miles (LC051)	kilometres
CF137« Type of vehicle »	Hatchback, Coupé, Cabriolet, Estate, Saloon (LC030)	Saloon
CF149« Gearbox type »*	Manual, Automatic, Regulator (LC029)	Automatic gearbox
CF142 « Electronic stability program system »	With, Without (LC053)	With
CF145« Tyre pressure monitor »*	With, Without (LC056)	With
CF141 « Overspeed (Saudi Arabia) »	With, Without (LC052)	None
CF143 « Unit of measurement for consumption »	(l/100 km), (gallon/miles) (LC054)	standard
CF150 «Cruise control/Speed limiter »	With, Without (LC061)	With
CF138 « Type of fuel »	Petrol / Diesel / LPG / GNC (LC049)	Petrol
CF005 « Oil change interval (in kilometres) »	10 000, 15 000, 20 000, 30 000 (LC062)	18,000 miles (30 000 km)
CF151 « Oil change frequency (in unit of time) »	(LC063)	24 months

* « Mid-range » and « High-end » instrument panel.

IMPORTANT

After checking the instrument panel configuration, disconnect and reconnect the battery so that the new configurations are taken into account.

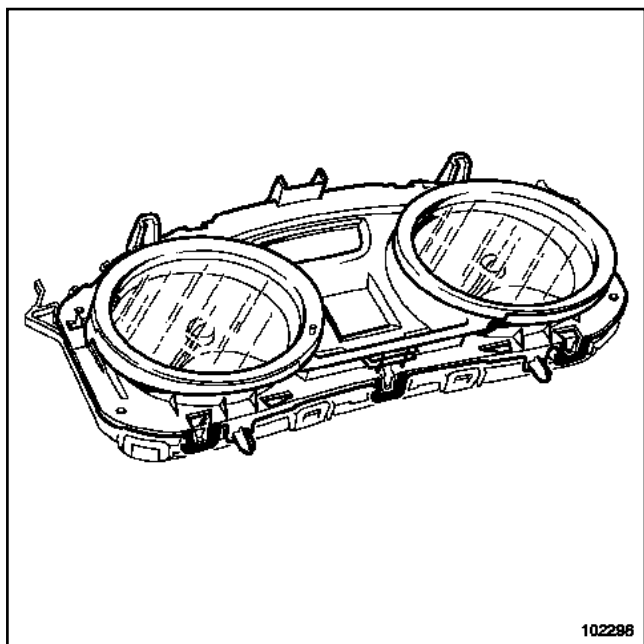
WARNING

Connect the battery; carry out the necessary programming (Section Battery, page 80A-1).

INSTRUMENT PANEL

Instrument panel

83A

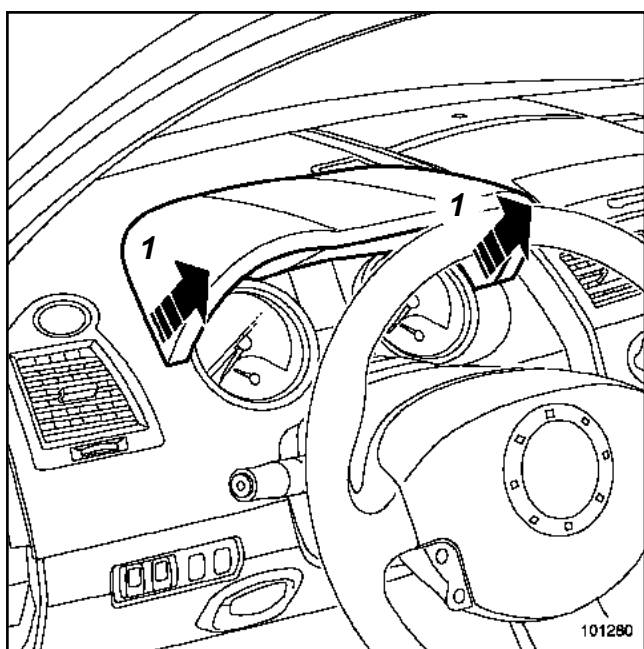


Note:

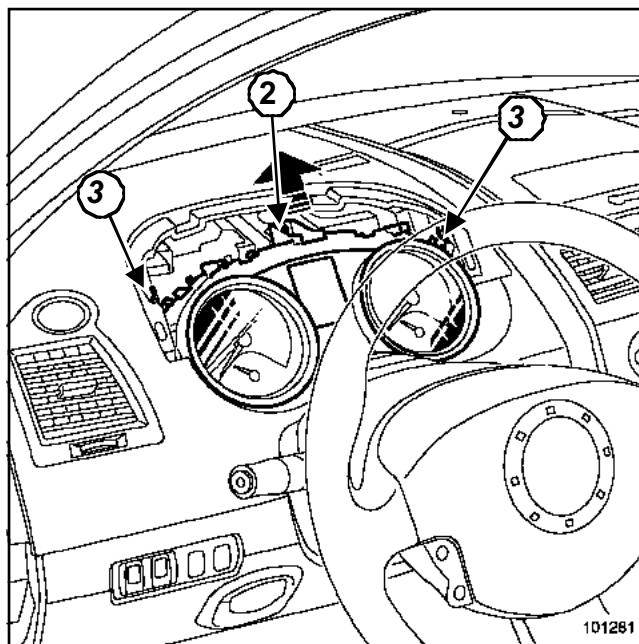
Only the glass may be replaced on these instrument panels. If other components are faulty, replace the instrument panel completely.

REMOVAL

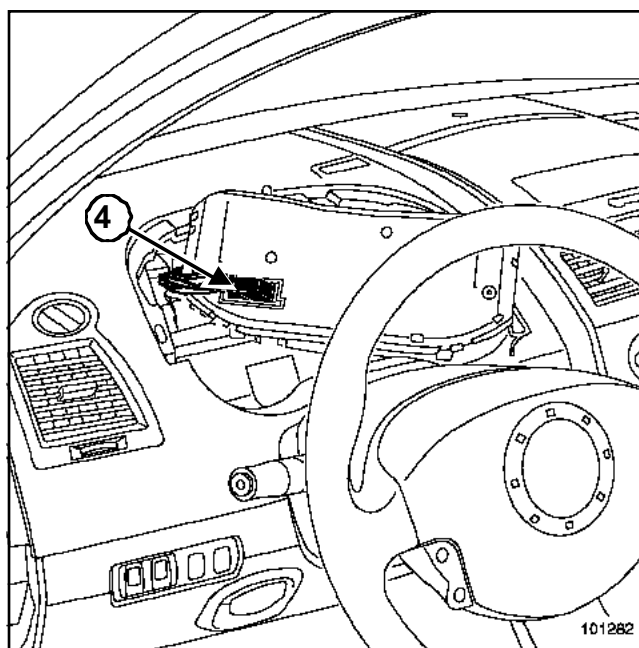
- Disconnect the battery.



- Remove the top of the instrument panel clipped to the dashboard at (1).



- Disconnect the navigation system speaker (if the vehicle has one).
- Remove the centre bolt (2).
- Release the instrument panel by pressing on the two tabs (3) on each side of the instrument panel.



- Disconnect the connector (4).
- Remove the instrument panel.

REFITTING

- To refit, proceed in the reverse order to removal.

- Connect the battery but do not carry out any programming.
- Make the necessary configurations (Section Battery, page **80A-1**).
- Disconnect the battery.

Note:

This procedure saves the instrument panel configurations.

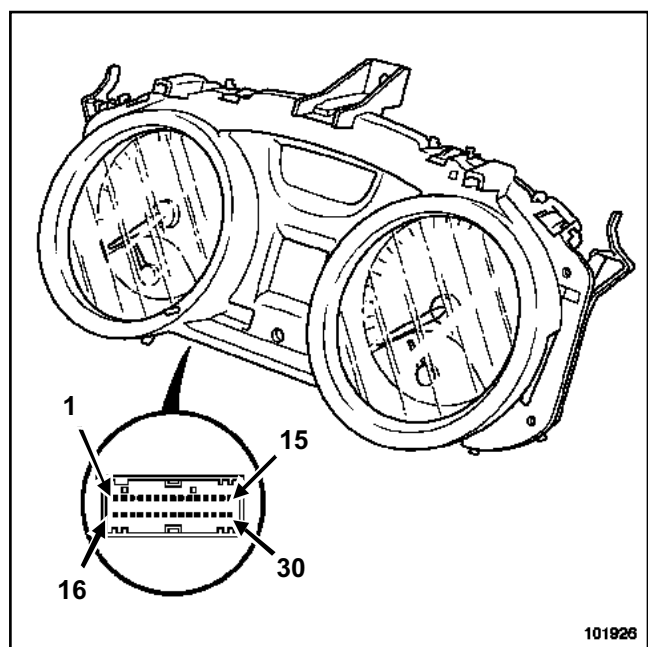
WARNING

Connect the battery; carry out the necessary programming (Section Battery, page **80A-1**).

INSTRUMENT PANEL

Instrument panel: Connection

83A



101926
101926

Track	Description
1	Vehicle multiplex connection H (input)
2	Vehicle multiplex connection H (output)
3	Not used
4	Vehicle multiplex connection L (input)
5	Vehicle multiplex connection L (output)
6	Not used
7	Multimedia multiplex connection H (input)
8	Not used
9	Multimedia multiplex connection L (input)
10	Radio ON / OFF signal input
11	Oil level sensor signal
12	Not used
13	Oil level sensor earth
14	Fuel gauge earth
15	Earth
16	Not used

Track	Description
17	Heated seat indicator light
18	Not used
19	Not used
20	Parking brake indicator light
21	Brake fluid warning light
22	Service warning light
23	Not used
24	Not used
25	Lighting dimmer
26	Not used
27	Fuel gauge signal
28	Not used
29	Immobiliser system indicator light
30	+ Before ignition

Note:

The radio ON / OFF signal and multimedia multiplex connection only apply to « Top of the range » instrument panels.

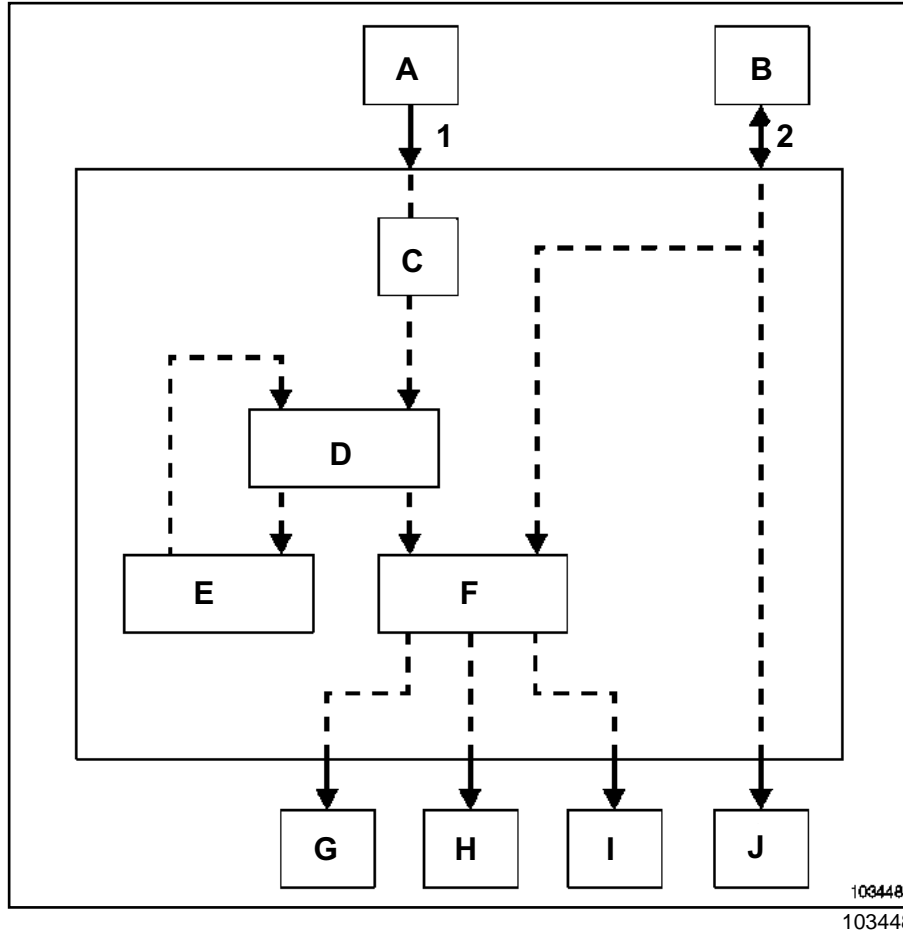
Fuel level sensor: Operating principle

OPERATING PRINCIPLE

The « current consumption » displayed on the Trip Computer page is the information sent by the injection computer (unmodified by the instrument panel).

The « fuel level », the « range » displayed on the Trip Computer page and the state of the « fuel warning light » depend on:

- the resistance of the filtered gauge,
- the resistance stored,
- the signal sent by the injection computer.



- (1) Wire connection
 (2) Multiplex connection

Mark	Vehicle state
A	Signal from the tank gauge (resistance)
B	Fuel consumption signal from injection
C	Resistance smoothing
D	Comparison of resistance reading with resistance in memory
E	Memorisation
F	Consumption comparison (gauge/injection)
G	Needle level display

INSTRUMENT PANEL

Fuel level sensor: Operating principle

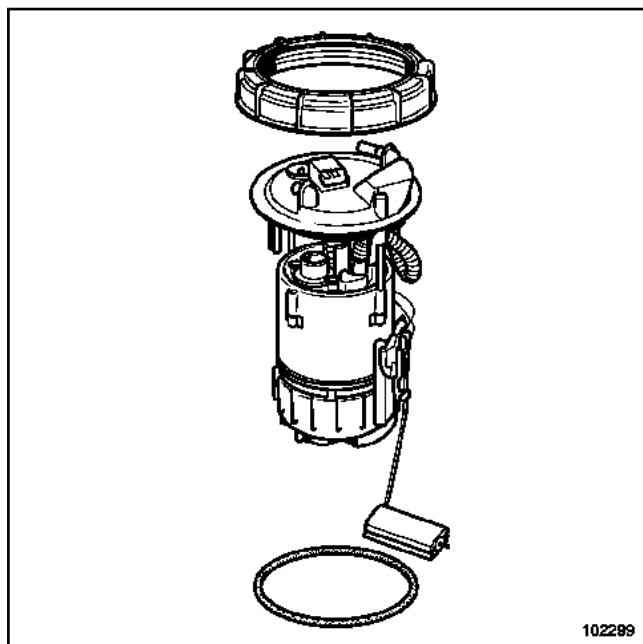
83A

Mark	Vehicle state
H	Low fuel level warning light comes on
I	Fuel range display on the « Trip computer »
J	Fuel consumption display (instantaneous and average fuel consumption) on the « Trip computer »

INSTRUMENT PANEL

Fuel level sensor: CONNECTION

83A



102299
102299

Track	Description
1	- fuel sender
2	fuel level signal
3	+ fuel pump
4	- fuel pump

Note:

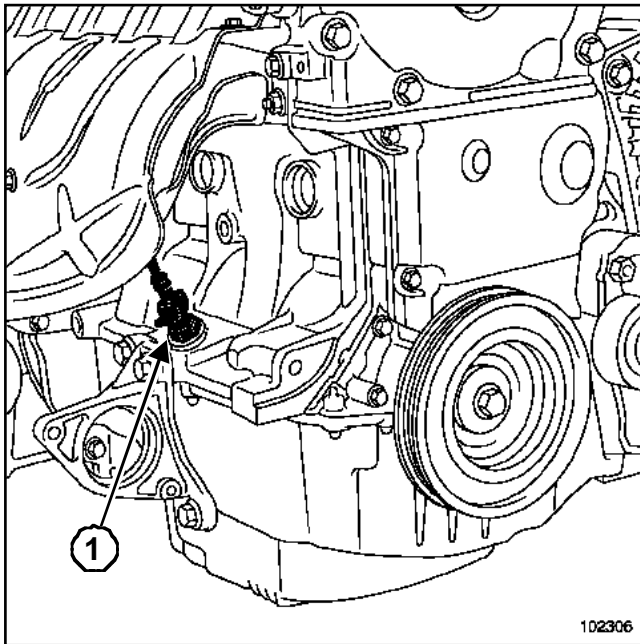
For information on the procedure for removing and refitting, see the **Reservoir**Section.

Specifications

Level	Resistance (+/- 10 Ω)	Litres con- sumed (+/- 5 l)
Tank full	20	60
Tank three quarters full	95	45
Tank half full	170	30
Tank one quarter full	245	15
Reserve level	290	6

LOCATION

Example of the K4J engine



102306

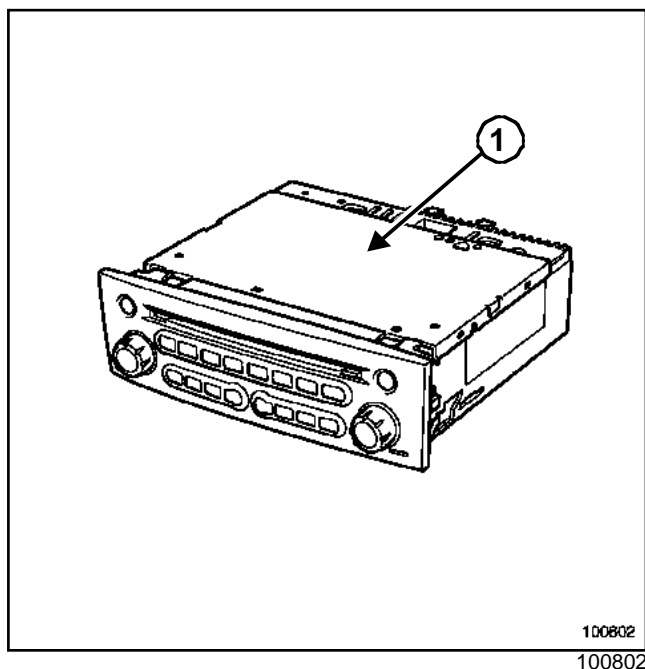
The oil level sensor (1) is located in the lower section of the engine.

General

Depending on the level of equipment, the vehicle may be fitted with:

- a « basic » navigation system (radionavigation),
- a « top of the range » navigation system (CARMINAT navigation).

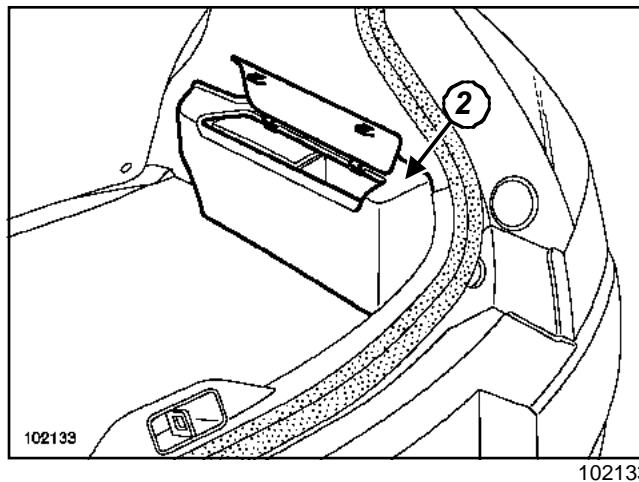
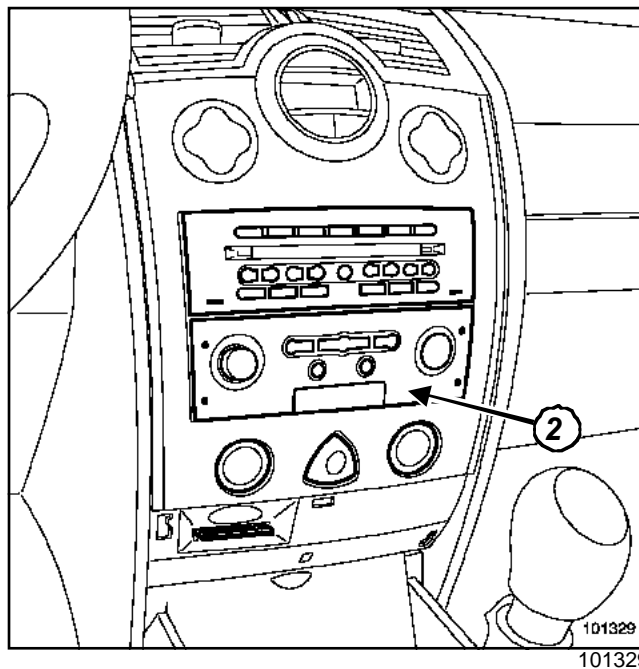
I - « BASICL » NAVIGATION



« Basic »(1) navigation comprises:

- the radionavigation system used for the CD-ROM drive, CD player, navigation and radio,
- a single display.

II - « TOP OF THE RANGE » NAVIGATION



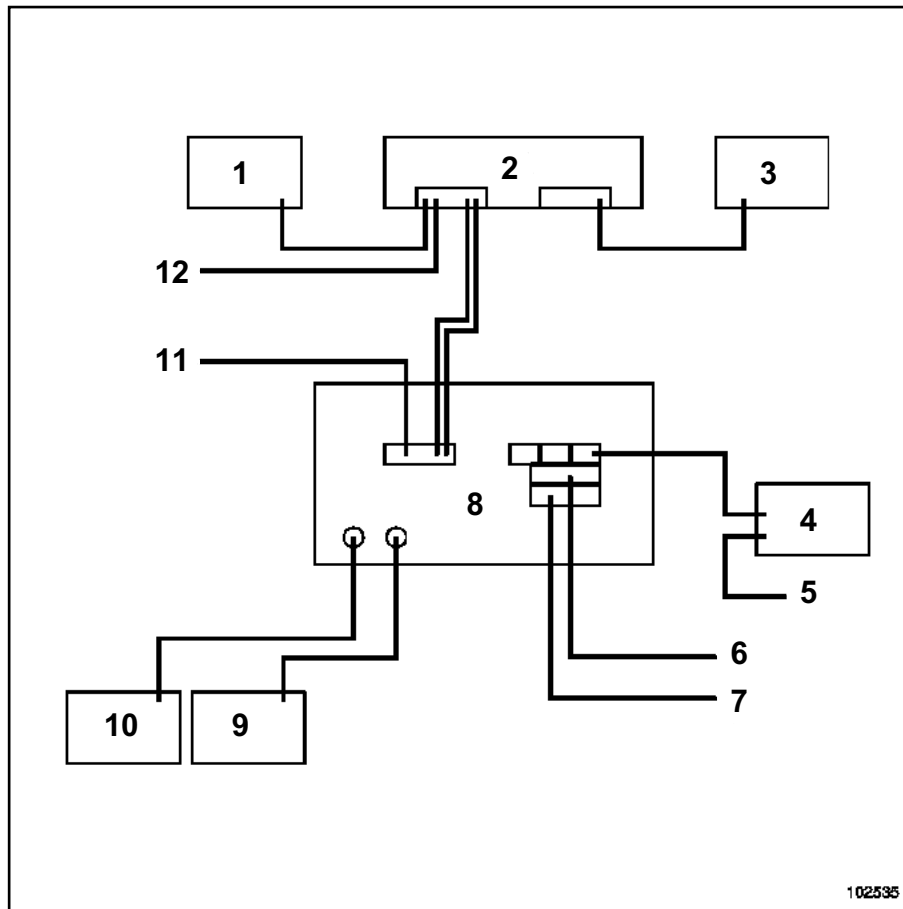
« Top of the range »(2) navigation comprises:

- the CD-ROM drive located in the boot,
- the central communication unit in the dashboard front panel,
- a fold-down screen.

Note:

When the fold-down screen is in « closed » position, the radio data are displayed on the dashboard via the multiplex connection. for special notes on the radio, see Section Radio, page **86A-1**.

"Entry Level" Navigation system: System description

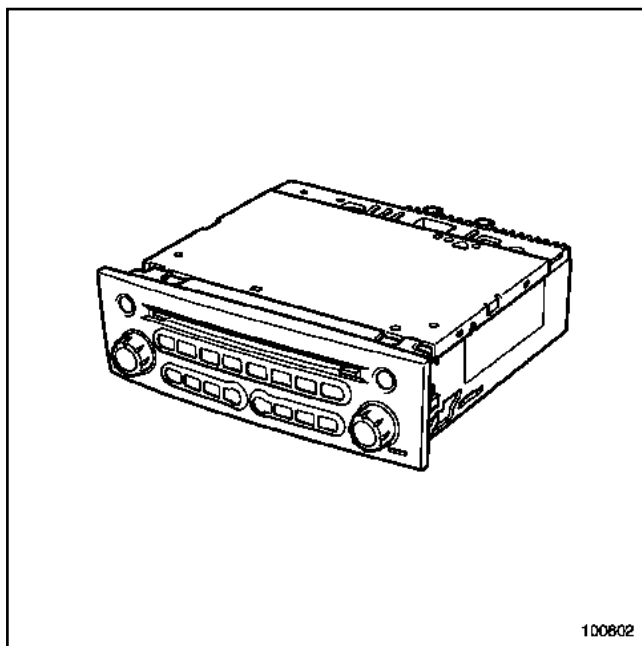


102535

102535

- (1) External temperature signal (UCH)
- (2) Offset display
- (3) Steering wheel mounted control
- (4) Compact disc changer (dash-board or boot)
- (5) Lighting signal (only for dash-board-mounted changer)
- (6) Speaker outputs
- (7) Vehicle supplies (+ before ignition / + accessories / earth / radio mute / speed signal / aerial supply)
- (8) Navigation system
- (9) GPS reception aerial
- (10) Radio aerial

- (11) Vehicle multiplex link (reverse signal / vehicle type / + after ignition)
- (12) Vehicle supplies (+ before ignition / + accessories / earth / lighting)



100802

100802

The system authorises a timed operation, without the + accessories feed, of approximately **20 minutes**.

The radio navigation system emits a beep and then switches off.

FUNCTIONS PROVIDED BY THE SYSTEM

- Listen to the radio (four geographical zones can be programmed),
- displaying the name of the station (RDS), via the best transmitter (AF function),
- Receiving traffic news (« I Traffic » function),
- Receiving news flashes and emergency bulletins (« I News » function),
- Receiving public safety emergency bulletins (« PTY 31 »),
- playing Compact Discs,
- Controlling a Compact Disc changer,
- Guiding the vehicle by means of a voice synthesiser and symbols on the display screen,
- Displaying « traffic information » messages (depending on version).

ON-BOARD TELEMATICS SYSTEM

"Entry level" navigation system: Operation

83C

I - SPECIAL NOTES ON THE RADIO FUNCTIONS

1 - Radio

The tuner has three selection modes displayed on the screen and accessed via the radio navigation front panel:

- manual mode (Manu),
- preselected mode (Preset),
- alphabetical order mode (List).

2 - Compact disc player

The CD player can play conventional compact discs and any audio tracks on a CD-ROM.

CDs can be played in order or tracks can be chosen at random.

To listen to a Compact Disc during navigation guidance:

- insert the navigation CD-ROM,
- select guidance,
- wait for the end of the route calculation (hourglass on display disappears),
- eject the CD-ROM and insert the compact disc.

Note:

If the route is modified while the Compact Disc is being played, it may be necessary to reinsert the CD-ROM.

3 - Compact Disc changer control

A Compact Disc changer may be connected to the radio navigation system. In which case, it may be necessary to enter a security code (Section Radio, "Entry level": Code protection, page **86A-3**).

Fitting a Compact Disc changer must be carried out with the radio navigation unit disconnected.

The presence of the Compact Disc changer is detected automatically when the radio navigation system is reconnected and the source is then accessible.

4 - Heat protection

If the temperature of the system is too high for it to operate properly, the volume is automatically reduced (without changing the volume on the display).

5 - Volume control

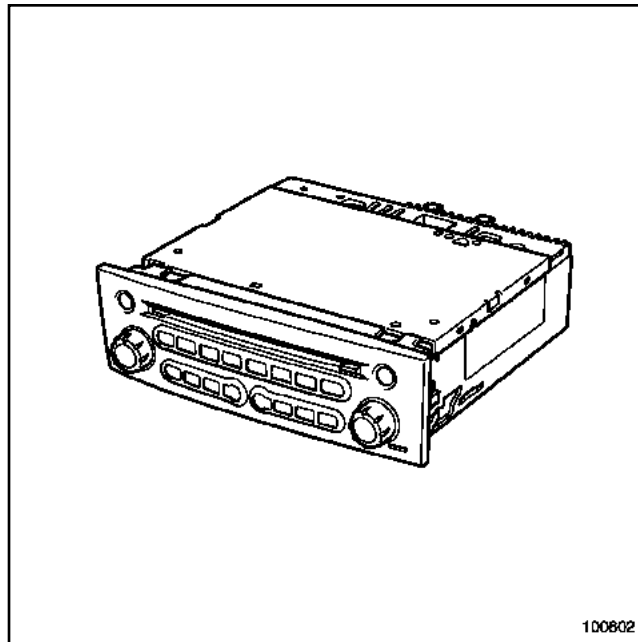
Each time the navigation system is switched on, the volume is the same as when it was switched off, with a maximum volume of 15.

6 - NOTES

- the « mute » function stops the CD from being played.
- The « traffic information » messages are issued at the same volume as the audio equipment's current volume setting. If the volume is altered during a message, the setting is stored until it is reset.
- The navigation system messages are issued at volume level 7. If the volume is altered (between 0 and 10) during a message, the setting is stored.
- If the lines short circuit, the amplifier is automatically switched off.

The volume can be corrected according to vehicle speed. Select the desired volume adjustment curve via « expert » mode: speed 5 for maximum adjustment, 0 to cancel the adjustment.

II - SPECIAL NOTES ON THE NAVIGATION FUNCTIONS



This navigation assistance system uses a voice synthesiser and a radio navigation display to guide the user of the vehicle.

This system can:

- find a specific location, such as:
 - a road, street or avenue, etc.
 - a hotel

- public services,
 - service station, garage,
 - etc.
- select guidance modes in order to:
- optimize journey time,
 - by giving priority to main or secondary roads, etc.
- display the journey time and distance.

1 - CD-ROM details

The navigation CD-ROM includes:

- maps,
- voice messages in twelve languages,
- an operating update (depending on the version of CD-ROM).

Note:

The system may operate slightly differently after a new CD-ROM has been loaded. It is possible to find out the version of the CD-ROM by pressing the following keys: « settings », « menu » and « OK ».

2 - Simulation mode

The system is fitted with a demonstration mode.

Press the « settings », « menu » and « OK » buttons then select « demo ».

WARNING

Demonstration mode **MUST** be deactivated to allow the system to operate normally. Every time the ignition is switched off, demonstration mode is deactivated.

3 - Notes:

- If the vehicle has been transported by train or ferry, the navigation system may need a few minutes to find its exact location (see « calibration »).
- If the vehicle battery has been disconnected, the system may need up to **20 minutes** to calculate its exact position. The vehicle must be outdoors, (with the navigation system switched on, in order to pick up satellite signals with the GPS aerial).
- The equipment can also operate without valid GPS data. Under these circumstances, precision may be lost when it comes to pinpointing exact locations.

ON-BOARD TELEMATICS SYSTEM

"Entry Level" navigation system: Self-test

83C

I - AUDIO SYSTEM SELF-TEST:

Press « i » and « audio » simultaneously.

1 - Connect:

📶V-CAN (vehicle multiplex link): « 0 » (not connected) or « 1 » (connected).

- Cdc (compact disc changer): « 0 » (not connected) or « 1 » (connected).

- Side light: « 0 » (inactive) or « 1 » (active).

- + Accessories: « 0 » (inactive) or « 1 » (active).

- Mute: « 0 » (inactive) or « 1 » (active).

- GPS aerial: « 0 » (not connected) or « 1 » (connected).

2 - Satellite:

📶UPPER RI (source).

- UPPER LE (source).

- VOLUME +.

- VOLUME -.

- THUMBW (thumbwheel +).

- THUMBW (thumbwheel -).

- BOTTOM (tuner).

- MUTE.

- NO KEY (no action)

3 - Speakers:

📶LE FRONT: front left.

- RI FRONT: front right.

- RI REAR: rear right.

- LE REAR: rear left.

4 - Tuner:

📶FM: station reception.

- FIELD: level of reception: « OO » (poor or « FF » (good).

- QUAL: quality of reception: « OO » (poor or « FF » (good).

5 - Version:

📶RV: software version.

- BV: boot-up version.

6 - Speed signal:

📶C: signal via multiplex link: « 0 » or « 1 » ,

- W: signal via wire connection: increases when the vehicle is driven,

- GAL: volume / speed increase: increases with the speed.

7 - Reset:

📶Reset Compact Disc changer.

- Reset radio/navigation.

8 - Run time:

📶Tuner.

- Navigation.

- Single compact disc.

- Compact disc changer.

- Auxiliary.

9 - Vehicle multiplex link:

📶T: vehicle type:

• 0 = Laguna,

• 1 = Vel Satis,

• 2 = Espace,

• 3 = Clio,

• 4 = Avantime,

• 5 = Kangoo,

• 6 = Trafic,

• 7 = Master,

• 13 = Mégane,

• 14 = Scénic.

- D : multiplexing fault finding: « 0 » (inactive) or « 1 » (active).

- A: + After ignition: « 0 » (inactive) or « 1 » (active).

- R: changes to 1 when reverse gear is engaged.

- D : Odometer: increases when the vehicle is driven.

10 - Lighting up (DIOMFOOS)

📶front panel diode supply %: 5 (no lighting) / 95 (maximum lighting).

II - NAVIGATION SYSTEM SELF-TEST:

Press « NAV » to access the « Settings » menu.

ON-BOARD TELEMATICS SYSTEM

"Entry Level" navigation system: Self-test

83C

- Press « flag », « menu » and « OK » simultaneously.

1 - GPS signal:

- ☛ Date,
- hour: GPS time.
- FIX: number of satellite receptions: reception indicator.
- Geographic position of the vehicle: X = latitude / Y = longitude.
- P: GPS reception quality: 0 = good / 99 = poor.

2 - Calibration:

- ☛ Save,
- Cancel.

3 - Calibration:

- ☛ Status,
- FIX:
 - no fix = no reception,
 - 1 = the system has located its position,
 - 2 = the system can locate the vehicle and give the name of the street,
 - 3 = calibration is complete and the system is operational.
- Wheel: the value should increase when the vehicle is driven,
- Rear: 1 when reverse gear is engaged.

4 - Sensors:

- ☛ Wheel: the value should increase when the vehicle is driven,
- Rear: 1 when reverse gear is engaged.
- Gyro: The value should change when the vehicle goes round a bend.

5 - Sound track test:

- ☛ The system issues the message « Please insert the navigation CD » (the volume can be changed during this procedure).

6 - Demonstration mode:

- ☛ The system can simulate navigation. Demonstration mode is deactivated every time the system is switched off.

7 - Version:

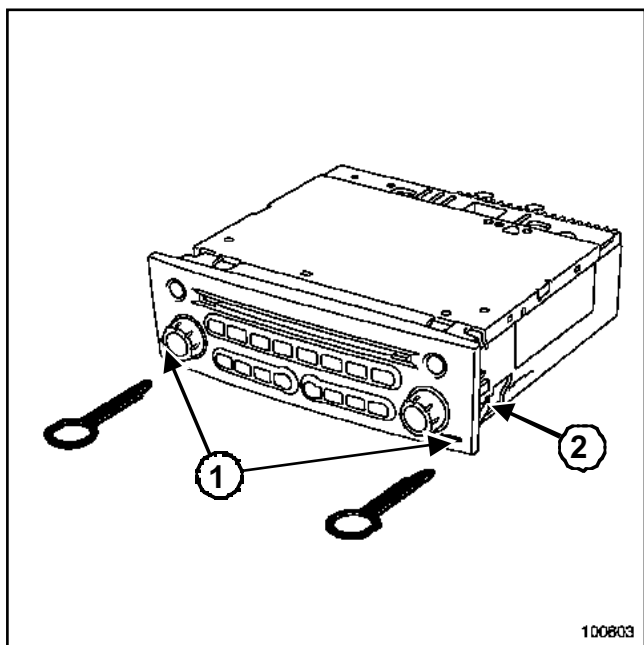
- ☛ Software version.
- CD-ROM version.

Essential special tooling

Ms. 1544	Tool for removing Carminat Becker radio
----------	---

REMOVAL

- Disconnect the battery.



- Insert the tools (Ms. 1544) in the two ports (1).
- Pull on the two tools in line with the radio-navigation unit.

WARNING

The aerial wire is very fragile. Do not pinch or kink it.

- Disconnect the connectors.
- Remove the tools by pressing on the nuts (2).

REFITTING

- Fit all the connectors.

WARNING

Connect the battery; carry out the necessary programming (see Section Battery, page 80A-1).

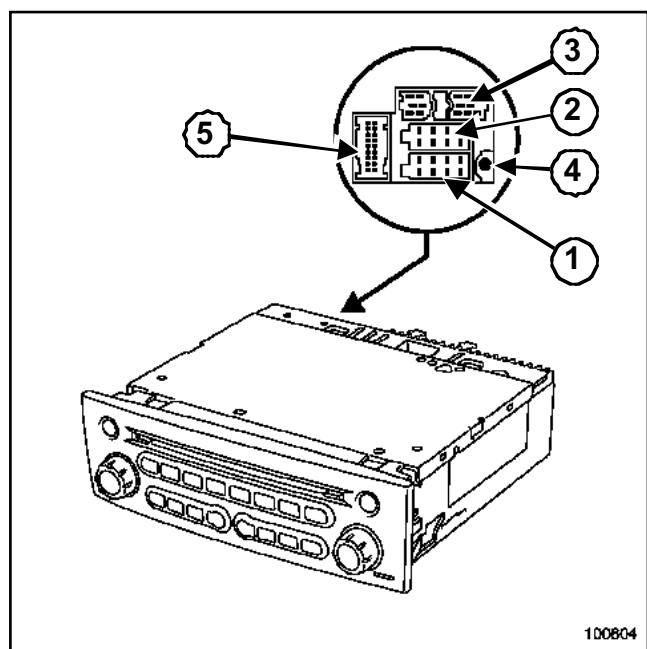
- Enter the security code.

WARNING

If the radio-navigation unit is connected to a CD changer panel, the protection code of the old radio-navigation unit must be entered when the display shows « CD CODE »(Section Radio, "Entry level": Code protection, page 86A-3).

- Reprogram the radio-navigation unit.
- Insert the CD ROM.
- Wait for the system to locate its position (calibrate).
- Continue by setting the time.

"Entry level" navigation system: Connections



100804
100804

Connector 1

Track	Description
1	Vehicle speed signal
2	Not used
3	Telephone mute
4	+ before ignition
5	Aerial supply output
6	+ side lights
7	+ accessories
8	Earth

Connector 2

Track	Description
1	+ Rear right-hand speaker
2	- Rear right-hand speaker
3	+ Front right-hand speaker
4	- Front right-hand speaker
5	+ Front left-hand speaker
6	- Front left-hand speaker

Track	Description
7	+ Rear left-hand speaker
8	- Rear left-hand speaker

Connector 5

Track	Description
1	Not used
2	Not used
3	Not used
4	Not used
5	Not used
6	Vehicle multiplex link (H)
7	Multimedia multiplex link (H)
8	Not used
9	Not used
10	Not used
11	Not used
12	Screen On / Off supply
13	Not used
14	Not used
15	Vehicle multiplex link (L)
16	Multimedia multiplex link (L)
17	Not used
18	Not used

Connector 3: Special connection for CD changer.

Connector 4: GPS aerial connection.

"Entry Level" Navigation system: Security code**CODED PROTECTION**

Two of the system components are protected by a code:

- The first four-figure security code is linked to the navigation system.

The user is asked for this code every time the power is cut.

This code must be entered using the control satellite.

The display shows « code » then « 0000 ».

WARNING

If the incorrect code is entered, the navigation system beeps, displays « CODE » and locks:

- First incorrect entry: **1 minute**,
- Second incorrect entry: **2 minutes**,
- Third incorrect entry: **4 minutes...(32 minutes maximum)**.

When the code has been entered, certain parameters must be reprogrammed. Others will only be requested when the code is entered for the first time (Section On-board telematics system, "Entry level" Navigation system: Settings, page **83C-13**).

Note:

The navigation system will operate for **2 minutes** without entry of the code (with regular beeps).

- the code which is exchanged between the CD changer (front panel) and the radio navigation system

- If a new fascia-mounted CD changer is fitted, the system code is programmed when the battery or CD changer is connected.
- if the navigation system is replaced, the security code of the old navigation system connected to the changer can be entered. The changer is programmed with the new code.
- if the code of the old navigation system is lost, the connection code can be cleared with a clearing code. The clearing code is transmitted in the usual manner.

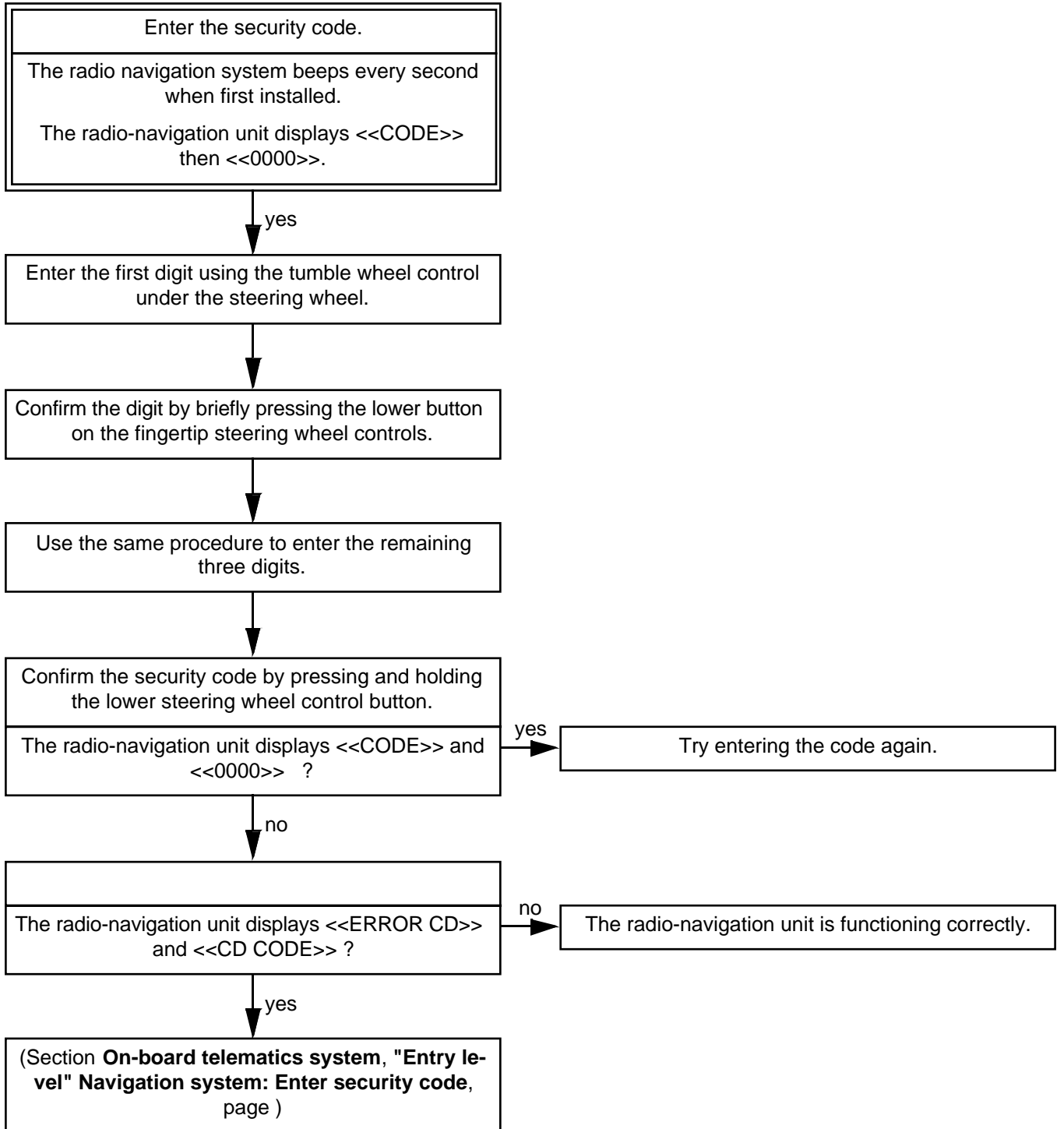
WARNING

- Boot-mounted changers are not coded.
- Only fascia-mounted Compact Disc changers have codes. The fascia-mounted Compact Disc changer is supplied uncoded. When it is installed in the vehicle, the changer is programmed with the navigation system code.

"Entry level" Navigation system: Enter security code

CHART 1	The display indicates: "CODE" or "CD CODE"
----------------	--

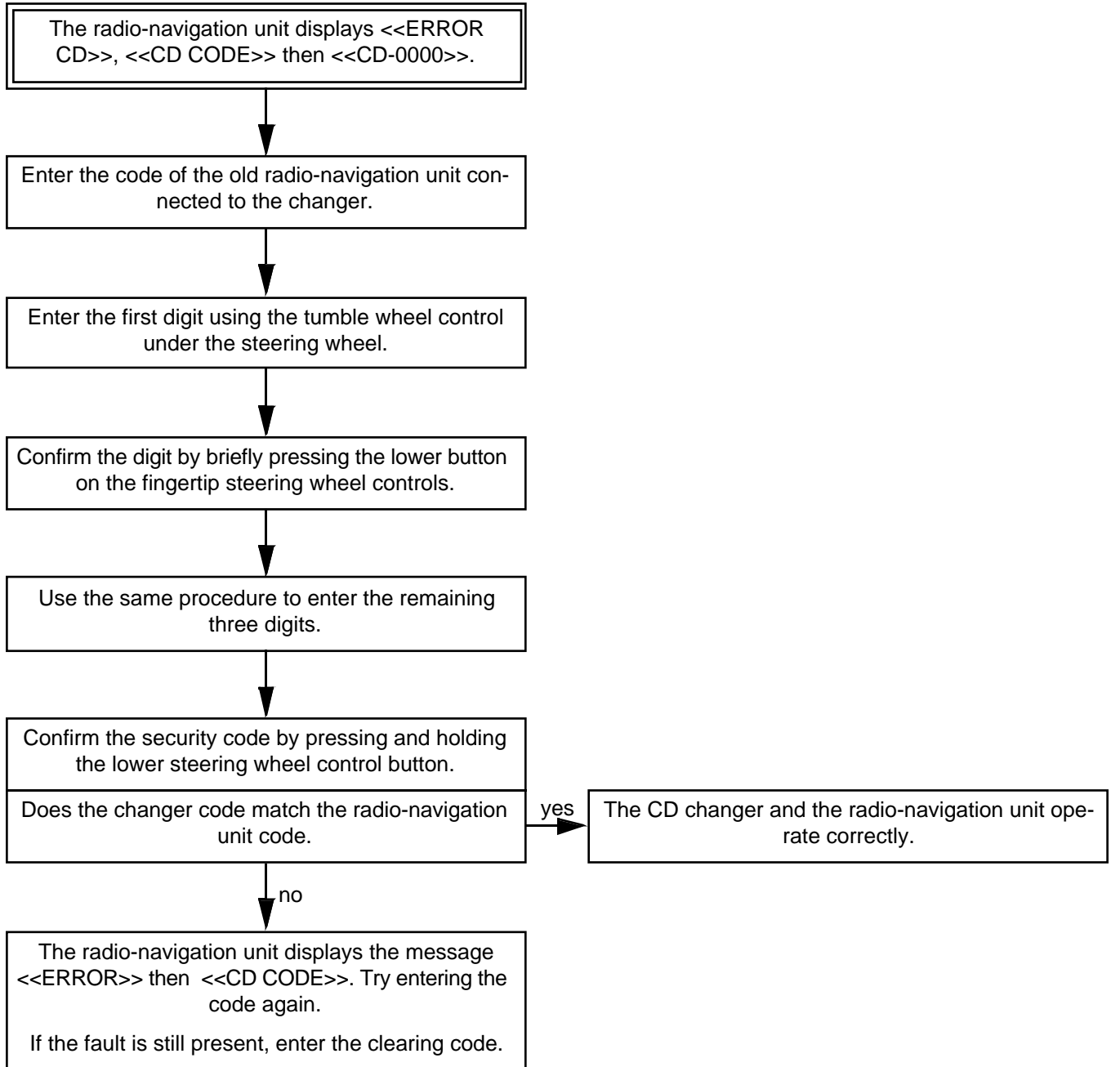
NOTES	
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"Entry level" Navigation system: Enter security code

CHART 2	The display shows CD CODE
----------------	----------------------------------

NOTES	
--------------	--



ON-BOARD TELEMATICS SYSTEM

"Entry level" Navigation system: Settings

83C

The radio navigation system parameters are only requested the first time the security code is entered. They are then stored if the feed is cut off.

- The parameters can be altered after pressing and holding the « Expert » button.
- Select the operating mode for the auxiliary input: AUX AUTO/ON/OFF.
- Move to the next parameter by means of the satellite thumbwheel or the volume button on the radio-navigation unit.
- Activate or deactivate the monitoring of the automatic station resynchronisations (RDS) : AF ON/OFF.
- Select the volume variation curve according to the speed:
 - SPEED 0 : no regulation
 - SPEED 5 : maximum regulation
- Activate or deactivate the «Loudness» function: LOUD ON/OFF.
- Select the operating mode of the tuner in manual mode:: TUNE MAN/AUTO.
- Exit by pressing the « C » button.

"Entry Level" Navigation system: Localisation

Calibrate the system by installing the radio-navigation unit.

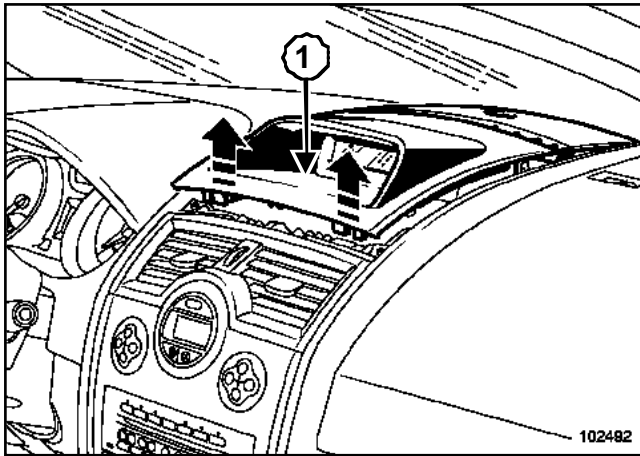
If calibration is not carried out, the system can be used in radio mode but the navigation mode is inoperative.

Note:

- The time cannot be adjusted if the system is not calibrated.
- If the vehicle has been transported by train or ferry, the navigation system may need a few minutes to find its exact location (see « calibration »).
- If the vehicle battery has been disconnected, the system may need up to **20 minutes** to calculate its exact location. The vehicle must be outdoors, with the navigation system switched on, in order to pick up satellite signals with the GPS aerial.
- The system can also operate without valid GPS data. Under these circumstances, precision may be lost when it comes to pinpointing exact locations.

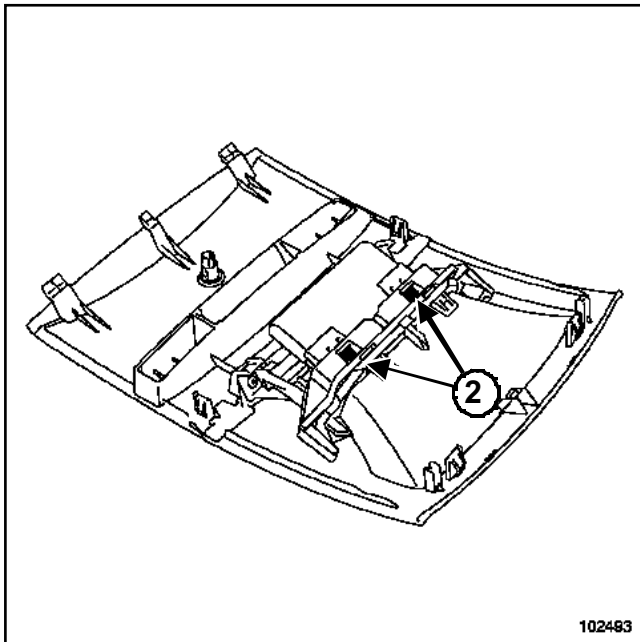
CALIBRATION

- Switch on the system.
- Insert the navigation CD ROM (the system displays « please wait »).
- Select your choice of language:
 - French,
 - Italian,
 - Dutch,
 - Portuguese,
 - Swedish,
 - Flemish.
- Wait until the system displays:
 - « language loading »,
 - « the language is installed ».
- Validate (the system displays the statutory welcome message).
- Validate or return to the choice of languages (the system displays « calibration running », calibration of the system can begin).

REMOVAL

102492

- Unclip the upper section (1) of the instrument panel.

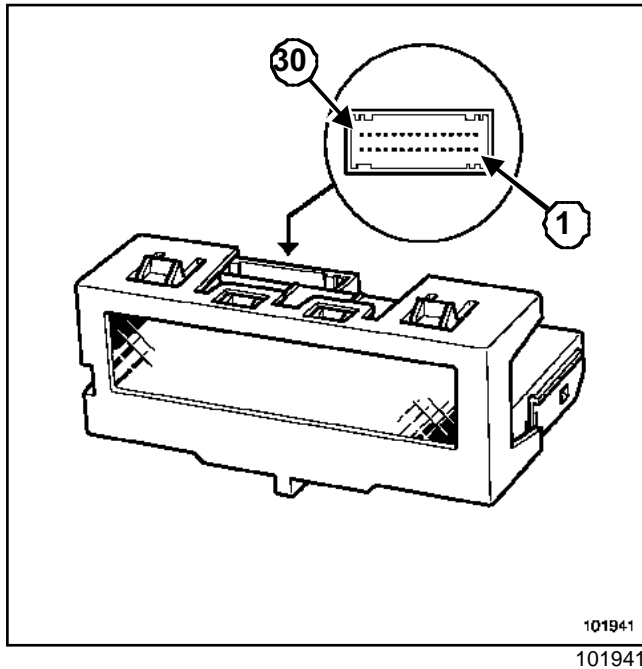


102493

- Unclip the display by pressing markings (2).
- Disconnect the connector.

REFITTING

- To refit, proceed in the reverse order of removal.



Track	Description
1	Not used
2	Not used
3	Not used
4	UCH connection for exterior temperature (depending on version)
5	Earth
6	+ side lights
7	+ accessories
8	Lighting dimmer
9	+ before ignition
10	Exterior temperature output
11	Not used
12	Screen supply on / off
13	Not used
14	Not used
15	Not used
16	Radio control connection
17	Radio control connection

Track	Description
18	Radio control connection
19	Radio control connection
20	Radio control connection
21	Radio control connection
22	Not used
23	Not used
24	Not used
25	Not used
26	Not used
27	Not used
28	Not used
29	Multimedia multiplex connection (L)
30	Multimedia multiplex connection (H)

"Top of the range" navigation system: Operation

The « Carminat » navigation assistance system comprises a screen and a voice synthesiser to guide the driver.

This system can:

- find a specific location, such as:
 - a road, street or avenue, etc.
 - a hotel
 - public services,
 - a garage or petrol station.
 - etc.
- select a guidance criterion (the selected guidance criterion appears as an icon on the status bar at the bottom of the screen):
 - shortest journey time,
 - shortest distance
 - travelling on main roads
 - or the scenic route,
 - avoiding tolls,
- store addresses in the address book,
- display road maps of:
 - the current location
 - or the destination,
- display journey time or time of arrival,
- receive written or voice messages from the « Traffic information » system.

Note:

For information on operating the system and descriptions of the various menus, refer to the driver's handbook.

The « Carminat » system uses the « vehicle speed » signal from the ABS computer and the « reversing » signal to measure the distance travelled.

A special multiplex network for the « Carminat » function links the navigation computer, the Central Communications Unit, the screen and the audio equipment (depending on version).

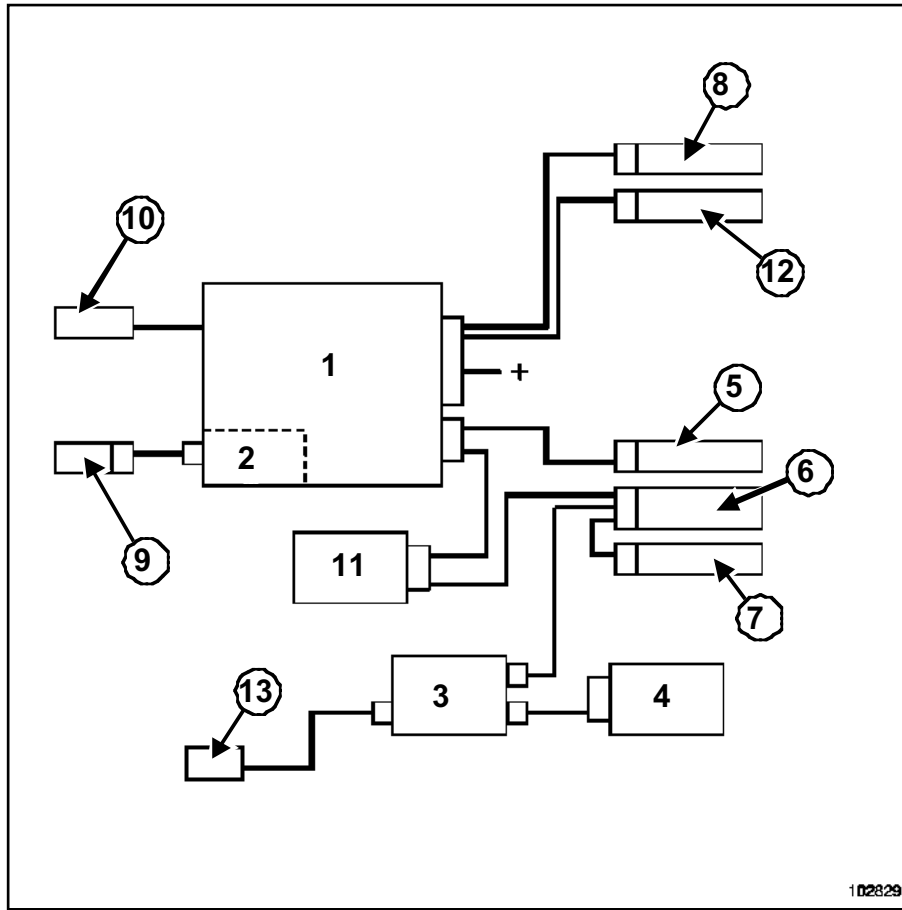
This network uses the following to function:

- a central communications unit,
- a keypad (integrated into the Central Communications Unit),
- an navigation computer comprising acceleration sensors (gyroscope) and a CD-ROM drive,
- a satellite link (GPS aerial) that can locate the vehicle,

- a screen to display written data and maps,
- a speaker for giving voice messages,
- a CD ROM with the maps of the country the vehicle is delivered to,
- an FM aerial for traffic information messages,
- a fold-out unit.

NOTES

- If the vehicle is moved with the ignition switched off, the navigation system may need a few minutes to find its exact location (refer to the « Re-location » section).
- If the vehicle battery has been disconnected, the system may need up to **20 minutes** to calculate its exact location. The vehicle must be outdoors, with the navigation system switched on, in order to pick up satellite signals with the GPS aerial.
- The system can also operate without valid GPS data. Under these circumstances, precision may be lost when it comes to pinpointing exact locations.
- Once the exact position has been located by the GPS system, the satellite symbol on the screen changes from red to green.
- On the motorway, the distances given by the system for the junctions are different from those shown on motorway signs. The signs show the distance to the start of the exit slip-road, while the « Carminat » system refers to the end of the exit slip-road.



102829

102829

- | | |
|------|-----------------------------------|
| (1) | Central Communications Unit |
| (2) | Control keypad |
| (3) | Carminat computer (CD-ROM drive) |
| (4) | Screen |
| (5) | Instrument panel |
| (6) | CD changer (depending on version) |
| (7) | Audio system |
| (8) | Voice synthesiser speaker |
| (9) | Steering wheel radio control |
| (10) | Radio aerial |
| (11) | Fold-out unit |
| (12) | Vehicle multiplex link |
| (13) | GPS aerial |

I - BASIC PRINCIPLES OF THE TRAFFIC INFORMATION SERVICE

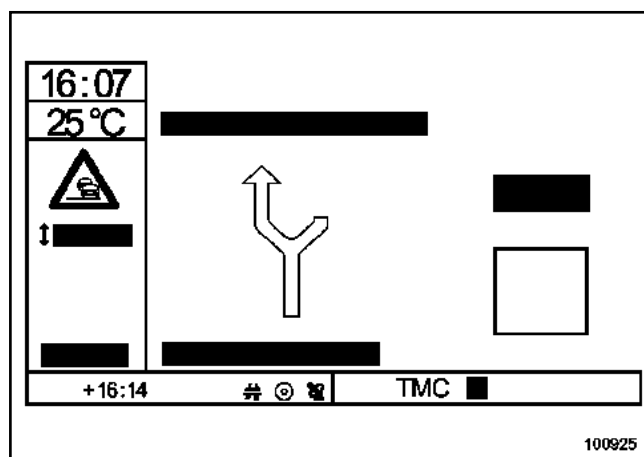
Coupled with the navigation system, the system provides information on the traffic situation. « TMC: Traffic Message Channel ».

The system uses:

- the navigation computer which receives, locates and takes account of the information received,
- the TMC locators on the mapping CD-ROM,
- the information collected and disseminated (by public authorities) in RDS-TMC format (communication protocol).

WARNING

RENAULT is not responsible for the information collection and dissemination services in Europe, which are still in the development stage.



100925

II - TRAFFIC INFORMATION TERMINAL PROCESSING REMINDER

TMC pictogram display logic:

- Red = no traffic information available in this geographical location or poor reception,
- Black = no traffic information locators on the CD,
- Green = the system is locked onto a frequency that can supply traffic information.

The letters « TMC » are replaced by the name of the service operator that the system has locked onto (if the operator uses a name).

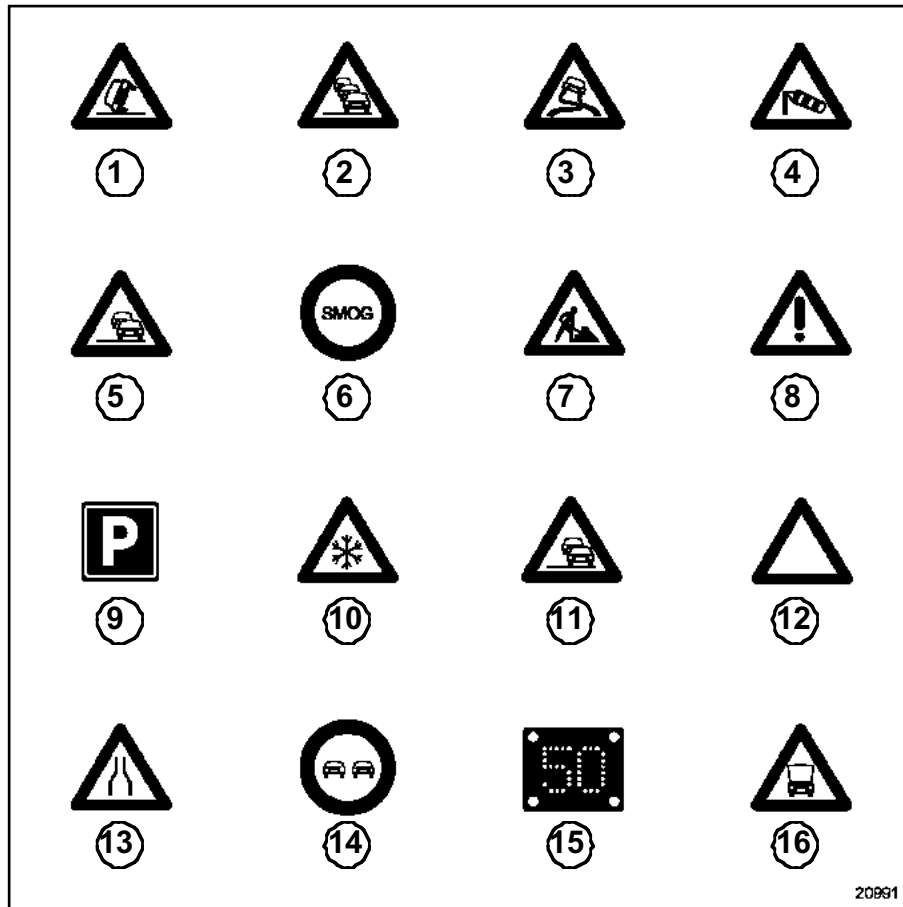
The system can display in either text or pictogram form.

It suggests a detour if the problem is located on the proposed itinerary.

The level of disruption is indicated by a pictogram « Δ » :

- Green = disruption with detour,
- Red = disruption without detour,
- Red (full) = very serious disruption within a 30 mile (50 km) radius.

III - EXAMPLES OF TRAFFIC INFORMATION PICTOGRAMS



20991

20991

- (1) Accident
- (2) Traffic jam
- (3) Slippery conditions
- (4) Strong winds
- (5) Slow traffic
- (6) Fog
- (7) Road works
- (8) Danger
- (9) Parking possible
- (10) Bad weather
- (11) Slow traffic
- (12) Traffic problems in both directions

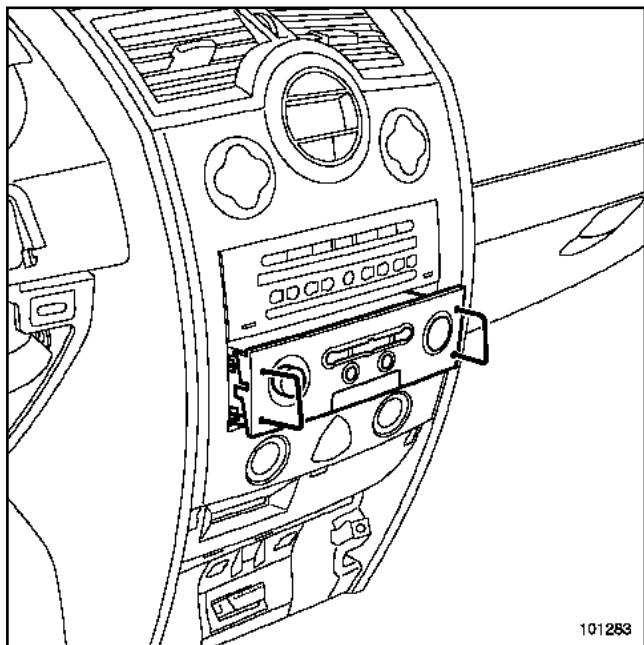
- (13) Road partially closed or narrowed
- (14) Vehicle travelling in the opposite direction
- (15) Speed restriction
- (16) Broken-down vehicle

Essential special tooling

Ms. 1373	Philips radio removal tool
-----------------	----------------------------

The Central Communications Unit is installed in the dashboard. It incorporates the keypad.

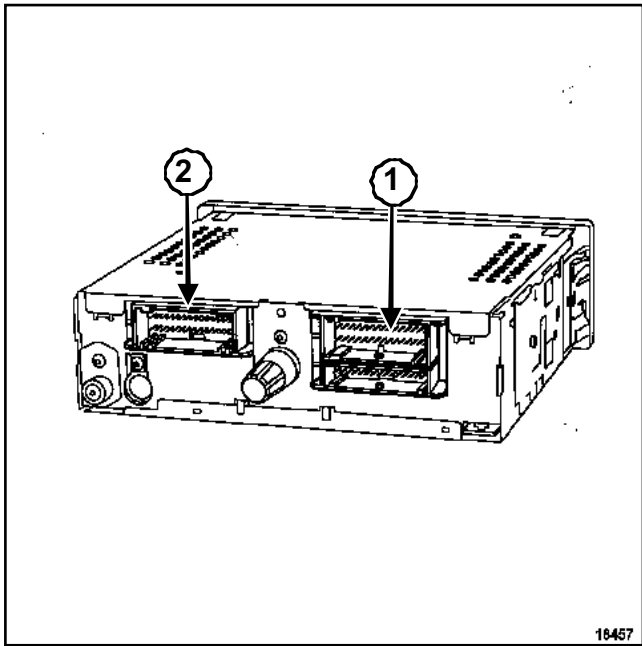
REMOVAL



- Remove the Central Communications Unit using the radio removal tools (Ms. 1373).
- Disconnect the connectors.
- Remove the assembly.

REFITTING

- Connect the connectors.
- Insert the guides into their positions.
- Position the Central Communications Unit in its mounting.
- Initialise the system (refer to the « Initialisation » section)



18457
18457

15-track connector (1) (red)

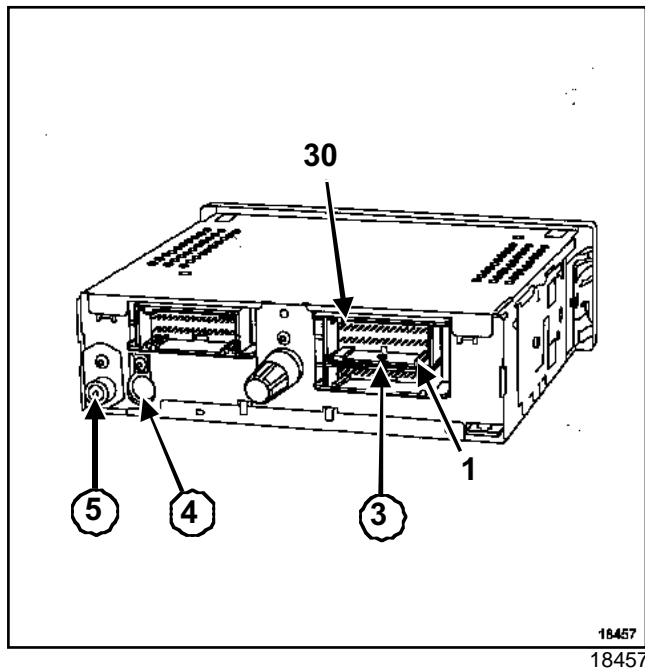
Track	Description
1	Not used
2	Not used
3	Not used
4	Not used
5	Not used
6	Not used
7	Not used
8	Not used
9	Audio equipment satellite control (track B1)
10	Audio equipment satellite control (track A3)
11	Audio equipment satellite control (track B2)
12	Audio equipment satellite control (track B3)
13	Audio equipment satellite control (track A2)

Track	Description
14	Audio equipment satellite control (track A1)
15	Not used

30-track connector (2) (grey)

Track	Description
1	Not used
2	Aerial amplifier output
3	Multiplex link (multimedia) to the instrument panel
4	Multiplex link (multimedia) to the instrument panel
5	Multiplex link (multimedia) to the deployment unit
6	Multiplex link (multimedia) to the deployment unit
7	Computer On / Off output (via the deployment unit)
8	Computer audio connection (via the deployment unit)
9	Computer audio connection (via the deployment unit)
10	Not used
11	Not used
12	Not used
13	Not used
14	Not used
15	Not used
16	Not used
17	Not used
18	Not used
19	Not used
20	Not used
21	Not used
22	Not used

Track	Description
23	Not used
24	Not used
25	+ lighting
26	Radio connection (track 6) entry level radio
27	On / Off (track 5)
28	Radio connection (track 3) entry level radio
29	Radio connection (track 1) entry level radio
30	Radio connection (track 2) entry level radio

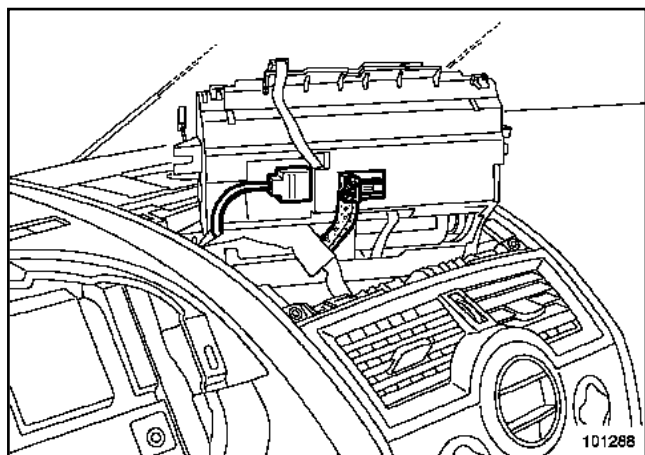


30-track connector (3) (green)

Track	Description
1	Not used
2	Not used
3	Not used
4	Not used
5	Not used
6	Multiplex link (vehicle)

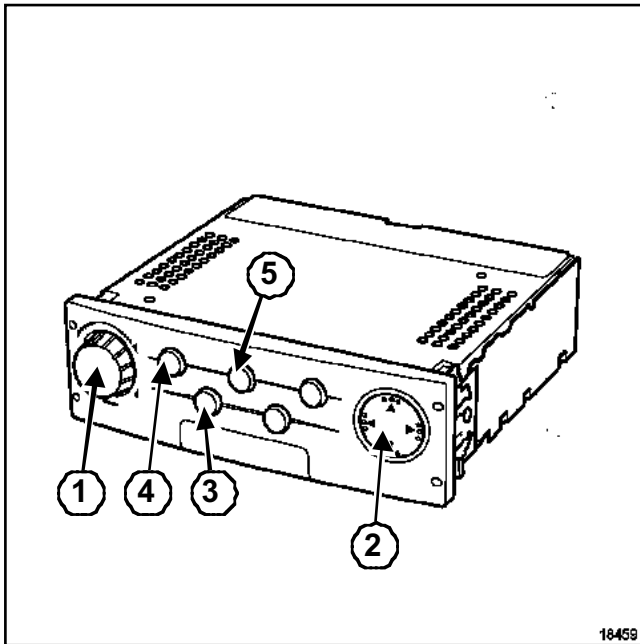
Track	Description
7	Multiplex link (vehicle)
8	Not used
9	+ accessories
10	+ before ignition
11	Radio mute control
12	Earth
13	Not used
14	Not used
15	Not used
16	Not used
17	Not used
18	Not used
19	Not used
20	Not used
21	Not used
22	Speaker output
23	Speaker output
24	Not used
25	Not used
26	Not used
27	Not used
28	Not used
29	Not used
30	Not used

(4) and (5): radio aerial input and output.



101288

Track	Description
1	+ before ignition
2	Not used
3	Not used
4	Not used
5	Not used
6	Not used
7	Earth
8	Not used
9	+ lighting
10	Not used
11	Not used
12	Not used
13	Multimedia multiplex connection to the screen
14	Multimedia multiplex connection to the screen
15	Multimedia multiplex connection to the central communications unit
16	Multimedia multiplex connection to the central communications unit
17	On / Off input to the central communications unit
18	On / off input to the screen



The console is incorporated in the Central Communications Unit.

The control panel is composed of

- a rotary switch (1) used for:
 - scrolling through different menus,
 - validating,
 - operating the screen,
- a control panel (2) used for:
 - scrolling through a menu in manual mode,
 - selecting options in the different menus,
- menu button « M » (4) (depending on vehicle) for returning to the main menu and operating the screen,
- button « I » (5) for repeating audio messages,
- button « C » (3) for switching off audio messages,
- buttons « + » and « - » for increasing and decreasing the volume of audio messages.

NAVIGATION COMPUTER (CD-ROM DRIVE)

This computer operates by using sensors which detect the vehicle's movements.

The vehicle's engine speed (or ABS) sensor calculates the distance travelled while the gyroscope (inert compass) in the computer registers the movements made when the vehicle turns bends and corners.

By making comparisons with the digital map (on the CD-ROM), the system corrects inaccuracies, (tyre pressure and wear, temperature, etc.) in order to determine the vehicle's exact location.

WARNING

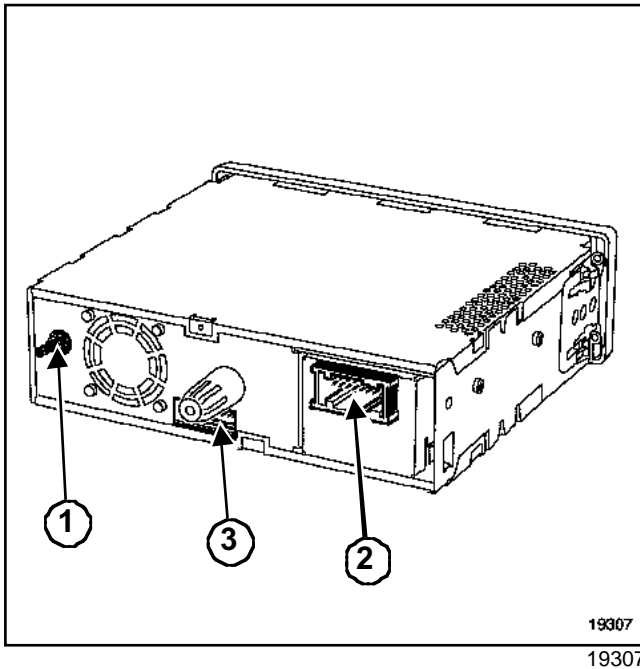
- After the battery has been disconnected or the navigation computer has been replaced, relocalisation is automatic (Section On-board telematics system, "Entry Level" Navigation system: Localisation, page **83C-14**).

- After replacing the navigation computer:

- the system is programmed in French by default. To change language, (Section On-board telematics system, "Top of the Range" navigation system: Change language , page **83C-35**),
- the addresses stored in the old computer cannot be recovered.

Note:

- With the ignition off, the CD-ROM drive is switched on automatically when the eject button is pressed and will remain on for approximately **1 minute** (without switching the ignition back on).
- The CD-ROM drive switches on automatically when the ignition is turned on,
- There are two specific types of navigation computer: horizontal and vertical.



19307
19307

18-track connector (2) to the vehicle

Track	Description
1	+ before ignition
2	Not used
3	Central communications unit audio connection (via deployment unit)
4	Not used
5	Not used
6	Computer On / Off input
7	Not used
8	Not used
9	Multiplex link (multimedia)
10	Earth
11	Not used
12	Central communications unit audio connection (via deployment unit)
13	Not used
14	Not used
15	Vehicle speed signal
16	Not used

Track	Description
17	Not used
18	Multiplex link (multimedia)

16-track connector (3) to screen

Track	Description
1	Not used
2	Earth
3	- video signal
4	Red video signal
5	Green video signal
6	Blue video signal
7	Earth
8	Video synchronisation signal
9	Earth
10	Brightness adjustment
11	Not used
12	Display On / Off
13	Not used
14	Not used
15	+ before ignition
16	+ before ignition

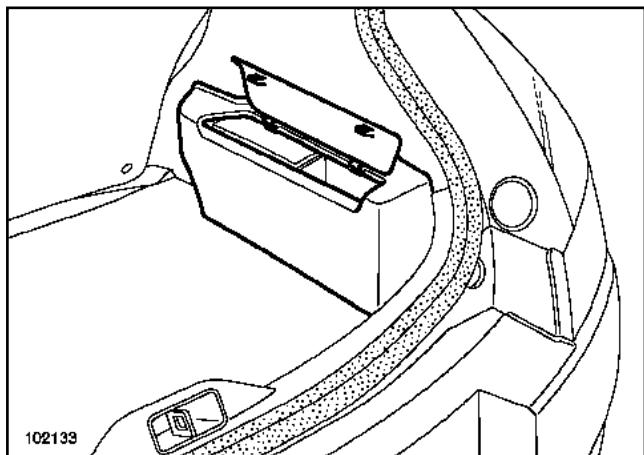
(1): GPS aerial connection

Essential special tooling

Ms. 1373	Philips radio removal tool
-----------------	----------------------------

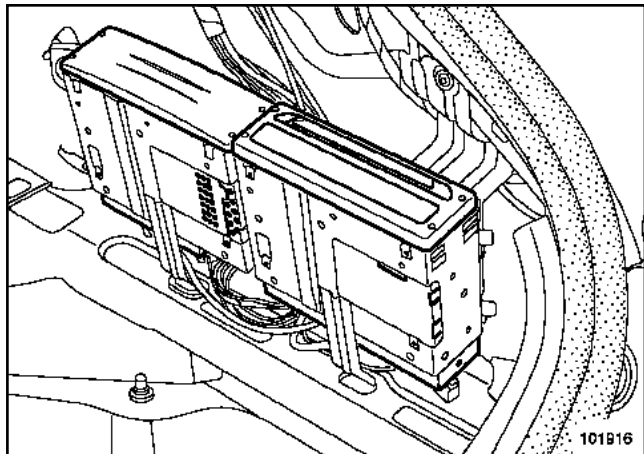
The computer is located in the luggage compartment behind the cover.

REMOVAL



102133

- Remove the cover clipped to the carpet.



101916

- Remove the computer using the radio removal tools (Ms. 1373).
- Disconnect the connectors.
- Remove the assembly.

WARNING

the GPS aerial wire is very fragile. Do not bend or trap it.

REFITTING

- Insert the guides into their positions.
- Connect the connectors.

- Position the computer in its holder.
- Initialise the system (Section On-board telematics system, "Top of the Range" navigation system: Initialisation, page 83C-34).

The screen displays:

- the various menus,
- the destination direction,
- the distance from the destination,
- the journey maps,
- the distance remaining until the next change of direction,
- the road maps,
- etc.

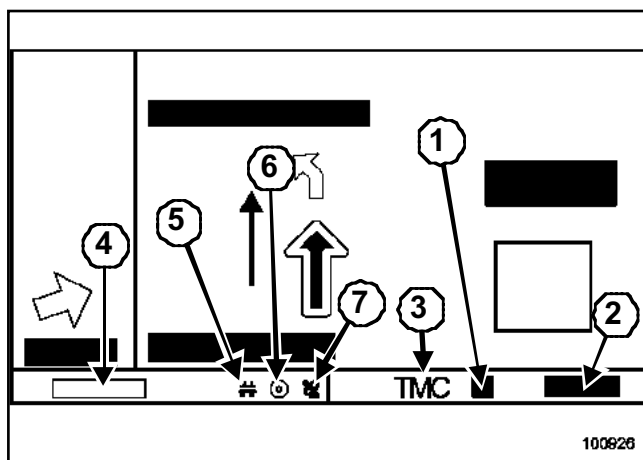
The screen lights up for a few seconds after the « Accessories » position or the radio is switched on and displays the safety message.

The screen switches off completely for approximately **45 seconds** after the ignition is switched off.

Note:

The screen colour and brightness can be altered using the « Screen configuration » menu:

- Daytime blue or dark blue (side lights off).
- Night time blue or dark blue (side lights on).



- (1) Level of disruption
- (2) Distance to disruption
- (3) « Traffic information » message pictogram
- (4) Time of arrival or journey remaining (can be configured)
- (5) « Guidance mode » pictogram

(6) « Disc present » pictogram

(7) « Satellite reception quality » pictogram

SPECIAL NOTES FOR RADIO

If the vehicle is fitted with an original radio, the display will appear on the screen bar (radio on only).

When the radio is being adjusted, the radio display fills the screen (for greater visibility) in « list » or « preset » mode.

Note:

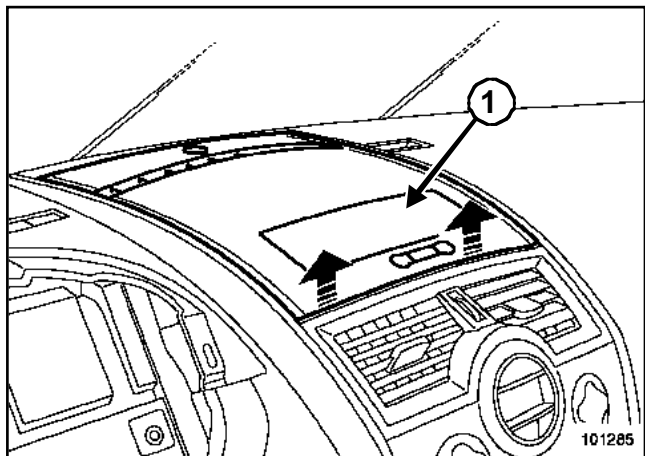
If the information concerning the radio does not appear on the screen, (Section On-board telematics system, "Top of the Range" navigation system: Initialisation, page **83C-34**).

WARNING

Do not use cleaning products to clean the screen (clean with a dry cloth or a damp cloth).

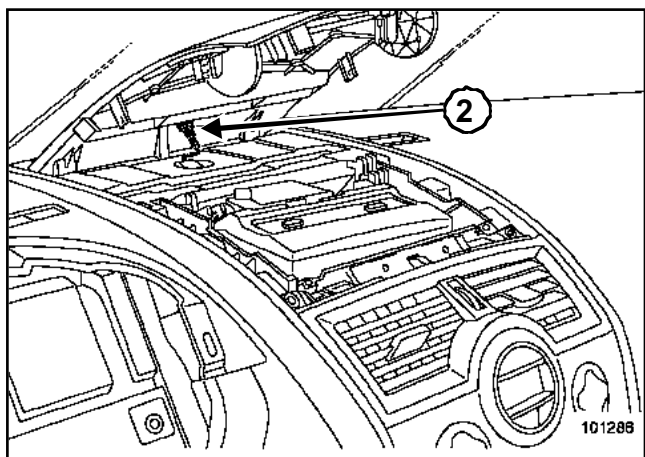
The screen and the central deployment unit are in one piece.

REMOVAL



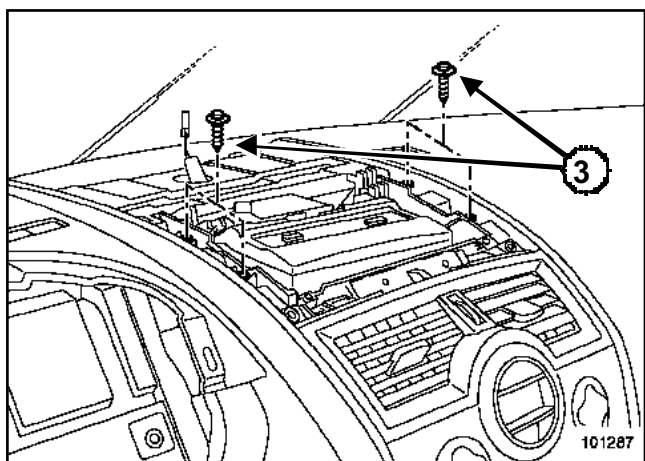
101285

- Unclip the upper section (1) of the instrument panel.



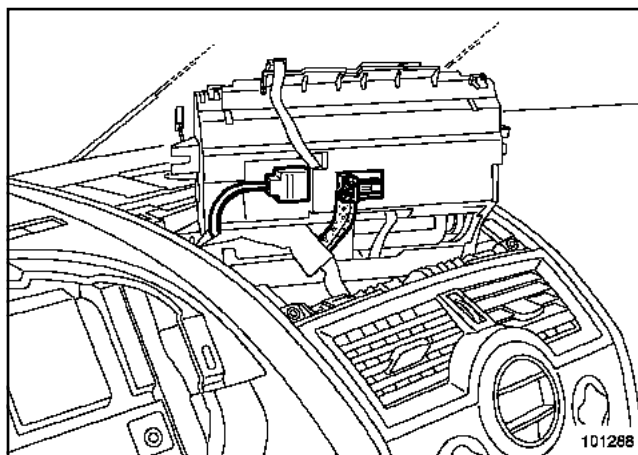
101286

- Disconnect the insulation sensor (2).



101287

- Remove the four bolts (3).



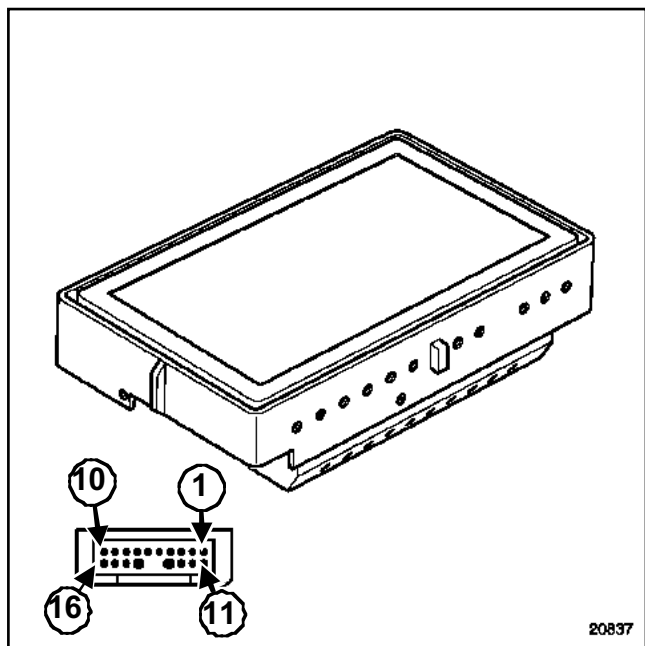
101288

- Disconnect the connectors.

REFITTING

- To refit, proceed in the reverse order of removal.
- Initialise the system (Section On-board telematics system, "Top of the Range" navigation system: Initialisation, page 83C-34).

"Top of the range" Navigation: Screen connection

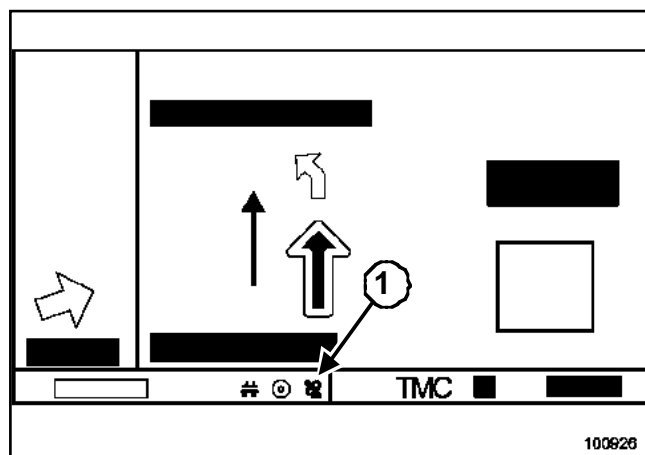


20837
20837

Track	Description
1	Not used
2	Earth
3	- video signal
4	Red video signal
5	Green video signal
6	Blue video signal
7	Earth
8	Video synchronisation signal
9	Earth
10	Brightness control
11	Not used
12	Display On / Off
13	Not used
14	Not used
15	+ Before ignition
16	+ Before ignition
Shielding	Earth shielding

"Top of the Range" navigation system: Aerial

The GPS aerial picks up satellite signals to allow the electronic navigation computer (CD-ROM reader) to locate the position of the vehicle.



100926

When the satellite reception is good, a green pictogram (1) is displayed on the screen.

When the satellite reception is poor (caused by going through a tunnel or along a street hemmed in by tall buildings, etc.), a red pictogram is displayed on the screen.

Note:

The vehicle is relocated automatically after the electronic navigation computer has been replaced or the battery has been disconnected: drive the car to an open area outdoors and wait for a few minutes with the ignition switched on. When the GPS reception (satellite) is good, a green pictogram is displayed on the screen.

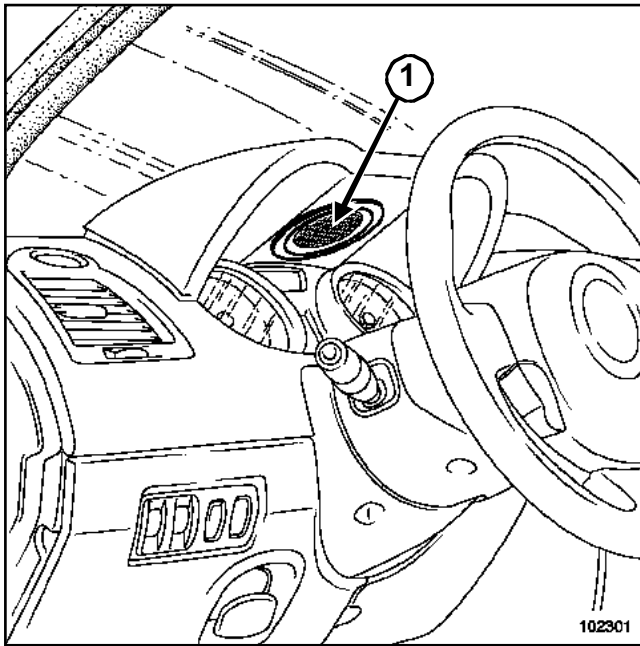
WARNING

The GPS aerial cable is very fragile. Therefore, do not bend or pinch it.

Note:

The GPS aerial is also used for the hands-free phone. Some vehicles are fitted with a dual band aerial.

For information on removing the aerial, refer to the « Aerial » section.



102301

The special system loudspeaker (1) is located beneath the upper section of the dashboard.

Note:

To remove the loudspeaker, unclip the upper section of the instrument panel, (Section Instrument panel, page **83A-1**).

"Top of the Range" navigation system: Initialisation

This procedure must be followed every time the component is replaced.

System configurations

Vehicle	Mégane II
Without radio display	1312
« Entry level » audio equipment	1326
« High end » audio equipment	1327

WARNING

If the vehicle is fitted with audio equipment, it must be switched on during initialisation. If it is not, the steering wheel control will not function and the screen will not display radio data.

- Switch off the ignition.
- Wait for the system to shut down completely.
- Switch the audio equipment on.
- Switch on the ignition (wait for approximately **20 seconds**).
- Press the « M » and « C » buttons at the same time.
- Read the vehicle reference number.
- Carry out the steering wheel control test (the GPS aerial connection is displayed on the screen: connected - not connected). Ignore the telephone and radio aerial tests.
- Quit initialisation using the rotary switch.
- Switch off the ignition (**1 minute**).

Note:

If the configuration does not correspond to the vehicle, check the vehicle wiring (multiplex lines) and the part numbers of the components.

"Top of the Range" navigation system: Change language

After the electronic navigation computer is replaced, the system will be programmed in French by default.

- With the ignition on, remove the mapping CD-ROM from the navigation computer, by pressing the eject button (the message « Please insert CD » is displayed on the screen).
- Confirm « OK » by pressing the rotary switch.
- Select the « Configurations » menu.
- Select the « Language » menu.

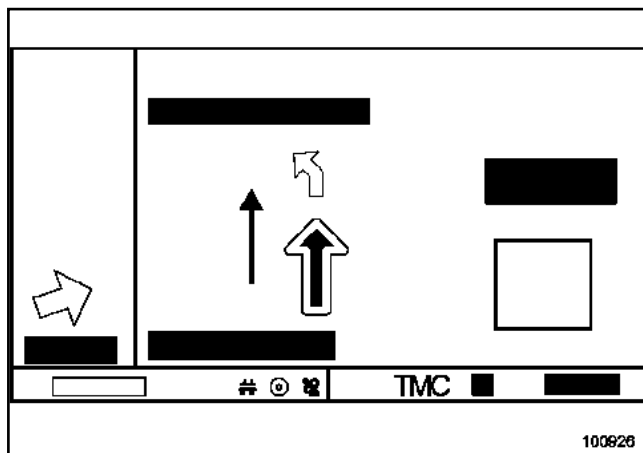
Note:

If the desired language does not appear in the menu, follow the procedure below:

- Select « Other language ». The system prompts you to insert the language CD-ROM.
- Insert the language CD-ROM.
- Confirm by pressing the rotary switch.
- Select the language to be replaced (language 1 or 2) by turning the knob.
- Select the language to load from those available on the CD-ROM by turning the « Load » rotary switch.
- Wait a few seconds. The screen will turn black and then white and display a message in black and red with a horizontal bar to show the loading time remaining. When loading is complete, the language CD-ROM is ejected from the drive and « OK » is displayed on the screen.
- Continue with the language change procedure.
- Reinsert the mapping CD-ROM into the reader.

"Top of the Range" navigation system: Localisation

The car has to be re-located after the electronic navigation computer has been replaced or the battery disconnected.

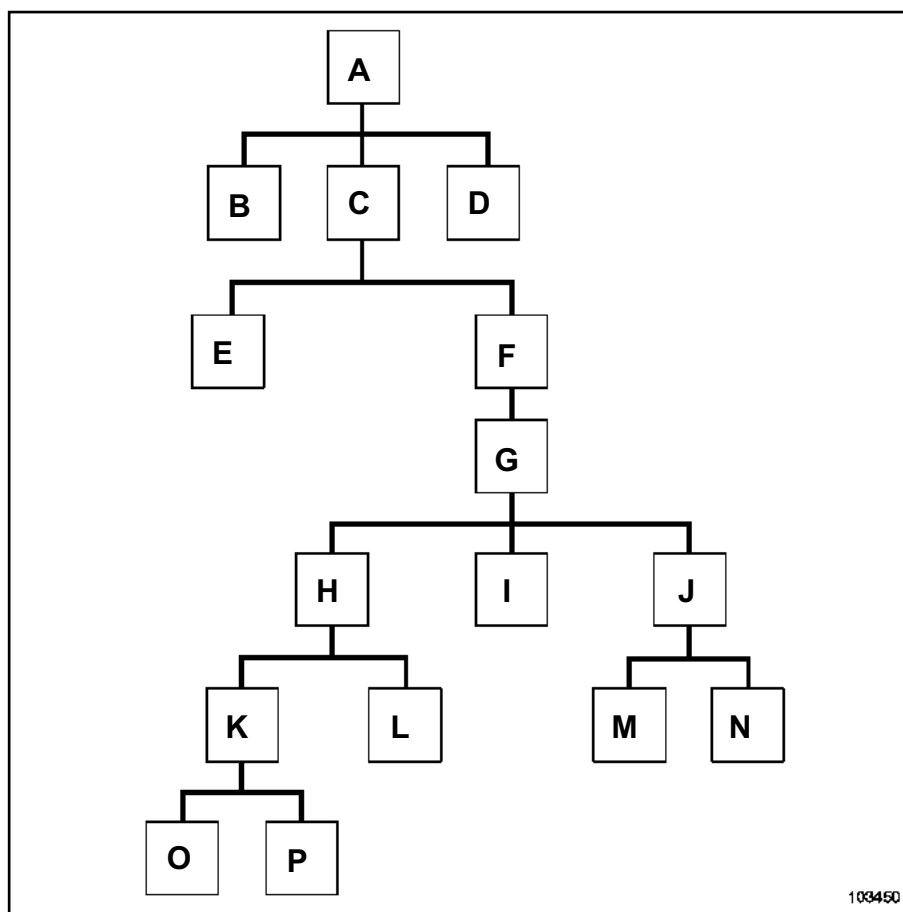


100926

- Drive the vehicle to an open area outdoors and wait for a few minutes with the ignition switched on.

Note:

- If the GPS (satellite) reception is good, a green pictogram will be displayed on screen.
- If the vehicle is not correctly located on the map, drive the vehicle along the various main roads on the mapped routes (between half a mile and 1.5 miles (1 and 3 km) at least).
- The location procedure may take up to **20 minutes**.



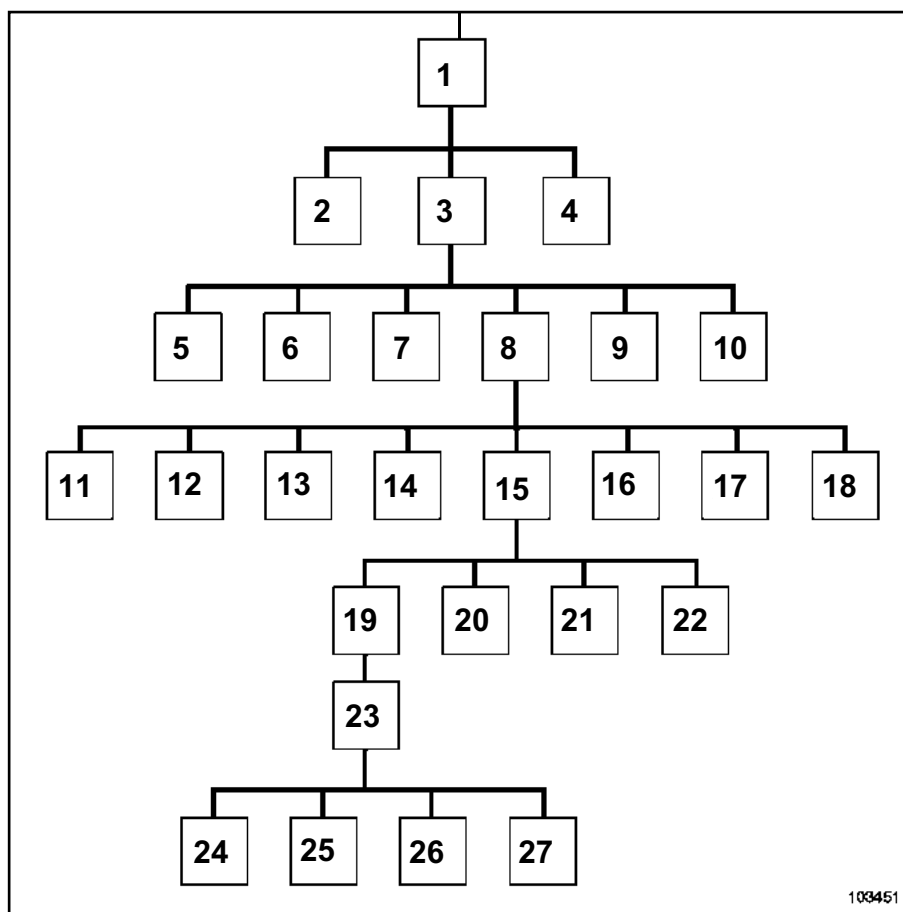
103450

103450

I

Key	Menus	
A	Welcome message	
B	Navigation	<ul style="list-style-type: none"> - Guidance - Map - Address book - Monitor - Emergency - Configuration
C	Settings	
D	Monitor	
E	Clock	- Setting the reference time
F	System	
G	Expert mode Code: 4112	
H	System test	

Key	Menus	
I	Configuration	<ul style="list-style-type: none"> - Configuration - Central Communication Unit type - Software version - Date of production - 12 NC - Checksum
J	Functions test	
K	Console Test	
L	Bus Test	<ul style="list-style-type: none"> - CAN V - CAN M - 11 C
M	RDS/TMC	<ul style="list-style-type: none"> - Frequency - Reception level - RDS quality
N	Vehicle	<ul style="list-style-type: none"> - Speed - + after ignition - + accessories - Tyre pressure monitor - Battery voltage - Seat belt - + side lights - Reverse gear - External temperature - Crash information
O	Satellite	-
P	Keyboard	-



103451

103451

Key	Menus	-
1	Welcome message	-
2	Settings	-
3	Navigation	-
4	Monitor	-
5	Guidance	-
6	Map	-
7	Address book	-
8	Configuration	-
9	Emergency	-
10	Monitor	-
11	Language	- Changing the menu language
12	Guidance modes	-

Key	Menus	-
13	Screen configuration	- Day colour - Status bar - Map colour - Night colour - Adjustment - Brightness
14	Traffic information	-
15	System information	-
16	Units	-
17	Volume	- Speed-dependent volume control - Voice messages - Volume
18		-
19	Fault finding procedure	-
20	Configuration	- Serial number - Product model - Software version - Week of manufacture - Year of manufacture - « CSB » software version
21	Speed correction	-
22	Pre-adjustments	-
23	Code 4112	-
24	Read GPS data	- Sensor status - Longitude - Latitude - Geographical altitude - Number of satellites
25	Read errors	-

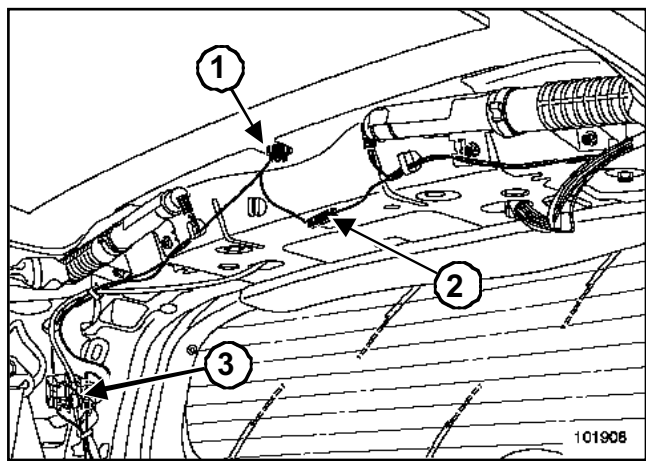
Key	Menus	-
26	Read I/O states	<ul style="list-style-type: none">- Tachograph pulse- Internal temperature- Battery- Eject button- Steering
27	Simulation	<ul style="list-style-type: none">- Usable simulation- Unusable simulation

Aerial

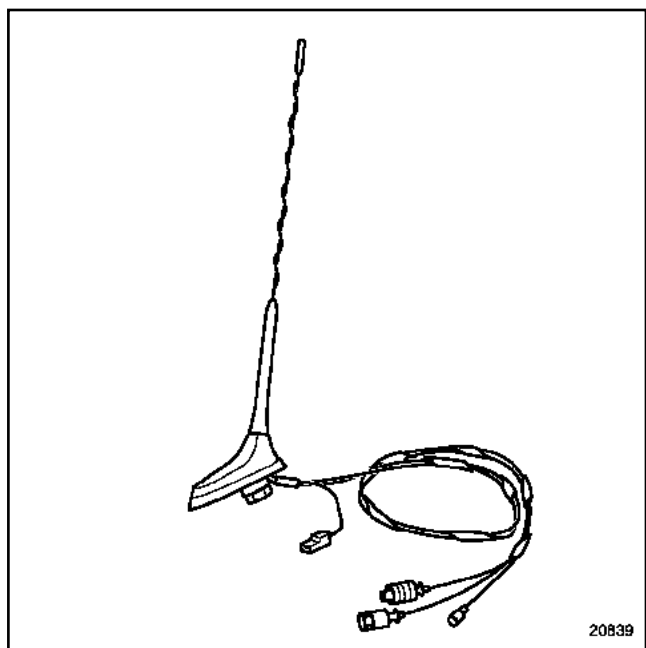
The aerial is fitted on the roof.

Note:

The GPS aerial incorporates the radio aerial, the amplifier and the telephone aerial (dual band).

REMOVAL

101908



20839

20839

- Partially remove the headlining.
- Remove the nut (1).
- Disconnect the connectors (2) and (3).

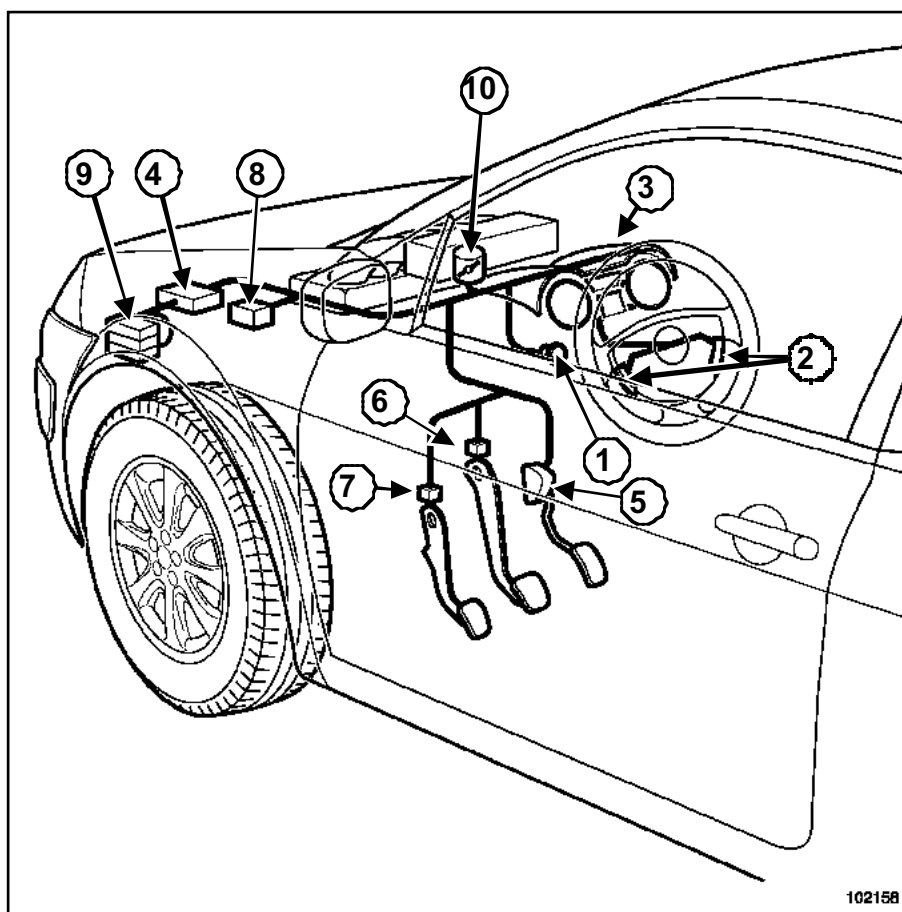
REFITTING

- To refit, proceed in the reverse order of removal.

CRUISE CONTROL

Cruise control / speed limiter

83D

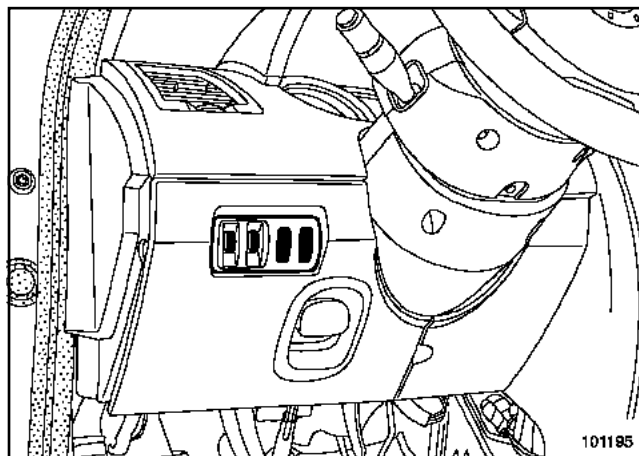


102158

- (1) Switch with three positions (off/cruise control/speed limiter)
- (2) Switches on the steering wheel
- (3) Instrument panel
- (4) Injection computer
- (5) Accelerator pedal potentiometer
- (6) Brake switch (dual contact)
- (7) Clutch switch (start of travel)
- (8) Automatic transmission computer (if the vehicle is equipped with it)
- (9) Anti-lock braking system computer
- (10) Throttle body (petrol engine) or diesel fuel flow

The vehicles are equipped with:

- cruise control which allows the driver to maintain a speed he has selected. This function can be switched off at any time by depressing the brake pedal or the clutch pedal, or by pressing the buttons on the steering wheel,
- the speed limiter which allows the driver to set a speed limit. The accelerator pedal will not function above the set speed. The speed limit selected can be exceeded at any moment by depressing the accelerator pedal beyond its point of resistance.



101195

101195

CRUISE CONTROL

Cruise control / speed limiter

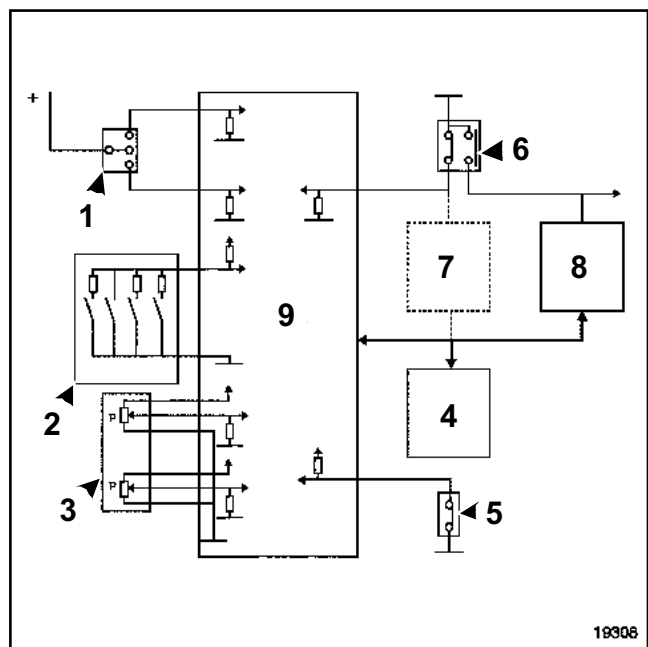
83D

The cruise control and speed limiter functions are controlled by the injection computer. The computer exchanges information with the anti-lock braking system computer, the UCH, the automatic transmission computer (if the vehicle is equipped with one) and the instrument panel. It applies the setpoint values by acting on the motorised throttle valve or diesel fuel flow.

Note:

If the warning on the instrument panel flashes, it indicates that the set speed cannot be maintained (e.g. when travelling downhill).

I - DIAGRAM



- (1) Cruise control/speed limiter off switch
- (2) Steering wheel switch
- (3) Accelerator pedal
- (4) Instrument panel
- (5) Clutch pedal switch (if the vehicle is equipped with one)
- (6) Brake pedal switch
- (7) UCH
- (8) ABS computer
- (9) Injection computer

II - DESCRIPTION

The UCH sends the « depressed brake pedal » signal (contact closed).

The anti-lock braking system computer sends the « vehicle speed » signal.

The automatic transmission computer (if the vehicle is equipped with one) sends the « gear engaged » signal.

The instrument panel displays the set value (cruise control or speed limiter) and activation of the function (three-coloured warning light) (Section Instrument panel, page 83A-1).

Each time these functions are switched on, the on-board computer display switches to the relevant function.

Note:

The cruise control and speed limiter functions have no fault warning light.

1 - Controls

- The three-position switch can be switched to off, cruise control or speed limiter.
- The steering wheel buttons can be used to adjust the cruising speed, cancel the adjustment or recall the stored speed,
- The accelerator pedal and brake pedal switches are the same as those used for injection and the brake lights.
- The clutch switch is only used for the cruise control function. This switch can also be used for the injection.

Note:

- The vehicle has two clutch sensors: one for starting the vehicle (end of travel) and one for the cruise control function (start of travel).
- The accelerator pedal must incorporate a point of resistance at the end of its travel.

2 - the injection computer

The injection computer receives the following signals over the multiplex network:

- the vehicle speed (anti-lock braking system computer),
- the brake switch closed signal (UCH),
- the gear engaged (automatic transmission if the vehicle is equipped with this).

CRUISE CONTROL

Cruise control / speed limiter

83D

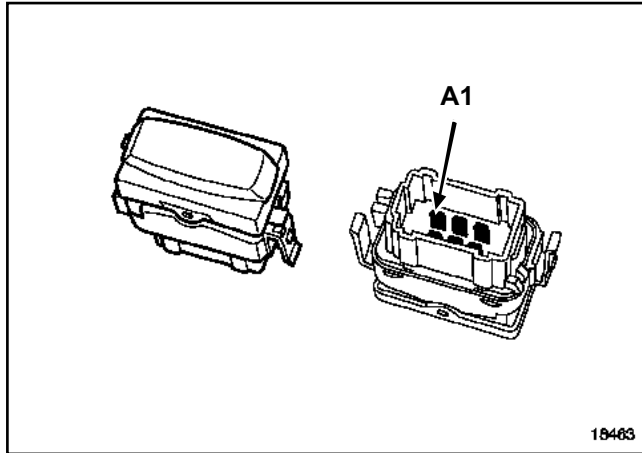
The injection computer sends the following signals over the multiplex network:

- cruise control or speed limit setting to the instrument panel,
- steady lighting or flashing of the warning light on the instrument panel (two-coloured warning light),
- the command signals for the motorised throttle body or diesel fuel flow
- the gear change signals from the automatic transmission (if the vehicle is equipped with it).

The injection computer receives signals by wire:

- from the accelerator pedal,
- from the brake switch (two switches: open and closed),
- from the clutch switch (if the vehicle is equipped with it),
- from the on/off switch (three positions),
- from the controls at the steering wheel.

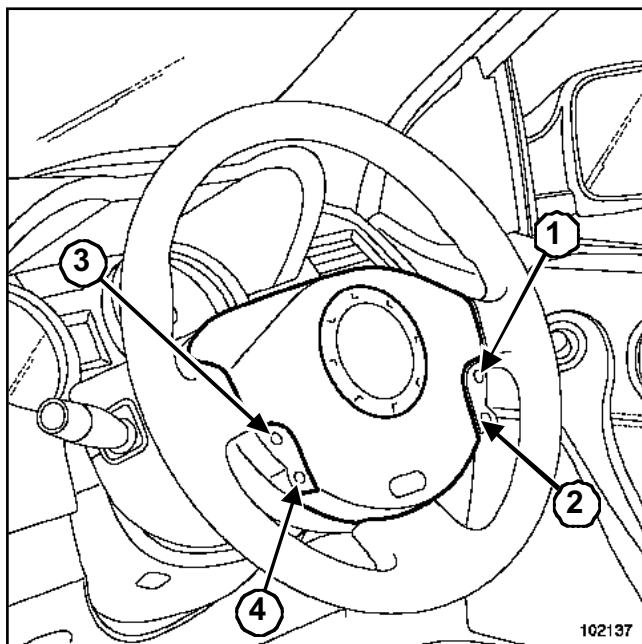
I - THREE-POSITION SWITCHES



19463
18463

Track	Description
A1	Earth
A2	+ after ignition
A3	Cruise control on/off switch
B1	Speed limiter on / off switch
B2	+ side light
B3	Not used

II - STEERING WHEEL SWITCH

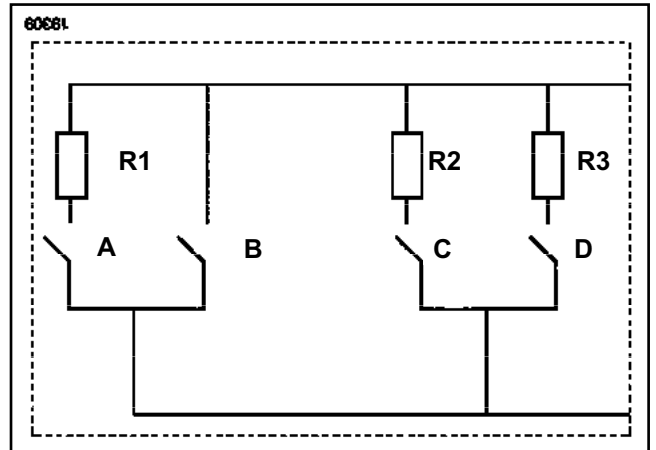


102137
102137

- (1) « Resume » button: 900 Ω
- (2) « 0 » button: approximately 0 Ω
- (3) « + » button: approximately 270 Ω
- (4) « - » button: approximately 100 Ω

Note:

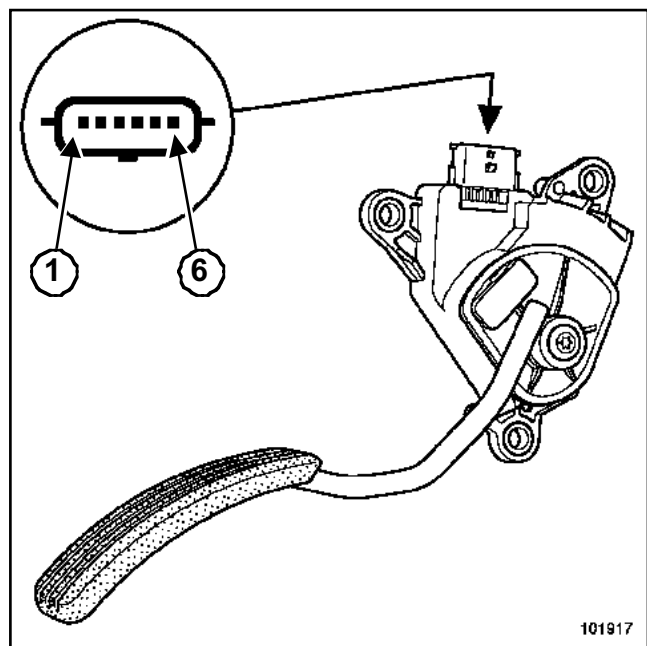
For removing the steering wheel mounted control, Section Controls - signals, page **84A-1**



19309

- (R1) 900 Ω
- (R2) 270 Ω
- (R3) 100 Ω

III - ACCELERATOR PEDAL



101917
101917

Track	Description
1	Track 2 signal
2	Track 2 feed
3	Track 1 feed
4	Track 1 signal
5	Track 1 earth
6	Track 2 earth

- Track 1 resistance = **1700 Ω +/- 900**

- Track 2 resistance = **3875 Ω +/- 1025**

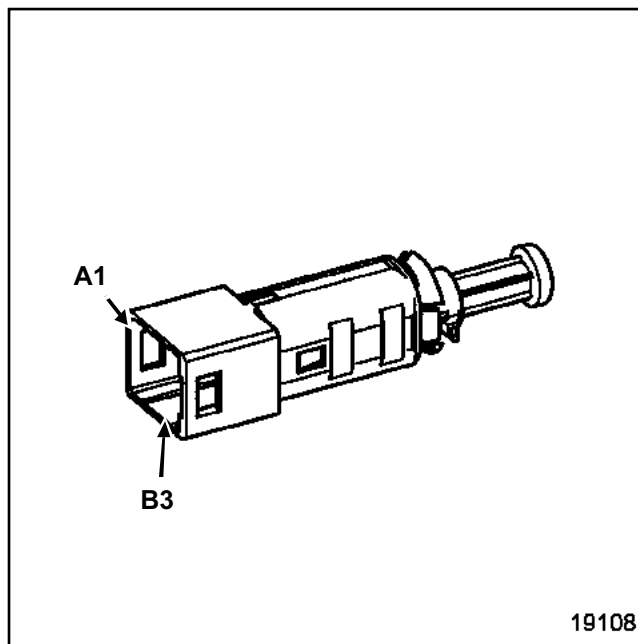
WARNING

In order to operate, the vehicle must be fitted with an accelerator pedal incorporating a kickdown point at the end of travel.

IV - BRAKE SWITCH (DOUBLE)

The « cruise control » function uses the open contact (shared with the lighting). The closed contact is sent by the UCH.

Both signals are compared by the injection computer.



19108

19108

Track	Description
A1	Close contact
A2	Open contact
B1	Open contact
B2	Open contact

V - CLUTCH SWITCH

The clutch pedal has two switches and a potentiometer:

- one start of travel switch specifically for the « cruise control » function (grey connector),
- one end of travel switch used for the « keyless vehicle » function (blue connector).

When the switch is fitted, pull on the pushrod to take up the play.

CRUISE CONTROL

Speed limiter: Operating principle

83D

Entry conditions:

- switch at Speed limiter position,
- **20 mph (30 km/h)** minimum, **120 mph (200 km/h)** maximum (as a guideline only),
- press the « + », « - » or « R » buttons.

Conditions for exiting cruise control mode:

- accelerator must be depressed firmly (beyond the kickdown point),
- switch in the « off » position,
- press the « 0 » button,
- injection computer intervention (fault or overspeed),

Note:

If the warning on the instrument panel flashes, it informs the driver that the cruising speed cannot be maintained.

CRUISE CONTROL

Cruise control: Operating principle

83D

Entry conditions:

- cruise control switch,
- **20 mph (30 km/h)** minimum, **120 mph (200 km/h)** maximum (as a guideline),
- press the « + » or « R » buttons.

Conditions for exiting cruise control mode:

- depress accelerator,
- depress the brake or clutch pedal,
- press « 0 » ,
- switch on « stop » ,
- intervention of the directional stability control system,
- work on injection computer (fault or over-speed).
- gearbox in « Neutral » , « Parking » or « Neutral » position.

Note:

If the indicator flashes green on the instrument panel, it indicates to the driver that the set speed cannot be maintained.

CONTROLS - SIGNALS

Column switch control assembly

84A

Tightening torques

steering wheel bolt to torque	4.4 daNm
-------------------------------	----------

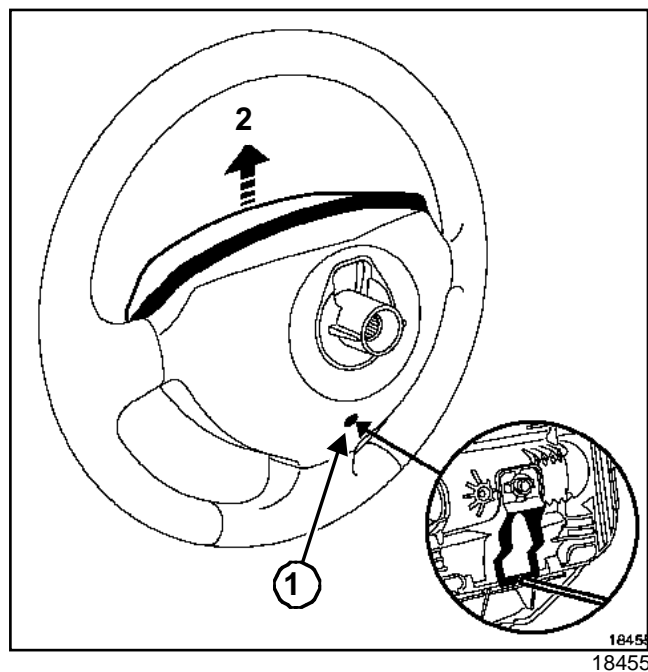
WARNING

It is essential to lock the airbag computer before removal. Locking the airbag computer also unlocks the electric steering column lock.

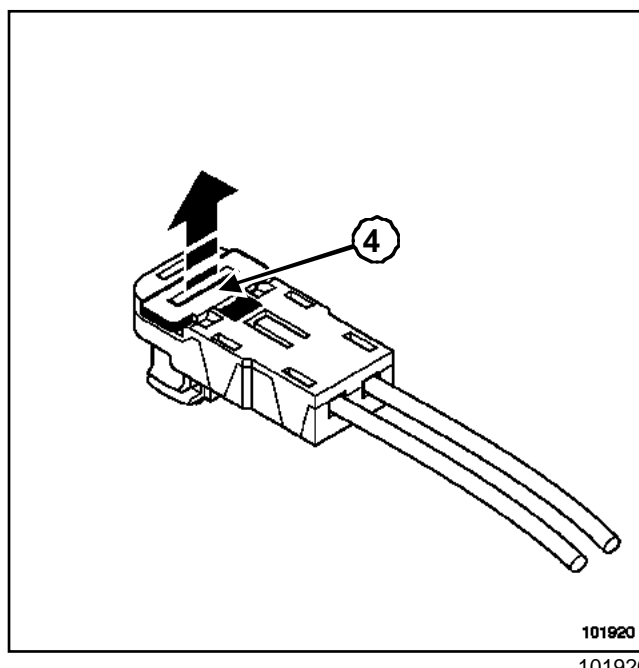
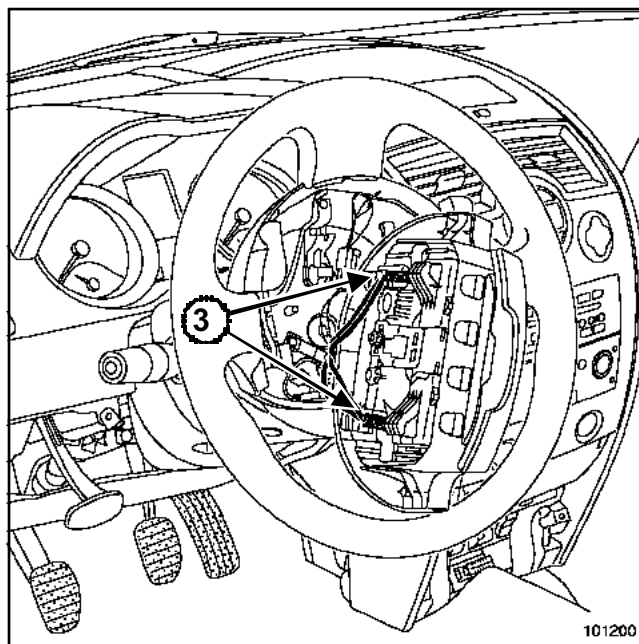
Note:

The lighting, wiper and rotary switches form a single unit (understeering control). They cannot be removed separately.

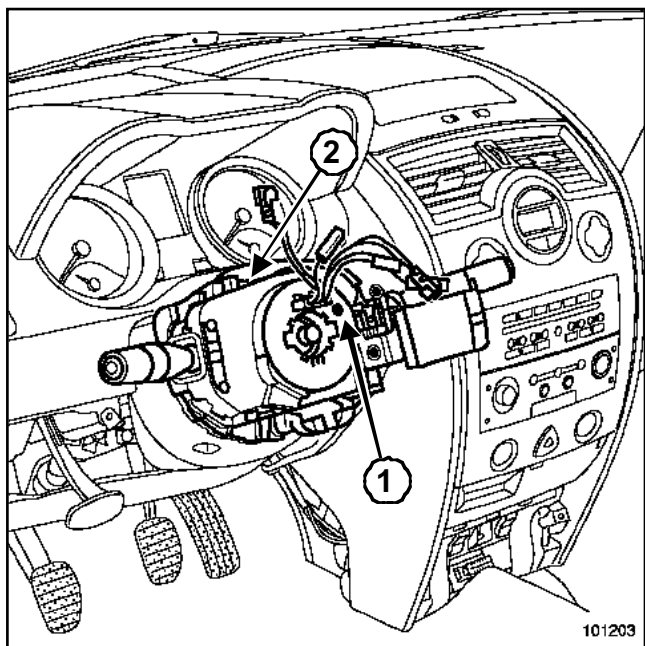
REMOVAL



- Insert a screwdriver into opening (1).
- Move upwards (2).



- Disconnect the steering wheel airbag connectors (3) using a screwdriver at (4).



101203

- Make sure the wheels are straight.
- Remove:
 - the steering wheel bolt,
 - the steering wheel,
 - the steering wheel half-shell casings.

Note:

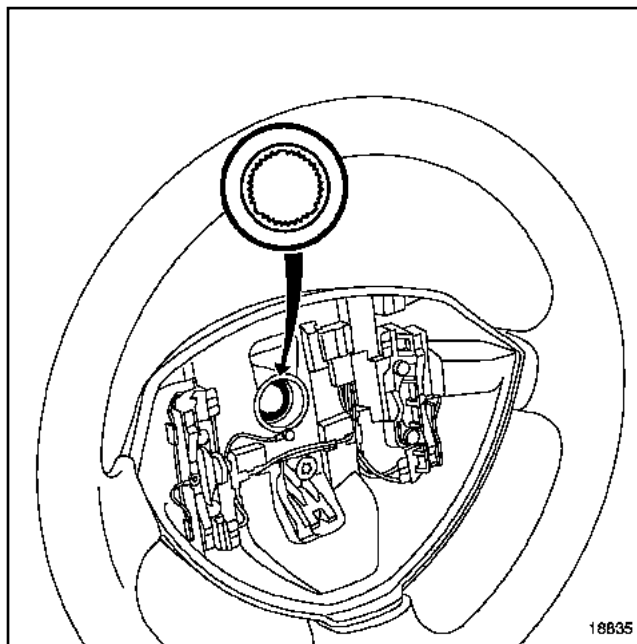
Before removing the understeering control unit, determine its position by ensuring that the "0" mark on the rotary switch (C) is properly positioned opposite the index (1).

- Remove the screw (2) holding the rotary switch.
- Partially remove the column switch to disconnect its connectors.
- Remove the column switch.

REFITTING

- Make sure the wheels are straight and that the rotary switch selector is set to "0".

I - SPECIAL FEATURE OF THE STEERING WHEEL



18835

18835

-

WARNING

- The steering wheel should freely enter the splines (the splines have location notches).
- Do not damage the spline location notches.
- The steering wheel bolt must be replaced after each removal.

- Tighten the **steering wheel bolt to torque (4.4 daNm)**.

II - SPECIAL NOTES ON THE AIRBAG

- Make sure the connectors are properly attached by matching colour codes and safety ratchets.

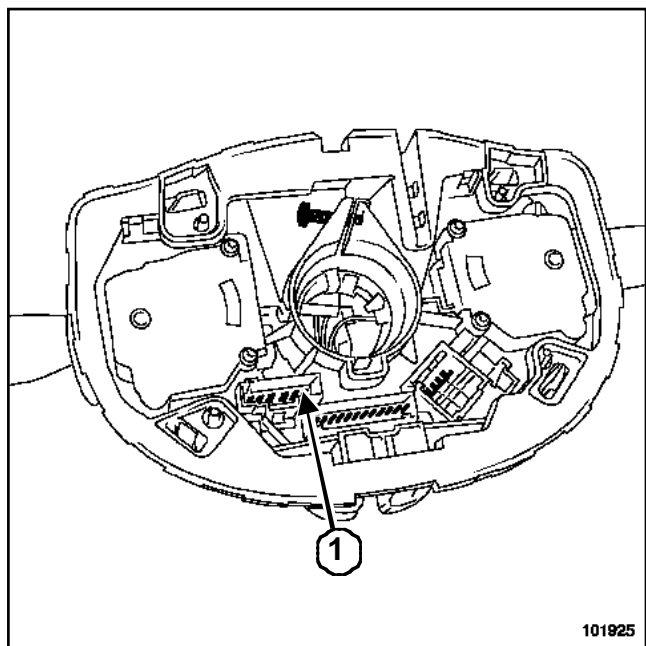
-

IMPORTANT

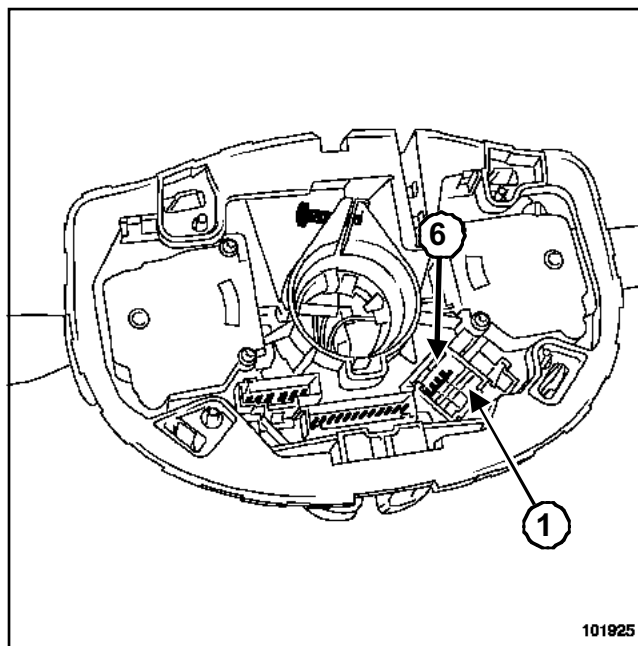
Before refitting, check the airbag computer with the diagnostic tool.

If everything is correct, remove the airbag computer.

Under steering wheel control assembly: Connection



101925
101925



101925
101925

Track	Description
1	Windscreen washer pump control
2	Rear screen washer pump control
3	+ buzzer
4	Buzzer earth
5	Earth
6	+ accessories

Note:

The front and rear screen washer pump controls can be checked with an ohmmeter (switch closed when the control is activated).

Activation of the control	Tracks
Windscreen washer pump	1 and 6
Rear screen washer pump	2 and 6

Track	Description
1	Cruise control connection
2	Cruise control connection
3	Not used
4	Not used
5	Not used
6	Driver's front airbag control connection (small volume)
7	Driver's front airbag control connection (small volume)
8	Earth connection (protects the airbag from static electricity)
9	Driver's front airbag control connection (large volume)
10	Driver's front airbag control connection (large volume)

Note:

All these connections run through the rotary switch.

Under steering wheel control assembly: Operating principle

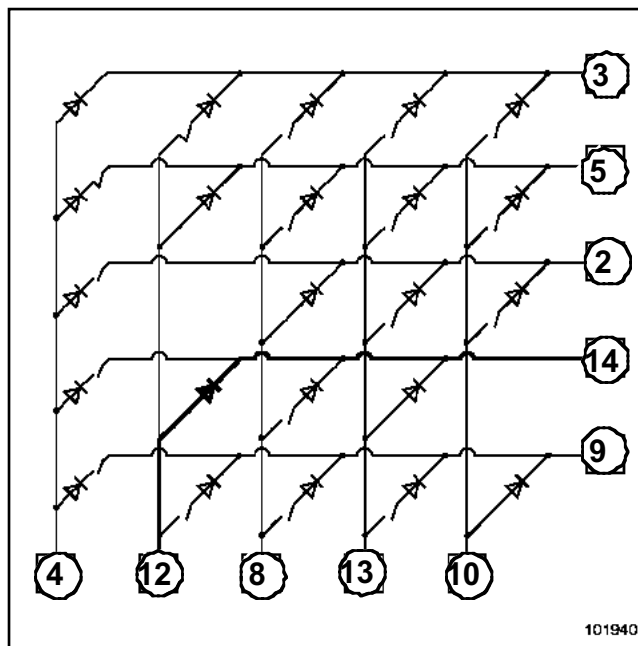
HOW THE LIGHTING AND WIPER SECTION WORKS

The light and wiper switch form an inseparable unit known as the « column switch ».

The component consists of a control unit containing diodes and switches.

The UCH determines which function is called by closing certain column switch switches.

Example: when tracks 12 and 14 communicate, the UCH interprets it as a request for the right hand indicators.



101940

101940

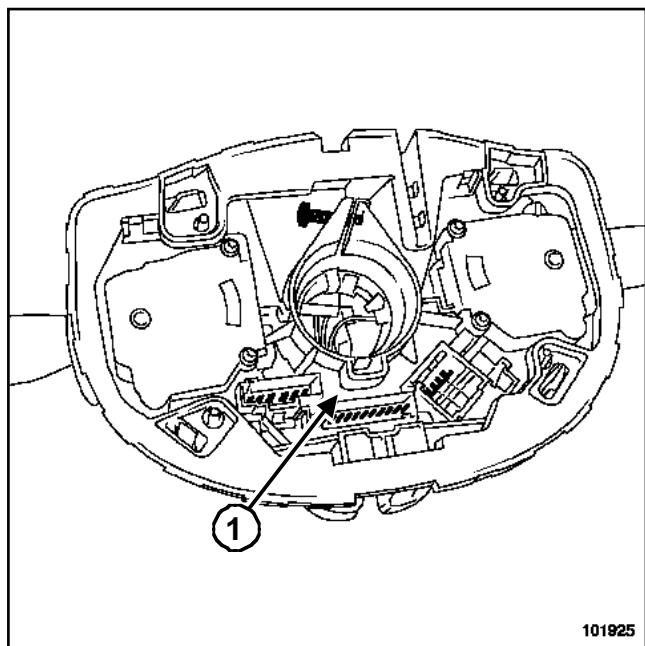
The permanent connections (4-3), (12-5), (8-2), (13-14), (10-9) are used for fault finding on the column switch and its connections with the UCH.

	track 4	Track 12	track 8	track 13	Track 10
track 3	Fault finding procedure 1	Lights off	Wiper speed (setting 1)	Side lights	Main beam headlight
track 5	Wipers off	Fault finding procedure 2	Indicator light	Dipped/main beam headlights inverted	Front fog light
Track 2	Rear fog lights	-	Fault finding procedure 3	Rear wipers	Trip computer « button »
Track 14	Left-hand turn indicator	Right-hand turn indicator	Automatic lighting button (only with rain sensor)	Fault finding procedure 4	-
track 9	Wiper speed (setting 2)	Wiper speed (setting 3)	Wiper speed (setting 4)	High-speed wipers	Fault finding procedure 5

Note:

To run the wipers at setting 2, 3 or 4, setting 1 must first be selected (see control chart).

Under steering wheel control assembly: Operating principle



101925
101925

Note:

The following states can be checked with a multimeter (set to diodometer).

Settings	Tracks
Wipers off	5 and 4
Wiper speed (setting 1)	3 and 8
Wiper speed (setting 2)	3 and 8 + 9 and 4
Wiper speed (setting 3)	3 and 8 + 9 and 12
Wiper speed (setting 4)	3 and 8 + 9 and 8
Low-speed wipers	* No ignition
High-speed wipers	9 and 13
Rear wipers	2 and 13
Trip computer « button »	2 and 10
Lights off	3 and 12
Side lights	3 and 13
Dipped headlights	3 and 10

Settings	Tracks
Main beam headlight	3 and 10 + 5 and 13
Fog lights	5 and 10
Fog lights	2 and 4
Operating button	14 and 8
Left-hand turn indicator	14 and 4
Right-hand turn indicator	14 and 12
Indicator light	8 and 5

* If the UCH detects no column switch contact, the low-speed wipers are automatically selected. The wipers stop when the switch (tracks 4 and 5) is closed.

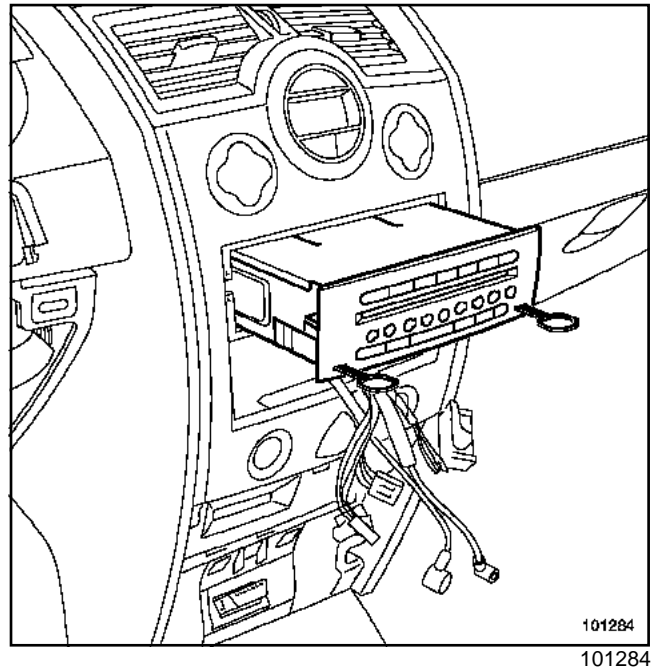
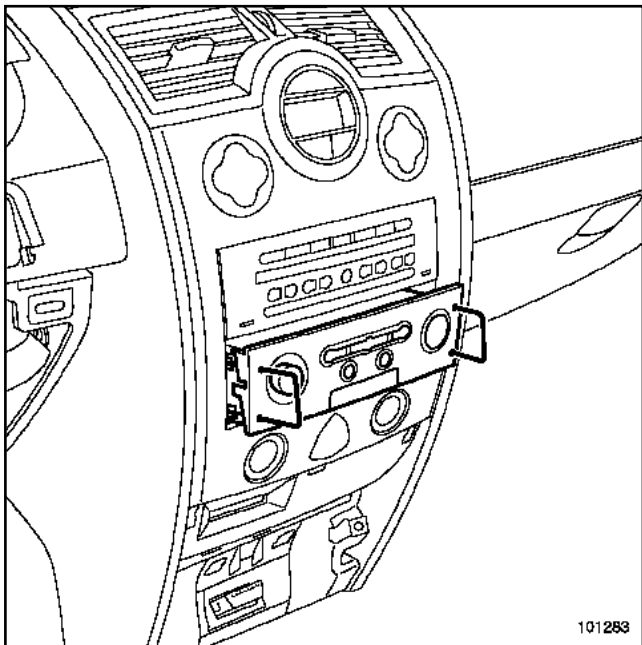
Central door locking and hazard warning lights switch

Essential special tooling

Ms. 1373	Philips radio removal tool
Ms. 1639	Tool for removing radio - CD player
Ms. 1544	Tool for removing Carminat Becker radio

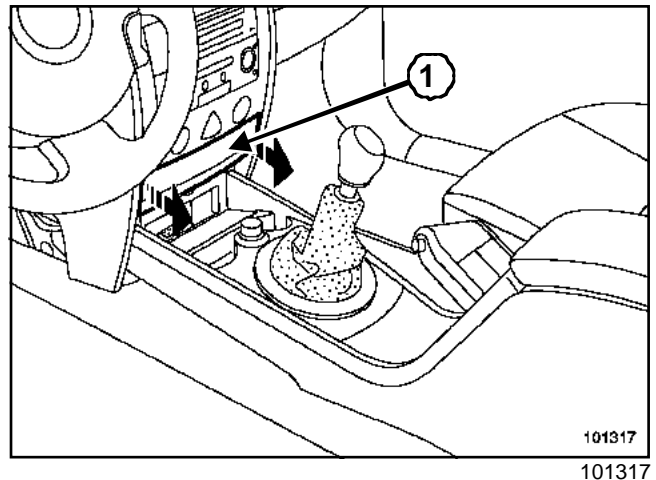
The hazard warning lights switch and electric control for opening and closing doors form a single unit.

REMOVAL



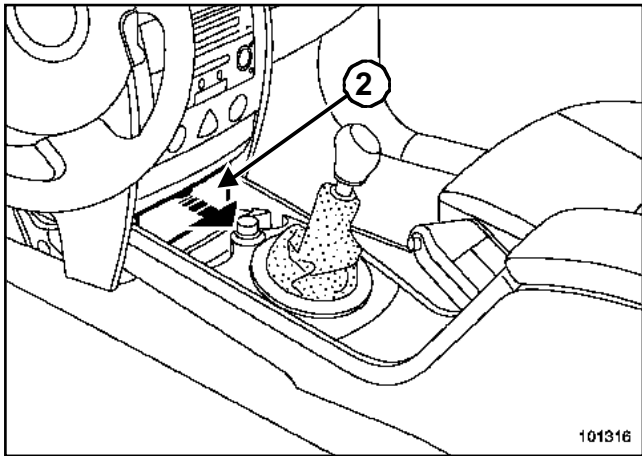
❑ Remove (if installed on the vehicle):

- the Central Communication Unit with tool (Ms. 1373),
- the radio using tool (Ms. 1373),
- the CD changer with tool (Ms. 1639),
- the radio-navigation with tool (Ms. 1544).



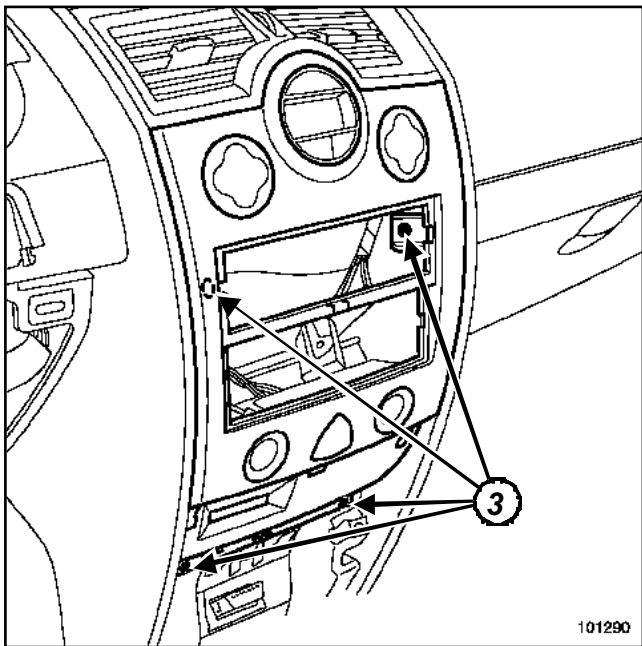
❑ Unclip cover (1) from the card reader.

Central door locking and hazard warning lights switch



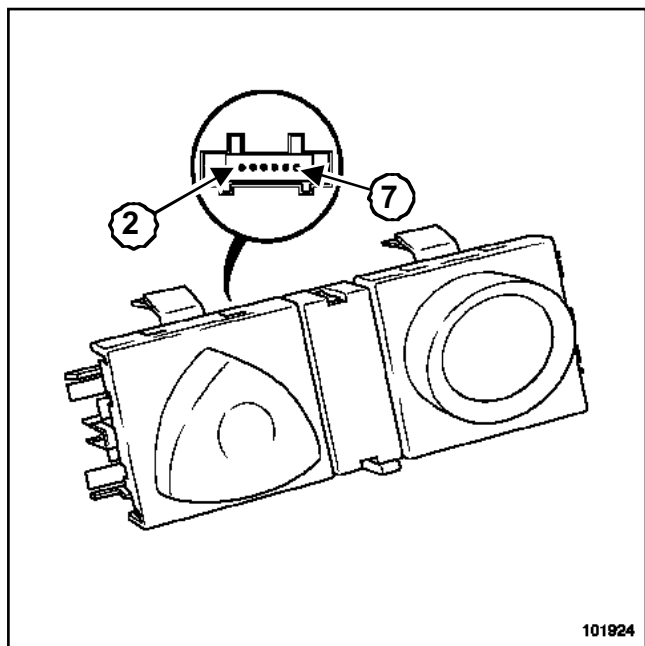
101316

- Unclip cover (2) from the diagnostic socket.



101290

- Remove the screws(3).
- Unclip the front panel.



101924
101924

Track	Description
1	Not used
2	Door opening and closing control
3	+ side light (centralisation and hazard warning lights control lighting)
4	Earth
5	+ closure indicator light
6	Hazard warning lights indicator light
7	Hazard warning lights control

I - CHECKING THE HAZARD WARNING LIGHTS SWITCH

Track	Description	Value
7 and 14	Hazard warning lights on and off	approx 8 Ω

II - CHECKING THE CENTRAL DOORS CONTROL

Track	Description	Value
2 and 4	Locking, Unlocking	approx 8 Ω

CONTROLS - SIGNALS

Remote adjustment control

84A

WARNING

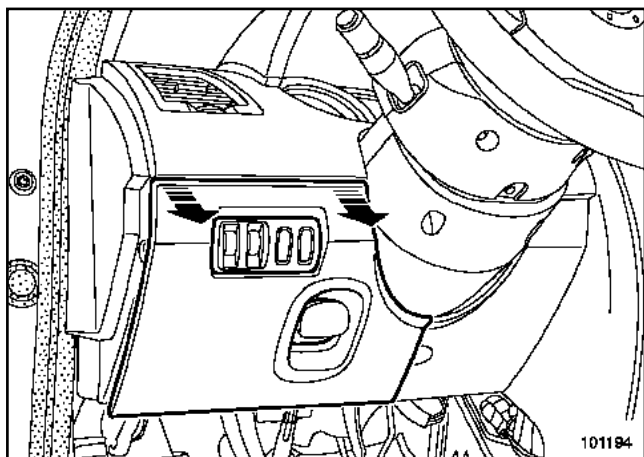
Two versions are available:

- with an « entry level » lighting dimmer for manual heating and ventilation systems,
- with a « top of the range » lighting dimmer for climate control.

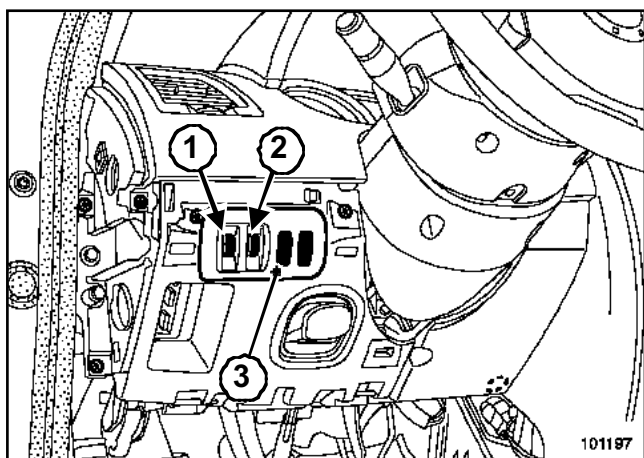
Note:

The beam adjustment part is the same, regardless of heating and ventilation system.

REMOVAL



101194



101197

□ Remove:

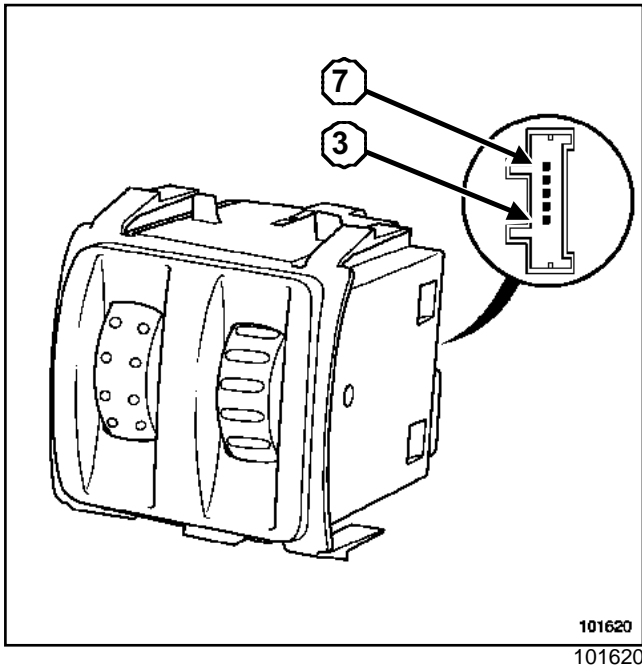
- the trim underneath the driver's side of the dashboard,

- the switch plate (3) using a small screwdriver.

Note:

The lighting dimmer (1) and beam adjustment control (2) form a single unit

- Disconnect the connector.
- Separate the « adjustment control - dimmer » from its support.



Track	Description
1	Not used
2	Not used
3	Side lights signal (from the Protection and Switching Unit)
4	Earth
5	Dimmer output
6	Beam adjustment actuator control
7	Supply (via Protection and Switching Unit)
8	Not used

TUMBLEWHEEL POSITION

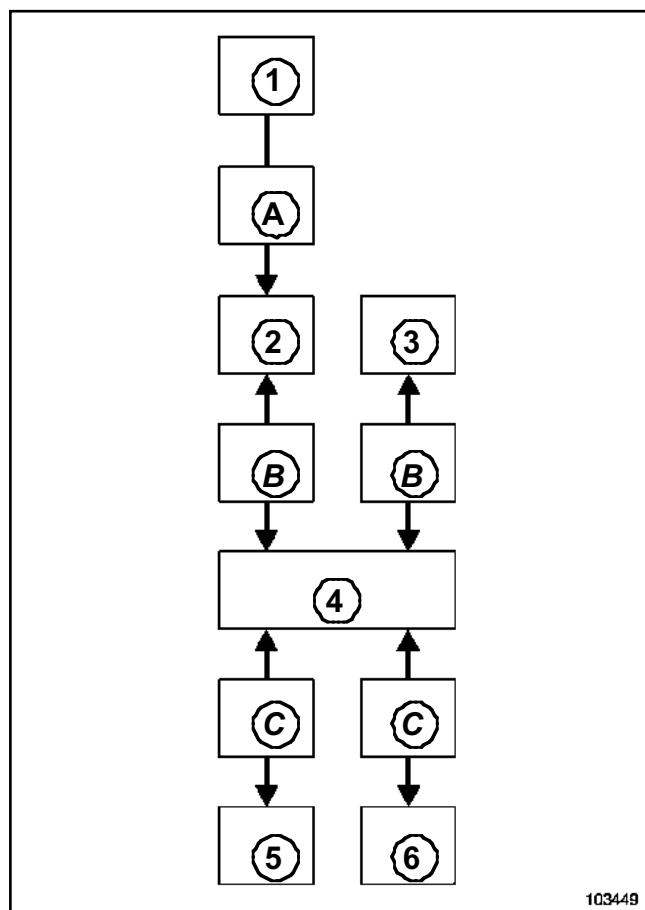
Position	Resistance
0	approximately 40 Ω
1	approximately 190 Ω
2	approximately 370 Ω
3	approximately 840 Ω
4	approximately 2030 Ω

Electric door mirror: Operating principle

The electric rear-view mirrors components are as follows:

- two motors for vertical and horizontal movement,
- an external temperature sensor (right-hand side),
- a door mirror folding motor (depending on the equipment level),
- a heating system (depending on the equipment level).

De-icer operation



103449
103449

- (1) Heating and ventilation control panel
- (2) UCH
- (3) Injection computer
- (4) Protection and Switching Unit
- (5) Heated door mirrors
- (6) Heated rear window
- (A) User request*

(B) Multiplex connection

(C) Control wire

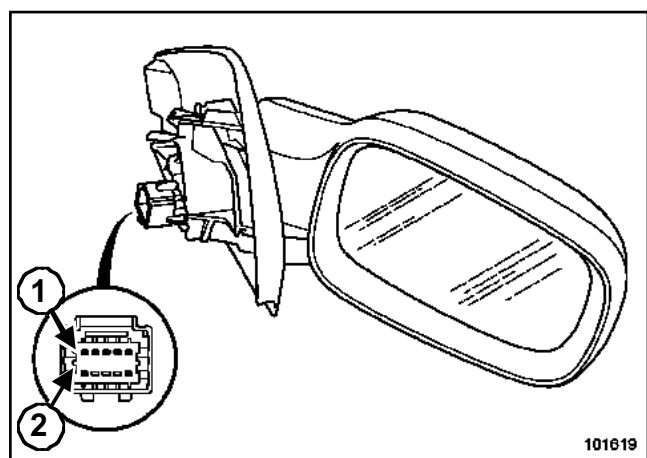
* : User request:

- wire in the case of manual heating and ventilation,
- multiplex in the case of climate control.

CONTROLS - SIGNALS

Electric door mirror: CONNECTION

84A



101619

Track	Description
1	Door mirror heating
2	Vertical adjustment motor
3	Motor common (vertical, horizontal)
4	Horizontal adjustment motor
5	Door mirror heating
6	Temperature sensor (right-hand side)
7	Folding motor
8	Not used
9	Folding motor
10	Temperature sensor (right-hand side)

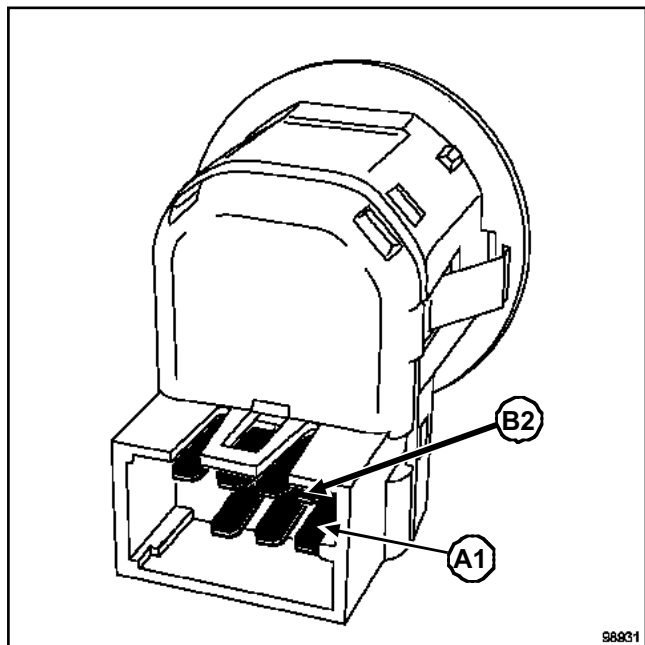
The resistance of the heating system is approximately 15 Ω .

There are several types of door mirror control, depending on the equipment level:

- basic electric door mirror control
- control for tiltable electric door mirrors.

I - BASIC ELECTRIC DOOR MIRRORS

1 - Connection



98931
98931

Track	Description
A1	Left-hand mirror left/right movement
A2	+ before ignition
A3	Left-hand mirror up/down movement
A4	Not used
B1	Right-hand mirror left/right movement
B2	Right-hand mirror up/down movement
B3	Earth
B4	Combined motor (vertical, horizontal)

2 - Operating principle

Check the resistance with an ohmmeter, the reading should be close to 0 Hgr; when the two tracks are in contact)

Door mirror function	Track
Left-hand side	
Tilt up	A3 / A2 and B3 / B4
Tilt downwards	A3 / B3 and A2 / B4
Tilt left	A1 / A2 and B3 / B4
Tilt right	A1 / B3 and A2 / B4

Door mirror function	Track
Right-hand side	
Tilt up	B2 / A2 and B3 / B4
Tilt downwards	B2 / B3 and B4 / A2
Tilt left	B1 / A2 and B3 / B4
Tilt right	B1 / B3 and A2 / B4

II - FOLD-IN ELECTRIC DOOR MIRRORS

1 - Connection

Track	Description
1	Door mirror folding control
2	+ lighting
3	Motor (vertical, horizontal) common line
4	Earth
5	+ before ignition
6	Up/down movement of the right-hand door mirror
7	Up/down movement of the left-hand door mirror
8	Right-hand mirror left/right movement
9	Left-hand mirror left/right movement
10	Door mirror folding control

2 - Operating principle

Door mirror function	Track
Left-hand side	
Tilt up	7 / 5 and 4 / 3
Tilt downwards	7 / 4 and 5 / 3
Tilt left	9 / 5 and 4 / 3
Tilt right	9 / 4 and 4 / 3

Door mirror function	Track
Right-hand side	
Tilt up	6 / 5 and 4 / 3
Tilt downwards	6 / 4 and 5 / 3
Tilt left	8 / 5 and 4 / 3
Tilt right	8 / 4 and 5 / 3
Door mirror folding	5 / 1 and 4 / 10
Door mirror deployment	4 / 1 and 5 / 10

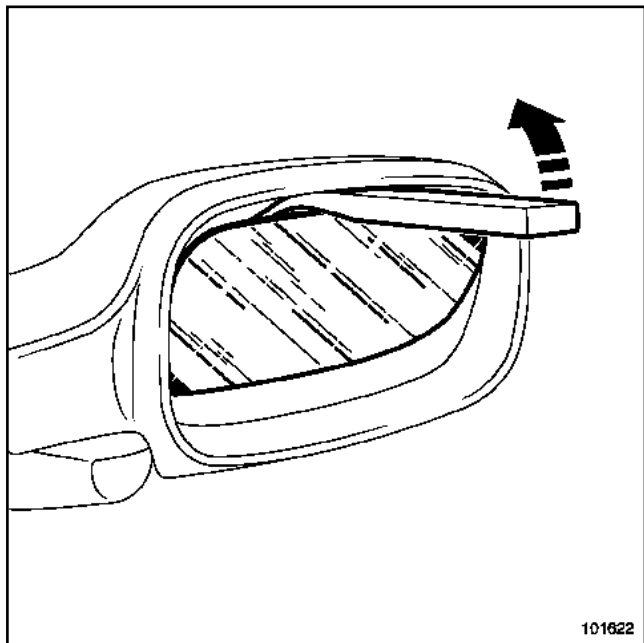
Essential special tooling

Car. 1363

Rear-view mirror glass
remover

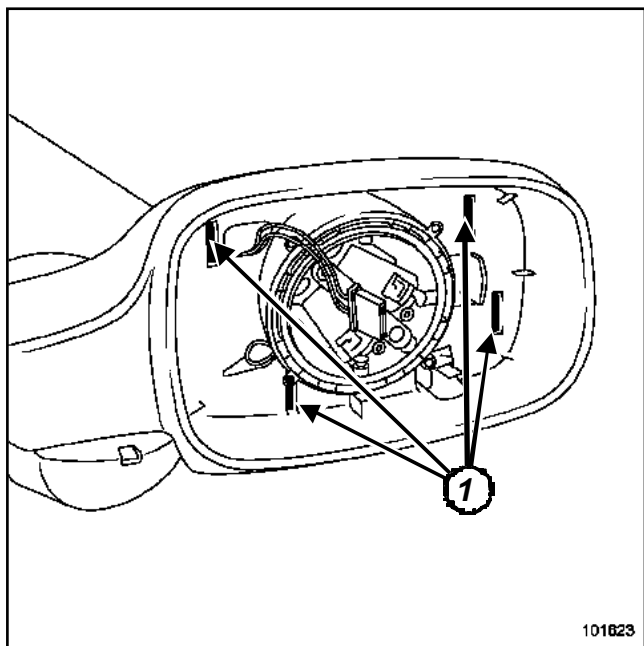
The external temperature sensor is located in the door mirror on the right-hand side.

REMOVAL



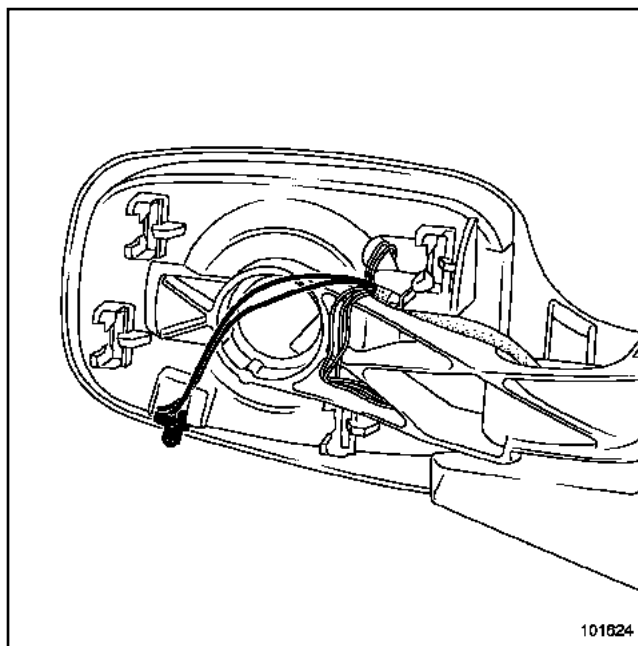
101622

- ❑ Remove the reflective glass using tool (Car. 1363).



101623

- ❑ Remove the door mirror shell by pressing the lugs (1).



101624

- ❑ Unclip the sensor from its mounting.
- ❑ Cut the wires.

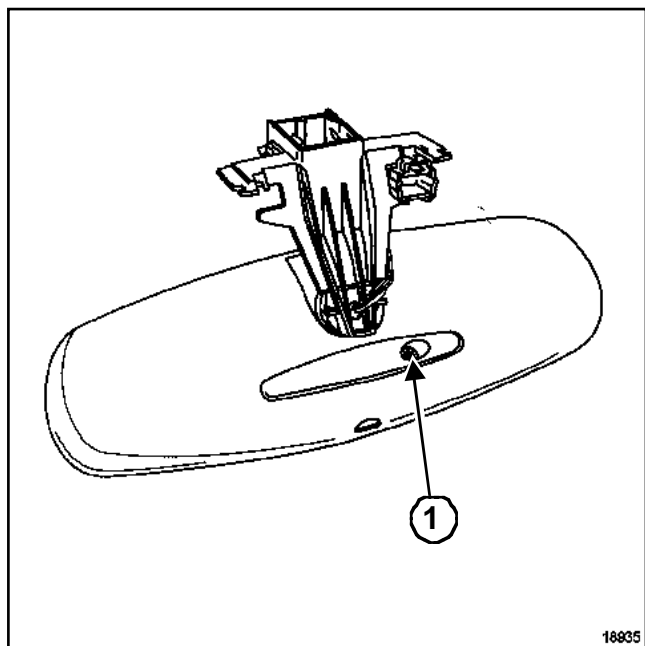
REFITTING

- ❑ Weld the two temperature sensor wires.
- ❑ Insulate the two wires with heat shrinkable sleeves.
- ❑ Refit:
 - the door mirror shell,
 - the glass.

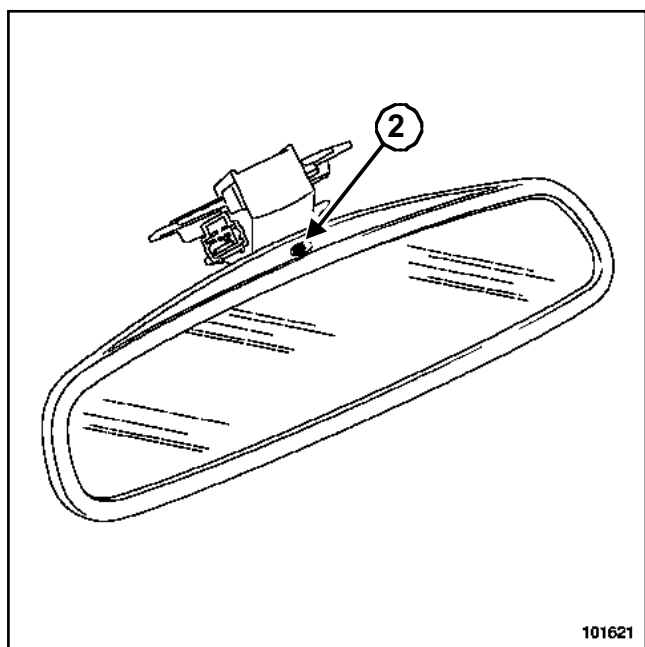
Temperature sensor resistance: Check

Check the resistance of the temperature sensor

Approximate temperature (°C)	Sensor resistance (Ω)
between 0 and 5	between 5400 and 6200
Between 6 and 10	between 4400 and 5400
between 11 and 15	between 3700 and 4400
Between 16 and 20	Between 3000 and 3700
between 21 and 25	between 2500 and 3000
between 26 and 30	between 2100 and 2500
between 31 and 35	between 1700 and 2100
between 36 and 40	between 1450 and 1700



18935
18935



101621
101621

The interior rear-view mirror can be fitted with the auto-dimming (electro-chrome) system.

This system works by comparing levels of brightness gauged by two sensors:

- a sensor (1) located on the windscreen side,
- a sensor (2) located on the mirror side.

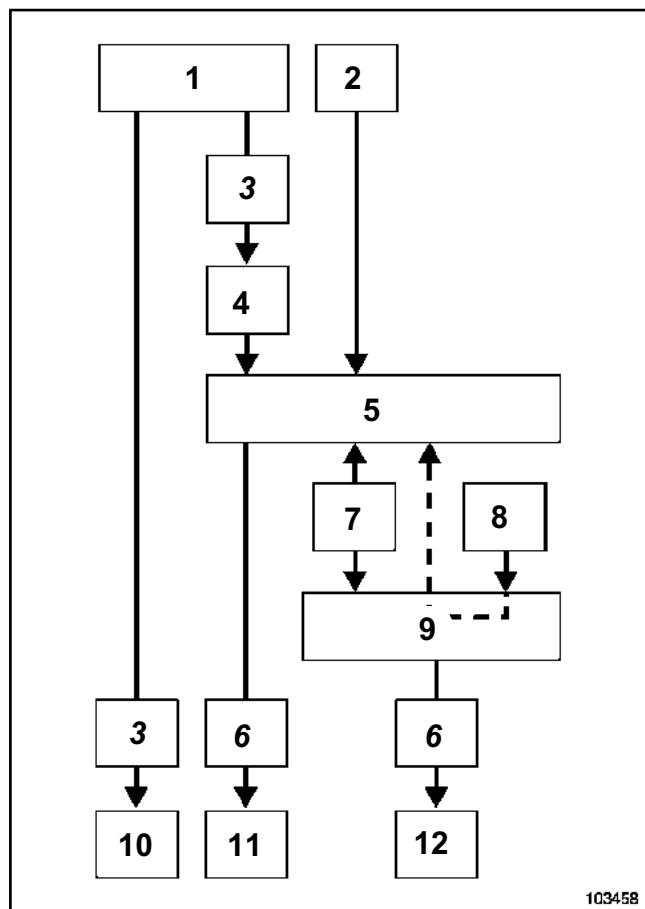
CONNECTION

Track	Description
1	Power supply
2	Earth
3	Not used
4	Not used

Note:

It is possible to check the auto-dimming system by obscuring the sensor (1) (+ after ignition active). The mirror should progressively darken.

I - OPERATING PRINCIPLE



103458

103458

Mark	Description
1	Understeering control
2	Rain and light sensors
3	user request
4	Combination of diodes and contact
5	UCH
6	Wire connection
7	Multiplex connection
8	Reverse gear and vehicle speed signal
9	Protection and Switching unit
10	Front and rear wiper pump
11	Rear wiper motor
12	Front wiper motor

II - AUTOMATIC OPERATION

Vehicles can have a wiper stalk fitted with an intermittent adjustment ring or an automatic intermittent wipe system. In both cases, vehicles have:

- a responsiveness ring sensor on the wiper stalk,
- rain and light sensors.

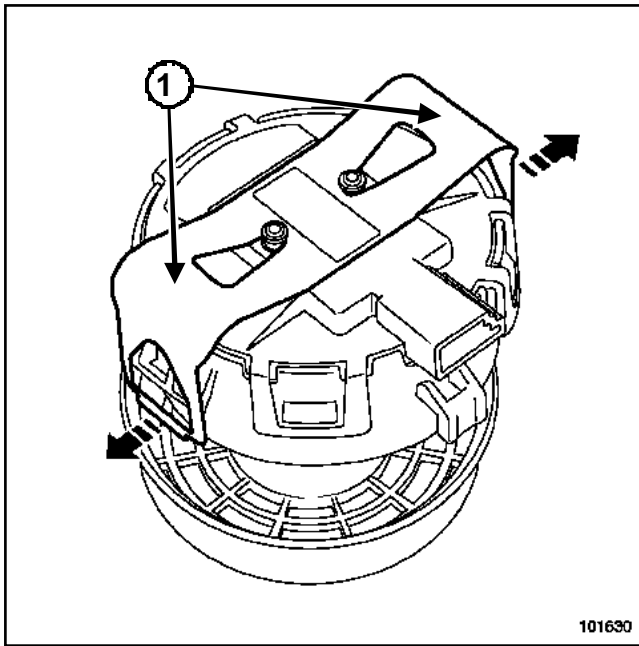
To operate the system, move the wiper stalk to the « intermittent » position. If the ignition is switched off, reposition the stalk to « stop », then to « intermittent ».

III - OPERATING NOTES

- If there is too much stress on the wiper arms (e.g.: at high speed), the Protection and Switching unit automatically commands wiping at a lower speed.
- If the wiper mechanism is jammed (e.g.: icy windscreen), the Protection and Switching unit automatically cuts the supply to the motor.
- If the windscreen wiper is requested (by the stalk or by the rain sensor), changing to reverse gear will activate the rear wiper.
- Any movement of the wiper stalk overrides and cancels any UCH commands from the Switching and Protection Unit.
- The intermittent rear wiper system is governed by the vehicle speed.
- If the UCH does not receive a signal from the column switch, the front low-speed wiper runs automatically (Section Controls - signals, page 84A-1).
- The UCH has configurations specific to the wipe/wash function (Section Passenger compartment connection unit, page 87B-1).

REMOVAL

- ❑ Remove the rear-view mirror cover.



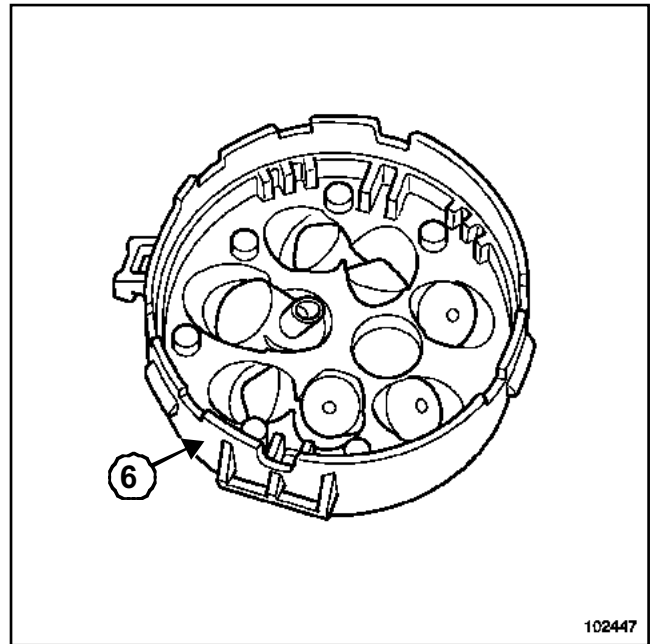
- ❑ Unclip the two side clips (1) from the sensor using a small screwdriver.
- ❑ Disconnect the connector.

REFITTING

- ❑ Clean the windscreen, preferably using a wooden spatula.

WARNING

The rain sensor must be refitted in perfectly clean conditions: any dust or fibres could cause a fault. Do not touch the electronic section of the sensor. Fit it on the vehicle as soon as it is removed from its packaging.



- ❑

Note:

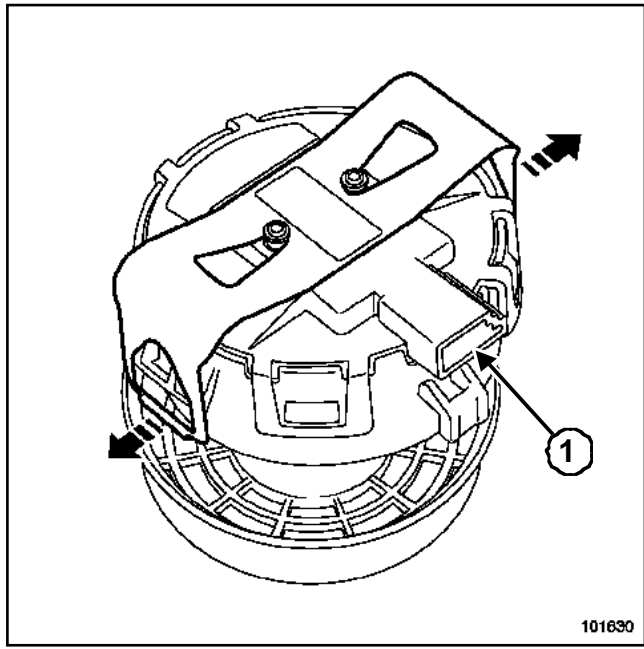
- When replacing the windscreen (with rain and light sensor conservation), the adhesive base of the sensor (6) must be replaced (see **bodywork section**).
- This part is available retail from the Parts Department.

- ❑ Position the sensor on the support.
- ❑ Clip the sensor on the support.
- ❑ Reconnect the connector itself.
- ❑ Refit the interior rear-view mirror cover.

WIPING / WASHING

Rain and light sensor: CONNECTION

85A



Track	Description
1	Supply + battery
2	UCH and wiper motor connection
3	Earth

Essential special tooling

Ele. 1294-01	Tool for removing windscreen wiper arms
---------------------	---

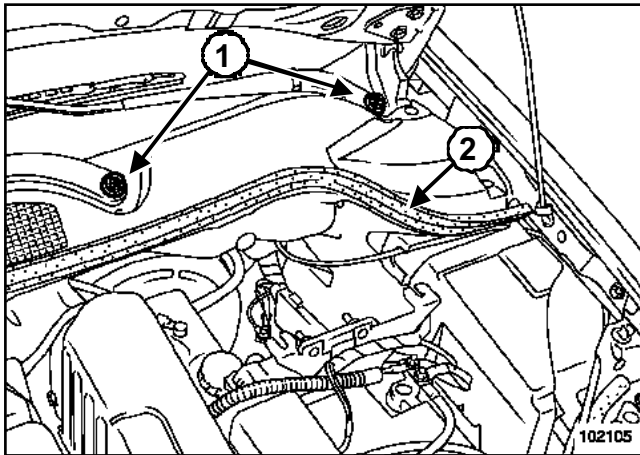
Tightening torques

mounting bolt mechanism to torque	0.8 daNm
windscreen wiper arms to torque	2.1 daNm

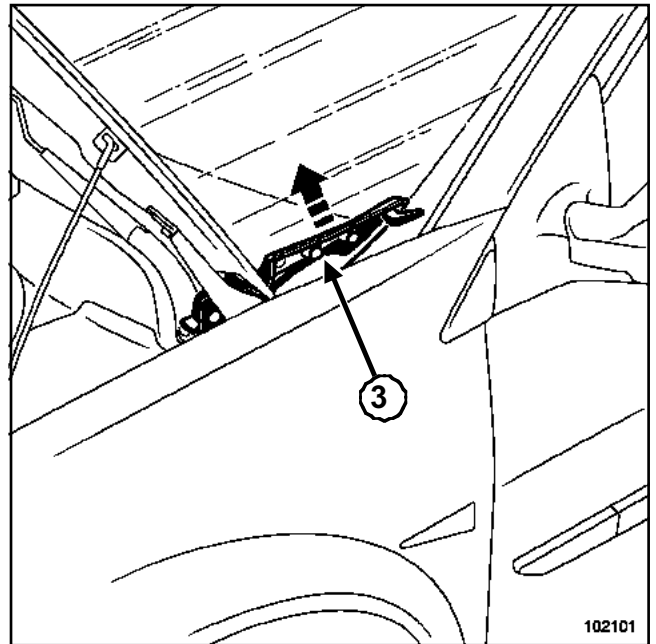
Right-hand drive and left-hand drive vehicle mechanisms are different, but their removal methods are the same.

REMOVAL

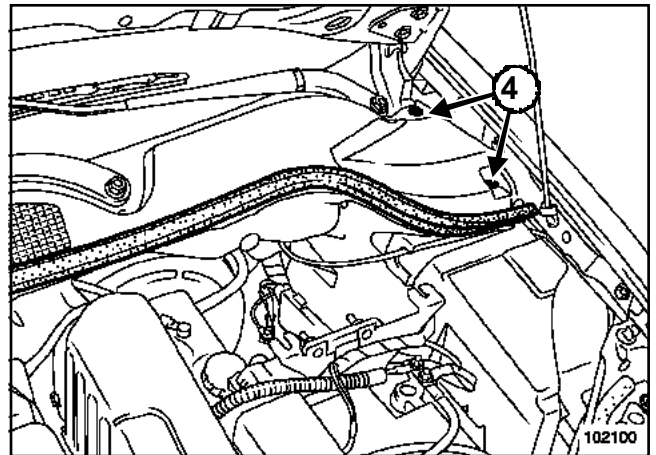
- Disconnect:
 - the battery,
 - the wiper motor.



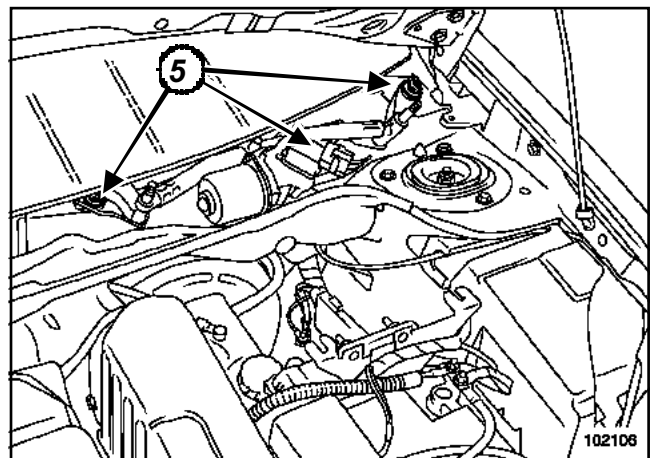
- Remove:
 - the mounting nuts (1) from the windscreen wiper arms,
 - the front windscreen wiper arms with tool (Ele. 1294-01),
 - the radiator tank seals (2).



- Remove the windscreen lower side trim (3).

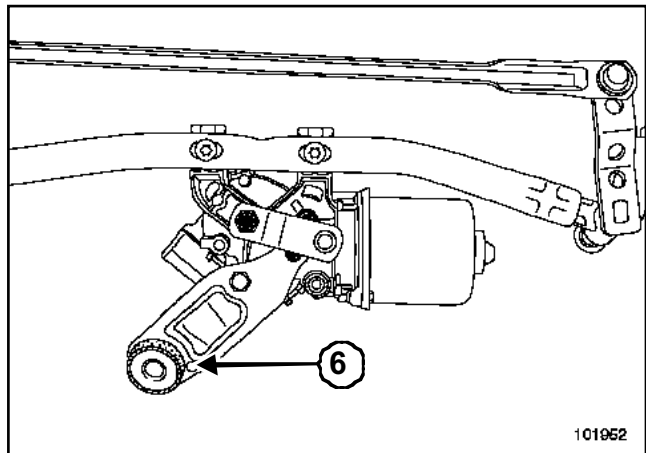


- Remove the radiator tank grille mountings (4).



102106

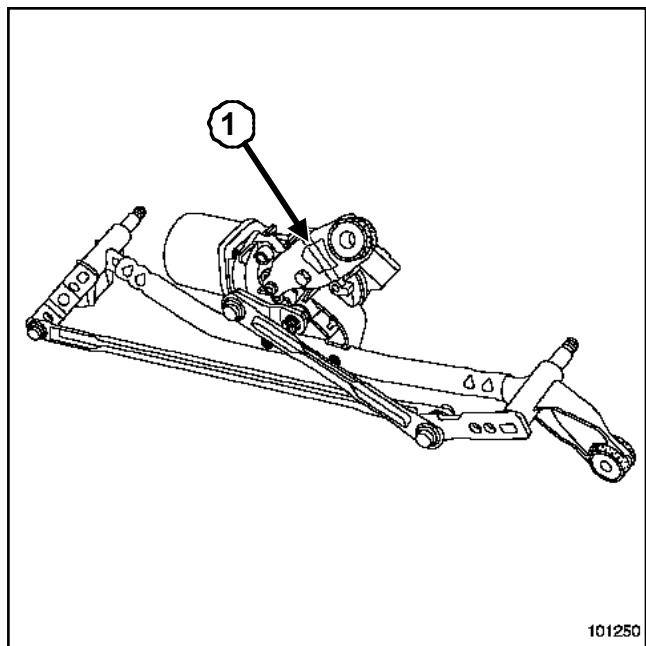
- ❑ Remove the three mounting bolts (5) from the assembly.



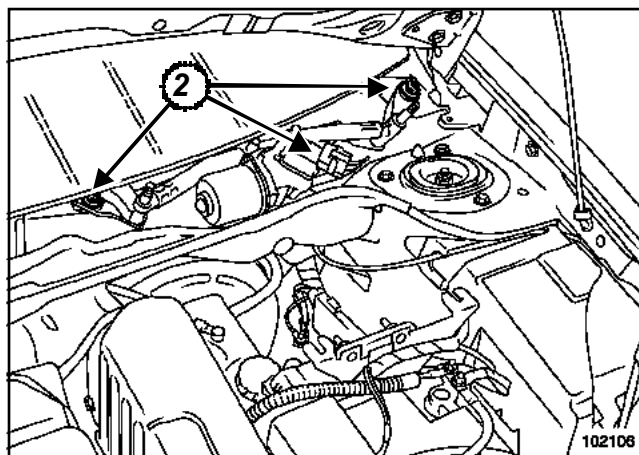
- ❑ Remove the mounting bracket nut (6).
- ❑ Release the bracket from its housing.
- ❑ Tilt the mechanism.
- ❑ Remove the mechanism.

REFITTING

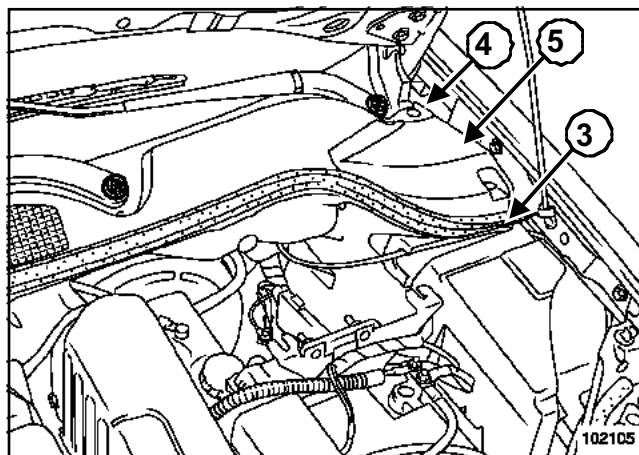
- ❑ Tilt the mechanism to position it.



- ❑ Position plate (1) without tightening the bolt.



- ❑ Position the three assembly mounting bolts (2).
- ❑ Tighten the mounting bolt mechanism to torque (0.8 daNm).



- ❑ Refit:
 - the radiator tank grille (5),
 - the windscreen lower side trim (4),
 - (3)the radiator tank gasket.
- ❑ Connect the battery.
- ❑ Reconnect the wiper motor connector.

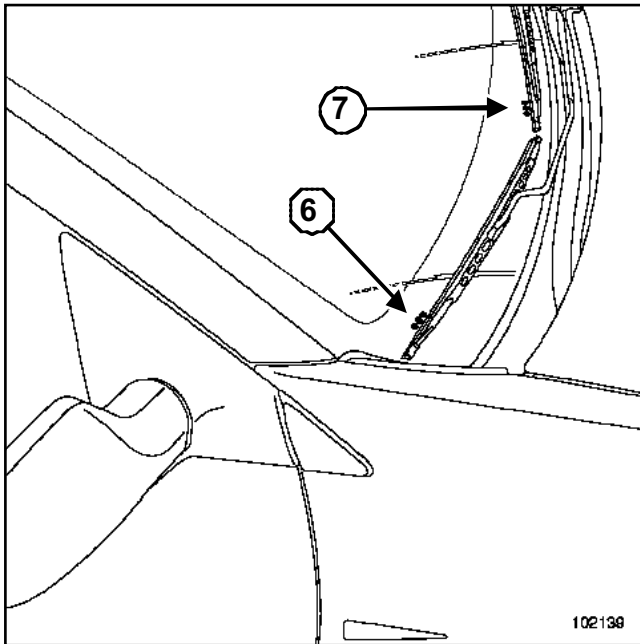
WARNING

It is essential to check that the wiper motor is in the park position before refitting the wiper arm.

WARNING

When refitting the wiper arms:

- ensure that the arms are in good condition (cracked or damaged splines),
- use new mounting nuts.



102139

- Position the lower arm (passenger side) with its wiper along mark (6) on the windscreen.
- Position the upper arm (driver's side) along mark (7) parallel to the radiator tank.
- Tighten the **windscreen wiper arms to torque (2.1 daNm)**.

WARNING

Connect the battery; carry out the necessary programming (Section Battery, page 80A-1).

Note:

The greater curvature of the passenger side wiper arm helps to differentiate between the two arms.

WIPING / WASHING

Windscreen wiper motor

85A

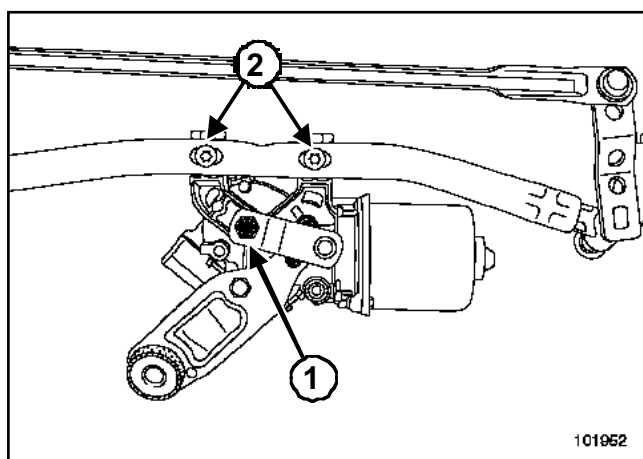
Tightening torques

motor mounting bolt to torque	0.8 daNm
-------------------------------	-----------------

motor shaft nut to torque	2.2 daNm
---------------------------	-----------------

REMOVAL

- Remove the windscreen wiper mechanism (Section Wiping / Washing, Windscreen wiper, page 85A-4).
- Remove the rod from the motor linkage.



101952

- Remove:

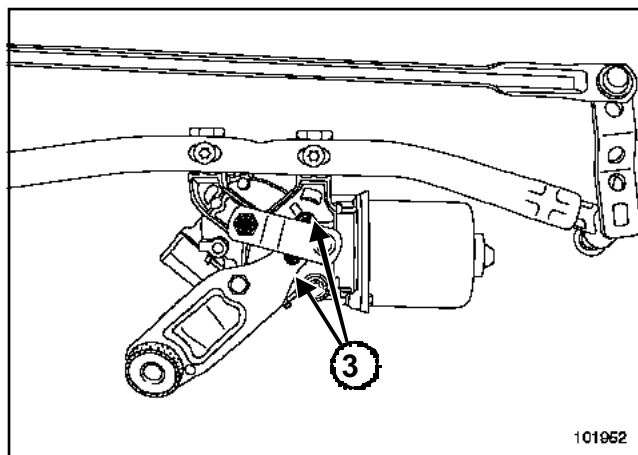
- the motor shaft nut (1),
- the two motor mounting bolts (2).

REFITTING

-

WARNING

Before refitting the mechanism's drive linkage, it is essential to make sure that the windscreen wiper motor is correctly set in the park position.



101952

101952

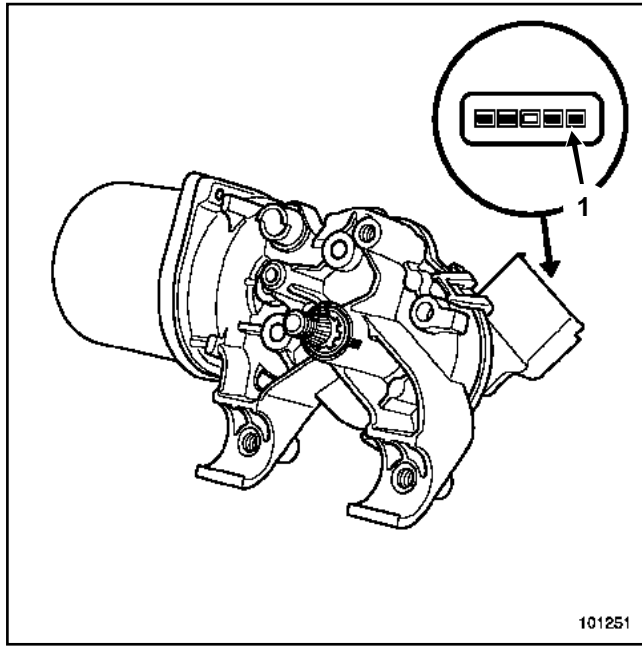
- Set the motor to park position.
- Place the mechanism on the motor.
- Tighten the **motor mounting bolt to torque (0.8 daNm)**.
- Position the linkage drive rod between the raised marks (3).
- Tighten the **motor shaft nut to torque (2.2 daNm)**.
- Refit the windscreen wiper mechanism (Section Wiping / Washing, Windscreen wiper, page 85A-4).

WIPING / WASHING

Windscreen wiper motor: CONNECTION

85A

The motor connection is identical for left and right-hand vehicles.



101251

Track	Description
1	Earth
2	Fixed stop control
3	Not connected
4	Low-speed control
5	High-speed control

WIPING / WASHING

Rear screen wiper motor

85A

Essential special tooling

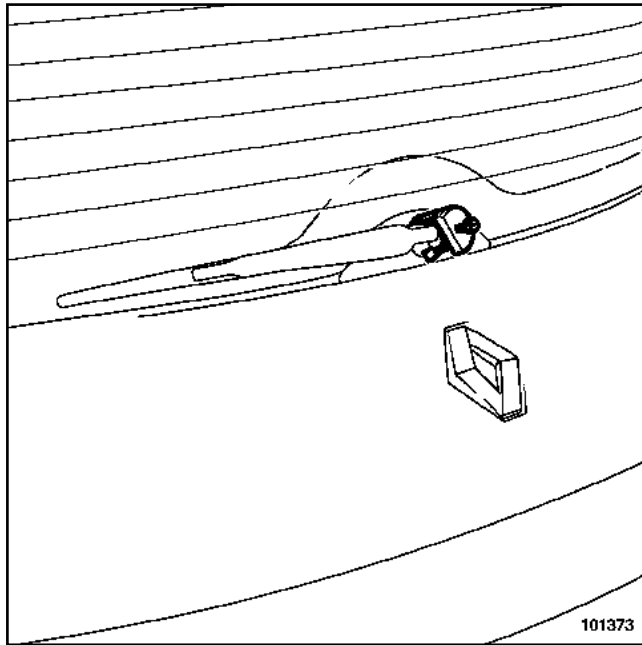
Ele. 1294-01	Tool for removing windscreen wiper arms
Ele. 1552	Tool for removing rear screen wiper arm

Tightening torques

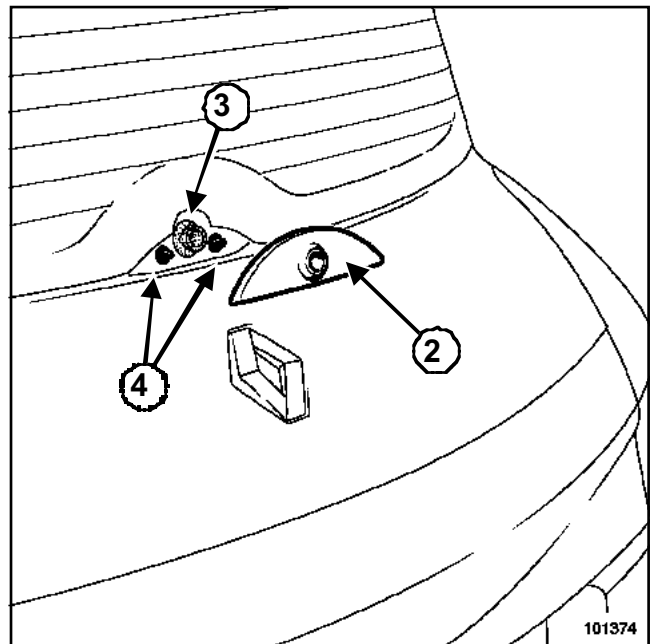
wiper arm nut to torque	1.2 daNm
-------------------------	----------

REMOVAL

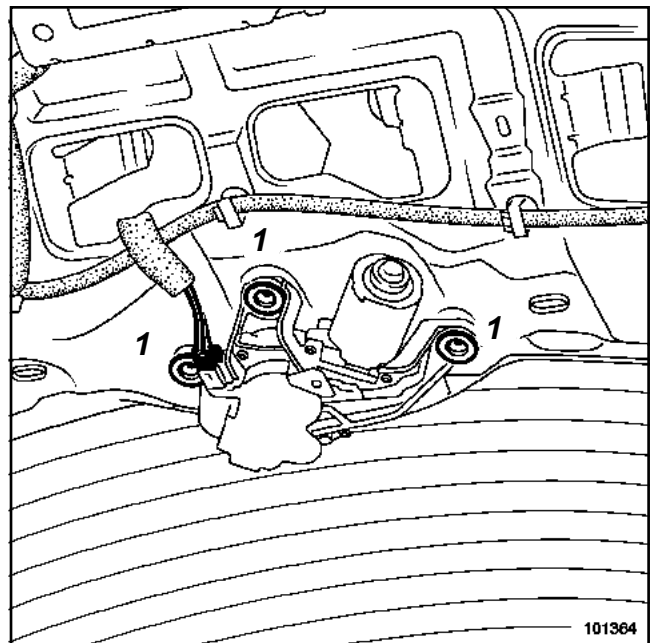
- Disconnect the battery.
- Remove the inner trims, (see **Tailgate lining**).



- Remove:
 - the wiper arm nut,
 - the wiper arm using tool (Ele. 1294-01) or tool (Ele. 1552).



- Remove:
 - the arm trim (2),
 - the seal (3),
 - the two arm trim retaining clips from inside the box section (4).



- Disconnect the connector.

WIPING / WASHING

Rear screen wiper motor

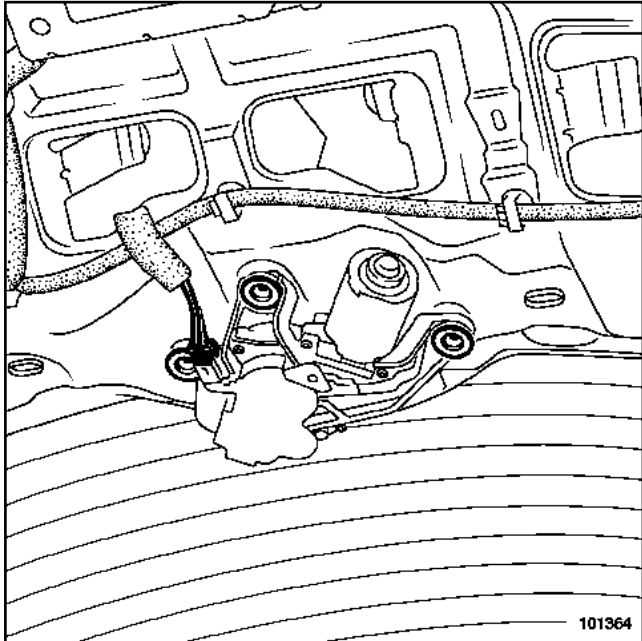
85A

- Drill out the motor mounting rivets (1).

WARNING

- Do not damage the external surface of the tailgate with the drill.
- Retrieve the rivets from the door box section.

REFITTING



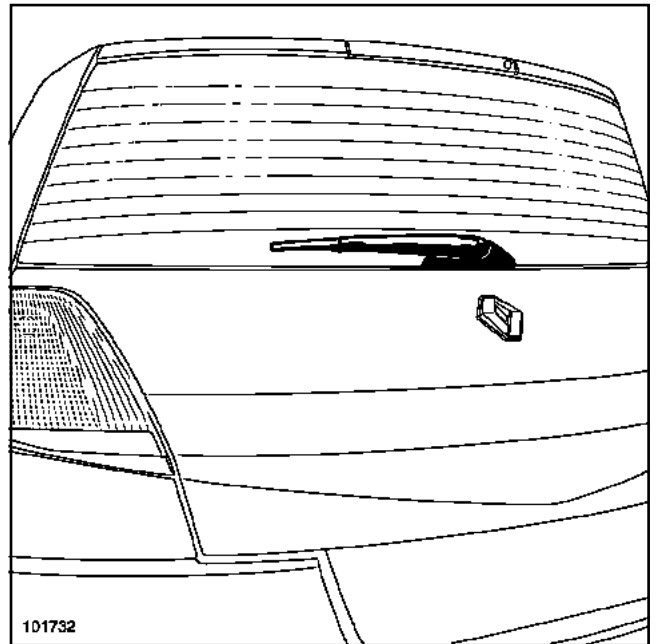
101364

-

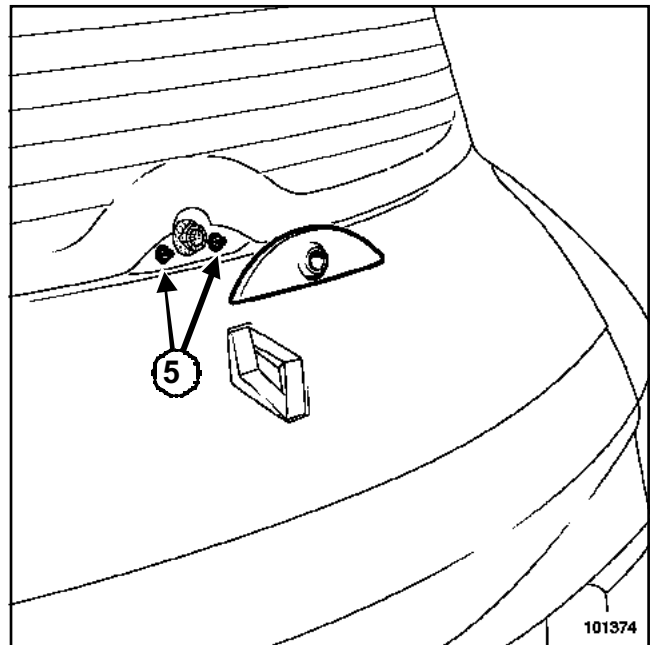
WARNING

Use special rivets part no. **77 03 072 362**.

- Position and rivet the motor.
- Connect the connector.



101732



101374

- Check the condition of the clips (5).
- Replace the clips if necessary.
- Clip the cover on.
- Clean the motor shaft splines.
- Affix the windscreen wiper arms to the park position with a new nut.
- The seal must be replaced each time the motor is removed.

WIPING / WASHING

Rear screen wiper motor

85A

- Connect the battery.

WARNING

Check that the wiper motor is in fixed stop position.

- Refit the wiper arms.
- Tighten the **wiper arm nut to torque (1.2 daNm)**.

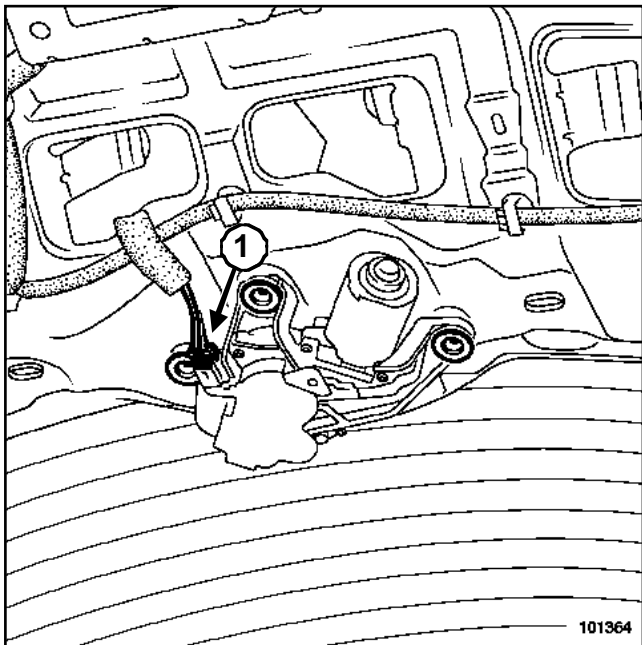
WARNING

Connect the battery; carry out the necessary programming (Section Battery, page **80A-1**).

In normal operation, the rear wiper operates in intermittent mode (variable timing according to speed), the rain sensor has no effect on the timing.

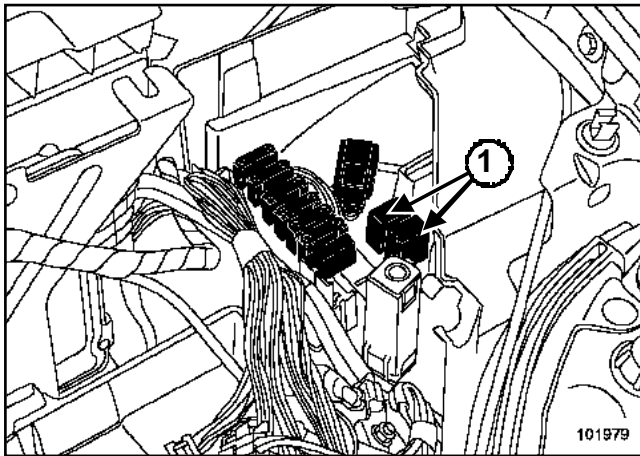
When the windscreen wipers are switched on, the rear wipers are automatically switched on if reverse gear is selected.

Connection



Track	Description
1	Motor supply
2	Fixed stop
3	Earth

Headlight washers: Operating principle

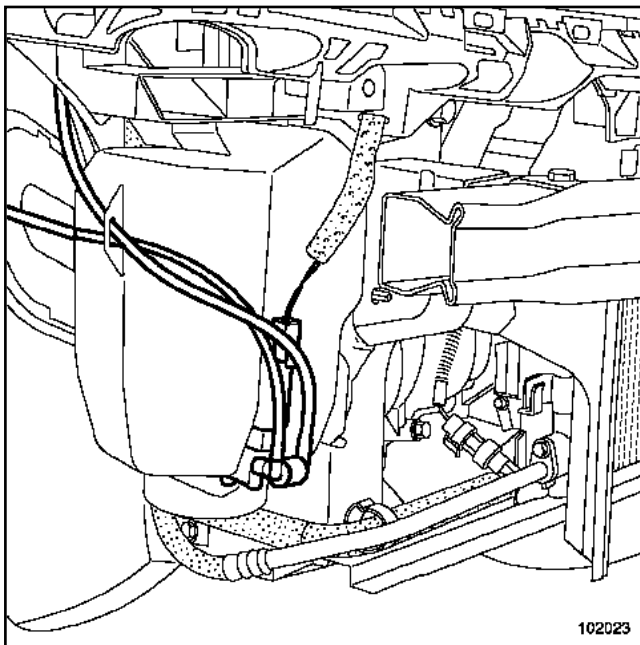


101979

The headlight washer pump is supplied by the UCH.

When the wiper/washer control is operated with the main or dipped beam headlights lit, the UCH operates two relays (1) in succession. The signal may be compared with an alternative supply.

Therefore, the headlight washer electric pump (bidirectional) sends the water to both headlights at the same time (see the wiring diagrams).



102023

Remove the front bumper to remove the headlight washer pump (Section Headlights, page **80B-1**).

WIPING / WASHING

Headlight washer nozzle

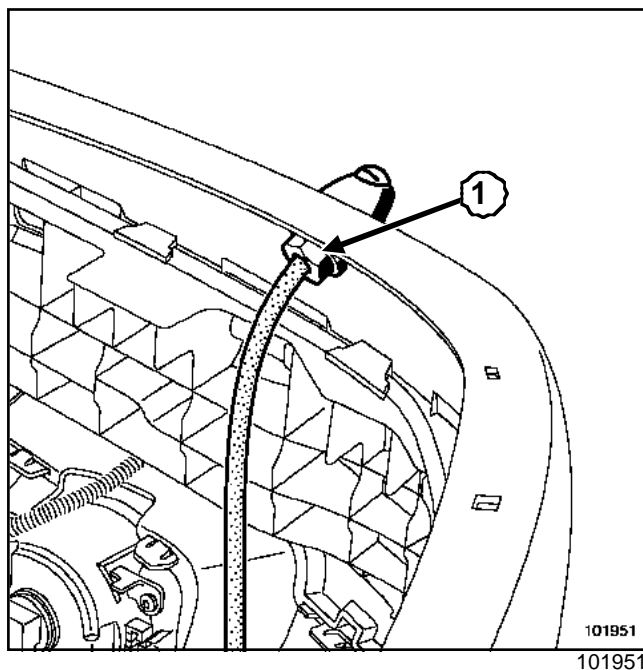
85A

Tightening torques

washer jet nut to torque	2 Nm
--------------------------	------

REMOVAL

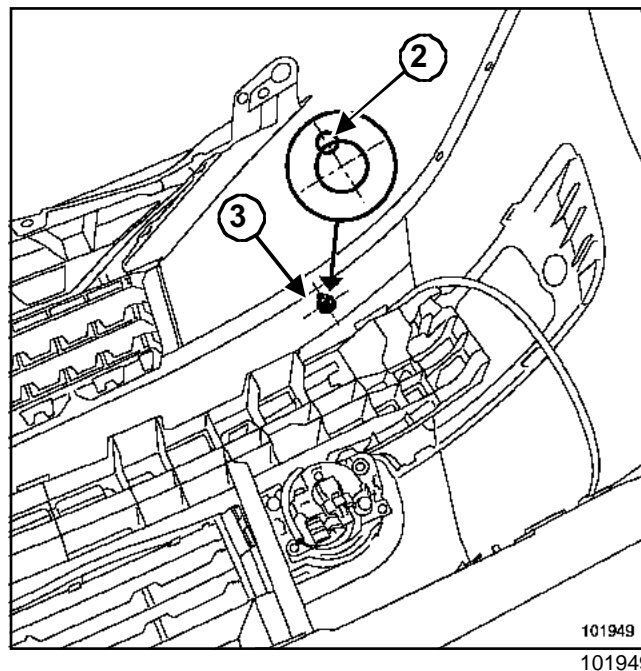
- ❑ Remove the front bumper (see **Front bumper**).



- ❑ Remove the nut (1).
- ❑ Remove the jet.

REFITTING

SPECIAL FEATURES OF A NEW BUMPER



- ❑

Note:

New bumpers are delivered undrilled. To adapt the headlight washer jets, drill according to the pre-markings, preferably before painting.

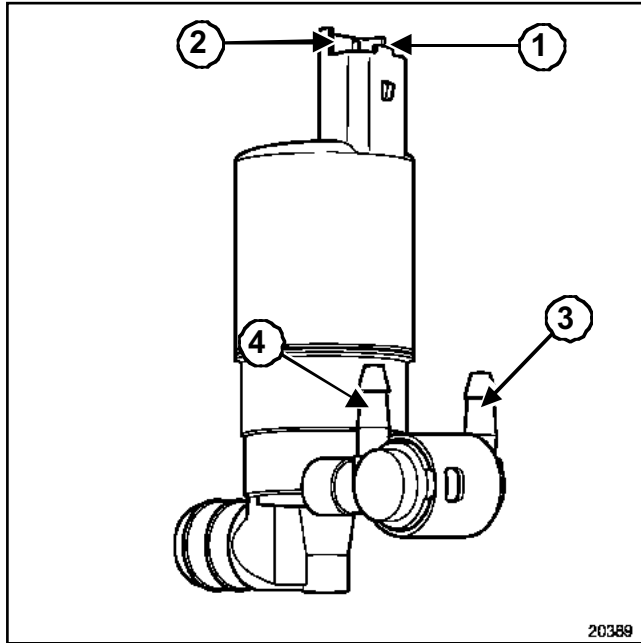
- ❑ Use a **3 mm** diameter drill , for the reference mark (2).
- ❑ Make a lead hole for the hole in the washer jet (3).
- ❑ Use a conical milling cutter to finish the hole.
- ❑ Fit the washer jet.
- ❑ Tighten the **washer jet nut to torque (2 Nm)**.

Windscreen washer: Operating principle

This vehicle is fitted with a two-way electric pump which feeds liquid from the same reservoir to either the windscreen or rear screen washer according to the electrical feed to the two tracks of the connector.

The windscreen and rear screen washers are controlled by the wiper control stalk.

There are two scenarios: scenario A and scenario B.



20389
20389

A: The pipes are fed via outlet 3, the front windscreen washer operates

Track	Description
1	Earth
2	+ 12V

B : The pipes are fed via outlet 4, the rear screen washer operates.

Track	Description
1	+ 12V
2	Earth

WIPING / WASHING

Windscreen washer pump

85A

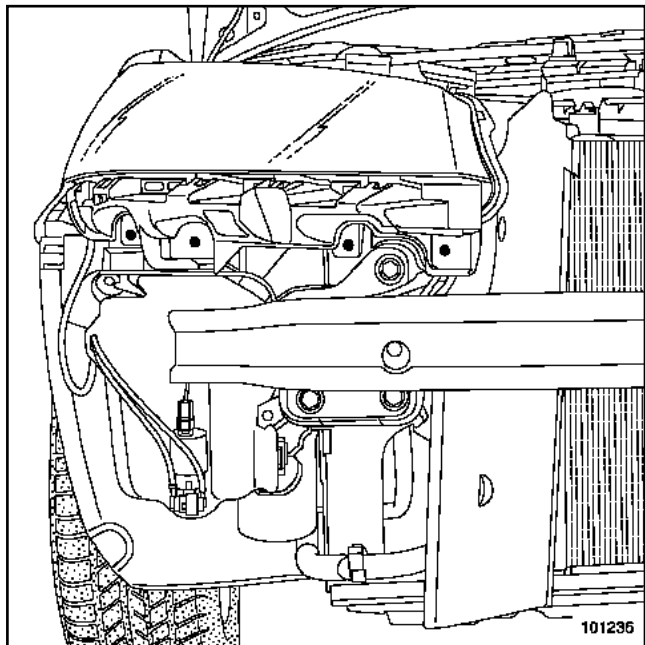
REMOVAL



Note:

The position of the windscreen washer pump is different if the vehicle is fitted with headlight washers.

I -VEHICLE WITHOUT HEADLIGHT WASHERS

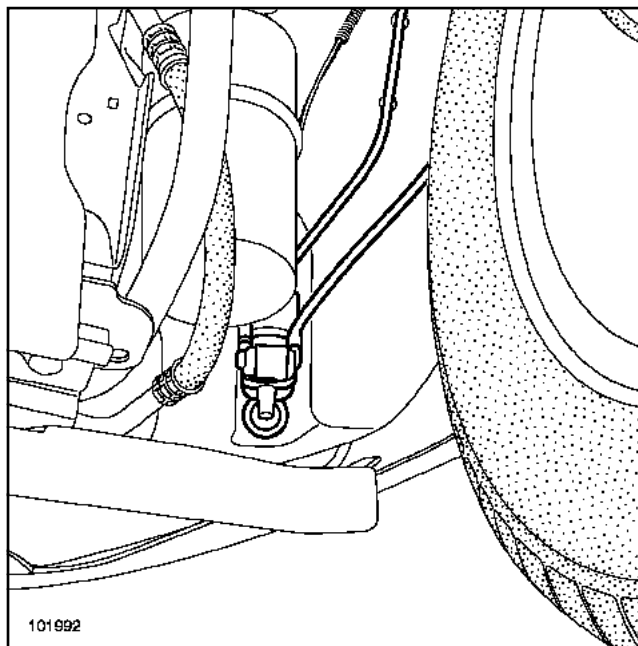


Note:

The pump is located at the front of the windscreen washer fluid reservoir.

- Remove the front bumper (see **Front bumper**) to access the windscreen washer pump.
- Repair the two pipes.
- Disconnect the two pipes.
- Remove the pump.

II - VEHICLE WITH HEADLIGHT WASHERS



Note:

The pump is located behind the screen washer reservoir.

- Remove the front wing to access the windscreen washer pump.
- Repair the two pipes.
- Disconnect the two pipes.
- Remove the pump.

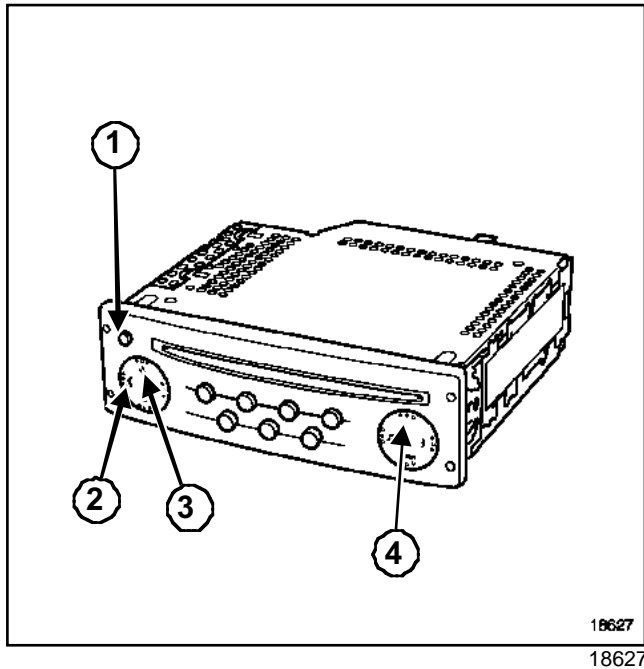
RADIO

Car radio: General

86A

Radio	CD changer	Display	Protection code
« Entry level » (cassette player)	in the boot (accessories)	Entry level « display »	Radio
	on front panel of dashboard (optional)		Radio + CD changer
« Entry level » (CD player)	in the boot (accessories)	Entry level « display »	Radio
	on front panel of dashboard (optional)		Radio + CD changer
« Top of the range » (amplifier/tuner in the boot)	in the dashboard	Top of the range « display » (multiplex multimedia connection)	radio + CD changer
Radio-navigation (Section On-board telematics system, page 83C-1)	in the boot (accessories)	Top of the range « display » (multiplex multimedia connection)	Radio
	on front panel of dashboard (optional)		Radio + CD changer

"entry level": General information



- (1) On / off « button »
- (2) Buttons « < » and « > » allow you to change the configuration mode and access the menus
- (3) Buttons « + » and « - » allow you to modify the adjustments
- (4) « Source » button

The radio features allow you to:

- listen to the radio (four geographical zones can be programmed for FM radio)
- display the name of the station using RDS,
- switch automatically to the best transmitter (AF function),
- receive traffic news (I-Traffic function),
- receive news flashes and emergency bulletins (I-News function),
- receive public safety emergency bulletins (PTY 31).

I - RADIO FUNCTION

Note:

Four geographical zones can be programmed for the radio.

The radio has three selection modes visible on the screen and accessible from the panel:

- manual mode (MANU),

- preset mode (PRESET),
- alphabetical order mode (LIST).

II - CD PLAYER FUNCTION (SINGLE CD)

The CD player can play conventional audio discs and any audio tracks on a CD-ROM.

CDs can be played in order or tracks can be chosen at random.

Note:

If a CD changer is being used, random play is possible on one disc only

III - HEAT PROTECTION

If the radio overheats and its operation is slightly impaired, the volume will be automatically lowered without the volume displayed being changed.

Should one of the speaker channels short circuit, the supply to the amplifier will be cut off.

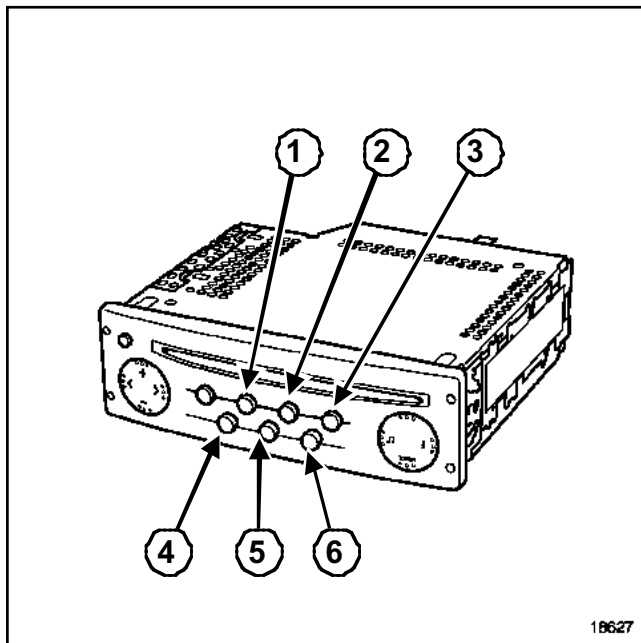
"Entry level": Code protection

The radio is protected by a four-digit code. This code can be entered via the control satellite or the car radio keypad each time the battery is disconnected.

1 - Entering the code with the steering wheel control

To enter a figure, press the bottom button on the control.

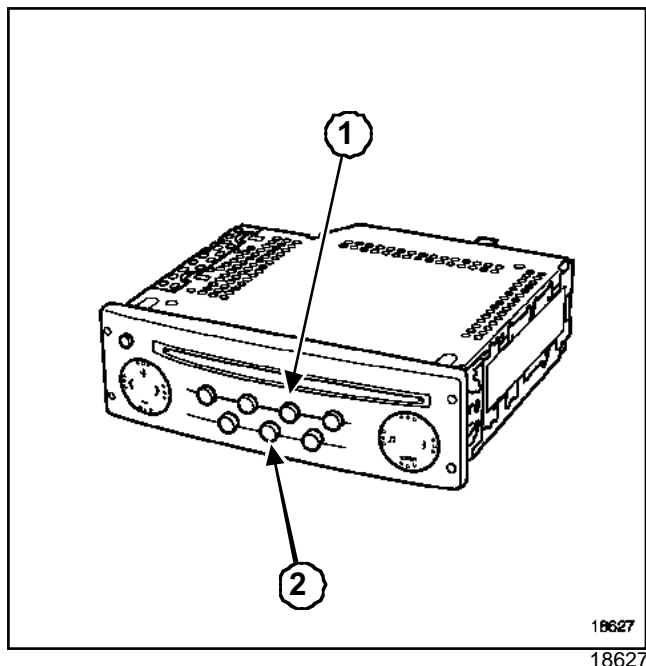
2 - Entering the code with the radio keypad



Enter the digits with buttons (1) to (4), then confirm with button (6).

Note:

- If an incorrect code is entered, the radio becomes jammed (for one minute for the first error, two minutes for the second error, four minutes for the third error up to **32 minutes** maximum).
- Once the code has been entered for the first time, certain parameters must be programmed ((Section Radio, "Entry level": Configuration, page **86A-4**)). These parameters are stored when the battery is disconnected.
- If there is a configuration error, you can return to scrambled mode by pressing the (2) and (5) buttons at the same time as switching the power on. Then wait approximately **two minutes**.



I - CONFIGURATION

Note:

To select the tuner's region of use, press buttons **(1)** and **(2)** simultaneously while switching it on. Then wait approximately **two minutes**.

Program the four-figure code:

- Select the equaliser graphs appropriate for the vehicle
 - 0: Inactive regulation,
 - 1 : Twingo,
 - 2 : Clio,
 - 3 : Mégane,
 - 4 : Laguna,
 - 5 : Vel Satis, Espace.
- Confirm by pressing and holding the lower button on the steering wheel control.
- Select the relevant zone:
 - America,
 - Japan,
 - Asia,
 - Arabia,
 - Others (Europe, Africa, Others).

- Configure the rear loudspeakers: « REAR ON / OFF ».

Note:

These configurations are not required once the secret code has been entered after the supply has been cut.

II - PARAMETERS

To switch to parameters mode (« expert » mode), press and hold the « source » button for four seconds until you hear a beep. This allows you to adjust the functions:

- activates AF mode (automatic retuning) of stations: RDS,
- variable volume according to the vehicle speed, 5 for maximum variation, 0 to deactivate the function),
- activates « Loudness » mode,
- activates « Assisted radio » mode,
- configures the number of speakers (2 or 4),
- selects manual or dynamic list.

Note:

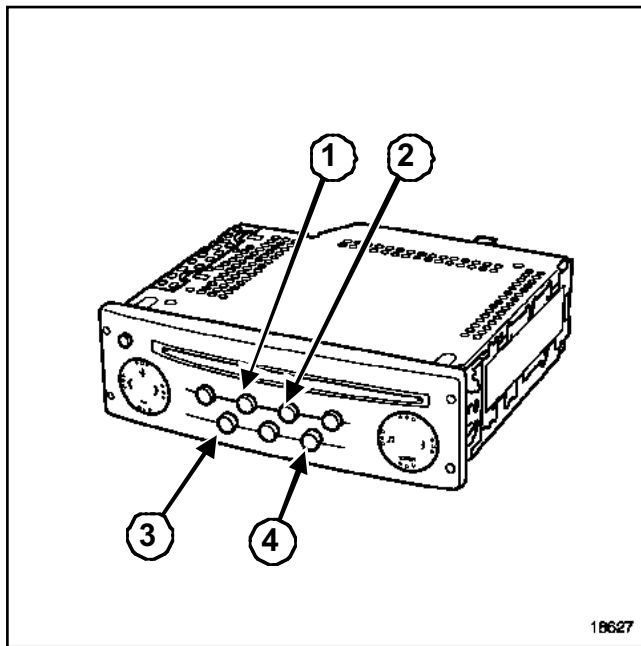
Pressing the source button once while the settings are being entered cancels the changes.

III - VOLUME CONTROL

The volume can be varied according to vehicle speed. To activate the function, select the required volume adjustment graph using « expert » mode (press and hold the « source » button until you hear a beep): 5 for maximum adjustment, 0 for no adjustment.

Note:

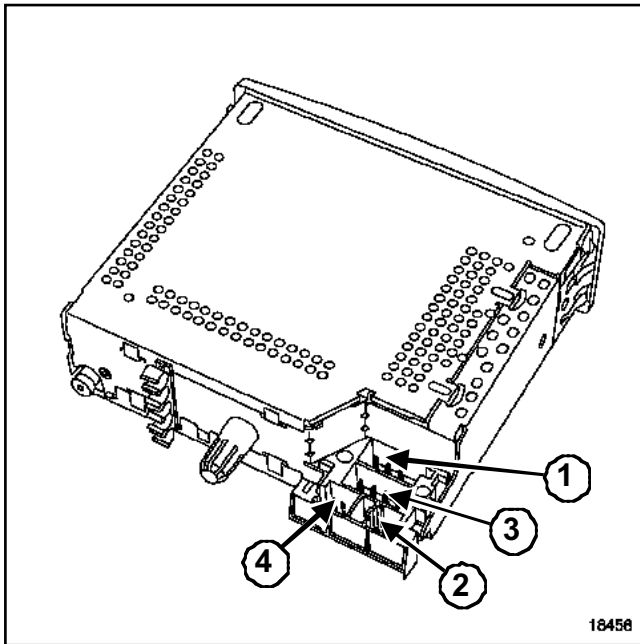
- Check that the radio is correctly connected for this function to be operational.
- The radio is equipped with a graphic equaliser according to the vehicle. To modify the vehicle type (see « Configuration »).



18627

The self-test mode checks some of the main functions:

- loudspeaker test: the loudspeakers are supplied one by one by pressing buttons (2) and (3) simultaneously. The display allows you to check the correspondance. Compare the signals issued by each loudspeaker,
- reception level test (after frequency display): when buttons (1) and (4) are pressed simultaneously, the display gives the radio reception quality (9 or a letter = good reception, 3 or less = poor reception, 2 = loss of stereo).



18458
18458

Black connector (1)

Track	Description
1	Vehicle speed signal
2	Not used
3	Mute signal
4	Battery supply
5	Aerial amplifier supply / display
6	Lighting supply
7	Accessories supply
8	Earth

Yellow connector (2)

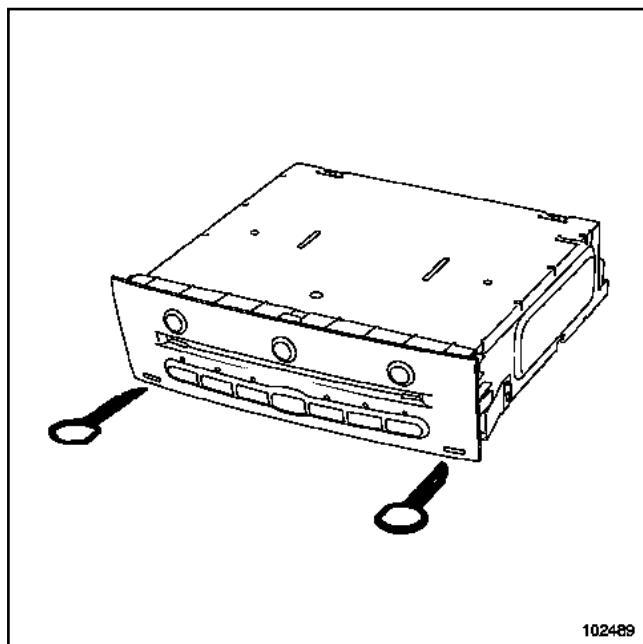
Track	Description
1	Display connection (track 13)
2	Display connection (track 14)
3	Display connection (track 15)
4	Not used
5	Radio on signal + display (track 12)
6	Earth / shielding (track 11)

Black connector (3)

Track	Description
1	+ rear right-hand loudspeaker
2	- rear right-hand loudspeaker
3	+ front right-hand loudspeaker
4	- front right-hand loudspeaker
5	+ front left-hand loudspeaker
6	- front left-hand loudspeaker
7	+ rear left-hand loudspeaker
8	- rear left-hand loudspeaker

Note:

- If the vehicle is equipped with navigation system, (Section On-board telematics system, page 83C-1).
- The speakers are connected in parallel on each output.
- Connector (4) is used for a CD changer connection.

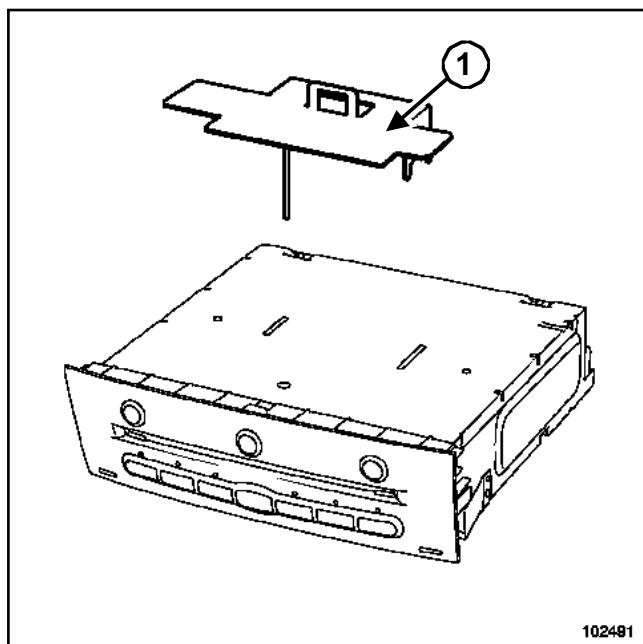
"entry level": Compact disc changer

102489

102489

WARNING

- The CD changer is supplied uncoded. As soon as it is installed into the vehicle, the CD changer is programmed with the tuner/amplifier connection code.
- The clearing code is essential in the event of removal for return to the Parts Stores.



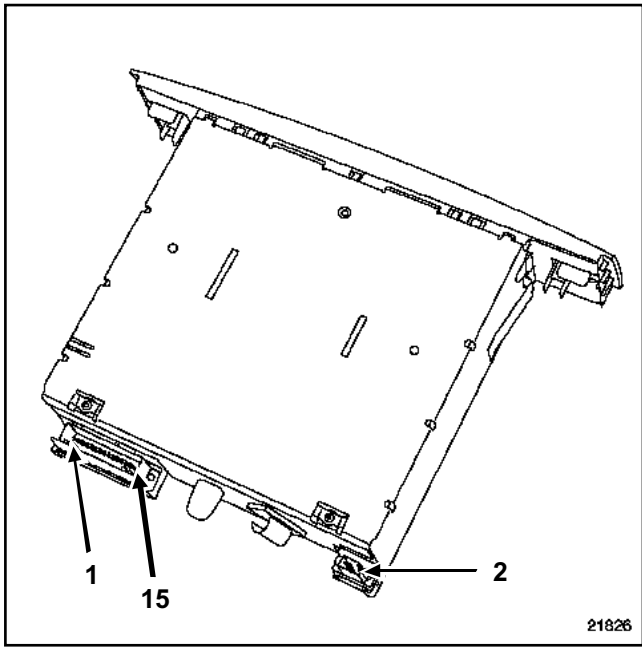
102481

102491

WARNING

It is essential to remove the support (1) before connecting the CD changer or the CD changer may be damaged.

"entry level": Compact disc changer connector



21826

Black connector

Track	Description
1	Not used
2	+ lighting
3	Not used

Green connector

Track	Description
1	Radio connection (track 15)
2	Radio connection (track 13)
3	Radio connection (track 14)
4	Radio connection (track 17)
5	Not used
6	Not used
7	Not used
8	Not used
9	Radio connection (track 19)
10	Radio connection (track 18)
11	Radio connection (track 20)
12	Not used

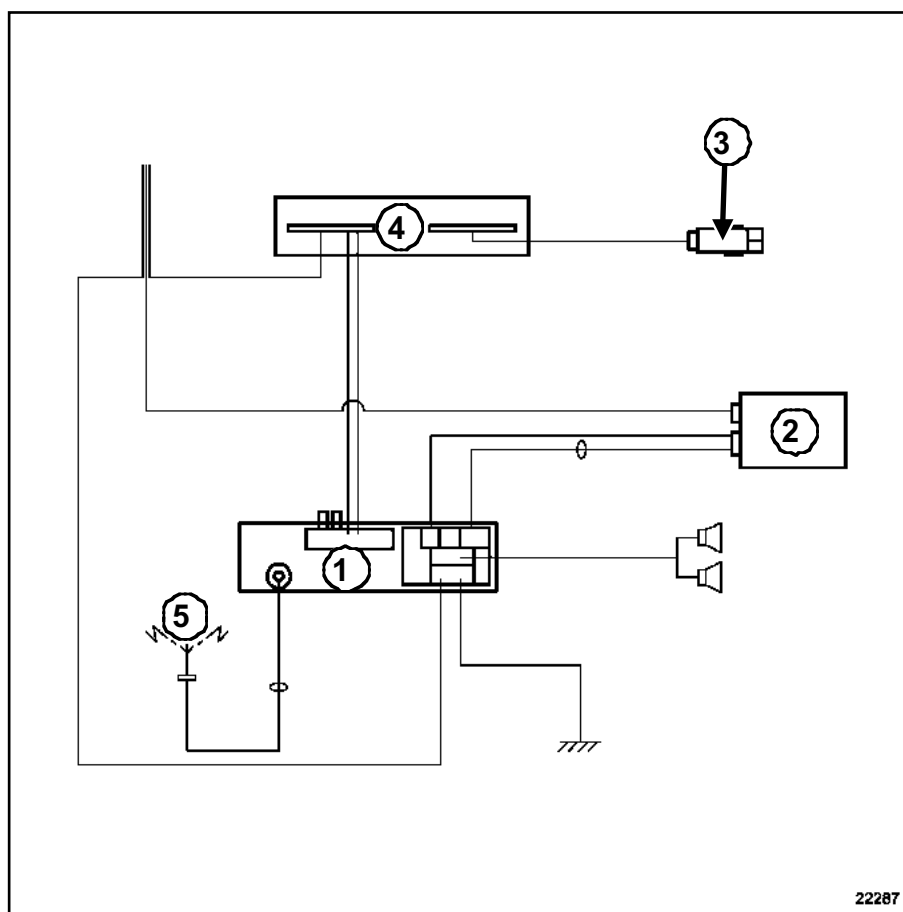
Track	Description
13	Radio / shielding
14	Not used
15	Radio connection (track 16)

"top of the range": General information

The amplifier/tuner includes a test menu for repair purposes ((Section Radio, "Entry Level": Self-test, page **86A-5**)).

WARNING

- Never carry out work on a system component.
- Any faulty component must be replaced.



22287
22287

- (1) Amplifier/tuner
- (2) CD changer
- (3) Satellite control on the steering wheel
- (4) Offset display on the dashboard
- (5) Amplified radio aerial

If the vehicle is equipped with navigation system (Section On-board telematics system, page **83C-1**).

The radio allows operation without accessories position for approximately **20 minutes**. The system beeps then switches off.

I - RADIO FUNCTION

This system uses two different tuners:

- the radio tuner,
- the tuner for « Traffic information » system messages.

The radio tuner has three selection modes indicated on the screen and accessible from the front panel:

- manual mode (MANU),
- preset mode (PRESET),
- manual or dynamic mode alphabetical (LIST) (see the Settings section).

II - CD READER FUNCTION

The CD changer can hold up to 6 discs (insert through the front panel).

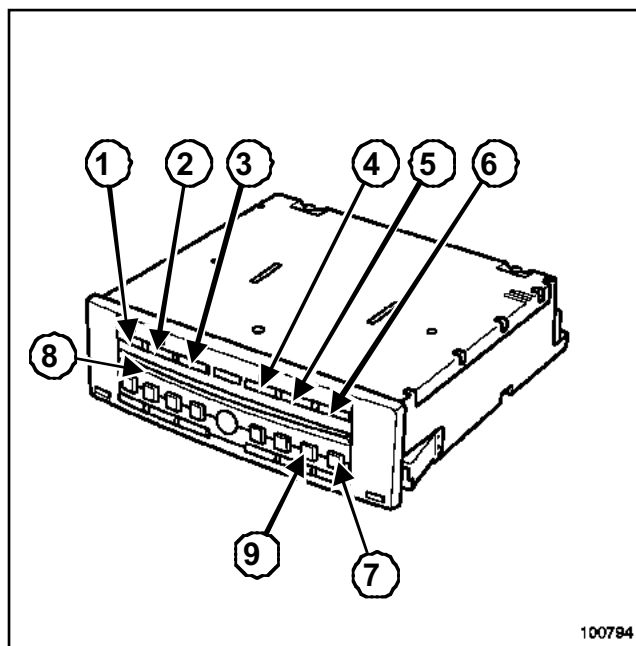
The CD changer can play conventional compact discs and any audio tracks on a CD-ROM.

A disc can be played in order or randomly.

Note:

- Random play can only be applied to the tracks on one disc. When one CD is finished, random play continues on the next disc.
- The « mute » function stops the CD playing and the display shows « pause » (depending on the version).

1 - Inserting compact discs



100794

100794

Press the (7) « LOAD » button

Note:

« SELECT » is displayed.

Use buttons (1) to (6) to select the required position of the CD.

Note:

« WAIT » is displayed, then the message « INSERT ».

Insert the disc into the slot (8).

Note:

« LOAD » is displayed, then the CD plays.

Repeat this process for other CDs.

2 - Ejecting compact discs

Press button (7).

Use buttons (1) to (6) to select the CD to eject.

Note:

- The disc ejects. If the disc is still present after approximately **15 seconds** the disc is automatically re-inserted.
- The sound is automatically switched off during all of these processes.
- All CDs can be ejected by pressing the (9) « ALL » button.

"top of the range": Operation**III - SPECIAL NOTE CONCERNING TIME SETTING BY SATELLITE**

Press and hold down the « source - » button (top right) to enter time setting mode.

Note:

The hours flash on the display.

Press buttons « + » and « - » to adjust the hour.

Press the source « - » button to confirm the data entry.

Note:

The minutes flash on the display.

Press buttons « + » and « - » to adjust the minutes.

Press the « source - » button to confirm the data entry and quit the time setting.

IV - VOLUME CONTROL

When the audio equipment is switched on, the volume is the same as when it was switched off, with a maximum volume of 15.

Note:

- The « mute » function stops the CD from playing.
- The « Traffic Information » messages are played at the audio equipment's current volume setting. If the volume is altered during a message, the setting is stored until it is reset.
- If the radio overheats and its operation is slightly impaired, the volume will be automatically lowered without the volume displayed being changed.
- Should one of the speakers short circuit, the supply to the amplifier will be cut off.

1 - Volume correction

The volume can be corrected according to vehicle speed. To activate the function, select the required volume control with « expert » mode (press and hold the « source » button until you hear a beep): 5 for maximum change, 0 for no change.

2 - Balance control

The audio equipment has a range of settings depending on the type of music being played: CLASSIC / JAZZ / POP / VOICE / FLAT / PERSO.

3 - Balance/fader

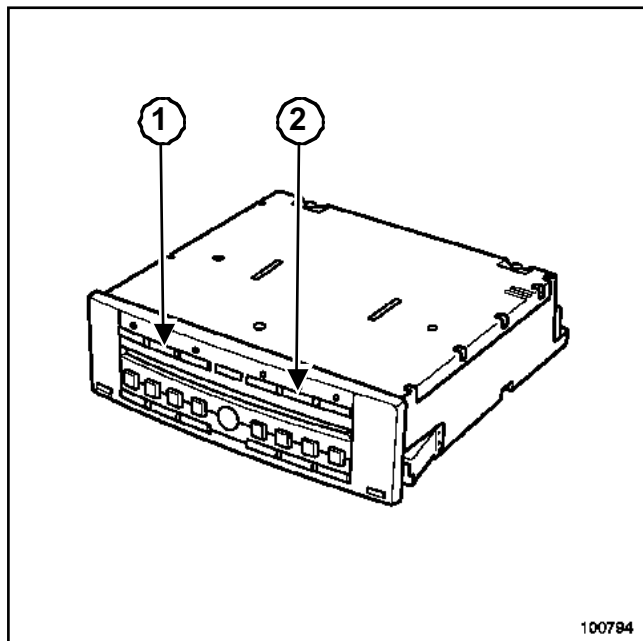
For a simplified operation, the audio equipment allows all or some of the speakers to be activated or deactivated:

- < FRONT >: only the front speakers work,
- < FRONT: only the front left-hand speaker works,
- FRONT >: only the front right-hand speaker works,
- < REAR >: only the rear speakers work,
- ALL CAR: all the speakers work (balance and fader centred),
- PERSO: customised settings.

4 - Auxiliary output

In the « EXPERT » menu, the operating mode of the auxiliary source may be chosen:

- AUX ON: scrolls through source selection (radio, CDs, aux, radio, etc), even if there is no source signal to the radio,
- AUX AUTO: automatic connection to the radio when a source signal appears,
- AUX OFF: suppresses the source (radio, CD, radio, etc).

"top of the range": configuration

100794

I - CONFIGURATION

Radio configuration is only required the first time the security code is entered. It is then stored in case the supply is cut.

select the tone graph appropriate for the vehicle the default configuration of the system is « 0 ».

Confirm by pressing and holding the lower button on the steering wheel control.

Select the relevant zone:

- America,
- Japan,
- Asia,
- Arabia,
- Others (Europe, Africa, Others).

Note:

These configurations can be modified: press and hold the « source » button on the front panel or buttons (1) and (2) while switching the radio on. Then wait approximately **two minutes**.

II - PARAMETERS

To switch to « parameters » mode « (expert » mode), press and hold the « source » button for four seconds until you hear a beep. This allows you to adjust the functions:

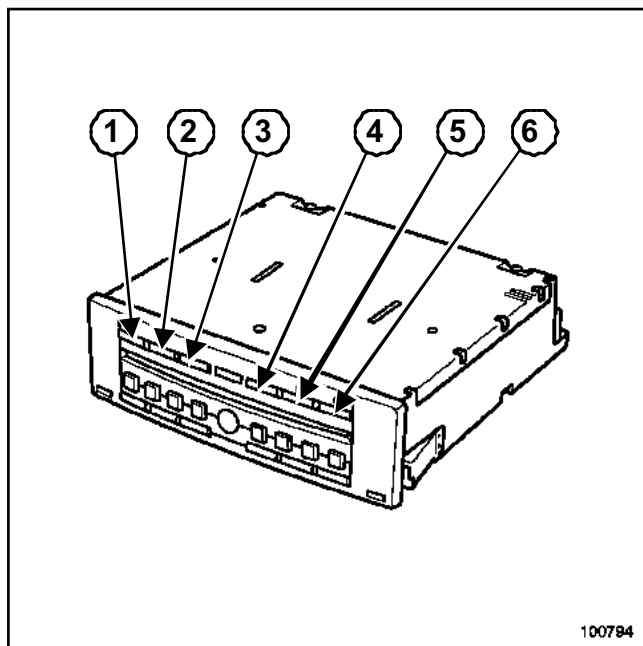
- activates AF mode (automatic retuning of stations):

- variable volume according to the vehicle speed, 5 for maximum variation, 0 to deactivate the function),
- activates « Loudness » mode,
- activates « Assisted radio » mode.
- activates the « AUX » (Auxiliary) function,
- Activates storage of data according to RENAULT card: CARD ON / OFF. The radio must be accompanied by the navigation system for this function to be operational.

Note:

Pressing the « source » button once while the settings are being entered cancels the changes.

"top of the range": Protection code



100784

100794

Two components of the audio equipment are protected by a code:

An initial four-digit protection code is linked to the amplifier/tuner. This code is required each time the supply is cut off. This code can be entered via the control satellite.

The display shows « code » then « 0000 ».

Note:

- If an incorrect code is entered, the radio beeps, displays « code » and locks (**1 minute** for the first error, **2 minutes** for the second error, **4 minutes** for the third error... maximum **32 minutes**).
- Once the code has been entered for the first time, certain parameters must be programmed (Section Radio, "top of the range": configuration, page **86A-12**). These parameters are stored when the battery is disconnected.
- You can return to scrambled mode by pressing buttons (2) and (5) at the same time as switching the power on. Then wait approximately **two minutes**.
- The radio can operate for approximately **2 minutes** regularly emitting beeps if the code is not entered.

If the vehicle is equipped with a code in the front panel, a code is exchanged between the CD changer and the amplifier/tuner.

- If a new CD changer is fitted, the amplifier/tuner code is programmed when the battery or CD changer is connected.

- If the amplifier/tuner is replaced, it is impossible to enter the protection code of the old amplifier/tuner connected to the CD changer. The CD changer is programmed with the code of the new amplifier/tuner.
- If the code of the old amplifier/tuner is lost, the code can be cleared with the clearing code. This code can be transmitted by techline, the server, for instance.

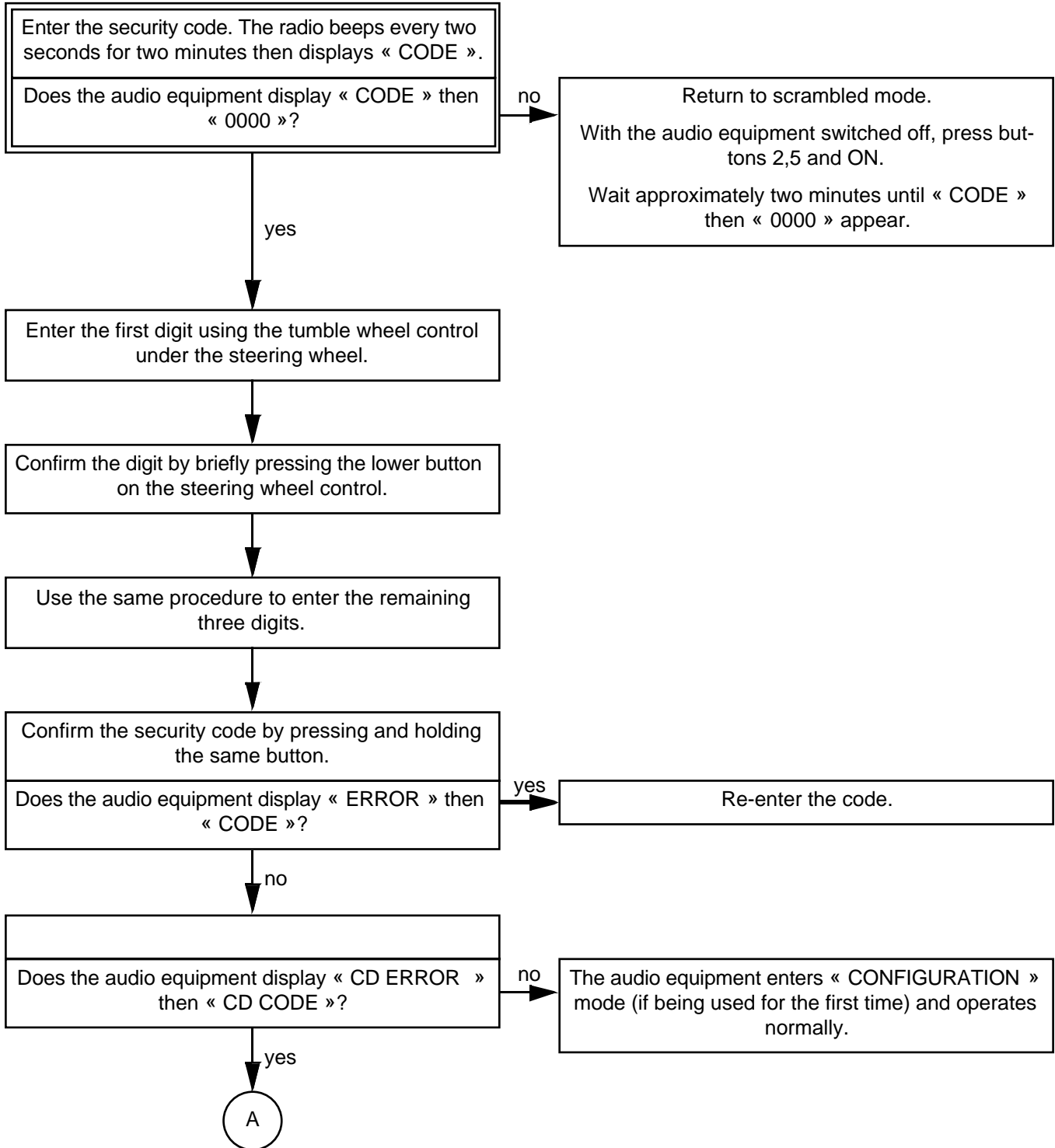
WARNING

The CD changer is supplied uncoded. The CD changer is programmed with the new amplifier/tuner code as soon as it is installed.

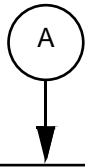
"top of the range": enter security code

CHART 1	The display shows CODE or 0000
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NOTES	
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"top of the range": enter security code

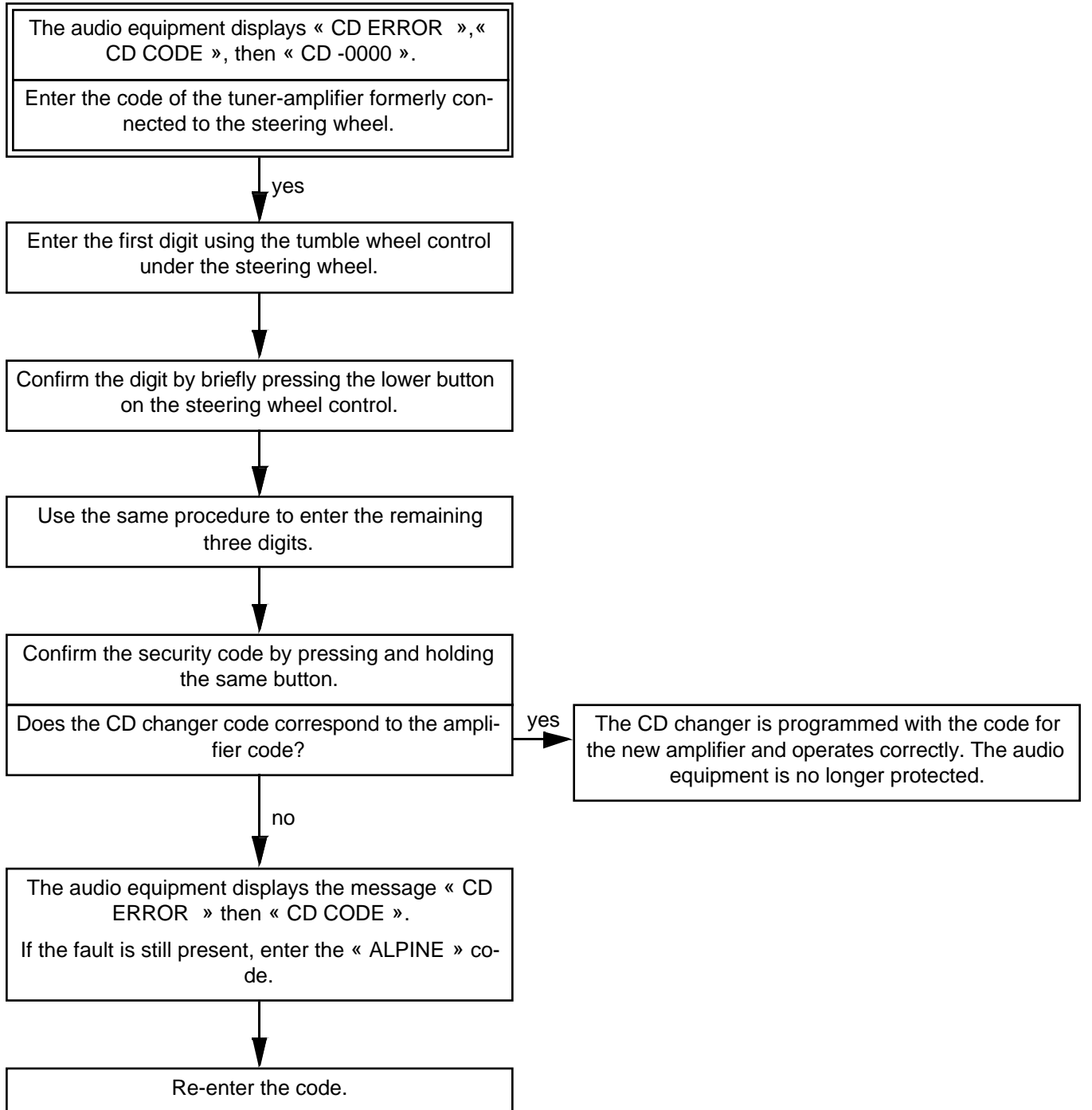


(Section **Radio**, "**top of the range**": enter security code, page)

"top of the range": enter security code

CHART 2	The display shows CD CODE
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NOTES	
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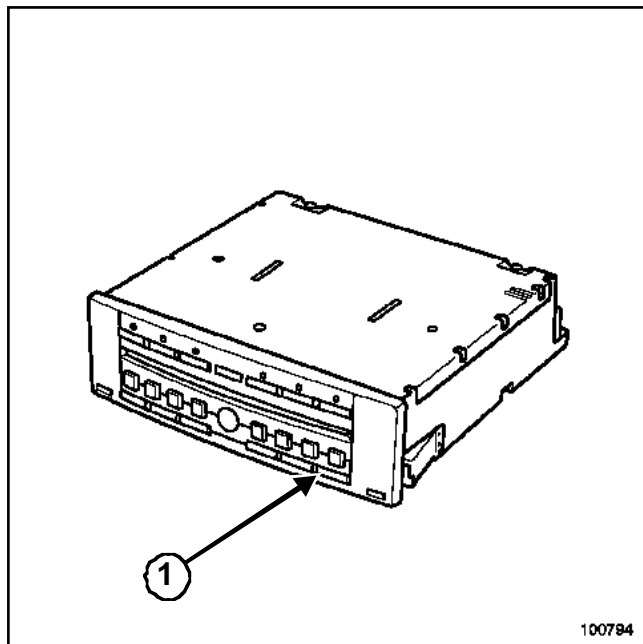


RADIO

Self diagnosis procedure

86A

Self diagnostic mode allows you to check certain main functions.



100794

100794

- « HI TEMP » message = CD changer temperature too high.

I - TESTING THE SPEAKERS

- Press and hold the « EXPERT » button.

The speakers are supplied separately. This is confirmed by the display. Compare the signals on each speaker.

II - TESTING THE LEVEL OF RECEPTION

- Fault finding can be performed on the tuner by pressing the « EXPERT » button for a second time.
 - The first four digits indicate the frequency of the station,
 - The fifth indicates the reception quality of the signal (9 or a letter = good reception, 3 or less = poor reception = loss of stereo).

III - OPERATION OF THE CD CHANGER

- CD changer operation is shown by indicator lights showing the presence of CDs on the front panel, and by the display:
 - CD indicator light off = no CD,
 - Flashing CD indicator light = CD being inserted,
 - « CD ERROR » message = no audio track on the CD,
 - « LINK_ERR » message = connection between the CD changer and the amplifier / tuner cut off,

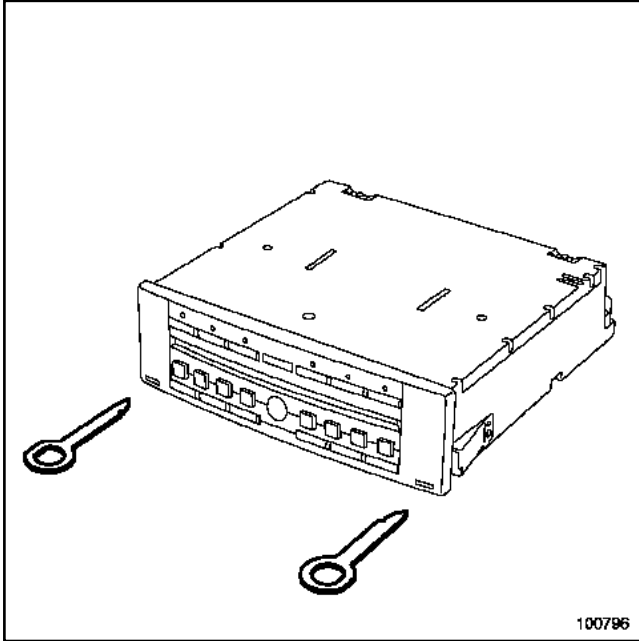
"top of the range": Compact disc changer

WARNING

- The CD changer is supplied uncoded. As soon as it is installed into the vehicle, the CD changer is programmed with the tuner/amplifier connection code.
- The clearing code is required if the security code is lost.

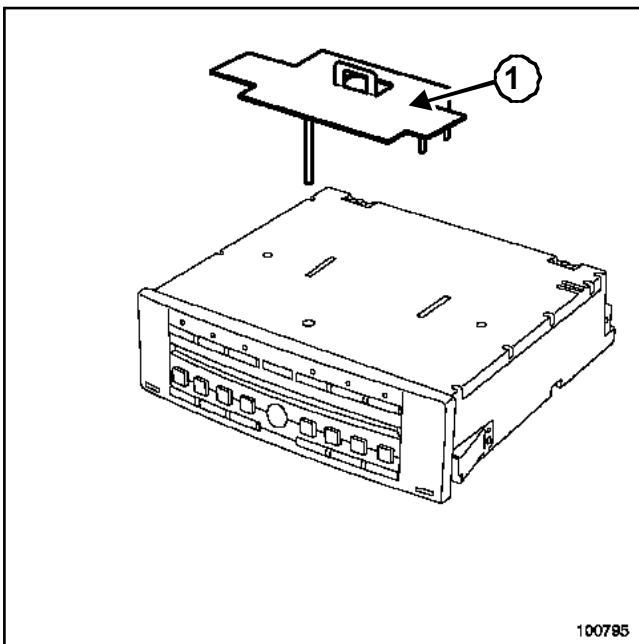
WARNING

It is essential to remove the support (1) before connecting the CD changer or the CD changer may be damaged).



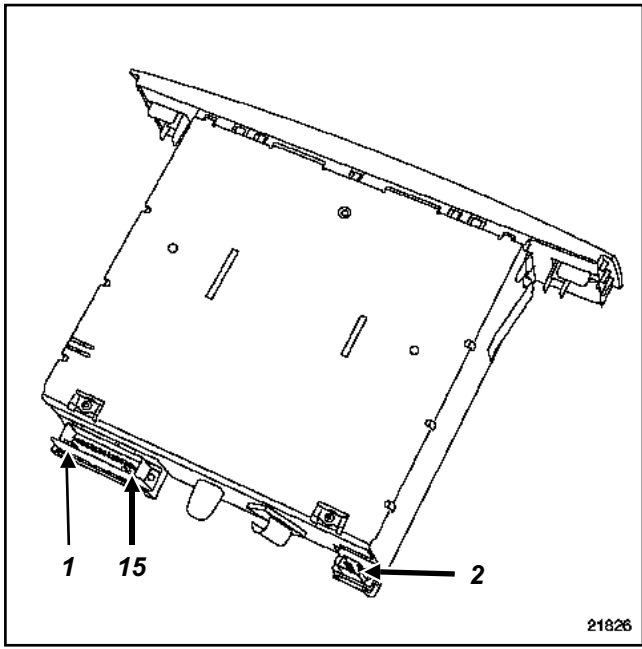
100796

The CD changer front panel is removed using tool (Ms. 1639).



100795

"top of the range": Compact disc changer connector



21826

Track	Description
13	Amplifier connection (track 15)
14	Not used
15	Amplifier connection (track 16)

Black connector

Track	Description
1	Not used
2	+ lighting
3	Not used

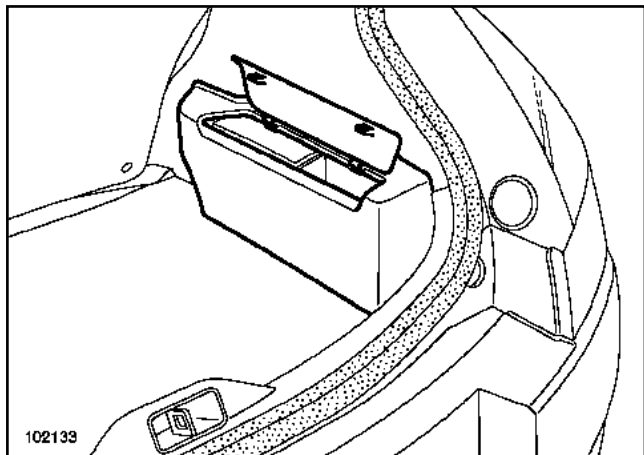
Green connector

Track	Description
1	Amplifier connection (track 15)
2	Amplifier connection (track 13)
3	Amplifier connection (track 14)
4	Amplifier connection (track 17)
5	Amplifier connection (track 4)
6	Amplifier connection (track 3)
7	Amplifier connection (track 2)
8	Amplifier connection (track 1)
9	Amplifier connection (tracks 19 and 20)
10	Amplifier connection (track 18)
11	Amplifier connection (tracks 19 and 20)
12	Amplifier connection (track 15)

Essential special tooling

Ms. 1373

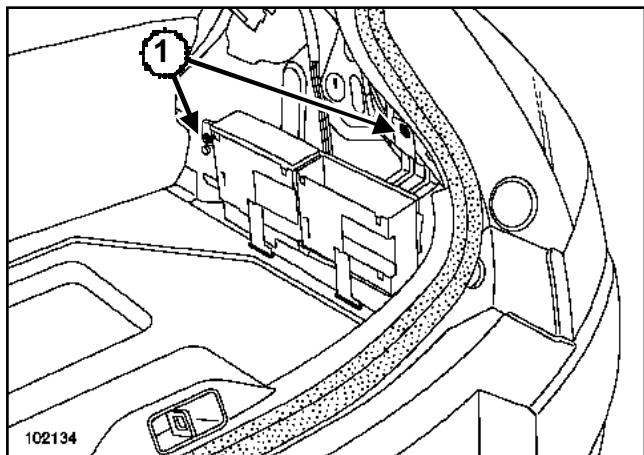
Philips radio removal tool



102133

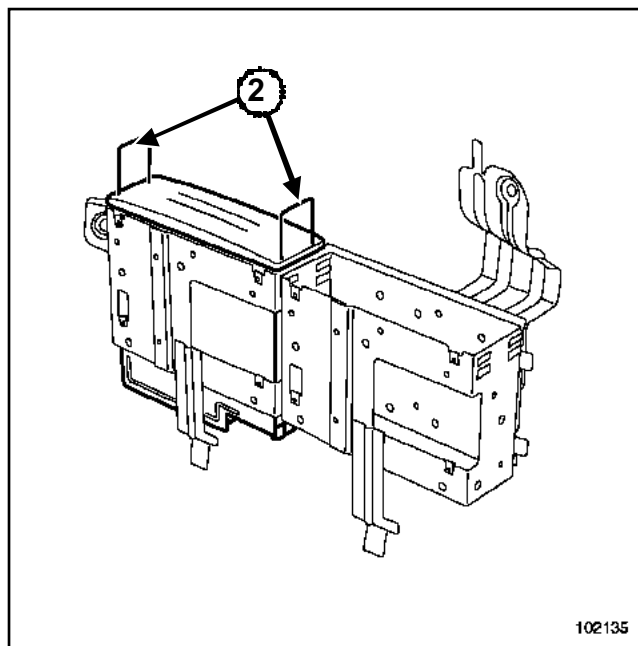
The amplifier incorporates the tuner function. The amplifier/tuner is mounted onto a special support in the boot.

REMOVAL



102134

- Remove:
 - the rear right-hand trim (**Body interior trim** Section) in **Workshop Repair Manual 365 - Bodywork**,
 - the mounting bolts (1) on the amplifier/tuner support.
- Slightly raise the mounting to remove it.
- Disconnect the connectors from the amplifier/tuner.



102135

102135

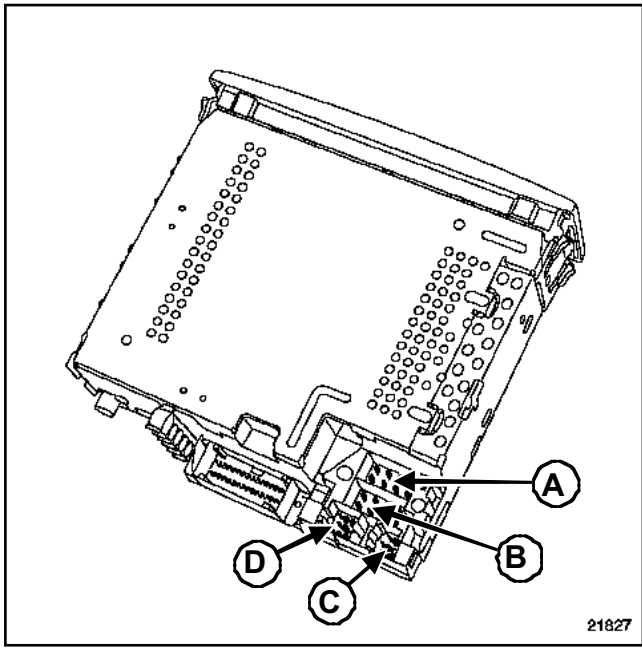
- Remove the amplifier/tuner from its mounting using tool (Ms. 1373)(2).

REFITTING

- To refit, proceed in the reverse order of removal.

In the event that the amplifier/tuner has to be replaced, it is essential to enter the code of the vehicle's old amplifier/tuner (Section Radio, "top of the range": Protection code, page **86A-13**).

"top of the range": tuner-amplifier connection



Black connector (A)

Track	Description
1	Vehicle speed signal
2	Not used
3	Voice synthesiser signal (mute)
4	+ battery
5	Aerial amplifier supply (except navigation)
6	Not used
7	+ accessories
8	Earth

Black connector (B)

Track	Description
1	+ rear right-hand loudspeaker
2	- rear right-hand loudspeaker
3	+ front right-hand loudspeaker
4	- front right-hand loudspeaker
5	+ front left-hand loudspeaker
6	- front left-hand loudspeaker

Track	Description
7	+ rear left-hand loudspeaker
8	- rear left-hand loudspeaker

Yellow connector (C)

Track	Description
1	CD changer connection (track 8)
2	CD changer connection (track 7)
3	+ accessories CD changer (track 6)
4	CD changer connection (track 5)
5	Not used
6	Not used

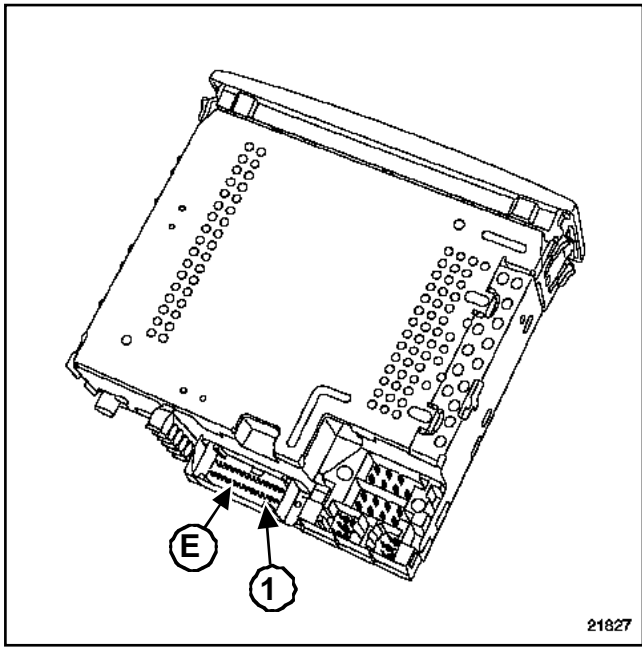
Blue connector (D)

Track	Description
13	CD changer connection (track 3)
14	CD changer connection (track 2)
15	CD changer connection (tracks 1, 12 and 13)
16	CD changer connection (track 15)
17	CD changer connection (track 4)
18	CD changer connection (track 10)
19	CD changer connection (tracks 9 and 11)
20	CD changer connection (tracks 9 and 11)

WARNING

It is essential to program the old amplifier/tuner code into the new one if it is replaced(Section Radio, "top of the range": Protection code, page 86A-13).

"top of the range": tuner-amplifier connection



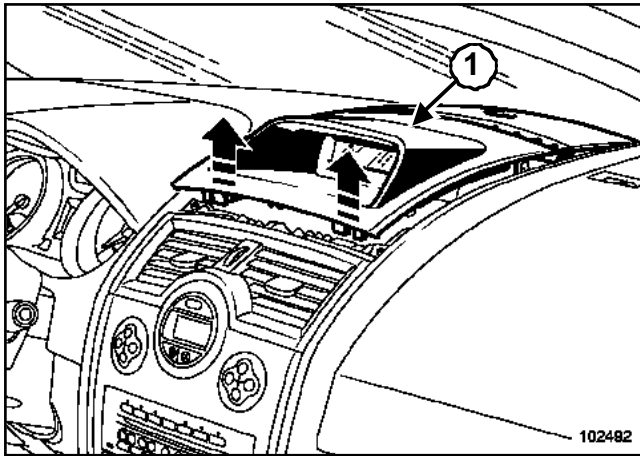
21827
21827

Red connector (E)

Track	Description
1	Multiplex connection to the display (track 14) (except navigation)
2	Multiplex network to the display (track 15) (except navigation)
3	Shunt track 5 (except navigation)
4	Shunt track 6 (except navigation)
5	Shunt track 3 (except navigation)
6	Shunt voie 4 (except navigation)
7	Not used
8	Radio on/off signal to the display (except navigation)
9	Radio on/off signal to the display (except navigation)
10	Not used
11	Not used
12	Not used
13	Not used
14	Not used
15	Not used

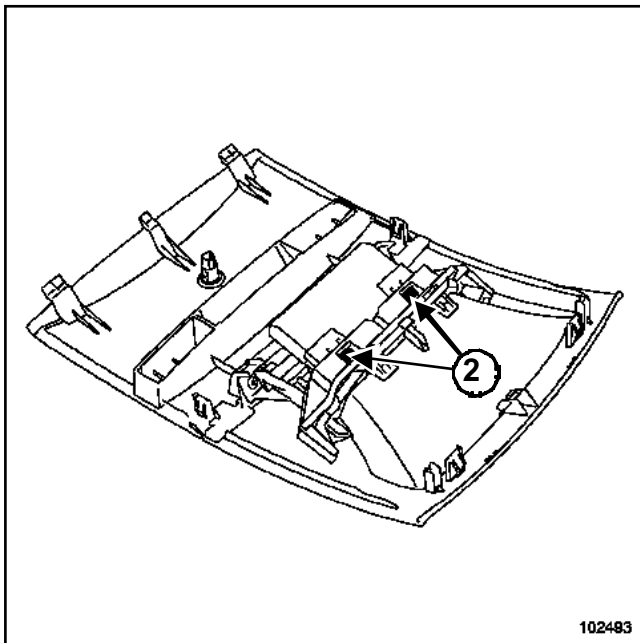
Track	Description
16	Not used
17	Not used
18	Not used
19	Not used
20	Not used
21	Not used
22	Not used
23	Not used
24	Not used
25	Not used
26	Not used
27	Not used
28	Not used
29	Not used
30	Not used

REMOVAL



102492

- Unclip the upper section (1) of the dashboard in the direction shown in the picture.

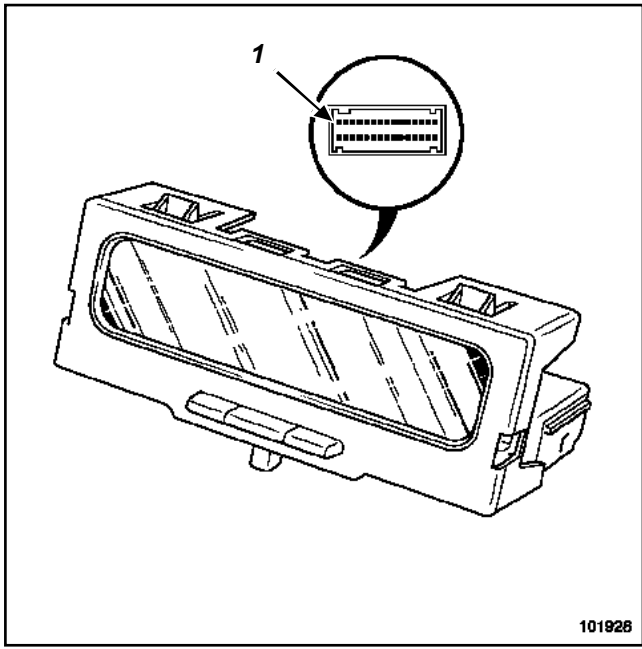


102493

- Unclip the display by pressing (2).
- Disconnect the connector.

REFITTING

- To refit, proceed in the reverse order of removal.



Red connector (30-track)

Track	Description
1	Not used
2	Not used
3	Not used
4	External temperature input
5	Earth
6	Lighting
7	Lighting dimmer
8	+ accessories
9	+ battery
10	Not used
11	Earth (radio track 6)
12	Radio on button (track 5)
13	Radio connection (track 1)
14	Radio connection (track 2)
15	Radio connection (track 3)
16	Satellite control connection (track 2)
17	Satellite control connection (track 3)

Track	Description
18	Satellite control connection (track 6)
19	Satellite control connection (track 5)
20	Satellite control connection (track 4)
21	Satellite control connection (track 7)
22	Not used
23	Not used
24	Not used
25	Not used
26	Not used
27	Not used
28	Not used
29	Not used
30	Not used

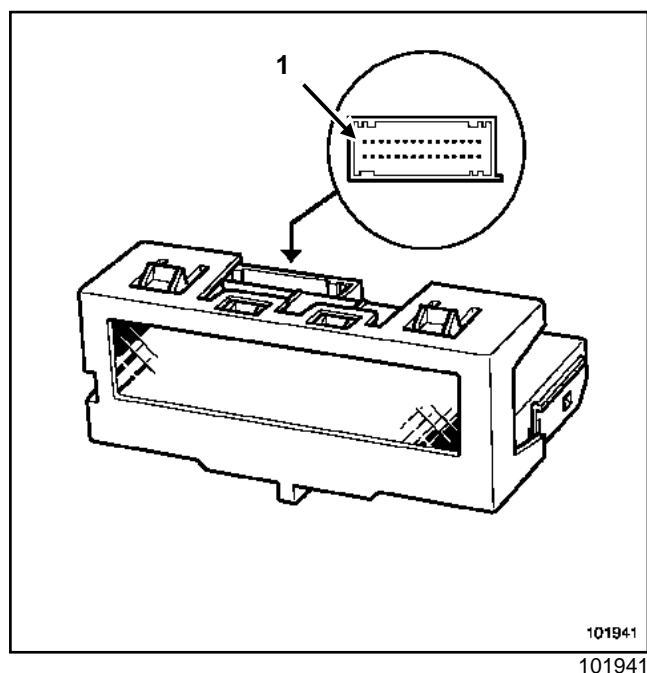
Note:

If the vehicle is equipped with a navigation system, (Section On-board telematics system, page 83C-1).

RADIO

Top-of-the-range display

86A



Green connector (30-track)

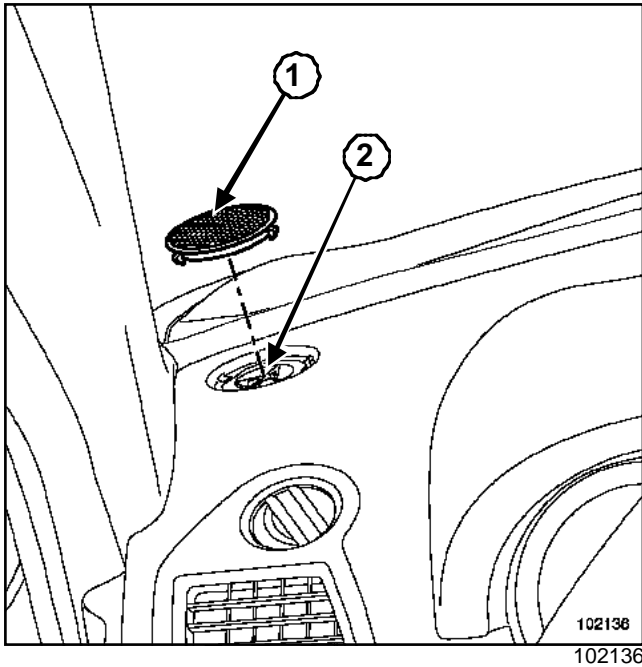
Track	Description
1	Not used
2	Not used
3	Not used
4	External temperature input
5	Earth
6	Lighting
7	Lighting dimmer
8	+ accessories
9	+ battery
10	Not used
11	Not used
12	Amplifier/tuner connection (track 8)
13	Not used
14	Not used
15	Not used
16	Satellite control connection (track 2)
17	Satellite control connection (track 3)

Track	Description
18	Satellite control connection (track 6)
19	Satellite control connection (track 5)
20	Satellite control connection (track 4)
21	Satellite control connection (track 7)
22	Not used
23	Not used
24	Not used
25	Not used
26	Not used
27	Not used
28	Not used
29	Amplifier/tuner connection (track 2)
30	Amplifier/tuner connection (track 1)

Note:

If the vehicle is equipped with a navigation system, (Section On-board telematics system, page **83C-1**).

REMOVAL

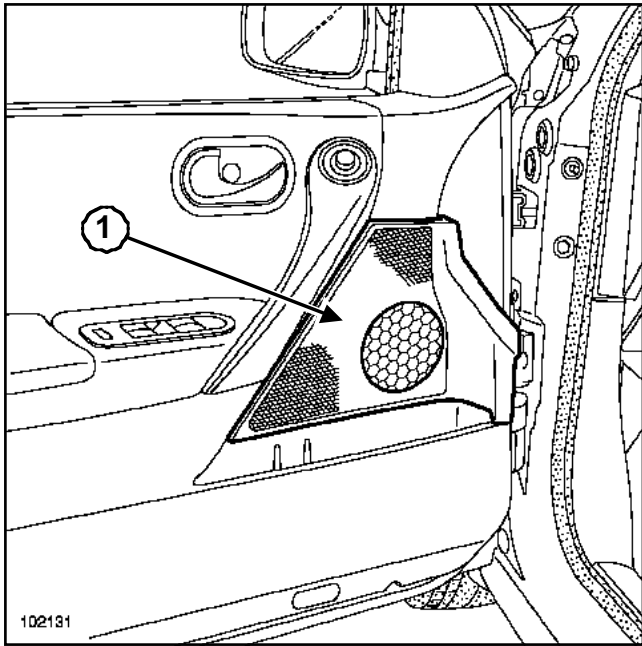


- Unclip:
 - the grille(1),
 - the tweeter (2).
- Disconnect the tweeter connector.

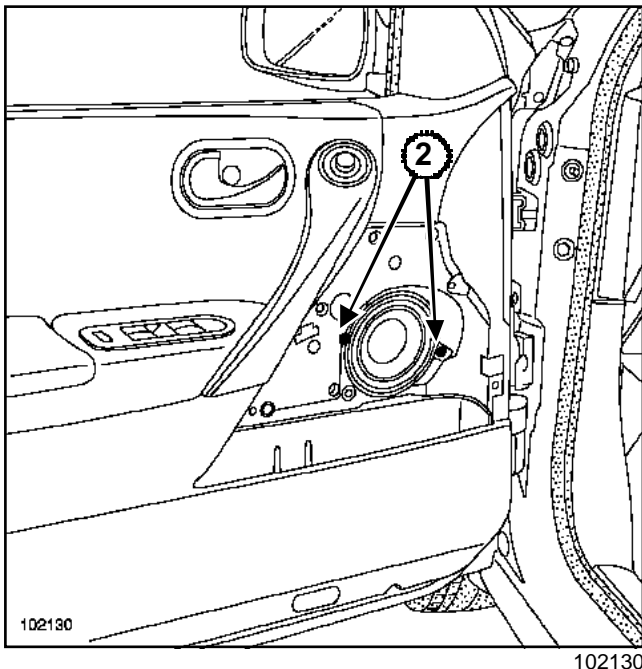
REFITTING

- To refit, proceed in the reverse order of removal.

REMOVAL



- Unclip the grille (1).

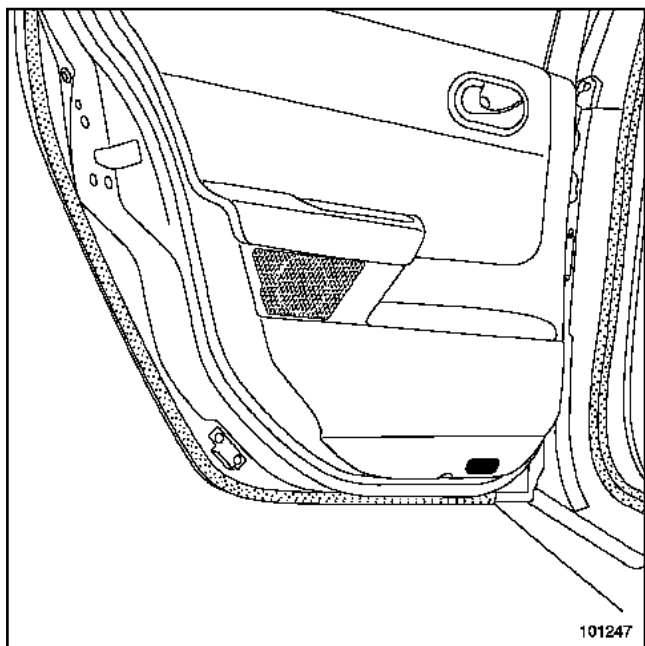


- Remove:
 - the speaker mounting bolts (2),
 - the speaker.
- Disconnect the speaker connector.

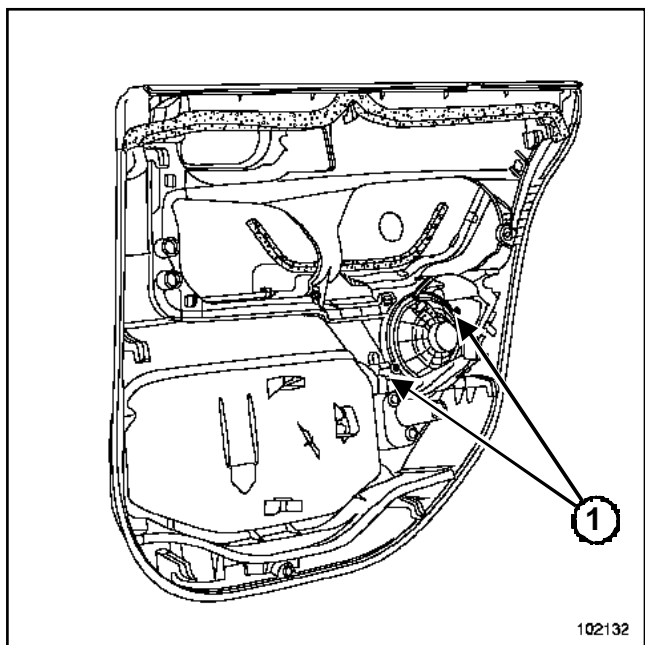
RADIO

Rear speakers

86A



101247
101247



102132
102132

REFITTING

- To refit, proceed in the reverse order of removal.

Note:

Gently tighten the speaker mounting bolts.

- Remove:

- the rear door trim (**Side opening element lining-Section**) in **Workshop Repair Manual 365 - Bodywork**,

- the speaker mounting screws.(1)

- remove the loudspeaker.

- Disconnect the speaker connector.

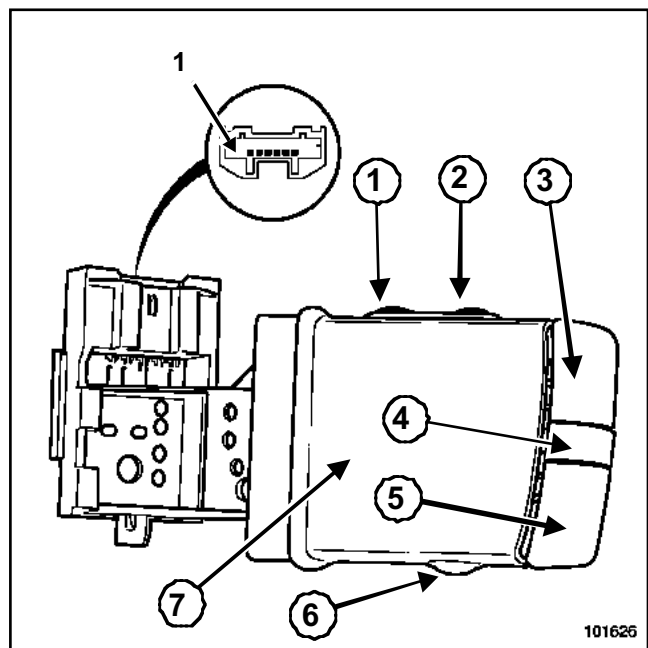
RADIO

Understeering control

86A

The radio control on the steering wheel is connected to the offset display or to the CCU (Section On-board telematics system, page 83C-1).

I - CONNECTION



Track	Description
1	Not used
2	Display connection (track 16)
3	Display connection (track 17)
4	Display connection (track 20)
5	Display connection (track 19)
6	Display connection (track 18)
7	Display connection (track 21)
8	Not used

II - OPERATION

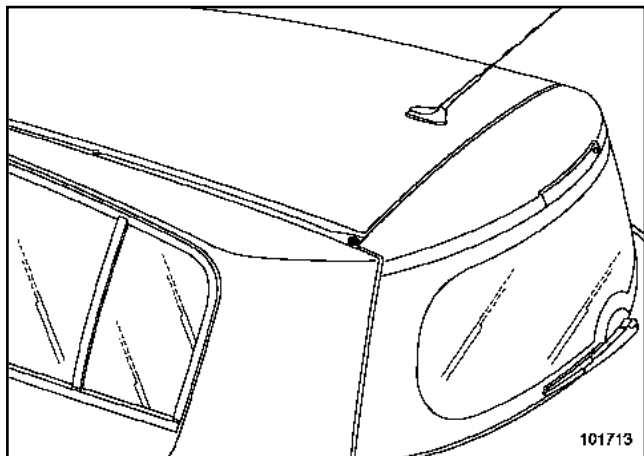
Action	Track	Values Ω
Top left-hand button (1)	5 and 4	Approximately 0.5
Top right-hand button (2)	3 and 4	Approximately 0.5

Action	Track	Values Ω
Volume +-(3)	1 and 6	Approximately 0.5
Pause button (4)	1 and 4	Approximately 0.5
Volume - (5)	5 and 6	Approximately 0.5
Base button (6)	3 and 6	Approximately 0.5
Tumblewheel (7) (first position)	1 and 2	Approximately 0.5
Tumblewheel (7) (second position)	5 and 2	Approximately 0.5
Tumblewheel (7) (third position)	3 and 2	Approximately 0.5

RADIO

Aerial Operating principle

86A



101713

Vehicles are fitted with one of three levels of aerials depending on the reception:

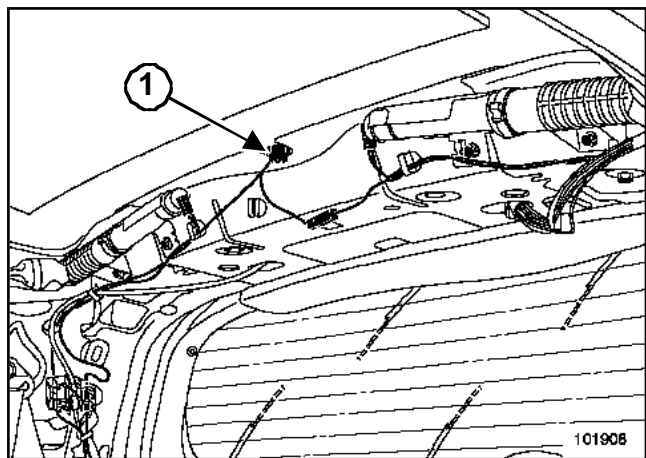
- radio;
- radio + telephone,
- radio + telephone + satellite.

The aerial with the integral amplifier is located on the rear roof.

The amplifier is supplied:

- by the radio for vehicles not fitted with navigation assistance,
- by the CCU in vehicles fitted with navigation assistance (Section On-board telematics system, page **83C-1**).

REMOVAL

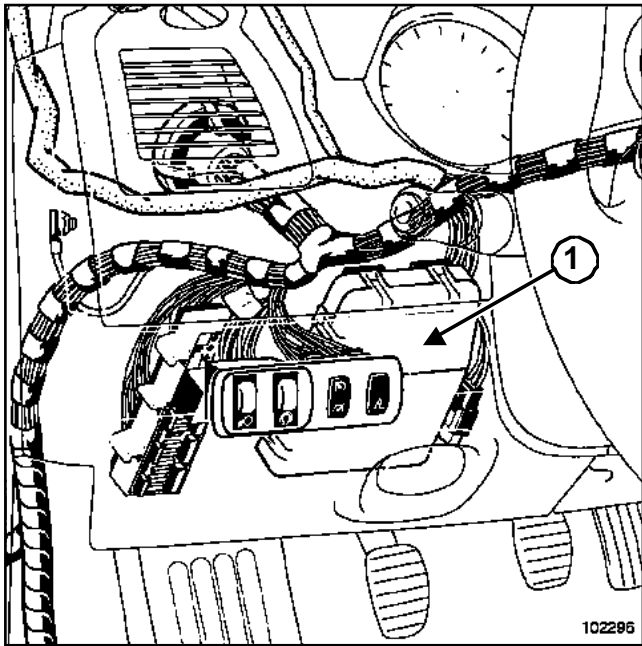


Remove:

- the headlining partially (**Body interior trim**Section) in **Workshop Repair Manual 365 - Bodywork**,
- the mounting nut (1).

REFITTING

- To refit, proceed in the reverse order to removal.



102296

Three types of UCH (1) can be found on a vehicle:

- « basic » UCH,

- « mid-range » UCH,

- « top of the range » UCH.

Only the « top of the range » UCH is available as a replacement part.

		« Basic » (L1)	« Mid-range » (L2)	« Top of the range » (L3)	See section
Multiplex connection		X	X	X	88B
Fault finding procedure		X	X	X	88A
Card Management	« Single » cards	X	X	X	82A/87C
	« Hands-free » cards			X	82A/87C
	Coded immobiliser (V3)	X	X	X	82A
	+ Accessories feed control relay	X	X	X	-

		« Basic » (L1)	« Mid-range » (L2)	« Top of the range » (L3)	See section
Doors and boot/tailgate	Central door locking (and unlocking in the event of an impact) while driving	X	X	X	87C
	Relocking the doors and boot/tailgate	X	X	X	87C
	Electric and one-touch windows (authorisation)	X	X	X	87D
	Tailgate lock	X	X	X	87D
	Deadlocking the doors and boot/tailgate		X	X	87D
	Electric childproof lock		X	X	84A
	« Driver's door only » opening program		X	X	87D
	Exterior locking button management (Hands-free)			X	87D
Wipers	Rain and light sensor	X	X	X	85A
	Windscreen wipers (low and high-speed management)	X	X	X	85A
	Rear screen wiper (wiper speed according to vehicle speed)	X	X	X	85A
	Windscreen and rear screen washers	X	X	X	85A
	Headlight washers		X	X	80B/85A

		« Basic » (L1)	« Mid-range » (L2)	« Top of the range » (L3)	See section
Lighting	Lighting / wiper control management	X	X	X	84A
	Indicators and hazard warning lights	X	X	X	-
	Hazard warning lights on under emergency braking and airbags being triggered	X	X	X	-
	Rear fog light	X	X	X	81A
	Lights on reminder management (control)	X	X	X	-
	Timed interior lighting supply	X	X	X	81B
	Interior lighting (floor)		X	X	81B
	Daytime running lights	X	X	X	80B
	Automatic headlights when driving	X	X	X	80B
	Automatic headlights when stationary	X	X	X	80B
Heated rear screen management	X	X	X	84A	
Air conditioning request management	X	X	X	62A	
Alarm management (pre-fitting)	X	X	X	82C	
External temperature management	X	X	X	84A	
Tyre Pressure Monitoring system	X	X	X	35B	
Additional heating (resistors)	X	X	X	61A	

PASSENGER COMPARTMENT CONNECTION UNIT

UCH

87B

LEFT-HAND DRIVE

Essential equipment

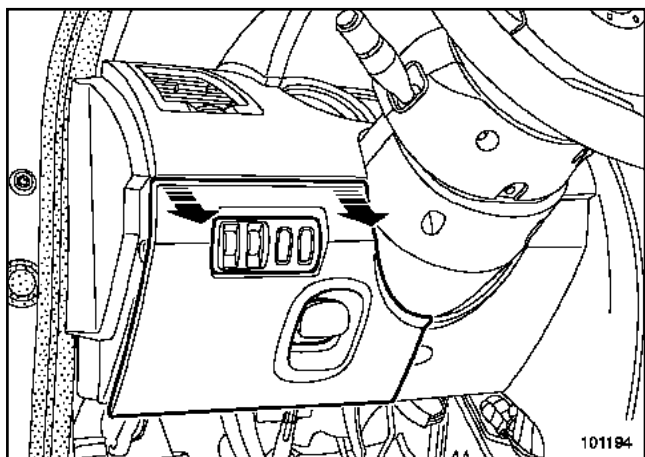
Diagnostic tool

WARNING

If the UCH is replaced, the valve code and configuration readings must be taken using the **Diagnostic tool**.

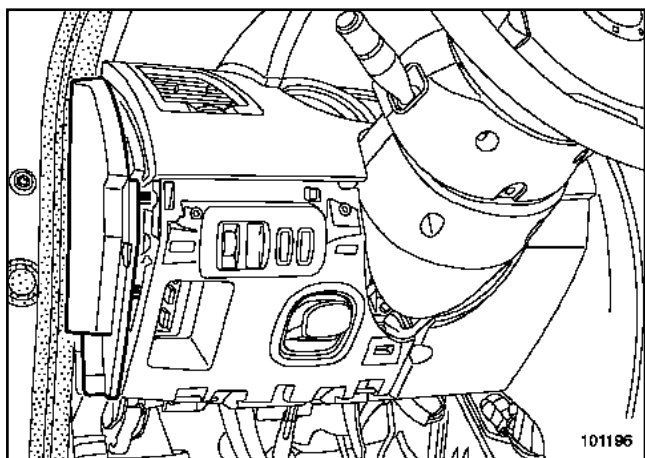
REMOVAL

- ❑ Disconnect the battery.



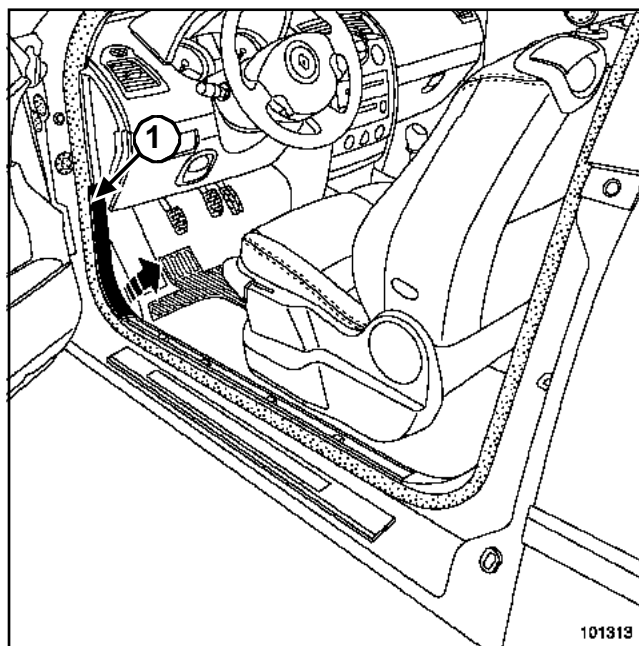
101194

- ❑ Remove the fuse box cover.



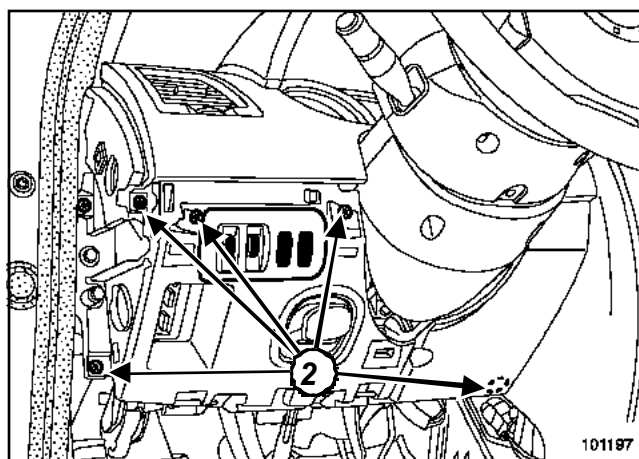
101196

- ❑ Remove the dashboard side panel.



101313

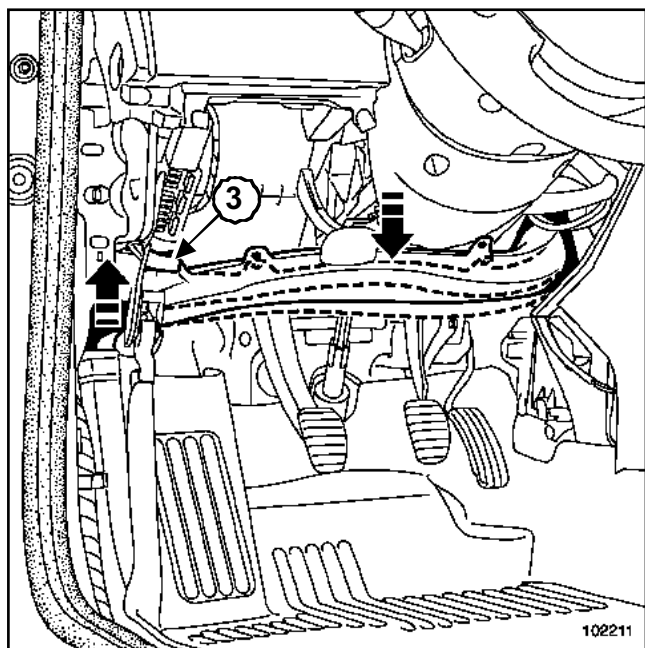
- ❑ Remove the front door sill lining, attached at (1).



101197

- ❑ Remove the switch mounting panel attached by five screws (2).

LEFT-HAND DRIVE

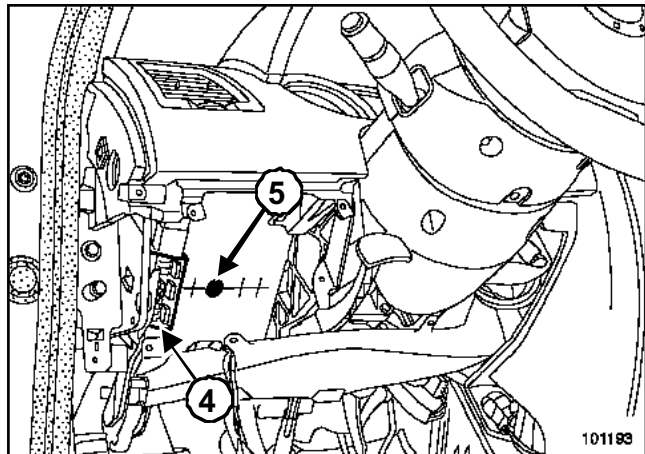


102211

- Remove the air duct attached by a clip (3).

WARNING

Unclip the air duct carefully.



101193

- Unclip the fuse board (4).
- Remove the UCH mounting bolt (5).

WARNING

The UCH is clipped on to its mounting at several points. Unfasten its clips to remove it.

REFITTING

- Connect the UCH.
- Attach the UCH taking care not to damage the wiring harness.
- Tighten the UCH mounting bolt slightly.

- Attach:

- the fuse board,
- the switch mounting panel,
- the dashboard side panel,
- the front door sill lining,
- the fuse cover.

WARNING

Connect the battery; carry out the necessary programming (Section Battery, page 80A-1).

- Program the vehicle code and cards (Section Immobiliser, page 82A-1).
- Configure the UCH according to the vehicle options.
- Program the multiplex network architecture (Section Multiplexing, page 88B-1).
- Program the tyre pressure monitor valves (**Tyre pressure monitoring system** Section).

PASSENGER COMPARTMENT CONNECTION UNIT

UCH

87B

RIGHT-HAND DRIVE

Essential equipment

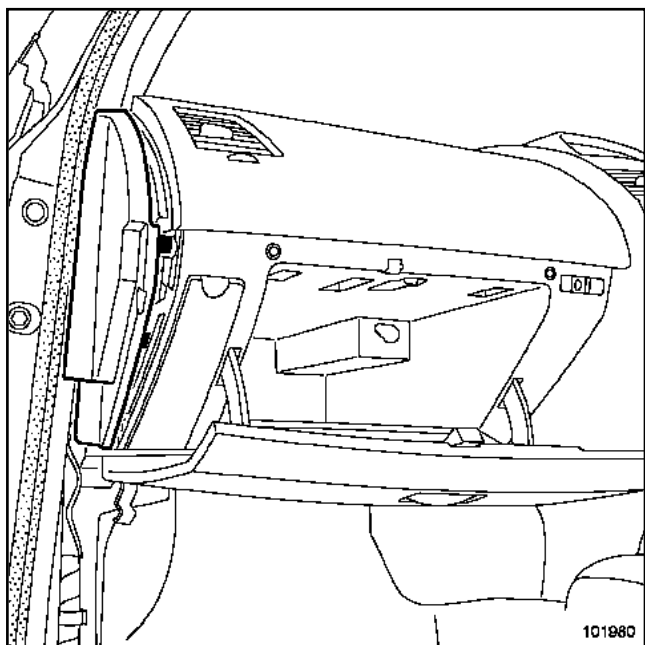
Diagnostic tool

WARNING

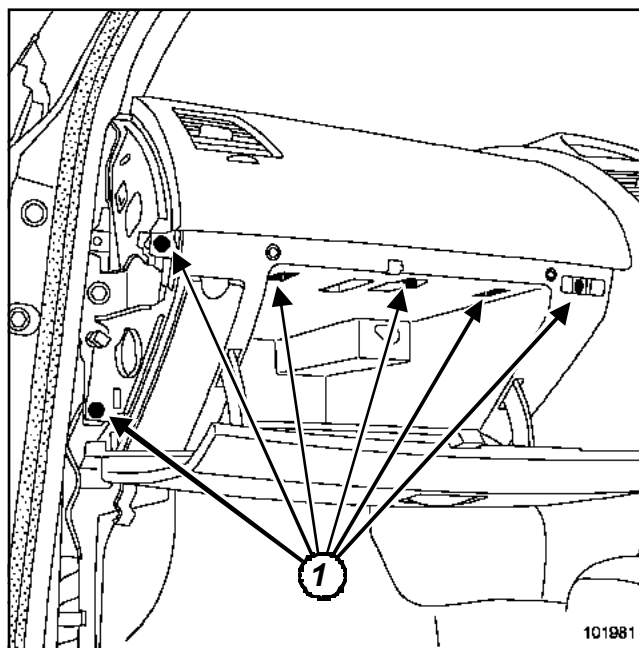
It is essential to display the configurations and valve codes using the **Diagnostic tool** if the UCH is replaced.

REMOVAL

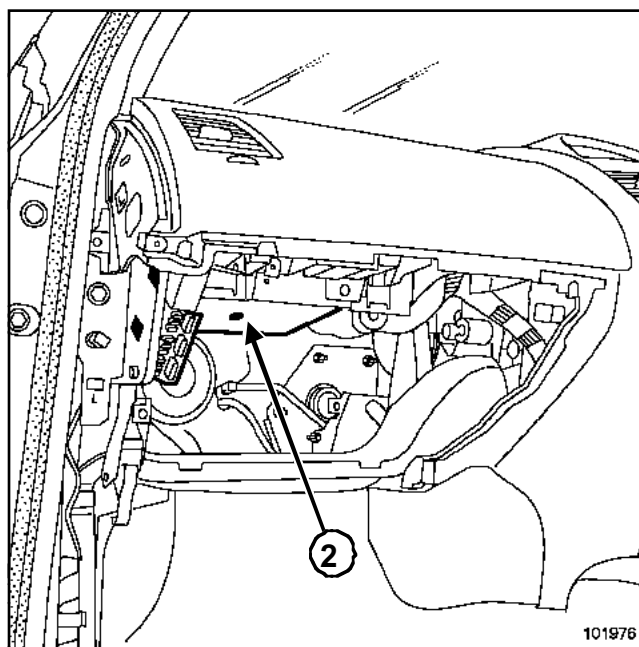
- Disconnect the battery.



- Open the glove compartment.
- Remove:
 - the dashboard panel,
 - the door sill lining.



- Remove the glovebox mounting bolts (1).



- Remove:
 - the glove compartment,
 - the UCH mounting bolt (2).

WARNING

The UCH is clipped onto its mounting at several places. Unhook the clips to remove it.

REFITTING

- Connect the UCH.

RIGHT-HAND DRIVE

- Clip the UCH, following the wiring harness routing.
- Tighten the UCH mounting bolt slightly.
- Attach:
 - the glove compartment, taking care not to pinch the passenger airbag wiring harness,
 - the dashboard side panel,
 - the front door sill lining,

WARNING

Connect the battery; carry out the necessary programming (Section Battery, page **80A-1**).

- Program the vehicle and card code (Section Immobiliser, page **82A-1**).
- Configure the UCH according to the vehicle options.
- Program the multiplex network architecture (Section Multiplexing, page **88B-1**).
- Program the Tyre Pressure Monitor system valves (**Tyre pressure monitoring system**Section).

PASSENGER COMPARTMENT CONNECTION UNIT

UCH: Configuration

87B

POSSIBLE CONFIGURATIONS FOR THE UCH

The UCH configurations possible using the diagnostic tool are:

Name of configuration	Configuration reading	CHOICE OF CONFIGURATION
Calibration CF031 «End of stream »	(LC024)	-
CF010 « Hands-free function »	(LC001)	with ⁽¹⁾
CF036 « Selective opening of doors and tailgate » ⁽²⁾	(LC029)	with/without
CF009 « Deadlocking »	(LC003)	with ⁽¹⁾
CF018 « Automatic relocking »	(LC012)	with/without
CF033 «Electric childproof locks » ⁽³⁾	(LC026)	with/without
CF019 «Type of air conditioning »	Air conditioning (LC013 « Type of air conditioning) (LC020 « Number of heating resistors »)	A, B, C, D, E, F, G, H, I ⁽⁴⁾
CF011 « Type of gearbox »	(LC005)	automatic / manual
CF012 « Rain sensor »	(LC006)	with /without
CF013 « Light sensor »	(LC006)	with / without
CF027 « Type of windscreen »	(LC021)	heat insulating / tinted
CF032 «Follow me home lighting »	(LC025)	with/without
CF014 « Daytime running lights »	LC008)	with / without
CF021 « Front fog lights »	(LC015)	with / without
CF015 « Hazard warning lights on in the event of an impact »	(LC009)	with / without
CF024 « Hazard warning lights on with ABS »	(LC018)	without ⁽¹⁾
CF020 « Type of drive »	(LC014)	right-hand / left-hand
CF025 « Rear screen wiper park position management »	(LC019)	with / without
CF023 « Tyre Pressure Monitor function »	Tyres (LC017)	with / without
CF016 « Pax system type tyre »	Tyres (LC010)	with / without
CF017 « Type of vehide »	(LC011)	all except cabriolet / convertible

PASSENGER COMPARTMENT CONNECTION UNIT

UCH: Configuration

87B

(1): To switch « without », run command **CF031** « **End of stream** ».

(2): This configuration corresponds to the « door only open » function (Section Opening elements management, page **87C-1**).

(3): This configuration allows you to modify operation of the « child safety » button:

- « With » configuration: prevents operation of the rear one-touch windows and interior handles on rear doors.
- « Without » configuration: prevents operation of the rear one-touch windows, the interior handles are operational.

(4): A = Heating (without air conditioning), without passenger compartment heating resistor

B = Manual air conditioning, without passenger compartment heating resistor

C = Climate control, without passenger compartment heating resistor

D = Heating (without air conditioning), with a passenger compartment heating resistor (**1000 W**)

E = Manual air conditioning, with a passenger compartment heating resistor (**1000 W**)

F = Manual air conditioning, with a passenger compartment heating resistor (**1000 W**)

G = Heating (without air conditioning), with two passenger compartment heating resistors (**1800 W**)

H = Manual air conditioning, with two passenger compartment heating resistors (**1800 W**)

I = Climate control, with two passenger compartment heating resistors (**1800 W**)

Programming:	
Function	Configuration
Keyless vehicle:	SC004 « UCH programming »
	SC006 « Card allocation »
	SC003 « Reserve »
Tyres	SC002 « Valve code programming »
	SC001 « Reading the set of valves and codes stored »
Other parameters	VP004 « V.I.N writing »

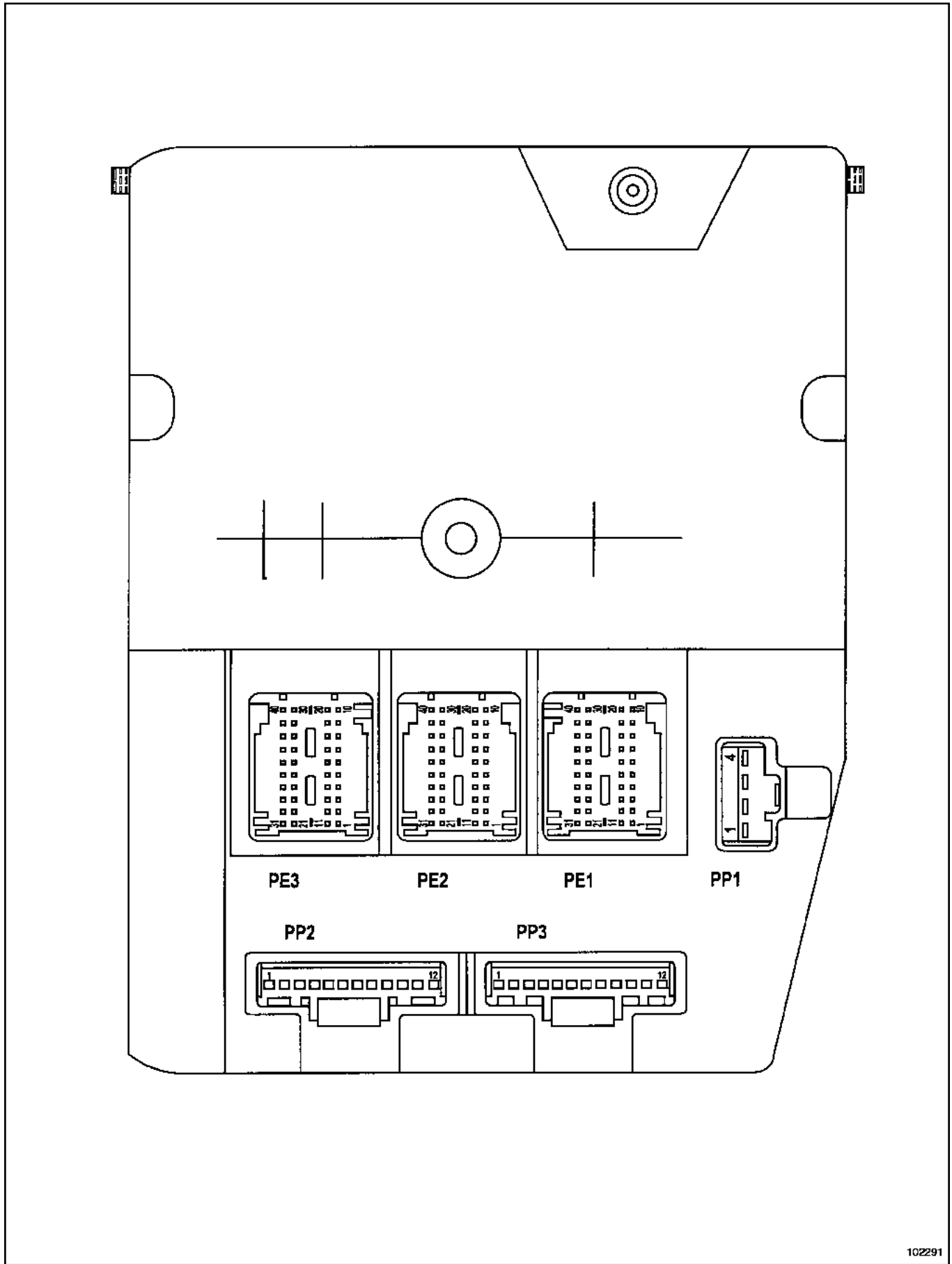
WARNING

After configuring:

- program the Tyre Pressure Monitor valve (**Tyre pressure monitoring system**Section),
- program the multiplex network architecture (Section Multiplexing, page **88B-1**),
- connect the battery (Section Battery, page **80A-1**) to confirm the configurations; carry out the two programming operations required,
- confirm by reading the configuration using the **Diagnostic tool**.

PASSENGER COMPARTMENT CONNECTION UNIT
UCH: Connection

87B



102291

102291

PASSENGER COMPARTMENT CONNECTION UNIT

UCH: Connection

87B

PP1 connector

Track	Description
1	Earth
2	Not used
3	+ before ignition (protected)
4	+ before ignition (protected)

PP2 connector

Track	Description
1	Electric steering column lock (supply)
2	Electric steering column lock (signal)
3	Rear wiper (control)
4	Rear wiper (supply)
5	Fuel flap and driver's door closing control
6	Fuel flap and driver's door opening control
7	Passenger door, rear door and boot closing control
8	Passenger door, rear door and boot opening control
9	Locking motors supply
10	Front doors deadlocking control
11	Rear doors superlocking control
12	Not used

Connector PP3

Track	Description
1	Interior lighting (control)
2	Electronic earth
3	+ timed supply
4	Left-hand direction indicators
5	Right-hand direction indicators
6	Rear fog light control

Track	Description
7	Tailgate control
8	Not used
9	+ timed supply (flap, earth)
10	Interior lighting (control)
11	Not used
12	Not used

PE1 connector

Track	Description
1	Electric steering column lock
2	External temperature (output)
3	Hazard warning lights indicator
4	Card reader (card present)
5	Clutch pedal sensor
6	Door locking/unlocking switch
7	Starter button (signal)
8	Tailgate opening sensor
9	Childproof locking indicator light
10	Not used
11	Interior locking control (child safety)
12	Windscreen washer control
13	Starter button (engine running indicator light)
14	Door locking indicator light
15	Passenger door opening sensor
16	Rear right-hand door opening sensor
17	Driver's door opening sensor
18	Door deadlocking state signal
19	Rear left-hand door opening sensor
20	Not used
21	Not used

PASSENGER COMPARTMENT CONNECTION UNIT

UCH: Connection

87B

Track	Description
22	Not used
23	Not used
24	Not used
25	Not used
26	Not used
27	Not used
28	Not used
29	Not used
30	Not used
31	Not used
32	Not used
33	Not used
34	Not used
35	Not used
36	Not used
37	Not used
38	Not used
39	Not used
40	Not used

PE2 connector (Black)

Track	Description
1	Rain and brightness sensor
2	Column switch connection (track 9)
3	External temperature sensor
4	Column switch connection (track 2)
5	Column switch connection (track 13)
6	H multiplex connection (Protection and Switching unit)
7	One-touch electric window and sunroof
8	H multiplex connection (passenger compartment)

Track	Description
9	Column switch connection (track 4)
10	H multiplex connection (electric steering column lock)
11	Column switch connection (track 14)
12	Column switch connection (track 5)
13	External temperature sensor earth
14	Column switch connection (track 3)
15	Column switch connection (track 12)
16	L multiplex connection (Protection and Switching unit)
17	Column switch connection (track 8)
18	L multiplex connection (passenger compartment)
19	Column switch connection (track 10)
20	L multiplex connection (electric steering column lock)
21	Card reader (supply)
22	Passenger compartment heating relay control
23	Not used
24	Air conditioning control (heating rear screen)
25	Card reader (earth)
26	Air conditioning control (air conditioning indicator light)
27	Brake pedal switch (depressed)
28	Rear wiper control
29	Immobiliser warning light output
30	Air conditioning control
31	Not used
32	Air conditioning state (heating fan in off position)
33	Passenger compartment heating relay control
34	+ Accessories relay (control)

PASSENGER COMPARTMENT CONNECTION UNIT

UCH: Connection

87B

Track	Description
35	Hazard warning lights switches
36	Brake pedal switch (released)
37	Rear wiper park position
38	Rear screen heating indicator light
39	Card reader
40	Card reader

Connector PE3 (brown)

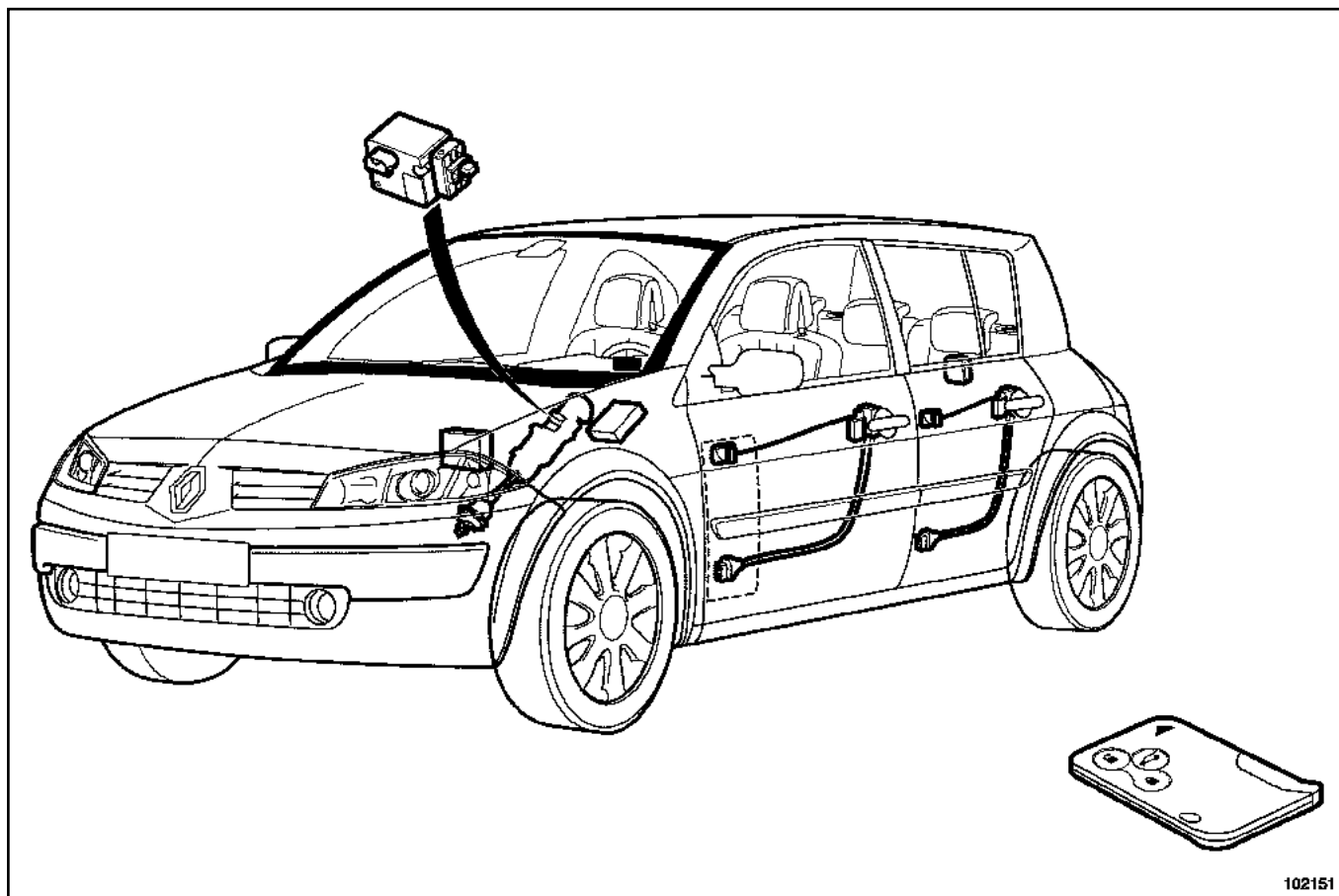
Track	Description
1	Not used
2	Not used
3	Driver's door presence sensors supply
4	Boot locking switch (hands-free)
5	Boot unlocking switch (hands-free)
6	Door locking switch (hands-free)
7	Not used
8	Not used
9	Not used
10	Not used
11	Not used
12	Not used
13	Headlight relay control
14	Headlight relay control
15	Not used
16	Not used
17	Not used
18	Not used
19	Not used
20	Not used
21	Presence sensor (driver's door)
22	Presence sensor (driver's rear door)

Track	Description
23	Presence sensor (passenger door)
24	Hands-free starting aerial (front)
25	Hands-free starting aerial (front)
26	Hands-free starting aerial (centre)
27	Driver's side front hands-free opening aerial
28	Driver's side rear hands-free opening aerial
29	Boot hands-free opening aerial
30	Presence sensor (passenger rear door)
31	Passenger side front hands-free opening aerial
32	Passenger side rear hands-free opening aerial
33	Passenger side rear hands-free opening aerial
34	Passenger side front hands-free opening aerial
35	Hands-free starting aerial (rear)
36	Hands-free starting aerial (rear)
37	Hands-free starting aerial (centre)
38	Driver's side rear hands-free opening aerial
39	Driver's side front hands-free opening aerial
40	Boot hands-free opening aerial

The door and tailgate control system on keyless vehicles consists of:

- the UCH (with radiofrequency receiver),
- special cards in « entry level » and « hands-free » version,
- an uncoded card reader (transponder receiver),
- door and tailgate locking / unlocking motors (built into the locks),

- special receiver aerials in the outside handles and tailgate (« hands-free » version),
- presence and motor sensors (« hands-free » version),
- special door locks for the child safety and deadlocking functions (depending on version),
- lock buttons in the exterior handles of the doors and tailgate.



102151

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For special notes on the UCH, (Section Passenger compartment connection unit, page **87B-1**).

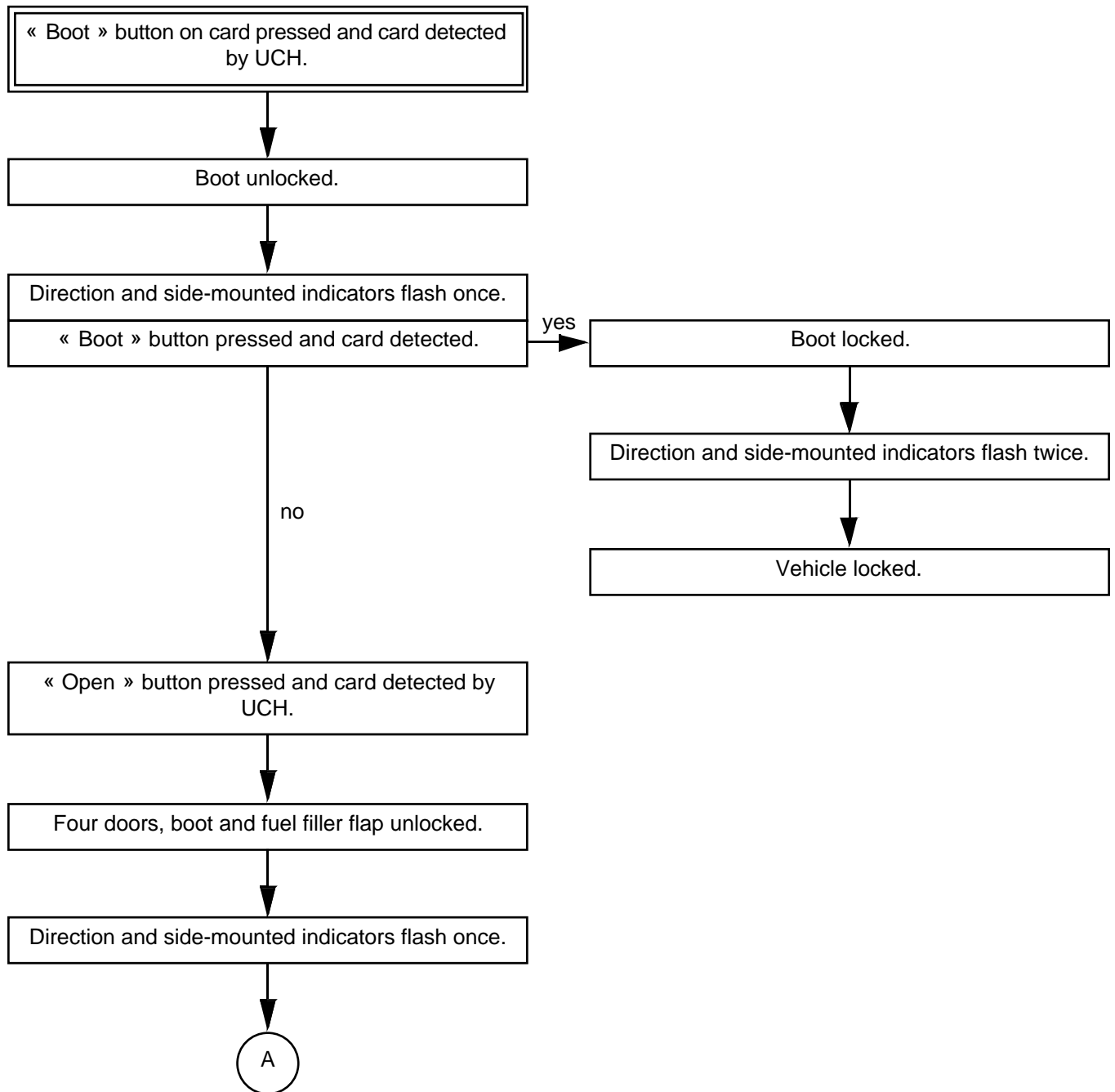
For special notes on the Protection and Switch Unit, (Section Engine interconnection unit, page **87G-1**).

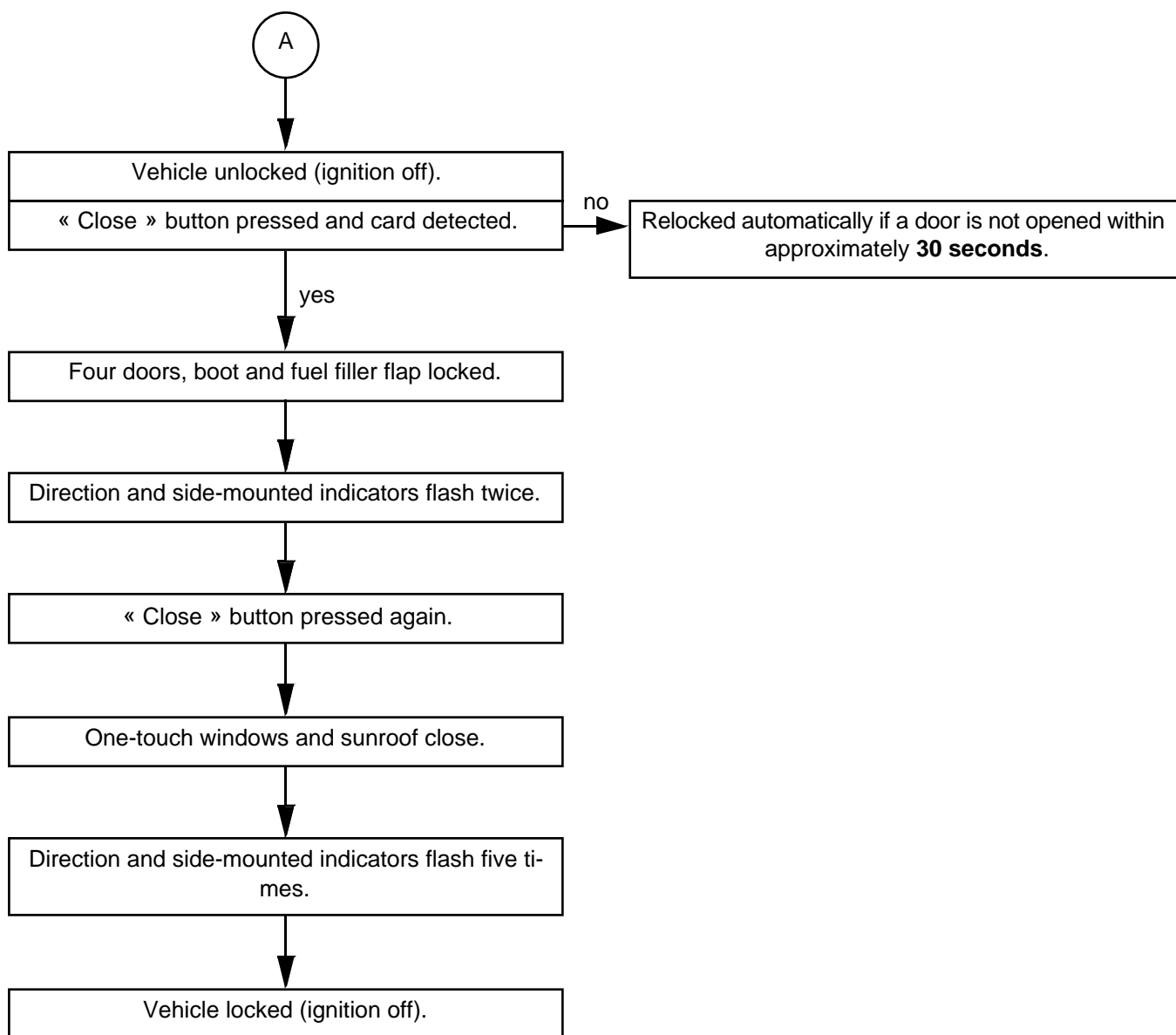
For special notes on the card reader and starter button (« start »), (Section Immobiliser, page **82A-1**).

Keyless vehicle:

CHART 1	Basic operation
----------------	------------------------

NOTES	Vehicle locked (ignition off).
--------------	--------------------------------

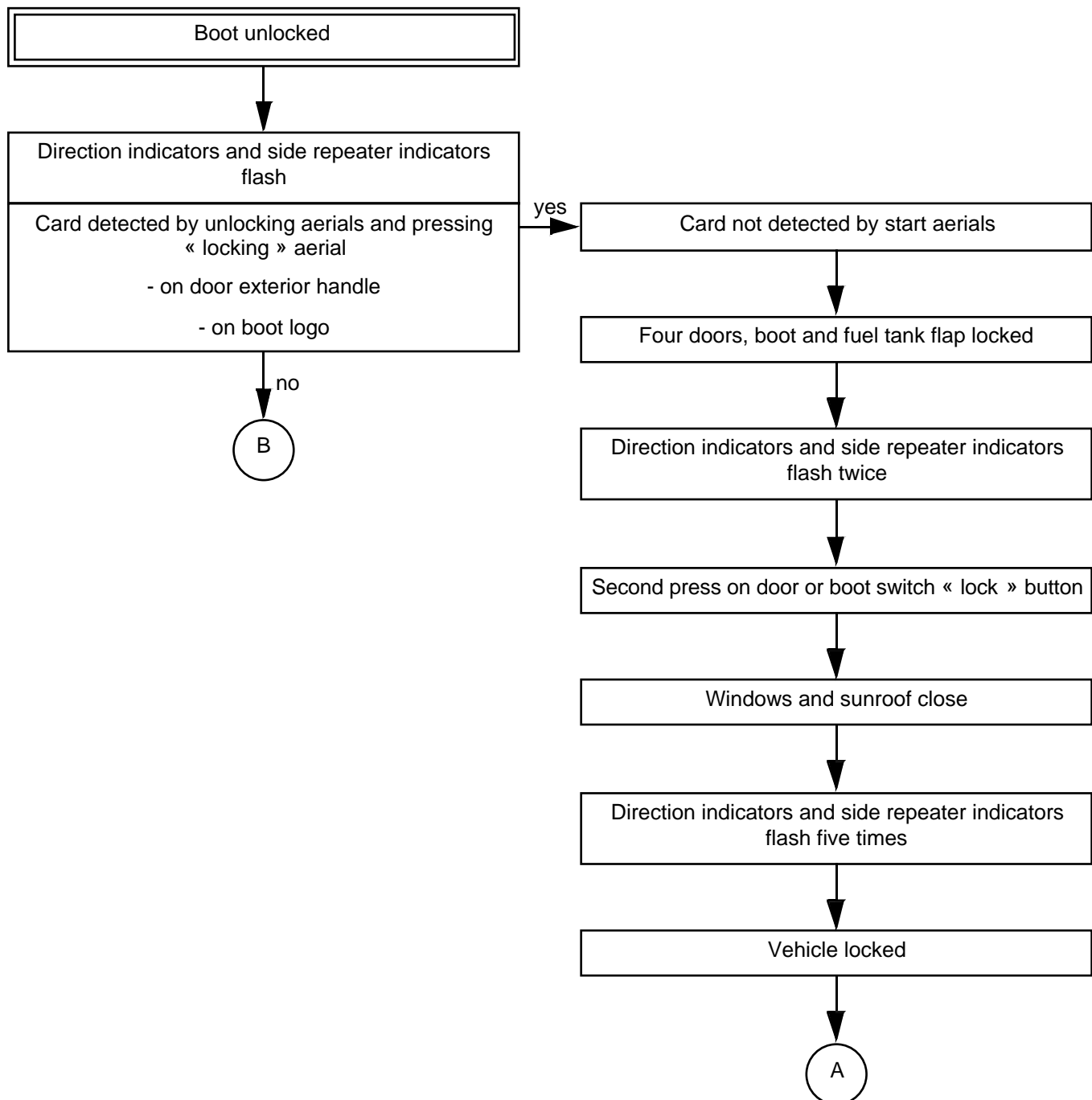




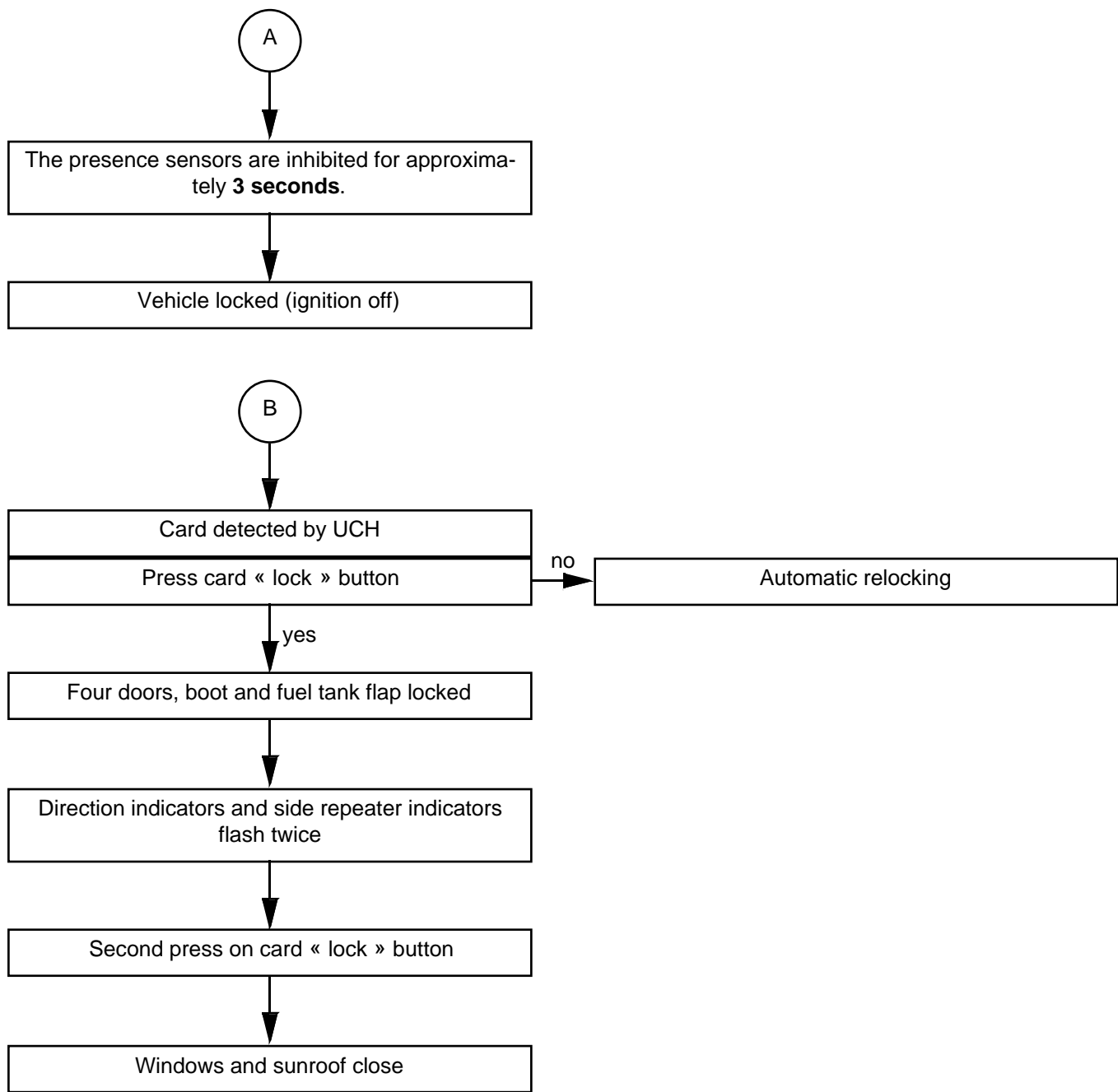
Keyless vehicle:

CHART 2	Hands-free operation
----------------	-----------------------------

NOTES	Vehicle locked (ignition off) Card detected by unlocking aerial and pressing « boot » button
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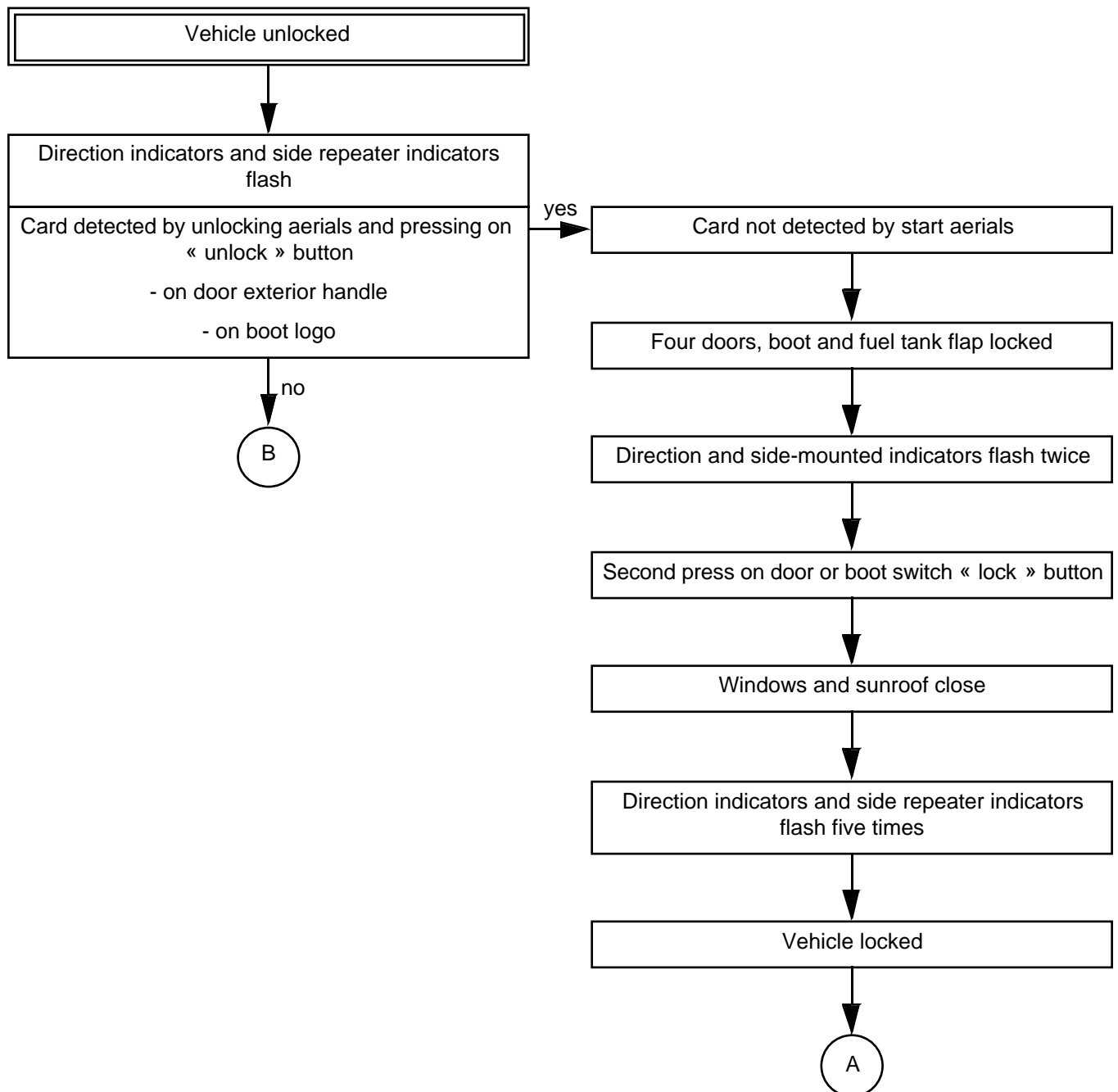
Keyless vehicle:



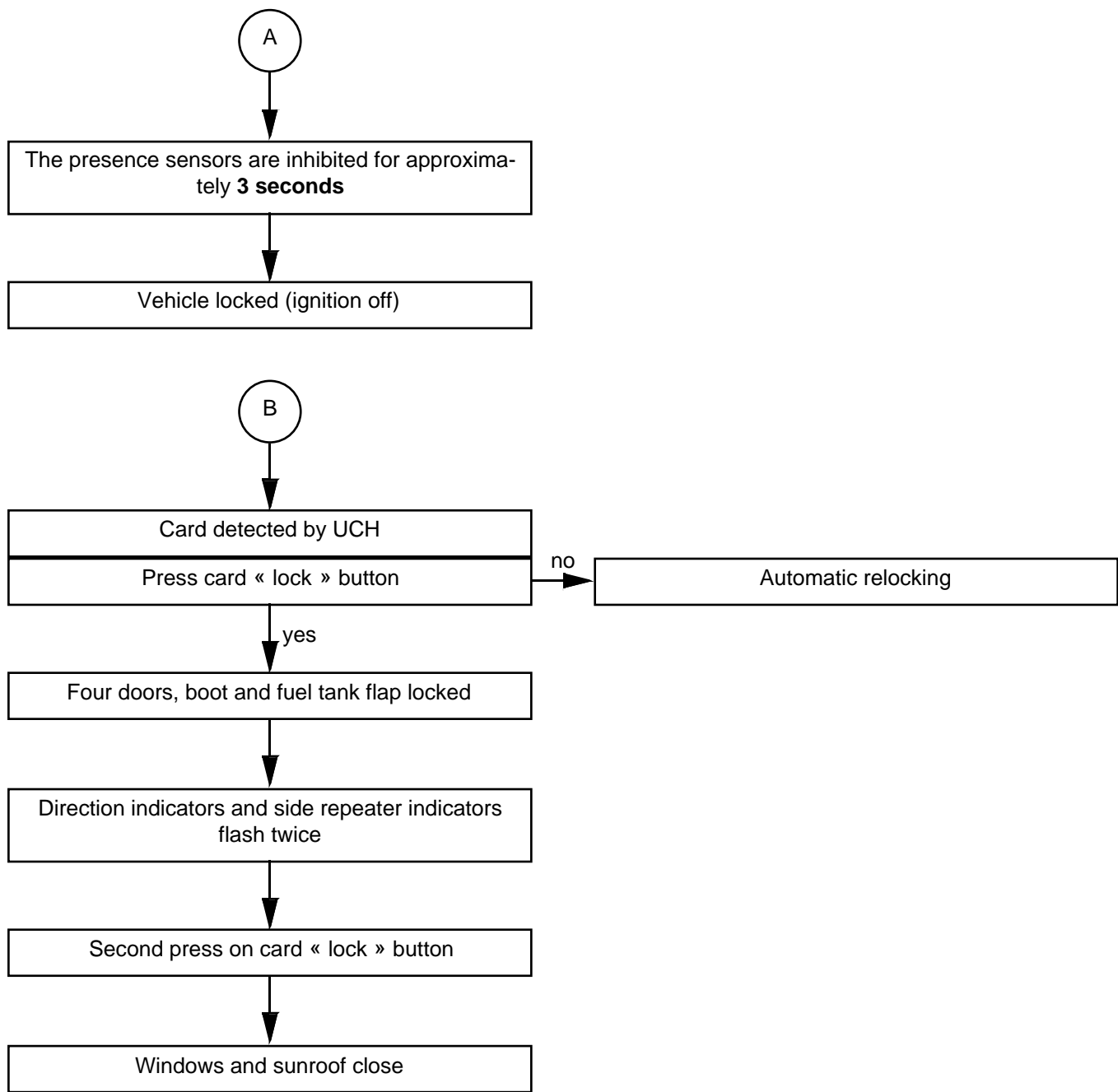
Keyless vehicle:

CHART 3	Hands-free operation
----------------	-----------------------------

NOTES	Vehicle locked (ignition off) Card detected: - unlocking request from movement sensor (handle) or boot switch (vehicle locked for more than 72 hours) - detection of hand by presence sensor (vehicle locked for less than 72 hours)
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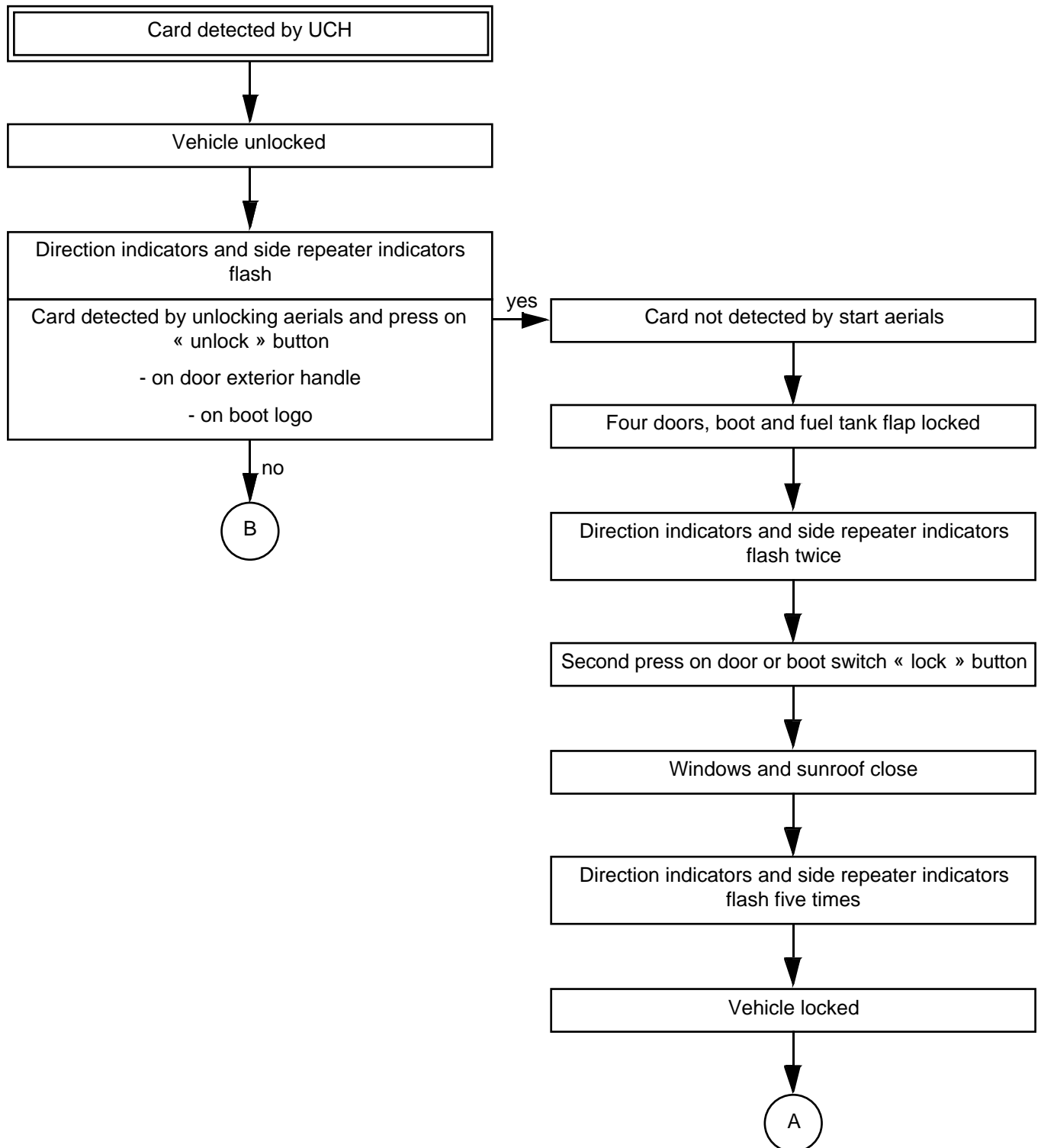
Keyless vehicle:



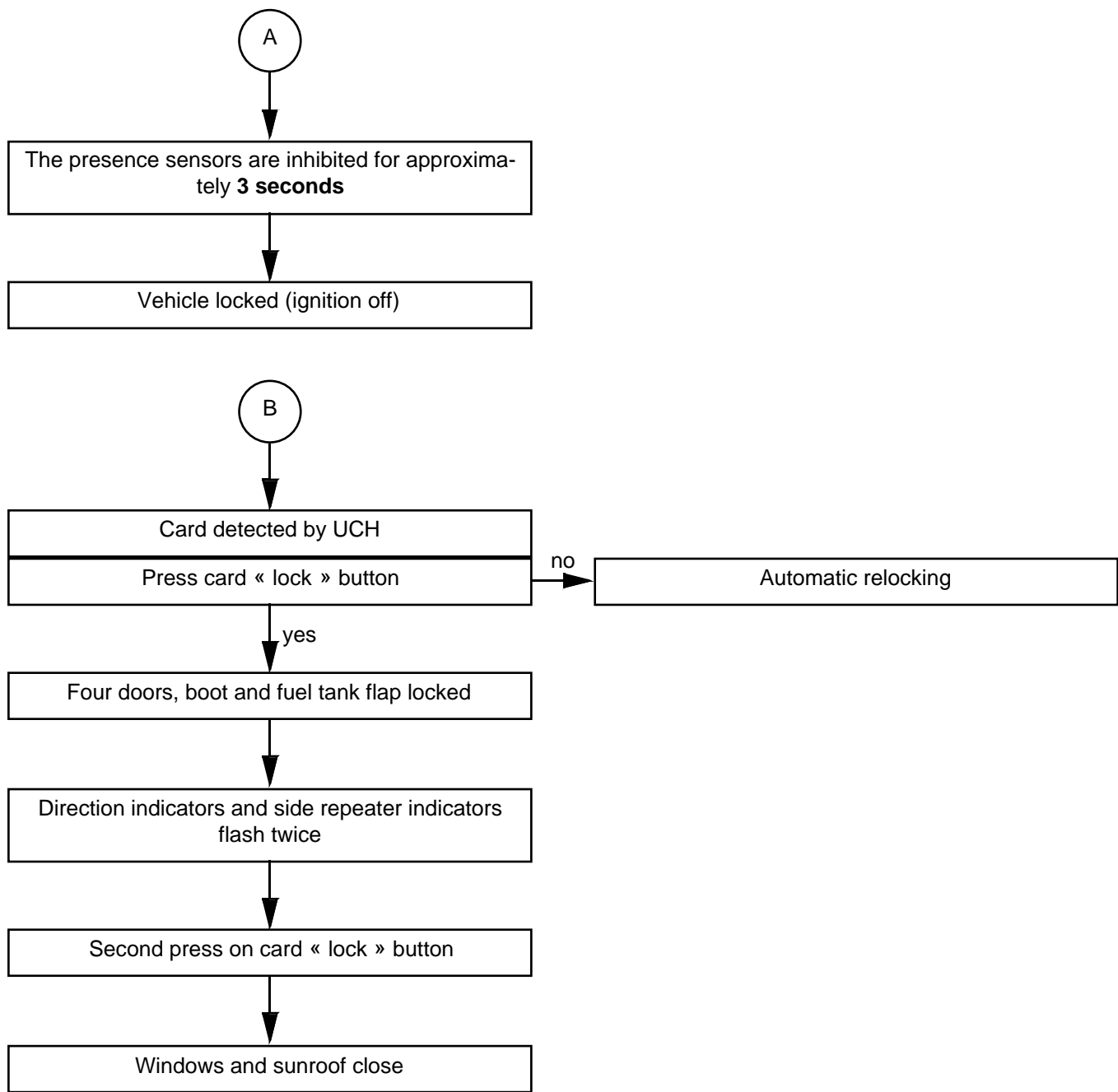
Keyless vehicle:

CHART 4	Hands-free operation
----------------	-----------------------------

NOTES	Vehicle locked (ignition off) Press card « unlock » button
--------------	---



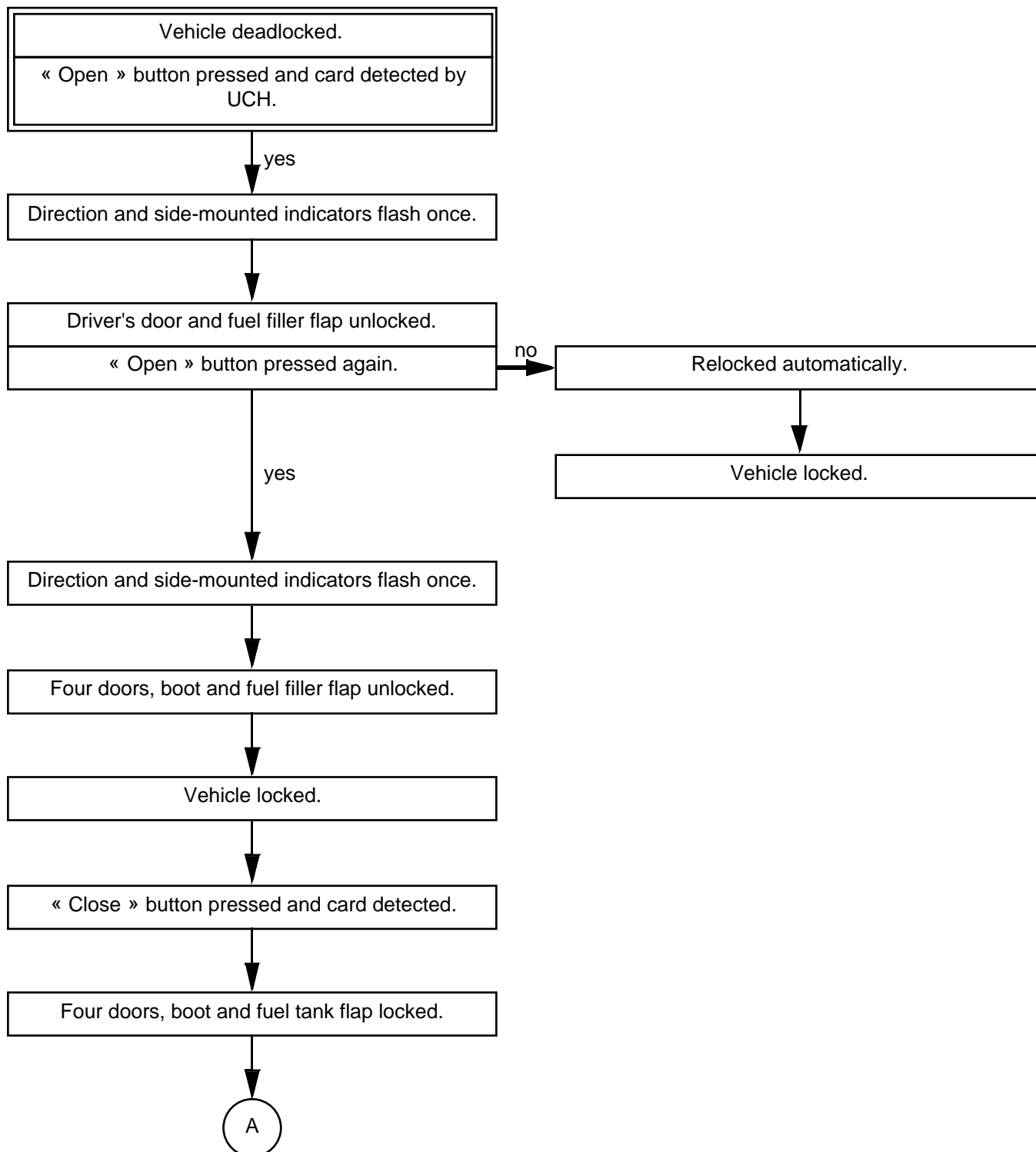
Keyless vehicle:

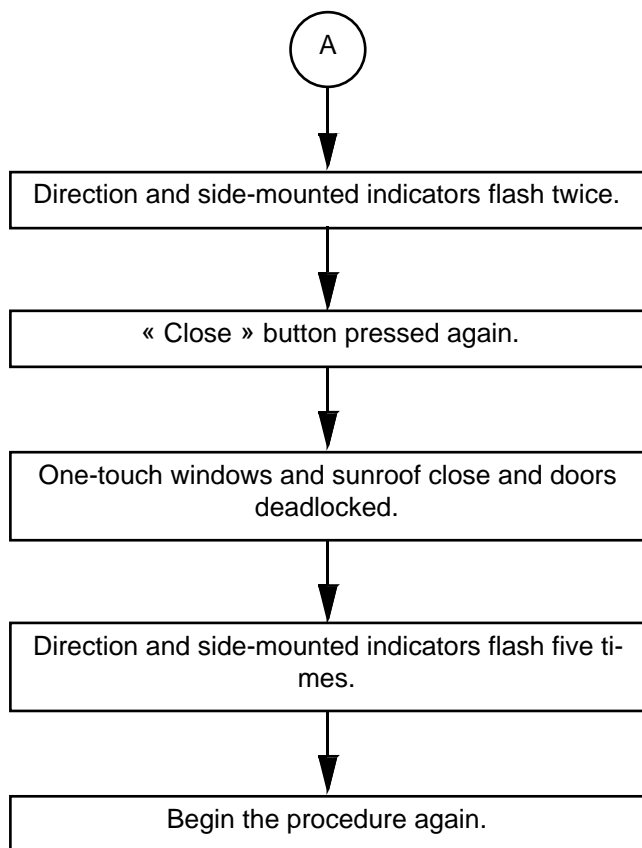


Keyless vehicle:

CHART 5	Deadlocking function operation
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NOTES	« Deadlocking » function operation
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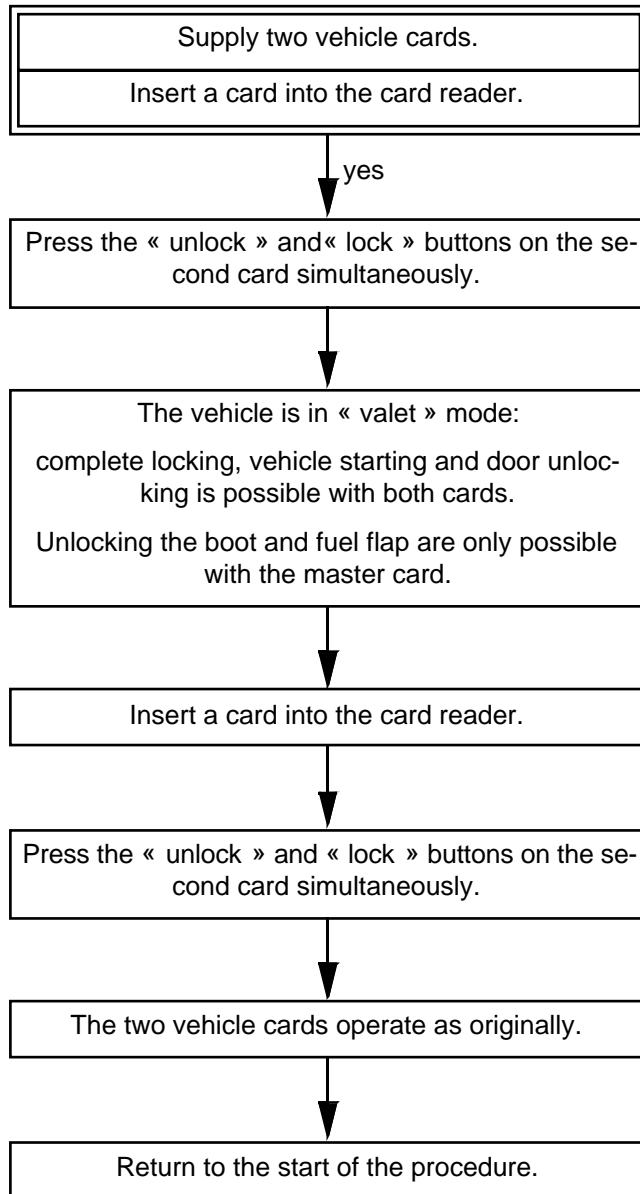




Keyless vehicle:

CHART 6	Special features of the "valet" function
----------------	---

NOTES	Special notes on the « valet » function
--------------	---



Keyless vehicle: Operating principle

I - SPECIAL INSTANCES OF « BASIC » MODE

- If a door or boot is open, pressing the « lock » button immediately locks / unlocks the doors and boot.
- If a card is in the card reader, pressing the « lock » button immediately locks / unlocks the doors and boot.
- The fuel tank flap is controlled in tandem with the driver's door.

II - SPECIAL INSTANCES OF « HANDS-FREE » MODE

- The starter aerials have no effect on vehicle unlocking. Conversely, it is impossible to lock the vehicles with the « lock » buttons on the exterior handles if the card is in the starting zone.
- motion sensors are built into the presence sensors. The presence sensors shut down after approximately 72 hours.
- Is the vehicle is locked using the card « lock » button, the cards in the passenger compartment (detected by starter aerials) are deactivated in « hands-free » mode (locking, unlocking and starting). Starting is still possible by inserting the card into the reader.
- « Hands-free » unlocking is not possible three seconds after locking (« basic » or « hands-free »).
- It is not possible to start the engine in « hands-free » mode if the boot is open.

III - SPECIAL INSTANCES OF THE « DEADLOCKING » FUNCTION

Certain vehicles are fitted with the « deadlocking » function which deactivates the interior door handles.

The « deadlocking » function is accompanied by opening of the « door only » which only allows unlocking of the driver's door and fuel flap after the first press.

IV - SPECIAL INSTANCES OF THE « VALET » FUNCTION

The « valet » function allows unlocking of the fuel flap and boot using one of the vehicle's card (e.g. when handing your vehicle to a restaurant valet). Activating this function absolutely requires two vehicle cards.

V - SPECIAL FUNCTIONS IF CARD BATTERY FAILS:

If the « basic » or « hands-free » card battery does not work, the left-hand door can be unlocked with a backup key, unlocking other doors or the boot and starting the engine can be carried out by inserting the card in the card reader.

1 - Unlocking the vehicle

Vehicle locked or deadlocked.

Front left-hand door opened by metallic insert.

Place the card in the card reader. The engine may be started.

Press the passenger compartment unlocking button.

The doors, boot and fuel flap unlock.

2 - Vehicle locking

Switch off the ignition.

Remove the card from the reader.

Open the front left-hand door.

Press the passenger compartment unlocking button twice.

The doors, boot and fuel flap lock.

Unlocking the front left-hand door with a metallic insert.

VI - OPERATING PRINCIPLE:

To check the locking and unlocking of doors and boot, the direction indicators and side repeater indicators are controlled by the UCH.

Press on card		Effect on the locks	Operation of the direction indicators	Operation of the side repeater indicators
One-touch	First press	Locking of the doors/tailgate/boot	Flashing twice	Flashing twice
	Flashing twice	Closing the windows and sunroof*	-	-
		Door and tailgate deadlocking**	-	Rapid flashing
One-touch	First press	Unlocking of the doors and luggage compartment or the driver's door**	Flashing	Flashing
	Seond press	Unlocking of the doors and boot**	-	-

* For this function, the vehicle must be fitted with one-touch electric windows and anti-pinch electric sunroof.

** certain vehicles may be equipped with the « deadlocking » function and the « door only unlocking » function. This function allows you to only lock the driver's door and fuel flap with the first press on the card.

This system may comprise up to four cards.

The « basic » and « hands-free » cards are different and are not interchangeable.

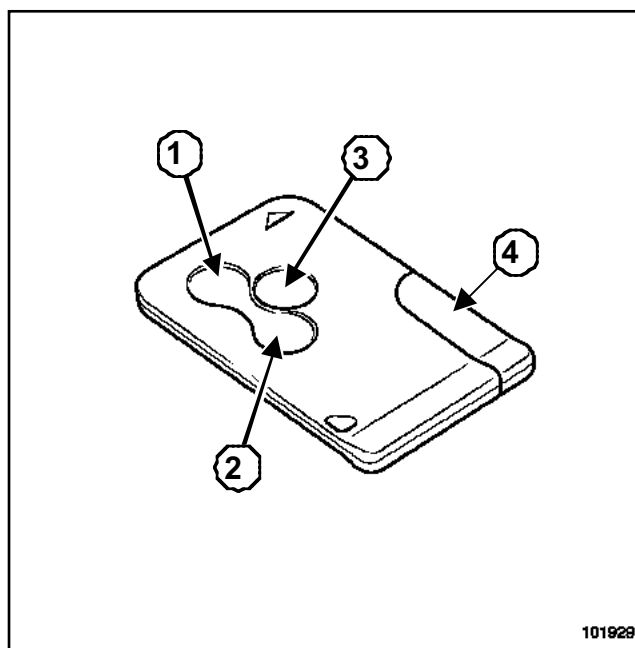
The cards are equipped with a backup key which allows the door to be unlocked in the event of a fault.

Cards delivered as spare parts are blank. A cover is fitted in the place of the backup key.

Note:

A backup key can be ordered from the replacement parts store by giving them the vehicle identification and safety numbers.

« Basic » card

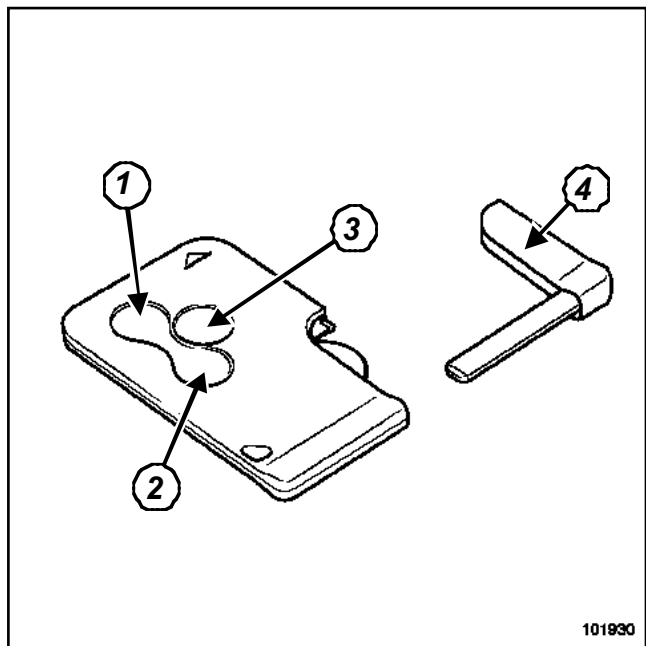


101929

101929

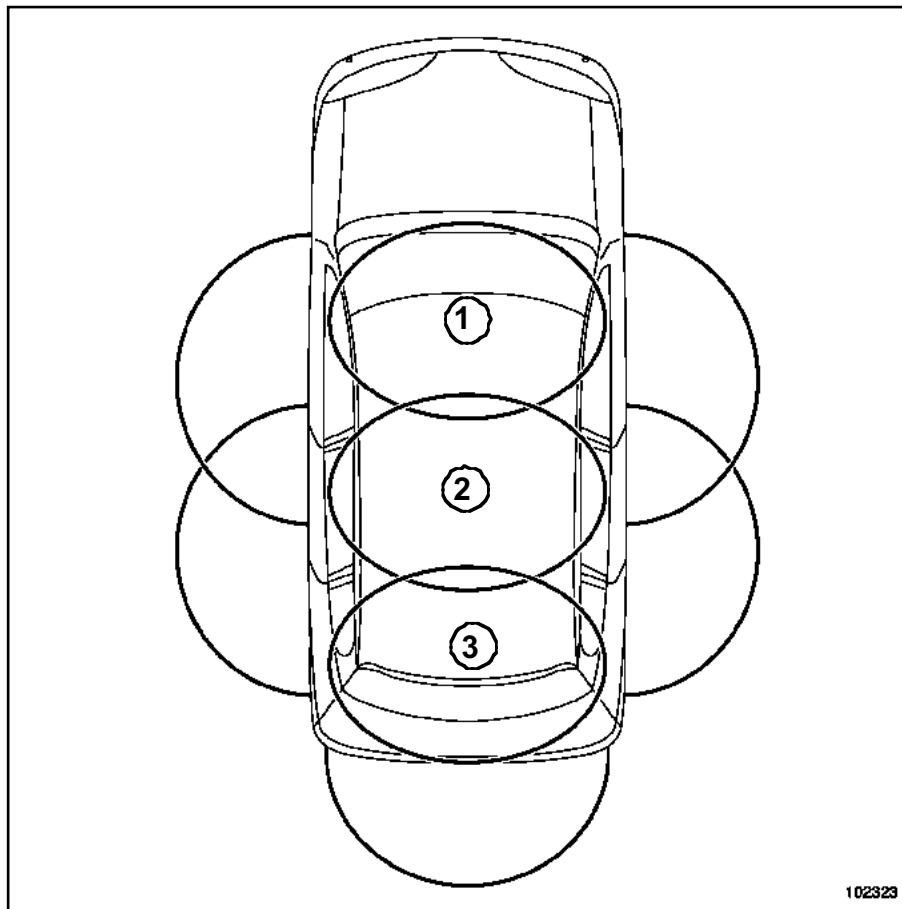
- (1) « Unlock » button
- (2) « Lock » button
- (3) « Unlock boot » button
- (4) Backup key

« Hands-free » card



- (1) « Unlocking » button
- (2) « Locking » button
- (3) « Boot unlocking / locking » button
- (4) Backup key

For the procedure for programming or allocating a card, (Section Immobiliser, page **82A-1**).



102323

102323

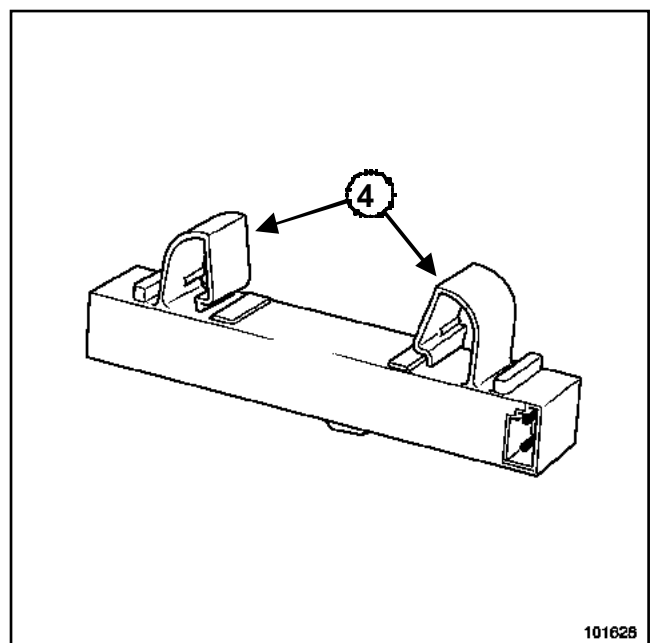
Vehicles with the « hands-free » system have three starter aerials for the card:

- a front detection aerial (1) located behind the front panel of the dashboard,
- an aerial (2) at the back of the centre console,
- an aerial (3) at the back of the floor.

Note:

- The remote control opening aerials have no effect on the engine immobiliser system (Section Opening elements management, page 87C-1).
- The aerials are identical and interchangeable. They require no programming.

REMOVAL



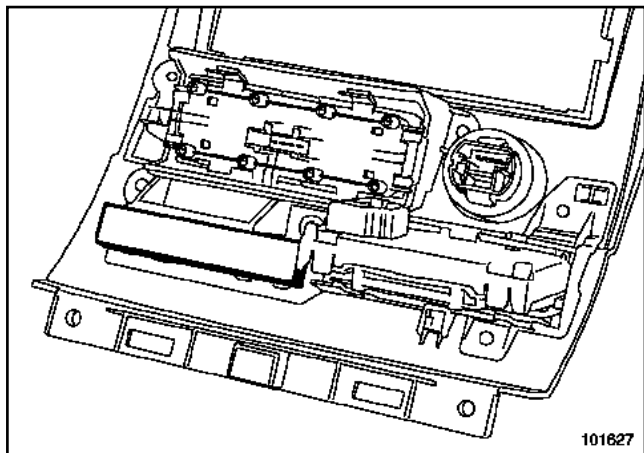
101628

101628

- Unclip the aerial by moving the clips (4).

WARNING

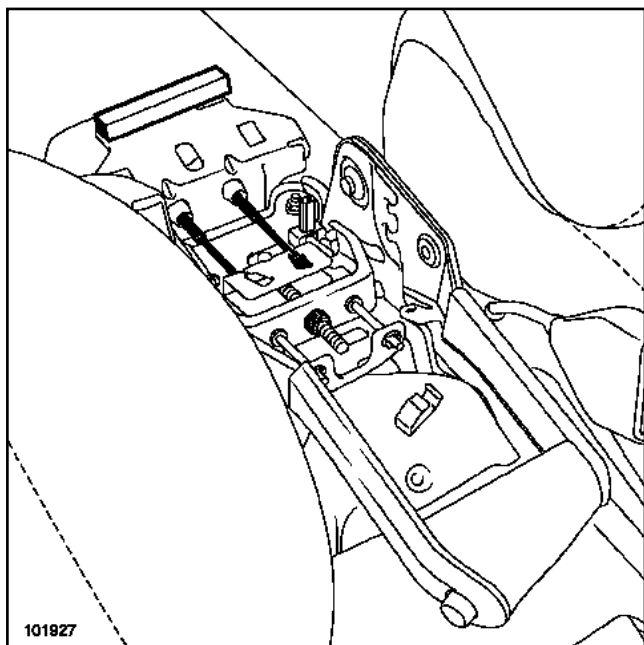
The starter aerial clips (4) are fragile.



101627
101627

- Unclip the front panel (Section Immobiliser, Engine start/stop button, page **82A-15**).

I - CENTRE AERIAL



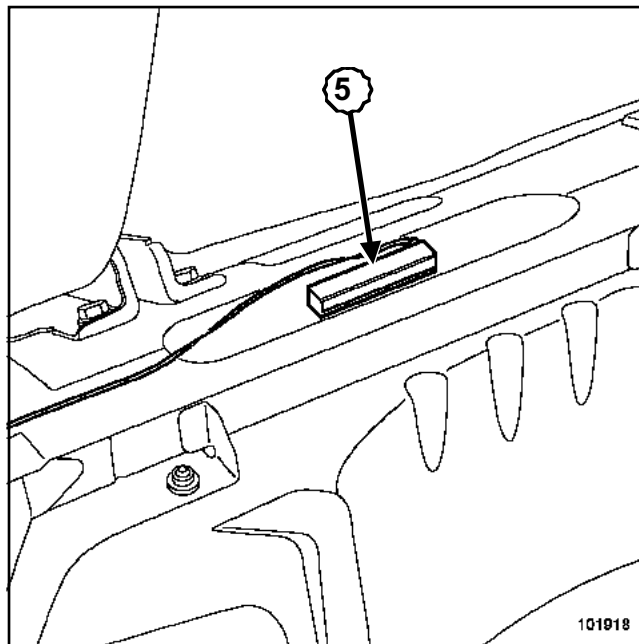
101927

101927

- Remove the central console (see **Central console**).

II - REAR AERIAL

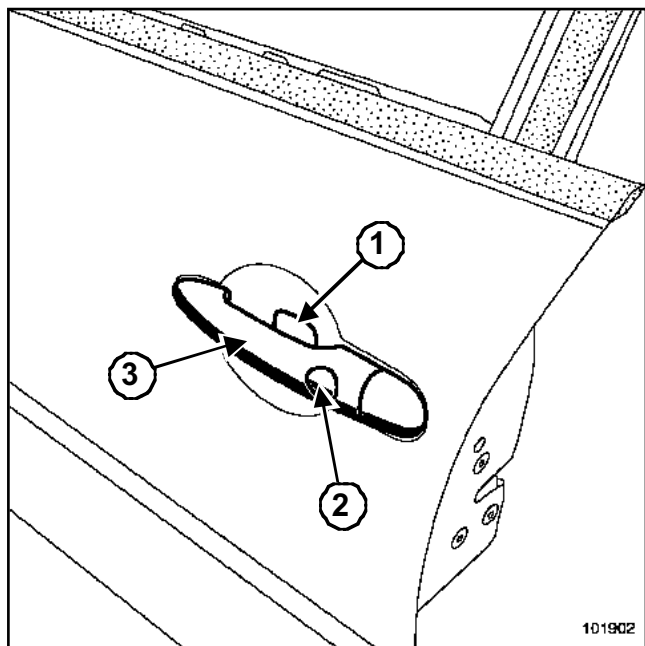
- Partially remove the carpet in the boot.



101918

101918

- Unclip aerial (5) by moving the clips.



101902

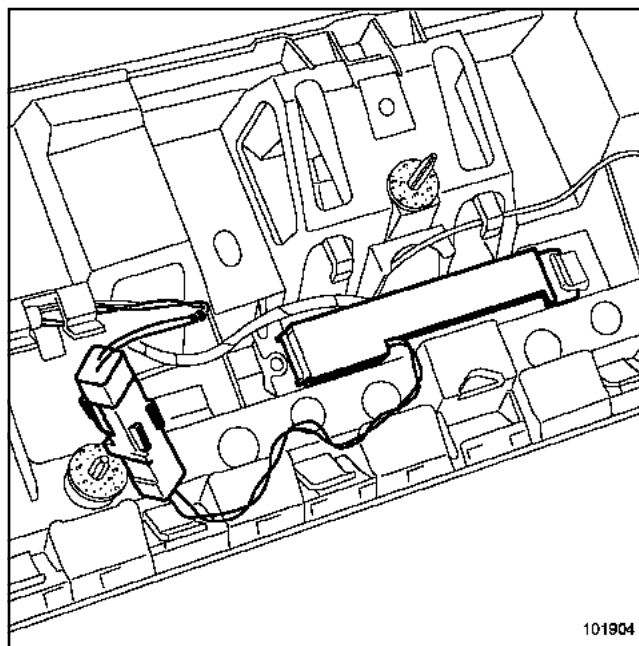
To operate in « hands-free » mode, the door handles must have:

- presence sensors (1) with a reflector on the handle to detect the user's hand,
- a lock button (2),
- a built-in opening aerial (3).

Note:

After a period of non-use of approximately 72 hours, the presence sensors become deactivated. The unlock request is then detected by a motion sensor. The presence sensor and motion sensor are a single unit.

To remove the handles, refer to **Workshop Repair Manual 365 - Bodywork**.

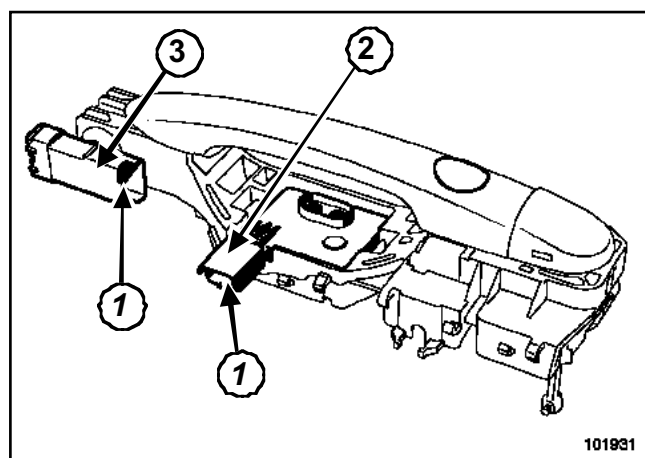


101904

101904

To operate in « hands-free » mode, the vehicles must have an opening aerial in the tailgate strip.

To remove the opening aerial, refer to **Workshop Repair Manual 365 - Bodywork**.



101931

Presence and movement sensors (connector 2)

Track	Description
1	Sensor signal
2	Earth
3	Supply (+ before ignition)

Opening aerial and locking button (connector 3)

Track	Description
1	Opening aerial
2	Opening aerial
3	Locking signal
4	Locking earth

Note:

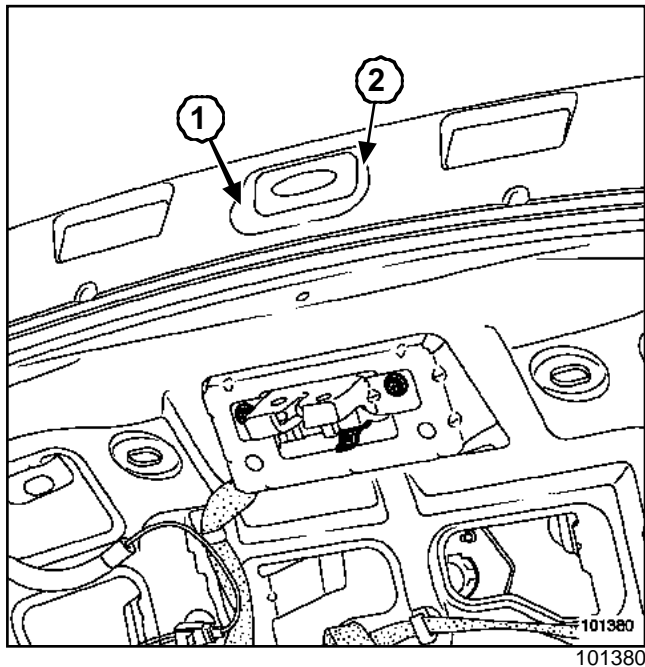
- The lock button is a simple switch. It can be tested with an ohmmeter between tracks 3 and 4.
- The resistance of the opening aerial is approximately **0.2 Ω**.

REMOVAL

□

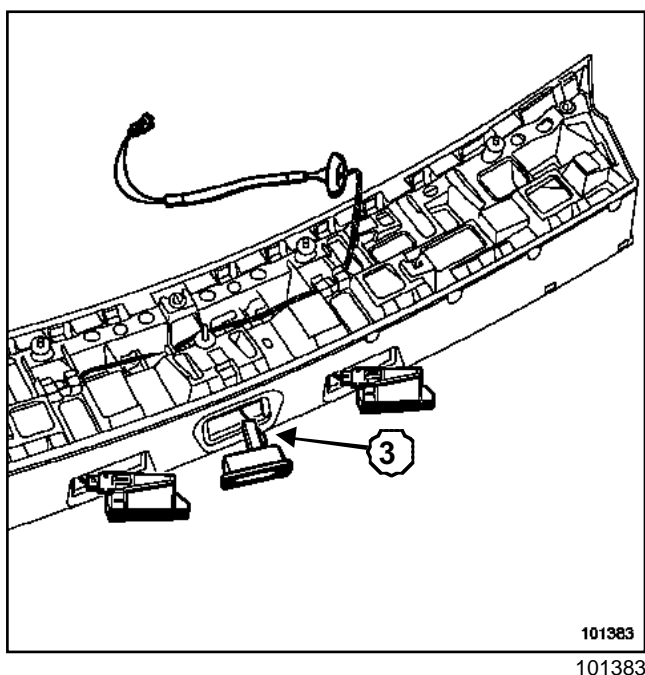
Note:

It is not necessary to remove the door strip to perform this operation.



□ Protect the edge of the opening control with masking tape.

□ Unclip the control at (1) and (2) using a flat screwdriver.

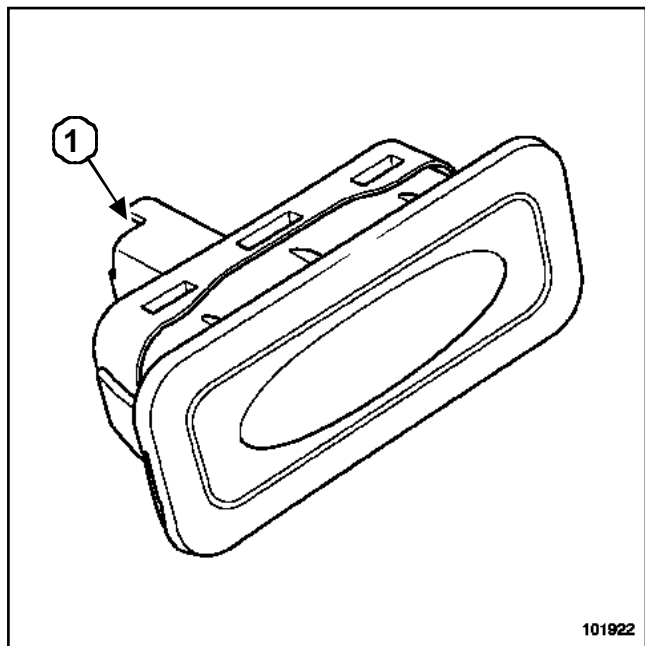


□ Disconnect connector (3).

REFITTING

□ To refit, proceed in the reverse order to removal.

Connection



101922

101922

Track	Description
1	Opening control
2	Earth

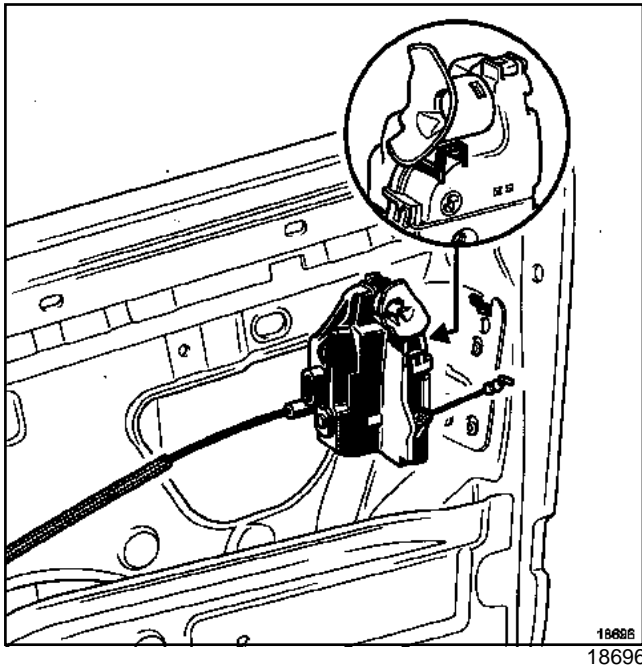
Note:

The tailgate opener control is a simple switch. The opening control can be checked using an ohmmeter:

Door locks: Connection

There are several types of door lock fitted to the vehicles depending on the equipment level:

- the entry level version (4 track connector) is fitted with electric locks and a closing sensor (vehicles are not equipped with body flange sensors),
- the high-end version (6 track connector) is fitted with a deadlocking system that can disable the internal door handles. This system can be used as a child-proof lock.



Entry level version (left-hand side)

Track	Description
A	Locking motor
B	Locking motor
C	Earth
D	Lock sensor

Entry level version (right-hand side)

Track	Description
A	Lock sensor
B	Earth
C	Locking motor
D	Locking motor

High-end version (front right)

Track	Description
A	Deadlocking system motor
B	Deadlocking system motor
C	Earth
D	Lock sensor
E	Deadlocking system motor
F	Deadlocking system motor

High-end version (front left)

Track	Description
A	Deadlocking system motor
B	Deadlocking system motor
C	Lock sensor
D	Earth
E	Locking motor
F	Locking motor

High-end version (rear left)

Track	Description
A	Locking motor
B	Common motor connection (child-proof)
C	Lock sensor
D	Earth
E	Deadlocking system motor (child-proof)
F	Deadlocking status indicator (child-proof)

High-end version (rear right)

Track	Description
F	Deadlocking status indicator (child-proof)
B	Deadlocking system motor (child-proof)
C	Earth

Track	Description
D	Lock sensor
E	Common motor connection (child-proof)
F	Locking motor

Tailgate lock

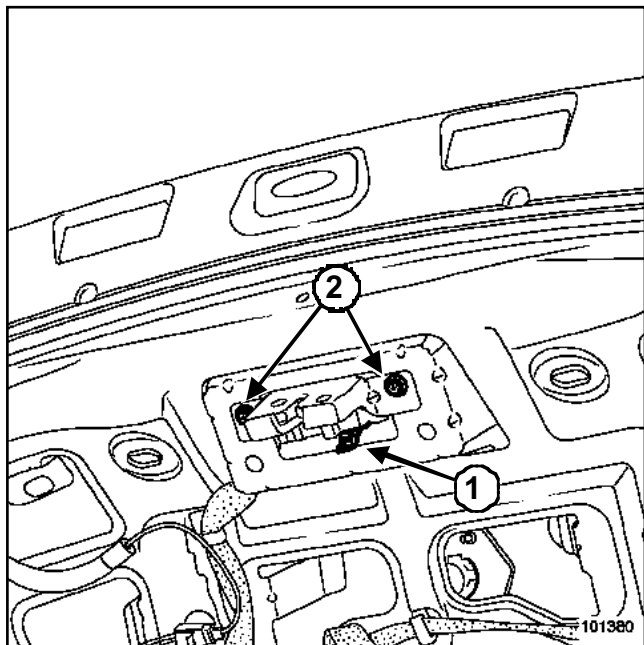
REMOVAL

- Unlock the tailgate lock by pushing on the tab with a screwdriver.

Note:

If there is an electrical failure, the tailgate can be opened manually.

- Disconnect the battery.
- Remove the interior trim (see **Tailgate lining**) in **Workshop Repair Manual 365 - Bodywork**.



101380

- Remove the mounting bolts (2) for the tailgate lock.
- Press on lower clip (1).
- Release the lock.
- Disconnect the wiring harness.

REFITTING

- To refit, proceed in the reverse order to removal.

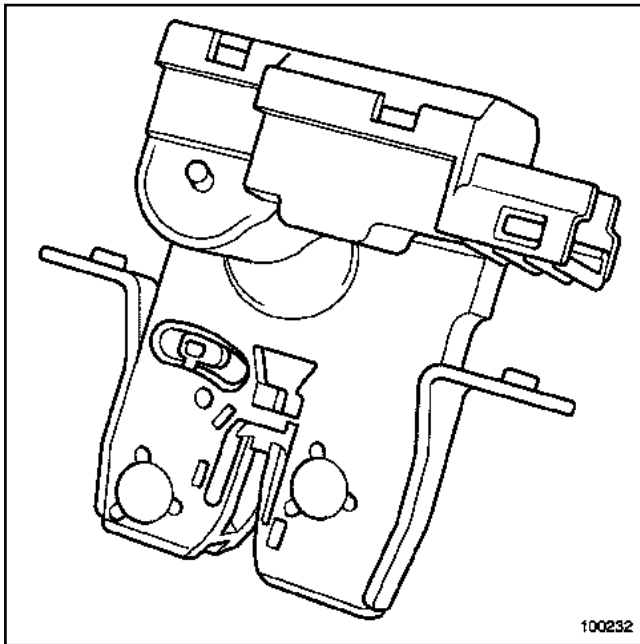
WARNING

Connect the battery; carry out the necessary programming (see Section Battery, page **80A-1**).

OPENING ELEMENTS MANAGEMENT

Keyless vehicle: Tailgate lock connection

87C

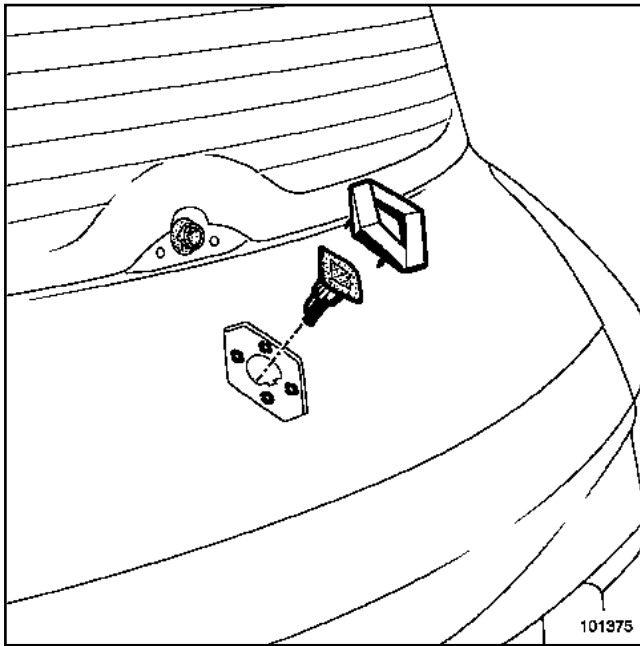


100232
100232

Track	Description
1	Motor supply
2	Motor supply
3	Opening signal (body flange sensor)
4	Earth

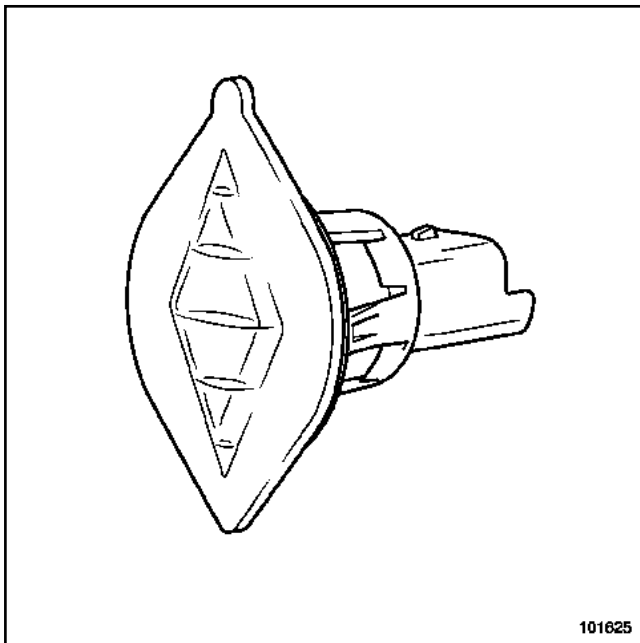
Note:

The tailgate opener control is a simple switch. The opening control can be checked using an ohmmeter:



101375

- To remove the lock button located on the tailgate, refer to **Workshop Repair Manual 365 - Bodywork**.



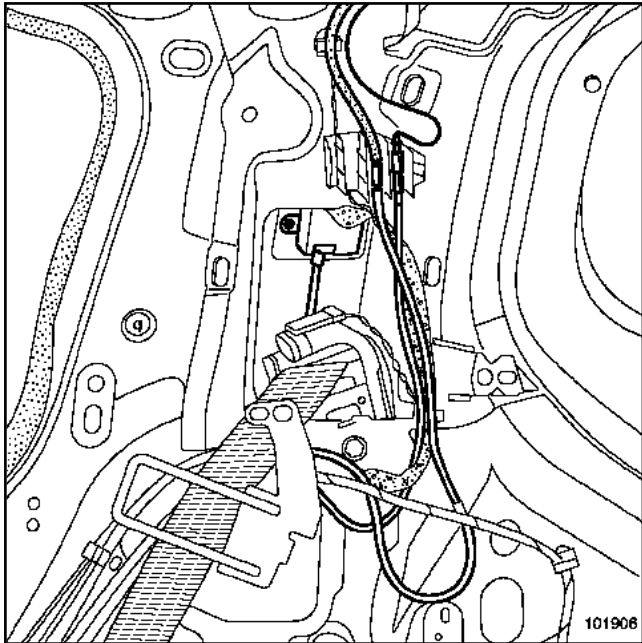
101625

□

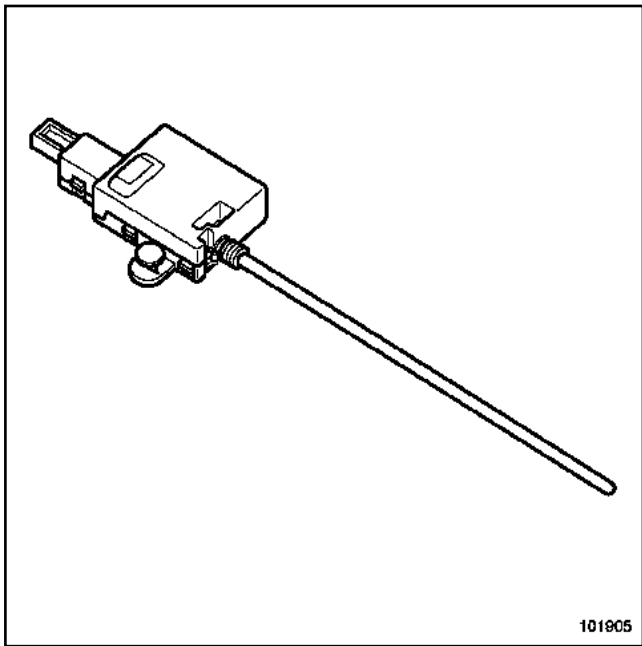
Note:

The lock button on the tailgate is a simple switch. The lock button can be checked using an ohmmeter.

Fuel tank flap locking / unlocking is controlled simultaneously with the driver's door.



101906



101905

❑ Remove:

- the luggage compartment lining right-hand side (see **Tailgate lining**) in **Workshop Repair Manual 365 - Bodywork**.

- the fuel filler flap electrical locking control.

Note:

The fuel tank flap lock electric motor is a simple switch.

I - TYPES OF UNIT

Three types of power window switches can be found on the driver's door:

- driver and passenger electric windows,
- driver's one-touch and passenger electric window
- driver and passenger one-touch power windows.

Two types of electric window switches can be found on the passenger door.

- electric window,
- one-touch electric window.

All rear power-window switches are the one-touch type.

II - ELECTRIC WINDOWS

Operating principle: The electric window motor is powered through the switch, which can also flip the polarity (for lowering or raising).

III - ONE-TOUCH ELECTRIC WINDOW

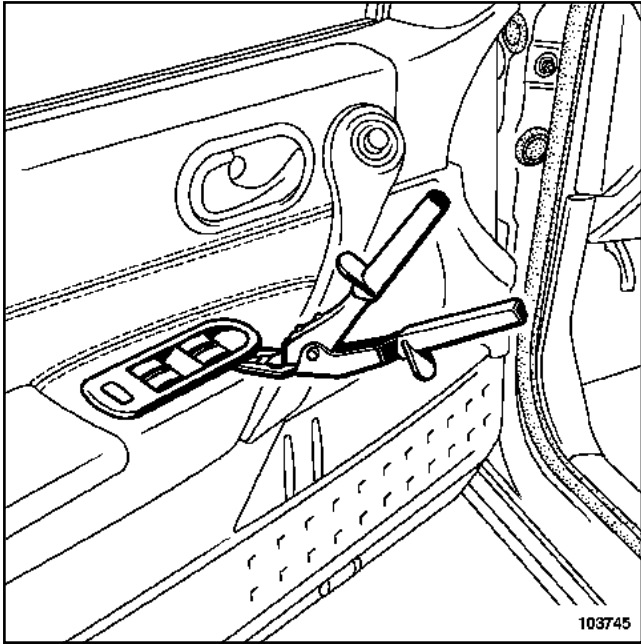
The one-touch switch has two positions for raising and two for lowering the windows.

- First raising contact: raising connection earthing (basic raising).
- Second raising contact: raising and lowering connection earthing (one-touch raising to the highest position).
- First lowering contact: raising connection earthing (basic lowering).
- Second lowering contact: raising and lowering connection earthing (one-touch lowering to the lowest position).

Front electric window switches on driver's door

The front power window switches (driver's side) are clipped to a plate. The plate is clipped to the door panel.

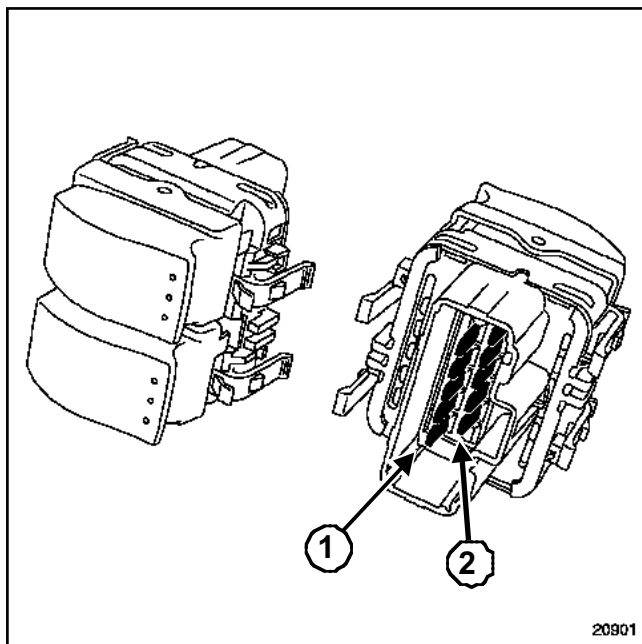
REMOVAL



- Protect the trim (with a mastic knife).
- Unclip the plate using unclipping pliers.
- Disconnect the connectors.
- Remove the electric window switch from the plate.

I - DRIVER'S AND PASSENGER ELECTRIC WINDOW ON DRIVER'S DOOR

RIGHT-HAND DRIVE or LEFT-HAND DRIVE



20901
20901

Track	Description
A1	Not used
A2	Passenger electric window control
A3	+ lighting
A4	Driver's electric window control
A5	+ after ignition
A6	Not used
B1	Not used
B2	Not used
B3	Passenger electric window control
B4	Earth
B5	Driver's electric window control
B6	Not used

Operating principle:

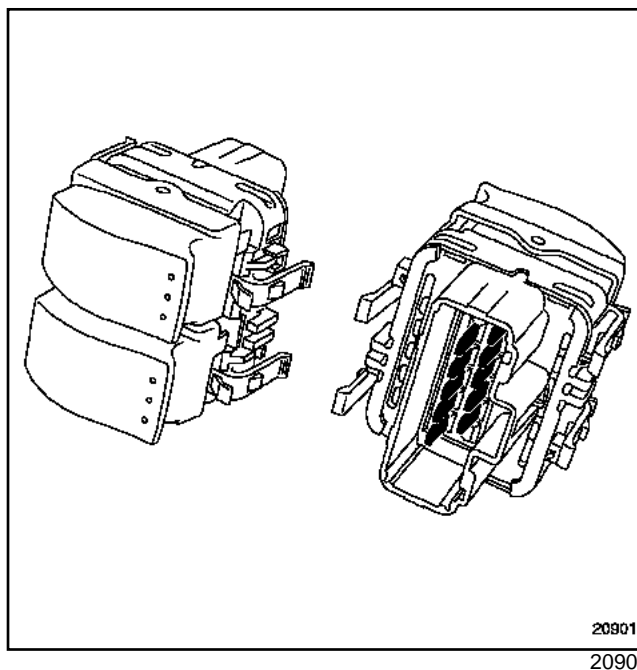
Check the resistance using an ohmmeter.

The value should be approximately 0Ω when a contact is made between the two tracks.

Action	Track			
	A4	B5	B3	A5
None	A5	A5	A5	A5
Driver open	B4	A5	-	-
Driver close	A5	B4	-	-
Passenger open	-	-	A5	B4
Passenger close	-	-	B4	A5

II - DRIVER'S AND PASSENGER ONE-TOUCH WINDOW

LEFT-HAND DRIVE



20901
20901

Track	Description
A1	Passenger side electric window control
A2	+ lighting
A3	+ after ignition
A4	Driver's side electric window control

ELECTRIC WINDOWS - SUNROOF

Front electric window switches on driver's door Connection

87D

Track	Description
A5	Not used
A6	Not used
B1	Not used
B2	Not used
B3	Passenger side electric window control
B4	Earth

Track	Description
B5	Driver's side electric window control
B6	Not used

Operating principle:

Check the resistance using an ohmmeter.

The value should be approximately **0 Ω** when a contact is made between two tracks.

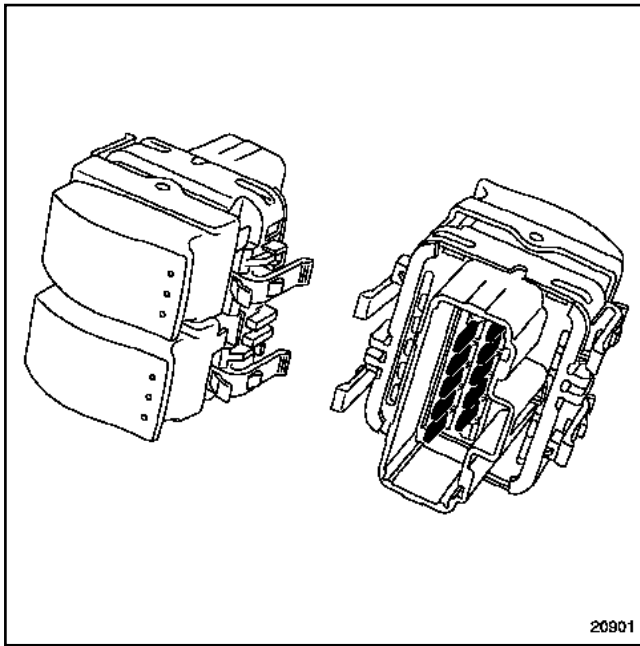
Action	Track			
	B4	B4	A1	B3
None	Infinite resistance	Infinite resistance	A2	A2
Driver basic opening	A4	Infinite resistance	-	-
Driver basic closing	Infinite resistance	B5	-	-
Driver one-touch open	A4 (first contact)	B5 (second contact)	-	-
Driver one-touch close	A4 (second contact)	B5 (first contact)	-	-
Passenger open	-	-	B4	A2
Passenger close	-	-	A2	B4

RIGHT-HAND DRIVE

ELECTRIC WINDOWS - SUNROOF

Front electric window switches on driver's door Connection

87D



20901
20901

Track	Description
A1	Not used
A2	Driver's side electric window control

Track	Description
A3	+ Lighting
A4	Driver's side electric window control
A5	+ before ignition
A6	Not used
B1	Not used
B2	Not used
B3	Driver's side electric window control
B4	Earth
B5	Passenger side electric window control
B6	Not used

Operating principle:

Check the resistance using an ohmmeter.

The value should be approximately **0 Ω** when a contact is made between two tracks.

Action	Track			
	B3	A2	A4	B5
None	Infinite resistance	Infinite resistance	A5	A5
Driver basic opening	Infinite resistance	B4	-	-
Driver basic closing	B4	Infinite resistance	-	-
Driver one-touch open	B4 (second contact)	B4 (first contact)	-	-
Driver one-touch close	B4 (first contact)	B4 (second contact)	-	-
Passenger open	-	-	B4	A5
Passenger close	-	-	A5	B4

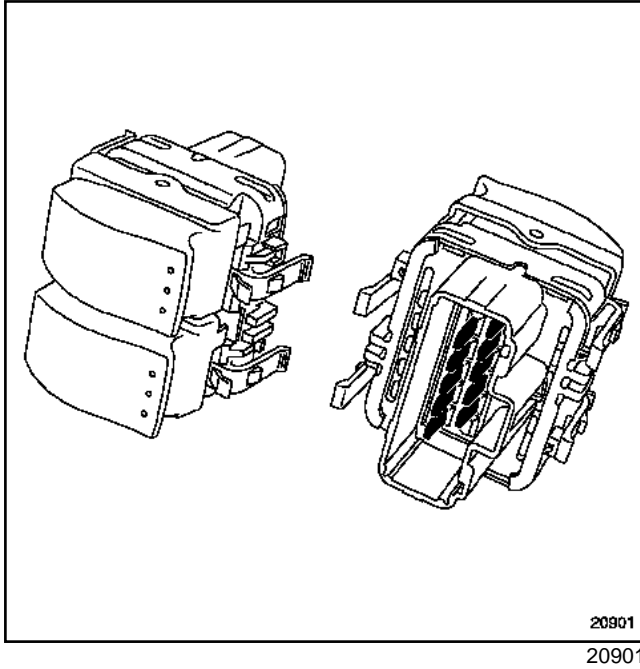
ELECTRIC WINDOWS - SUNROOF

Front electric window switches on driver's door Connection

87D

III - DRIVER'S AND PASSENGER ONE-TOUCH ELECTRIC WINDOW

LEFT-HAND DRIVE



Track	Description
A1	Passenger side electric window control
A2	Connection with passenger switch
A3	+ lighting
A4	Driver's side electric window control
A5	Not used
A6	Not used
B1	Not used
B2	Passenger side electric window control
B3	Connection with passenger switch
B4	Earth
B5	Driver's side electric window control
B6	Not used

Operating principle:

Check the resistance using an ohmmeter.

The value should be approximately **0 Ω** when a contact is made between two tracks.

Action	Tracks			
	B2 / B3	A1 / A2	A4 / B4	B5 / B4
None	Infinite resistance	Infinite resistance	Infinite resistance	Infinite resistance
Driver basic opening	-	-	0	Infinite resistance
Driver basic closing	-	-	Infinite resistance	0
Driver one-touch open	-	-	0 (first contact)	0 (second contact)
Driver one-touch close	-	-	0 (second contact)	0 (first contact)
Passenger basic opening	Infinite resistance	0	-	-
Passenger basic closing	0	Infinite resistance	-	-

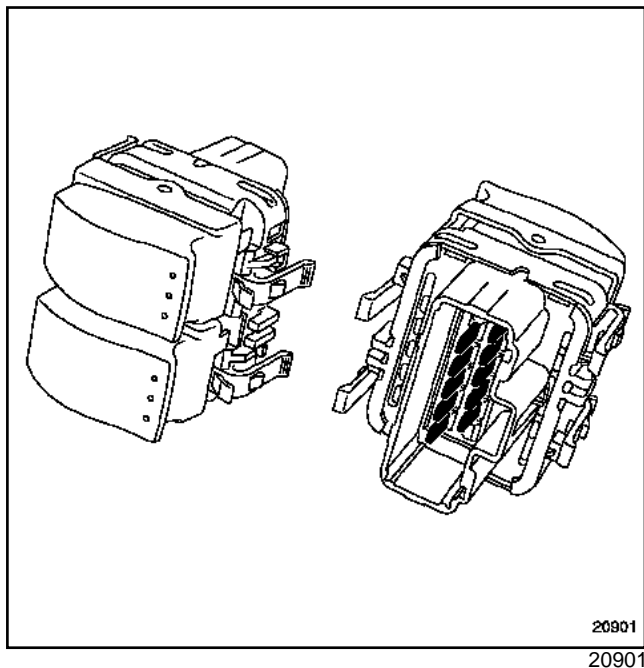
ELECTRIC WINDOWS - SUNROOF

Front electric window switches on driver's door Connection

87D

Action	Tracks			
	B2 / B3	A1 / A2	A4 / B4	B5 / B4
Passenger one-touch opening	0 (second contact)	0 (first contact)	-	-
Passenger one-touch closing	0 (first contact)	0 (second contact)	-	-

RIGHT-HAND DRIVE



Track	Description
A1	Driver's side electric window control
A2	Not used
A3	+ lighting
A4	Connection with passenger switch
A5	Passenger side electric window control
A6	Not used
B1	Not used
B2	Not used
B3	Driver's side electric window control
B4	Earth
B5	Connection with passenger switch
B6	Passenger side electric window control

Operating principle:

Check the resistance using an ohmmeter.

The value should be approximately **0 Ω** when a contact is made between two tracks.

Action	Tracks			
	A1 / B4	B3 - B4	B4 / A5	B4 / B6
None	Infinite resistance	Infinite resistance	Infinite resistance	Infinite resistance
Driver basic opening	0	Infinite resistance	-	-
Driver basic closing	Infinite resistance	0	-	-
Driver one-touch open	0 (first contact)	0 (second contact)	-	-

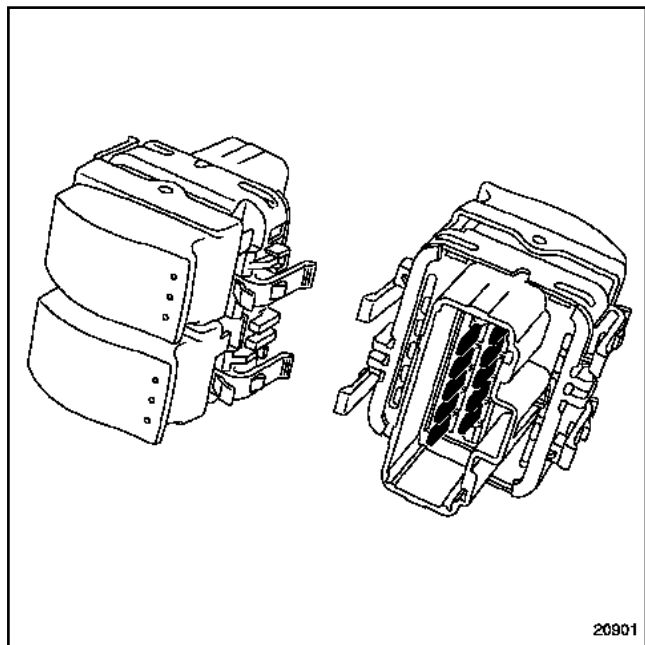
ELECTRIC WINDOWS - SUNROOF

Front electric window switches on driver's door Connection

87D

Action	Tracks			
	A1 / B4	B3 - B4	B4 / A5	B4 / B6
Driver one-touch close	0 (second contact)	0 (first contact)	-	-
Passenger basic opening	-	-	Infinite resistance	0
Passenger basic closing	-	-	0	-
Passenger one-touch opening	-	-	0 (second contact)	0 (first contact)
Passenger one-touch closing	-	-	0 (first contact)	0 (second contact)

IV - REAR ONE-TOUCH ELECTRIC WINDOW (ALL TYPES)



20901

20901

Track	Description
A5	Left-hand electric window control
A6	Not used
B1	Not used
B2	Right-hand electric window control
B3	Connection to rear right-hand electric window control
B4	Earth
B5	Connection to the rear left-hand electric window control
B6	Left-hand electric window control

Operating principle:

Check the resistance using an ohmmeter.

The value should be approximately **0 Ω** when a contact is made between the two tracks.

Track	Description
A1	Right-hand electric window control
A2	Connection to rear right-hand electric window control
A3	+ lighting
A4	Connection to rear left-hand electric window control

ELECTRIC WINDOWS - SUNROOF

Front electric window switches on driver's door Connection

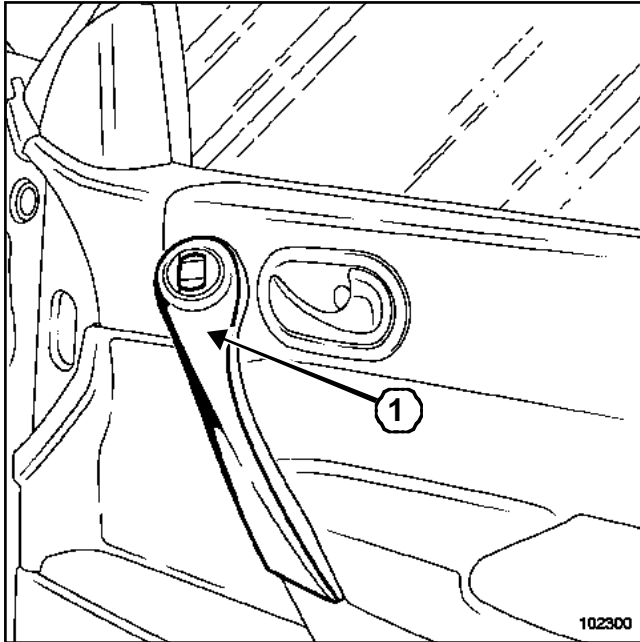
87D

Action	Tracks			
	A5 / B4	B6 / B4	A1 / B4	B2 - B4
None	Infinite resistance	Infinite resistance	Infinite resistance	Infinite resistance
Driver basic opening	-	-	0	Infinite resistance
Driver basic closing	-	-	Infinite resistance	0
Driver one-touch open	-	-	0 (first contact)	0 (second contact)
Driver one-touch close	-	-	0 (second contact)	0 (first contact)
Passenger basic opening	Infinite resistance	0	-	-
Passenger basic closing	0	Infinite resistance	-	-
Passenger one-touch opening	0 (first contact)	0 (second contact)	-	-
Passenger one-touch closing	0 (second contact)	0 (first contact)	-	-

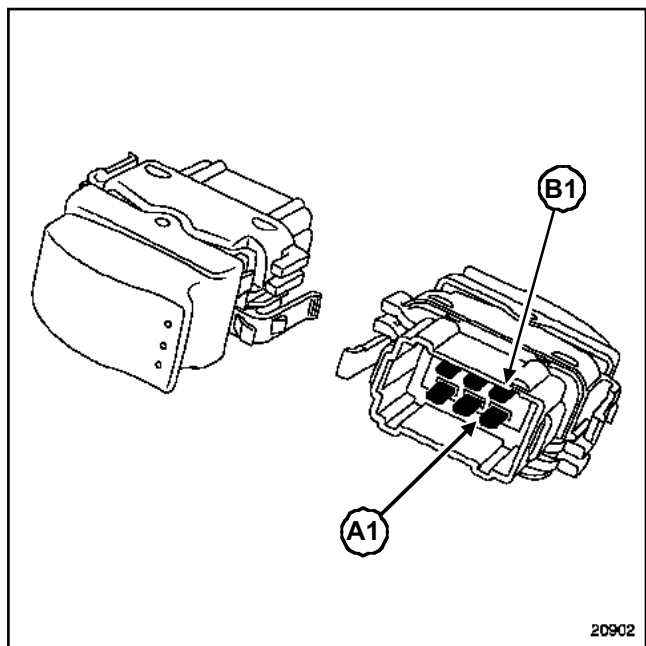
Front electric window switch on the passenger door

The passenger power window switch is clipped to the handle.

REMOVAL



- Unclip the upper section (1) of the handle.
- Remove the electric window switch from the plate.



20902

Electric window on passenger door

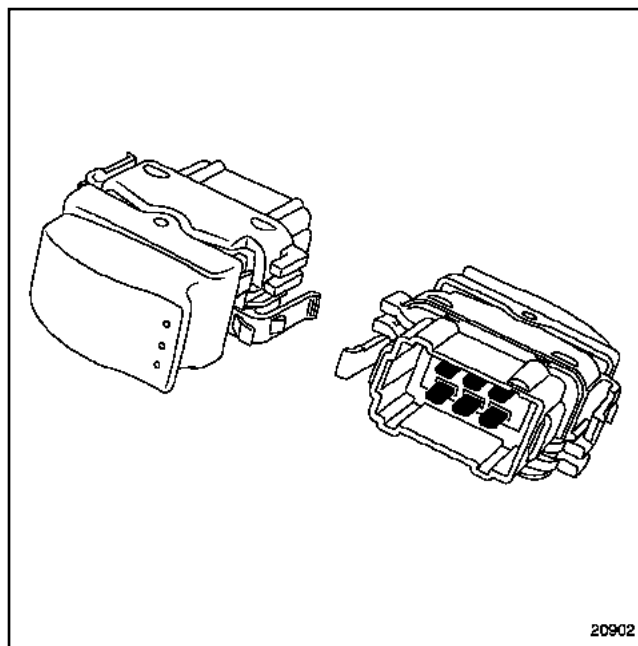
Track	Description
A1	Connection to driver's electric window
A2	Earth
A3	Passenger electric window control
B1	Passenger electric window control
B2	Connection to driver's electric window switch
B3	+ lighting

Operating principle:

Check the resistance using an ohmmeter.

The value should be approximately **0 Ω** when a contact is made between two tracks.

Action	Track	
	A3	B1
None	A1	B2
Passenger close	A2	B2
Passenger open	A1	A2



20902

20902

One-touch electric window on passenger door

Track	Description
A1	Electric window control
A2	Electric window control
A3	Connection to driver's switch
B1	Connection to driver's switch
B2	Earth
B3	+ lighting

Operating principle:

Check the resistance using an ohmmeter.

The value should be approximately 0 when a contact is made between two tracks.

Action	Tracks	
	A1 / B1	A2 / A3
None	Resistance infinite	Resistance infinite
Basic closing	Resistance infinite	0
Basic opening	0	Resistance infinite

ELECTRIC WINDOWS - SUNROOF

Front electric window switch on the passenger door: Connection

87D

Action	Tracks	
	A1 / B1	A2 / A3
Closing (one-touch)	0 (second contact)	0 (first contact)
Opening (one-touch)	0 (first contact)	0 (second contact)

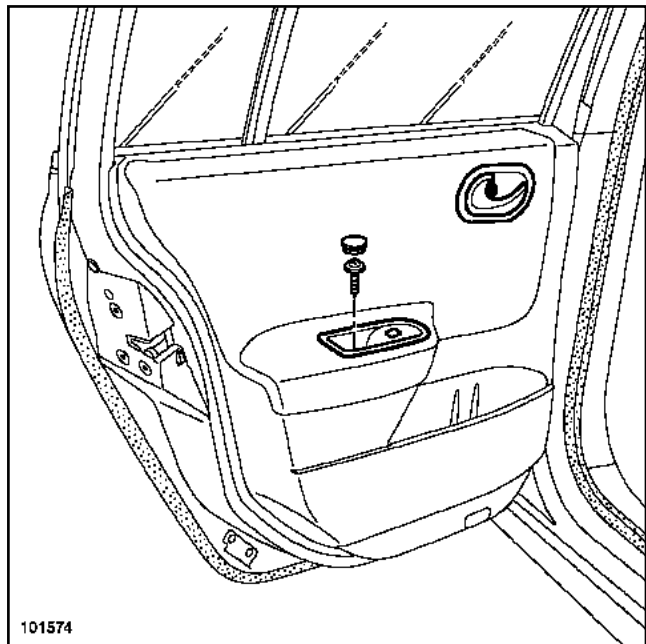
ELECTRIC WINDOWS - SUNROOF

Rear electric window switches on rear doors

87D

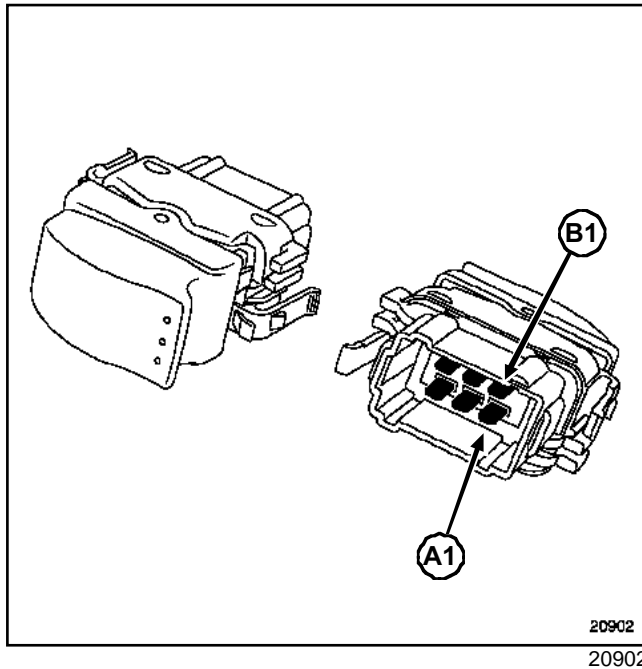
The rear electric window switches are clipped to a plate.

REMOVAL



101574

- Unscrew the door panel plate.
- Unclip the switch from the plate.



WARNING

The rear switches cannot be checked with a multi-meter. However, it is possible to shunt the corresponding tracks to determine the state of the switch.

One touch electric window

Track	Description
A1	Window riser control
A2	Switched earth (window riser locking)
A3	Connection to driver's electric window control
B1	Connection to driver's electric window control
B2	Window riser control
B3	+ lighting

Action	Tracks	
	A1 - A2	B2 - A2
None	-	-
Basic closing	0*	-
Basic opening	-	0*
One-touch closing	0* (first contact)	0* (second contact)
One-touch opening	0* (second contact)	0* (first contact)

Child lock switch

When the vehicle is locked, a red warning light (operated by the UCH) comes on on the switch. This switch is used to inhibit opening of the rear doors and windows (depending on vehicle equipment).

Note:

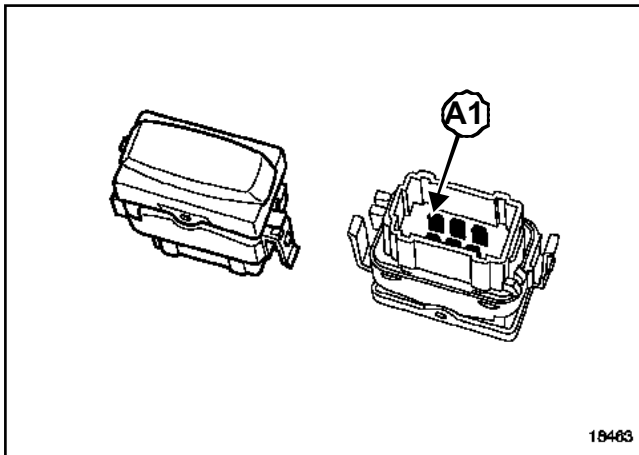
The switch is removed in the same way as the driver's electric windows switch.

If the vehicle is fitted with one-touch electric windows, the child safety control switches the control earth of the rear one-touch windows and notifies the UCH of its state.

Note:

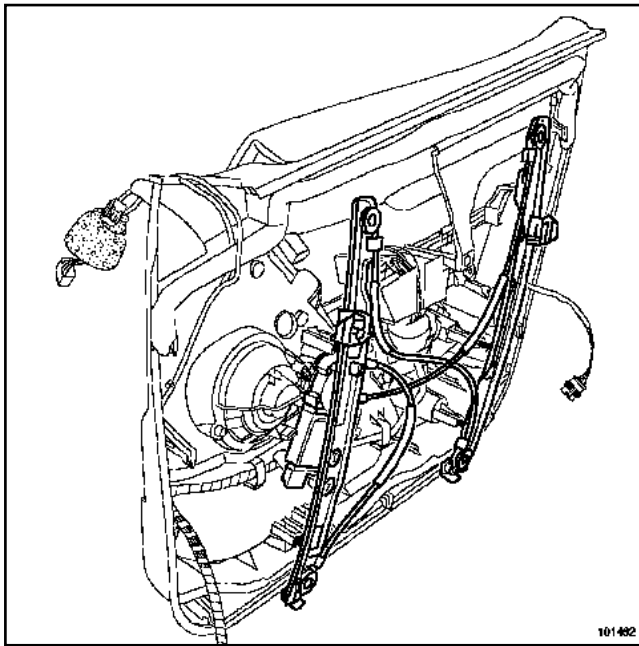
When the child safety lock is on, the resistance between tracks A3 and B1 is infinite.

One touch electric window



18463

Track	Description
A1	+ lighting
A2	+ before ignition
A3	Earth
B1	Locking of rear electric windows - child safety (if the vehicle is equipped with it)
B2	Not used
B3	Child safety warning light control (depending on equipment level)



101462

Note:

For removal/refitting of the front window mechanism, see **Side opening element mechanisms** Section in **Workshop Repair Manual 365 - Bodywork**.

- The procedure is the same for all versions of electric window motors (one-touch or not).
- The motor cannot be replaced alone. Its replacement requires replacement of the whole mechanism.

The one-touch electric window motors incorporate a non-removable electronics module.

One-touch electric windows include an anti-pinch function.

IMPORTANT

You must initialise the one-touch electric window motors to reactivate the anti-pinch function (Section Battery, page **80A-1**).

Note:

If the one-touch electric window motors are not initialised:

- the windows rise and descend in step mode,
- closing the windows remotely (two short presses on the locking button of the Renault Card or door lock) does not work.

ELECTRIC WINDOWS - SUNROOF

Front electric window motor: Connection

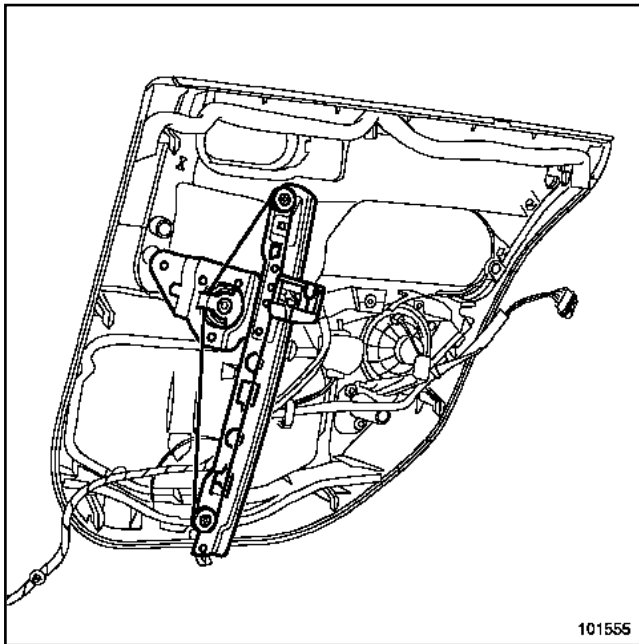
87D

Electric window (not one-touch)

Track	Description
1	Motor power supply
2	Motor power supply

Electric window (one-touch)

Track	Description
1	Lowering control
2	Raising control
3	Earth
4	+ battery
5	Not used
6	Operation authorisation



101555

101555

Note:

- For removing/refitting the rear window riser mechanism, (**Side opening element mechanisms**Section) in **Workshop Repair Manual 365 - Bodywork**.
- The motor cannot be replaced alone. Its replacement requires replacement of the whole mechanism.

Two types of rear window riser are available, depending on the equipment level:

- manual window riser,
- one-touch electric window.

The one-touch electric window motors have a built-in inseparable electronics module.

One-touch electric windows have an anti-pinch function.

IMPORTANT

It is essential to initialise the one-touch electric windows to reactivate the anti-pinch function (Section Battery, page **80A-1**).

Note:

If the one-touch electric window motors are not initialised:

- the windows rise and descend in step mode,
- it is not possible to close the windows using the remote control (two short presses on the Renault card or door lock button).

ELECTRIC WINDOWS - SUNROOF

Rear electric window motor: Connection

87D

One-touch electric window

Track	Description
1	Lowering control
2	Raising control
3	Earth
4	+ battery
5	Not used
6	Operating authorisation

ELECTRIC WINDOWS - SUNROOF

Electric sunroof: Operating principle

87D

I - GENERAL

The electric sunroof has an anti-pinch mode regulated according to vehicle speed.

IMPORTANT

Anti-pinch mode only works if the sunroof has been correctly initialised (see below).

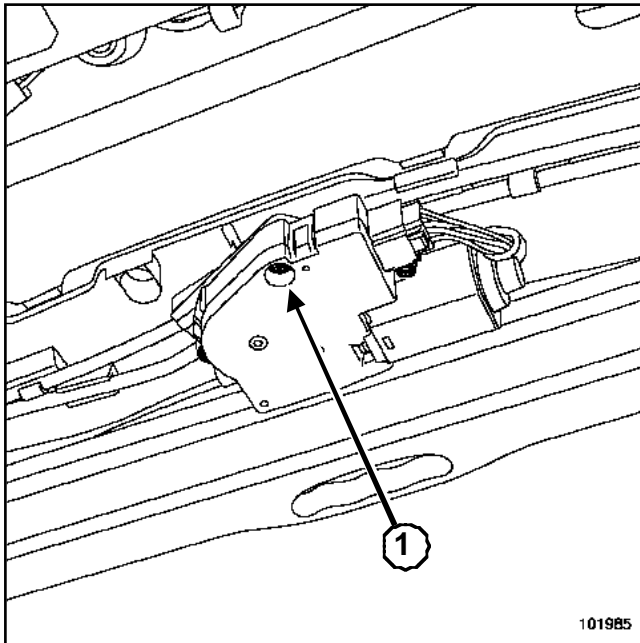
Note:

The sunroof (sliding or tilting) can be closed by pressing and holding (for about two seconds) the lock button of the RENAULT Card. This signal is managed by the UCH if it is correctly configured (Section Passenger compartment connection unit, page **87B-1**).

In this case, the switch remains in the last position used.

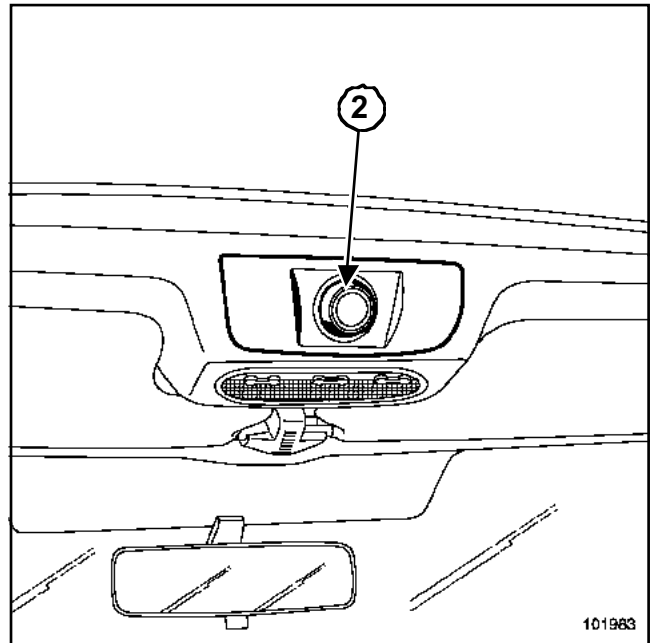
Press the switch to reposition the sunroof in its original position before closing with the RENAULT card.

Sunroof electric motor fault



In the event of a sunroof motor fault, it can be moved (1) manually using a male Allen key.

II - OPERATING PRINCIPLE



The electric sunroof motor has two functions:

- tilting: 1 position,
- sliding: 3 positions.

Operation of the sunroof is controlled by the switch(2).

To operate, the sunroof motor must receive authorisation from the UCH:

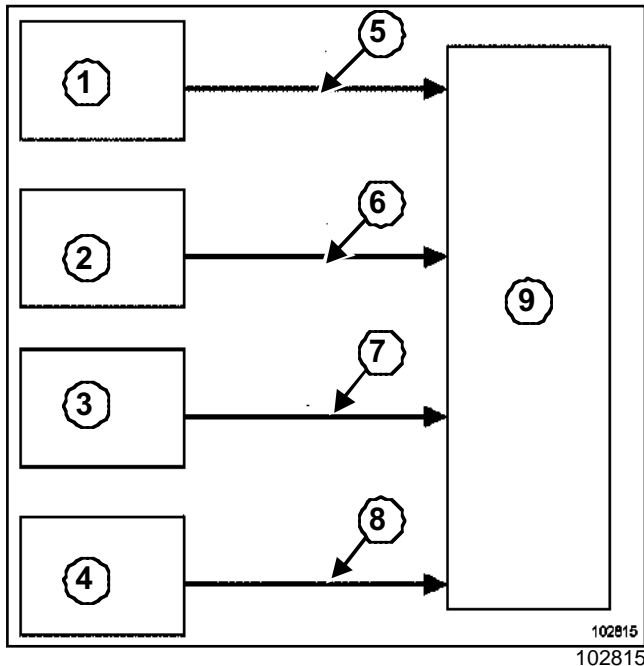
- 0 V signal: sunroof movement authorisation (opening or closing),
- +12 V signal: no sunroof movement authorisation,
- opening cyclic ratio signal: automatic closing of the sunroof by pressing and holding the remote control.

ELECTRIC WINDOWS - SUNROOF

Electric sunroof: Operating principle

87D

III - DIAGRAM



- | | |
|-----|------------------------|
| (1) | Relay/fuse box |
| (2) | UCH |
| (3) | ABS computer |
| (4) | Switch |
| (5) | Power supply - earth |
| (6) | Authorisation to close |
| (7) | Vehicle speed signal |
| (8) | Open - close |
| (9) | Sunroof electric motor |

IV - ANTI-PINCH

Obstacle detection is based on analysis of the motor's speed rotation. An encounter with an obstacle results in a significant variation in motor speed.

Two sensors incorporated into the motor generate periodic signals. The speed can thus be determined over half a revolution.

During the initialisation phase, a speed curve is stored by the computer integrated into the motor.

For the anti-pinch function, the computer compares the actual speed of movement with the stored speed.

Depending on the speed variation detected, the system triggers anti-pinch mode.

IMPORTANT

The anti-pinch function only works if the sunroof has been correctly initialised (see below).

Note:

The anti-pinch function can be disabled in order to overcome a point of stiffness (bent rail, foreign body in the runners).

To do this, press and hold until the sunroof is closed in step-by-step mode. The anti-pinch function is reactivated when the switch is released.

V - INITIALISATION PROCEDURE

IMPORTANT

In the event that the battery is disconnected, there is an electrical fault or an operation on the sunroof, the system will operate in manual mode only and with a jerky movement.

To perform initialisation:

- Set the switch to the closed position,
- press and hold the switch (for at least two seconds) and keep pressed. The motor moves in stepper mode then goes down several centimetres,
- release the switch.

Electric sunroof control

Essential special tooling

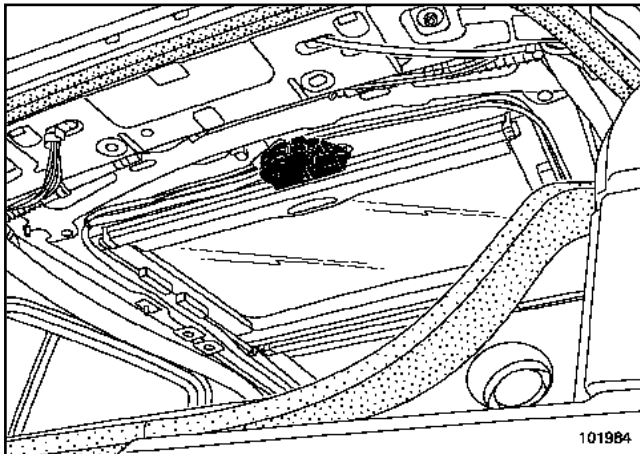
Car. 1597

Lever for removing rear turning handle clips

To access the sunroof motor, the headlining must be removed (see **Headlining**) in the **Workshop Repair Manual MR 365 - Bodywork**.

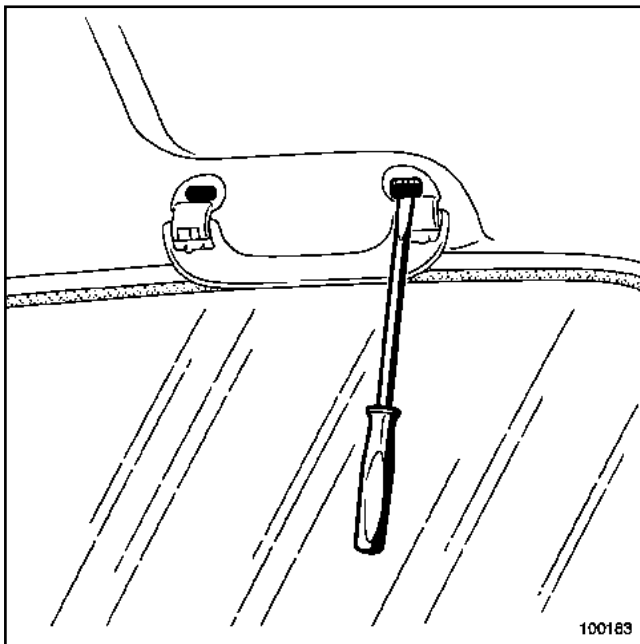
The motor is located in the rear section of the roof.

REMOVAL



Remove:

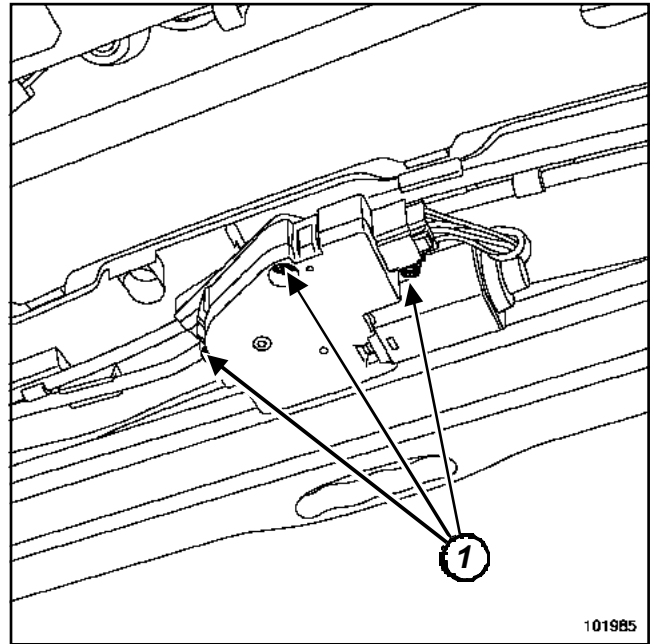
- the sunroof switch and its connector,
- the courtesy light,
- the pillar linings (refer to **Workshop Repair Manual MR 365 - Bodywork**).



100183

Remove:

- the front and rear handles using tool (Car. 1597),
- the rear clip,
- the two rear fasteners.



101985

- Unclip and disconnect the sunroof motor connector.
- Remove the mounting bolts (1).
- Release:
 - the connector mounting,
 - the sunroof motor.

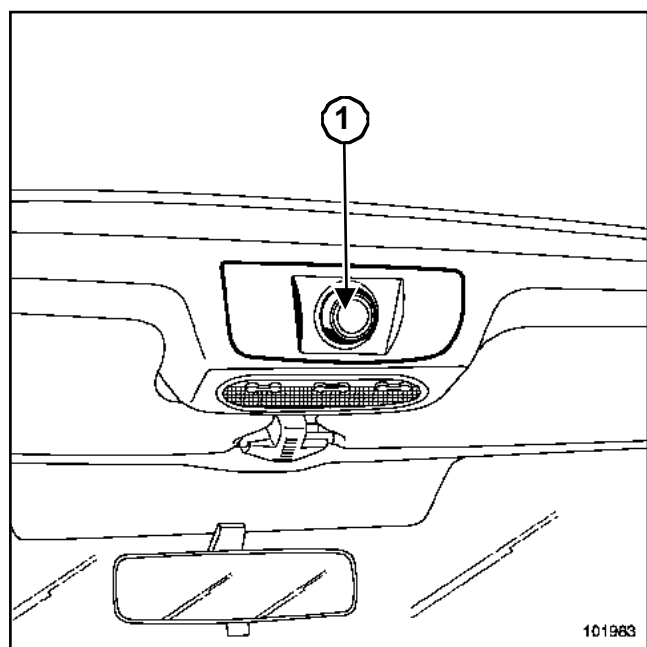
REFITTING

- To refit, proceed in the reverse order to removal.
- The system must be initialised after the motor is refitted (Section Electric windows - Sunroof, Sunroof opening motor Initialisation, page **87D-23**).

ELECTRIC WINDOWS - SUNROOF

Sunroof opening motor Initialisation

87D



101983

Note:

During the initialisation procedure, the interval between two actions must not exceed **5 seconds**, otherwise the electronics will start another initialisation cycle.



IMPORTANT

- If the battery is disconnected, or if there is an electrical fault or work is carried out on the sunroof, the system will operate in manual mode only and with a jerky movement.
- the anti-pinch function only works if the sunroof has been initialised correctly (see below).

□ To initialise the motor:

- position the switch (1) in the closed position,
- press and hold the switch (at least two seconds) and keep pressed: The motor moves into stepper mode then goes down to several centimetres,
- release the switch,
- press the switch again within **5 seconds**,
- hold the switch, the sunroof opens then closes in the sliding position,
- the motor is initialised,
- set the switch to « stop ».

In some instances, only the first three stages are required for initialisation.

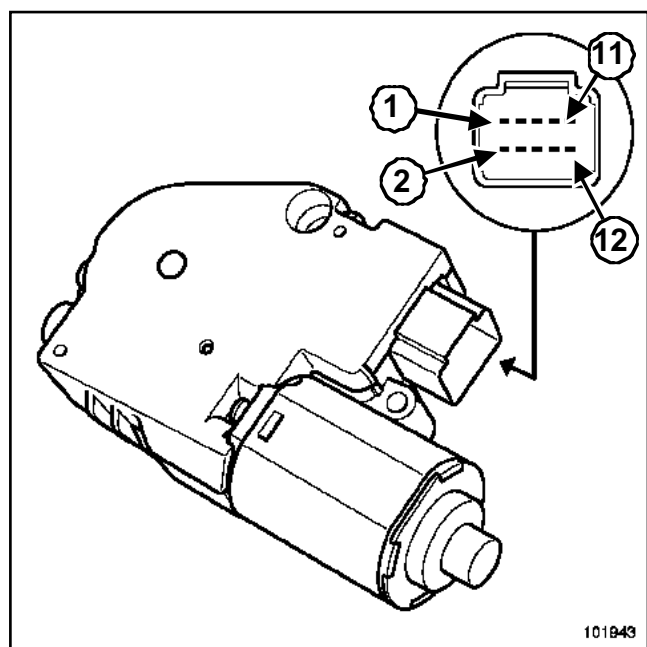
WARNING

It is important to wait for at least **3 seconds** before operating the control again.

ELECTRIC WINDOWS - SUNROOF

Electric sunroof motor: CONNECTION

87D



101943
101943

Track	Description
1	Sunroof control (track 1 of the switch)
2	Sunroof control (track 5 of the switch)
3	Sunroof control (track 2 of the switch)
4	Sunroof control (track 3 of the switch)
5	Not used
6	Not used
7	Power supply
8	Vehicle speed information
9	Central opening and closing authorisation signal
10	Earth
11	Not used
12	Not used

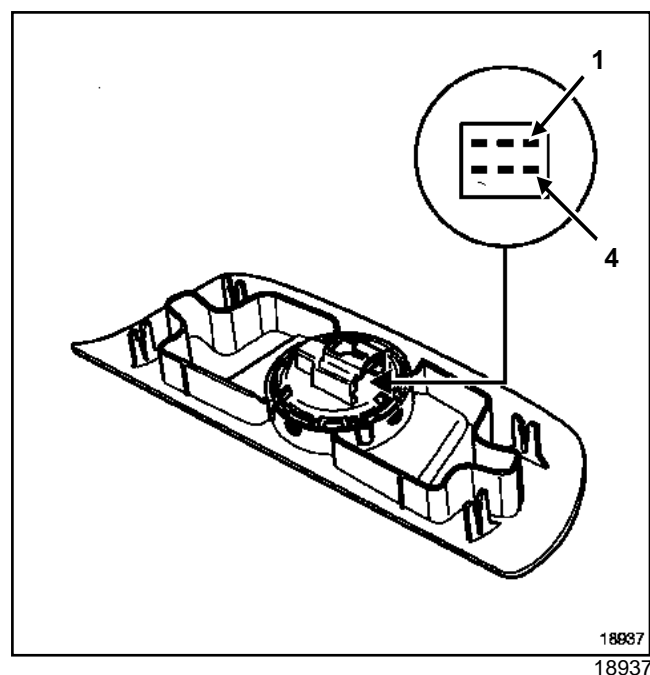
Note:

- The vehicle speed signal comes from the ABS computer.
- The « centralised locking/unlocking authorisation signal » comes from the UCH.

Track	Description
1	Motor (track 1)
2	Motor (track 3)
3	Motor (track 4)

Track	Description
4	Not used
5	Motor (track 2)
6	Not used

Switch position	Tracks 1 and 2	Tracks 1 and 3	Tracks 1 and 5
Closed	approx 0 Ω	approx 0 Ω	resistance infinite
Open	resistance infinite	approx 0 Ω	resistance infinite
Slide position 1	resistance infinite	approx 0 Ω	approx 0 Ω
Slide position 2	resistance infinite	resistance infinite	approx 0 Ω
Slide position 3	approx 0 Ω	resistance infinite	approx 0 Ω
Pressed	approx 0 Ω	approx 0 Ω	approx 0 Ω



ENGINE INTERCONNECTION UNIT

Protection and Switching Unit: General

87G

Two models of Protection and Switching Unit may be fitted to vehicles:

- « Basic N1 » UCH,

- « High-end N3 » UCH.

Only the « High-end » Protection and Switch Unit is available as a replacement part.

	« Basic (N1) »	« High-end (N3) »
Multiplex connection	X	X
Diagnostics	X	X
« + After ignition » feed management:	-	-
- to the starter	X	X
- to the power assisted steering	X	X
- to the passenger compartment	X	X
- to the injection computer	X	X
- to the fuel pump	X	X
- to the diesel heater	X	X
- to the ABS computer	X	X
- to the automatic gearbox computer	-	X
Keyless vehicle:	-	-
- « neutral » input	X	X
- steering column electric lock	X	X
Lighting management:	-	-
- side lights	X	X
- dipped beam headlights	X	X
- main beam headlights	X	X
- fog lights (front)	-	X
Cooling fan assembly management:	-	-
- low speed	X	X
- high speed	-	X
Air conditioning compressor clutch management	-	X
Oil level and pressure display management	X	X
Battery charge indicator display management	X	X
Windscreen wipers management	X	X
Timed rear screen de-icing management	X	X

ENGINE INTERCONNECTION UNIT

Switching and protection unit

87G

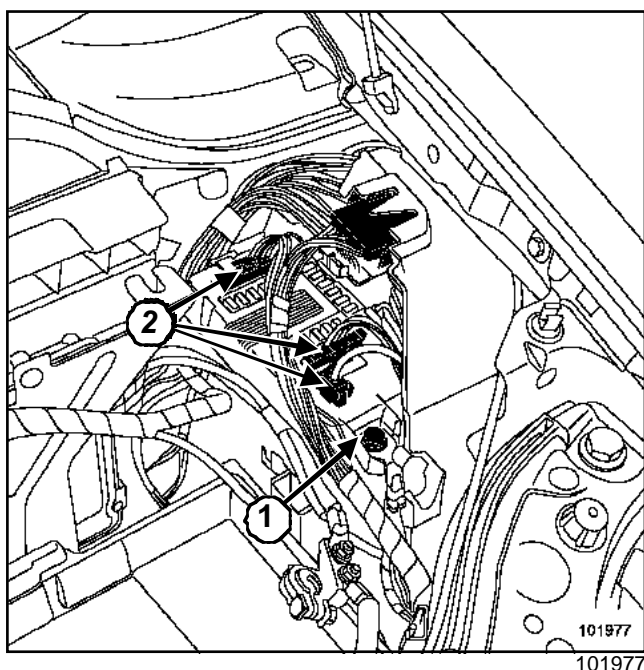
Essential equipment

Diagnostic tool

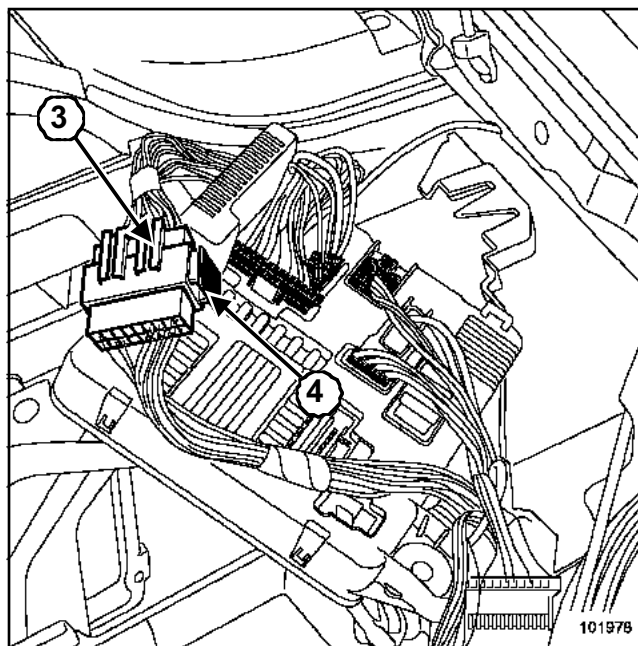
WARNING

It is essential to take a reading of the Protection and Switching Unit configurations using the **Diagnostic tool**.

REMOVAL



- Remove the engine covers.
- Disconnect the battery.
- Remove:
 - the battery,
 - the upper section of the connection unit,
 - bolt (1).
- Disconnect the connectors (2).



- Disconnect the remaining connectors.

Note:

To unfasten the connector (3), use lock (4).

REFITTING

- To refit, proceed in the reverse order to removal.

WARNING

The alternator type must be configured when replacing the Protection and Switching Unit (**Starting - load**Section).

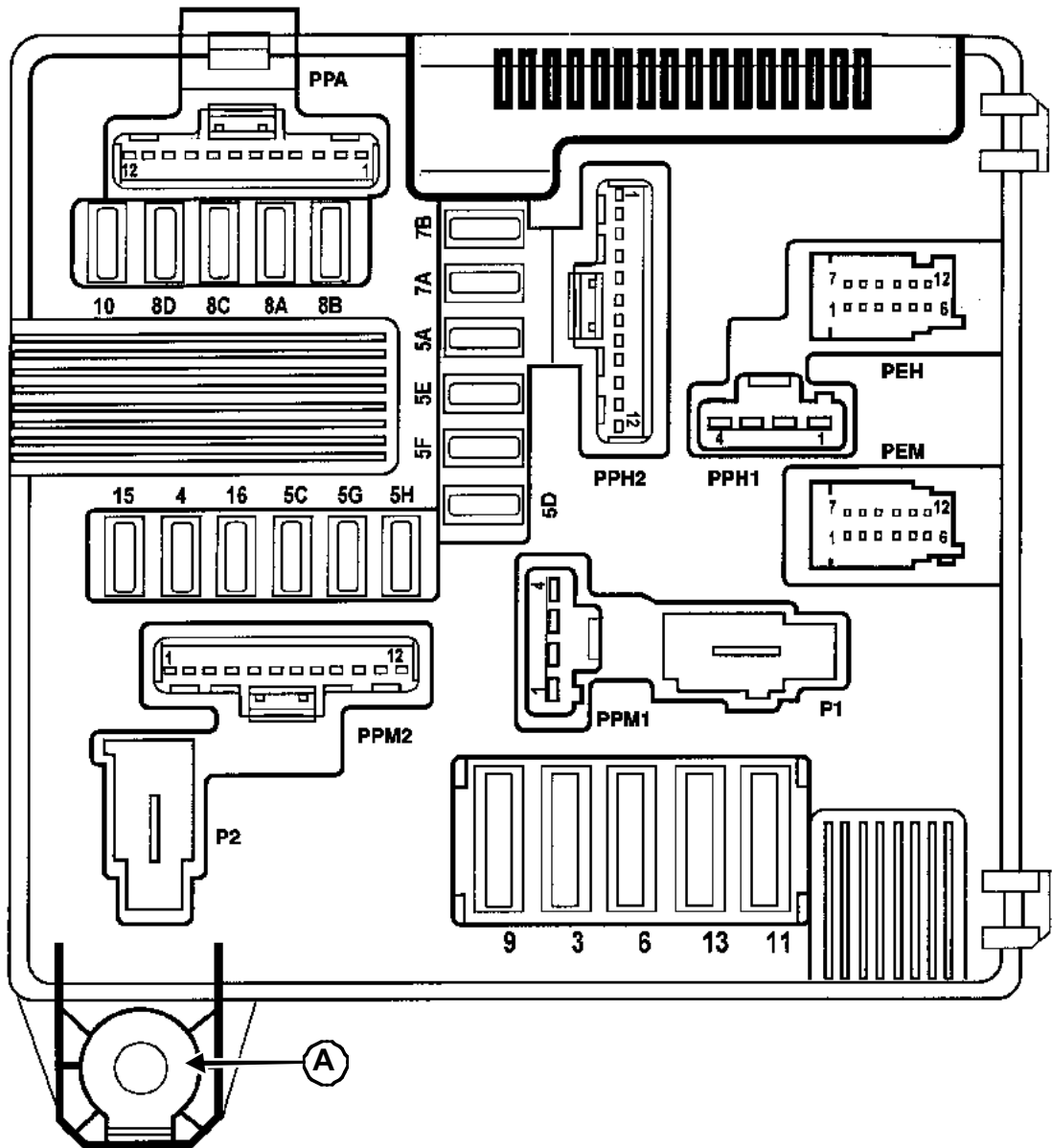
CONFIGURATION

- Alternator type: CF001
 - KCB1 90 BOSCH
 - TG11 110 VALEO
 - SG12 VALEO
 - LIE8 150 BOSCH
 - SG15L VALEO
 - OTHER TYPES

ENGINE INTERCONNECTION UNIT

Protection and Switching Unit: Connection

87G



102290
102290

ENGINE INTERCONNECTION UNIT

Protection and Switching Unit: Connection

87G

(A) + battery

Connector PPH1 (grey)

Track	Description
1	ABS computer supply
2	Heated rear screen and door mirrors control
3	Earth
4	Injection system supply

Connector PEH (black)

Track	Description
1	+ After ignition (injection and steering column electric lock)
2	Not used
3	+ Accessories feed input (connection to track 9 of connector PEM)
4	Oil level sensor
5	Oil level sensor
6	Windscreen park position control
7	Multiplex link L (ABS)
8	Multiplex link L (UCH)
9	Multiplex link L (engine)
10	Multiplex link H (UCH)
11	Multiplex link H (ABS)
12	Multiplex link H (engine)

Connector PPH2 (brown)

Track	Description
1	Windscreen wiper high speed control
2	Windscreen wiper low speed control
3	Electronic earth
4	Right-hand dipped beam headlight output

Track	Description
5	Fuel pump output
6	Left-hand side light output
7	Right-hand side light output
8	+ After ignition steering column lock switch normally closed
9	Reversing light output
10	Electric power assisted steering and air-bag computer supply
11	+ After ignition (passenger compartment)
12	Not used

Connector PPA (black)

Track	Description
1	Protected left-hand side light output
2	Protected right-hand side light output
3	Protected left-hand main beam headlight output
4	Protected right-hand main beam headlight output
5	Protected right-hand dipped beam headlight output
6	Protected left-hand dipped beam headlight output
7	Front right-hand fog light output
8	Front left-hand fog light output
9	Not used
10	Not used
11	Not used
12	Not used

Connector PEM (black)

ENGINE INTERCONNECTION UNIT

Protection and Switching Unit: Connection

87G

Track	Description
1	Earth input (controlled by the injection computer for the ignition system fuel pump)
2	Earth input (controlled by the injection computer for the actuators)
3	Alternator (charge signal)
4	Not used
5	Not used
6	Automatic gearbox neutral signal
7	Not used
8	Alternator (excitation)
9	Diesel heater relay control output
10	Oil level sensor
11	Oil level sensor
12	Oil pressure sensor

PPM1 connector (black)

Track	Description
1	Injection system supply
2	Injection system supply
3	Starter control
4	Fan assembly low speed resistor control

Connector PPM2 (grey)

Track	Description
1	Automatic gearbox computer supply
2	Not used
3	Diesel heater supply output
4	Not used
5	Air conditioning clutch control
6	Reversing lights supply
7	Not used

Track	Description
8	Ignition coil supply
9	Reversing lights control
10	Automatic gearbox computer supply
11	Not used
12	Not used

Connector P1 (blue)

Track	Description
1	High-speed fan assembly supply

Connector P2 (transparent)

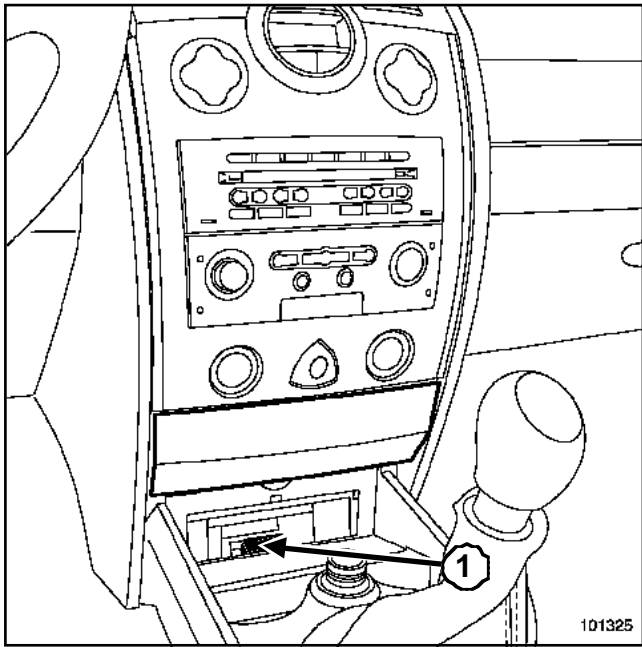
Track	Description
1	+ battery

WIRING HARNESS

Diagnostic socket

88A

I - LOCATION



101325

The diagnostic socket (1) is located in front of the cigarette lighter behind the plastic cover.

WARNING

Be careful not to scratch the plastic cover when removing it.

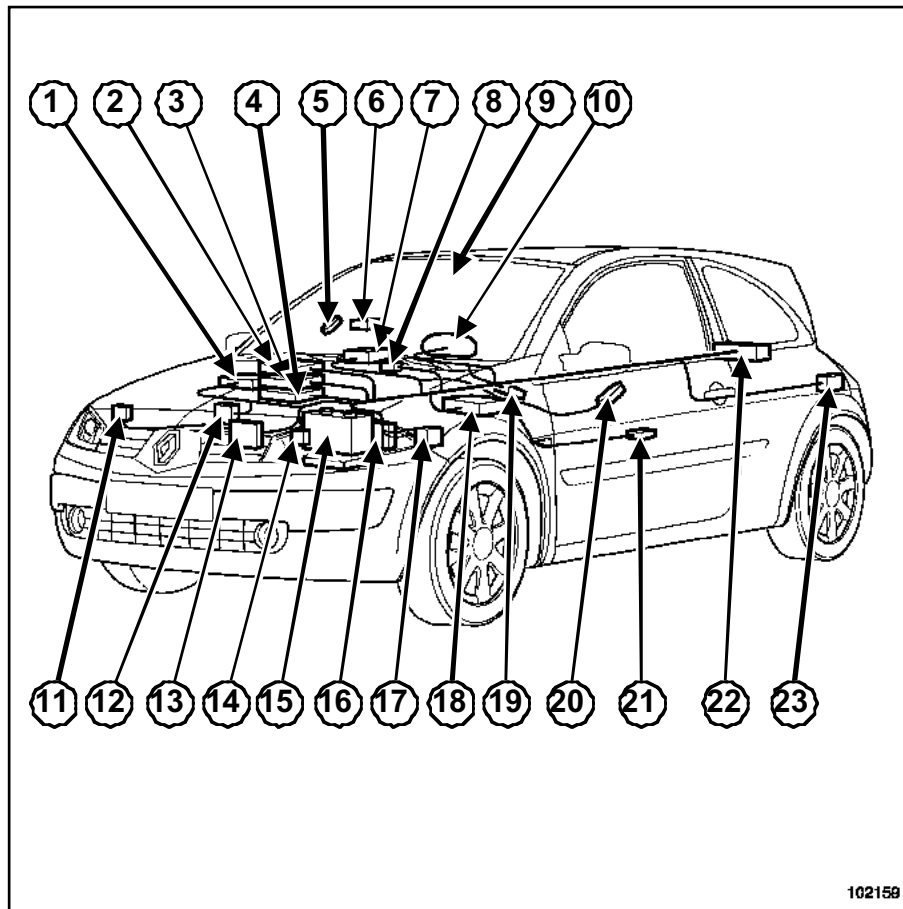
II - CONNECTION

Track	Description
1	+ after ignition
2	Not used
3	Not used
4	Earth
5	Earth
6	Multiplex connection (CAN H)
7	Fault finding K signal
8	Not used
9	Not used
10	Not used
11	Not used
12	Not used

Track	Description
13	Not used
14	Multiplex connection (CAN L)
15	Not used
16	+ Battery

WIRING HARNESS COMPUTER POSITIONS

88A



102158

102159

- | | | | |
|------|---|------|--------------------------------------|
| (1) | Central communications unit | (14) | Left side xenon bulb computer |
| (2) | Radio | (15) | Battery |
| (3) | Climate control | (16) | Engine management injection computer |
| (4) | Card reader | (17) | Protection and Switch Unit |
| (5) | Right-hand electric window controls | (18) | UCH |
| (6) | Right side impact sensors | (19) | Power-assisted steering computer |
| (7) | Airbag computer | (20) | Left-hand electric window controls |
| (8) | Electric steering lock | (21) | Left side impact sensor |
| (9) | Rain and light sensors | (22) | « Hands-free unlocking antenna |
| (10) | Instrument panel | (23) | CD changer |
| (11) | Right side xenon bulb computer | | |
| (12) | Anti-lock braking system / Electronic Stability Program | | |
| (13) | Automatic transmission computer | | |

WIRING HARNESS

Headlining wiring

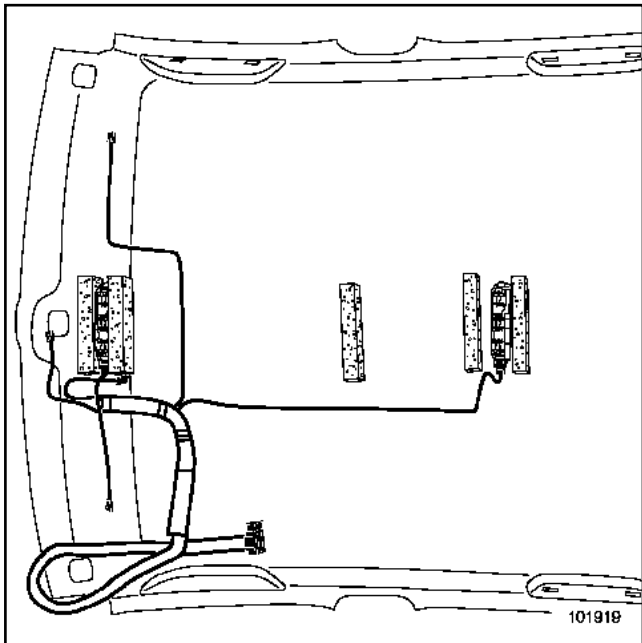
88A

The headlining is not glued into the vehicle. It is held in place by the door and tailgate seals, the sun visors and the grab handles (refer to **Body interior trim** Section).

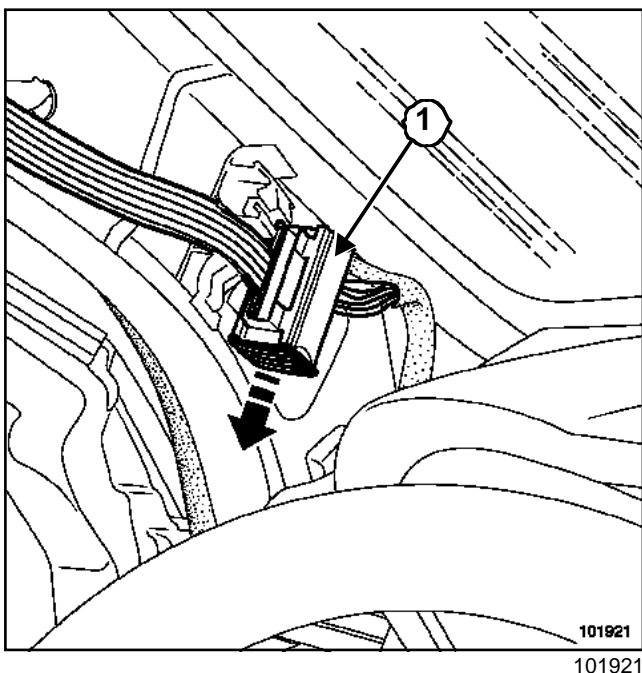
It is possible to replace the headlining and keep the wiring harness, and vice-versa.

The wiring harness cannot be repaired. It must be replaced if it is cut, broken or burnt.

Location



REMOVAL



- Remove the headlining (refer to **Body interior trim** Section).

- Unfasten the left-hand side A-pillar connector (1).
- Disconnect the connector.

REFITTING

- Use a glue gun to glue the wiring harness to the headlining.
- Cut the bead, taking care not to damage the wiring harness.

Note:

It is also possible to leave the faulty harness in place, and to glue the new harness alongside it.

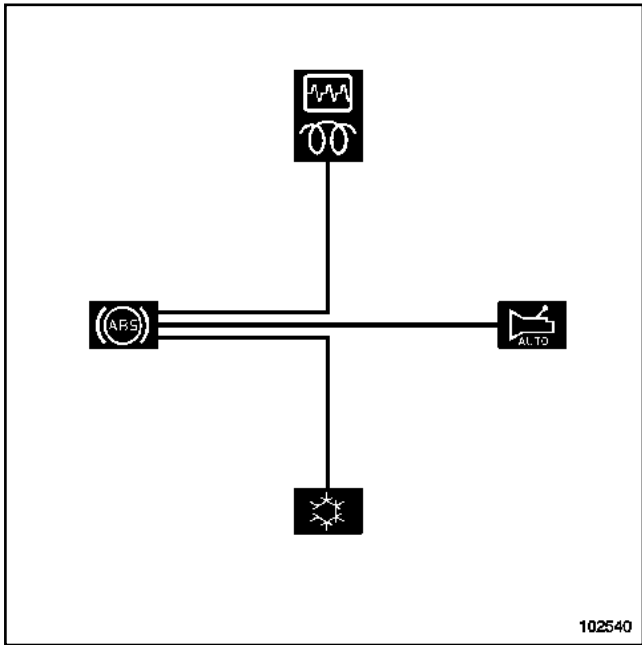
WARNING

The position of the connectors in relation to the side of the headlining must be respected. A mark on the harness must coincide with the edge of the headlining.

To improve vehicle performance, a growing number of computers processes an increasing variety of data so as to continuously pursue optimal functioning.

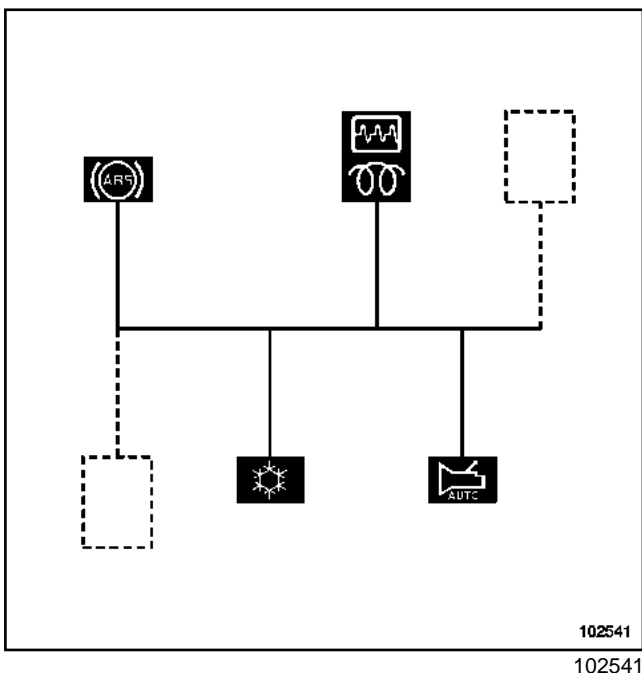
With multiplexing, the data from a single sensor can be used by a number of computers, thereby reducing both the amount of wiring and number of sensors.

I - SOLUTION WITHOUT MULTIPLEXING



Example: to use the speed signal, each computer needs its own electrical connection to the ABS sensor.

II - SOLUTION WITH MULTIPLEXING



Engine speed is signalled to various computers through a single connection.

III - ADVANTAGES OF MULTIPLEXING

- Reduced costs due to less wiring and fewer connectors.
- Less weight due to wiring.
- Greater reliability due to fewer wires and connectors.
- Easy to locate a faulty component in some cases.

IV - HOW MULTIPLEXING WORKS

Take the example of an underground line used by many passengers. Even though the passengers are not going to the same destination, they take the same underground line and use the same stations, and are carried by trains. Some stations might be used by a large number of passengers getting on and off there, yet are on the same track as other less busy stations.

Data exchanges on a multiplex network (data BUS) resembles an underground line.

The data, after it has been formatted into frames, travels to the computers:

- 1 : A computer formats the data (from a sensor or internal computation) into a « frame » that tells the other computers what kind of signal it is.
- 2 : After formatting the data, the computer waits for the bus to be free, i.e. not carrying a message. In fact, unlike the underground, the signal sent through the multiplex network leaves each side of the sending computer; hence the track has to be clear to keep messages from getting mixed up.
- 3 : The computer transmits the data through the multiplex network once the track is clear.
- 4 : The message travels through the multiplex network and reaches all the computers connected to it. Unlike underground passengers, the data does not « get off the train », but travels to the ends of the line (bus). Each computer in the multiplex network reads the passing signals and knows which ones are of interest to it through the formatting done by the sending computer.

Thus there are advantages to exchanging data through a multiplex network:

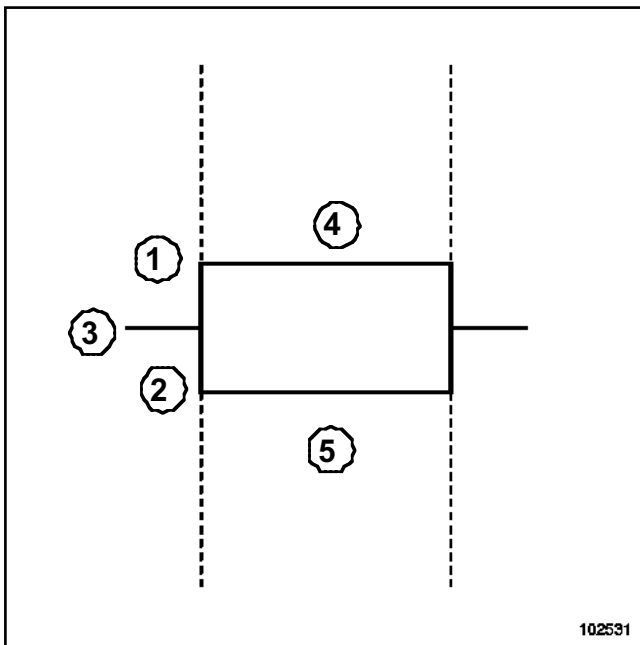
- the same data can be sent multiple computers at a time as well as simultaneously,
- if a computer doesn't understand the data it receives, it can force the sender to repeat the frame concerned by sending a data-request message through the bus.

V - DESCRIBE THE « DATA BUS »

The data bus consists of two electrical (copper) wires, usually twisted. They function as a differential pair, thereby providing better insulation against electronic interference and limiting the field. The two wires are known as Can_H and Can_L.

For an underground train to travel smoothly on its track, the rails have to be a virtually continuous strips. The same thing has to be done to ensure the good quality of the signals flowing through the bus; this is why « end-of-the-line impedances » are added to the ends of the bus (injection computer and UCH). These end-of-the-line impedances, also known as «adaptation impedances » have a resistance of **120 Ω** to smooth the signal (block out harmful interference). This explains why the data bus cannot be repaired: a splice would damage the impedance.

VI - DESCRIBE THE SIGNAL

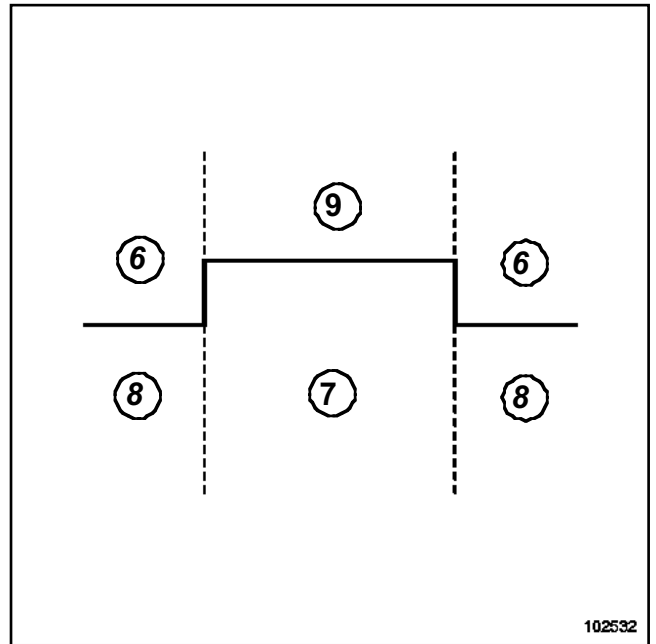


- (1) Can_H
- (2) Can_L
- (3) 2.5 V
- (4) 3.5 V
- (5) 1.5 V

The two electrical wires comprising the bus are known as Can_H and Can_L. They carry digital signals. The signal is transmitted in the form of a differential pair of square wave signals, which gives greater protection against electromagnetic interference and limits radia-

tion. The voltages of the signals transmitted on the bus are strictly differentiated: between 2.5 and 3.5 V for the CAN H line and between 1.5 and 2.5 V for the CAN L line.

VII - THE CAN PROTOCOL



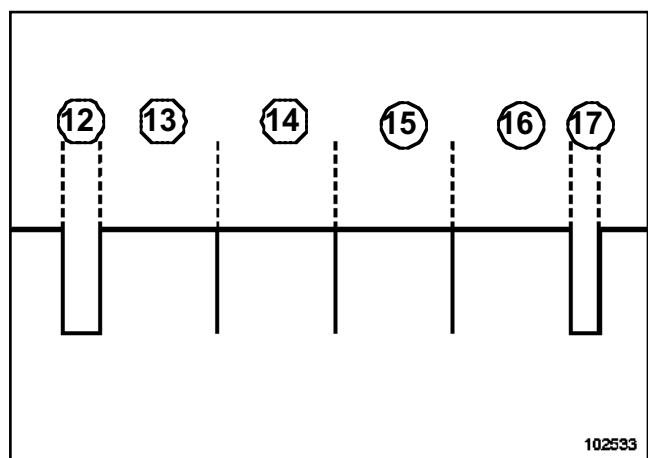
- (6) Recessive
- (7) Dominant
- (8) 0 V
- (9) 2 V

The data is transmitted in the form of the voltage differential between Can_H and Can_L. If it is above a certain level, the corresponding logic level is dominant (value of bit*=0), otherwise it is recessive (value of bit*=1).

* a bit is the unit of digital signals; its value is binary (0 or 1).

VIII - THE CAN FRAME

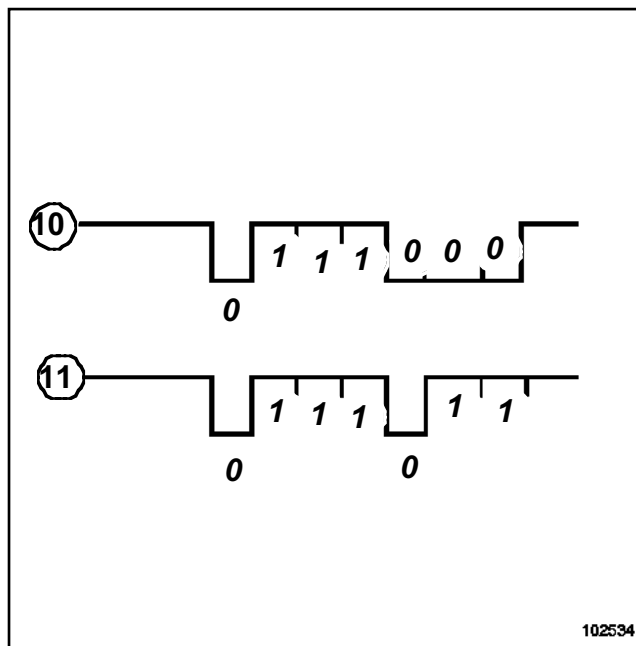
It formats the data for use by the computers reading the bus. The message consists of several components joined together:



102533
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- (12) A field marking the start of a CAN frame
- (13) A weight field indicating the computer(s) for which the message is intended (and network priority access when several computers try to transmit simultaneously)
- (14) A control field to ensure the integrity of the transmission
- (15) A field containing the message data
- (16) An acknowledgement field indicating that the frame was properly transmitted through the network
- (17) A field marking the end of a CAN frame

IX - SPECIAL CASES



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When several computers try to send a frame at the same time, the one with the highest weight field has top priority (the highest weight field is the one with the longest dominant or that issues a dominant « 0 » bit* the fastest).

A bit is the unit of digital signals; its value is binary (0 or 1).

Example: frame (10) takes priority over frame (11).

If a message is incorrect or incorrectly received by a computer, the acknowledgement field is not set and the message is cancelled. A message is automatically resent until acknowledged.

X - FAULT FINDING PROCEDURE

Multiplex computers fitted with a diagnostic connection incorporate a multiplex network fault finding strategy.

Each computer permanently monitors its capacity to transmit and receive regular messages from other computers. Any fault detected results in one or more present or stored faults on the multiplex network. These faults are grouped in a frame dedicated to the multiplex network fault finding procedure, using a format common to all the computers.

After-Sales, these faults can be displayed on fault finding tools in order to identify the faulty inter-computer connection(s) and to locate and ascertain the nature of the fault.

Each time a diagnostic tool is connected to the vehicle, a « Multiplex Network Test » is performed by the tool.

XI - REPAIR OF THE MULTIPLEX NETWORK

The multiplex network is connected to each of the computers by means of cable joints in the harness.

Bus diagnostics involves checking the:

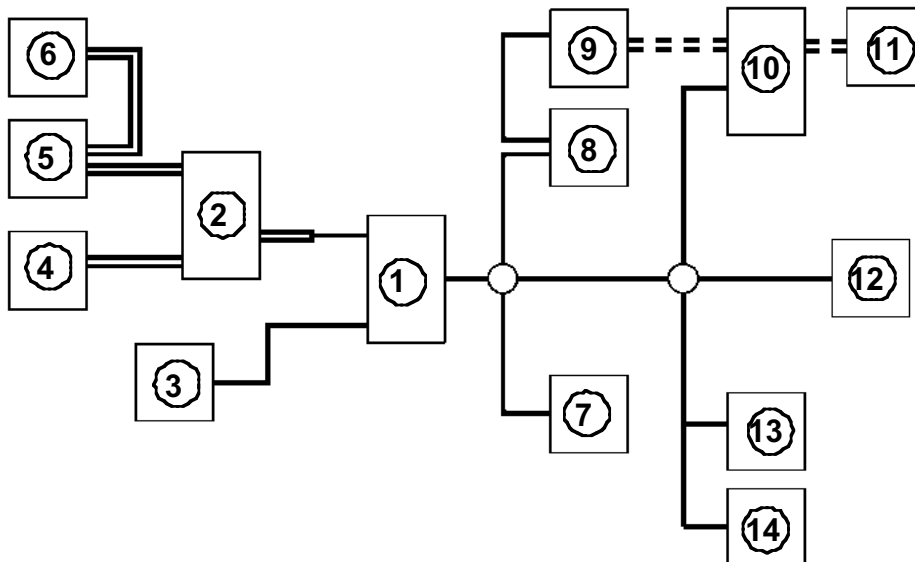
- continuity line by line,
- insulation from earth and voltage,
- line impedance:
 - **60 Ω** between Can_H and Can_L (battery disconnected, between terminals 6 and 14 of the diagnostic socket),

- **120 Ω** between Can_H and Can_L, airbag computer side (disconnected from the network),
- **120 Ω** between Can_H and Can_L, injection computer side (disconnected from the network),
- the frames can be displayed using an oscilloscope,

WARNING

It is forbidden to use terminals or to solder the multiplex network. To repair it, the harness has to be replaced.

XII - OPERATING DIAGRAM



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- | | |
|-----|-----------------------------------|
| (1) | UCH |
| (2) | Protection and Communication Unit |
| (3) | Electric steering lock |
| (4) | Anti-lock braking system |
| (5) | Injection |
| (6) | Automatic gearbox |

- | | |
|------|----------------------------------|
| (7) | Diagnostic socket |
| (8) | Electric power assisted steering |
| (9) | Instrument panel |
| (10) | Top of the range navigation |
| (11) | Top of the range radio |
| (12) | Airbags and pretensioners |

MULTIPLEXING

Description

88B

(13) Climate control

(14) Driving school unit

==== : Engine multiplex connection

_____ : Passenger compartment multiplex connection

=== : Multimedia multiplex connection

MULTIPLEXING

Multiplex network configuration

88B

If the topology (network layout) stored in the UCH and airbag computer is incorrect, it is possible to display the multiplex network result with the **Diagnostic tool**.

For the **Diagnostic tool** to carry out a multiplex network test, it is essential that the multiplex network « topology configuration » and those of the « diagnosable computers » are identical on both computers (UCH, airbag computer).

A UCH or airbag computer that is blank following a replacement must be programmed with the topology before the multiplex network can be tested.

PROCEDURE

It is advisable to configure the topology with « + after ignition feed ».

Select the « Multiplex network » tab to properly enter the network version and list of computers connected to the multiplex network.

Enter the number of the « multiplex network version into the new computer ». The version is the same as that for the computer that was not replaced (if there is a problem, contact your « Techline »).

Adjust the topology by indicating the computer(s) in the UCH and airbag computer as « present » or « absent » (the topology in both must be identical).

WARNING

The new configuration programmed into the UCH must be confirmed before changing the one in the airbag computer and vice versa.

Computer	UCH	Airbag/preten-sioners	Note
Injection	Present	Present	Always present in the vehicle
Protection and Switching Unit	Present	Present	Always present in the vehicle
Anti-lock braking system (ABS)	Present	Present	Always present in the vehicle
Steering lock	Present	Present	Always present in the vehicle
Instrument panel	Present	Present	Always present in the vehicle
Passenger Compartment Control Unit (UCH)	Present	Present	Always present in the vehicle
Power Assisted Steering (PAS)	Present	Present	Always present in the vehicle
Airbag	Present	Present	Always present in the vehicle
Automatic gearbox	Present depending on version	Present depending on version	-
LPG	Present depending on version	Present depending on version	-
Climate control	Present depending on version	Present depending on version	Declared present only with climate control.
Central Communications Unit (CCU)	Present depending on version	Present depending on version	-
Roof control unit	Present depending on version	Present depending on version	Option on the convertible

MULTIPLEXING

Multiplex network configuration

88B

Computer	UCH	Airbag/preten- sioners	Note
Driving school unit (DSU)	Present depend- ing on version	Present depend- ing on version	-
Xenon bulbs (discharge bulbs)	Absent	Absent	The xenon bulbs are not connected to the multiplex network

Computers which support fault finding configuration

Select the « diagnosable computers » tab to properly enter the diagram number and list of diagnosable computers. Contact « techline » to find out the diagram version.

Adjust the configuration by indicating « yes » or « no » to the diagnosable UCH and airbag computers (the configuration in both must be identical).

WARNING

The new configuration programmed into the UCH must be confirmed before changing the one in the airbag computer and vice versa.

Computer	UCH	Airbag/pre-tensioners	Note
Injection	Yes	Yes	Always diagnosable
Protection and Switching unit	Yes	Yes	Always diagnosable
Anti-lock braking system	Yes	Yes	Always diagnosable
Steering lock	Yes	Yes	Always diagnosable
Instrument panel	Yes	Yes	Always diagnosable
UCH	Yes	Yes	Always diagnosable
Power Assisted Steering	Yes	Yes	Always diagnosable
Airbag	Yes	Yes	Always diagnosable
Automatic gearbox	Yes	Yes	Present on the multiplex network and diagnosable with line K
LPG	Yes	Yes	Diagnosable on the multiplex network
Climate control	Yes	Yes	Diagnosable only with climate control
Central Communications Unit	No	No	Not diagnosable
Sunroof control unit	Yes	Yes	Can be diagnosed
Self-opening unit	No	No	Not diagnosable
Steering lock	No	No	Present on the network but not diagnosable
Xenon bulbs	Yes	Yes	Diagnosable on line K (with dipped headlights on)

Interpreting multiplex network test results

COMPUTERS

- Valid: green outline, green writing,
- not detected : red outline, red writing,
- Does not support fault finding: black outline, black writing,
- not recognised : red outline, red writing = exclamation mark.

SEGMENTS:

- Valid: green line,
- faulty : red line,
- non diagnosable: black line.

Under the « faults » tab, the computers are organised into the following groups:

- undetected if the computer failed to respond to the tool's identification request,
- unknown if the computer was detected but could not be identified by its response,

Under the « information » tab, the computers are organised and defined as follows:

- not diagnosable if the computer cannot be diagnosed by the tool and therefore was not queried,
- valid if the computer responded correctly to the tool's query.

Click on the « continue » icon in the lower right-hand corner to obtain a new screen. Under the « results » tab, the computers are organised into the following groups:

- faulty if the computer was identified and has one or more faults,
- no faults if the computer was detected, identified and has no faults,
- unknown if the computer was detected but could not be identified by its response,

- undetected if the computer failed to respond yet is diagnosable.

Note:

You can always connect to a computer by:

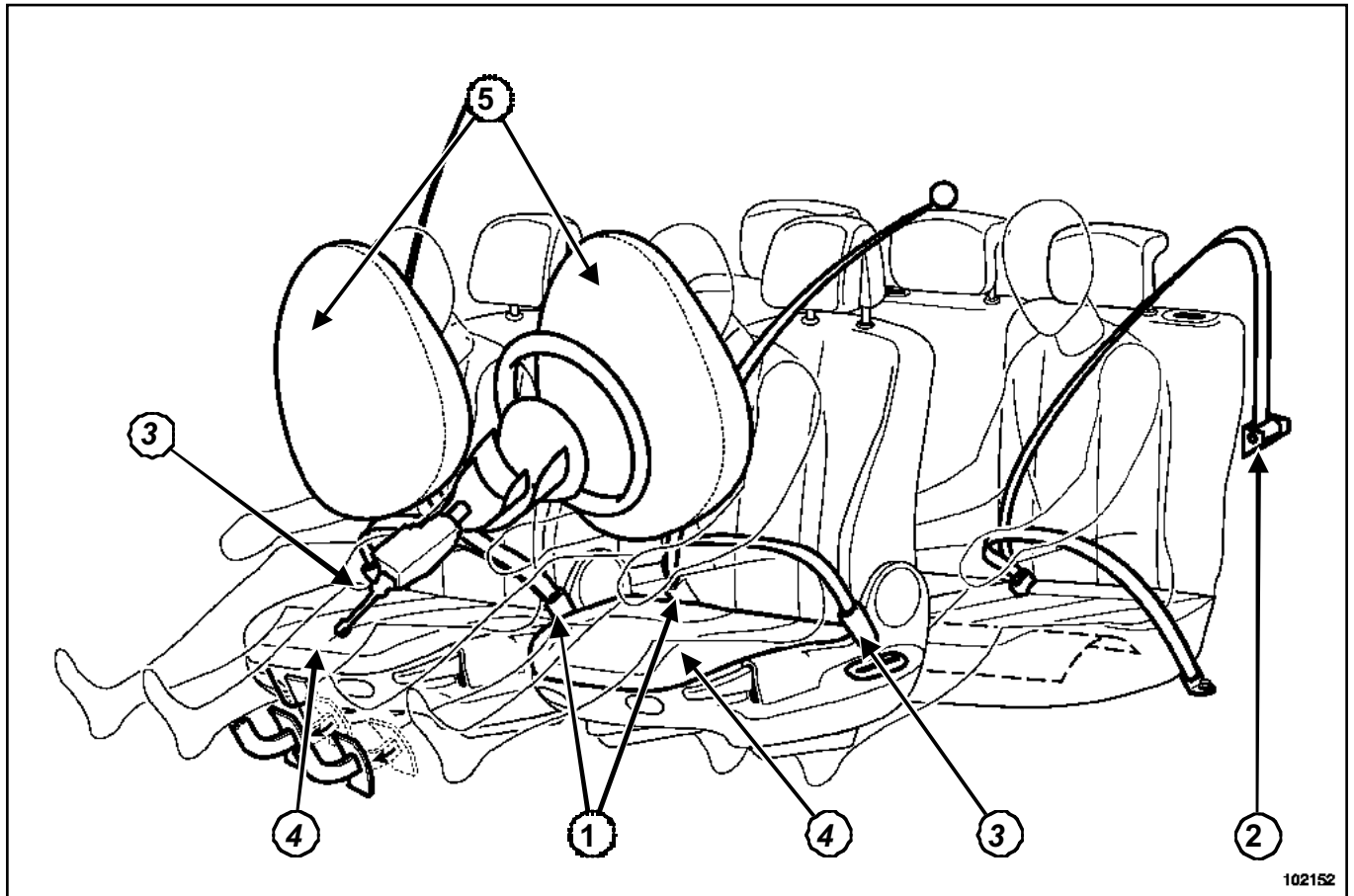
- selecting the result of the multiplex network test,
- selecting the « information » tab,
- clicking on the CONTINUE icon,
- selecting the computer to diagnose on under the « results » tab,
- confirm by pressing the « diagnose » button,

This can be used, for example, to « program » the UCH because the multiplex network cannot be reliably tested with a blank UCH.

WARNING

If the multiplex network is tested without + after ignition feed, some computers will not respond and the diagnosis can be wrong.

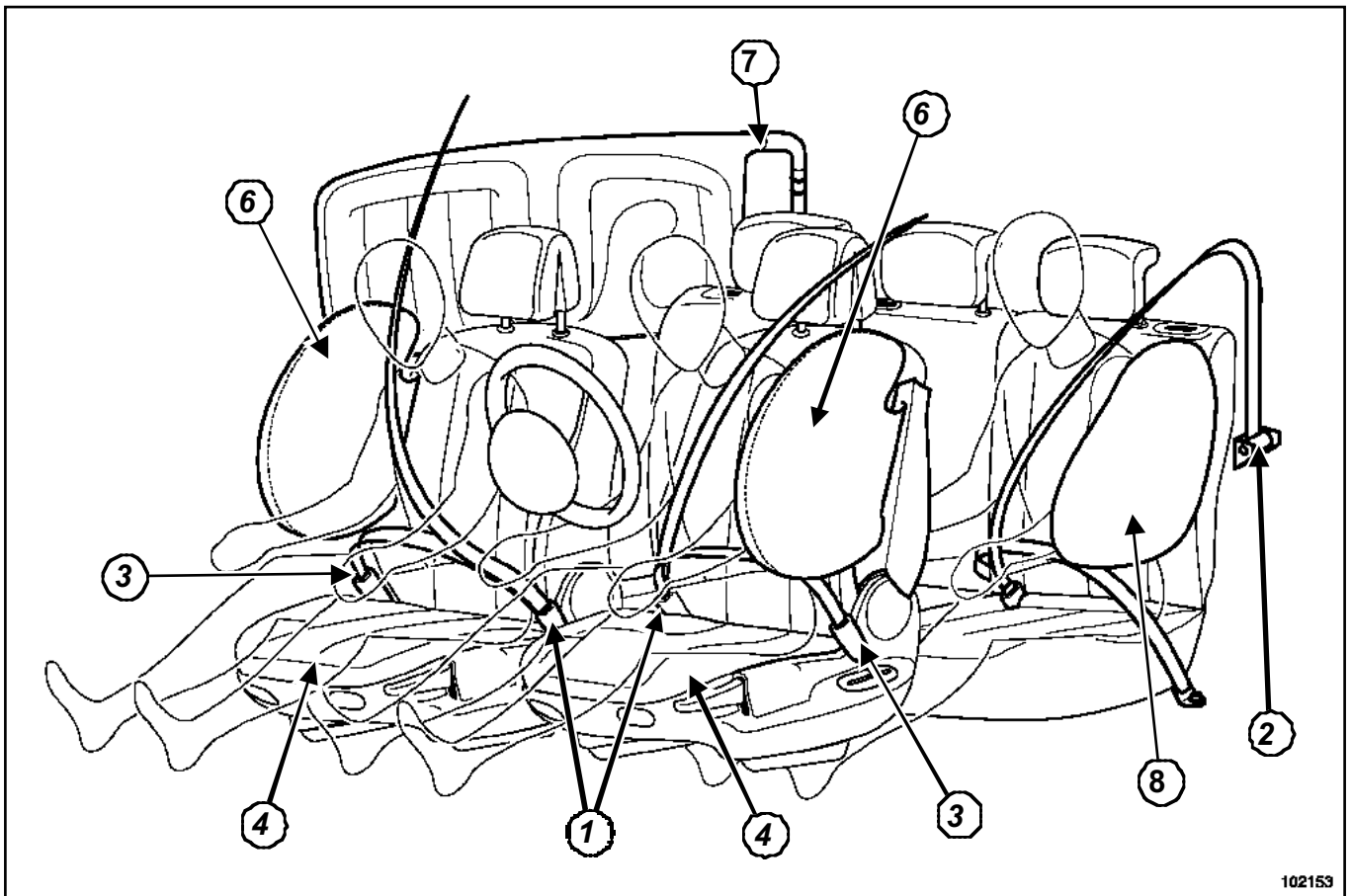
Programmed Restraint System



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- | | |
|-----|--|
| (1) | Front buckle pretensioners (driver and passenger) |
| (2) | Rear seat belt pyrotechnic inertia reels (side seats) |
| (3) | Front lap belt pretensioners (driver's and passenger) on 5-door saloon |
| (4) | Anti-submarining airbags (driver's and passenger) on 3-door saloon |
| (5) | Dual generator front airbags (two sizes) |



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- (6) Side chest airbags in the front seat seatbacks
- (7) Curtain side airbags
- (8) Rear seat side chest airbags (if fitted to the vehicle)

These vehicles are fitted with a passive safety system of the SRP (Programmed Restraint System) type, comprising:

- front buckle pretensioners (driver's and passenger),
- pyrotechnic retractors on the rear seat belts (side seats),
- front lap belt pretensioners (driver's and passenger) on 5-door saloon,
- anti-submarining airbags (driver's and passenger) on 3-door saloon version,
- dual generator front airbags (two sizes),
- a 75-track computer with two impact sensors,
- side chest airbags in the front seats in the seatbacks,
- side curtain airbags,

- Rear seat side chest airbags (if the vehicle is fitted with them),
- a driver's seat position sensor,
- a front passenger airbag deactivation switch,
- a system fault warning light,
- a deactivation indicator light.

General

PRECAUTIONS DURING REPAIR

IMPORTANT

- All operations on airbag and pretensioner systems must be carried out by qualified trained personnel.
- Never handle the pyrotechnic systems close to a source of heat or a naked flame; There is a risk of triggering.
- The airbags have a pyrotechnic gas generator with an ignition module and airbag which must not be separated.
- Before removing a component from the safety system, check the airbag computer using the **Diagnostic tool**. When this function is activated all the triggering lines are disabled and the airbag warning light on the instrument panel lights up (ignition on).
- Any operation, even minor, is forbidden on the triggering lines of the pyrotechnic components.

When an airbag or a pretensioner is triggered, the computer is permanently locked and the « airbag fault » warning light lights up on the instrument panel. The airbag computer must be replaced (some components lose their settings after being subjected to the energy created by ignition).

After refitting all the parts, carry out a check using the **Diagnostic tool**.

If everything is correct, unlock the computer, otherwise refer to the **fault finding document**.

IMPORTANT

- It is essential to refer to the **Destruction procedure** when scrapping a pyrotechnic system that has not been triggered.
- The impact computers and sensors have fragile components, do not drop them.
- Do not fit a seat cover onto the front seats (except specific products from the RENAULT shop).
- Do not place objects in the airbag deployment zone.
- When working under the vehicle (on the bodywork, sill panel, etc.), it is essential to lock the airbag computer using the **Diagnostic tool** and switch off the ignition.
- For special notes on removing and refitting the seat trims, see the **bodywork repair manual**.
- Pyrotechnic systems (pretensioners and airbags) must be checked using the **Diagnostic tool**:
 - following an accident which did not trigger the systems,
 - following theft or attempted theft of the vehicle,
 - before selling a used vehicle.

After an impact:

- if the buckle pretensioner has been triggered, the seat frame and the seat belt must be replaced if it was fastened, (the buckle pretensioners are supplied in series),
- if the rear pyrotechnic inertia reels have been triggered, the « seat belt / pyrotechnic inertia reel » assembly must be replaced, the pyrotechnic inertia reels supply wiring is in series,
- if the driver's front airbag was triggered, the steering wheel and its mounting bolt must be replaced,
- if the passenger front airbag has been triggered, the dashboard must be replaced,
- if a side seat airbag is triggered, the seat frame must be replaced,
- if the anti-submarining airbag has been triggered, the seat frame must be replaced,
- if the curtain airbag has been triggered, the plate must be repositioned and the deflector must be replaced; see **Repair plate**.

Operating principle

OPERATING PRINCIPLE

1 - During a front impact of sufficient severity:

- The seat belts restrain the driver and the passengers.
- The front buckle pretensioners and the rear pyrotechnic inertia reels tighten the seat belts so that they fit tightly against the body.
- The Programmed Restraint System limits the force of the seat belt against the body.
- The front airbags inflate:
 - from the centre of the steering wheel to protect the driver's head,
 - from the dashboard to protect the front passenger's head.
- The front lap belt pretensioners (5-door) or anti-submarining airbag (3-door) tighten the seat belts to protect the lower limbs.

Note:

The inflation volume of the driver's air bag may be modified by the computer according to:

- the position of the driver's seat (see « Under-seat switch ») section,
- the severity of the impact.

2 - During a side impact of sufficient severity:

- The front side chest airbag, located in the corresponding front seat (impact side) deploys on the door side in order to protect the front seat occupant's chest.
- The rear side chest airbag, if the vehicle is fitted with one, is located on the body side (impact side) deploys on the door side to protect the rear seat occupants chest.
- The curtain airbag (impact side) deploys on the door side to protect the front and rear passenger's heads.

IMPORTANT

- The triggering of the pretensioners, pyrotechnic inertia reels, anti-submarining airbags, both front and side, may vary depending on the severity and type of impact.
- When triggered, the pyrotechnic gas generator produces an explosion and light smoke.

Note:

Power supply to the computer and ignition modules is usually provided by the vehicle battery. Nevertheless, a power reserve capacity is incorporated into the airbag computer in case of battery failure on impact.

Precautions during repair

REPLACING THE SAFETY COMPONENTS FOLLOWING AN IMPACT

This table lists the parts which must be replaced in the event of an impact.

Reminder of the levels of severity for a frontal impact:

- impact without the pyrotechnic components being triggered: « level 0 » (minor impact)

- impact with triggering of the buckle pretensioners: « level 1 » (medium severity)

- level 1 impact with triggering of the airbags: « level 2 » (severe impact)

- level 2 impact with triggering of lap pretensioners « level 3 » (very severe impact).

Component	Equipment	Frontal impact			Side impact	Compulsory replacement for the safety of occupants
		Level				
		1	2	3		
Buckle pretensioners (driver and passenger)	Standard	X	X	X	No	Airbag computer and its protector. Seat belt (if it was fastened). Seat frames (if it was occupied). the buckle pretensioners (driver and passenger) are connected in series and must both be systematically replaced if they are triggered
Rear pyrotechnic inertia reel (side seats)	Standard **	-	X	X	No	The pyrotechnic inertia reels are connected in series and must both be systematically replaced if they are triggered
Driver's front airbag	Standard	-	X	X	No	Steering wheel Mounting bolts
Passenger front airbag*	Standard	-	X	X	No	Dashboard
Lap belt pretensioner (driver's and passenger)	In series (on 5-door vehicle only)	-	-	X	No	-
Anti-submerging airbag in the seat squab (driver's and passenger)	Standard	-	-	X	No	Seat frame
Front chest airbags (driver and passenger*)	Standard	No			yes impact side	Seat frame Airbag computer and its protector
Rear chest airbags	Optional	No			Yes impact side	-
Curtain airbags	Standard	No			Yes impact side	Airbag deflector Fit the repair plate

*unless deactivated by switch.

** except utility version.

IMPORTANT

The triggering of the pretensioners, pyrotechnic inertia reels, anti-submarining airbags, both front and side, may vary depending on the severity and type of impact.

AIRBAG AND PRETENSIONERS

Airbag computer locking procedure

88C

Essential equipment

Diagnostic tool

- Lock the computer using the **Diagnostic tool**:
 - Select and confirm the « airbag » system to diagnose.
 - Select the « repair » menu.
 - Select the « other programming » command.
 - Confirm line **VP006 « computer locking »**.
 - In the « state » menu, check that the computer is correctly locked. State **ET073 « computer locked by tool »** should be active and the airbag indicator light on the instrument panel lit (new computers are supplied in this state).

Note:

- To unlock the airbag computer, use the same procedure, confirming line **VP007 « unlocking computer »**. State **ET073 « computer locked by tool »** should no longer be active and the airbag indicator light on the instrument panel should go out.
- New computers are sold « locked ».
- In the event that the systems do not operate properly during an impact, use the **Diagnostic tool** to check that no faults were present before the impact.
- After locking following an impact, check the ignition lines supplied by command **SC004 « reading impact contexts »** on the **Diagnostic tool**.

Airbag computer

Essential equipment

Diagnostic tool

Tightening torques

airbag computer mounting bolts

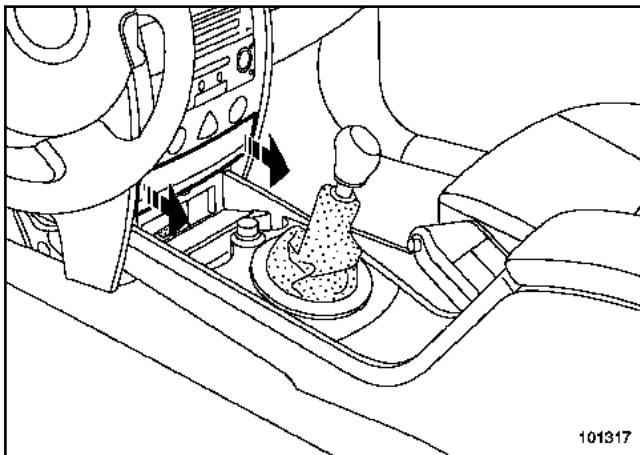
0.8 daNm

IMPORTANT

Before removing a safety system component, check the airbag computer using the **Diagnostic tool**. When this function is activated all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

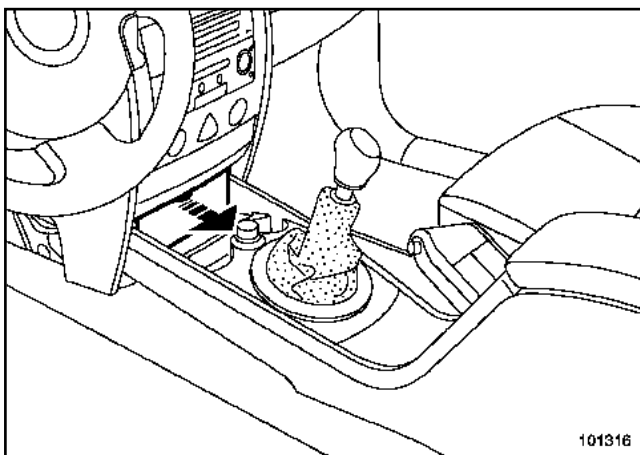
REMOVAL

- Disconnect the battery.



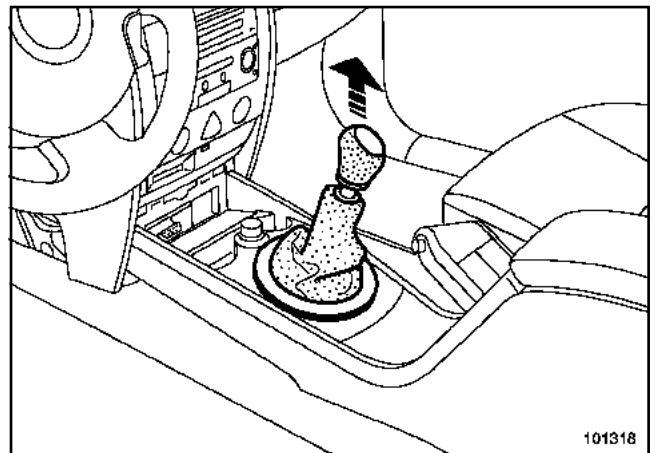
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- Unclip the card reader access cover.



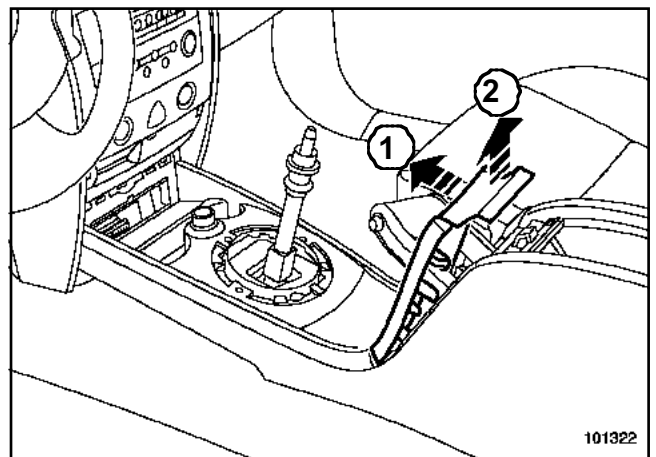
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- Unclip the diagnostic socket access cover.



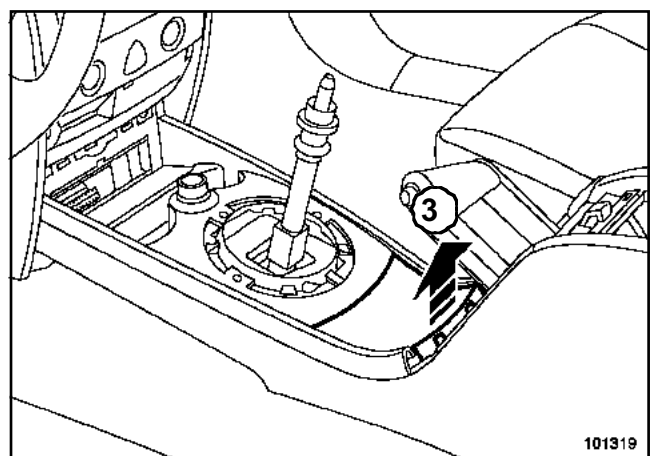
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- Remove:
 - the gear lever gaiter,
 - the knob.
- Open the glove compartment.



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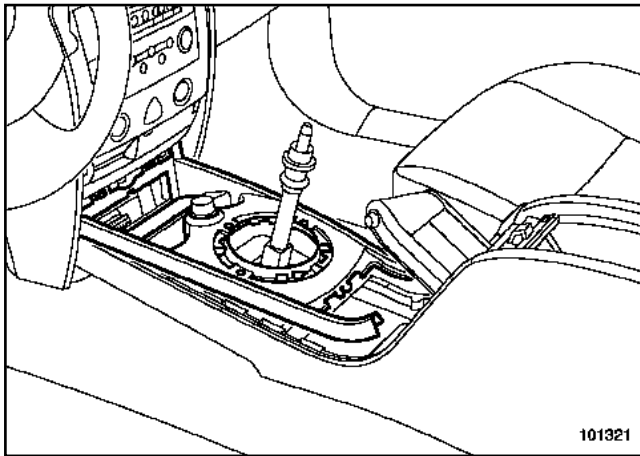
- Unclip the handbrake surround trim (1) and (2).
- Disconnect the heated seat connectors.



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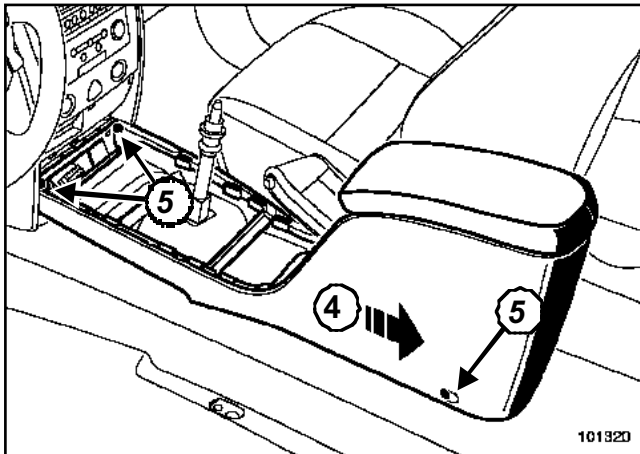
- Unclip the lower cover (3).

Airbag computer



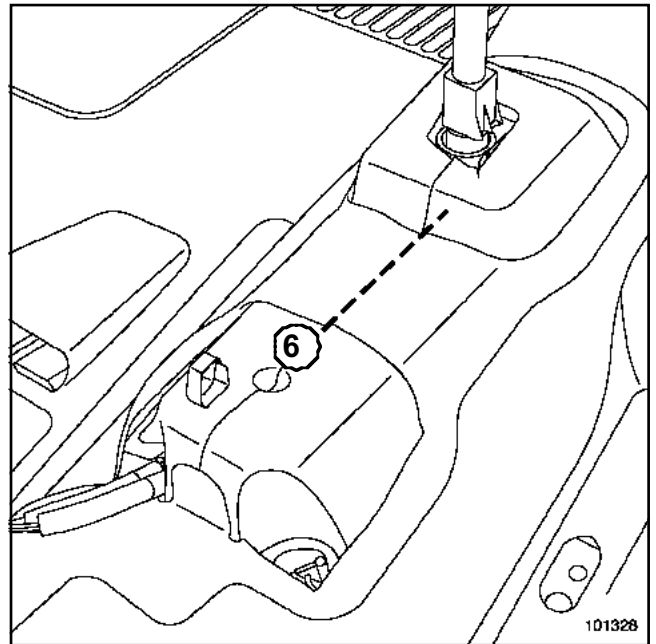
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- Unclip the cigarette lighter holder.
- Disconnect the connector.



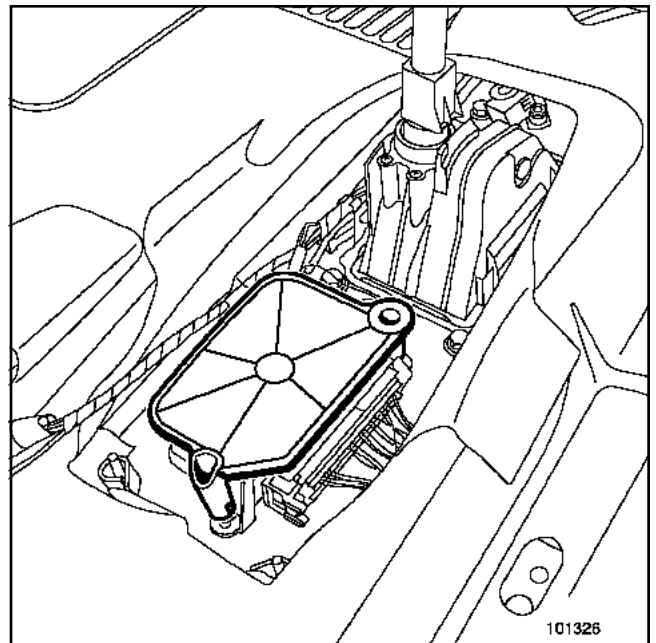
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- Move the front seats forward.
- Remove screws (5).
- Release:
 - the console carefully (4),
 - the gear lever console.



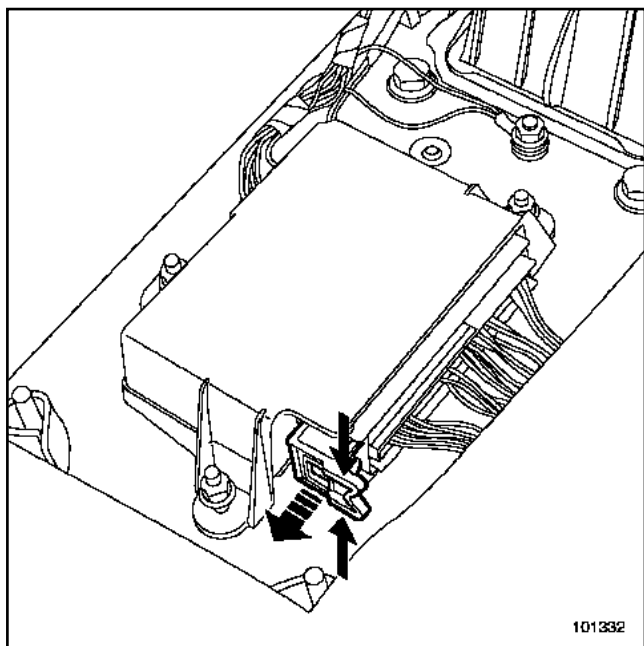
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- Cut the carpet at (6) to remove the soundproofing material.



101326
101326

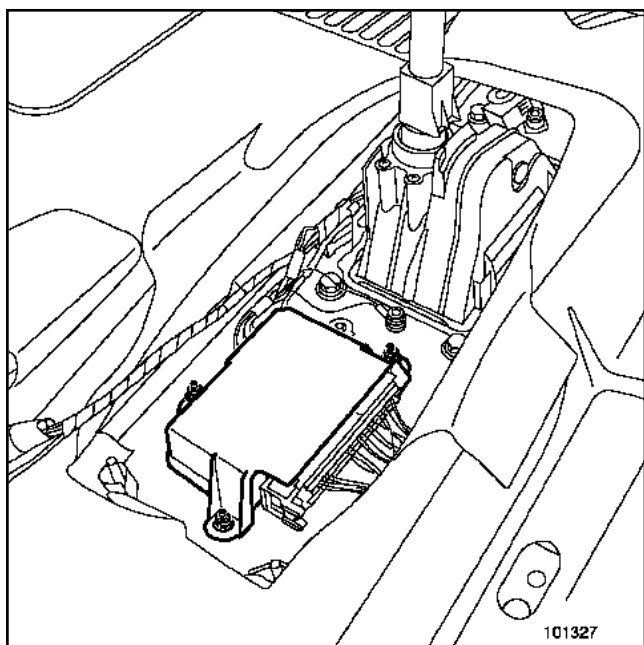
- Release the computer unit protective housing.



101332

101332

- Disconnect the connector by moving the bolt.

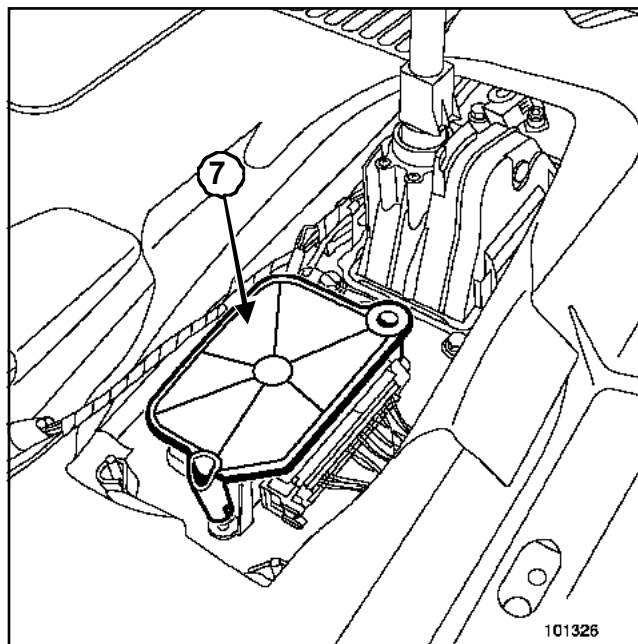


101327

101327

- Remove the mounting bolts.

REFITTING



101326

101326

- Position the computer before connecting it.
- Tighten to torque the **airbag computer mounting bolts (0.8 daNm)**.
- Reconnect the connector itself.

WARNING

Replace the protective housing (7), every time it is removed.

- To refit, proceed in the reverse order to removal.

WARNING

Connect the battery; carry out the necessary programming (Section Battery, page 80A-1).

- Carry out the necessary configuration operations.
- If everything is correct, unlock the computer if not, refer to **fault finding manual**.

IMPORTANT

Check the airbag computer using the **Diagnostic tool**.

AIRBAG AND PRETENSIONERS

Airbag computer: CONNECTION

88C

22-track connector

Track	Description
1	+ Passenger front airbag volume 2
2	+ Passenger front airbag volume 1
3	+ Driver's front airbag volume 1
4	+ Driver's front airbag volume 2
5	Not used
6	Not used
7	+ after ignition
8	Not used
9	Not used
10	Multiplex connection (CAN L)
11	Multiplex connection (CAN H)
12	- Passenger's level 2 front airbag
13	- Passenger front airbag volume 1
14	- Driver's front airbag volume 1
15	- Driver's front airbag volume 2
16	Not used
17	Not used
18	Earth
19	Not used
20	Not used
21	- airbag inhibitor switch
22	+ airbag inhibitor switch

64-track connector

Track	Description
1	+ Buckle pretensioner: driver
2	- Buckle pretensioner: driver
3	+ Driver's front lap belt pretensioner (5-door) or + anti-submarining airbag (3-door)
4	- Driver's front lap belt pretensioner (5-door) or - anti-submarining airbag (3-door)

AIRBAG AND PRETENSIONERS

Airbag computer: CONNECTION

88C

Track	Description
5	Not used
6	Not used
7	Not used
8	Not used
9	- driver's seat position sensor
10	+ driver's seat position sensor
11	+ driver's seat belt buckle contact
12	- driver's seat belt buckle contact
13	Not used
14	Not used
15	+ driver's front chest side airbag
16	- driver's front chest side airbag
17	+ curtain airbag driver's side
18	- curtain airbag driver's side
19	+ Rear pyrotechnic inertia reel driver's side
20	- Rear pyrotechnic inertia reel driver's side
21	Not used
22	Not used
23	Not used
24	Not used
25	Not used
26	Not used
27	+ side impact sensor driver's side
28	- side impact sensor driver's side
29	+ rear chest side airbag driver's side
30	- rear chest side airbag driver's side
31	Not used
32	Not used
33	Not used
34	Not used

AIRBAG AND PRETENSIONERS

Airbag computer: CONNECTION

88C

Track	Description
35	Not used
36	Not used
37	+ buckle pretensioner: passenger
38	- buckle pretensioner: passenger
39	+ passenger front lap belt pretensioner (5-door) or + anti-submarining airbag (3-door)
40	- passenger front lap belt pretensioner (5-door) or - anti-submarining airbag (3-door)
41	+ rear pyrotechnic inertia reel passenger side
42	- rear pyrotechnic inertia reel passenger side
43	+ chest side airbag passenger side
44	- chest side airbag passenger side
45	+ airbag: curtain, passenger
46	- airbag: curtain, passenger
47	Not used
48	Not used
49	Not used
50	Not used
51	Not used
52	Not used
53	Not used
54	Not used
55	Not used
56	Not used
57	+ rear side chest airbag passenger side
58	- rear side chest airbag passenger side
59	Not used
60	Not used
61	+ side impact sensor passenger side
62	- side impact sensor passenger side

AIRBAG AND PRETENSIONERS

Airbag computer: CONNECTION

88C

Track	Description
63	Not used
64	Not used

Essential equipment

Diagnostic tool

	Configuration command	Configuration reading
Buckle pretensioners (driver's and passenger's connected in series)	CF284	LC081
Lap belt pretensioner or anti-submarining airbag driver's side	CF283	LC080
Lap belt pretensioner or anti-submarining airbag passenger side	CF282	LC079
Rear seat belt pyrotechnic inertia reels (driver's and passenger's connected in series)	CF278	LC078
Driver's front airbag	CF230 / CF231	LC048 / LC049
Passenger's front airbag	CF229 / CF236	LC047 / LC052
Driver's front chest side airbag	CF223	LC042
Passenger front chest side airbag	CF224	LC043
Driver's rear chest side airbag	CF225	LC044
Passenger rear chest side airbag	CF226	LC045
Driver's side curtain airbag	CF221	LC040
Passenger's side curtain airbag	CF222	LC041
Passenger airbag inhibitor switch system	CF248	LC060
Driver's seat position sensor	CF289	LC086
Driver's seat buckle sensor	CF273	LC073
Side impact sensor driver's side	CF207	LC025
Side impact sensor passenger side	CF208	LC026

When installing a new computer, program the multiplex network architecture (see Section Multiplexing, page **88B-1**) and enter the following using the Diagnostic tool:

- the vehicle identification number (« VIN ») using command **VP010**,
- the last after-sales operation using command **VP008**.

Side impact sensors

Essential equipment

Diagnostic tool

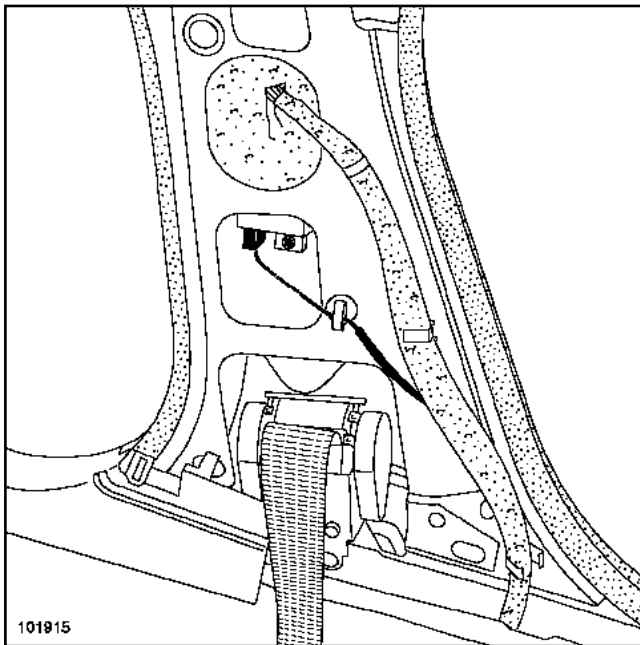
Tightening torques

side impact sensor mounting bolts	0.8 daNm
-----------------------------------	-----------------

IMPORTANT

Before removing a safety system component, lock the airbag computer using the **Diagnostic tool**. When this function is activated all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

REMOVAL



- Remove the B-pillar lower trim, (see **B-pillar lower trim**).
- Remove the sensor mounting bolt.
- Disconnect the connector.
- Remove the side impact sensors located on each side, behind the B-pillar trim.

REFITTING

- Position the sensor with its tab.

- Tighten to torque the **side impact sensor mounting bolts (0.8 daNm)**.

- Reconnect the connector itself.

IMPORTANT

Check using the **Diagnostic tool**.

- Unlock the computer.

Note:

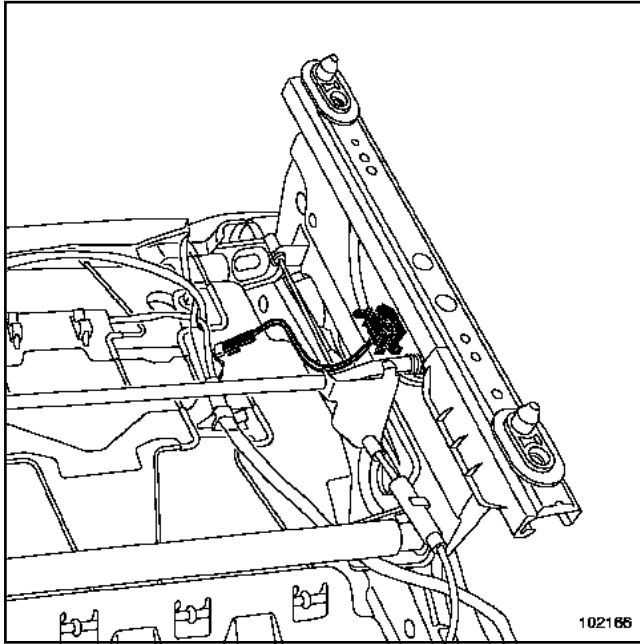
These sensors do not require programming with the **Diagnostic tool**.

- To refit, proceed in the reverse order of removal.

Seat position sensor

SWITCH UNDER THE SEAT

The driver's seat is fitted with a runner position sensor. This switch allows the level of inflation of the driver's frontal airbag to be modified (small or large volume) according to the position of the driver and the severity of the impact.



102166

The resistance of the seat position sensor can be checked using the diagnostic tools:

- Seat forward: sensor resistance = **400 Ω**
- Seat back: sensor resistance = **100 Ω**

Note:

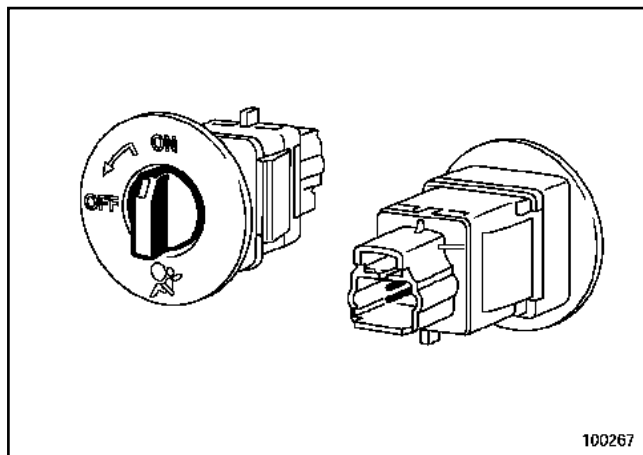
The inflation volume of the driver's airbag is not modified according to the seat positions.

AIRBAG AND PRETENSIONERS

Inhibitor switch: Operating principle

88C

The inhibitor switch is located on the side panel of the dashboard, passenger side.



This switch has two positions:

- ON position = passenger airbags operational (resistance = **400 Ω**),
- OFF position = passenger airbags are deactivated to enable a child seat to be fitted. This position is indicated on the instrument panel by an amber-coloured « airbag OFF » warning light (resistance = **100 Ω**).

The inhibitor switch inhibits the trigger lines:

- for the passenger front airbag,
- for the front side thorax airbag,
- for the lap belt pretensioner (5-door saloon),
- for the anti-submarining airbag (3-door saloon).

IMPORTANT

- The front seat belt is set up to operate with a passenger front airbag. Make sure that its replacement has the correct part number.
- The position of the inhibitor switch is only taken into account if the ignition is switched off and the computer is configured correctly.

Inhibitor switch

Essential equipment

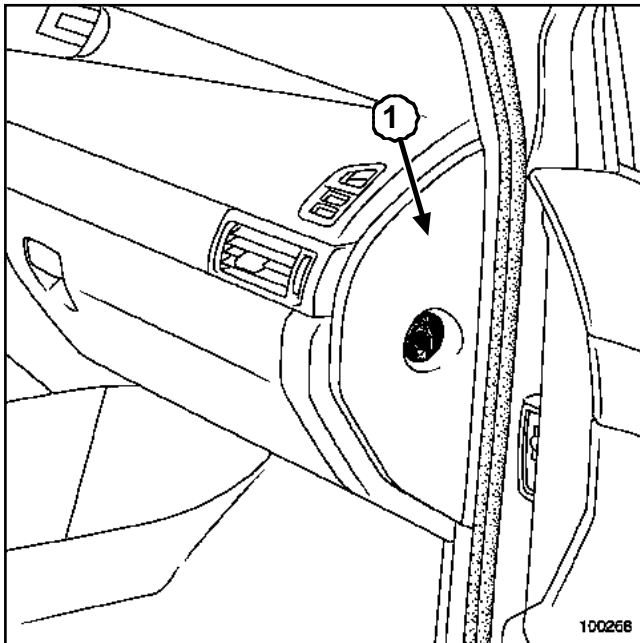
Diagnostic tool

REMOVAL

□

IMPORTANT

Before removing a safety system component, lock the airbag computer using the **Diagnostic tool**. When this function is activated all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).



100268

□ Remove:

- the front door sill lining (top section),
- side panel (1) of the dashboard.

□ Unclip the inhibitor switch.

REFITTING

□ To refit, proceed in the reverse order of removal.

IMPORTANT

Check the airbag computer using the **Diagnostic tool**.

□ If everything is correct, unlock the computer if not, refer to **fault finding manual**.

□ Check that the following are operational:

- the switch,
- the « airbag OFF » warning light.

Essential equipment

Diagnostic tool

Tightening torques

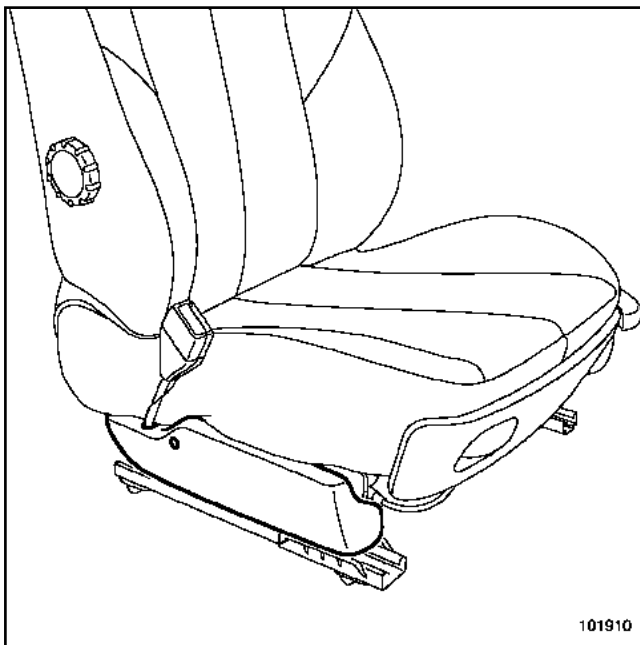
pretensioner mounting bolt	2.1 daNm
----------------------------	-----------------

REMOVAL

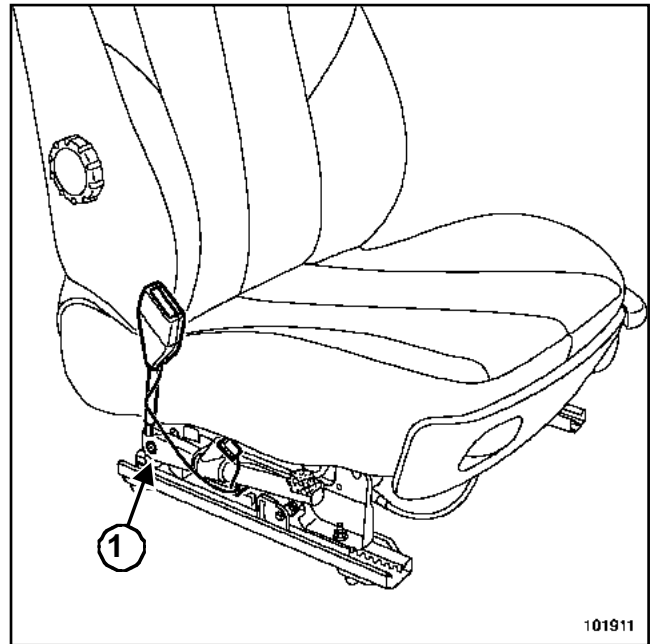
□

IMPORTANT

Before removing a safety system component, lock the airbag computer using the **Diagnostic tool**. When this function is activated all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).



- Remove the plastic housing, (refer to the **bodywork workshop repair manual**).



- Remove:

- the pretensioner connector,
- the pretensioner mounting bolt (1),
- the pretensioner assembly.

IMPORTANT

For scrapping a non-triggered pretensioner, (Section Airbag and Pretensioners, Destruction procedure, page **88C-38**).

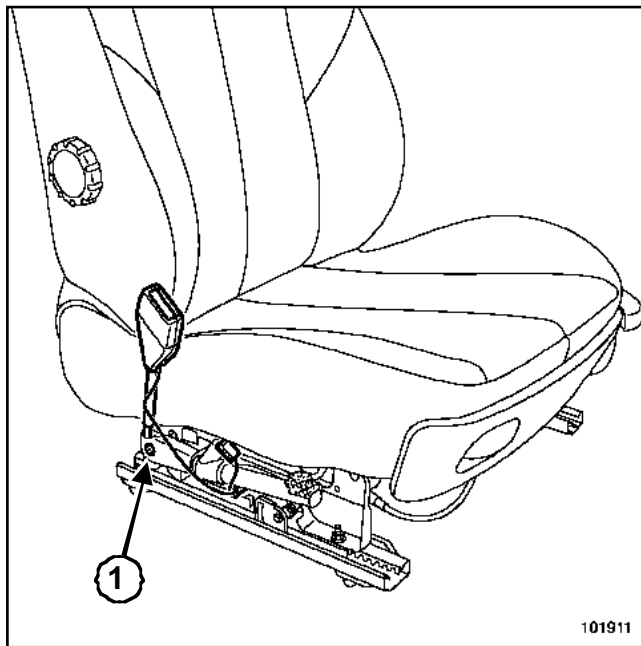
REFITTING

- To refit, proceed in the reverse order of removal.

WARNING

If a pretensioner has been triggered, some parts must be replaced (Section Airbag and Pretensioners, Destruction procedure, page **88C-38**).

- Follow the correct routing of the wiring and the wiring mounting points under the seat.



101911

- ❑ Tighten to torque the **pretensioner mounting bolt (2.1 daNm)(1)**.

IMPORTANT

Check the airbag computer using the **Diagnostic tool**.

- ❑ If everything is correct, unlock the computer if not, refer to **fault finding manual**.

Rear pyrotechnic inertia reel

B84 or C84

Essential equipment

Diagnostic tool

Tightening torques

pretensioner mounting bolt	2.1 daNm
----------------------------	-----------------

seat belt fitting mounting bolt	2.1 daNm
---------------------------------	-----------------

The rear seat belts (side seats) are fitted with pyrotechnic inertia reels.

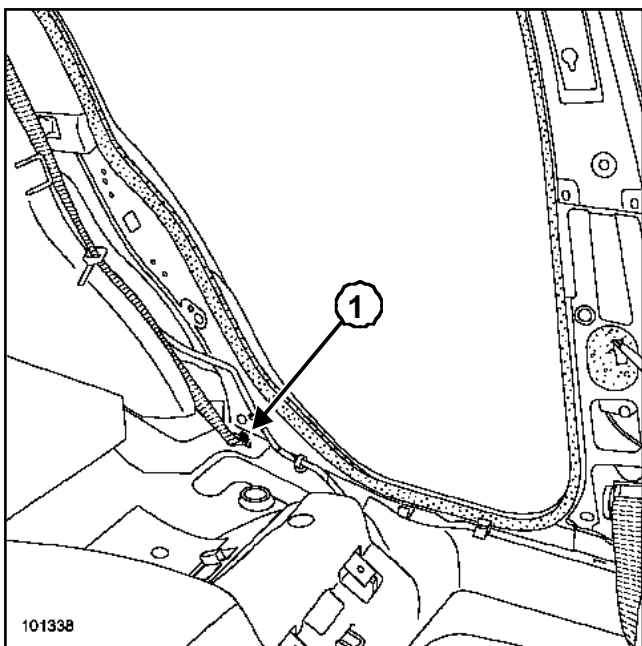
REMOVAL

IMPORTANT

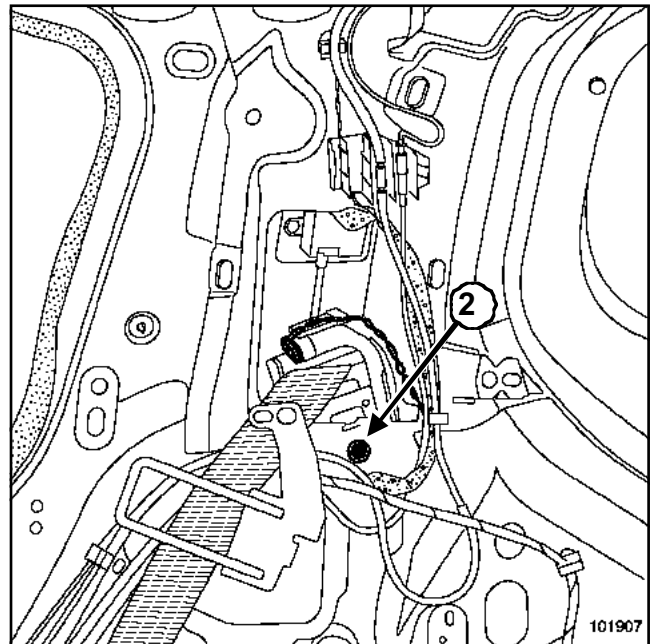
Before removing a safety system component, lock the airbag computer using the **Diagnostic tool**. When this function is activated all the trigger lines are inhibited and the airbag warning light on the instrument panel lights up continuously (ignition on).

Remove the trim:

- from the luggage compartment,
- from the rear quarter panel.



Remove the seat belt mounting bolt (1).



101907

Disconnect the connector.

Remove the pretensioner mounting bolt (2).

IMPORTANT

For scrapping a non-triggered pretensioner, (Section Airbag and Pretensioners, Destruction procedure, page **88C-38**).

REFITTING

To refit, proceed in the reverse order of removal.

WARNING

If a pretensioner has been triggered, some parts must be replaced (Section Airbag and Pretensioners, Precautions during repair, page **88C-5**).

Follow the correct routing of the wiring and the wiring mounting points under the seat.

Tighten to torque:

- the **pretensioner mounting bolt (2.1 daNm)**,
- the **seat belt fitting mounting bolt (2.1 daNm)**.

IMPORTANT

Check the airbag computer using the **Diagnostic tool**.

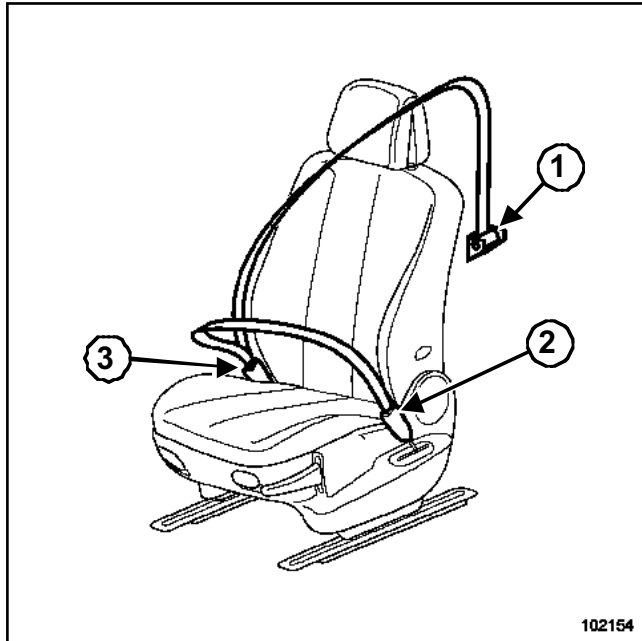
If everything is correct, unlock the computer if not, refer to **fault finding manual**.

Lap belt pretensioner and anti-submarining airbag

The front seats of the vehicle are fitted with two pretensioning devices.

B84

5-door saloon



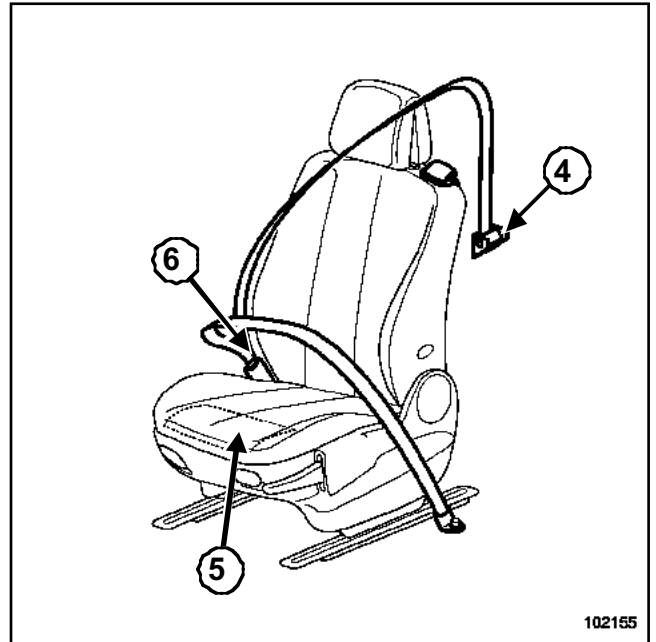
102154
102154

- (1) Inertia reel with integral force limiter
- (2) Lap belt pretensioner
- (3) Buckle pretensioner

Pretensioning is first applied to the buckle strap and then to the lap belt strap. Restraint is optimised with limited anti-submarining.

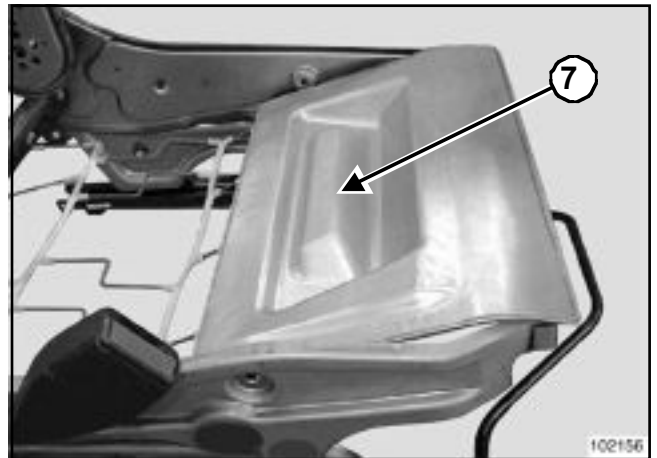
C84

3-door saloon



102155
102155

- (4) Inertia reel with integral force limiter
- (5) Anti-submarining airbag
- (6) Buckle pretensioner



102156
102156

The means of access to the rear seats of the 3-door saloon means that the seat belt must be mounted on the body.

Therefore, a lap belt pretensioner cannot be fitted, and a new airbag, called an anti-submarining airbag, has been introduced.

This airbag (7) located under the seat, contributes towards preventing submarining.

Front lap belt pretensioner

B84 or S84

Essential equipment

Diagnostic tool

Tightening torques

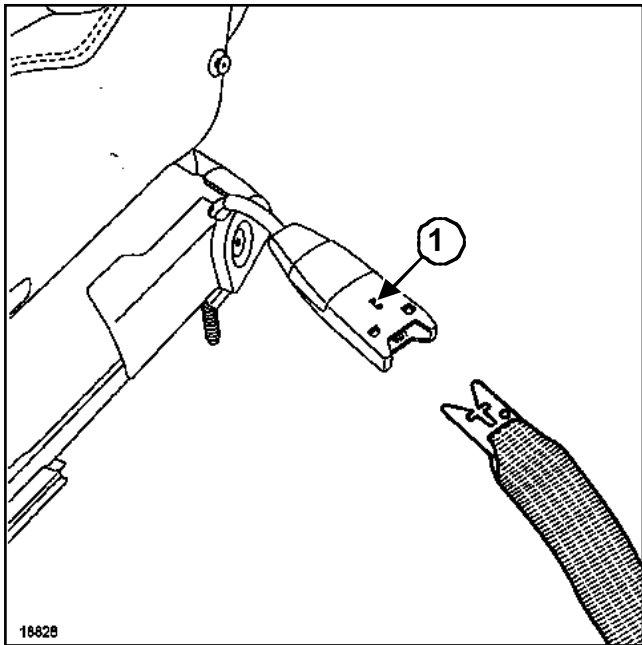
pretensioner mounting bolt	2.1 daNm
----------------------------	----------

REMOVAL

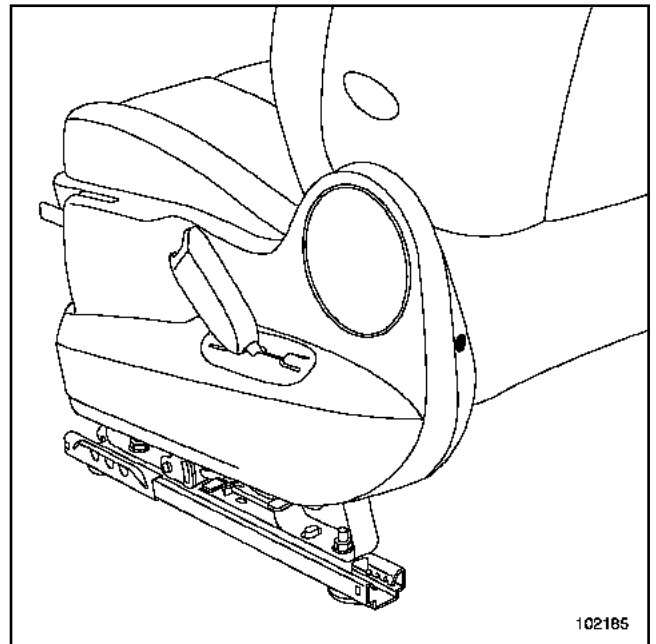
□

IMPORTANT

Before removing a component from the safety system, it is essential to check the airbag computer using the **Diagnostic tool**. When this function is activated all the triggering lines are disabled and the airbag warning light on the instrument panel lights up (ignition on).

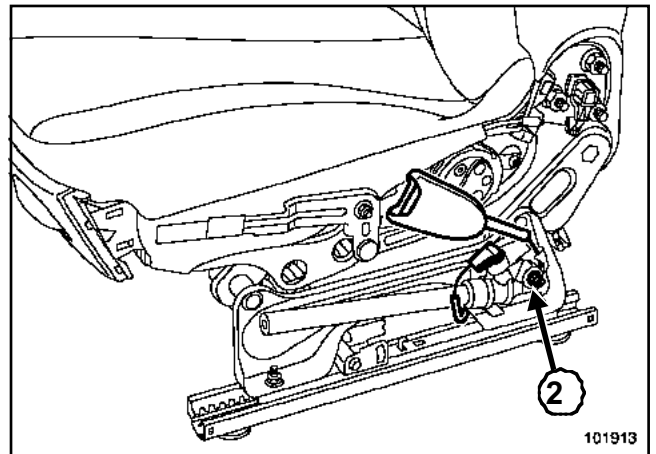


□ Undo the seat belt by pressing the lock (1).



102185

□ Remove the plastic housing.



101913

□ Remove:

- the pretensioner mounting bolt (2),
- the pretensioner connector,
- the pretensioner assembly.

IMPORTANT

To refit an airbag which has not been triggered, (Section Airbag and Pretensioners, Destruction procedure, page **88C-38**).

Front lap belt pretensioner

B84 or S84

REFITTING

- To refit, proceed in the reverse order of removal.

WARNING

When an airbag has been triggered, certain parts must be replaced (« Precautions for repair »).

- Follow the correct routing of the wiring and the wiring mounting points under the seat.
- Tighten to torque the **pretensioner mounting bolt (2.1 daNm)**.
- Replace any faulty parts.
- Reconnect the connector.

IMPORTANT

Check the airbag computer using the **Diagnostic tool**.

- If everything is correct, unlock the airbag computer, if not, refer to the **fault finding manual**.

Anti-submarining airbag

C84

Essential equipment

Diagnostic tool

Tightening torques

anti-submarining airbag mounting bolts	0.8 daNm
--	----------

REMOVAL

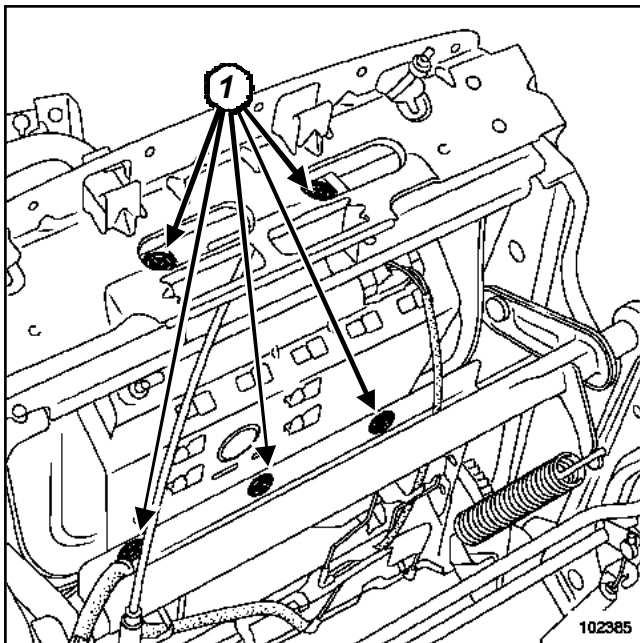
IMPORTANT

Before removing a component from the safety system, it is essential to check the airbag computer using the **Diagnostic tool**. When this function is activated all the triggering lines are disabled and the airbag warning light on the instrument panel lights up (ignition on).

Remove:

- the seat,
- the cushion upholstery (see **bodywork repair manual**).

Disconnect the anti-submarining airbag connector.



102385

Remove the mounting bolts (1).

IMPORTANT

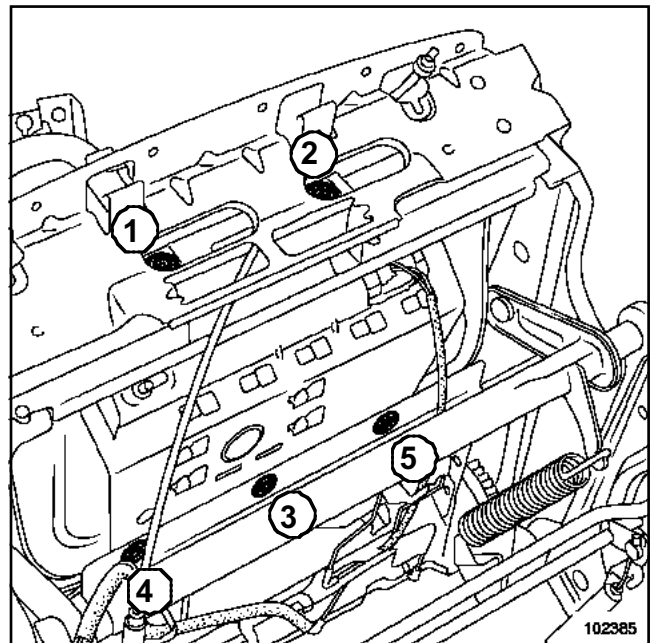
To refit an airbag which has not been triggered, (Section Airbag and Pretensioners, Destruction procedure, page **88C-38**).

REFITTING

To refit, proceed in the reverse order of removal.

WARNING

When an anti-submarining airbag has been triggered, certain parts must be replaced (Section Airbag and Pretensioners, Precautions during repair, page **88C-5**).



102385

Tighten to torque the **anti-submarining airbag mounting bolts (0.8 daNm)**.

Ensure that the wiring is correctly routed using the wiring attachment points.

Replace any faulty parts.

Reconnect the connector.

IMPORTANT

Check the airbag computer using the **Diagnostic tool**.

If everything is correct, unlock the airbag computer, if not, refer to the **fault finding manual**.

Driver's front airbag

Essential equipment

Diagnostic tool

The driver's front airbag is fitted with a dual chamber inflatable bag (small and large volume).

It inflates according to the severity of the impact or the adjustment position of the driver's seat.

When triggered, the inflatable bag deploys by bursting through the steering wheel cover.

REMOVAL

□ Disconnect the battery.

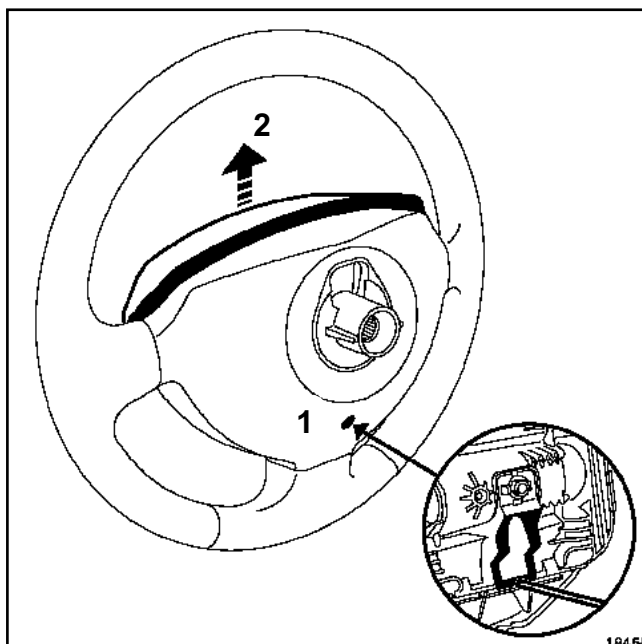
IMPORTANT

- Before removing a component from the safety system, it is essential to check the airbag computer using the **Diagnostic tool**. When this function is activated all the triggering lines are disabled and the airbag warning light on the instrument panel lights up (ignition on).

- Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

WARNING

It is essential to lock the airbag computer before removal. Locking the airbag computer also unlocks the electric steering column lock.

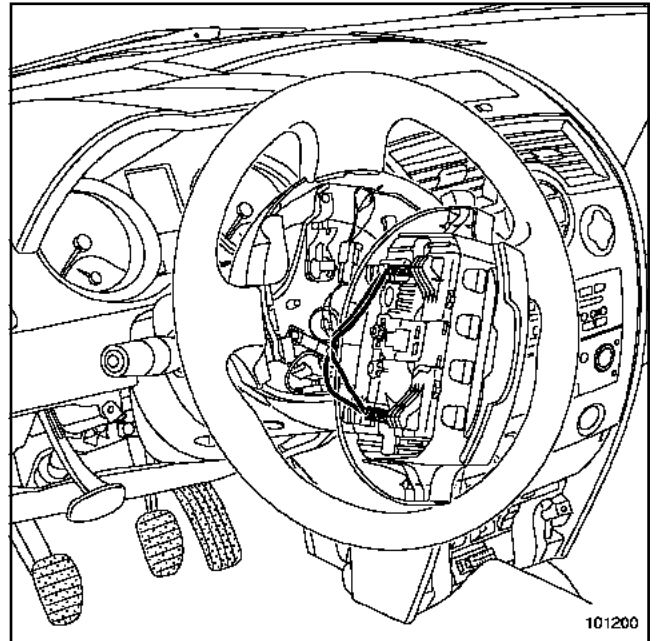


18455
18455

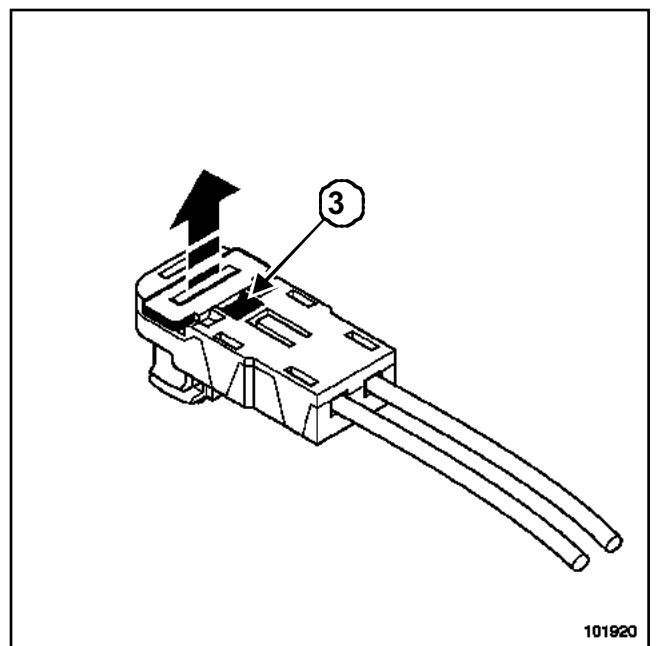
□ Turn the steering wheel half a turn to access the hole (1).

□ Insert a screwdriver into the hole (1) behind the steering wheel.

□ Release the airbag (2).



101200
101200



101920
101920

□ Unclip the connector mountings at (3) using a small screwdriver.

□ Disconnect the connectors:

- driver's front airbag,

- cruise control buttons.

Driver's front airbag

Release:

- The airbag,
- the connector mounting clip with a small flat screwdriver.

IMPORTANT

- The airbag has a connector which short circuits if it is disconnected to prevent accidental triggering.
- To refit a pyrotechnic reel which has not been triggered, (Section Airbag and Pretensioners, Airbag computer, page **88C-8**).

REFITTING

WARNING

- When an airbag has been triggered, certain parts must be replaced (Section Airbag and Pretensioners, Precautions during repair, page **88C-5**).
- Whenever the steering wheel is removed, replace the steering wheel mounting bolt.

- Fit both connectors.
- Position the airbag on the steering wheel.
- Slide the airbag downwards to clip it in place.

IMPORTANT

Check the airbag computer using the **Diagnostic tool**.

- If everything is correct, unlock the airbag computer, if not, refer to the **fault finding manual**.
- To refit, proceed in the reverse order of removal.

Passenger's airbag

Essential equipment

Diagnostic tool

Tightening torques

airbag mounting bolts **2 Nm**

The passenger front airbag is fitted with a dual chamber inflatable bag (small and large volume).

It is mounted under the dashboard in front of the front passenger.

REMOVAL

- Disconnect the battery.

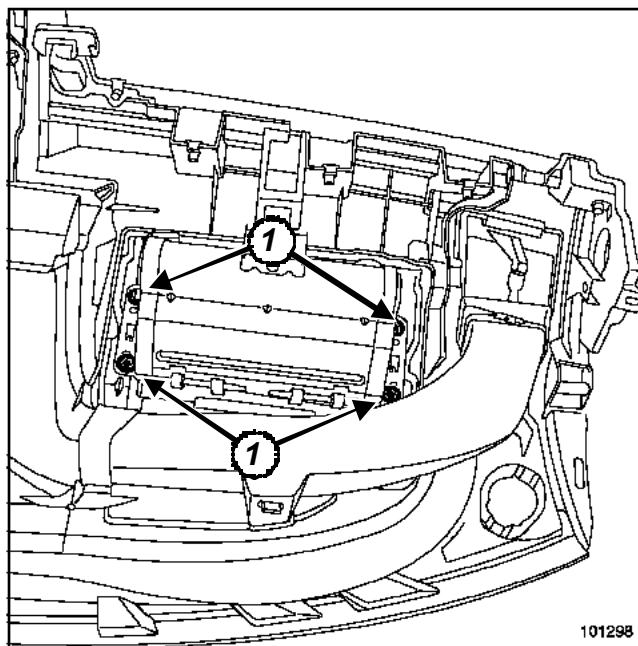
IMPORTANT

- Before removing a component from the safety system, it is essential to check the airbag computer using the **Diagnostic tool**. When this function is activated all the triggering lines are disabled and the airbag warning light on the instrument panel lights up (ignition on).
- Never handle the pyrotechnic systems (pretensioners or airbags) near to a source of heat or naked flame - they may be triggered.

WARNING

It is essential to lock the airbag computer before removal. Locking the airbag computer also unlocks the electric steering column lock.

- Remove the dashboard (Section Instrument panel, Dashboard, page **83A-1**).



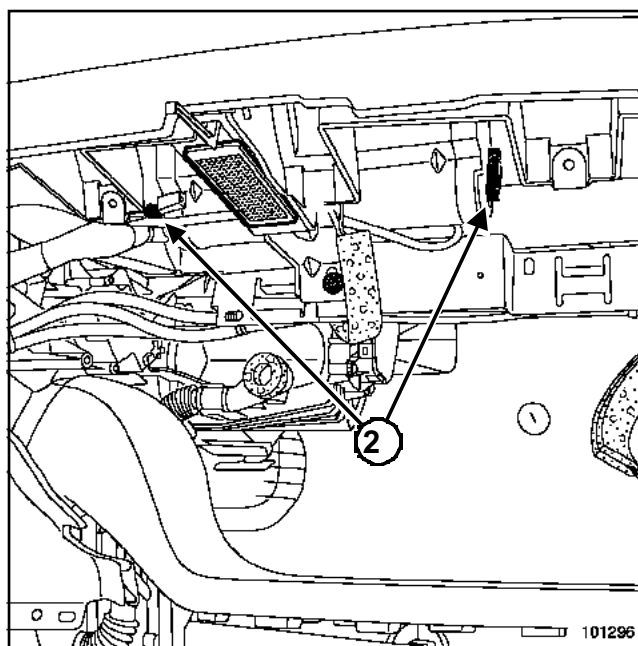
101298

101298

- Remove the four airbag mounting bolts (1).

IMPORTANT

- Whenever the passenger airbag module is removed, it is essential to replace the panel nuts that hold the module to the dashboard.
- To refit a pyrotechnic reel which has not been triggered, (Section Airbag and Pretensioners, Destruction procedure, page **88C-38**).



101296

101296

Passenger's airbag

Note:

The airbag connectors (2) can be accessed by removing the passenger glovebox.

REFITTING**WARNING**

- When the front passenger airbag has been triggered, certain parts must be replaced (Section Airbag and Pretensioners, Precautions during repair, page 88C-5).

- Whenever the passenger airbag is removed, it is essential to replace the panel nuts that hold the module to the dashboard.

 To refit, proceed in the reverse order of removal. Tighten to torque the **airbag mounting bolts (2 Nm)**.**IMPORTANT**

Check the airbag computer using the **Diagnostic tool**.

 If everything is correct, unlock the airbag computer, if not, refer to the **fault finding manual**.

Front (chest) side airbag

Essential equipment

Diagnostic tool

The front side thorax airbag is fixed to the lower section of the seatback of each front seat on the door side.

When it is deployed, the inflatable bag tears the module cover and the foam and pops off the trim.

The system is operational from when the ignition is switched on.

REMOVAL

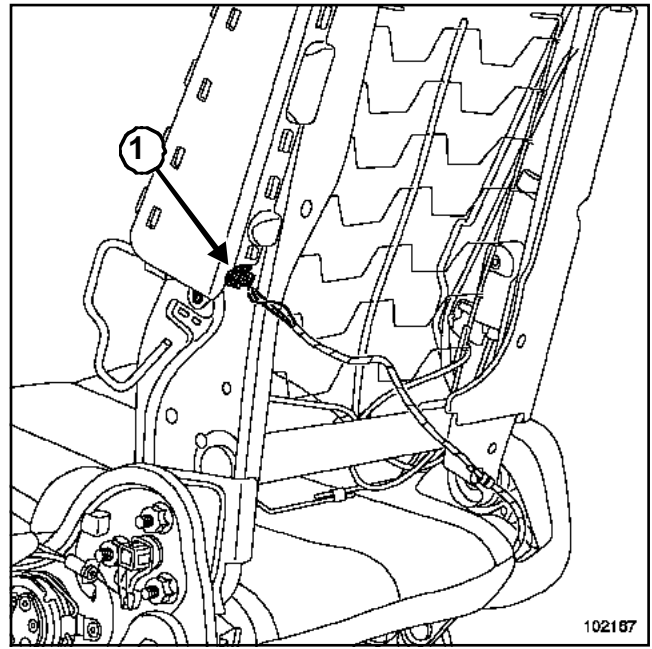
❑ IMPORTANT

Before removing a component from the safety system, it is essential to check the airbag computer using the **Diagnostic tool**. When this function is activated all the triggering lines are disabled and the airbag warning light on the instrument panel lights up (ignition on).

WARNING

When carrying out work on a seat fitted with an airbag and to ensure that the airbag triggers correctly, it is essential to follow the instructions described in **Workshop Repair Manual 365 - bodywork**.

- ❑ Disconnect the battery.
- ❑ Remove the seat.
- ❑ Disconnect:
 - the airbag module wiring,
 - the airbag module earth wiring.



102187
102167

- ❑ Remove the mounting rivet (1).
- ❑ Release the airbag module.

IMPORTANT

To refit an airbag which has not been triggered, (Section Airbag and Pretensioners, Destruction procedure, page **88C-38**).

REFITTING

❑

WARNING

When an airbag has been triggered, certain parts must be replaced (Section Airbag and Pretensioners, Precautions during repair, page **88C-5**).

- ❑ Position the airbag on the frame.
- ❑ Rivet the airbag to the frame (special rivet).
- ❑ Refit the wiring under the seat as before and respect the routing and the mounting points.
- ❑ Connect the earth wire.
- ❑ Verify that connector is locked correctly.
- ❑ Refit the seat trim, following the advice (see **Workshop Repair Manual 365 - bodywork**).
- ❑ Fit the seat to the vehicle (see **Workshop Repair Manual 365 - bodywork**).

IMPORTANT

Check the airbag computer using the **Diagnostic tool**.

-
- If everything is correct, unlock the airbag computer, if not, refer to the **fault finding manual** .

Rear side airbag (chest)

B84

Essential equipment

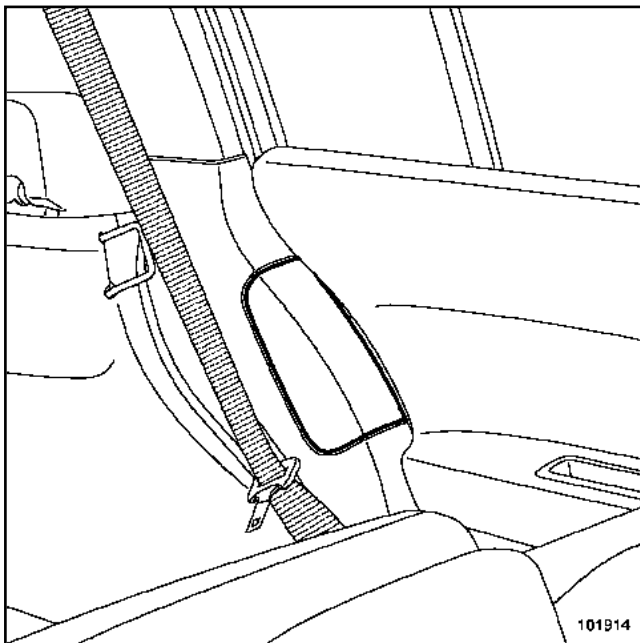
Diagnostic tool

Tightening torques

rear side chest airbag mounting bolts	0.4 daNm
---------------------------------------	-----------------

The rear side chest airbag module is mounted on the quarter panel lining.

The airbag detaches the lining when it deploys.



101914

REMOVAL

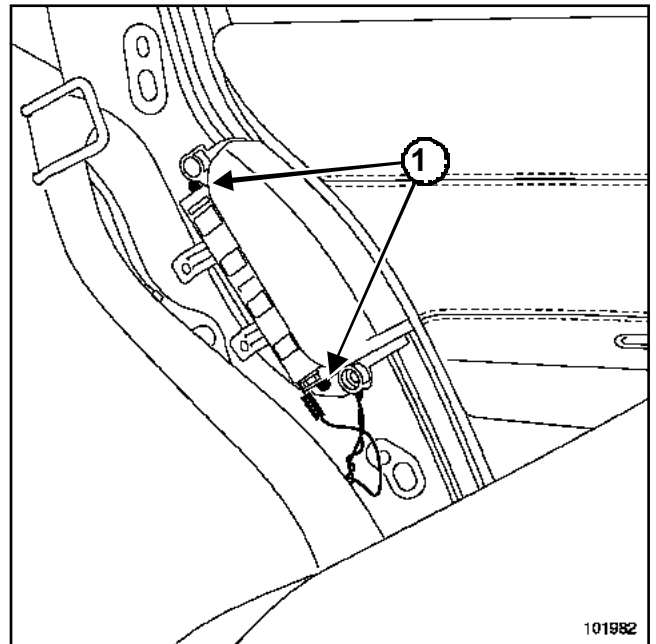
IMPORTANT

Before removing a safety system component, lock the airbag using the **Diagnostic tool**. When this function is activated all the trigger lines are disabled and the air bag warning light on the instrument panel lights up (ignition on).

Remove the trim (see **Workshop Repair Manual 365 - bodywork**).

Disconnect:

- the airbag connector,
- the airbag earth wire.



101982

101982

Remove:

- the two mounting bolts (1),
- the rear side chest airbag.

IMPORTANT

To scrap an airbag which has not been triggered, (Section Airbag and Pretensioners, Destruction procedure, page **88C-38**).

REFITTING

Position the airbag.

Tighten to torque the **rear side chest airbag mounting bolts (0.4 daNm)**.

Connect:

- the airbag connector, checking that the connector is correctly tightened,
- the earth wire.

Refit the trim.

IMPORTANT

Check the airbag computer using **Diagnostic tool**.

If everything is correct, unlock the computer, if not, refer to **fault finding manual**.

Rear side airbag (chest)

C84

Essential equipment

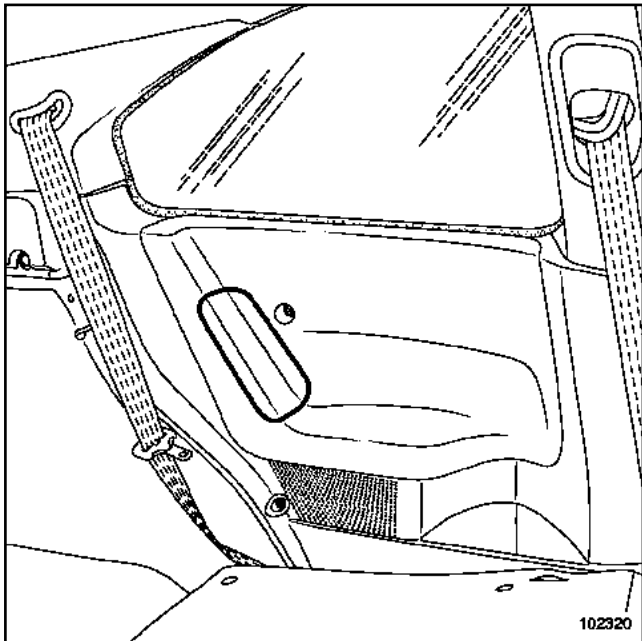
Diagnostic tool

Tightening torques

rear side chest airbag mounting bolt	0.4 daNm
--------------------------------------	-----------------

The rear side chest airbag module is mounted on the quarter panel lining.

The airbag detaches the lining when it deploys.



102320

REMOVAL

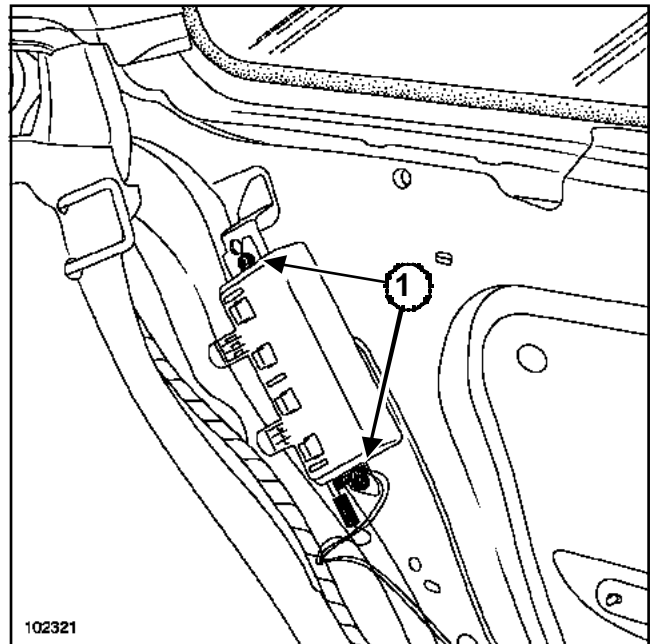
IMPORTANT

Before removing a safety system component, lock the airbag using the **Diagnostic tool**. When this function is activated all the trigger lines are disabled and the air bag warning light on the instrument panel lights up (ignition on).

Remove the trim (see **Workshop Repair Manual 365 - bodywork**).

Disconnect:

- the airbag connector,
- the airbag earth wire.



102321

Remove:

- the two mounting bolts(1),
- the rear side chest airbag.

IMPORTANT

To scrap an airbag which has not been triggered, (Section Airbag and Pretensioners, Destruction procedure, page **88C-38**).

REFITTING

Position the airbag.

Tighten to torque the **rear side chest airbag mounting bolt (0.4 daNm)**.

Connect:

- the airbag connector, checking that the connector is correctly tightened,
- the earth wire,

Refit the trim.

IMPORTANT

Check the airbag computer using **Diagnostic tool**.

If everything is correct, unlock the computer if not, refer to the **fault finding manual**.

Curtain side airbag

Essential equipment

Diagnostic tool

Tightening torques

rear side chest airbag mounting bolt	0.8 daNm
--------------------------------------	-----------------

The side curtain airbag is mounted behind the headlining.

The air bag detaches the headlining when it deploys.

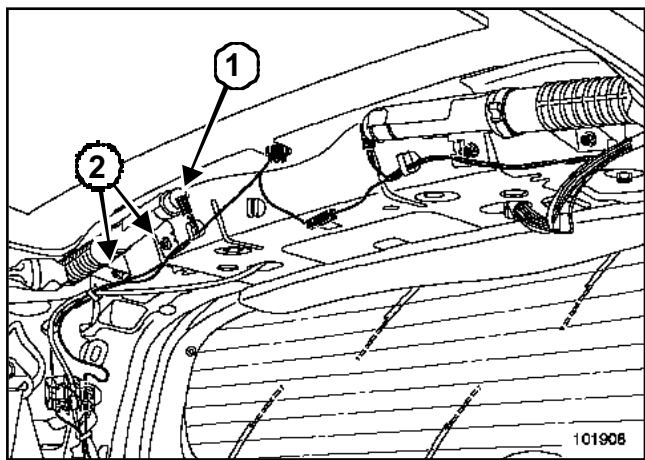
REMOVAL

IMPORTANT

Before removing a safety system component, lock the airbag using the **Diagnostic tool**. When this function is activated all the trigger lines are disabled and the airbag warning light on the instrument panel lights up (ignition on).

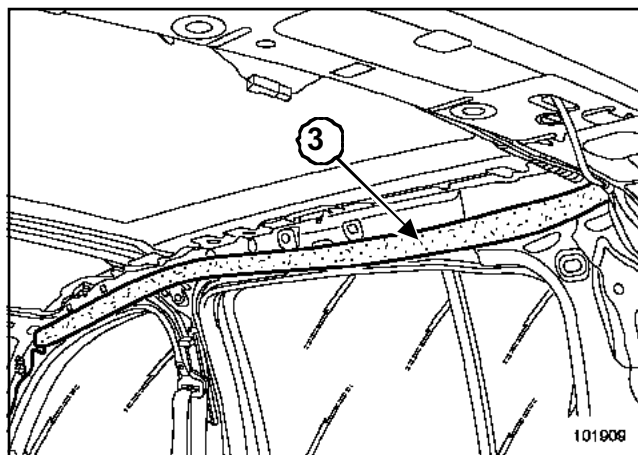
Remove the headlining (see **Headlining**).

EXAMPLE OF RIGHT-HAND CURTAIN AIRBAG REMOVAL.



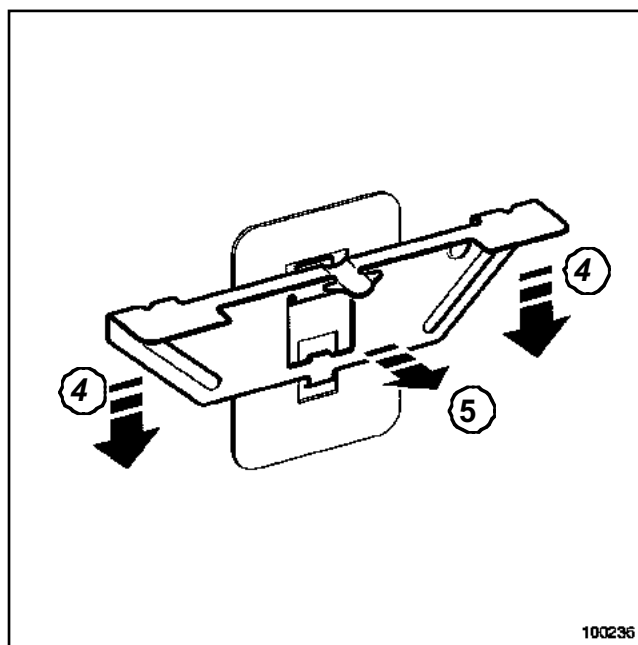
Disconnect the connector (1) from the module.

Remove the module mounting bolts(2).



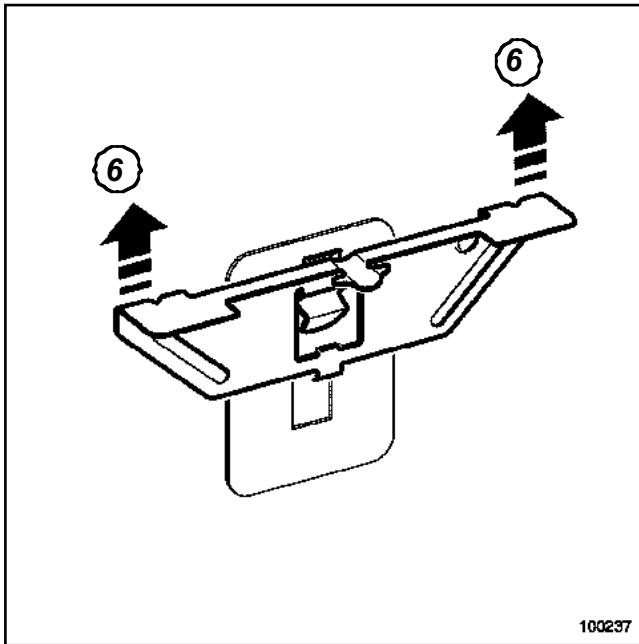
101909

The curtain section (3) is clipped onto the body.



100236

Curtain side airbag



100237
100237

- ❑ Unclip the curtain at:
 - lowering (4) the curtain, to lower the clip mounted on the body,
 - pulling (5) on the curtain to release the clip from its upper section,
 - lifting (6) the assembly.

IMPORTANT

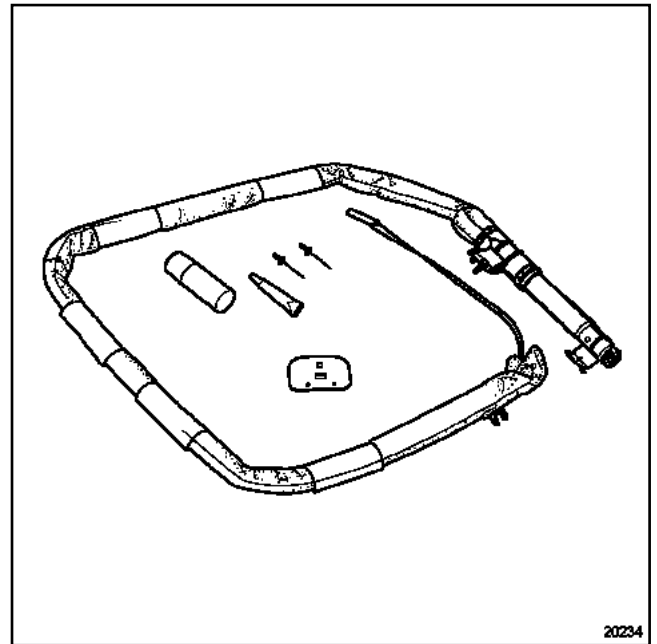
To scrap an airbag which has not been triggered, (Section Airbag and Pretensioners, Destruction procedure, page 88C-38).

REFITTING

❑

WARNING

- If a curtain airbag module is triggered, the damage to the first mounting always requires that a plate supplied as a replacement part be fitted.
- If a curtain airbag is triggered, it is essential to replace certain parts (Section Airbag and Pretensioners, Precautions during repair, page 88C-5).



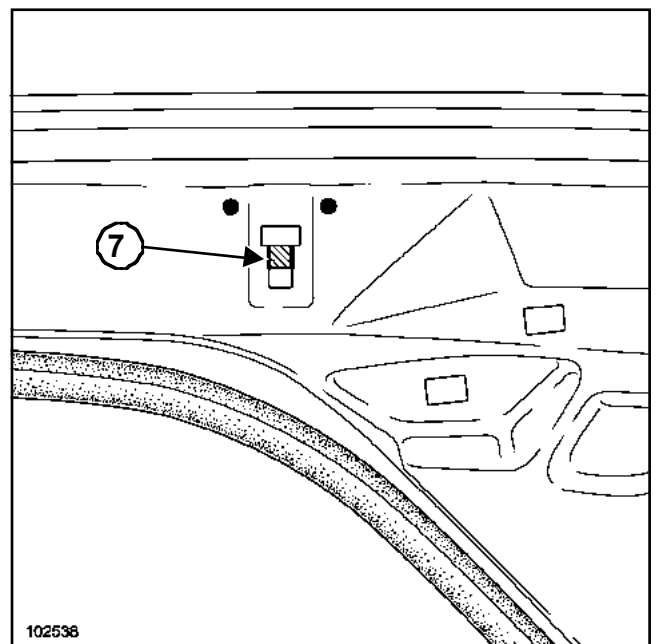
20234
20234

- ❑ Use the following replacement parts:
 - a curtain airbag,
 - a pad **part number 82 00 277 635**,
 - two special rivets **part number 77 03 072 050**,
 - a sachet of adhesive **part number 77 11 171 805**.

Note:

The pad is identical on the left and right-hand sides.

I - FITTING THE PAD

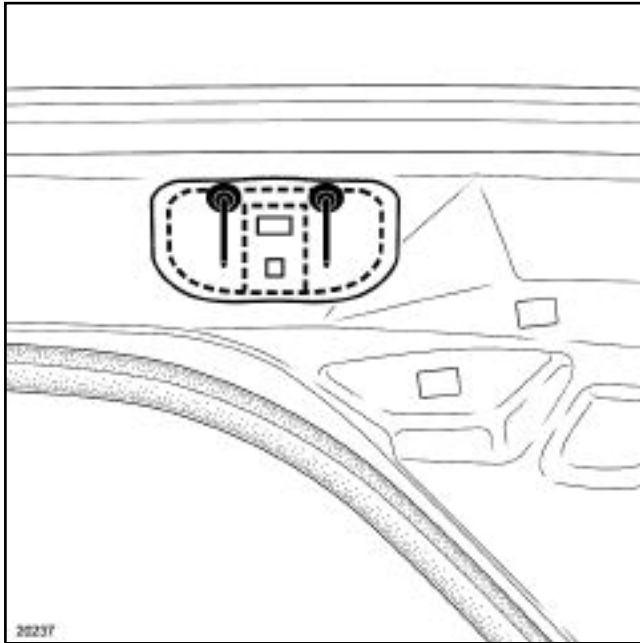


102538

102538

Curtain side airbag

- Cut away the plate (7) damaged by the triggering of the curtain airbag.
- Apply an anti-corrosion paint treatment to the area of the cut.
- Cleaning surfaces to be bonded.
- Degreasing surfaces to be bonded.



20237

- Apply the supplied activator and then coat the pad with adhesive.
- Fit the pad.
- Rivet the pad.

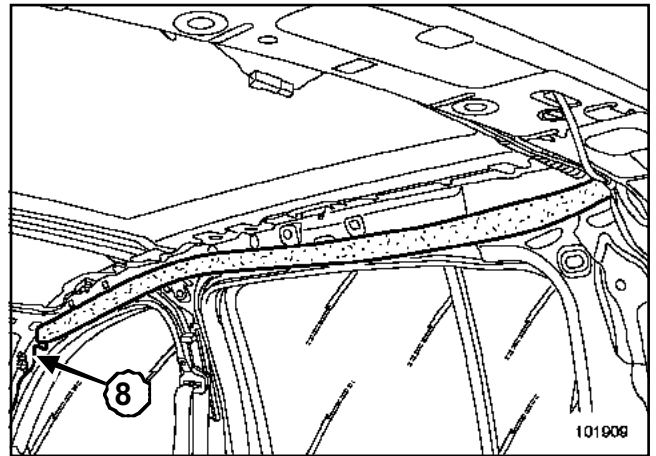
WARNING

The adhesive and rivets are special and must under no circumstances be replaced by other components with different part numbers.

- Inject wax into hollow body parts (see **Workshop Repair Manual 365 - bodywork**).

II - FITTING THE MODULE

- Position the airbag without tightening the mounting screws.



101909

- Position the airbag starting with the retaining clip (8).
- Position all the clips.
- Tighten to torque the **rear side chest airbag mounting bolt (0.8 daNm)**.
- Reconnect the connector, ensuring that it locks into place properly.

IMPORTANT

Check the airbag computer using **Diagnostic tool**.

- If everything is correct, unlock the airbag computer, if not, refer to the **fault finding manual**.

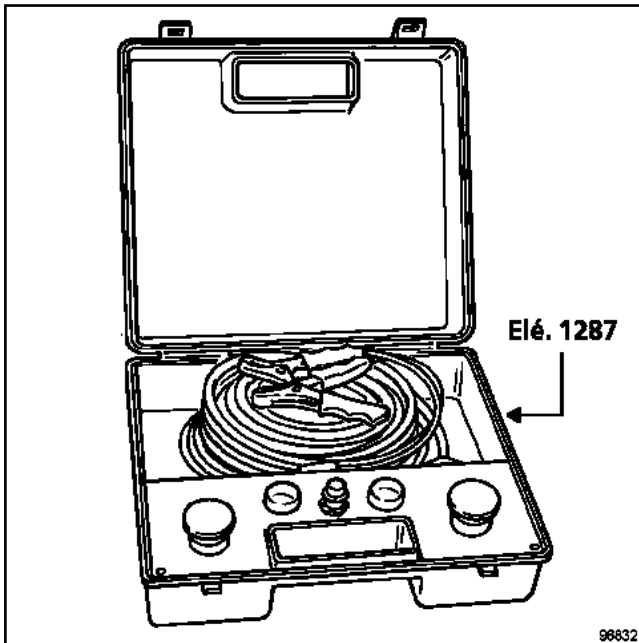
Destruction procedure

IMPORTANT

In order to avoid any risk of an accident, the pyrotechnic gas generators must be triggered before the vehicle is scrapped or the part is scrapped.

WARNING

The destruction procedure cannot be carried out if local regulations require a special procedure which has been confirmed and published by the Fault finding, Repair and Procedures Department.



Tool (Ele. 1287) and adaptive leads (Ele. 1287-1) and (Ele. 1287-02) must be used.

IMPORTANT

Do not re-use the pyrotechnic components. The pretensioners or airbags on a vehicle which is to be scrapped must be destroyed.

WARNING

- Each part is intended for a specific type of vehicle and should not be fitted onto another vehicle under any circumstances. The parts are not interchangeable.
- Do not trigger pretensioners which are to be returned under warranty because of a problem with the seat belt catch. This makes analysis of the part by the supplier impossible. Return the faulty part to techline in the packaging of the new part.

I - PRETENSIONERS AND PYROTECHNIC INERTIA REELS

1 - Destruction of part fitted to the vehicle:

Move the vehicle outside the workshop.

Connect the destruction tool (Ele. 1287) to the pretensioner after removing the seat runner cover.

Unroll the wiring of the tool so you are sufficiently far away from the vehicle (approximately 10 metres) when the device is activated.

Connect the two supply wires on the tool to a battery.

After checking that there is no-one nearby, destroy the pretensioner by pressing both buttons on the tool at the same time.

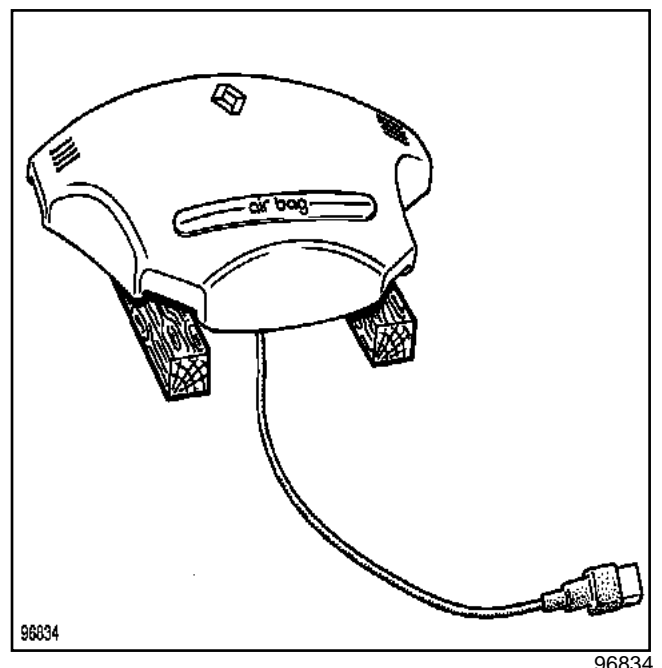
2 - Destruction of part removed from the vehicle:

Proceed in the same way as for the front airbag, in a stack of old tyres.

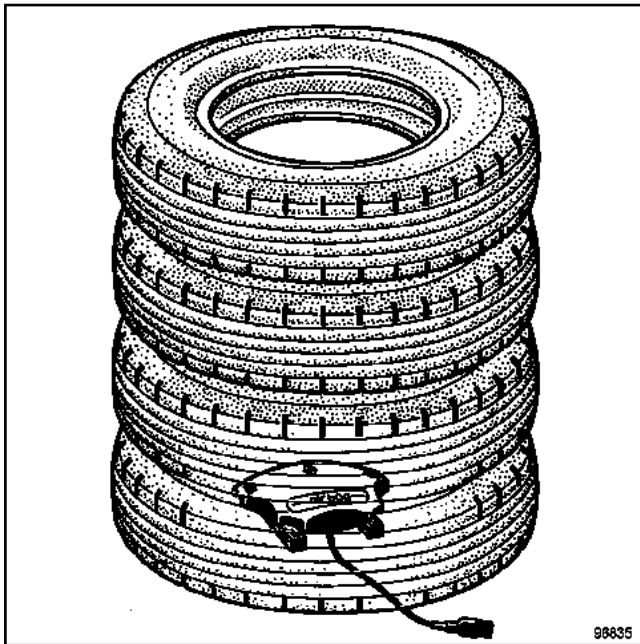
II - AIRBAGS

These components can only be destroyed after they have been removed from the vehicle. The destruction procedure must take place outside the workshop.

Connect the corresponding wiring.



Put the airbag on two wooden blocks.



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96835

Destruction is carried out in a stack of old tyres.

Make sure that deployment of the air bag will not be hindered.

Unwind all the tool wiring so that it is far enough away from the unit (approx. 10 metres) during triggering and connect it to the airbag.

Connect the two destruction tool supply files (Ele. 1287) to a battery.

After checking that there is no-one nearby, destroy the airbag by pressing both buttons on the tool simultaneously.

Note:

If triggering is not possible (faulty ignition module) return the part to the Techline.