**Electrical equipment**

- Battery
- Headlights
- Xenon bulbs
- Rear lighting
- Interior lighting
- Fuses
- Immobiliser
- Horn
- Alarm
- Instrument panel

**On-board telematics system**

<table>
<thead>
<tr>
<th>Model</th>
<th>ModelYear</th>
<th>Engine</th>
<th>ModelType</th>
<th>OtherDetails</th>
</tr>
</thead>
</table>

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The repair methods given by the manufacturer in this document are based on the technical specifications current when it was prepared. The methods may be modified as a result of changes introduced by the manufacturer in the production of the various component units and accessories from which his vehicles are constructed.
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77 11 318 102 MARCH 2003 Edition Anglaise

- CRUISE CONTROL
- CONTROLS - SIGNALS
- WIPING / WASHING
- RADIO
- PASSENGER COMPARTMENT CONNECTION UNIT
- OPENING ELEMENTS MANAGEMENT
- ELECTRIC WINDOWS - SUNROOF
- ENGINE INTERCONNECTION UNIT
- WIRING HARNESS
- MULTIPLEXING
- AIRBAG AND PRETENSIONERS

<table>
<thead>
<tr>
<th>S/N Line</th>
<th>Make Code</th>
<th>Engine</th>
</tr>
</thead>
<tbody>
<tr>
<td>11 11 11</td>
<td>ABCD</td>
<td>EFGH</td>
</tr>
</tbody>
</table>

Page 1
## Contents

### Battery
- Battery: Removal/Refitting 80A-1
- Battery: Checking 80A-2
- Battery: Refitting 80A-3

### Headlights
- Automatic Headlights 80B-1
- Headlights: Halogen or Xenon 80B-2
  - Halogen Headlamps: Connection 80B-4
  - Halogen Headlights: Replacement 80B-6
  - Fog Lights 80B-8
- Remote Adjustment Actuator 80B-9
  - Remote Adjustment Actuator: Connection 80B-10

### Xenon Bulbs
- Headlights: Description 80C-1
  - Xenon Bulbs: Replacement 80C-6
- Xenon Headlights: Adjustment 80C-13

### Rear Lighting
- High Level Brake Light 81A-1
- Rear Light 81A-2
  - Rear Light: Connection 81A-3
- Registration Plate Light 81A-4

### Interior Lighting
- Operating Principle 81B-1
- Courtesy Light: General 81B-2
- Courtesy Light: Vanity Light: General 81B-5
- Lower Door Light 81B-6
- Lower Door Light Switch 81B-7

<table>
<thead>
<tr>
<th>contents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>87C OPENING ELEMENTS MANAGEMENT</strong></td>
</tr>
<tr>
<td>Keyless vehicle: Description</td>
</tr>
<tr>
<td>Keyless vehicle:</td>
</tr>
<tr>
<td>Keyless vehicle: Operating principle</td>
</tr>
<tr>
<td>Starter aerials</td>
</tr>
<tr>
<td>Opener aerials</td>
</tr>
<tr>
<td>Opener aerials CONNECTION</td>
</tr>
<tr>
<td>Tailgate exterior opening control</td>
</tr>
<tr>
<td>Keyless vehicle: Tailgate opening control connection</td>
</tr>
<tr>
<td>Door locks: Connection</td>
</tr>
<tr>
<td>Tailgate lock</td>
</tr>
<tr>
<td>Keyless vehicle: Tailgate lock connection</td>
</tr>
<tr>
<td>Keyless vehicle: Tailgate locking button</td>
</tr>
<tr>
<td>Keyless vehicle: Fuel filler flap</td>
</tr>
<tr>
<td><strong>87D ELECTRIC WINDOWS - SUNROOF</strong></td>
</tr>
<tr>
<td>Electric windows Operating principle</td>
</tr>
<tr>
<td>Front electric window switches on driver’s door</td>
</tr>
<tr>
<td>Front electric window switches on driver’s door Connection</td>
</tr>
<tr>
<td>Front electric window switch on the passenger door</td>
</tr>
<tr>
<td>Front electric window switch on the passenger door Connection</td>
</tr>
<tr>
<td>Rear electric window switches on rear doors</td>
</tr>
<tr>
<td>Rear electric window switches on rear doors Connection</td>
</tr>
<tr>
<td>Child lock switch</td>
</tr>
<tr>
<td>Front electric window motor</td>
</tr>
<tr>
<td>Front electric window motor Connection</td>
</tr>
<tr>
<td>Rear electric window motor</td>
</tr>
<tr>
<td>Rear electric window motor Connection</td>
</tr>
<tr>
<td>Electric sunroof: Operating principle</td>
</tr>
<tr>
<td>Electric sunroof control</td>
</tr>
<tr>
<td>Sunroof opening motor Initialisation</td>
</tr>
<tr>
<td>Electric sunroof motor Connection</td>
</tr>
<tr>
<td>Sunroof control: Connection</td>
</tr>
<tr>
<td><strong>87G ENGINE INTERCONNECTION UNIT</strong></td>
</tr>
<tr>
<td>Protection and Switching Unit: General</td>
</tr>
<tr>
<td>Protection and Switching Unit</td>
</tr>
<tr>
<td><strong>88A WIRING HARNESS</strong></td>
</tr>
<tr>
<td>Diagnostic socket</td>
</tr>
<tr>
<td>COMPUTER POSITIONS</td>
</tr>
<tr>
<td>Headlining wiring</td>
</tr>
<tr>
<td><strong>88B MULTIPLEXING</strong></td>
</tr>
<tr>
<td>Description</td>
</tr>
<tr>
<td>Multiplex network configuration</td>
</tr>
</tbody>
</table>
Battery: Removing - Refitting

- Switch off all the consumers.
- Remove:
  - the battery cover mountings (1),
  - the battery cover.
- Disconnect the battery starting with the negative terminal.
- Remove the cover (2).
- Disconnect:
  - the cover (3),
  - the positive terminal.
- Remove the battery mounting bracket (4).

**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.
**Battery: Removing - Refitting**

1. Correctly position the battery in the battery tray.
2. Tighten the battery mounting bracket to a torque of 0.7 daNm (4).
3. Connect:
   - the positive battery terminal
   - the fuse (3).
4. Tighten the fuse on the battery terminal to a torque of 0.5 daNm.
5. Connect the negative terminal.
6. Tighten the battery terminals to a torque of 1.2 daNm.
7. 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.
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.

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

- 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.

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.

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

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 on 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.

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

II - BATTERY CHARGE

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

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.
- If the voltage displayed is above 15 V, the charger is not direct current (use is dangerous for the battery).
Check the charge circuit and make sure there is no abnormal electrical consumer.

Charge the battery.

Repeat the test.

Recharge the battery using a direct current charger.

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.

A battery component is short-circuited.

Replace the battery.

Repeat the test on a new battery.

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.

Note:
The battery is not the cause of the problem.

Note:
The battery is good a priori, but requires another charge.
Automatic headlights

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.

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):

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

The system operates in automatic mode.

Perform the same operation to return to manual mode.

Note:

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

Note:

For special notes on replacing the light sensor, (Section Wiping / Washing, page 85A-1).
HEADLIGHTS
Halogen or Xenon headlight

The headlight and the direction indicator are one unit.

REMOVAL

- Disconnect the battery.
- Remove the bolts (1).
- Remove:
  - the bolts (2),
  - the clip (3),
  - the front bumper.
- Unclip the side section of the bumper.
- Unclip the plastic rivets (4).
- Release the side trim.
- Unclip the plastic rivets (5).
- Release the centre trim.

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

Halogen or Xenon headlight

- 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

<table>
<thead>
<tr>
<th>Track Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Earth</td>
</tr>
<tr>
<td>2 + dipped beam</td>
</tr>
<tr>
<td>3 + direction indicator</td>
</tr>
<tr>
<td>4 + main beam headlight</td>
</tr>
<tr>
<td>5 + side light</td>
</tr>
</tbody>
</table>

![Diagram of headlight connections](image)
80B

HEADLIGHTS
Halogen headlights
Adjustment

- 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.
- 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:
- Do not apply the parking brake.

Note:
- To access the horizontal adjustment screw (2), use a 6 mm Allen key through the wheel arch access flap.
HEADLIGHTS
Halogen bulbs: 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.

II - SIDE LIGHT BULBS

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

III - DIPPED BEAM HEADLIGHT BULB

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

Note:
- Only use approved H1 bulbs.
- Only use approved W5W bulbs.
- Only use approved H7 bulbs.
- For replacing Xenon headlight bulbs (Section Xenon bulbs, page 80C-1).

Note:
HEADLIGHTS
Halogen bulbs: Replacement

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

**WARNING**
Only use approved PY21W bulbs.
REMOVAL

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

REFITTING

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

- Remove:
  - the trim underneath the driver's side of the dashboard,
  - the switch plate (3) using a small screwdriver.

- Disconnect the connector.

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

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.

Note:

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

Remote adjustment control: Connection

<table>
<thead>
<tr>
<th>Track Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not used</td>
</tr>
<tr>
<td>2</td>
<td>Not used</td>
</tr>
<tr>
<td>3</td>
<td>Side lights signal (from the Protection and Switching Unit)</td>
</tr>
<tr>
<td>4</td>
<td>Earth</td>
</tr>
<tr>
<td>5</td>
<td>Dimmer output</td>
</tr>
<tr>
<td>6</td>
<td>Beam adjustment actuator control</td>
</tr>
<tr>
<td>7</td>
<td>Supply (via Protection and Switching Unit)</td>
</tr>
<tr>
<td>8</td>
<td>Not used</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Position of the tumblewheel</th>
<th>Beam adjustment output (track 6)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Minimum value</td>
</tr>
<tr>
<td>0</td>
<td>0.95 V</td>
</tr>
<tr>
<td>1</td>
<td>3.61 V</td>
</tr>
<tr>
<td>2</td>
<td>5.62 V</td>
</tr>
<tr>
<td>3</td>
<td>8.35 V</td>
</tr>
<tr>
<td>4</td>
<td>10 V</td>
</tr>
</tbody>
</table>

Track 4 (Earth) is connected to the vehicle frame, providing a reference point for the circuit. Use a voltmeter between tracks 4 and 6 to check the beam adjustment command.
HEADLIGHTS
Headlight remote adjustment actuator

**REMOVAL**

1. Remove the headlight.
2. Turn the motor one eighth of a turn to the outside to release it from the headlight.
3. Disconnect the ball joint from the parabola by tilting the actuator slightly.

**REFITTING**

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

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

**WARNING**

1. Detach the catch (2) carefully to avoid breaking it.
2. To facilitate this, tighten screw (1) by several turns.

**Note:**
For information regarding the xenon headlights:
- The focus area can change as the beam bends.
- The focus area can change with the beam direction.
### Headlight Remote Adjustment Actuator: Connection 80B

<table>
<thead>
<tr>
<th>LINE</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Earth</td>
</tr>
<tr>
<td>2</td>
<td>Motor control</td>
</tr>
<tr>
<td>3</td>
<td>Supply (via Protection and Switching Unit)</td>
</tr>
</tbody>
</table>

**Diagram:**

- A diagram of the headlight remote adjustment actuator is shown with labels for each connection point.
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.

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.

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.

WARNING
- The actuator (stepping motor) cannot be removed from the headlight unit.
- If the actuator is defective, replace the headlight unit.
XENON BULBS

Headlights: Description

Schematic diagram:

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
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Headlights</td>
</tr>
<tr>
<td>9</td>
<td>Computer + power unit (left-hand headlight)</td>
</tr>
<tr>
<td>10</td>
<td>Bulb</td>
</tr>
<tr>
<td>11</td>
<td>Left-hand height adjustment actuator</td>
</tr>
<tr>
<td>12</td>
<td>Computer + power unit (right-hand headlight)</td>
</tr>
<tr>
<td>13</td>
<td>Right-hand height adjustment actuator</td>
</tr>
<tr>
<td>14</td>
<td>Bulb</td>
</tr>
</tbody>
</table>
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

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

---

**Diagram:**

[Diagram of Xenon Bulb Connection]
It is preferable to remove the headlight before replacing a xenon bulb.

**REMOVAL**
- Release the retaining clip (1).
- Remove the sealing cover.
- Remove the high-voltage unit (2) by turning it one eighth of a turn anti-clockwise.
- Unclip the retaining latch holding the bulb.

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

**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.

**WARNING**
- The actuator (3) (stepper motor) can not be removed from the headlight. If the actuator is faulty replace the headlight.
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.
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
❏ Tighten to torque the 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 A C while operating.
- Wait for the « computers / power unit » to cool down before removing them.
- The battery must be disconnected before any operations are performed.

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.
- 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.
**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 when ever 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.
<table>
<thead>
<tr>
<th>PIN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CONNECTION</td>
</tr>
<tr>
<td>2</td>
<td>CONNECTION to sensor track 6</td>
</tr>
<tr>
<td>3</td>
<td>Not used</td>
</tr>
<tr>
<td>4</td>
<td>Height signal (output)</td>
</tr>
<tr>
<td>5</td>
<td>Supply (dipped headlights)</td>
</tr>
</tbody>
</table>
### REMOVAL

- Remove the rear height sensor mounting bolt.

### REFITTING

- Position the sensor and its mounting on the vehicle.

Tighten the rear height sensor mounting bolt to 8 Nm.

### WARNING

- Clip (1) must be replaced each time it is removed.
- 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.
## Rear Height Sensor: CONNECTION

<table>
<thead>
<tr>
<th>PIN</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Earth</td>
</tr>
<tr>
<td>2</td>
<td>Connection to front sensor track 3</td>
</tr>
<tr>
<td>3</td>
<td>Connection to front sensor track 2</td>
</tr>
<tr>
<td>4</td>
<td>Height signal (output)</td>
</tr>
<tr>
<td>5</td>
<td>Supply (dipped headlights)</td>
</tr>
<tr>
<td>6</td>
<td>Not used</td>
</tr>
</tbody>
</table>

---

XENON BULBS

80C

---
XENON BULBS

Xenon headlights: 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.

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.

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).

Essential equipment

Diagnostic tool

WARNING

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

Note:

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

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

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.

REFITTING

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

Note: The vehicles are fitted with a brake light containing diodes.
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.
### Track Description

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Earth</td>
</tr>
<tr>
<td>2</td>
<td>Fog light</td>
</tr>
<tr>
<td>3</td>
<td>Reversing light</td>
</tr>
<tr>
<td>4</td>
<td>Not used</td>
</tr>
</tbody>
</table>

Note: The black bulb mounting connection 2 on the left-hand side is different from that on the right-hand side.

### Track Description

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not used</td>
</tr>
<tr>
<td>2</td>
<td>Reversing light</td>
</tr>
<tr>
<td>3</td>
<td>Fog light</td>
</tr>
<tr>
<td>4</td>
<td>Earth</td>
</tr>
</tbody>
</table>

Note: The grey bulb mounting connection 1 is identical on the left and right-hand side.
The registration plate lights are clipped onto the tailgate on either side of the opening control.
INTERIOR LIGHTING
Operating principle

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.
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.
INTERIOR LIGHTING

Courtesy light

REMOVAL

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

2. Pull on the mounting tabs (2).

3. Rotate to release the connector.

Essential special tooling
Car. 1597
Lever for removing rear turning handle clips

101244
101243

101244
101243
The courtesy mirrors may be fitted with a light incorporated into the headlining. 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.
REMOVAL

❏ 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 101245
INTERIOR LIGHTING
Lower door light

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

- Position the tool (Car. 1597) on the light side.
- 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.

Essential special tooling

Car. 1597
Lever for removing rear turning handle clips
INTERIOR LIGHTING
Lower door light switch

REMOVAL

- 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. The unit is located behind the flap (1).

LEFT-HAND DRIVE

101194

RIGHT-HAND DRIVE

102319
<table>
<thead>
<tr>
<th>Fuse</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>Electric sunroof</td>
</tr>
<tr>
<td>15</td>
<td>Anti-lock Braking System and Electronic Stability Program computer</td>
</tr>
<tr>
<td>15</td>
<td>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</td>
</tr>
<tr>
<td>15</td>
<td>Horn - diagnostic socket - headlight washer pump relay - rear wiper motor</td>
</tr>
<tr>
<td>15</td>
<td>Rear screen wiper</td>
</tr>
<tr>
<td>20</td>
<td>UCH - instrument panel - AC control unit - accessories relay</td>
</tr>
<tr>
<td>20</td>
<td>Heated seats</td>
</tr>
<tr>
<td>3</td>
<td>Passenger compartment temperature sensor and fan - autodimming rear-view mirror - rain and light sensor (depending on version)</td>
</tr>
<tr>
<td>20</td>
<td>Central door locking or deadlocking</td>
</tr>
<tr>
<td>25</td>
<td>Driver's window lift</td>
</tr>
<tr>
<td>25</td>
<td>Passenger electric window</td>
</tr>
<tr>
<td>20</td>
<td>Consumer cut-out fuse : radio - offset display - heated door mirror control - alarm - instrument panel</td>
</tr>
<tr>
<td>7.5</td>
<td>Heated door mirrors</td>
</tr>
</tbody>
</table>
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).
<table>
<thead>
<tr>
<th>Number</th>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>25 A</td>
<td>Starter solenoid</td>
</tr>
<tr>
<td>4</td>
<td>10 A</td>
<td>Air conditioning compressor clutch</td>
</tr>
<tr>
<td>5A</td>
<td>15 A</td>
<td>Electric steering column lock</td>
</tr>
<tr>
<td>5C</td>
<td>10 A</td>
<td>Reversing lights</td>
</tr>
<tr>
<td>5D</td>
<td>5 A</td>
<td>Injection computer - electric steering column lock (+ after ignition)</td>
</tr>
<tr>
<td>5E</td>
<td>5 A</td>
<td>Airbag and electric power assisted steering computer (+ after ignition)</td>
</tr>
<tr>
<td>5F</td>
<td>7.5 A</td>
<td>+ 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)</td>
</tr>
<tr>
<td>5H</td>
<td>5 A</td>
<td>Automatic gearbox (+ after ignition)</td>
</tr>
<tr>
<td>6</td>
<td>30 A</td>
<td>Heated rear screen</td>
</tr>
<tr>
<td>7A</td>
<td>7.5 A</td>
<td>Right-hand side lights - cruise control and speed limiter - Electronic Stability Program - gear lever display - heated seat controls</td>
</tr>
<tr>
<td>7B</td>
<td>7.5 A</td>
<td>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</td>
</tr>
<tr>
<td>8A</td>
<td>10 A</td>
<td>Main beam headlights right-hand side</td>
</tr>
<tr>
<td>8B</td>
<td>10 A</td>
<td>Main beam headlights left-hand side</td>
</tr>
<tr>
<td>8C</td>
<td>10 A</td>
<td>Right-hand dipped beam headlights - rear height sensor - front height sensor - headlight beam adjustment rheostat - right-hand headlight beam adjustment switch</td>
</tr>
<tr>
<td>8D</td>
<td>10 A</td>
<td>Left-hand dipped headlights - left-hand headlight beam adjustment switch</td>
</tr>
<tr>
<td>9</td>
<td>25 A</td>
<td>Windscreen wiper motor</td>
</tr>
<tr>
<td>10</td>
<td>20 A</td>
<td>Front fog lights</td>
</tr>
<tr>
<td>11</td>
<td>40 A</td>
<td>Cooling fan assembly</td>
</tr>
<tr>
<td>13</td>
<td>25 A</td>
<td>Anti-lock Braking System and Electronic Stability Program computer</td>
</tr>
<tr>
<td>15</td>
<td>20 A</td>
<td>+ battery automatic gearbox</td>
</tr>
<tr>
<td>16</td>
<td>10 A</td>
<td>Not used</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Engine Compartment Fuse and Relay Box

#### Allocation of fuses (depending on equipment level)

<table>
<thead>
<tr>
<th>Mark</th>
<th>Nominal current</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not used</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>40 A</td>
<td>Preheating unit</td>
</tr>
<tr>
<td>3</td>
<td>Not used</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>70 A</td>
<td>Passenger compartment fuse and relay supply</td>
</tr>
<tr>
<td>5</td>
<td>50 A</td>
<td>Anti-lock braking system computer</td>
</tr>
<tr>
<td>6</td>
<td>70 A</td>
<td>Electric power assisted steering</td>
</tr>
<tr>
<td>7</td>
<td>40 A</td>
<td>Additional heater relay</td>
</tr>
<tr>
<td>8</td>
<td>60 A</td>
<td>Passenger compartment fuse and relay supply</td>
</tr>
<tr>
<td>9</td>
<td>70 A</td>
<td>Passenger compartment auxiliary heating relay</td>
</tr>
<tr>
<td>A</td>
<td>20 A</td>
<td>Diesel heating relay</td>
</tr>
<tr>
<td>B</td>
<td>Not used</td>
<td></td>
</tr>
</tbody>
</table>

#### Allocation of relays (depending on equipment level)

<table>
<thead>
<tr>
<th>Mark</th>
<th>Nominal current</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Battery protection fuses

These fuses are located on the positive battery terminal.

Allocation of fuses (depending on equipment level)

<table>
<thead>
<tr>
<th>No.</th>
<th>Mark</th>
<th>Nominal current</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>30 A</td>
<td>+ protected battery for fuse box - passenger compartment and UCH relay (tightening torque 4.5 Nm)</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>350 A (Petrol)</td>
<td>400 A (Diesel) + protected battery for starter - alternator - power supply fuse board - Protection and Switching Unit (tightening torque 11 Nm)</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>30 A</td>
<td>+ protected battery for engine functions via Protection and Switching Unit - diesel fuel heater relay (tightening torque 4.5 Nm)</td>
</tr>
</tbody>
</table>
The Megane 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.

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.

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.

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.

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).

Note:

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

1
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 aerials 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.
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.

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.

WARNING

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

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

- 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.

2 - Warning light activation table.

<table>
<thead>
<tr>
<th>Indicator light</th>
<th>Instrument panel message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reader out of order or card not detected</td>
<td>No Unrecognised card in reader. The card does not match the vehicle or has been de-allocated from it.</td>
</tr>
<tr>
<td>Steering not locked or card not recognised</td>
<td>No Faulty electric steering column lock or multiplex connection.</td>
</tr>
<tr>
<td>Faulty injection - Faulty engine immobiliser</td>
<td>Yes The electric steering column lock is unlocked. There is a problem with the vehicle's injection system.</td>
</tr>
<tr>
<td>On permanently (3 seconds) then off</td>
<td>Yes Starting the engine.</td>
</tr>
</tbody>
</table>

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.
User action

1 - 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 - pressing the starter button (« start »),
- and card verified by the UCH (card in the card reader or operating in « hands-free » mode).

3 - 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 - 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 - 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 - removing the card from the card reader (without affecting operation in « hands-free » mode).

7 - opening the driver's door,
- or locking the vehicle (radio remote control or « hands-free »),
- or period of 20 minutes without user action.

8 - pressing the starter button (« start »),
- or locking the vehicle (radio remote control or « hands-free »),
- or period of 20 minutes without user action.

9 - locking the vehicle (radio remote control or « hands-free »),
- or period of 5 minutes without user action.
## IMMOBILISER
System operation diagram

<table>
<thead>
<tr>
<th>Key</th>
<th>Vehicle state</th>
<th>Automatic action</th>
<th>Possible action</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Vehicle state</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Vehicle state</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Vehicle state</td>
<td>C + accessories before switching to after ignition - switching on the audio equipment automatically, - passenger compartment fan. - wipers, - navigation,</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Vehicle state</td>
<td>D - unlocking the steering column electric lock.</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>Vehicle state</td>
<td>E starting (timed starter supply)</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Vehicle state</td>
<td>F + after ignition engine running - all vehicle functions are available.</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>Vehicle state</td>
<td>G + accessories card in the card reader - audio equipment on, - passenger compartment fan off. - wipers, - navigation, - electric childproof lock.</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td>Vehicle state</td>
<td>H - locking the steering column electric lock.</td>
<td></td>
</tr>
<tr>
<td>I</td>
<td>Vehicle state</td>
<td>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.</td>
<td></td>
</tr>
<tr>
<td>J</td>
<td>Vehicle state</td>
<td>J - starting or unlocking failure.</td>
<td></td>
</tr>
</tbody>
</table>
NOTES
- 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.

Timed feed
Card in the card reader and press and hold the
starter button (« start »).
IMMOBILISER
Programming:

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.

**Allocation table**

<table>
<thead>
<tr>
<th>Role</th>
<th>Function</th>
<th>Code</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCH</td>
<td>Programming</td>
<td>Coded</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Electric steering column lock</td>
<td>Programming</td>
<td>Blank</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Injection computer</td>
<td>Programming</td>
<td>Coded</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>

**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.

**Note:**
The code consists of 12 hexadecimal characters in upper case.

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

**I - UCH PROGRAMMING PROCEDURE**

1. Turn on the side lights.
2. Enter the serial number using the Diagnostic tool.
3. Perform the « Multiplex network test ».
4. Select the « Multiplex network result » icon.
5. Select the following tabs:
   - « information », then
   - « UCH », then
   - « perform fault finding ».
6. Select the following icons:
   - « repair », then
   - « programming ».
7. Perform the SC004 « UCH programming ».
8. The tool displays « Please enter the After-Sales code ».
9. Remove the card from the reader.
10. Click on « Next ».
11. Take the card out of the card reader.
12. Enter the repair code.
13. Confirm.
14. If the code format is correct, the tool displays « Insert card fully into reader ».

**Essential equipment**
Diagnostic tool

**WARNING**
If a part is programmed, it is permanently allocated to the vehicle.
The programmed code cannot be erased.
II - PROGRAMMING AND ALLOCATION PROCEDURE FOR RENAULT 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.

2 - To complete the programming:
   □ Select « No ».

Note:
- This procedure cannot be carried out with a blank card.

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

Note:
- This procedure can take a few seconds.

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).

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.

Note:
- The code consists of 12 hexadecimal characters in upper case.

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

Note:
- The vehicle can have no more than four cards.

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

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.

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

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.
IMMOBILISER
Steering column lock

The electric steering column lock is mounted on the steering column.

REMOVAL
❏ Shift the steering column to its highest position.
❏ Remove the fuse box cover (1).
❏ Remove the instrument panel face (2).
❏ Unclip the sill lining on the front doors (3).
❏ Remove:
  - the lighting rheostat support plate fastening bolts (4),
  - the lighting rheostat support plate,
  - the half cowling fastening bolts (5),
  - the half cowlings.

Tightening torques

<table>
<thead>
<tr>
<th>Part</th>
<th>Torque [Nm]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steering column lock</td>
<td>0.8</td>
</tr>
</tbody>
</table>

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

Steering column lock

**Removal**

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

**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**

- 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 mounting bolt has a left-hand thread.
- 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.
- 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.

- 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

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Earth</td>
</tr>
<tr>
<td>2</td>
<td>UCH connection (control +)</td>
</tr>
<tr>
<td>3</td>
<td>UCH multiplex connection (CAN H)</td>
</tr>
<tr>
<td>4</td>
<td>UCH connection (control -)</td>
</tr>
<tr>
<td>5</td>
<td>Engine running signal coming from the Protection and Switch Unit</td>
</tr>
<tr>
<td>6</td>
<td>UCH multiplex connection (CAN L)</td>
</tr>
</tbody>
</table>

---

**IMMOBILISER**

Steering column electric lock: Connection.
IMMOBILISER
Engine start/stop button

REMOVAL

• Disconnect the battery.

• 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).

• Unclip cover (1).

• Unclip cover (2).

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
IMMOBILISER
Engine start/stop button

Remove the screws (3).

Unclip the front panel.

REFITTING

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

**Test by ohmmeter**

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Starting control</td>
</tr>
<tr>
<td>2</td>
<td>Earth</td>
</tr>
<tr>
<td>3</td>
<td>Not used</td>
</tr>
<tr>
<td>4</td>
<td>+ lighting (5V lights on, 12V invitation to start the engine)</td>
</tr>
</tbody>
</table>

**Track Sensor Description**

1 and 2 0 Ω « Start or stop » pulse

1 and 2 infinite Idle
The card reader is the same on "entry level" vehicles and those fitted with the "hands-free" function.

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>UCH connection</td>
</tr>
<tr>
<td>2</td>
<td>Supply</td>
</tr>
<tr>
<td>3</td>
<td>UCH connection</td>
</tr>
<tr>
<td>4</td>
<td>Earth</td>
</tr>
<tr>
<td>5</td>
<td>UCH connection</td>
</tr>
<tr>
<td>6</td>
<td>Not used</td>
</tr>
<tr>
<td>7</td>
<td>Not used</td>
</tr>
<tr>
<td>8</td>
<td>Not used</td>
</tr>
</tbody>
</table>

The card reader supports various tracks for connection and supply.
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.

**REMOVAL**

Unclip the aerial by moving the clips (4).

**WARNING**

The starter aerial clips (4) are fragile.

Note:

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

The starter aerials are located in the following areas:

- Audi MMI: behind the front panel of the dashboard
- Audi Xenon: at the back of the centre console
- Audi Virtual Cockpit: at the back of the floor
Unclip the front panel (Section Immobiliser, Engine start/stop button, page 82A-15).

- CENTRE AERIAL

- Remove the central console (see Central console).

- REAR AERIAL

- Partially remove the carpet in the boot.
- Unclip aerial (5) by moving the clips.

101627
101927
101918
5
HORN

I - DESCRIPTION

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

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

II - CONNECTION

<table>
<thead>
<tr>
<th>Track Description</th>
<th>Feed</th>
<th>Earth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
I - DESCRIPTION

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

II - CONNECTION

1. Connector (1) is next to the UCH.

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

❏ Disconnect the battery.

❏ Remove the diagnostic socket access cover.

❏ Unclip the card reader access cover.

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

❏ Open the glove compartment.

❏ Unclip the handbrake surround trim in the direction of arrows (1) and (2) in succession.

**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.

**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**
- m steering wheel bolt 4.4 daNm
- bolt 2 Nm

*Caution:*
Always check the current tightening torques when replacing components. The values listed are for the diameter of the thread to be adjusted.
1. Disconnect the cigarette lighter connectors (if installed).
2. Unclip the lower cover (3).
3. Unclip the cigarette lighter mounting.
4. Disconnect the connector from the cigarette lighter mounting.
5. Move the front seats forward.
6. Remove the screws (5).
7. Release:
   - the console gently following the arrow (4),
   - the gear lever console.
8. Unclip the mounting clip (1).
9. Release:
   - the clip (2),
   - the sun visor (3).
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).
Release the front inner sill trim.
Unclip the windscreen pillar trim (1) and (2).

- the tweeter speaker grilles,
- the tweeters.

Unclip the sump access flap.
Unclip the side panel.

Unclip the anti-rotation clip.

Unclip the headlight beam adjustment and dimmer control.

Remove the screws.

Remove the driver's airbag (Section Airbag and Pretensioners, Driver's front airbag, page 88C-27).

Remove the steering wheel (see Steering wheel).

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

Mark the position of the column switch assembly.
83A

- Check that mark « 0 » on the rotary switch is correctly positioned opposite the indexing mark.
- Remove the column switch assembly.
- Release bolt.
- Unclip the steering column assembly.
- Disconnect:
  - the different connectors (wiper, radio control and lighting),
  - the rotary switch connector.
- Remove the two bolts.
- Unclip the two top clips.
- Remove the second lower shell casing.
- Unclip the top of the dashboard (partially).
- Disconnect the Carminat system speaker connector.
- Remove the upper bolt.
- Press the two clips.
- Remove the instrument panel.
- Remove the bolts (\(10\)).

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

- Disconnect the insolation sensor.

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

- Disconnect the connector.

- Remove:
  - the bolt (\(11\)),
  - the bolts (\(12\)).
Remove the Carminat control (if installed), using the tool (Ms. 1373).

Disconnect the different connectors.

Remove the radio with the tool (Ms. 1639).

Disconnect the various connectors.

Unclip the card reader, using the tool (Car. 1597).

Disconnect the various connectors.

Remove the screws.

Remove the screws.
- Remove the « centre air vent / air conditioning control ».
- Place the air conditioning control so that it does not interfere with removal of the dashboard.
- Disconnect the various connectors.
- Open the glove compartment.
- Unclip the side panel.
- Disconnect the passenger front airbag deactivation connector.
- Unclip the anti-rotation clip (15).
- Remove:
  - the bolt (16),
  - the bolts (17).
- Release the storage compartment.
- Unclip the two lower covers.
- Unclip the glovebox light.

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.

WARNING
The two anti-rotation clips must be replaced after each removal.
Disconnect the glovebox light.

Remove the bolt (18).

Disconnect the two passenger airbag connectors.

Remove the dashboard. This operation requires two people.

Remove the passenger airbag (Section Airbag and Pretensioners, Passenger's airbag, page 88C-29).

**WARNING**

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

**WARNING**

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

Before refitting, check:
- the wheels are still straight,
- the column switch is properly on the « 0 » mark.
II - SPECIAL NOTES ON THE STEERING WHEEL

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.

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

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.

WARNING - Connect the battery; carry out the necessary programming (Section Battery, page 80A-1).
### Instrument Panel:

#### General

Three types of instrument panel can be found on vehicles:
- **Entry level** instrument panel,
- **Mid-range** instrument panel,
- **Top of the range** instrument panel.

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

### Table:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Entry Level</th>
<th>Mid-range</th>
<th>Top of the Range</th>
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<tbody>
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<td>X</td>
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<td>Self-test procedure</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Needle gauge</td>
<td>Vehicle speed</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Rev counter</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Coolant temperature</td>
<td>X</td>
<td>X</td>
</tr>
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<td>X</td>
<td>X</td>
</tr>
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</tr>
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<td></td>
<td>Oil level</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Door and tailgate status</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>ADAC Computer</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Mileage before oil change</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Cruise control or speed limiter setting</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Fault message</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Additional display</td>
<td>Door location</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Tyre pressure monitor</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Automatic transmission gear display</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>Large-screen display</td>
<td>Time</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>External temperature</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Radio display</td>
<td>-</td>
<td>X</td>
</tr>
<tr>
<td>Text messages</td>
<td>Overspeed feature (Saudi Arabia)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>LPG data display (not used)</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Warning light display</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>Acoustic warning signal</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
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.
INSTRUMENT PANEL
Instrument panel: General

II - "MID-RANGE" INSTRUMENT PANEL
IV - TABLE OF WIRING AND MULTIPLEX INPUTS

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Radio information display</td>
<td>Engine control unit</td>
</tr>
<tr>
<td>2</td>
<td>Written message display</td>
<td>Engine control unit</td>
</tr>
<tr>
<td>3</td>
<td>Automatic gearbox display</td>
<td>Engine control unit</td>
</tr>
<tr>
<td>4</td>
<td>Clock and external temperature display</td>
<td>Engine control unit</td>
</tr>
<tr>
<td>5</td>
<td>Data Computer CONNECTION</td>
<td>Engine control unit</td>
</tr>
<tr>
<td>6</td>
<td>Fuel level level sensor in the tank</td>
<td>Engine control unit</td>
</tr>
<tr>
<td>7</td>
<td>Heated seat warning light</td>
<td>Engine control unit</td>
</tr>
<tr>
<td>8</td>
<td>Engine oil level Engine sensor</td>
<td>Engine control unit</td>
</tr>
<tr>
<td>9</td>
<td>Brake fluid level warning light</td>
<td>Engine control unit</td>
</tr>
<tr>
<td>10</td>
<td>Parking brake indicator light</td>
<td>Engine control unit</td>
</tr>
<tr>
<td>11</td>
<td>Lighting dimmer Dimmer</td>
<td>Engine control unit</td>
</tr>
<tr>
<td>12</td>
<td>Vehicle speed Anti-lock braking system computer Multiplexing</td>
<td>Engine control unit</td>
</tr>
<tr>
<td>13</td>
<td>Electronic Stability Program indicator light</td>
<td>Engine control unit</td>
</tr>
</tbody>
</table>
**Instrument Panel**

**Instrument panel: General**

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

**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

- Time

**External temperature**

- Instrument panel alarm
- Central communication unit

- Multiplexing

**Data Computer CONNECTION**
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 ».

II - MILEAGE BEFORE OIL CHANGE

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.

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:
- To exit self-test mode (« test mode »), press the trip mileage reset button.
- The mileage and intervals between services may be configured using the Diagnostic tool.
- The oil level must be topped up as soon as possible.

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 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.

Note:
- It is not possible to configure the display in kilometres or miles. The instrument panel must be replaced if it is replaced.
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,
- current consumption (in l/100 km),
- estimated range with remaining fuel (in kilometres or miles*),
- distance travelled since the last reset,
- average speed since the last reset,
- 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

* UK version.

Note:
- This is only displayed when the vehicle has been driven for approximately 400 m.
- This takes into consideration the distance covered and the fuel consumption since the last time the reset button was pressed.

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.

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.

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.

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).
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).

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

<table>
<thead>
<tr>
<th>Message Type</th>
<th>Message</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written Message</td>
<td>B R A K E / SERVICE</td>
<td></td>
</tr>
<tr>
<td>Audible Warning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Faulty Steering</td>
<td>Stop X</td>
<td></td>
</tr>
<tr>
<td>Faulty Injection</td>
<td>Stop X</td>
<td></td>
</tr>
<tr>
<td>Check Injection</td>
<td>Service -</td>
<td></td>
</tr>
<tr>
<td>Engine Overheating</td>
<td>Stop X</td>
<td></td>
</tr>
<tr>
<td>Check Steering</td>
<td>Service -</td>
<td></td>
</tr>
<tr>
<td>ESP Out of Order</td>
<td>Service -</td>
<td></td>
</tr>
<tr>
<td>ESP Disconnected</td>
<td>- -</td>
<td></td>
</tr>
<tr>
<td>Check Gearbox</td>
<td>Service -</td>
<td></td>
</tr>
<tr>
<td>Gearbox Overheating</td>
<td>Service -</td>
<td></td>
</tr>
<tr>
<td>Faulty Engine Immobiliser</td>
<td>Service -</td>
<td></td>
</tr>
<tr>
<td>Heated Seat</td>
<td>ON - -</td>
<td></td>
</tr>
<tr>
<td>Insert Card</td>
<td>- -</td>
<td></td>
</tr>
<tr>
<td>Card Not Detected</td>
<td>Service X</td>
<td></td>
</tr>
<tr>
<td>Hands-Free Out of Order</td>
<td>Service -</td>
<td></td>
</tr>
<tr>
<td>Change Card Battery</td>
<td>- -</td>
<td></td>
</tr>
<tr>
<td>Push the brake + « start »</td>
<td>- -</td>
<td></td>
</tr>
<tr>
<td>Clutch + « start » / depress brake + « start »</td>
<td>- -</td>
<td></td>
</tr>
<tr>
<td>Steering Locked</td>
<td>Service -</td>
<td></td>
</tr>
<tr>
<td>Steering Not Locked</td>
<td>Service -</td>
<td></td>
</tr>
<tr>
<td>Gear Shift in P or N / press on brake + « start »</td>
<td>- -</td>
<td></td>
</tr>
<tr>
<td>Press the Brake Pedal</td>
<td>- -</td>
<td></td>
</tr>
<tr>
<td>Adjust Oil Level</td>
<td>Service -</td>
<td></td>
</tr>
<tr>
<td>Door Open</td>
<td>- -</td>
<td></td>
</tr>
<tr>
<td>Luggage Compartments Open</td>
<td>- -</td>
<td></td>
</tr>
<tr>
<td>Underinflation: Slow Down</td>
<td>- -</td>
<td></td>
</tr>
<tr>
<td>Adjust Tyre Pressure</td>
<td>Service -</td>
<td></td>
</tr>
<tr>
<td>Puncture: Change the Wheel</td>
<td>Stop X</td>
<td></td>
</tr>
<tr>
<td>Tyre Pressure Sensor Not Working</td>
<td>Service -</td>
<td></td>
</tr>
<tr>
<td>Limiter</td>
<td>- -</td>
<td></td>
</tr>
<tr>
<td>Message Type</td>
<td>Message</td>
<td>Service</td>
</tr>
<tr>
<td>--------------------</td>
<td>-------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Instrument panel</td>
<td>Indicator lights and text messages</td>
<td>Service</td>
</tr>
<tr>
<td>Cruise control</td>
<td>XXX km (or miles) in memory</td>
<td>Service</td>
</tr>
<tr>
<td>Speed limiter</td>
<td>Out of order</td>
<td>Service</td>
</tr>
<tr>
<td>Cruise control</td>
<td>Not working</td>
<td>Service</td>
</tr>
<tr>
<td>Electronic failure</td>
<td></td>
<td>Service</td>
</tr>
<tr>
<td>Roof</td>
<td>Out of order (convertible)</td>
<td>Service</td>
</tr>
<tr>
<td>Automatic lighting</td>
<td>OFF</td>
<td>Service</td>
</tr>
<tr>
<td>Automatic lighting</td>
<td>Out of order</td>
<td>Service</td>
</tr>
<tr>
<td>No message stored</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boot open / insert card</td>
<td>depending on equipment</td>
<td>Service</td>
</tr>
<tr>
<td>Confirm engine stop</td>
<td>Press « stop » twice (depending on equipment)</td>
<td>Service</td>
</tr>
<tr>
<td>Remove card</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shift into neutral</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automatic wipers</td>
<td>OFF</td>
<td>Service</td>
</tr>
<tr>
<td>Automatic wipers</td>
<td>Out of order</td>
<td>Service</td>
</tr>
<tr>
<td>Card reader</td>
<td>Not working</td>
<td>Service</td>
</tr>
<tr>
<td>Card reader</td>
<td>Not working / Electronic fault (depending on equipment)</td>
<td>Service</td>
</tr>
<tr>
<td>Restricted card mode</td>
<td></td>
<td>Service</td>
</tr>
<tr>
<td>Oil level</td>
<td>Check diesel filter</td>
<td>Service</td>
</tr>
<tr>
<td>Regenerate particle filter</td>
<td></td>
<td>Service</td>
</tr>
</tbody>
</table>

*Written message: B R A K E /
SERVICE light
Audible warning signal*
<table>
<thead>
<tr>
<th>Wire symbol</th>
<th>Description</th>
<th>Condition for fault confirmation</th>
<th>Condition for return to normal</th>
<th>Fault information (before management of display priorities)</th>
<th>Indicator light and message</th>
<th>Electronic failure</th>
<th>Audible alarm and memorisation</th>
<th>Oil level signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>OIL SENSOR</td>
<td>R &gt; 20 Ω</td>
<td>R &gt; 20 Ω</td>
<td>永远不会熄灭</td>
<td>« oil sensor fault » during the self-test procedure</td>
<td>永远亮着</td>
<td>永远不会熄灭</td>
<td>导电，永不停息</td>
<td>R &lt; 3 Ω</td>
</tr>
<tr>
<td>FUEL GAUGE</td>
<td>R &gt; 350 Ω</td>
<td>350 Ω &gt; R &gt; 5 Ω</td>
<td>永远不会熄灭</td>
<td>导电，永不停息</td>
<td>永远亮着</td>
<td>永远不会熄灭</td>
<td>导电，永不停息</td>
<td>R &lt; 5 Ω</td>
</tr>
<tr>
<td>BRAKE FLUID</td>
<td>short circuit or open circuit</td>
<td>短路或开路</td>
<td>永远不会熄灭</td>
<td>短暂，只能在刹车时亮起</td>
<td>永远亮着</td>
<td>永远不会熄灭</td>
<td>导电，永不停息</td>
<td>短暂，只能在刹车时亮起</td>
</tr>
<tr>
<td>PARKING BRAKE</td>
<td>short circuit or open circuit</td>
<td>短路或开路</td>
<td>永远不会熄灭</td>
<td>短暂，只能在停车时亮起</td>
<td>永远不会熄灭</td>
<td>永远不会熄灭</td>
<td>导电，永不停息</td>
<td>短暂，只能在停车时亮起</td>
</tr>
<tr>
<td>INSTRUMENT PANEL</td>
<td>reactor circuit or earth</td>
<td>短路或开路</td>
<td>永远不会熄灭</td>
<td>短暂，只能在仪表盘故障时亮起</td>
<td>永远不会熄灭</td>
<td>永远不会熄灭</td>
<td>导电，永不停息</td>
<td>短暂，只能在仪表盘故障时亮起</td>
</tr>
</tbody>
</table>

Note: The table contains information about instrument panel defects, including wire connections, conditions for fault confirmation and return to normal, fault information, and indicators.
<table>
<thead>
<tr>
<th>Sensor Name</th>
<th>Sensor Type</th>
<th>Sensor Function</th>
<th>Indicator Light and Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrument panel</td>
<td>Multiplex connection</td>
<td></td>
<td>Fault information (before management of display priorities)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Indicator light and message Electronic failure</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Audible warning signal</td>
</tr>
<tr>
<td>Air bag</td>
<td></td>
<td></td>
<td>« Airbag fault » and « service » lights</td>
</tr>
<tr>
<td>Gearbox</td>
<td></td>
<td></td>
<td>Missing frame « Service » and message indicator light</td>
</tr>
<tr>
<td>Anti-lock braking system</td>
<td></td>
<td></td>
<td>Missing frame Message and indicator lights</td>
</tr>
<tr>
<td>Speedometer</td>
<td></td>
<td></td>
<td>- « brake fault » - « ABS fault » - « Electronic stability program system » - « Brake »</td>
</tr>
<tr>
<td>Engine cooling system</td>
<td></td>
<td></td>
<td>Missing frame Indicator lights: - « Service » and « electronic fault » message</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- « Oil pressure warning » - « Battery charge » - « Coolant temperature warning »</td>
</tr>
<tr>
<td>Tachometer</td>
<td></td>
<td></td>
<td>Speedometer needle stays at 0</td>
</tr>
<tr>
<td>Engine speed setting</td>
<td></td>
<td></td>
<td>Cruise control or speed limiter setting Symbol steadily lit</td>
</tr>
<tr>
<td>Instrument panel</td>
<td>Issue</td>
<td>Description</td>
<td>Result</td>
</tr>
<tr>
<td>------------------</td>
<td>-------</td>
<td>-------------</td>
<td>--------</td>
</tr>
<tr>
<td>ESP frame Missing</td>
<td>–</td>
<td>« Service » indicator light and « faulty steering » message</td>
<td>–</td>
</tr>
<tr>
<td>Tyre pressure monitoring system frame Missing</td>
<td>–</td>
<td>« Service » indicator light and « faulty tyre sensors » message</td>
<td>–</td>
</tr>
<tr>
<td>UCH frame</td>
<td>–</td>
<td>« Service » indicator light and « dipped beam headlights, main beam headlights, fog lights indicator light always off »</td>
<td>–</td>
</tr>
<tr>
<td>–</td>
<td>–</td>
<td>« Turn signals indicator light lit »</td>
<td>–</td>
</tr>
<tr>
<td>–</td>
<td>–</td>
<td>« Trip Computer scroll setting »</td>
<td>–</td>
</tr>
<tr>
<td>–</td>
<td>–</td>
<td>« Service » indicator light</td>
<td>–</td>
</tr>
<tr>
<td>Retractable roof frame (convertible)</td>
<td>–</td>
<td>« Service » indicator light and « roof not working » message</td>
<td>–</td>
</tr>
<tr>
<td>Protection and Switch Unit frame</td>
<td>–</td>
<td>« Service » indicator light and « electronic fault » message</td>
<td>–</td>
</tr>
<tr>
<td>Multiplex network failure (all frames missing)</td>
<td>–</td>
<td>No network before + after ignition « Service » indicator light and « electronic fault » message</td>
<td>–</td>
</tr>
<tr>
<td>–</td>
<td>–</td>
<td>« Open doors symbol remains lit »</td>
<td>–</td>
</tr>
<tr>
<td>–</td>
<td>–</td>
<td>« No network while driving » « Service » and « brake » indicator light and « electronic fault » message</td>
<td>–</td>
</tr>
<tr>
<td>Input multiplex Fault</td>
<td>–</td>
<td>Fault information (before management of display priorities) Indicator light and message Electronic failure Audible warning signal</td>
<td>–</td>
</tr>
</tbody>
</table>
INSTRUMENT PANEL
Instrument panel: Configuration

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CF002 « Language setting »</td>
<td>* French, English, Italian, German, Spanish, Dutch, Portuguese, Turkish (LC060)</td>
</tr>
<tr>
<td>CF140 « Unit of distance »</td>
<td>Kilometres, miles (LC051)</td>
</tr>
<tr>
<td>CF137 « Type of vehicle »</td>
<td>Hatchback, Coupé, Cabriolet, Estate, Saloon (LC030)</td>
</tr>
<tr>
<td>CF149 « Gearbox type »</td>
<td>* Manual, Automatic, Regulator (LC029)</td>
</tr>
<tr>
<td>CF142 « Electronic stability program »</td>
<td>With, Without (LC053)</td>
</tr>
<tr>
<td>CF145 « Tyre pressure monitor »</td>
<td>* With, Without (LC056)</td>
</tr>
<tr>
<td>CF141 « Overspeed (Saudi Arabia) »</td>
<td>With, Without (LC052)</td>
</tr>
<tr>
<td>CF143 « Unit of measurement for consumption »</td>
<td>(l/100 km), (gallon/miles) (LC054)</td>
</tr>
<tr>
<td>CF150 « Cruise control/Speed limiter »</td>
<td>With, Without (LC061)</td>
</tr>
<tr>
<td>CF005 « Oil change interval (in kilometres) »</td>
<td>10 000, 15 000, 20 000, 30 000 (LC062)</td>
</tr>
<tr>
<td>CF151 « Oil change frequency (in unit of time) »</td>
<td>24 months (LC063)</td>
</tr>
</tbody>
</table>

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).
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.

Note: Only the glass may be replaced on these instrument panels. If other components are faulty, replace the instrument panel completely.
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).
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vehicle multiplex connection H (input)</td>
</tr>
<tr>
<td>2</td>
<td>Vehicle multiplex connection H (output)</td>
</tr>
<tr>
<td>3</td>
<td>Not used</td>
</tr>
<tr>
<td>4</td>
<td>Vehicle multiplex connection L (input)</td>
</tr>
<tr>
<td>5</td>
<td>Vehicle multiplex connection L (output)</td>
</tr>
<tr>
<td>6</td>
<td>Not used</td>
</tr>
<tr>
<td>7</td>
<td>Multimedia multiplex connection H (input)</td>
</tr>
<tr>
<td>8</td>
<td>Not used</td>
</tr>
<tr>
<td>9</td>
<td>Multimedia multiplex connection L (input)</td>
</tr>
<tr>
<td>10</td>
<td>Radio ON / OFF signal input</td>
</tr>
<tr>
<td>11</td>
<td>Oil level sensor signal</td>
</tr>
<tr>
<td>12</td>
<td>Not used</td>
</tr>
<tr>
<td>13</td>
<td>Oil level sensor earth</td>
</tr>
<tr>
<td>14</td>
<td>Fuel gauge earth</td>
</tr>
<tr>
<td>15</td>
<td>Earth</td>
</tr>
<tr>
<td>16</td>
<td>Not used</td>
</tr>
<tr>
<td>17</td>
<td>Heated seat indicator light</td>
</tr>
<tr>
<td>18</td>
<td>Not used</td>
</tr>
<tr>
<td>19</td>
<td>Not used</td>
</tr>
<tr>
<td>20</td>
<td>Parking brake indicator light</td>
</tr>
<tr>
<td>21</td>
<td>Brake fluid warning light</td>
</tr>
<tr>
<td>22</td>
<td>Service warning light</td>
</tr>
<tr>
<td>23</td>
<td>Not used</td>
</tr>
<tr>
<td>24</td>
<td>Not used</td>
</tr>
<tr>
<td>25</td>
<td>Lighting dimmer</td>
</tr>
<tr>
<td>26</td>
<td>Not used</td>
</tr>
<tr>
<td>27</td>
<td>Fuel gauge signal</td>
</tr>
<tr>
<td>28</td>
<td>Not used</td>
</tr>
<tr>
<td>29</td>
<td>Immobiliser system indicator light</td>
</tr>
<tr>
<td>30</td>
<td>+ Before ignition</td>
</tr>
</tbody>
</table>

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

Diagram:

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

The fuel level sensor operates on a principle that

- The fuel level warning light comes on when the fuel level is low.
- The fuel range display is shown on the trip computer.
- The fuel consumption display (instantaneous and average fuel consumption) is also shown on the trip computer.

Mark Vehicle state
# INSTRUMENT PANEL

## Fuel level sensor: CONNECTION

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Code</th>
<th>No</th>
<th>Description</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fuel sender</td>
<td></td>
<td>2</td>
<td>Fuel level signal</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>+ fuel pump</td>
<td></td>
<td>4</td>
<td>- fuel pump</td>
<td></td>
</tr>
</tbody>
</table>

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

## Specifications

- **Level Resistance** (+/- 10 Ω)
- **Litres consumed** (+/- 5 l)

<table>
<thead>
<tr>
<th>Tank Description</th>
<th>Litres Consumed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tank full</td>
<td>20 (60)</td>
</tr>
<tr>
<td>Tank three quarters full</td>
<td>95 (45)</td>
</tr>
<tr>
<td>Tank half full</td>
<td>170 (30)</td>
</tr>
<tr>
<td>Tank one quarter full</td>
<td>245 (15)</td>
</tr>
<tr>
<td>Reserve level</td>
<td>290 (6)</td>
</tr>
</tbody>
</table>
Example of the K4J engine

The oil level sensor (1) is located in the lower section of the engine.
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 - « BASIC » NAVIGATION**

« Basic » 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 » 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

1. External temperature signal (UCH)
2. Offset display
3. Steering wheel mounted control
4. Compact disc changer (dash or boot)
5. Lighting signal (only for dashboard-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)
ON-BOARD TELEMATICS SYSTEM
“Entry Level” Navigation system: System description

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 Trafic” 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 TELEMATIC SYSTEM

“Entry level” navigation system: Operation

1. Audiophonic system

This navigation system is equipped with an audiophonic system which

- manual tune: buttons
- preset: buttons
- automatic tuning (Auto) (Cuts out any preselected tune)

2. 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).

3. 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.

4. 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.

5. 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).

6. 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.

7. 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

Note:

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

The navigation assistance system used is subject to the terms of a non-exclusive licence to play. The licence holder is: Nielsen Navigon GmbH.

The navigation system is designed for personal use only. Do not use in public transport. No compensation will be paid if the system is lost or stolen.

This clause applies to the extent permitted by law.
1. Entry level

ON-BOARD TELEMATICS SYSTEM
“Entry level” navigation system: Operation

• 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).

2 - Simulation mode

The system is fitted with a demonstration mode.
Press the « settings », « menu » and « OK » buttons then select « demo ».

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.

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 ».

WARNING
Demonstration mode MUST be deactivated to allow the system to operate normally. Every time the ignition is switched off, demonstration mode is deactivated.
### Audio System Self-Test

**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:**

- UP (source).
- LOWER LE (source).
- VOLUME +.
- VOLUME -.
- THUMBW (+).
- THUMBW (-).
- 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: « 00 » (poor) or « FF » (good).
- QUAL: quality of reception: « 00 » (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 speed.

**7 - Reset:**

- Reset compact disc changer.
- Reset radio/navigation.

**8 - Run Time:**

- Tuner.
- Navigation.
- Single compact disc.
- Compact disc changer.

**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:**

- Front panel diode supply %: 5 (no lighting) / 95 (maximum lighting).

### Navigation System Self-Test

**II - Navigation System Self-Test:**

- Press « NAV » to access the « Settings » menu.
ON-BOARD TELEMATICS SYSTEM

"Entry Level" navigation system: Self-test

1. GPS signal:
   - GPS time
   - FIX: number of satellite receptions: reception indicator.
   - 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.
ON-BOARD TELEMATICS SYSTEM

"Entry level" Navigation system

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

REFITTING

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

Essential special tooling
Ms. 1544 Tool for removing Carminat Becker radio

WARNING
- The aerial wire is very fragile. Do not pinch or kink it.
- Connect the battery; carry out the necessary programming (see Section Battery, page 80A-1).

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).
### On-board Telematics System

#### "Entry level" Navigation System: Connections

<table>
<thead>
<tr>
<th>Connector</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vehicle speed signal</td>
</tr>
<tr>
<td>2</td>
<td>Not used</td>
</tr>
<tr>
<td>3</td>
<td>Telephone mute</td>
</tr>
<tr>
<td>4</td>
<td>+ before ignition</td>
</tr>
<tr>
<td>5</td>
<td>Aerial supply output</td>
</tr>
<tr>
<td>6</td>
<td>+ side lights</td>
</tr>
<tr>
<td>7</td>
<td>+ accessories</td>
</tr>
<tr>
<td>8</td>
<td>Earth</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Connector</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+ Rear right-hand speaker</td>
</tr>
<tr>
<td>2</td>
<td>- Rear right-hand speaker</td>
</tr>
<tr>
<td>3</td>
<td>+ Front right-hand speaker</td>
</tr>
<tr>
<td>4</td>
<td>- Front right-hand speaker</td>
</tr>
<tr>
<td>5</td>
<td>+ Front left-hand speaker</td>
</tr>
<tr>
<td>6</td>
<td>- Front left-hand speaker</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Connector</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+ Rear left-hand speaker</td>
</tr>
<tr>
<td>2</td>
<td>- Rear left-hand speaker</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Connector</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not used</td>
</tr>
<tr>
<td>2</td>
<td>Not used</td>
</tr>
<tr>
<td>3</td>
<td>Not used</td>
</tr>
<tr>
<td>4</td>
<td>Not used</td>
</tr>
<tr>
<td>5</td>
<td>Not used</td>
</tr>
<tr>
<td>6</td>
<td>Vehicle multiplex link (H)</td>
</tr>
<tr>
<td>7</td>
<td>Multimedia multiplex link (H)</td>
</tr>
<tr>
<td>8</td>
<td>Not used</td>
</tr>
<tr>
<td>9</td>
<td>Not used</td>
</tr>
<tr>
<td>10</td>
<td>Not used</td>
</tr>
<tr>
<td>11</td>
<td>Not used</td>
</tr>
<tr>
<td>12</td>
<td>Screen On / Off supply</td>
</tr>
<tr>
<td>13</td>
<td>Not used</td>
</tr>
<tr>
<td>14</td>
<td>Not used</td>
</tr>
<tr>
<td>15</td>
<td>Vehicle multiplex link (L)</td>
</tr>
<tr>
<td>16</td>
<td>Multimedia multiplex link (L)</td>
</tr>
<tr>
<td>17</td>
<td>Not used</td>
</tr>
<tr>
<td>18</td>
<td>Not used</td>
</tr>
</tbody>
</table>
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 ».
  
  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).

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

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

  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.
ON-BOARD TELEMATICS SYSTEM

"Entry level" Navigation system: Enter security code

CHART 1

The display indicates: "CODE" or "CD CODE"

NOTES

Enter the security code.

The radio navigation system beeps every second when first installed.

The radio-navigation unit displays <<CODE>> then <<0000>>.

Enter the first digit using the tumble wheel control under the steering wheel.

Confirm the digit by briefly pressing the lower button on the fingertip steering wheel controls.

Use the same procedure to enter the remaining three digits.

Confirm the security code by pressing and holding the lower steering wheel control button.

The radio-navigation unit displays <<CODE>> and <<0000>>.

Try entering the code again.

The radio-navigation unit displays <<ERROR CD>> and <<CD CODE>>.

The radio-navigation unit is functioning correctly.

(Section On-board telematics system, "Entry level" Navigation system: Enter security code, page)
ON-BOARD TELEMATICS SYSTEM

“Entry level” Navigation system: Enter security code

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The display shows &quot;ERROR&quot;</td>
</tr>
<tr>
<td>2</td>
<td>The radio-navigation unit displays &lt;&lt;ERROR&gt;&gt;, &lt;&lt;CD CODE&gt;&gt; then &lt;&lt;CD-0000&gt;&gt;.</td>
</tr>
<tr>
<td>3</td>
<td>Enter the code of the old radio-navigation unit connected to the changer.</td>
</tr>
<tr>
<td>4</td>
<td>Enter the first digit using the tumble wheel control under the steering wheel.</td>
</tr>
<tr>
<td>5</td>
<td>Confirm the digit by briefly pressing the lower button on the fingertip steering wheel controls.</td>
</tr>
<tr>
<td>6</td>
<td>Use the same procedure to enter the remaining three digits.</td>
</tr>
<tr>
<td>7</td>
<td>Confirm the security code by pressing and holding the lower steering wheel control button.</td>
</tr>
<tr>
<td>8</td>
<td>Does the changer code match the radio-navigation unit code.</td>
</tr>
<tr>
<td></td>
<td>yes</td>
</tr>
<tr>
<td></td>
<td>The CD changer and the radio-navigation unit operate correctly.</td>
</tr>
<tr>
<td></td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>The radio-navigation unit displays the message &lt;&lt;ERROR&gt;&gt; then &lt;&lt;CD CODE&gt;&gt;. Try entering the code again.</td>
</tr>
<tr>
<td></td>
<td>If the fault is still present, enter the clearing code.</td>
</tr>
</tbody>
</table>

(Continued on the next page)
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.
ON-BOARD TELEMATICS SYSTEM

"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.

**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).

**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.
ON-BOARD TELEMATICS SYSTEM
Navigation: Screen

REMOVAL

- Unclip the upper section (1) of the instrument panel.
- Unclip the display by pressing markings (2).
- Disconnect the connector.

REFITTING

- To refit, proceed in the reverse order of removal.
### Entry Level Navigation: Display connection

| Track Description | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|-------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Not used          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Not used          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Not used          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| UCH connection for exterior temperature (depending on version) |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Earth             |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| + side lights     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| + accessories     |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Lighting dimmer   |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| + before ignition |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Exterior temperature output |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Screen supply on/off |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Not used          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Not used          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Not used          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Not used          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Not used          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Not used          |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Radio control connection |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Radio control connection |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Radio control connection |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Radio control connection |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Radio control connection |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Multimedia multiplex connection (L) |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
| Multimedia multiplex connection (H) |   |   |   |   |   |   |   |   |   |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
ON-BOARD TELEMATICS SYSTEM

“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.

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 when the vehicle is in tunnels. In this case, the system will use the last valid GPS position to calculate its route. The system will then display the remaining distance to reach the exit of the tunnel.
- 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.

Note:
For information on operating the system and descriptions of the various menus, refer to the driver’s handbook.
“Top of the range” navigation system: Operation

- Central Communications Unit
- Control keypad
- Carminat computer (CD-ROM drive)
- Screen
- Instrument panel
- CD changer (depending on version)
- Audio system
- Voice synthesiser speaker
- Steering wheel radio control
- Radio aerial
- Fold-out unit
- Vehicle multiplex link
- 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).

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

WARNING

RENAULT is not responsible for the information collection and dissemination services in Europe, which are still in the development stage.
### III - EXAMPLES OF TRAFFIC INFORMATION PICTOGRAMS

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**

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Accident</td>
</tr>
<tr>
<td>2</td>
<td>Traffic jam</td>
</tr>
<tr>
<td>3</td>
<td>Slippery conditions</td>
</tr>
<tr>
<td>4</td>
<td>Strong winds</td>
</tr>
<tr>
<td>5</td>
<td>Slow traffic</td>
</tr>
<tr>
<td>6</td>
<td>Fog</td>
</tr>
<tr>
<td>7</td>
<td>Road works</td>
</tr>
<tr>
<td>8</td>
<td>Danger</td>
</tr>
<tr>
<td>9</td>
<td>Parking possible</td>
</tr>
<tr>
<td>10</td>
<td>Bad weather</td>
</tr>
<tr>
<td>11</td>
<td>Slow traffic</td>
</tr>
<tr>
<td>12</td>
<td>Traffic problems in both directions</td>
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<td>13</td>
<td>Road partially closed or narrowed</td>
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<td>Vehicle travelling in the opposite direction</td>
</tr>
<tr>
<td>15</td>
<td>Speed restriction</td>
</tr>
<tr>
<td>16</td>
<td>Broken-down vehicle</td>
</tr>
</tbody>
</table>
ON-BOARD TELEMATICS SYSTEM

"Top of the Range" navigation system: Central Communication Unit

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).

Essential special tooling

Ms. 1373
Philips radio removal tool
### Track Description

<table>
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<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
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</tr>
<tr>
<td>2</td>
<td>Not used</td>
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<tr>
<td>3</td>
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<tr>
<td>4</td>
<td>Not used</td>
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<td>5</td>
<td>Not used</td>
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<tr>
<td>6</td>
<td>Not used</td>
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<tr>
<td>7</td>
<td>Not used</td>
</tr>
<tr>
<td>8</td>
<td>Audio equipment satellite control (track B1)</td>
</tr>
<tr>
<td>9</td>
<td>Audio equipment satellite control (track A3)</td>
</tr>
<tr>
<td>10</td>
<td>Audio equipment satellite control (track B2)</td>
</tr>
<tr>
<td>11</td>
<td>Audio equipment satellite control (track B3)</td>
</tr>
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<td>12</td>
<td>Audio equipment satellite control (track A2)</td>
</tr>
<tr>
<td>13</td>
<td>Audio equipment satellite control (track A1)</td>
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<td>Not used</td>
</tr>
<tr>
<td>15</td>
<td>Not used</td>
</tr>
<tr>
<td>16</td>
<td>Aerial amplifier output</td>
</tr>
<tr>
<td>17</td>
<td>Multiplex link (multimedia) to the instrument panel</td>
</tr>
<tr>
<td>18</td>
<td>Multiplex link (multimedia) to the instrument panel</td>
</tr>
<tr>
<td>19</td>
<td>Multiplex link (multimedia) to the deployment unit</td>
</tr>
<tr>
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<td>Multiplex link (multimedia) to the deployment unit</td>
</tr>
<tr>
<td>21</td>
<td>Computer On / Off output (via the deployment unit)</td>
</tr>
<tr>
<td>22</td>
<td>Computer audio connection (via the deployment unit)</td>
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<td>Computer audio connection (via the deployment unit)</td>
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</table>

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**ON-BOARD TELEMATICS SYSTEM**

"Top of the range" Navigation system: Central Communication Unit connections.
ON-BOARD TELEMATICS SYSTEM

"Top of the range" Navigation system: Central Communication Unit connections

83C

30-track connector (3) (green)

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

Not used

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

18457

Track Description

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

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

18 30

Trac k Description

18 30
<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
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<td>+ before ignition</td>
</tr>
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<td>Not used</td>
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<tr>
<td>7</td>
<td>Earth</td>
</tr>
<tr>
<td>8</td>
<td>Not used</td>
</tr>
<tr>
<td>9</td>
<td>+ lighting</td>
</tr>
<tr>
<td>10</td>
<td>Not used</td>
</tr>
<tr>
<td>11</td>
<td>Not used</td>
</tr>
<tr>
<td>12</td>
<td>Not used</td>
</tr>
<tr>
<td>13</td>
<td>Multimedia multiplex connection to the screen</td>
</tr>
<tr>
<td>14</td>
<td>Multimedia multiplex connection to the screen</td>
</tr>
<tr>
<td>15</td>
<td>Multimedia multiplex connection to the central communications unit</td>
</tr>
<tr>
<td>16</td>
<td>Multimedia multiplex connection to the central communications unit</td>
</tr>
<tr>
<td>17</td>
<td>On / Off input to the central communications unit</td>
</tr>
<tr>
<td>18</td>
<td>On / off input to the screen</td>
</tr>
</tbody>
</table>
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 menus 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.
"Top of the range" navigation system: Computer operation

The computer operates by using sensors which detect:

- 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, relocation 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.
ON-BOARD TELEMATICS SYSTEM


<table>
<thead>
<tr>
<th>Track Description</th>
<th>Track Description</th>
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<td>Track Description</td>
<td>_track description</td>
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</tbody>
</table>
ON-BOARD TELEMATICS SYSTEM

"Top of the Range" navigation system: Computer

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

REMOVAL

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

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 34).

Essential special tooling

Ms. 1373
Philips radio removal tool

WARNING

The GPS aerial wire is very fragile. Do not bend or trap it.
ON-BOARD TELEMATICS SYSTEM

“Top of the range” navigation system: Screen operation

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.

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:

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).

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

- Unclip the upper section (1).
- Disconnect the insolation sensor (2).
- Remove the four bolts (3).
- 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).
### Track Description

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>-</td>
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<tr>
<td>2</td>
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<td>15</td>
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<tr>
<td>16</td>
<td>-</td>
</tr>
</tbody>
</table>

**Shielding Earth**
ON-BOARD TELEMATICS SYSTEM
"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.

When the satellite reception is good, a green pictogram 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.

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

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

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.

Note:
The GPS aerial is also used for the hands-free phone. Some vehicles are fitted with a dual band aerial.
ON-BOARD TELEMATICS SYSTEM

"Top of the Range" navigation system: Loudspeaker

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).
ON-BOARD TELEMATICS SYSTEM

"Top of the Range" navigation system: Initialisation

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

System configurations

❏ 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).

Vehicle Mégane II

Without radio display

« Entry level » audio equipment

« High end » audio equipment

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.

Note:

If the configuration does not correspond to the vehicle, check the vehicle wiring (multiplex lines) and the part numbers of the components.
ON-BOARD TELEMATICS SYSTEM
“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.
The car has to be re-located after the electronic navigation computer has been replaced or the battery disconnected.

- 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.
ON-BOARD TELEMATICS SYSTEM

"Top of the Range" navigation system: Navigation menu

<table>
<thead>
<tr>
<th>Key</th>
<th>Menu</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Welcome message</td>
</tr>
<tr>
<td>B</td>
<td>Navigation - Guidance</td>
</tr>
<tr>
<td></td>
<td>- Map</td>
</tr>
<tr>
<td></td>
<td>- Address book</td>
</tr>
<tr>
<td></td>
<td>- Monitor</td>
</tr>
<tr>
<td></td>
<td>- Emergency</td>
</tr>
<tr>
<td></td>
<td>- Configuration</td>
</tr>
<tr>
<td>C</td>
<td>Settings</td>
</tr>
<tr>
<td>D</td>
<td>Monitor</td>
</tr>
<tr>
<td>E</td>
<td>Clock - Setting the reference time</td>
</tr>
<tr>
<td>F</td>
<td>System</td>
</tr>
<tr>
<td>G</td>
<td>Expert mode</td>
</tr>
<tr>
<td></td>
<td>Code: 4112</td>
</tr>
<tr>
<td>H</td>
<td>System test</td>
</tr>
</tbody>
</table>

ECE 15
<table>
<thead>
<tr>
<th>No</th>
<th>Group</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td></td>
<td>Central communication unit type</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>Software version</td>
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<td>3</td>
<td></td>
<td>Date of production</td>
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<td>4</td>
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<td>Checksum</td>
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<td>5</td>
<td></td>
<td>Functions test</td>
</tr>
<tr>
<td>6</td>
<td></td>
<td>Console test</td>
</tr>
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<td>7</td>
<td></td>
<td>Bus test - CAN V</td>
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<td>8</td>
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<td>CAN M</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>RDS/TMC - Frequency</td>
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<tr>
<td>10</td>
<td></td>
<td>Reception level</td>
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<td>11</td>
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<td>RDS quality</td>
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<tr>
<td>12</td>
<td></td>
<td>Vehicle - Speed</td>
</tr>
<tr>
<td>13</td>
<td></td>
<td>+ after ignition</td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>+ accessories</td>
</tr>
<tr>
<td>15</td>
<td></td>
<td>Tyre pressure monitor</td>
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<tr>
<td>16</td>
<td></td>
<td>Battery voltage</td>
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<tr>
<td>17</td>
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<td>Seat belt</td>
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<tr>
<td>18</td>
<td></td>
<td>+ side lights</td>
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<tr>
<td>19</td>
<td></td>
<td>Reverse gear</td>
</tr>
<tr>
<td>20</td>
<td></td>
<td>External temperature</td>
</tr>
<tr>
<td>21</td>
<td></td>
<td>Crash information</td>
</tr>
<tr>
<td>22</td>
<td></td>
<td>Satellite -</td>
</tr>
<tr>
<td>23</td>
<td></td>
<td>Keyboard -</td>
</tr>
</tbody>
</table>

KEY

- [ ] New
- [ ] Active
- [ ] Modify
- [ ] Safety
- [ ] Other
- [ ] RDS/TMC
- [ ] Alert
- [ ] Data
- [ ] Others
- [ ] Default
- [ ] Parameter
- [ ] Not parameter
- [ ] Parameter
- [ ] Function
- [ ] Command
- [ ] Value
ON-BOARD TELEMATICS SYSTEM

"Top of the Range" navigation system: Navigation menus

<table>
<thead>
<tr>
<th>No.</th>
<th>Name</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Welcome message</td>
</tr>
<tr>
<td>2</td>
<td>Settings</td>
</tr>
<tr>
<td>3</td>
<td>Navigation</td>
</tr>
<tr>
<td>4</td>
<td>Monitor</td>
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<tr>
<td>5</td>
<td>Guidance</td>
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<tr>
<td>6</td>
<td>Map</td>
</tr>
<tr>
<td>7</td>
<td>Address book</td>
</tr>
<tr>
<td>8</td>
<td>Configuration</td>
</tr>
<tr>
<td>9</td>
<td>Emergency</td>
</tr>
<tr>
<td>10</td>
<td>Monitor</td>
</tr>
<tr>
<td>11</td>
<td>Language</td>
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Changing the menu language

Guidance modes -
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<tr>
<th>No.</th>
<th>Menu</th>
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<th>Submenu 2</th>
<th>Submenu 3</th>
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<tbody>
<tr>
<td>1</td>
<td>Navigation</td>
<td>Status bar</td>
<td>Map colour</td>
<td>Night colour</td>
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<tr>
<td>2</td>
<td>Traffic information</td>
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<td>Volume</td>
<td>Speed-dependent volume control</td>
</tr>
<tr>
<td>3</td>
<td>Units</td>
<td></td>
<td>Volume</td>
<td>V oice messages</td>
</tr>
<tr>
<td>4</td>
<td>Fault finding procedure</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>5</td>
<td>Configuration</td>
<td>Serial number</td>
<td>Product model</td>
<td>Software version</td>
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<td>6</td>
<td>Speed correction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Pre-adjustments</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Code 4112</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Read GPS data</td>
<td>Longitude</td>
<td>Latitude</td>
<td>Geographical altitude</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td>Number of satellites</td>
<td></td>
<td></td>
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<tr>
<td>11</td>
<td></td>
<td>Sensor status</td>
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ON-BOARD TELEMATICS SYSTEM

"Top of the Range" navigation system: Navigation menus

- Read I/O states - Tachograph pulse
- Internal temperature
- Battery
- Eject button
- Steering

Simulation - Usable simulation
- Unusable simulation

Key Menus -

<table>
<thead>
<tr>
<th>No.</th>
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<td></td>
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<td>Chassisaxle</td>
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<td>Driver</td>
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<td>Ejector</td>
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<td>Engine</td>
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<td>Lights</td>
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<td>Mirrors</td>
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<td>Rain</td>
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<td>Speedometer</td>
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<td>Tachograph</td>
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<td>Time</td>
</tr>
<tr>
<td></td>
<td>Trip</td>
</tr>
<tr>
<td></td>
<td>Tyre pressure</td>
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<td></td>
<td>Vehicle</td>
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<td>Vehicle type</td>
</tr>
<tr>
<td></td>
<td>Windshield</td>
</tr>
<tr>
<td></td>
<td>Windows</td>
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</tbody>
</table>

SC-42
ON-BOARD TELEMATICS SYSTEM

Aerial

The aerial is fitted on the roof.

REMOVAL

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

REFITTING

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

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

The following components are involved in the system:

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

**I - DIAGRAM**

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 onboard computer display switches to the relevant function.

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.

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).

Note:

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

Note:

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

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.
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.
### Cruise Control Connectors: CONNECTION

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I -</td>
<td>Three-position switch</td>
</tr>
<tr>
<td>II -</td>
<td>Steering wheel switch</td>
</tr>
</tbody>
</table>

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

- **(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, refer to Section Controls - signals, page 84A-1.
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.

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.

WARNING
In order to operate, the vehicle must be fitted with an accelerator pedal incorporating a kickdown point at the end of travel.
CRUISE CONTROL
Speed limiter: Operating principle

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: Operating principle

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.
REMOVAL

- Insert a screwdriver into opening (1).
- Move upwards (2).
- Disconnect the steering wheel airbag connectors (3) using a screwdriver at (4).

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.
Make sure the wheels are straight.

- Remove:
  - the steering wheel bolt,
  - the steering wheel,
  - the steering wheel half-shell casings.

- 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".

- 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.

- 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).

- 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.

- IMPORTANT
  - Before refitting, check the airbag computer with the diagnostic tool.
  - If everything is correct, remove the airbag computer.
CONTROLS - SIGNALS
Under steering wheel control assembly: Connection

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Windscreen washer pump control</td>
</tr>
<tr>
<td>2</td>
<td>Rear screen washer pump control</td>
</tr>
<tr>
<td>3</td>
<td>+ buzzer</td>
</tr>
<tr>
<td>4</td>
<td>Buzzer earth</td>
</tr>
<tr>
<td>5</td>
<td>Earth</td>
</tr>
<tr>
<td>6</td>
<td>+ accessories</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cruise control connection</td>
</tr>
<tr>
<td>2</td>
<td>Cruise control connection</td>
</tr>
<tr>
<td>3</td>
<td>Not used</td>
</tr>
<tr>
<td>4</td>
<td>Not used</td>
</tr>
<tr>
<td>5</td>
<td>Not used</td>
</tr>
<tr>
<td>6</td>
<td>Driver's front airbag control connection (small volume)</td>
</tr>
<tr>
<td>7</td>
<td>Driver's front airbag control connection (small volume)</td>
</tr>
<tr>
<td>8</td>
<td>Earth connection (protects the airbag from static electricity)</td>
</tr>
<tr>
<td>9</td>
<td>Driver's front airbag control connection (large volume)</td>
</tr>
<tr>
<td>10</td>
<td>Driver's front airbag control connection (large volume)</td>
</tr>
</tbody>
</table>

Note:
All these connections run through the rotary switch.
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.

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.

**Fault Finding Procedure 1**

- Lights off
- Wiper speed (setting 1)
- Side lights
- Main beam headlight

**Fault Finding Procedure 2**

- Wipers off
- Indicator light
- Dipped/main beam headlight inverted
- Front fog light

**Fault Finding Procedure 3**

- Rear fog lights
- Trip computer « button »

**Fault Finding Procedures 4**

- Track 14 Left-hand turn indicator
- Right-hand turn indicator
- Automatic lighting button (only with rain sensor)

**Fault Finding Procedures 5**

- Wiper speed (setting 2)
- Wiper speed (setting 3)
- Wiper speed (setting 4)
- High-speed wipers

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

Note:
The following states can be checked with a multimeter (set to diodemeter).

<table>
<thead>
<tr>
<th>Settings Tracks</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tracks 4 and 5</td>
<td>Wipers off</td>
</tr>
<tr>
<td>Tracks 3 and 8</td>
<td>Wiper speed (setting 1)</td>
</tr>
<tr>
<td>Tracks 3 and 8 + 9 and 4</td>
<td>Wiper speed (setting 2)</td>
</tr>
<tr>
<td>Tracks 3 and 8 + 9 and 12</td>
<td>Wiper speed (setting 3)</td>
</tr>
<tr>
<td>Tracks 3 and 8 + 9 and 8</td>
<td>Wiper speed (setting 4)</td>
</tr>
<tr>
<td>No ignition</td>
<td>Low-speed wipers</td>
</tr>
<tr>
<td>Tracks 9 and 13</td>
<td>High-speed wipers</td>
</tr>
<tr>
<td>Tracks 2 and 13</td>
<td>Rear wipers</td>
</tr>
<tr>
<td>Track 10</td>
<td>Trip computer « button »</td>
</tr>
<tr>
<td>Tracks 3 and 12</td>
<td>Lights off</td>
</tr>
<tr>
<td>Tracks 3 and 13</td>
<td>Side lights</td>
</tr>
<tr>
<td>Tracks 3 and 10</td>
<td>Dipped headlights</td>
</tr>
<tr>
<td>Tracks 3 and 10 + 5 and 13</td>
<td>Main beam headlight</td>
</tr>
<tr>
<td>Tracks 5 and 10</td>
<td>Fog lights</td>
</tr>
<tr>
<td>Tracks 2 and 4</td>
<td>Fog lights</td>
</tr>
<tr>
<td>Tracks 14 and 8</td>
<td>Operating button</td>
</tr>
<tr>
<td>Tracks 14 and 4</td>
<td>Left-hand turn indicator</td>
</tr>
<tr>
<td>Tracks 14 and 12</td>
<td>Right-hand turn indicator</td>
</tr>
<tr>
<td>Tracks 8 and 5</td>
<td>Indicator light</td>
</tr>
</tbody>
</table>

*Note: The table above is for illustrative purposes. Actual connections and functions may vary depending on the vehicle model and specifications.*
CONTROLS - SIGNALS

Central door locking and hazard warning lights switch

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.

Essential special tooling

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

Central door locking and hazard warning lights switch

Unclip cover (2)

Remove the screws (3)

Unclip the front panel.
CONTROLS - SIGNALS

Central door locking and hazard warning lights switch: Connection

I - CHECKING THE HAZARD WARNING LIGHTS SWITCH

II - CHECKING THE CENTRAL DOORS CONTROL

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 and 14</td>
<td>Hazard warning lights on and off</td>
<td>approx 8Ω</td>
</tr>
<tr>
<td>2</td>
<td>Locking, Unlocking</td>
<td>approx 8Ω</td>
</tr>
</tbody>
</table>
Remote adjustment control

• Remove:
  - the trim underneath the driver’s side of the dashboard,
  - the switch plate (3) using a small screwdriver.

• Disconnect the connector.

• Separate the adjustment control - dimmer from its support.

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.

Note:
The lighting dimmer (1) and beam adjustment control (2) form a single unit.
### LIGHTING DIMMER CONTROL CONNECTION

<table>
<thead>
<tr>
<th>TUMBLEWHEEL POSITION</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not used</td>
</tr>
<tr>
<td>2</td>
<td>Not used</td>
</tr>
<tr>
<td>3</td>
<td>Side lights signal (from Protection and Switching Unit)</td>
</tr>
<tr>
<td>4</td>
<td>Earth</td>
</tr>
<tr>
<td>5</td>
<td>Dimmer output</td>
</tr>
<tr>
<td>6</td>
<td>Beam adjustment actuator control</td>
</tr>
<tr>
<td>7</td>
<td>Supply (via Protection and Switching Unit)</td>
</tr>
<tr>
<td>8</td>
<td>Not used</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Position</th>
<th>Resistance (Ω)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Approximately 40</td>
</tr>
<tr>
<td>1</td>
<td>Approximately 190</td>
</tr>
<tr>
<td>2</td>
<td>Approximately 370</td>
</tr>
<tr>
<td>3</td>
<td>Approximately 840</td>
</tr>
<tr>
<td>4</td>
<td>Approximately 2030</td>
</tr>
</tbody>
</table>

### Section Diagram
Electric door mirror: Operating principle

The electric rear-view mirror 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

* User request:
  - Wire in the case of manual heating and ventilation,
  - Multiplex in the case of climate control.

---

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
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

### II - FOLD-IN ELECTRIC DOOR MIRRORS

1. Connection

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

#### Door mirror function

**Left-hand side**
- Tilt up: A3 / A2 and B3 / B4
- Tilt down: A3 / B3 and A2 / B4
- Tilt left: A1 / A2 and B3 / B4
- Tilt right: A1 / B3 and A2 / B4

**Right-hand side**
- Tilt up: B2 / A2 and B3 / B4
- Tilt down: B2 / B3 and B4 / A2
- Tilt left: B1 / A2 and B3 / B4
- Tilt right: B1 / B3 and A2 / B4

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

Operating principle

Door mirror function

Left-hand side

Track

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

Right-hand side

Track

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
External temperature sensor

**Removal**

- Remove the reflective glass using tool (Car. 1363).
- Remove the door mirror shell by pressing the lugs (1).
- 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.

**Essential special tooling**

- Car. 1363
- Rear-view mirror glass remover 101622
- Rear-view mirror glass remover 101623
- Rear-view mirror glass remover 101624
## Temperature Sensor Resistance: Check

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Sensor Resistance (Ω)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-5</td>
<td>5400 - 6200</td>
</tr>
<tr>
<td>6-10</td>
<td>4400 - 5400</td>
</tr>
<tr>
<td>11-15</td>
<td>3700 - 4400</td>
</tr>
<tr>
<td>16-20</td>
<td>3000 - 3700</td>
</tr>
<tr>
<td>21-25</td>
<td>2500 - 3000</td>
</tr>
<tr>
<td>26-30</td>
<td>2100 - 2500</td>
</tr>
<tr>
<td>31-35</td>
<td>1700 - 2100</td>
</tr>
<tr>
<td>36-40</td>
<td>1450 - 1700</td>
</tr>
</tbody>
</table>
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.

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

Operating principle

I - OPERATING PRINCIPLE

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 windscreens), 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).
WIPING / WASHING

Rain and light sensor

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

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.
WIPING / WASHING
Rain and light sensor: CONNECTION

<table>
<thead>
<tr>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Supply + battery</td>
</tr>
<tr>
<td>2 UCH and wiper motor connection</td>
</tr>
<tr>
<td>3 Earth</td>
</tr>
</tbody>
</table>
WIPING / WASHING

Windscreen wiper

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).

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

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mounting bolt</td>
</tr>
<tr>
<td>2</td>
<td>Radiator tank seals</td>
</tr>
<tr>
<td>3</td>
<td>Windscreen lower side trim</td>
</tr>
<tr>
<td>4</td>
<td>Radiator tank grille mountings</td>
</tr>
</tbody>
</table>

[Diagram of windscreen wiper mechanism]
WIPING / WASHING

**Windscreen wiper**

- Remove the three mounting bolts (5).
- 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),
  - 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.
- When refitting the wiper arms:
  - ensure that the arms are in good condition (cracked or damaged splines),
  - use new mounting nuts.
WIPING / WASHING

Windscreen wiper

- Position the lower arm (passenger side) with its wiper along mark (6) on the windshield.
- 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

REMOVAL

- Remove the windscreen wiper mechanism (Section Wiping / Washing, Windscreen wiper, page 85A-4).
- Remove the rod from the motor linkage.
- Remove:
  - the motor shaft nut (1),
  - the two motor mounting bolts (2).

REFITTING

- 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).

Tightening torques

- Motor mounting bolt to torque 0.8 daNm
- Motor shaft nut to torque 2.2 daNm

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Earth</td>
</tr>
<tr>
<td>2</td>
<td>Fixed stop control</td>
</tr>
<tr>
<td>3</td>
<td>Not connected</td>
</tr>
<tr>
<td>4</td>
<td>Low-speed control</td>
</tr>
<tr>
<td>5</td>
<td>High-speed control</td>
</tr>
</tbody>
</table>
WIPING / WASHING
Rear screen wiper motor

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.

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

Tightening torques
m
wiper arm nut to torque 1.2 daNm
WIPING / WASHING

Rear screen wiper motor

Drill out the motor mounting rivets (1).

REFITTING

Position and rivet the motor.
Connect the connector.
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.

WARNING
- Do not damage the external surface of the tailgate with the drill.
- Retrieve the rivets from the door box section.
- Use special rivets part no. 77 03 072 362.

101364
101732
101374
5
WIPING / WASHING

Rear screen wiper motor

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

**WARNING**
Check that the wiper motor is in fixed stop position.

**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 engaged.
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). 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).

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

Headlight washer nozzle

REMOVAL

- Remove the front bumper (see Front bumper).
- Remove the nut (1).
- Remove the jet.

REFITTING

SPECIAL FEATURES OF A NEW BUMPER

- 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).

Tightening torques

m

washer jet nut to torque

2 Nm

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

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

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

### Track Description

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Earth</td>
</tr>
<tr>
<td>2</td>
<td>+12V</td>
</tr>
<tr>
<td>3</td>
<td>+12V</td>
</tr>
<tr>
<td>4</td>
<td>Earth</td>
</tr>
</tbody>
</table>

### Table

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>
WIPING / WASHING

Windscreen washer pump

REMOVAL

I - VEHICLE WITHOUT HEADLIGHT WASHERS

- 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

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

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

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

Note:
The pump is located behind the screen washer reservoir.
<table>
<thead>
<tr>
<th>Level</th>
<th>Equipment</th>
<th>Display</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entry level</td>
<td>Radio CD changer</td>
<td>Entry display</td>
</tr>
<tr>
<td></td>
<td>in the boot (accessories)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Entry level « display »</td>
<td>Radio</td>
</tr>
<tr>
<td></td>
<td>on front panel of dashboard (optional)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Radio + CD changer</td>
<td></td>
</tr>
<tr>
<td></td>
<td>« Entry level » (CD player)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>in the boot (accessories)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Entry level « display »</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Radio</td>
<td></td>
</tr>
<tr>
<td></td>
<td>on front panel of dashboard (optional)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Radio + CD changer</td>
<td></td>
</tr>
<tr>
<td>Top of the range</td>
<td>Radio navigation</td>
<td>Top of the range display</td>
</tr>
<tr>
<td></td>
<td>(Section On-board telecommunications system, page 83C-1)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>in the boot (accessories)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Top of the range « display »</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(multiplex multimedia connection)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>on front panel of dashboard (optional)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Radio + CD changer</td>
<td></td>
</tr>
</tbody>
</table>
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**
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.

**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.

**Notes:**
- Four geographical zones can be programmed for FM radio.
- If a CD changer is being used, random play is possible on one disc only.
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).

- 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.
RADIO
"Entry level": Configuration

I - CONFIGURATION

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 ».

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.

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

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

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

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 »).
“Entry Level” Self-test

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 correspondence. Compare the signals issued by each loudspeaker.

- **Reception Level Test**: 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).
RADIO
“Entry level” connection

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vehicle speed signal</td>
</tr>
<tr>
<td>2</td>
<td>Not used</td>
</tr>
<tr>
<td>3</td>
<td>Mute signal</td>
</tr>
<tr>
<td>4</td>
<td>Battery supply</td>
</tr>
<tr>
<td>5</td>
<td>Aerial amplifier supply / display</td>
</tr>
<tr>
<td>6</td>
<td>Lighting supply</td>
</tr>
<tr>
<td>7</td>
<td>Accessories supply</td>
</tr>
<tr>
<td>8</td>
<td>Earth</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Display connection (track 13)</td>
</tr>
<tr>
<td>2</td>
<td>Display connection (track 14)</td>
</tr>
<tr>
<td>3</td>
<td>Display connection (track 15)</td>
</tr>
<tr>
<td>4</td>
<td>Not used</td>
</tr>
<tr>
<td>5</td>
<td>Radio on signal + display (track 12)</td>
</tr>
<tr>
<td>6</td>
<td>Earth / shielding (track 11)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+ rear right-hand loudspeaker</td>
</tr>
<tr>
<td>2</td>
<td>- rear right-hand loudspeaker</td>
</tr>
<tr>
<td>3</td>
<td>+ front right-hand loudspeaker</td>
</tr>
<tr>
<td>4</td>
<td>- front right-hand loudspeaker</td>
</tr>
<tr>
<td>5</td>
<td>+ front left-hand loudspeaker</td>
</tr>
<tr>
<td>6</td>
<td>- front left-hand loudspeaker</td>
</tr>
<tr>
<td>7</td>
<td>+ rear left-hand loudspeaker</td>
</tr>
<tr>
<td>8</td>
<td>- rear left-hand loudspeaker</td>
</tr>
</tbody>
</table>

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

WARNING - The CD changer is supplied un-coded. As soon as the CD changer is installed into the vehicle, the CD changer is programmed with the tuner/amplifier connection code.

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

"entry level": Compact disc changer connector

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not used</td>
</tr>
<tr>
<td>2</td>
<td>+ lighting</td>
</tr>
<tr>
<td>3</td>
<td>Not used</td>
</tr>
<tr>
<td>4</td>
<td>Radio connection (track 17)</td>
</tr>
<tr>
<td>5</td>
<td>Not used</td>
</tr>
<tr>
<td>6</td>
<td>Not used</td>
</tr>
<tr>
<td>7</td>
<td>Not used</td>
</tr>
<tr>
<td>8</td>
<td>Not used</td>
</tr>
<tr>
<td>9</td>
<td>Radio connection (track 19)</td>
</tr>
<tr>
<td>10</td>
<td>Radio connection (track 18)</td>
</tr>
<tr>
<td>11</td>
<td>Radio connection (track 20)</td>
</tr>
<tr>
<td>12</td>
<td>Not used</td>
</tr>
</tbody>
</table>

**Track Description**

1. Radio connection (track 15)
2. Radio connection (track 13)
3. Radio connection (track 14)
4. Radio / shielding
5. Radio connection (track 16)
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.

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).
RADIO
"top of the range" Operation

1. RADIO FUNCTION

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

II - 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.

1 - Inserting compact discs

Press the (7) « LOAD » button.

Use buttons (1) to (6) to select the required position of the CD.

Insert the disc into the slot (8).

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:
- 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).

Note:
- « SELECT » is displayed.

Note:
- « WAIT » is displayed, then the message « INSERT ».

Note:
- « LOAD » is displayed, then the CD plays.

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.
III - SPECIAL NOTE CONCERNING TIME SETTING

Press and hold down the « source - » button (top right) to enter time setting mode.

Press buttons « + » and « - » to adjust the hour.

Press the source « - » button to confirm the data entry.

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.

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/PERSONAL.

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),
- <PERSONAL>: 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).

Note:
The hours flash on the display.

Note:
The minutes flash on the display.

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 display being changed.
- Should one of the speakers short circuit, the supply to the amplifier will be cut off.
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).

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:
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.

Note:
Pressing the « source » button once while the settings are being entered cancels the changes.
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 ».

- 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.

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.

WARNING
The CD changer is supplied uncoded. The CD changer is programmed with the new amplifier/tuner code as soon as it is installed.
RADIO
"top of the range": enter security code

CHART 1 The display shows CODE or 0000

NOTES

Enter the security code. The radio beeps every two seconds for two minutes then displays « CODE ».

Does the audio equipment display « CODE » then « 0000 »?

Return to scrambled mode.

With the audio equipment switched off, press buttons 2,5 and ON.

Wait approximately two minutes until « CODE » then « 0000 » appear.

no

Enter the first digit using the tumble wheel control under the steering wheel.

yes

Confirm the digit by briefly pressing the lower button on the steering wheel control.

Use the same procedure to enter the remaining three digits.

Confirm the security code by pressing and holding the same button.

Does the audio equipment display « ERROR » then « CODE »?

Re-enter the code.

yes

Does the audio equipment display « CD ERROR » then « CD CODE »?

no

The audio equipment enters « CONFIGURATION » mode (if being used for the first time) and operates normally.

no

yes
RADIO
"top of the range": enter security code.

(Section Radio, "top of the range": enter security code, page)
"top of the range" enter security code

<table>
<thead>
<tr>
<th>Command</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHART 2</td>
<td>The display shows « CD ERROR ».</td>
</tr>
</tbody>
</table>

NOTES

The audio equipment displays « CD CODE », then « CD -0000 ». Enter the code of the tuner-amplifier formerly connected to the steering wheel.

1. Enter the first digit using the tumble wheel control under the steering wheel.
2. Confirm the digit by briefly pressing the lower button on the steering wheel control.
3. Use the same procedure to enter the remaining three digits.
4. Confirm the security code by pressing and holding the same button.

Does the CD changer code correspond to the amplifier code?

1. If yes, The CD changer is programmed with the code for the new amplifier and operates correctly. The audio equipment is no longer protected.
2. If no, the audio equipment displays the message « CD ERROR » then « CD CODE ». If the fault is still present, enter the « ALPINE » code.
Self diagnosis procedure

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
- After an initial display of the frequency of the station, press 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 on the display, and by the presence of CDs on the front panel:
  - 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.
  - « HI TEMP » message = CD changer temperature too high.
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.
<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not used</td>
</tr>
<tr>
<td>2</td>
<td>+ lighting</td>
</tr>
<tr>
<td>3</td>
<td>Not used</td>
</tr>
<tr>
<td>4</td>
<td>Amplifier connection (track 17)</td>
</tr>
<tr>
<td>5</td>
<td>Amplifier connection (track 4)</td>
</tr>
<tr>
<td>6</td>
<td>Amplifier connection (track 3)</td>
</tr>
<tr>
<td>7</td>
<td>Amplifier connection (track 2)</td>
</tr>
<tr>
<td>8</td>
<td>Amplifier connection (track 1)</td>
</tr>
<tr>
<td>9</td>
<td>Amplifier connection (tracks 19 and 20)</td>
</tr>
<tr>
<td>10</td>
<td>Amplifier connection (track 18)</td>
</tr>
<tr>
<td>11</td>
<td>Amplifier connection (tracks 19 and 20)</td>
</tr>
<tr>
<td>12</td>
<td>Amplifier connection (track 15)</td>
</tr>
<tr>
<td>13</td>
<td>Amplifier connection (track 15)</td>
</tr>
<tr>
<td>14</td>
<td>Not used</td>
</tr>
<tr>
<td>15</td>
<td>Amplifier connection (track 16)</td>
</tr>
</tbody>
</table>

**Diagram:**

- Black connector
- Green connector

**Top of the range:** Compact disc changer connector
The amplifier incorporates the tuner function. The amplifier/tuner is mounted onto a special support in the boot.

**Removal**

- 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.
- Remove the amplifier/tuner from its mounting using tool (Ms. 1373)(2).

**Refitting**

- To refit, proceed in the reverse order of removal.
- Essential special tooling Ms. 1373 Philips radio removal tool.

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).
**RADIO**

"Top of the range": tuner-amplifier connection

---

**Black connector (A)**

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vehicle speed signal</td>
</tr>
<tr>
<td>2</td>
<td>Not used</td>
</tr>
<tr>
<td>3</td>
<td>Voice synthesiser signal (mute)</td>
</tr>
<tr>
<td>4</td>
<td>+ battery</td>
</tr>
<tr>
<td>5</td>
<td>Aerial amplifier supply (except navigation)</td>
</tr>
<tr>
<td>6</td>
<td>Not used</td>
</tr>
<tr>
<td>7</td>
<td>+ accessories</td>
</tr>
<tr>
<td>8</td>
<td>Earth</td>
</tr>
</tbody>
</table>

**Black connector (B)**

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+ rear right-hand loudspeaker</td>
</tr>
<tr>
<td>2</td>
<td>- rear right-hand loudspeaker</td>
</tr>
<tr>
<td>3</td>
<td>+ front right-hand loudspeaker</td>
</tr>
<tr>
<td>4</td>
<td>- front right-hand loudspeaker</td>
</tr>
<tr>
<td>5</td>
<td>+ front left-hand loudspeaker</td>
</tr>
<tr>
<td>6</td>
<td>- front left-hand loudspeaker</td>
</tr>
<tr>
<td>7</td>
<td>+ rear left-hand loudspeaker</td>
</tr>
<tr>
<td>8</td>
<td>- rear left-hand loudspeaker</td>
</tr>
</tbody>
</table>

**Black connector (C)**

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CD changer connection (track 8)</td>
</tr>
<tr>
<td>2</td>
<td>CD changer connection (track 7)</td>
</tr>
<tr>
<td>3</td>
<td>+ accessories CD changer (track 6)</td>
</tr>
<tr>
<td>4</td>
<td>CD changer connection (track 5)</td>
</tr>
<tr>
<td>5</td>
<td>Not used</td>
</tr>
<tr>
<td>6</td>
<td>Not used</td>
</tr>
</tbody>
</table>

**Black connector (D)**

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>13</td>
<td>CD changer connection (track 3)</td>
</tr>
<tr>
<td>14</td>
<td>CD changer connection (track 2)</td>
</tr>
<tr>
<td>15</td>
<td>CD changer connection (tracks 1, 12 and 13)</td>
</tr>
<tr>
<td>16</td>
<td>CD changer connection (track 15)</td>
</tr>
<tr>
<td>17</td>
<td>CD changer connection (track 10)</td>
</tr>
<tr>
<td>18</td>
<td>CD changer connection (tracks 9 and 11)</td>
</tr>
<tr>
<td>19</td>
<td>CD changer connection (tracks 9 and 11)</td>
</tr>
</tbody>
</table>

---

**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).
### Track Description

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Multiplex connection to the display</td>
</tr>
<tr>
<td>2</td>
<td>Multiplex network to the display</td>
</tr>
<tr>
<td>3</td>
<td>Shunt track 5</td>
</tr>
<tr>
<td>4</td>
<td>Shunt track 6</td>
</tr>
<tr>
<td>5</td>
<td>Shunt track 3</td>
</tr>
<tr>
<td>6</td>
<td>Shunt track 4</td>
</tr>
<tr>
<td>7</td>
<td>Not used</td>
</tr>
<tr>
<td>8</td>
<td>Radio on/off signal to the display</td>
</tr>
<tr>
<td>9</td>
<td>Radio on/off signal to the display</td>
</tr>
<tr>
<td>10</td>
<td>Not used</td>
</tr>
<tr>
<td>11</td>
<td>Not used</td>
</tr>
<tr>
<td>12</td>
<td>Not used</td>
</tr>
<tr>
<td>13</td>
<td>Not used</td>
</tr>
<tr>
<td>14</td>
<td>Not used</td>
</tr>
<tr>
<td>15</td>
<td>Not used</td>
</tr>
<tr>
<td>16</td>
<td>Not used</td>
</tr>
<tr>
<td>17</td>
<td>Not used</td>
</tr>
<tr>
<td>18</td>
<td>Not used</td>
</tr>
<tr>
<td>19</td>
<td>Not used</td>
</tr>
<tr>
<td>20</td>
<td>Not used</td>
</tr>
<tr>
<td>21</td>
<td>Not used</td>
</tr>
<tr>
<td>22</td>
<td>Not used</td>
</tr>
<tr>
<td>23</td>
<td>Not used</td>
</tr>
<tr>
<td>24</td>
<td>Not used</td>
</tr>
<tr>
<td>25</td>
<td>Not used</td>
</tr>
<tr>
<td>26</td>
<td>Not used</td>
</tr>
<tr>
<td>27</td>
<td>Not used</td>
</tr>
<tr>
<td>28</td>
<td>Not used</td>
</tr>
<tr>
<td>29</td>
<td>Not used</td>
</tr>
<tr>
<td>30</td>
<td>Not used</td>
</tr>
</tbody>
</table>

**RADIO**

"top of the range": tuner-amp filament connection

Red connector (E)
RADIO Display

**REMOVAL**

1. Unclip the upper section (1) of the dashboard in the direction shown in the picture.
2. Unclip the display by pressing (2).
3. Disconnect the connector.

**REFITTING**

- To refit, proceed in the reverse order of removal.
<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not used</td>
</tr>
<tr>
<td>2</td>
<td>Not used</td>
</tr>
<tr>
<td>3</td>
<td>Not used</td>
</tr>
<tr>
<td>4</td>
<td>External temperature input</td>
</tr>
<tr>
<td>5</td>
<td>Earth</td>
</tr>
<tr>
<td>6</td>
<td>Lighting</td>
</tr>
<tr>
<td>7</td>
<td>Lighting dimmer</td>
</tr>
<tr>
<td>8</td>
<td>+ accessories</td>
</tr>
<tr>
<td>9</td>
<td>+ battery</td>
</tr>
<tr>
<td>10</td>
<td>Not used</td>
</tr>
<tr>
<td>11</td>
<td>Earth (radio track 6)</td>
</tr>
<tr>
<td>12</td>
<td>Radio on button (track 5)</td>
</tr>
<tr>
<td>13</td>
<td>Radio connection (track 1)</td>
</tr>
<tr>
<td>14</td>
<td>Radio connection (track 2)</td>
</tr>
<tr>
<td>15</td>
<td>Radio connection (track 3)</td>
</tr>
<tr>
<td>16</td>
<td>Satellite control connection (track 2)</td>
</tr>
<tr>
<td>17</td>
<td>Satellite control connection (track 3)</td>
</tr>
<tr>
<td>18</td>
<td>Satellite control connection (track 6)</td>
</tr>
<tr>
<td>19</td>
<td>Satellite control connection (track 5)</td>
</tr>
<tr>
<td>20</td>
<td>Satellite control connection (track 4)</td>
</tr>
<tr>
<td>21</td>
<td>Satellite control connection (track 7)</td>
</tr>
<tr>
<td>22</td>
<td>Not used</td>
</tr>
<tr>
<td>23</td>
<td>Not used</td>
</tr>
<tr>
<td>24</td>
<td>Not used</td>
</tr>
<tr>
<td>25</td>
<td>Not used</td>
</tr>
<tr>
<td>26</td>
<td>Not used</td>
</tr>
<tr>
<td>27</td>
<td>Not used</td>
</tr>
<tr>
<td>28</td>
<td>Not used</td>
</tr>
<tr>
<td>29</td>
<td>Not used</td>
</tr>
<tr>
<td>30</td>
<td>Not used</td>
</tr>
</tbody>
</table>

Note: If the vehicle is equipped with a navigation system, (Section On-board telematics system, page 83C-1).
### Radio Top-of-the-range display

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Not used</td>
</tr>
<tr>
<td>2</td>
<td>Not used</td>
</tr>
<tr>
<td>3</td>
<td>Not used</td>
</tr>
<tr>
<td>4</td>
<td>External temperature input</td>
</tr>
<tr>
<td>5</td>
<td>Earth</td>
</tr>
<tr>
<td>6</td>
<td>Lighting</td>
</tr>
<tr>
<td>7</td>
<td>Lighting dimmer</td>
</tr>
<tr>
<td>8</td>
<td>+ accessories</td>
</tr>
<tr>
<td>9</td>
<td>+ battery</td>
</tr>
<tr>
<td>10</td>
<td>Not used</td>
</tr>
<tr>
<td>11</td>
<td>Not used</td>
</tr>
<tr>
<td>12</td>
<td>Amplifier/tuner connection (track 8)</td>
</tr>
<tr>
<td>13</td>
<td>Not used</td>
</tr>
<tr>
<td>14</td>
<td>Not used</td>
</tr>
<tr>
<td>15</td>
<td>Not used</td>
</tr>
<tr>
<td>16</td>
<td>Satellite control connection (track 2)</td>
</tr>
<tr>
<td>17</td>
<td>Satellite control connection (track 3)</td>
</tr>
<tr>
<td>18</td>
<td>Satellite control connection (track 5)</td>
</tr>
<tr>
<td>19</td>
<td>Satellite control connection (track 6)</td>
</tr>
<tr>
<td>20</td>
<td>Satellite control connection (track 4)</td>
</tr>
<tr>
<td>21</td>
<td>Satellite control connection (track 7)</td>
</tr>
<tr>
<td>22</td>
<td>Not used</td>
</tr>
<tr>
<td>23</td>
<td>Not used</td>
</tr>
<tr>
<td>24</td>
<td>Not used</td>
</tr>
<tr>
<td>25</td>
<td>Not used</td>
</tr>
<tr>
<td>26</td>
<td>Not used</td>
</tr>
<tr>
<td>27</td>
<td>Not used</td>
</tr>
<tr>
<td>28</td>
<td>Not used</td>
</tr>
<tr>
<td>29</td>
<td>Amplifier/tuner connection (track 2)</td>
</tr>
<tr>
<td>30</td>
<td>Amplifier/tuner connection (track 1)</td>
</tr>
</tbody>
</table>

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

1. Unclip:
   - the grille (1),
   - the tweeter (2).
2. Disconnect the tweeter connector.

REFITTING

To refit, proceed in the reverse order of removal.
RADIO
Front speakers

REMOVAL

1. Unclip the grille (1).

2. Remove:
   - the speaker mounting bolts (2),
   - the speaker.

3. Disconnect the speaker connector.
Rear speakers

- 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.

**REFITTING**

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

**Note:**
- Gently tighten the speaker mounting bolts.
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).

### Table 1: Action Track Values

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
<th>Top left-hand button (1)</th>
<th>Top right-hand button (2)</th>
<th>Volume + (3)</th>
<th>Pause button (4)</th>
<th>Volume - (5)</th>
<th>Base button (6)</th>
<th>Tumble wheel (7) first position (first position)</th>
<th>Tumble wheel (7) second position (second position)</th>
<th>Tumble wheel (7) third position (third position)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>5 and 4</td>
<td>3 and 4</td>
<td>1 and 6</td>
<td>1 and 4</td>
<td>5 and 6</td>
<td>3 and 2</td>
<td>1 and 2</td>
<td>5 and 2</td>
<td>3 and 2</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Values are approximate.
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.
Three types of UCH 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.

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
<table>
<thead>
<tr>
<th>System and Feature</th>
<th>Basic (L1)</th>
<th>Mid-range (L2)</th>
<th>Top of the range (L3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central locking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deadlocking</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric locks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hands-free</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tilted steering</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cruise control</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Park assist</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Headlight washers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windscreen washers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear wiper speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rain and light sensor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windscreen wipers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rear screen wiper</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wiper speed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electric childproof lock</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>«Driver's door only» opening program</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### PASSENGER COMPARTMENT CONNECTION UNIT

**UCH: General**

<table>
<thead>
<tr>
<th>Lighting / Wiper Control</th>
<th>Management</th>
<th>Indicators and Hazard WARNING Lights</th>
<th>Hazard Warning Lights on under emergency braking and airbags being triggered</th>
<th>Rear Fog Light</th>
<th>Lights on Reminder Management (control)</th>
<th>Timed Interior Lighting Supply</th>
<th>Interior Lighting (Floor)</th>
<th>Daytime Running Lights</th>
<th>Automatic Headlights When Driving</th>
<th>Automatic Headlights When Stationary</th>
</tr>
</thead>
<tbody>
<tr>
<td>XX X8 4 A</td>
<td></td>
<td>XX X-</td>
<td></td>
<td>XX X-</td>
<td>XX X-</td>
<td>XX X8 1 B</td>
<td>XX X8 1B</td>
<td>XX X8 0 B</td>
<td>XX X8 0 B</td>
<td>XX X8 0 B</td>
</tr>
</tbody>
</table>

**Heated Rear Screen Management**

<table>
<thead>
<tr>
<th>Air Conditioning Request Management</th>
<th>Alarm Management (Pre-fitting)</th>
<th>External Temperature Management</th>
<th>Tyre Pressure Monitoring System</th>
<th>Additional Heating (Resistors)</th>
</tr>
</thead>
<tbody>
<tr>
<td>XX X8 4 A</td>
<td>XX X8 2 C</td>
<td>XX X8 4 A</td>
<td>XX X3 5 B</td>
<td>XX X6 1 A</td>
</tr>
</tbody>
</table>

See section «Basic» (L1) «Mid-range» (L2) «Top of the range» (L3)
Removal

- Disconnect the battery.
- Remove the fuse box cover.
- Remove the dashboard side panel.
- Remove the front door sill lining, attached at (1).
- Remove the switch mounting panel attached by five screws (2).

**WARNING**

If the UCH is replaced, the valve code and configuration readings must be taken using the Diagnostic tool.

**Essential equipment**

Diagnostic tool
Remove the air duct attached by a clip (3).

Unclip the fuse board (4).

Remove the UCH mounting bolt (5).

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.

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).

WARNING
Unclip the air duct carefully.

WARNING
The UCH is clipped on to its mounting at several points. Unfasten its clips to remove it.

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

REFITTING

- Connect the UCH.

Essential equipment

Diagnostic tool

WARNING

- It is essential to display the configurations and valve codes using the Diagnostic tool if the UCH is replaced.

WARNING

- The UCH is clipped onto its mounting at several places. Unhook the clips to remove it.
- 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,
- 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).

**WARNING**
Connect the battery; carry out the necessary programming (Section Battery, page 80A-1).
### Possible Configurations for the UCH

<table>
<thead>
<tr>
<th>Name of Configuration</th>
<th>Configuration Reading</th>
<th>Choice of Configuration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calibration CF031 « End of stream »</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 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 » (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 » (LC017) with / without CF016 « Pax system type » (LC010) with / without CF017 « Type of vehicle » (LC011) all except cabriolet / convertible

---

**Note:**
- CF010 « Hands-free function »
- CF036 « Selective opening of doors and tailgate »
- CF009 « Deadlocking »
- CF018 « Automatic relocking »
- CF033 « Electric childproof locks »
- CF019 « Type of air conditioning »
- CF027 « Type of windscreen »
- CF032 « Follow me home lighting »
- CF014 « Daytime running lights »
- CF021 « Front fog lights »
- CF015 « Hazard warning lights on in the event of an impact »
- CF024 « Hazard warning lights on with ABS »
- CF020 « Type of drive »
- CF025 « Rear screen wiper park position management »
- CF023 « Tyre Pressure Monitor function »
- CF016 « Pax system type »
- CF017 « Type of vehicle »
To switch « without », run command CF031 « End of stream ».

This configuration corresponds to the « door only open » function (Section Opening elements management, page 87C-1).

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.

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.
<table>
<thead>
<tr>
<th>Track</th>
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<td>+ before ignition (protected)</td>
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<td>5</td>
<td>Electric steering column lock (supply)</td>
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<td>6</td>
<td>Electric steering column lock (signal)</td>
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<td>Rear wiper (control)</td>
</tr>
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<td>8</td>
<td>Rear wiper (supply)</td>
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<tr>
<td>9</td>
<td>Fuel flap and driver's door closing control</td>
</tr>
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<td>Fuel flap and driver's door opening control</td>
</tr>
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<td>11</td>
<td>Passenger door, rear door and boot closing control</td>
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<td>Passenger door, rear door and boot opening control</td>
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<td>13</td>
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<td>Rear doors superlocking control</td>
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<td>17</td>
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<td>Electronic earth</td>
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<td>22</td>
<td>Rear fog light control</td>
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<td>Tailgate control</td>
</tr>
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</tr>
<tr>
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<td>26</td>
<td>Interior lighting (control)</td>
</tr>
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<td>Not used</td>
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<tr>
<td>28</td>
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<td>29</td>
<td>Electric steering column lock</td>
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<td>External temperature (output)</td>
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<td>Hazard warning lights indicator</td>
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<tr>
<td>32</td>
<td>Card reader (card present)</td>
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<tr>
<td>33</td>
<td>Clutch pedal sensor</td>
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<tr>
<td>34</td>
<td>Door locking/unlocking switch</td>
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<td>35</td>
<td>Starter button (signal)</td>
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<td>Tailgate opening sensor</td>
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<td>Childproof locking indicator light</td>
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<td>39</td>
<td>Interior locking control (child safety)</td>
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<td>Windscreen washer control</td>
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<td>Starter button (engine running indicator light)</td>
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<td>Passenger door opening sensor</td>
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<td>Rear right-hand door opening sensor</td>
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<td>45</td>
<td>Driver's door opening sensor</td>
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<td>46</td>
<td>Door deadlocking state signal</td>
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<td>47</td>
<td>Rear left-hand door opening sensor</td>
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**PP1 connector**

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<tr>
<td>2</td>
<td>Electronic earth</td>
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<tr>
<td>3</td>
<td>+ timed supply</td>
</tr>
<tr>
<td>4</td>
<td>Left-hand direction indicators</td>
</tr>
<tr>
<td>5</td>
<td>Right-hand direction indicators</td>
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<td>6</td>
<td>Rear fog light control</td>
</tr>
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<td>7</td>
<td>Tailgate control</td>
</tr>
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<tr>
<td>9</td>
<td>+ timed supply (flap, earth)</td>
</tr>
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<td>Interior lighting (control)</td>
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**PP2 connector**

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<td>Tailgate control</td>
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**Connector PP3**

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<td>Right-hand direction indicators</td>
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<td>Rear fog light control</td>
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<td>Rain and brightness sensor</td>
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<td>Column switch connection (track 9)</td>
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<td>External temperature sensor</td>
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<td>Column switch connection (track 2)</td>
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<td>Column switch connection (track 13)</td>
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<tr>
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<td>H multiplex connection (Protection and Switching unit)</td>
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<tr>
<td>7</td>
<td>One-touch electric window and sunroof</td>
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<td>H multiplex connection (passenger compartment)</td>
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<td>Column switch connection (track 4)</td>
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<td>H multiplex connection (electric steering column lock)</td>
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<td>Column switch connection (track 12)</td>
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<td>L multiplex connection (Protection and Switching unit)</td>
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<td>Passenger compartment heating relay control</td>
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<td>24</td>
<td>Air conditioning control (heating rear screen)</td>
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<tr>
<td>25</td>
<td>Card reader (earth)</td>
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<td>26</td>
<td>Air conditioning control (air conditioning indicator light)</td>
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<td>27</td>
<td>Brake pedal switch (depressed)</td>
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<td>Rear wiper control</td>
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<td>Immobiliser warning light output</td>
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<td>Air conditioning state (heating fan in off position)</td>
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<td>Passenger compartment heating relay control</td>
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<td>Door locking switch (hands-free)</td>
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</tr>
<tr>
<td>21</td>
<td>Presence sensor (driver's door)</td>
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<td>22</td>
<td>Presence sensor (driver's rear door)</td>
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<td>Presence sensor (passenger door)</td>
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<td>24</td>
<td>Hands-free starting aerial (front)</td>
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<td>25</td>
<td>Hands-free starting aerial (front)</td>
</tr>
<tr>
<td>26</td>
<td>Hands-free starting aerial (centre)</td>
</tr>
<tr>
<td>27</td>
<td>Driver's side front hands-free opening aerial</td>
</tr>
<tr>
<td>28</td>
<td>Driver's side rear hands-free opening aerial</td>
</tr>
<tr>
<td>29</td>
<td>Boot hands-free opening aerial</td>
</tr>
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<td>Presence sensor (passenger rear door)</td>
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<td>31</td>
<td>Passenger side front hands-free opening aerial</td>
</tr>
<tr>
<td>32</td>
<td>Passenger side rear hands-free opening aerial</td>
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<tr>
<td>33</td>
<td>Passenger side rear hands-free opening aerial</td>
</tr>
<tr>
<td>34</td>
<td>Passenger side front hands-free opening aerial</td>
</tr>
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<td>35</td>
<td>Hands-free starting aerial (rear)</td>
</tr>
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<td>36</td>
<td>Hands-free starting aerial (rear)</td>
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<td>37</td>
<td>Hands-free starting aerial (centre)</td>
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<td>38</td>
<td>Driver's side rear hands-free opening aerial</td>
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<td>Driver's side front hands-free opening aerial</td>
</tr>
<tr>
<td>40</td>
<td>Boot hands-free opening aerial</td>
</tr>
</tbody>
</table>
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.

For special notes on the UCH, see Section Passenger compartment connection unit, page 87B-1.

For special notes on the Protection and Switch Unit, see Section Engine interconnection unit, page 87G-1.

For special notes on the card reader and starter button («start»), see Section Immobiliser, page 82A-1.
OPENING ELEMENTS MANAGEMENT
Keyless vehicle:

CHART 1 Basic operation

NOTES

Vehicle locked (ignition off).

« Boot » button on card pressed and card detected by UCH.

Boot unlocked.

Direction and side-mounted indicators flash once.

« Boot » button pressed and card detected.

Boot locked.

Direction and side-mounted indicators flash twice.

Vehicle locked.

« Open » button pressed and card detected by UCH.

Four doors, boot and fuel filler flap unlocked.

Direction and side-mounted indicators flash once.

« Open » button pressed and card detected.

Four doors, boot and fuel filler flap locked.

Direction and side-mounted indicators flash once.

« Open » button pressed and card detected.
OPENING ELEMENTS MANAGEMENT

Keyless vehicle:

- Vehicle unlocked (ignition off).
  - « Close » button pressed and card detected.
  - Relocked automatically if a door is not opened within approximately 30 seconds.

- Four doors, boot and fuel filler flap locked.
  - Direction and side-mounted indicators flash twice.
  - « Close » button pressed again.
  - One-touch windows and sunroof close.
  - Direction and side-mounted indicators flash five times.

- Vehicle locked (ignition off).
OPENING ELEMENTS MANAGEMENT
Keypad vehicle:

CHART 2 Hands-free operation

Vehicle locked (ignition off)
Card detected by unlocking aerials and pressing « boot » button

Boot unlocked
Direction indicators and side repeater indicators flash
Card detected by unlocking aerials and pressing « locking » aerial
- on door exterior handle
- on boot logo

Card not detected by start aerials
Four doors, boot and fuel tank flap locked
Direction indicators and side repeater indicators flash twice
Second press on door or boot switch « lock » button
Windows and sunroof close
Direction indicators and side repeater indicators flash five times
Vehicle locked
OPENING ELEMENTS MANAGEMENT

Keyless vehicle:

- Presence sensors are inhibited for approximately 3 seconds.

Vehicle locked (ignition off):
- Card detected by UCH
- Press card « lock » button
  - Automatic relocking
  - Four doors, boot and fuel tank flap locked
  - Direction indicators and side repeater indicators flash twice
- Second press on card « lock » button
  - Windows and sunroof close
Vehicle locked (ignition off)
- 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)

Vehicle unlocked
Direction indicators and side repeater indicators flash
- Card detected by unlocking aerials and pressing on « unlock » button
  - on door exterior handle
  - on boot logo
- Card not detected by start aerials
Four doors, boot and fuel tank flap locked
Direction and side-mounted indicators flash twice
Second press on door or boot switch « lock » button
Windows and sunroof close
Direction indicators and side repeater indicators flash five times
Vehicle locked
Opening Elements Management

Keyless Vehicle:

- The presence sensors are inhibited for approximately 3 seconds.
- Vehicle locked (ignition off)
- Card detected by UCH
- Press card « lock » button
- Automatic relocking
- No
- Four doors, boot and fuel tank flap locked
- Yes
- Direction indicators and side repeater indicators flash twice
- Second press on card « lock » button
- Windows and sunroof close
Vehicle locked (ignition off)
Press card « unlock » button
Card detected by UCH
Vehicle unlocked
Direction indicators and side repeater indicators flash
Card detected by unlocking aerials and press on « unlock » button
- on door exterior handle
- on boot logo
Card not detected by start aerials
Four doors, boot and fuel tank flap locked
Direction indicators and side repeater indicators flash twice
Second press on door or boot switch « lock » button
Windows and sunroof close
Direction indicators and side repeater indicators flash five times
Vehicle locked
no

yes
OPENING ELEMENTS MANAGEMENT

Keyless vehicle:

- The presence sensors are inhibited for approximately 3 seconds.
- Vehicle locked (ignition off):
  - Card detected by UCH
  - Press card « lock » button
    - Automatic relocking
    - Four doors, boot and fuel tank flap locked
    - Direction indicators and side repeater indicators flash twice
    - Second press on card « lock » button
      - Windows and sunroof close
Vehicle deadlocked.

« Open » button pressed and card detected by UCH.

Direction and side-mounted indicators flash once.

yes

Driver's door and fuel filler flap unlocked.

« Open » button pressed again.

Vehicle locked.

no

Direction and side-mounted indicators flash once.

yes

Four doors, boot and fuel filler flap unlocked.

« Close » button pressed and card detected.

Four doors, boot and fuel tank flap locked.
OPENING ELEMENTS MANAGEMENT
Keypad vehicle:

87C

Direction and side-mounted indicators flash twice.

« Close » button pressed again.

One-touch windows and sunroof close and doors deadlocked.

Direction and side-mounted indicators flash five times.

Begin the procedure again.
Special features of the "valet" function

Supply two vehicle cards.

Insert a card into the card reader.

Press the «unlock» and «lock» buttons on the second card simultaneously.

The vehicle is in "valet" mode: complete locking, vehicle starting and door unlocking is possible with both cards.

Unlocking the boot and fuel flap are only possible with the master card.

Insert a card into the card reader.

Press the «unlock» and «lock» buttons on the second card simultaneously.

The two vehicle cards operate as originally.

Return to the start of the procedure.
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 vehicle 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.

OPERATING PRINCIPLE:
To check the locking and unlocking of doors and boot, the direction indicators and side repeater indicators are controlled by the UCH.
**OPENING ELEMENTS MANAGEMENT**

**Keyless vehicle: Operating principle**

* 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.

### Press/Release | Effect on the locks | Operation of the direction indicators | Operation of the side repeater indicators
--- | --- | --- | ---
**One-touch** | First press | Loc king of the doors/tailgate/boot | —
 | —— | Closing the windows and sunroof* | ——
 | —— | Door and tailgate deadlocking** | ——

### Press/Release | Effect on the locks | Operation of the direction indicators | Operation of the side repeater indicators
--- | --- | --- | ---
**Second press** | Unlocking of the doors and luggage compartment or the driver's door** | Flas hing | ——

Note:

A backup key can be ordered from the replacement parts store by giving them the vehicle identification and safety numbers.

---

1. « Unlock » button
2. « Lock » button
3. « Unlock boot » button
4. Backup key

---

 здоровья
OPENING ELEMENTS MANAGEMENT

Keyless vehicle: Operating principle

* « Hands-free » card
  For the procedure for programming or allocating a card, (Section Immobiliser, page 82A-1).

1) « Unlocking » button
2) « Locking » button
3) « Boot unlocking / locking » button
4) Backup key
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.

**Removal**

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

**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.

**Warning:**
- The starter aerial clips (4) are fragile.
Unclip the front panel (Section Immobiliser, Engine start/stop button, page 82A-15).

I - CENTRE AERIAL

Remove the central console (see Central console).

II - REAR AERIAL

Partially remove the carpet in the boot.

Unclip aerial (5) by moving the clips.
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).

To remove the handles, refer to Workshop Repair Manual 365 - Bodywork.

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.

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.
OPENING ELEMENTS MANAGEMENT
Opener aerials CONNECTION

Presence and movement sensors (connector 2):
1. Sensor signal
2. Earth
3. Supply (+ before ignition)

Opening aerial and locking button (connector 3):
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.
OPENING ELEMENTS MANAGEMENT
Tailgate exterior opening control

REMOVAL

- 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.
- Note: It is not necessary to remove the door strip to perform this operation.
OPENING ELEMENTS MANAGEMENT
Keypless vehicle: Tailgate opening control connection

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Opening control</td>
</tr>
<tr>
<td>2</td>
<td>Earth</td>
</tr>
</tbody>
</table>

Note: The tailgate opener control is a simple switch. The opening control can be checked using an ohmmeter.
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)
- Locking motor
- Lock sensor
- Earth

### Entry level version (right-hand side)
- Locking motor
- Lock sensor
- Earth

### High-end version (front right)
- Deadlocking system motor
- Deadlocking system motor
- Earth
- Lock sensor

### High-end version (front left)
- Deadlocking system motor
- Deadlocking system motor
- Earth
- Lock sensor

### High-end version (rear left)
- Locking motor
- Common motor connection (child-proof)
- Lock sensor
- Earth
- Deadlocking system motor (child-proof)
- Deadlocking status indicator (child-proof)

### High-end version (rear right)
- Deadlocking status indicator (child-proof)
- Deadlocking system motor (child-proof)
- Earth
OPENING ELEMENTS MANAGEMENT
Tailgate lock

REMOVAL

- Unlock the tailgate lock by pushing on the tab with a screwdriver.
- Disconnect the battery.
- Remove the interior trim (see Tailgate lining) in Workshop Repair Manual 365 - Bodywork.
- 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.

Note: If there is an electrical failure, the tailgate can be opened manually.

WARNING

Connect the battery; carry out the necessary programming (see Section Battery, page 80A-1).
Keyless vehicle: Tailgate lock connection

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Supply voltage</td>
</tr>
<tr>
<td>2</td>
<td>Supply voltage</td>
</tr>
<tr>
<td>3</td>
<td>Opening signal (body flange sensor)</td>
</tr>
<tr>
<td>4</td>
<td>Earth</td>
</tr>
</tbody>
</table>

Note: The tailgate opener control is a simple switch. The opening control can be checked using an ohmmeter.
To remove the lock button located on the tailgate, refer to Workshop Repair Manual 365 - Bodywork.

Note: The lock button on the tailgate is a simple switch. The lock button can be checked using an ohmmeter.
OPENING ELEMENTS MANAGEMENT

Keyless vehicle: Fuel filler flap

Fuel tank flap locking / unlocking is controlled simultaneously with the driver's door.

- 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.
ELECTRIC WINDOWS - SUNROOF

Electric window Operating principle

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.

III - ELECTRIC WINDOWS

Operating principle: The electric window motor is powered through the switch, which can also flip the polarity (for lowering or raising).

IV - 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).

The one-touch switch has been designed to automatically lower the windows in the event of an accident.
The front electric window switches should be removed for replacement.

**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.
ELECTRIC WINDOWS - SUNROOF

Front electric window switches on driver’s door

- Connection

I - DRIVER’S AND PASSENGER ELECTRIC WINDOW ON DRIVER’S DOOR

Operating principle:
Check the resistance using an ohmmeter.
The value should be approximately 0 Ω when a contact is made between the two tracks.

II - DRIVER’S AND PASSENGER ONE-TOUCH WINDOW

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Not used</td>
</tr>
<tr>
<td>A2</td>
<td>Passenger electric window control</td>
</tr>
<tr>
<td>A3</td>
<td>+ lighting</td>
</tr>
<tr>
<td>A4</td>
<td>Driver’s electric window control</td>
</tr>
<tr>
<td>A5</td>
<td>+ after ignition</td>
</tr>
<tr>
<td>A6</td>
<td>Not used</td>
</tr>
<tr>
<td>B1</td>
<td>Not used</td>
</tr>
<tr>
<td>B2</td>
<td>Not used</td>
</tr>
<tr>
<td>B3</td>
<td>Passenger electric window control</td>
</tr>
<tr>
<td>B4</td>
<td>Earth</td>
</tr>
<tr>
<td>B5</td>
<td>Driver’s electric window control</td>
</tr>
<tr>
<td>B6</td>
<td>Not used</td>
</tr>
</tbody>
</table>

Action

<table>
<thead>
<tr>
<th>Track</th>
<th>A4</th>
<th>B5</th>
<th>B3</th>
<th>A5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Driver open</td>
<td>B4</td>
<td>A5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Driver close</td>
<td>A5</td>
<td>B4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Passenger open</td>
<td>-</td>
<td>-</td>
<td>A5</td>
</tr>
<tr>
<td></td>
<td>Passenger close</td>
<td>-</td>
<td>-</td>
<td>B4</td>
</tr>
</tbody>
</table>

LEFT-HAND DRIVE

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Passenger side electric window control</td>
</tr>
<tr>
<td>A2</td>
<td>+ lighting</td>
</tr>
<tr>
<td>A3</td>
<td>+ after ignition</td>
</tr>
<tr>
<td>A4</td>
<td>Driver’s side electric window control</td>
</tr>
<tr>
<td>A5</td>
<td>-</td>
</tr>
<tr>
<td>A6</td>
<td>-</td>
</tr>
</tbody>
</table>

Action

<table>
<thead>
<tr>
<th>Track</th>
<th>A4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Driver open</td>
</tr>
<tr>
<td></td>
<td>Driver close</td>
</tr>
<tr>
<td></td>
<td>Passenger open</td>
</tr>
<tr>
<td></td>
<td>Passenger close</td>
</tr>
</tbody>
</table>
## ELECTRIC WINDOWS - SUNROOF

### Front electric window switches on driver's door Connection

**Operating principle:** Check the resistance using an ohmmeter. The value should be approximately 0 Ω when a contact is made between two tracks.

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>B4</td>
<td>Earth</td>
<td>None</td>
</tr>
<tr>
<td>B3</td>
<td>Passenger side electric window control</td>
<td></td>
</tr>
<tr>
<td>B2</td>
<td>Earth</td>
<td></td>
</tr>
<tr>
<td>B1</td>
<td>Driver's side electric window control</td>
<td></td>
</tr>
<tr>
<td>B5</td>
<td>Earth</td>
<td></td>
</tr>
</tbody>
</table>

### Table

<table>
<thead>
<tr>
<th>Track</th>
<th>B1</th>
<th>B2</th>
<th>B3</th>
<th>B4</th>
<th>B5</th>
<th>B6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Driver basic opening** (A4): Infinite resistance
- **Driver basic closing** (B5): Infinite resistance
- **Driver one-touch open** (A4): (first contact) Infinite resistance, (second contact) (A4) (third contact)
- **Driver one-touch close** (B5): (first contact) Infinite resistance, (second contact) (B5) (third contact)
- **Passenger open** (B4): (first contact) Infinite resistance, (second contact) (B4) (third contact)
- **Passenger close** (B4): (first contact) Infinite resistance, (second contact) (B4) (third contact)

### RIGHT-HAND DRIVE
**ELECTRIC WINDOWS - SUNROOF**

**Front electric window switches on driver’s door**

**Connection**

**Operating principle:**

Check the resistance using an ohmmeter. The value should be approximately 0 Ω when a contact is made between two tracks.

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
<th>Action</th>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Not used</td>
<td>None</td>
<td>A2</td>
<td>Driver's side electric window control</td>
</tr>
<tr>
<td>A3</td>
<td>+ Lighting</td>
<td>Infinitely</td>
<td>A4</td>
<td>Driver's side electric window control</td>
</tr>
<tr>
<td>A5</td>
<td>+ before ignition</td>
<td>Infinitely</td>
<td>A6</td>
<td>Not used</td>
</tr>
<tr>
<td>B1</td>
<td>Not used</td>
<td>Infinitely</td>
<td>B2</td>
<td>Not used</td>
</tr>
<tr>
<td>B3</td>
<td>Driver's side electric window control</td>
<td>Infinitely</td>
<td>B4</td>
<td>Earth</td>
</tr>
<tr>
<td>B5</td>
<td>Passenger side electric window control</td>
<td>Infinitely</td>
<td>A5</td>
<td>Driver basic opening</td>
</tr>
<tr>
<td>B6</td>
<td>Not used</td>
<td>Infinitely</td>
<td>A5</td>
<td>Driver basic closing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Infinitely</td>
<td>B4</td>
<td>Driver one-touch open</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Infinitely</td>
<td>B4</td>
<td>Driver one-touch close</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Infinitely</td>
<td>A5</td>
<td>Passenger open</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Infinitely</td>
<td>B4</td>
<td>Passenger close</td>
</tr>
</tbody>
</table>
### ELECTRIC WINDOWS - SUNROOF

**Front electric window switches on driver's door Connection**

**Operating principle:**
Check the resistance using an ohmmeter. The value should be approximately 0 \(\Omega\) when a contact is made between two tracks.

#### LEFT-HAND DRIVE

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Passenger side electric window control</td>
</tr>
<tr>
<td>A2</td>
<td>Connection with passenger switch</td>
</tr>
<tr>
<td>A3</td>
<td>+ lighting</td>
</tr>
<tr>
<td>A4</td>
<td>Driver's side electric window control</td>
</tr>
<tr>
<td>A5</td>
<td>Not used</td>
</tr>
<tr>
<td>A6</td>
<td>Not used</td>
</tr>
<tr>
<td>B1</td>
<td>Not used</td>
</tr>
<tr>
<td>B2</td>
<td>Passenger side electric window control</td>
</tr>
<tr>
<td>B3</td>
<td>Connection with passenger switch</td>
</tr>
<tr>
<td>B4</td>
<td>Earth</td>
</tr>
<tr>
<td>B5</td>
<td>Driver's side electric window control</td>
</tr>
<tr>
<td>B6</td>
<td>Not used</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Action</th>
<th>Tracks</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>Infini te resistance</td>
</tr>
<tr>
<td>Driver basic opening</td>
<td>A1 / A2 A4 / B4 B5 / B4</td>
</tr>
<tr>
<td>Driver basic closing</td>
<td>- - Infinite resistance</td>
</tr>
<tr>
<td>Driver one-touch open</td>
<td>- - 0 (first contact)</td>
</tr>
<tr>
<td>Driver one-touch close</td>
<td>- - 0 (second contact)</td>
</tr>
<tr>
<td>Passenger basic opening</td>
<td>- - Infinite resistance</td>
</tr>
<tr>
<td>Passenger basic closing</td>
<td>- - 0</td>
</tr>
<tr>
<td>Passenger one-touch open</td>
<td>- - Infinite resistance</td>
</tr>
<tr>
<td>Passenger one-touch close</td>
<td>- - 0 (second contact)</td>
</tr>
</tbody>
</table>
ELECTRIC WINDOWS - SUNROOF

Front electric window switches on driver's door Connections

Operating principle:
Check the resistance using an ohmmeter. The value should be approximately 0 Ω when a contact is made between two tracks.

Passenger one-touch opening
0 (second contact)
0 (first contact)

Passenger one-touch closing
0 (first contact)
0 (second contact)

Action
Tracks

Right-hand Drive

20901

Trac k 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

Action
Tracks

Infinite resistance

Driver basic opening
0

--

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

IV - REAR ONE-TOUCH ELECTRIC WINDOW (ALL TYPES)

Operating principle:
Check the resistance using an ohmmeter.
The value should be approximately 0 Ω when a contact is made between the two tracks.

Driver one-touch close 0 (second contact) 0 (first contact)
Passenger basic opening - - Infinite resistance
Passenger basic closing - - 0 -
Passenger one-touch opening - - 0 (second contact) 0 (first contact)
Passenger one-touch closing - - 0 (first contact) 0 (second contact)

Action
Tracks
A1 / B4 B3 - B4 B4 / A5 B4 / B6

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
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

[Diagram showing electric window control and tracks]

Check the capacitance using an ohmmeter.
The measurement should be approximately 0 Ω when a contact is made between the two tracks.

Table
<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Right-hand electric window control</td>
</tr>
<tr>
<td>A2</td>
<td>Connection to rear right-hand electric window control</td>
</tr>
<tr>
<td>A3</td>
<td>+ lighting</td>
</tr>
<tr>
<td>A4</td>
<td>Connection to rear left-hand electric window control</td>
</tr>
<tr>
<td>A5</td>
<td>Left-hand electric window control</td>
</tr>
<tr>
<td>A6</td>
<td>Not used</td>
</tr>
<tr>
<td>B1</td>
<td>Not used</td>
</tr>
<tr>
<td>B2</td>
<td>Right-hand electric window control</td>
</tr>
<tr>
<td>B3</td>
<td>Connection to rear right-hand electric window control</td>
</tr>
<tr>
<td>B4</td>
<td>Earth</td>
</tr>
<tr>
<td>B5</td>
<td>Connection to the rear left-hand electric window control</td>
</tr>
<tr>
<td>B6</td>
<td>Left-hand electric window control</td>
</tr>
</tbody>
</table>

[Diagram showing electric window control and tracks]
### Electric Windows - Sunroof

#### Front electric window switches on driver's door connection

<table>
<thead>
<tr>
<th>Action</th>
<th>Trac Ks</th>
<th>A5 / B4</th>
<th>B6 / B4</th>
<th>A1 / B4</th>
<th>B2 / B4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Driver basic opening</td>
<td>Infinite resistance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driver basic closing</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driver one-touch open</td>
<td>0 (first contact)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driver one-touch close</td>
<td>0 (second contact)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger basic opening</td>
<td>Infinite resistance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger basic closing</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger one-touch open</td>
<td>0 (first contact)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Passenger one-touch close</td>
<td>0 (second contact)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ELECTRIC WINDOWS - SUNROOF
Front electric window switch on the passenger door

The passenger power window switch is clipped to the handle.

REMOVAL

1. Unclip the upper section (1) of the handle.
2. Remove the electric window switch from the plate.
ELECTRIC WINDOWS - SUNROOF

Front electric window switch on the passenger door: Connection

Operating principle:
Check the resistance using an ohmmeter. The value should be approximately 0 Ω when a contact is made between two tracks.

One-touch electric window on passenger door
Operating principle:
Check the resistance using an ohmmeter. The value should be approximately 0 Ω when a contact is made between two tracks.

<table>
<thead>
<tr>
<th>Track Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1 Connection to driver's electric window</td>
<td>None</td>
</tr>
<tr>
<td>A2 Earth</td>
<td></td>
</tr>
<tr>
<td>A3 Passenger electric window control</td>
<td></td>
</tr>
<tr>
<td>B1 Passenger electric window control</td>
<td></td>
</tr>
<tr>
<td>B2 Connection to driver's window switch</td>
<td></td>
</tr>
<tr>
<td>B3 + lighting</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Action</th>
<th>Track</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>A1 / B1</td>
</tr>
<tr>
<td>Resistance in infinite</td>
<td>A2 / A3</td>
</tr>
</tbody>
</table>

Basic closing: Resistance in infinite
Basic opening: Resistance 0
ELECTRIC WINDOWS - SUNROOF
Front electric window switch on the passenger door:

<table>
<thead>
<tr>
<th>Action</th>
<th>Tracks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opening (one-touch)</td>
<td>A1 / B1, A2 / A3</td>
</tr>
<tr>
<td>Closing (one-touch)</td>
<td>A1 / B1, A2 / A3</td>
</tr>
<tr>
<td>Opening (second contact)</td>
<td>A1 / B1, A2 / A3</td>
</tr>
<tr>
<td>Closing (second contact)</td>
<td>A1 / B1, A2 / A3</td>
</tr>
</tbody>
</table>
ELECTRIC WINDOWS - SUNROOF
Rear electric window switches on rear doors

Removal:
1. Unclip the rear panel from the door.
2. Unclip the switch from the plate.
3. Remove the door panel plate.
### ELECTRIC WINDOWS - SUNROOF

Rear electric window switches on rear doors: Connection

**One touch electric window**

<table>
<thead>
<tr>
<th>Action</th>
<th>Tracks</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>- -</td>
</tr>
<tr>
<td>Basic closing</td>
<td>0* -</td>
</tr>
<tr>
<td>Basic opening</td>
<td>- 0*</td>
</tr>
<tr>
<td>One-touch closing</td>
<td>0* (first contact)</td>
</tr>
<tr>
<td>One-touch opening</td>
<td>0* (second contact)</td>
</tr>
</tbody>
</table>

**WARNING**

The rear switches cannot be checked with a multimeter. However, it is possible to shunt the corresponding tracks to determine the state of the 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).

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:**
The switch is removed in the same way as the driver's electric windows switch.

**Note:**
When the child safety lock is on, the resistance between tracks A3 and B1 is infinite.

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>+ lighting</td>
</tr>
<tr>
<td>A2</td>
<td>+ before ignition</td>
</tr>
<tr>
<td>A3</td>
<td>Earth</td>
</tr>
<tr>
<td>B1</td>
<td>Locking of rear electric windows - child safety (if the vehicle is equipped with it)</td>
</tr>
<tr>
<td>B2</td>
<td>Not used</td>
</tr>
<tr>
<td>B3</td>
<td>Child safety warning light control (depending on equipment level)</td>
</tr>
</tbody>
</table>

**One touch electric window**

**Note:**
When the child safety lock is on, the resistance between tracks A3 and B1 is infinite.
The one-touch electric window motors incorporate a non-removable electronics module. One-touch electric windows include an anti-pinch function.

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.

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.
<table>
<thead>
<tr>
<th>Track Description</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor power supply</td>
<td>2</td>
</tr>
<tr>
<td>Lowering control</td>
<td>3</td>
</tr>
<tr>
<td>Raising control</td>
<td>4</td>
</tr>
<tr>
<td>Earth</td>
<td>5</td>
</tr>
<tr>
<td>+ battery</td>
<td>6</td>
</tr>
<tr>
<td>Not used</td>
<td>7</td>
</tr>
<tr>
<td>Operation authorisation</td>
<td>8</td>
</tr>
</tbody>
</table>
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.

Note:
- For removing/refitting the rear window riser mechanism, refer to 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.

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).
### Track Description

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lowering control</td>
</tr>
<tr>
<td>2</td>
<td>Raising control</td>
</tr>
<tr>
<td>3</td>
<td>Earth</td>
</tr>
<tr>
<td>4</td>
<td>+ battery</td>
</tr>
<tr>
<td>5</td>
<td>Not used</td>
</tr>
<tr>
<td>6</td>
<td>Operating authorisation</td>
</tr>
</tbody>
</table>
I - GENERAL

The electric sunroof has an anti-pinch mode regulated according to vehicle speed.

Sunroof electric motor fault
In the event of a sunroof motor fault, it can be moved 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.

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.

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.
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.

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.

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.

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 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).

- Remove:
  - the front and rear handles using tool (Car. 1597),
  - the rear clip,
  - the two rear fasteners.

- 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).
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.

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).

WARNING
It is important to wait for at least 3 seconds before operating the control again.

Note:
During the initialisation procedure, the interval between two actions must not exceed 5 seconds, otherwise the electronics will start another initialisation cycle.
### Track Description

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sunroof control (track 1 of the switch)</td>
</tr>
<tr>
<td>2</td>
<td>Sunroof control (track 5 of the switch)</td>
</tr>
<tr>
<td>3</td>
<td>Sunroof control (track 2 of the switch)</td>
</tr>
<tr>
<td>4</td>
<td>Sunroof control (track 3 of the switch)</td>
</tr>
<tr>
<td>5</td>
<td>Not used</td>
</tr>
<tr>
<td>6</td>
<td>Not used</td>
</tr>
<tr>
<td>7</td>
<td>Power supply</td>
</tr>
<tr>
<td>8</td>
<td>Vehicle speed information</td>
</tr>
<tr>
<td>9</td>
<td>Central opening and closing authorisation signal</td>
</tr>
<tr>
<td>10</td>
<td>Earth</td>
</tr>
<tr>
<td>11</td>
<td>Not used</td>
</tr>
<tr>
<td>12</td>
<td>Not used</td>
</tr>
</tbody>
</table>

**Note:**
- The vehicle speed signal comes from the ABS computer.
- The "central opening and closing authorisation signal" comes from the UCH.
ELECTRIC WINDOWS - SUNROOF
Sunroof control: Connection

<table>
<thead>
<tr>
<th>Track Description</th>
<th>Switch position Trac ks 1 and 2</th>
<th>Switch position Trac ks 1 and 3</th>
<th>Switch position Trac ks 1 and 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motor (track 1)</td>
<td>Closed approx 0 Ω</td>
<td>Open resistance infinite</td>
<td>Slide position 1 resistance infinite</td>
</tr>
<tr>
<td>Motor (track 3)</td>
<td>slide position 2 resistance infinite</td>
<td>slide position 3 approx 0 Ω</td>
<td>pressed approx 0 Ω approx 0 Ω approx 0 Ω</td>
</tr>
<tr>
<td>Motor (track 4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not used</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor (track 2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not used</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

18937
Protection and Switching Unit: General

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 Switching Unit is available as a replacement part.

### Multiplex connection

- After ignition
- to the starter
- to the power assisted steering
- to the passenger compartment
- to the injection computer
- to the fuel pump
- to the diesel heater
- to the ABS computer
- to the automatic gearbox

### Keyless vehicle

- « neutral » input
- steering column electric lock

### Lighting management

- side lights
- dipped beam headlights
- main beam headlights
- fog lights (front)

### Cooling fan assembly management

- low speed
- high speed

### Air conditioning compressor clutch management

### Oil level and pressure display management

### Battery charge indicator display management

### Windscreen wipers management

### Timed rear screen de-icing management
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.

REFITTING

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

CONFIGURATION

- Alternator type: CF001
  - KCB1 90 BOSCH
  - TG11 110 VALEO
  - SG12 VALEO
  - LIE8 150 BOSCH
  - SG15L VALEO
  - OTHER TYPES

WARNING

- It is essential to take a reading of the Protection and Switching Unit configurations using the Diagnostic tool.

- The alternator type must be configured when replacing the Protection and Switching Unit - Starting - load Section.

Note:

- To unfasten the connector (3), use lock (4).

WARNING

- The alternator type must be configured when replacing the Protection and Switching Unit.
### Connector PPH1 (grey)
- Connector PEH (black)
- Connector PPH2 (brown)
- Connector PPA (black)
- Connector PEM (black)

#### Track Description
1. ABS computer supply
2. Heated rear screen and door mirrors control
3. Earth
4. Injection system supply

#### 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)

#### Track Description
1. Windscreen wiper high speed control
2. Windscreen wiper low speed control
3. Electronic earth
4. Right-hand dipped beam headlight output
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 airbag computer supply
11. + After ignition (passenger compartment)
12. Not used

#### 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
### Engine Interconnection Unit Protection and Switching Unit: Connection

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Earth input (controlled by the injection computer for the ignition system fuel pump)</td>
</tr>
<tr>
<td>2</td>
<td>Earth input (controlled by the injection computer for the actuators)</td>
</tr>
<tr>
<td>3</td>
<td>Alternator (charge signal)</td>
</tr>
<tr>
<td>4</td>
<td>Not used</td>
</tr>
<tr>
<td>5</td>
<td>Not used</td>
</tr>
<tr>
<td>6</td>
<td>Automatic gearbox neutral signal</td>
</tr>
<tr>
<td>7</td>
<td>Not used</td>
</tr>
<tr>
<td>8</td>
<td>Alternator (excitation)</td>
</tr>
<tr>
<td>9</td>
<td>Diesel heater relay control output</td>
</tr>
<tr>
<td>10</td>
<td>Oil level sensor</td>
</tr>
<tr>
<td>11</td>
<td>Oil level sensor</td>
</tr>
<tr>
<td>12</td>
<td>Oil pressure sensor</td>
</tr>
</tbody>
</table>

### Track Description

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Injection system supply</td>
</tr>
<tr>
<td>2</td>
<td>Injection system supply</td>
</tr>
<tr>
<td>3</td>
<td>Starter control</td>
</tr>
<tr>
<td>4</td>
<td>Fan assembly low speed control</td>
</tr>
</tbody>
</table>

### Track Description

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Automatic gearbox computer supply</td>
</tr>
<tr>
<td>2</td>
<td>Not used</td>
</tr>
<tr>
<td>3</td>
<td>Diesel heater supply output</td>
</tr>
<tr>
<td>4</td>
<td>Not used</td>
</tr>
<tr>
<td>5</td>
<td>Air conditioning clutch control</td>
</tr>
<tr>
<td>6</td>
<td>Reversing lights supply</td>
</tr>
<tr>
<td>7</td>
<td>Not used</td>
</tr>
<tr>
<td>8</td>
<td>Ignition coil supply</td>
</tr>
<tr>
<td>9</td>
<td>Reversing lights control</td>
</tr>
<tr>
<td>10</td>
<td>Automatic gearbox computer supply</td>
</tr>
<tr>
<td>11</td>
<td>Not used</td>
</tr>
<tr>
<td>12</td>
<td>Not used</td>
</tr>
</tbody>
</table>

### Track Description

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High-speed fan assembly supply</td>
</tr>
</tbody>
</table>

### Track Description

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>+ battery</td>
</tr>
</tbody>
</table>
**Location**

The diagnostic socket is located in front of the cigarette lighter behind the plastic cover.

**Connection**

- **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
- **13** Not used
- **14** Multiplex connection (CAN L)
- **15** Not used
- **16** + Battery

---

*Table*

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>after ignition</td>
</tr>
<tr>
<td>2</td>
<td>Not used</td>
</tr>
<tr>
<td>3</td>
<td>Not used</td>
</tr>
<tr>
<td>4</td>
<td>Earth</td>
</tr>
<tr>
<td>5</td>
<td>Earth</td>
</tr>
<tr>
<td>6</td>
<td>Multiplex connection (CAN H)</td>
</tr>
<tr>
<td>7</td>
<td>Fault finding K signal</td>
</tr>
<tr>
<td>8</td>
<td>Not used</td>
</tr>
<tr>
<td>9</td>
<td>Not used</td>
</tr>
<tr>
<td>10</td>
<td>Not used</td>
</tr>
<tr>
<td>11</td>
<td>Not used</td>
</tr>
<tr>
<td>12</td>
<td>Not used</td>
</tr>
<tr>
<td>13</td>
<td>Not used</td>
</tr>
<tr>
<td>14</td>
<td>Multiplex connection (CAN L)</td>
</tr>
<tr>
<td>15</td>
<td>Not used</td>
</tr>
<tr>
<td>16</td>
<td>+ Battery</td>
</tr>
</tbody>
</table>
Central communications unit
(2) Radio
(3) Climate control
(4) Card reader
(5) Right-hand electric window controls
(6) Right side impact sensors
(7) Airbag computer
(8) Electric steering lock
(9) Rain and light sensors
(10) Instrument panel
(11) Right side xenon bulb computer
(12) Anti-lock braking system / Electronic Stability Program
(13) Automatic transmission computer
(14) Left side xenon bulb computer
(15) Battery
(16) Engine management injection computer
(17) Protection and Switch Unit
(18) UCH
(19) Power-assisted steering computer
(20) Left-hand electric window controls
(21) Left side impact sensor
(22) Hands-free unlocking antenna
(23) CD changer
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.

/box3
MULTIPLEXING

Description

To improve vehicle performance, a growing number of computers process 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) resemble 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 to multiple computers 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.
MULTIPLEXING

Description

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 strip. 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

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 radiation. 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

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:

1. Can_H
2. Can_L
3. 2.5 V
4. 3.5 V
5. 1.5 V
6. Recessive
7. Dominant
8. 0 V
9. 2 V

... (Diagram and more text)
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 re-sent 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.

1. **CAN Frame:**
   - A field marking the start of a CAN frame
   - A weight field indicating the computer(s) for which the message is intended (and network priority access when several computers try to transmit simultaneously)
   - A control field to ensure the integrity of the transmission
   - A field containing the message data
   - An acknowledgement field indicating that the frame was properly transmitted through the network
   - A field marking the end of a CAN frame
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:
  - \(60\ \Omega\) between Can_H and Can_L (battery disconnected, between terminals 6 and 14 of the diagnostic socket),
  - \(120\ \Omega\) between Can_H and Can_L, airbag computer side (disconnected from the network),
  - \(120\ \Omega\) between Can_H and Can_L, injection computer side (disconnected from the network),
- the frames can be displayed using an oscilloscope.

XII - OPERATING DIAGRAM

WARNING

It is forbidden to use terminals or to solder the multiplex network. To repair it, the harness has to be replaced.

Diagram:

- (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

= : Engine multiplex connection
____ : Passenger compartment multiplex connection
= = = : Multimedia multiplex connection

(13) Climate control
(14) Driving school unit
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.

<table>
<thead>
<tr>
<th>Computer</th>
<th>Status</th>
<th>Location</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer UCH</td>
<td></td>
<td>Present</td>
<td>Present</td>
</tr>
<tr>
<td>Computer Airbag/Pretensioners</td>
<td></td>
<td>Present</td>
<td>Present</td>
</tr>
<tr>
<td>Protection and Switching Unit</td>
<td></td>
<td>Present</td>
<td>Present</td>
</tr>
<tr>
<td>Anti-lock braking system (ABS)</td>
<td></td>
<td>Present</td>
<td>Present</td>
</tr>
<tr>
<td>Steering lock</td>
<td>Present</td>
<td>Present</td>
<td>Present</td>
</tr>
<tr>
<td>Instrument panel</td>
<td>Present</td>
<td>Present</td>
<td>Present</td>
</tr>
<tr>
<td>Passenger Compartment Control Unit (UCH)</td>
<td></td>
<td>Present</td>
<td>Present</td>
</tr>
<tr>
<td>Power Assisted Steering (PAS)</td>
<td></td>
<td>Present</td>
<td>Present</td>
</tr>
<tr>
<td>Airbag</td>
<td>Present</td>
<td>Present</td>
<td>Present</td>
</tr>
<tr>
<td>Automatic gearbox</td>
<td>Dependent on version</td>
<td>Present</td>
<td>Present</td>
</tr>
<tr>
<td>LPG</td>
<td>Dependent on version</td>
<td>Present</td>
<td>Present</td>
</tr>
<tr>
<td>Climate control</td>
<td>Dependent on version</td>
<td>Present</td>
<td>Present</td>
</tr>
<tr>
<td>Central Communications Unit (CCU)</td>
<td></td>
<td>Dependent on version</td>
<td>Present</td>
</tr>
<tr>
<td>Roof control unit</td>
<td>Dependent on version</td>
<td>Present</td>
<td>Present</td>
</tr>
</tbody>
</table>

Option on the convertible...
MULTIPLEXING
Multiplex network configuration

<table>
<thead>
<tr>
<th>Component</th>
<th>XENON Bulbs</th>
<th>Computer UCH</th>
<th>Airbag/pretensioners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present</td>
<td>Present</td>
<td>Present</td>
<td>Present</td>
</tr>
<tr>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
<td>Absent</td>
</tr>
</tbody>
</table>

The xenon bulbs are not connected to the multiplex network.
**MULTIPLEXING**

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.

<table>
<thead>
<tr>
<th>Computer</th>
<th>UCH</th>
<th>Airbag/pre tensioners</th>
<th>Injection</th>
<th>Protection and Switching unit</th>
<th>Anti-lock braking system</th>
<th>Steering lock</th>
<th>Instrument panel</th>
<th>UCH</th>
<th>Power Assisted Steering</th>
<th>Airbag</th>
<th>Automatic gearbox</th>
<th>LPG</th>
<th>Climate control</th>
<th>Central Communications Unit</th>
<th>Sunroof control</th>
<th>Self-opening unit</th>
<th>Xenon bulbs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*Computer UCH Airbag*
MULTIPLEXING

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.

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 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.
AIRBAG AND PRETENSIONERS

General

Programmed Restraint System

(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)
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.
AIRBAG AND PRETENSIONERS

General

PRECAUTIONS DURING REPAIR

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.

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.

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.

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.
AIRBAG AND PRETENSIONERS
Operating principle

1 - During a front impact of sufficient severity:
- The seat belts restrain the driver and the passengers.
- The seat belt 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.

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 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.

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.

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.
### AIRBAG AND PRETENSIONERS

#### 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).

*unless deactivated by switch.

<table>
<thead>
<tr>
<th>Component</th>
<th>Equipment</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buckle pretensioner (driver and passenger)</td>
<td>Compulsory</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Rear pyrotechnic inertia reel (side seats)</td>
<td>Standard</td>
<td><strong>X</strong></td>
<td>X</td>
<td>No</td>
</tr>
<tr>
<td>Driver's front airbag</td>
<td>Standard</td>
<td>-</td>
<td>X</td>
<td>No</td>
</tr>
<tr>
<td>Passenger front airbag*</td>
<td>Standard</td>
<td>-</td>
<td>X</td>
<td>No</td>
</tr>
<tr>
<td>Lap belt pretensioner (driver and passenger)</td>
<td>In series (on 5-door vehicle only)</td>
<td>--</td>
<td>X</td>
<td>No</td>
</tr>
<tr>
<td>Anti-submarining airbag in the seat squab (driver and passenger)</td>
<td>Standard</td>
<td>-</td>
<td>X</td>
<td>No</td>
</tr>
<tr>
<td>Front chest airbags (driver and passenger)*</td>
<td>Standard</td>
<td>No</td>
<td>Yes</td>
<td>iimpact side</td>
</tr>
<tr>
<td>Rear chest airbags</td>
<td>Optional</td>
<td>No</td>
<td>Yes</td>
<td>iimpact side</td>
</tr>
<tr>
<td>Curtain airbags</td>
<td>Standard</td>
<td>No</td>
<td>Yes</td>
<td>iimpact side</td>
</tr>
<tr>
<td>Airbag deflector</td>
<td>Fit the repair plate</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Must be replaced where installed.
AIRBAG AND PRETENSIONERS
Precautions during repair

** 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

- 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).

Essential equipment
Diagnostic tool

Note:
- To unlock the airbag computer, use the same procedure, confirming line VP007 « unlocking computer ».
- 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 and Pretensioners

Airbag Computer

Removal

- Disconnect the battery.
- Unclip the card reader access cover.
- Unclip the diagnostic socket access cover.
- Remove:
  - the gear lever gaiter,
  - the knob.
- Open the glove compartment.
- Unclip the handbrake surround trim (1) and (2).
- Disconnect the heated seat connectors.
- Unclip the lower cover (3).

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).
Airbag computer

- Unclip the cigarette lighter holder.
- Disconnect the connector.
- Move the front seats forward.
- Remove screws (5).
- Release:
  - the console carefully (4),
  - the gear lever console.
- Cut the carpet at (6) to remove the soundproofing material.
- Release the computer unit protective housing.
AIRBAG AND PRETENSIONERS
Airbag computer

Disconnect the connector by moving the bolt.

Remove the mounting bolts.

Position the computer before connecting it.

Tighten to torque the airbag computer mounting bolts (0.8 daNm).

Reconnect the connector itself.

To refit, proceed in the reverse order to removal.

Carry out the necessary configuration operations.

If everything is correct, unlock the computer if not, refer to fault finding manual.

WARNING
Replace the protective housing (7), every time it is removed.

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

IMPORTANT
Check the airbag computer using the Diagnostic tool.
### Airbag and Pretensioners

**Airbag Computer: Connection**

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Passenger front airbag volume 2</td>
</tr>
<tr>
<td>2</td>
<td>Passenger front airbag volume 1</td>
</tr>
<tr>
<td>3</td>
<td>Driver's front airbag volume 1</td>
</tr>
<tr>
<td>4</td>
<td>Driver's front airbag volume 2</td>
</tr>
<tr>
<td>5</td>
<td>Not used</td>
</tr>
<tr>
<td>6</td>
<td>Not used</td>
</tr>
<tr>
<td>7</td>
<td>After ignition</td>
</tr>
<tr>
<td>8</td>
<td>Not used</td>
</tr>
<tr>
<td>9</td>
<td>Not used</td>
</tr>
<tr>
<td>10</td>
<td>Multiplex connection (CAN L)</td>
</tr>
<tr>
<td>11</td>
<td>Multiplex connection (CAN H)</td>
</tr>
<tr>
<td>12</td>
<td>Passenger's level 2 front airbag</td>
</tr>
<tr>
<td>13</td>
<td>Passenger front airbag volume 1</td>
</tr>
<tr>
<td>14</td>
<td>Driver's front airbag volume 1</td>
</tr>
<tr>
<td>15</td>
<td>Driver's front airbag volume 2</td>
</tr>
<tr>
<td>16</td>
<td>Not used</td>
</tr>
<tr>
<td>17</td>
<td>Not used</td>
</tr>
<tr>
<td>18</td>
<td>Earth</td>
</tr>
<tr>
<td>19</td>
<td>Not used</td>
</tr>
<tr>
<td>20</td>
<td>Not used</td>
</tr>
<tr>
<td>21</td>
<td>Airbag inhibitor switch</td>
</tr>
<tr>
<td>22</td>
<td>Airbag inhibitor switch</td>
</tr>
</tbody>
</table>

**Buckle Pretensioner**

<table>
<thead>
<tr>
<th>Track</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Buckle pretensioner: driver</td>
</tr>
<tr>
<td>2</td>
<td>Driver's front lap belt pretensioner (5-door) or anti-submarining airbag (3-door)</td>
</tr>
<tr>
<td>3</td>
<td>Driver's front lap belt pretensioner (5-door) or anti-submarining airbag (3-door)</td>
</tr>
</tbody>
</table>

### Note

- **CAN L**: Controller Area Network Line
- **CAN H**: Controller Area Network High-Line
- **5-door**: Vehicles with five doors
- **3-door**: Vehicles with three doors
<table>
<thead>
<tr>
<th>Pin</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Not used</td>
</tr>
<tr>
<td>1</td>
<td>Not used</td>
</tr>
<tr>
<td>2</td>
<td>Not used</td>
</tr>
<tr>
<td>3</td>
<td>Not used</td>
</tr>
<tr>
<td>4</td>
<td>Not used</td>
</tr>
<tr>
<td>5</td>
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<td>Driver's seat position sensor</td>
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</tr>
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<td>+ Driver's seat belt buckle contact</td>
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<td>15</td>
<td>+ Driver's front chest side airbag</td>
</tr>
<tr>
<td>16</td>
<td>- Driver's front chest side airbag</td>
</tr>
<tr>
<td>17</td>
<td>+ Curtain airbag driver's side</td>
</tr>
<tr>
<td>18</td>
<td>- Curtain airbag driver's side</td>
</tr>
<tr>
<td>19</td>
<td>+ Rear pyrotechnic inertia reel driver's side</td>
</tr>
<tr>
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<td>- Rear pyrotechnic inertia reel driver's side</td>
</tr>
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</tr>
<tr>
<td>29</td>
<td>+ Rear chest side airbag driver's side</td>
</tr>
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<td>- Rear chest side airbag driver's side</td>
</tr>
<tr>
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</tr>
<tr>
<td>39</td>
<td>+ passenger front lap belt pretensioner (5-door) or + anti-submarining airbag (3-door)</td>
</tr>
<tr>
<td>40</td>
<td>- passenger front lap belt pretensioner (5-door) or - anti-submarining airbag (3-door)</td>
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<td>+ rear pyrotechnic inertia reel passenger side</td>
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</tr>
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<td>43</td>
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</tr>
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<tr>
<td>56</td>
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</tr>
<tr>
<td>57</td>
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</tr>
<tr>
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</tr>
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Track Description
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</table>
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.

**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
AIRBAG AND PRETENSIONERS

Side impact sensors

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.
❏ Unlock the computer.
❏ To refit, proceed in the reverse order of removal.

Essential equipment

Diagnostic tool

Tightening torques

m 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).

IMPORTANT

Check using the Diagnostic tool.

Note:

These sensors do not require programming with the Diagnostic tool.
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.

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.
Inhibitor switch: Operating principle

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.
AIRBAG AND PRETENSIONERS
INHIBITOR SWITCH

REMOVAL

- 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.

- 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.

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).

IMPORTANT

Check the airbag computer using the Diagnostic tool.
AIRBAG AND PRETENSIONERS

Front buckle pretensioner

REMOVAL

- Remove the plastic housing, (refer to the bodywork workshop repair manual).
- Remove:
  - the pretensioner connector,
  - the pretensioner mounting bolt (1),
  - the pretensioner assembly.

REFITTING

- To refit, proceed in the reverse order of removal.
- Follow the correct routing of the wiring and the wiring mounting points under the seat.

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).

IMPORTANT

For scrapping a non-triggered pretensioner, (Section Airbag and Pretensioners, Destruction procedure, page 88C-38).

WARNING

If a pretensioner has been triggered, some parts must be replaced (Section Airbag and Pretensioners, Destruction procedure, page 88C-38).
AIRBAG AND PRETENSIONERS
Front buckle pretensioner

- Tighten to torque the pretensioner mounting bolt (2.1 daNm) (1).
- 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
Rear pyrotechnic inertia reel

The rear seat belts (side seats) are fitted with pyrotechnic inertia reels.

REMOVAL
- Remove the trim:
  - from the luggage compartment,
  - from the rear quarter panel.
- Remove the seat belt mounting bolt (1).
- Disconnect the connector.
- Remove the pretensioner mounting bolt (2).

REFITTING
- To refit, proceed in the reverse order of removal.
- 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).
- If everything is correct, unlock the computer if not, refer to fault finding manual.

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).

WARNING
If a pretensioner has been triggered, some parts must be replaced (Section Airbag and Pretensioners, Precautions during repair, page 88C-5).

IMPORTANT
Check the airbag computer using the Diagnostic tool.

Tightening torques
- pretensioner mounting bolt: 2.1 daNm
- seat belt fitting mounting bolt: 2.1 daNm

IMPORTANT
For scrapping a non-triggered pretensioner, (Section Airbag and Pretensioners, Destruction procedure, page 88C-38).
The front seats of the vehicle are fitted with two pretensioning devices.

5-door saloon

Pretensioning is first applied to the buckle strap and then to the lap belt strap. Restraint is optimised with limited anti-submarining.

3-door saloon

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.

1. Inertia reel with integral force limiter
2. Lap belt pretensioner
3. Buckle pretensioner
4. Inertia reel with integral force limiter
5. Anti-submarining airbag
6. Buckle pretensioner
AIRBAG AND PRETENSIONERS
Front lap belt pretensioner

REMOVAL

1. Undo the seat belt by pressing the lock (1).

2. Remove the plastic housing.

3. Remove:
   - the pretensioner mounting bolt (2),
   - the pretensioner connector,
   - the pretensioner assembly.

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).

IMPORTANT
To refit an airbag which has not been triggered, (Section Airbag and Pretensioners, Destruction procedure, page 88C-38).
AIRBAG AND PRETENSIONERS

Front lap belt pretensioner

B84 or S84

REFITTING

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

❏ 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.

❏ If everything is correct, unlock the airbag computer, if not, refer to the fault finding manual.

WARNING

When an airbag has been triggered, certain parts must be replaced (« Precautions for repair »).

IMPORTANT

Check the airbag computer using the Diagnostic tool.
AIRBAG AND PRETENSIONERS
Anti-submarining airbag

**Removal**

- Remove:
  - the seat,
  - the cushion upholstery (see bodywork manual).
- Disconnect the anti-submarining airbag connector.
- Remove the mounting bolts (1).

**Refitting**

- To refit, proceed in the reverse order of removal.
- 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.
- If everything is correct, unlock the airbag computer, if not, refer to the fault finding manual.

**Essential equipment**

- Diagnostic tool
- Tightening torques
  - Anti-submarining airbag mounting bolts 0.8 daNm

**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 an anti-submarining airbag has been triggered, certain parts must be replaced (Section Airbag and Pretensioners, Precautions during repair, page 5).

**Important**

Check the airbag computer using the Diagnostic tool.

**Section Airbag and Pretensioners, Destruction procedure, page 38.**

**Section Airbag and Pretensioners, Precautions during repair, page 5.**
The driver's front airbag is fitted with a dual 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.
- 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).
- Unclip the connector mountings at (3) using a small screwdriver.
- Disconnect the connectors:
  - driver's front airbag,
  - cruise control buttons.

**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.
AIRBAG AND PRETENSIONERS
Driver’s front setting

RELEASE
- The airbag,
- the connector mounting clip with a small flat screwdriver.

REFITTING
- Fit both connectors.
- Position the airbag on the steering wheel.
- Slide the airbag downwards to clip it in place.
- If everything is correct, unlock the airbag computer, if not, refer to the fault finding manual.

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).

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.

IMPORTANT
- Check the airbag computer using the Diagnostic tool.
Passenger's airbag

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.
- Remove the dashboard (Section Instrument panel, Dashboard, page 83A-1).
- Remove the four airbag mounting bolts (1).

**Essential equipment**

- Diagnostic tool
- Tightening torques

**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.

**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).
AIRBAG AND PRETENSIONERS
Passenger's airbag

To refit, proceed in the reverse order of removal.

Tighten to torque the airbag mounting bolts (2 Nm).

If everything is correct, unlock the airbag computer, if not, refer to the fault finding manual.

Note: The airbag connectors (2) can be accessed by removing the passenger glovebox.

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.

IMPORTANT Check the airbag computer using the Diagnostic tool.

Page 88C-5
AIRBAG AND PRETENSIONERS
Front (left) side airbag

Front (chest) side airbag

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

1. Disconnect the battery.
2. Remove the seat.
3. Disconnect:
   - the airbag module wiring,
   - the airbag module earth wiring.
4. Remove the mounting rivet (1).
5. Release the airbag module.

REFITTING

1. Position the airbag on the frame.
2. Rivet the airbag to the frame (special rivet).
3. Refit the wiring under the seat as before and respect the routing and the mounting points.
4. Connect the earth wire.
5. Verify that connector is locked correctly.
6. Refit the seat trim, following the advice (see Workshop Repair Manual 365 - bodywork).
7. Fit the seat to the vehicle (see Workshop Repair Manual 365 - bodywork).

Essential equipment

Diagnostic tool

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.

IMPORTANT
To refit an airbag which has not been triggered, (Section Airbag and Pretensioners, Destruction procedure, page 88C-38).

WARNING
When an airbag has been triggered, certain parts must be replaced (Section Airbag and Pretensioners, Precautions during repair, page 88C-5).

IMPORTANT
Check the airbag computer using the Diagnostic tool.
AIRBAG AND PRETENSIONERS  
Front (driver) side airbag

If everything is correct, unlock the airbag computer, if not, refer to the fault finding manual.
AIRBAG AND PRETENSIONERS
Rear side airbag (chest)

The rear side chest airbag module is mounted on the quarter panel lining. The airbag detaches the lining when it deploys.

**REMOVAL**
- Remove the trim (see Workshop Repair Manual 365 - bodywork).
- Disconnect:
  - the airbag connector,
  - the airbag earth wire.
- Remove:
  - the two mounting bolts
  - the rear side chest airbag.

**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.
- If everything is correct, unlock the computer, if not, refer to fault finding manual.

**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).

To scrap an airbag which has not been triggered, (Section Airbag and Pretensioners, Destruction procedure, page 88C-38).

Check the airbag computer using Diagnostic tool.

**Essential equipment**
- Diagnostic tool
- Tightening torques
  - m rear side chest airbag mounting bolts 0.4 daNm

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*Note: The diagrams and illustrations are not fully visible in the image.*
AIRBAG AND PRETENSIONERS

Rear side airbag chest

The rear side chest airbag module is mounted on the quarter panel lining. The airbag detaches the lining when it deploys.

REMOVAL

- Remove the trim (see Workshop Repair Manual 365 - bodywork).
- Disconnect:
  - the airbag connector,
  - the airbag earth wire.
- Remove:
  - the two mounting bolts (1),
  - the rear side chest airbag.

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.
- If everything is correct, unlock the computer if not, refer to the fault finding manual.

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).

To scrap an airbag which has not been triggered, (Section Airbag and Pretensioners, Destruction procedure, page 88C-38).

Check the airbag computer using Diagnostic tool.

Essential equipment

Diagnostic tool

Tightening torques

m rear side chest airbag mounting bolt

0.4 daNm

102320
The side curtain airbag is mounted behind the headlining. The air bag detaches the headlining when it deploys.

**Removal**

- Disconnect the connector (1) from the module.
- Remove the module mounting bolts (2).
- The curtain section (3) is clipped onto the body.

**Essential equipment**

- Diagnostic tool
- Tightening torques

**Rear side chest airbag mounting bolt**

**0.8 daNm**

**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).
AIRBAG AND PRETENSIONERS
Curtain side airbag

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.

REFITTING

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.

I - FITTING THE PAD

IMPORTANT
To scrap an airbag which has not been triggered, (Section Airbag and Pretensioners, Destruction procedure, page 88C-38).

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).

Note:
The pad is identical on the left and right-hand sides.

20234
1. Clean the entire airbag area, removing any residue from the airbag deployment.
2. Check the airbag computer for any errors.
3. Check the airbag module for any damage.
4. Check the wiring harness for any damage.
5. Check the tensioners for any damage.
6. Check the airbag module for any damage.
7. Check the airbag computer for any errors.
8. Check the wiring harness for any damage.
9. Check the tensioners for any damage.
10. Check the airbag module for any damage.
11. Check the airbag computer for any errors.
12. Check the wiring harness for any damage.
13. Check the tensioners for any damage.
14. Check the airbag module for any damage.
15. Check the airbag computer for any errors.
16. Check the wiring harness for any damage.
17. Check the tensioners for any damage.
18. Check the airbag module for any damage.
19. Check the airbag computer for any errors.
20. Check the wiring harness for any damage.
21. Check the tensioners for any damage.
22. Check the airbag module for any damage.
23. Check the airbag computer for any errors.
24. Check the wiring harness for any damage.
25. Check the tensioners for any damage.
26. Check the airbag module for any damage.
27. Check the airbag computer for any errors.
28. Check the wiring harness for any damage.
29. Check the tensioners for any damage.
30. Check the airbag module for any damage.
31. Check the airbag computer for any errors.
32. Check the wiring harness for any damage.
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AIRBAG AND PRETENSIONERS

Destruction procedure

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.

Put the airbag on two wooden blocks.

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.

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.
AIRBAG AND PRETENSIONERS
Destruction procedure

Destruction is carried out in a stack of old tyres. Make sure that deployment of the airbag 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.