RENAULT

Workshop Repair Manual

AIRBAGS, PRETENSIONERS and SEAT BELTS

PRS

All operations on airbag systems and pretensioners must be carried out by qualified trained personnel.

This document cancels and replaces

- **the manuals:**
  - **Airbags and seat belt pretensioners PRS Kangoo - Mégane - Safrane**
  - **Mégane side airbags**
  - **Laguna side airbag**
- **Technical Notes** **3092A - 3148A - 3324A**
- **the "Airbag and seat belt pretensioners" chapters in Technical Notes 3003A and 3022A**

77 11 292 862 **DECEMBER 1999** **EDITION ANGLAISE**

"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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These vehicles are fitted with **PRS** (**P**rogrammed **R**restraint **S**ystem) type passive safety equipment comprising:
– a driver's front airbag with a PRS inflatable bag,
– a passenger's front airbag (if fitted) with a PRS inflatable bag,
– front pretensioners (unchanged),
– specific front seat belts with **P**rogrammed **R**estraint **S**ystem,
– a computer specific to this unit (**30** or **50 track** if fitted),
– a driver's and passenger's side airbag unit (if fitted) with impact sensor offset in the centre pillar of each side (except Safrane, see **Technical Note 2798A**).

WARNING

In this equipment, (front PRS airbags), the seat belts are linked to the airbag function.

The programmed restraint system is calibrated differently depending on whether or not the seat belts are to be fitted in front of a PRS airbag (it is vital that the reference for each part is checked before replacement).

It is strictly forbidden to fit PRS seat belts on these vehicles where there is no airbag.

NOTE: For more PRS seat belt specifications, see the corresponding bodywork Technical Note.

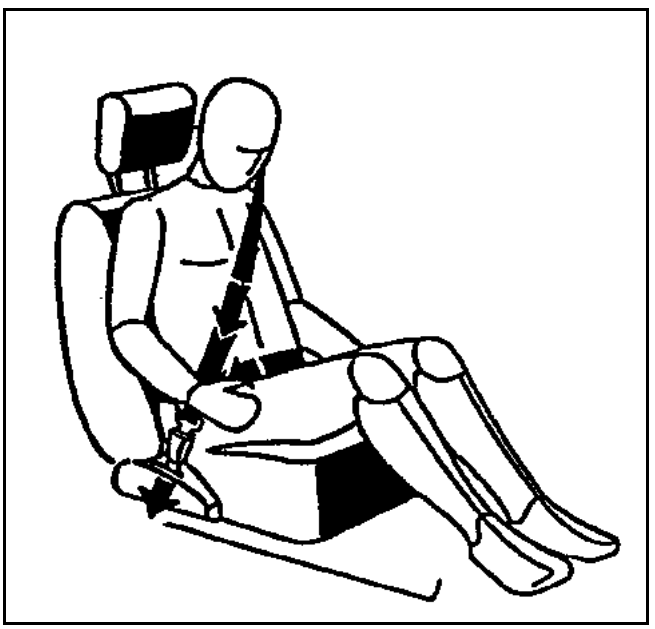
GENERAL

All operations on airbag and pretensioner systems must be carried out by qualified trained personnel.

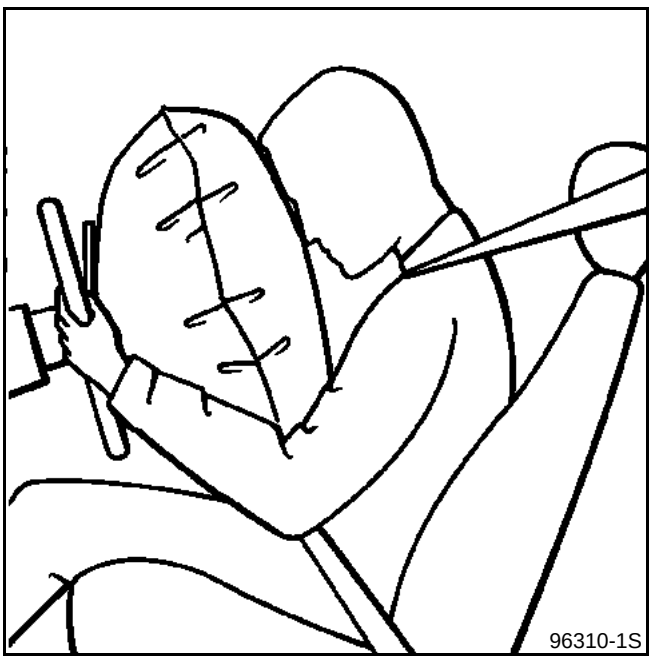
These safety elements are complementary.

During a front impact of a sufficient severity:

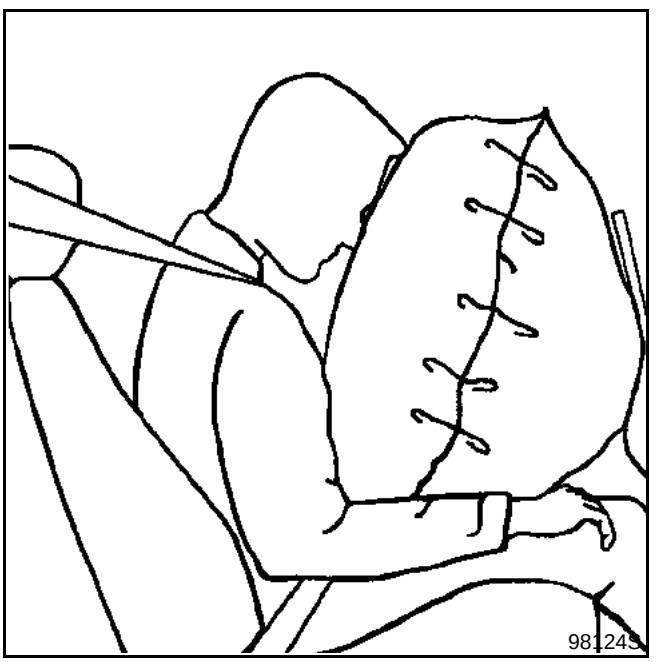
- **the front seat belts** restrain the driver and the passenger.
- **the pretensioners** tighten the front seat belts so that they flatten against the body.



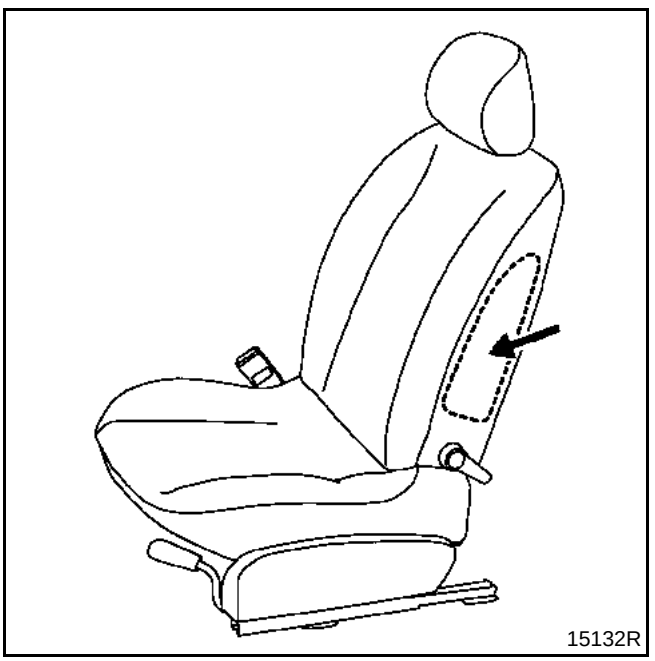
- **The programmed restraint system (PRS**) limits the force of the seat belt against the body.
- **The airbag cushions** inflate:
  – from the centre of the steering wheel so that the driver's head is protected,



  – from the dashboard so that the front passenger's head is protected (if fitted).



During side impact of a sufficient severity, the corresponding side airbag (impact side) deploys on the door side to protect:
– the chest of the passenger in the seat for autonomous versions (Safrane see **Technical Note 2798A**),
– the head and chest of the passenger on non autonomous versions (except Safrane).



IMPORTANT:

- Do not put a cover on the front seats.
- Do not place objects in the airbag deployment area.
- When working on the sill pane (on the side impact sensor, the bodywork, the seat belt retractor, etc.), it is vital that you lock the airbag unit using a fault finding tool.
- For special features of seat trim removal and refitting operations refer to the corresponding **bodywork Technical Note 539A**.

NOTE: For the Safrane (fitted with autonomous side airbags), see **Technical Note 2798A**.

IDENTIFICATION

Vehicles fitted with front airbags are identified by stickers placed in the lower corners of the windscreen on each side and by the inscription "**PRS Airbag**" in the centre of the steering wheel and on the dashboard (if fitted).

Vehicles fitted with side airbags are identified by stickers placed in the lower corners of the windscreen on each side and by the inscription "**Airbag**" on the side of the front seat backs (if fitted).

Remember to fit the labels showing that the vehicle is fitted with airbags every time the windscreen is replaced.

All these labels are available in a set with part no.: **77 01 205 442**.

IMPORTANT: It is vital that pyrotechnic systems (pretensioners, front and side airbags) are checked using the fault finding tools:
– following an accident which did not trigger the devices,
– following theft or attempted theft of the vehicle,
– before selling a used vehicle.

SPECIAL TOOLING

Faults may be traced in these systems using the following fault finding tools:

- **XR25** (depending on version),
- **NXR**,
- **OPTIMA 5800**,
- **CLIP**.

These tools allow faults in the computer or faulty lines to be detected (see "**Fault finding**" section).

NOTE: These tools have an auxiliary function which allows ignition lines to be deactivated to prevent any risk of triggering the pyrotechnic gas generators.

The **NXR** or **CLIP** tools also have an "**Airbag and pretensioner wiring harness check"** function which is similar to the functionality of the **XRBAG** tool.

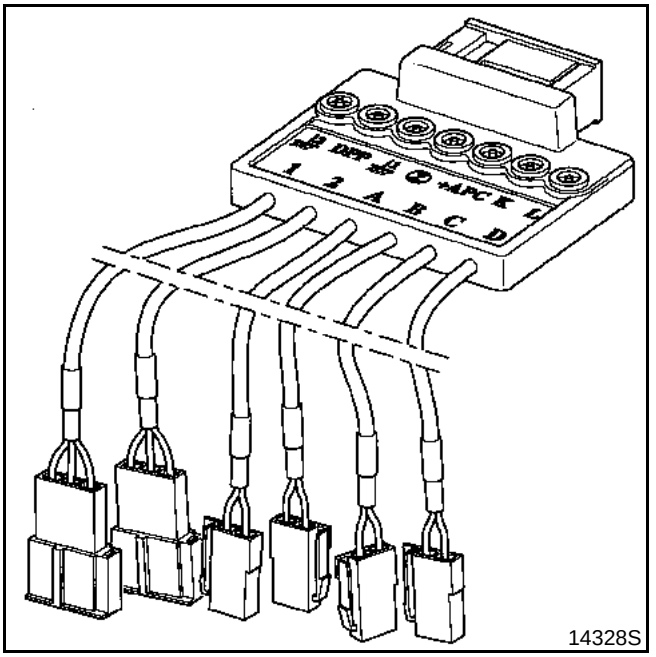
XRBAG TEST UNIT (Elé. 1288)

This unit is a tool specifically designed for testing and fault finding on airbag devices and seat belt pretensioners.

It allows electrical measurements to be carried out on the various lines in the systems (See "**Fault finding**" section).

ATTENTION: It is forbidden to take measurements on these systems with an ohmmeter or other electrical measuring device: there is a risk of triggering due to the operating current of the device.

30 TRACK ADAPTER (B40)
For vehicles without side airbags and all Safrane models



This bornier connects in place of the computer.

Using the **XRBAG, NXR** and **CLIP**, it is used to check all the ignition lines, to measure the voltage supply to the computer and to force illumination of the airbag warning light on the instrument panel.

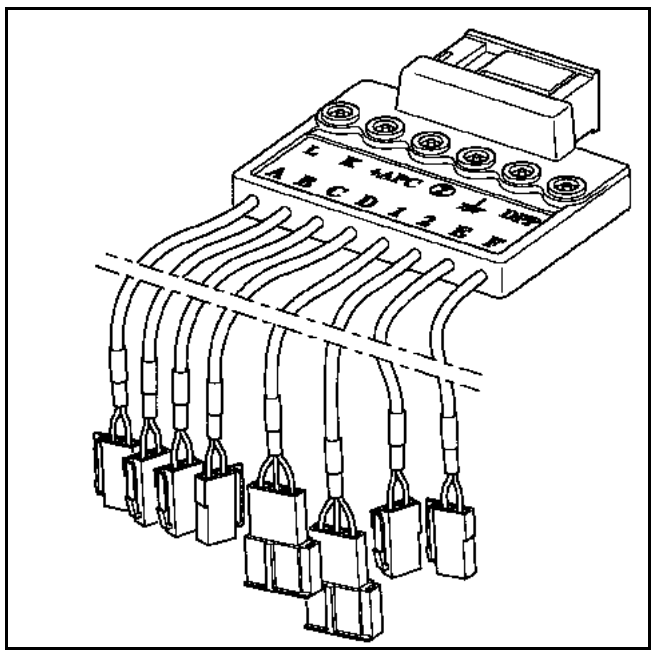
Terminals also allow continuity checks of fault finding lines, warning light and supply lines to the computer (see "**Fault finding**" section).

NOTE: The **DPP** terminals and **earth n° 2** are not used on this system.

Identification of output wiring on the adapter

1 : Supply and warning light
2 : Not used
A : Driver's airbag lines
B : Passenger airbag lines
C : Passenger's pretensioner lines
D : Driver's pretensioner lines

50 TRACK ADAPTER XRBAG (B50)
For vehicles with side airbags (except Safrane)



This bornier connects in place of the computer.

Using the **XRBAG, NXR** and **CLIP**, it is used to check all the ignition lines, to measure the supply voltage to the computer and to force illumination of the airbag warning light on the instrument panel.

Terminals allow continuity checks of fault finding lines, earth warning light and supply to the computer lines (see "**Fault finding**" section).

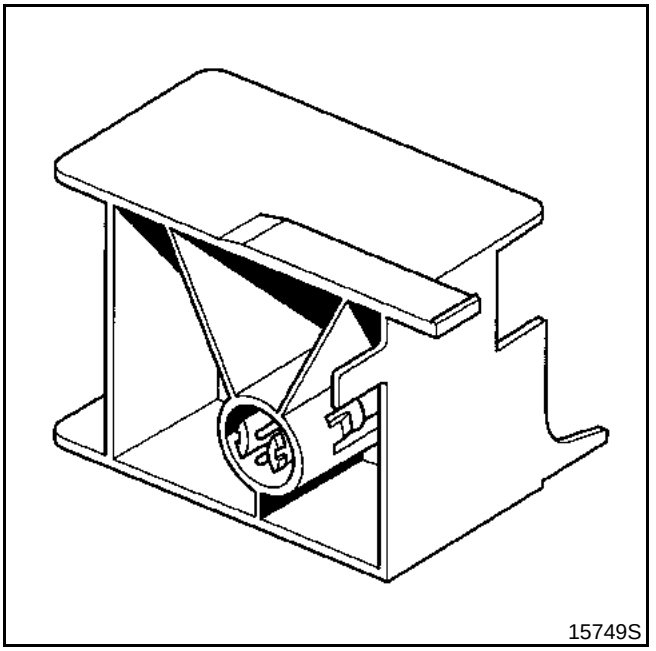
NOTE: Terminal **DPP** is not currently used on this system.

Identification of output wiring on the adapter

1 : Not currently used
2 : Supply and warning light
A : Driver's pretensioner lines
B : Passenger's pretensioner lines
C : Driver's airbag lines
D : Passenger airbag lines
E : Driver's side airbag lines
F : Passenger's side airbag lines

DUMMY AIRBAG IGNITION MODULE

A dummy ignition module integrated in a small red unit is delivered with the **XRBAG** test kit.



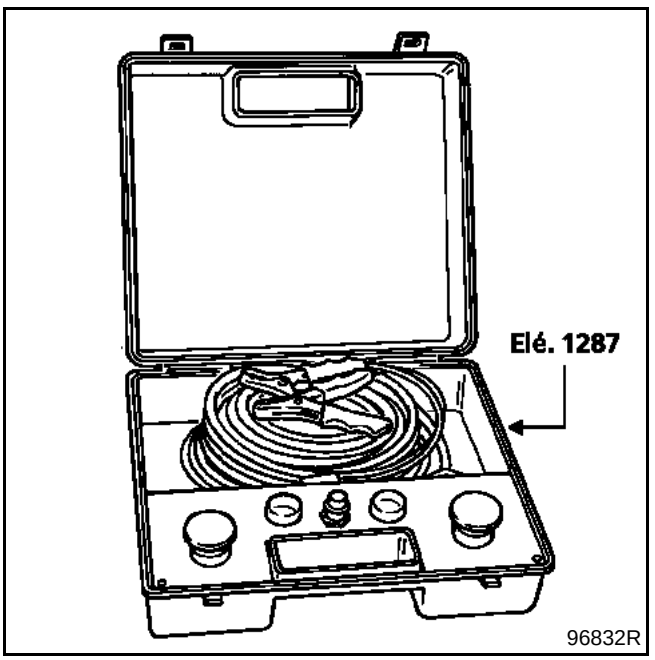
It has the same electrical characteristics as a live ignition module and replaces the airbag cushion or the pretensioner during fault finding.

For FRANCE, they are available from:
MEIGA
99 - 101, route de Versailles
CHAMPLAN
91165 LONGJUMEAU CEDEX
Tel. 01 69 10 21 70

DESTRUCTION UNIT

To avoid all possible risks of an accident the pyrotechnic gas generators in the airbags and seat belt pretensioners must be triggered before the vehicle or the individual part is scrapped.

It is **ESSENTIAL** to use the tool **Elé. 1287** for this purpose.



Refer to section "**Destruction procedure**" (depending on country).

IMPORTANT: Do not reuse the pyrotechnic components as replacement parts. The pretensioners or airbags on a vehicle which are destined for scrap must be destroyed.

WARNING: Do not trigger pretensioners which are to be returned under the warranty for a problem on the seat belt catch. This makes analysis by the supplier impossible.
Return the part in the packaging of the new part.

OPERATION OF FRONT PRETENSIONERS AND AIRBAGS

After ignition, the warning light for these systems illuminates for a few seconds and then extinguishes.

The computer is then on alert and will take into account the vehicle's deceleration by means of a signal measured by two integrated electronic decelerometers.

During front impact of a sufficient severity, one of them triggers simultaneous pyrotechnic generators ignition for the two seat belt pretensioners, after confirmation of impact detection by the electronic safety sensor.

Under the effect of the gas generated by the system, a piston moves in its cylinder and drives with it a wire connected to the corresponding central catch which allows the seat belt to be retracted (see "**Pretensioners**" section).

If the front impact is more significant, the decelerometer, following validation of impact by the electronic seat belt sensor, triggers ignition of the pyrotechnic gas generators for the seat belt pretensioners and the driver’s and passenger’s airbags (if fitted).

These systems are not triggered during:
– side impact (except pretensioners on vehicles fitted with side airbags, other than Safrane),
– rear impact.

When triggered, the pyrotechnic gas generator produces an explosion combined with light smoke.

NOTE: Supply to the computer and ignition modules is usually from the vehicle battery. However, a reserve capacity is included in the computer in case the battery is disconnected at the start of the impact.

OPERATION OF SIDE AIRBAGS (except SAFRANE)

After ignition, the airbag and pretensioner systems warning light illuminates for a few seconds and extinguishes.

The computer for the airbag and pretensioner systems is then on alert as well as the side airbag impact sensors located on the vehicle's two centre pillars.

During a side impact of sufficient severity, the impact sensor located at the side of the impact sends a signal to the airbag and pretensioner systems computer.

After having received confirmation of impact detection by the electronic safety sensor (integrated in the unit), the latter triggers ignition of the pyrotechnic gas generator in the seat, which inflates the airbag cushion (side of the impact) then the pretensioners.

The side airbags do not trigger during:
– front impact,
– rear impact,
– impact on the opposite side.

When triggered, the pyrotechnic gas generator produces an explosion combined with light smoke.

REMINDER: For the Safrane (fitted with autonomous side airbags) see Technical Note **2798A**.

COMPUTER

Two types of PRS computer are fitted on these vehicles depending on their equipment:

- A unit fitted with a yellow 30 track connector for vehicles without side airbags and all Safrane models. This must be configured as a function of the equipment in the vehicle (see configuration).

- A unit fitted with an orange 50 track connector for vehicles with side airbags (except Safrane) On certain versions it will be necessary to configure the side airbags (see configuration).

These units comprise:
– an electronic safety sensor for front airbags and pretensioners,
– an electronic safety sensor for side airbags (unit with orange 50 track connector only),
– an electronic safety decelerometer for the front airbags and pretensioners,
– connections with the side electronic sensors located in the centre pillars (unit with orange 50 track connector only),
– an ignition circuit for the various pyrotechnic systems,
– a power reserve for the various lines,
– a fault finding and detected fault memory circuit,
– a control circuit for the warning light on the instrument panel,
– a communication interface K - L via the fault finding socket,
– an impact detection connection (depending on version).

IMPORTANT:

There are two generations of **50 track** (orange connector) computers and two generations of side sensors.

For correct operation of the side airbags, it is vital that computers which are in good condition are fitted and that their compatibility with the side sensors fitted on the vehicle is respected.

If there is a pairing error, the side airbag will not be triggered in case of impact and the airbag warning light may illuminate erratically (see details in the "**Side impact sensors**" section.

IMPORTANT

Before removing the computer it is vital that you lock it using one of the fault finding tools.

When this function is activated, all the ignition lines are inhibited and the airbag warning light on the instrument panel illuminated when ignition is switched on (new computers are delivered in this condition).

See the following procedure.

NOTE: It is possible to check that no fault was present prior to impact using the fault finding tools in the event of poor operation of these systems at the time of impact.

Computer locking procedure

Before removing the computer or before any operation on the airbag and pretensioner systems, it is vital that you lock the computer either:

- **using the XR25 (fiche n° 49** or **66** depending on equipment and version**)**
  1 Type the corresponding ISO selector code on **S8**
  2 Type the command code **G80***
  When this function is activated all the ignition lines are inhibited, the airbag warning light on the instrument panel and the "**Computer locked**" bargraph on the tool illuminate (the new computers are delivered in this condition). Fault finding is still possible when this mode is activated.

NOTE: To unlock the computer, use the same method using the **G81*** command code. The airbag warning light on the instrument panel and the "**Computer locked**" bargraph on the tool extinguish.

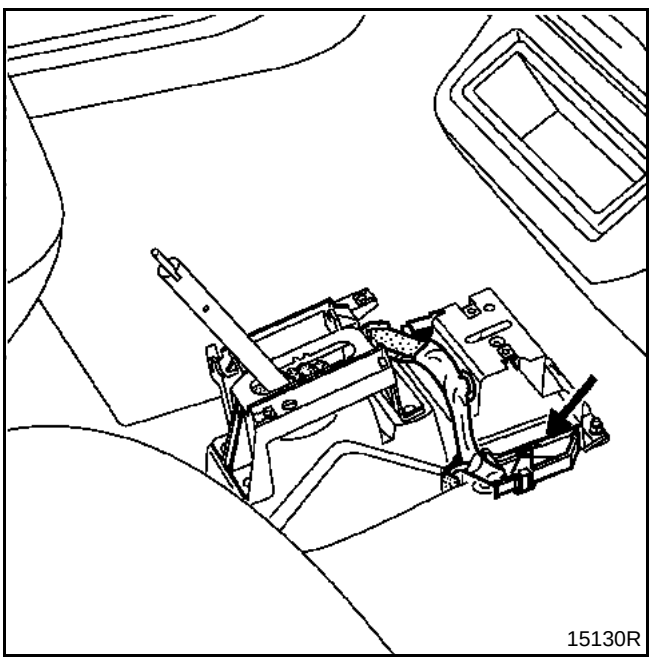
- **using tools NXR, OPTIMA 5800 and CLIP**
  1 Choose the "**Fault**" menu
  2 Select and validate the vehicle model
  3 Select and validate the system to be checked "**Airbag**"
  4 Choose the "**Command**" menu
  5 Select and validate the "**Computer configuration**" or "**Configuration**" function and then validate the "**Computer locking**" line
  6 Choose the "**Status**" menu and check that the unit is locked. The "**Computer locked**" status must be confirmed and the airbag warning light on the instrument panel illuminated (new computers are delivered in this condition). Fault finding is still possible when this mode is activated.

NOTE: To unlock the computer, use the same method and validate the "**Computer unlocking**" line.
The "**Computer locked**" status no longer needs to be confirmed and the airbag warning light on the instrument panel must extinguish.

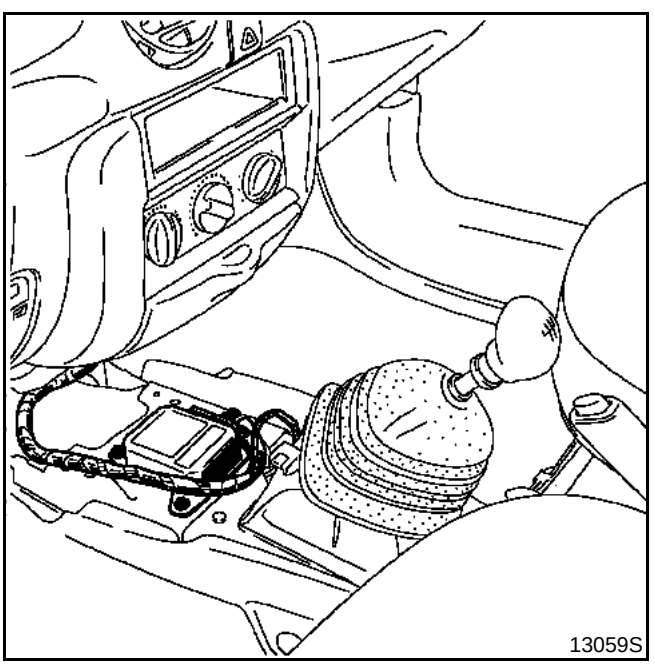
Removal

The computer is located on the tunnel in the central console.

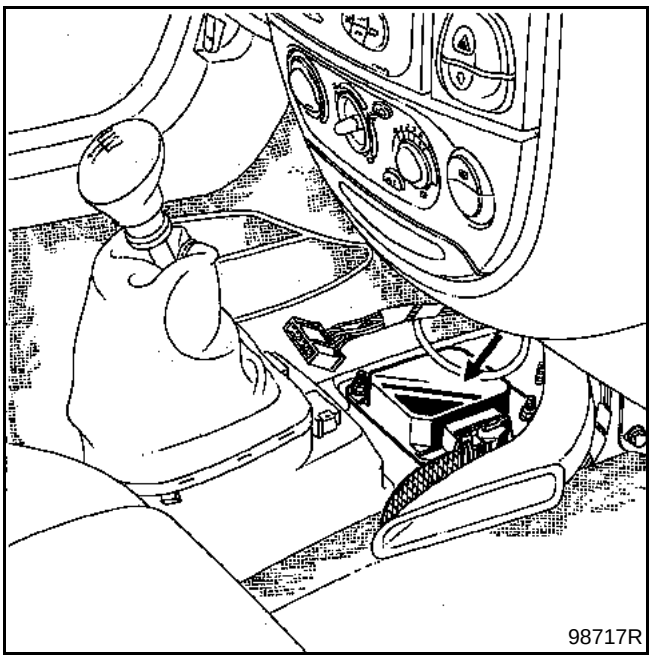
Twingo



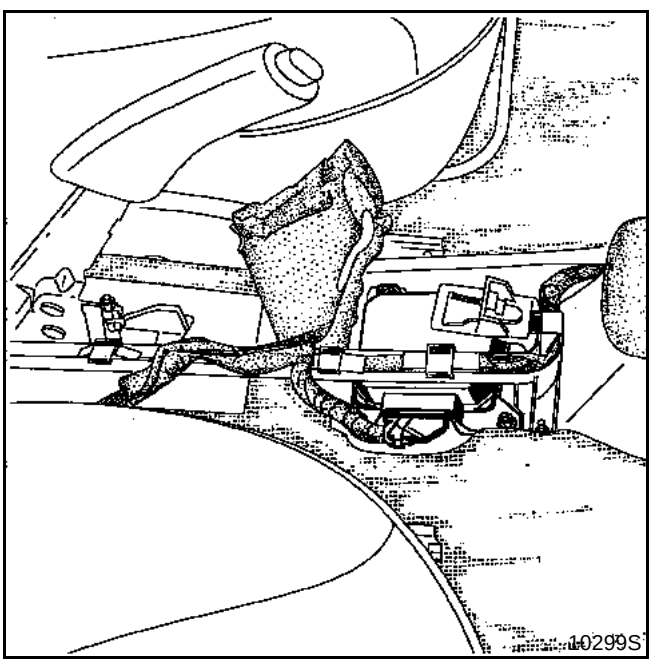
Kangoo



Mégane

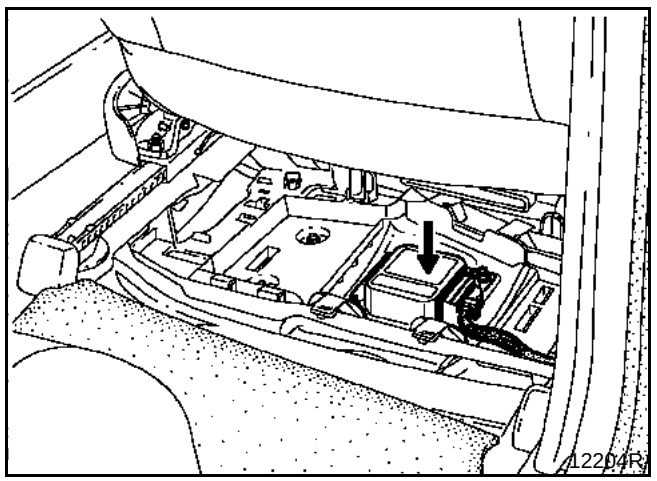


Laguna



Safrane

The computer is located under the passenger seat.

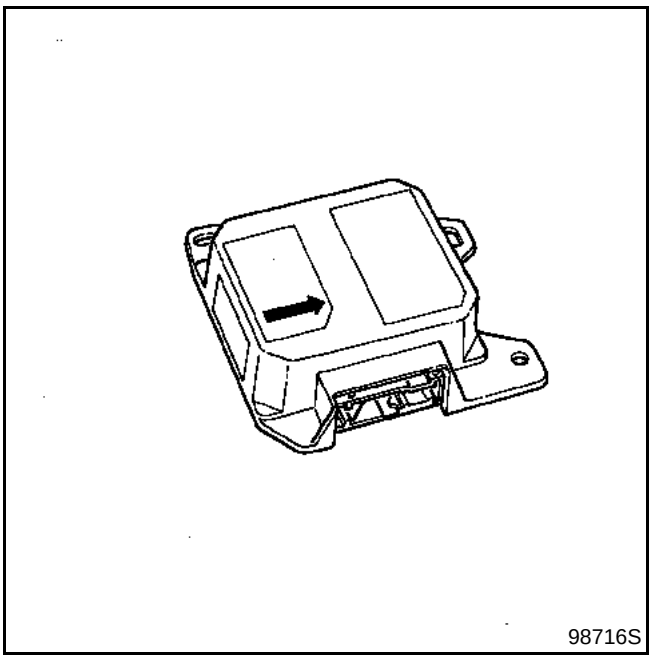


WARNING

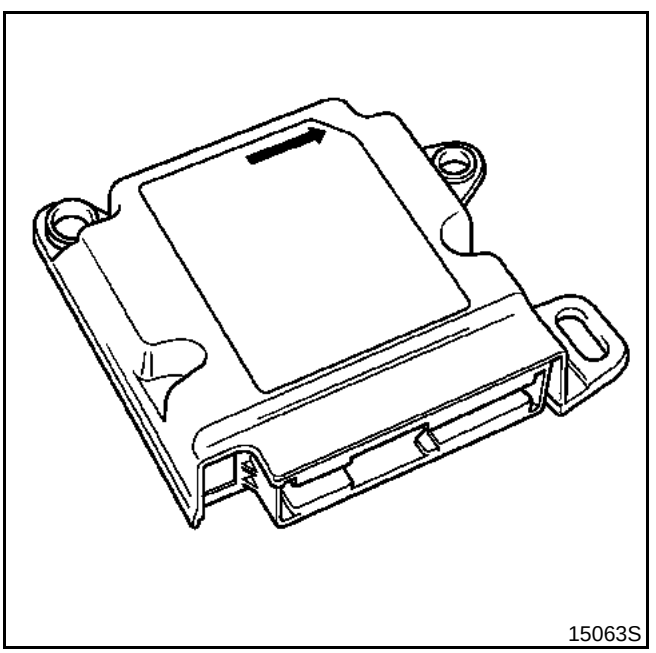
- During an operation under the vehicle (exhaust, bodywork, etc.), do not use hammers or cause any impact on the floor without first locking the computer using the fault finding tool.
- An electrical accessory retrofitted to the vehicle (speaker, alarm unit and any device which may generate a magnetic field), must not be placed in close proximity to the airbag/pretensioner computer.

Removed units

30 tracks for vehicles fitted with:
– pretensioners,
– front airbags,
– autonomous side airbags (Safrane).



50 tracks for vehicles fitted with:
– pretensioners,
– front airbags,
– side airbags (except Safrane).



Configuration of units fitted with a yellow 30 track connector

The new units are usually delivered with "**passenger airbag**" configuration.

If the vehicle does not have a passenger airbag, it will be necessary to configure the computer to "**without passenger airbag**" using a fault finding tool.

If the unit configuration does not correspond to the vehicle equipment, the airbag warning light remains illuminated (with ignition switched on).

- **using XR25 (1st generation of unit identified 4.Ab only)**
  1 Type the **D49** ISO selector code on **S8** (**fiche n°49**)
  2 Type the **G85*5*** command code, the **17 left** tool bargraph should extinguish.

NOTE: To reconfigure the computer with the passenger airbag, use the same method using the **G85*6*** command code, the **17 left** tool bargraph should extinguish.

NOTE: For vehicles which are only fitted with pretensioners, use the **G85*7*** command code. The **17** and **19 left** bargraphs extinguish.

- **using tools NXR, OPTIMA 5800 and CLIP**
  1 Choose the "**Fault**" menu
  2 Select and validate the vehicle model
  3 Select and validate the system to be checked "**Airbag**"
  4 Choose the "**Command**" menu
  5 Select and validate the "**Configuration**" function and then configure the computer to "**Without passenger airbag**".
  6 Switch ignition off and on again to validate the configuration
  7 Choose the "**Command**" menu, select and validate the "**Read configuration**" function or choose the "**Status**" menu (depending on tool version) and ensure that the configuration modification has taken effect.

NOTE: Use the same method to reconfigure the computer with passenger airbag.

Configuration of units fitted with an orange 50 track connector 2nd generation

The new units which can be identified by the heading "**AC6Ph2**" using the fault finding tools (except **XR25**) are delivered with "**side airbags**" not configured.

If this configuration is not carried out, the airbag warning light remains illuminated (ignition switched on).

- **using tools NXR, OPTIMA 5800 and CLIP**
  1 Choose the "**Fault**" menu
  2 Select and validate the vehicle model
  3 Select and validate the system to be checked "**Airbag**"
  4 Choose the "**Command**" menu
  5 Select and validate the "**Configuration**" function and validate the "**Programming side sensors**" line.
  6 Select and validate the vehicle model
  7 Switch the ignition off and on again to validate the configuration

Connection

NOTE: A special feature of the computer connector is that it short circuits the various ignition lines once it is connected. Shunts located opposite each pretensioner line or airbag line prevent incorrect triggering of these systems (by aerial effect for example).

Yellow 30 track connector
(most complete connection)

Track	Description
1	+ driver's pretensioner
2	- driver's pretensioner
3	+ passenger's pretensioner
4	- passenger's pretensioner
5	+ after ignition
6	Earth
7	Airbag warning light on instrument panel
8	Not used
9	Fault finding line K
10	+ driver's airbag
11	- driver's airbag
12	Not used
13	+ passenger airbag
14	- passenger airbag
15	Not used
16	Shunt
17	Shunt
18	Shunt
19	Shunt
20	Not used
21	Shunt
22	Shunt
23	Fault finding line L
24	Not used
25	Shunt
26	Shunt
27	Impact detection information (depending on version)
28	Shunt
29	Shunt
30	Not in use

Orange 50 track connector

Track	Description
1	+ driver's pretensioner
2	- driver's pretensioner
3	+ passenger's pretensioner
4	- passenger's pretensioner
5	+ after ignition
6	Earth
7	Airbag warning light on instrument panel
8	Not used
9	Fault finding line K
10	+ driver's airbag
11	- driver's airbag
12	Fault finding line L
13	+ passenger airbag
14	- passenger airbag
15	Not used
16	+ driver's side airbag
17	- driver's side airbag
18	+ passenger's side airbag
19	- passenger's side airbag
20	Driver's side sensor signal
21	Passenger's side sensor signal
22	- Driver's side sensor
23	- Passenger's side sensor
24	Not used
25	Not used
26 to 29	Shunt
30	Not used
31	Shunt
32	Shunt
33	Not used
34	Not used
35	Shunt
36	Shunt
37	Impact detection information (depending on version)
38	Shunt
39	Shunt
40	Not used
41 to 44	Shunt
45 to 50	Not in use

WARNING LIGHT ON THE DASHBOARD

This light checks the driver's and passengers pretensioners and airbags (except Safrane autonomous side airbags).

It should illuminate for a few seconds when the ignition is switched on, then extinguish (and remain extinguished).

If it does not illuminate when ignition is switched on or illuminates when the vehicle is moving, this signals a fault in the system (see "**Fault finding**" section).

THE SIDE IMPACT SENSORS
(if fitted)

IMPORTANT: Before removing a side impact sensor, lock the computer using a fault finding tool. When this function is activated all the ignition lines are inhibited and the airbag warning light on the instrument panel illuminated when ignition is switched on.

WARNING: There are two generations of side sensor:

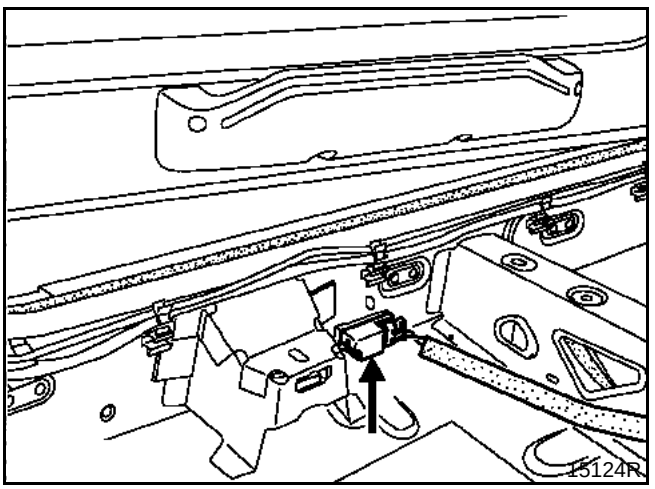
1. Sensors with a black plastic cap and an aluminium casing which are fitted in vehicles with a computer headed "**AC6**"(**n.66**) can be identified using the fault finding tools (**except** for intermediate computer references listed at point 2 which have sensors with a black plastic cap and casing).
2. sensors with a black plastic cap and casing which are fitted in vehicles with a computer headed"**AC6 Ph2**" can be identified using the fault finding tools except **XR25** and for intermediate references **82 00 018 833, 77 00 437 475, 77 00 436 556** and **82 00 018 830** (as read by the fault finding tool).

If there is a pairing error, the side airbag will not be triggered in case of impact and the airbag warning light may illuminate erratically.

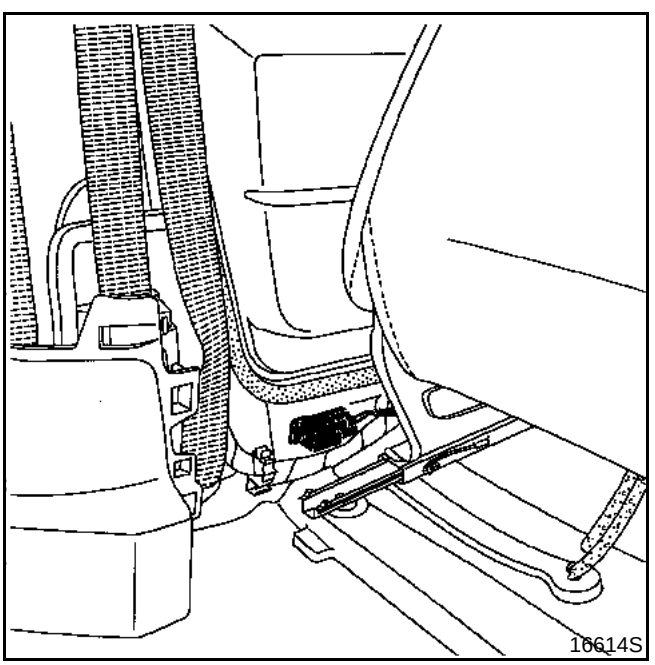
REMINDER: For the Safrane (fitted with autonomous side airbags) see Technical Note **2798A**.

Removal

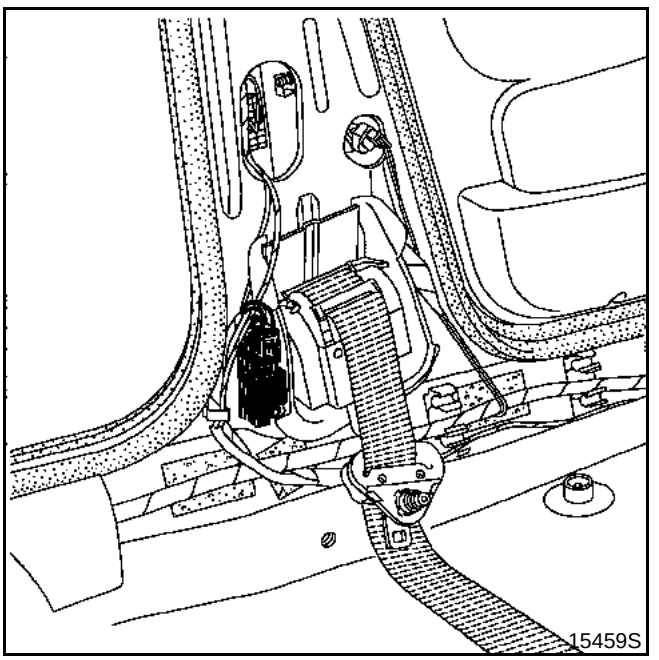
Twingo
They are located on either side beneath the carpet under the door sill lining.



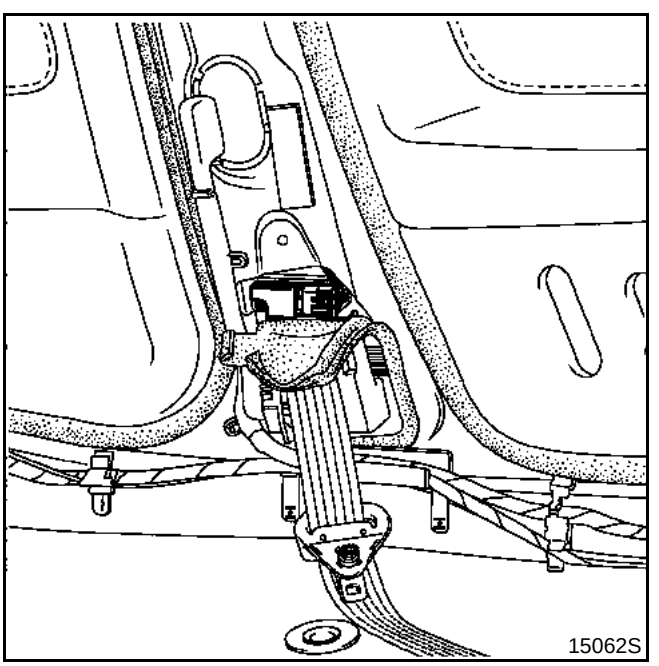
Kangoo
They are located on either side behind the door sill lining.



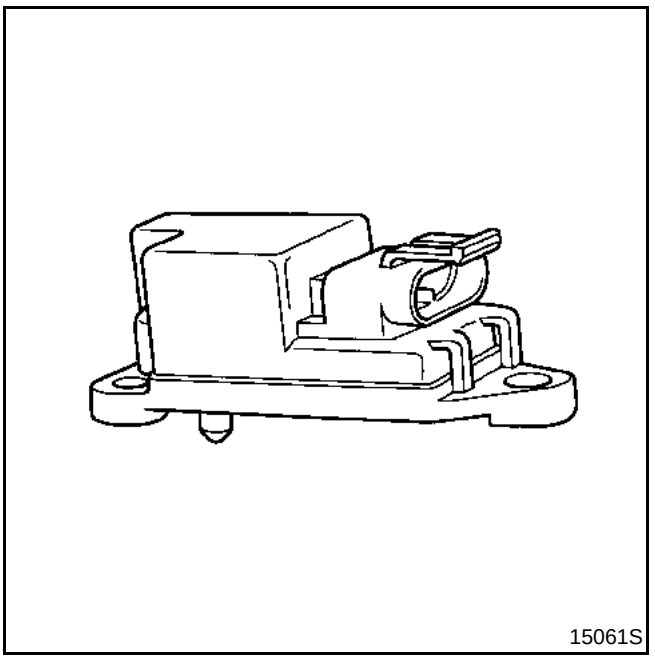
Mégane
They are located on either side behind the centre pillar lining.



Laguna
They are located on either side behind the centre pillar lining.



Removed sensor



15061S

WARNING: When the side airbag is triggered, the computer is locked definitively and illuminates the airbag warning light on the instrument panel. The side impact sensor and the computer must be replaced (certain components loose their rated characteristics after the passage of the trigger energy).

Refitting

To refit it, position the sensor by its lug and proceed to fix it to the vehicle before reconnecting its connector (tightening torque: **0.8 daN.m**).

After connecting the connector, check the sensor using the fault finding tool.

If everything is correct, unlock the computer or see the "**Fault finding**" section.

Connection

Track	Description
1	Sensor supply
2	Earth
3	Not used

OPERATIONS ON THE TRIGGER LINES

If a fault is detected on one of these lines, the component must be replaced and not repaired.

This safety equipment cannot be subjected to any conventional wiring or connector repair operations.

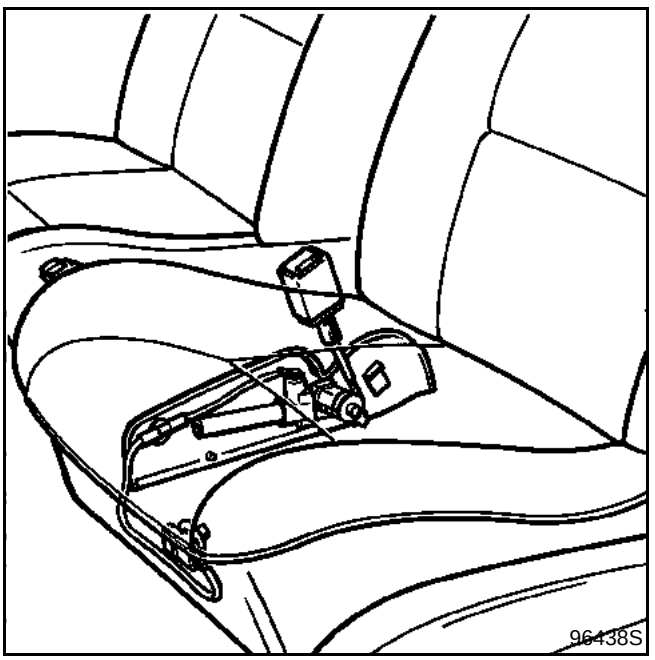
As the trigger wiring for airbags and pretensioners is integrated in the passenger compartment wiring harness, to repair them, they are replaced by cutting the two ends of the faulty wiring and leading the new wiring through the same route along the passenger compartment wiring harness.

WARNING: When fitting new wiring ensure that it is not damaged and that its original state of cleanliness is respected.

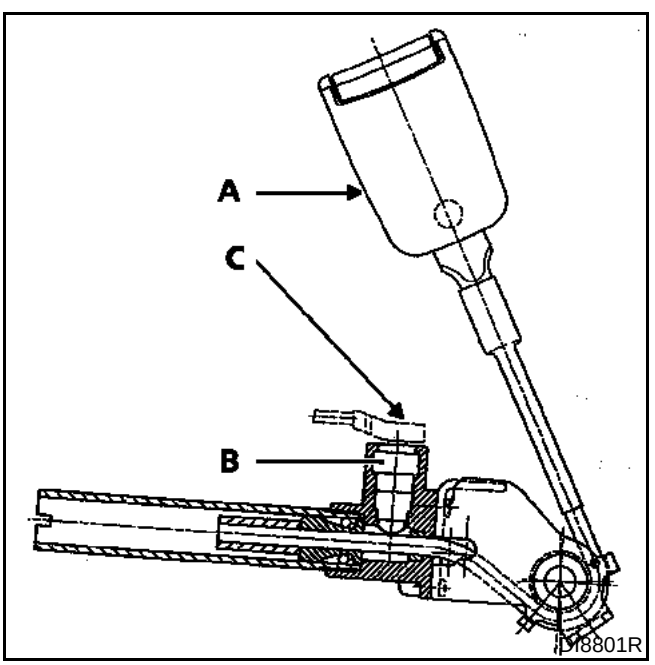
SEAT BELT PRETENSIONERS

Description

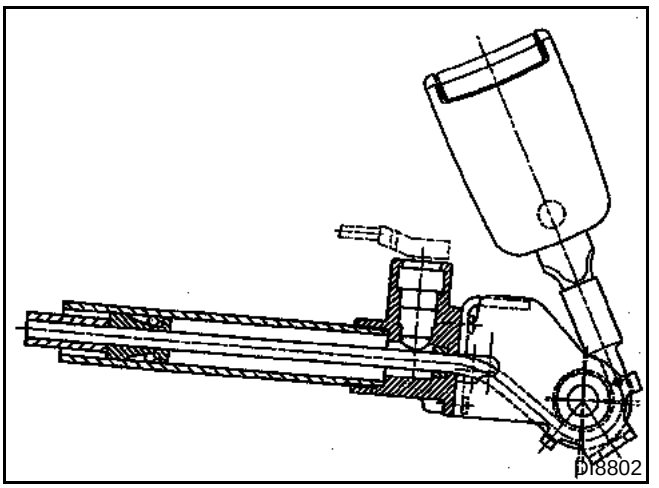
They are mounted on the side of the front seats.



A pretensioner comprises:
– a specific seat belt catch (A),
– a pyrotechnic gas generator with its ignition module (B).



When it is triggered, the system is able to retract the seat belt catch by up to **70 mm** (maximum)



The components of the pretensioner cannot be separated.

NOTE: This system is operational after ignition is switched on.

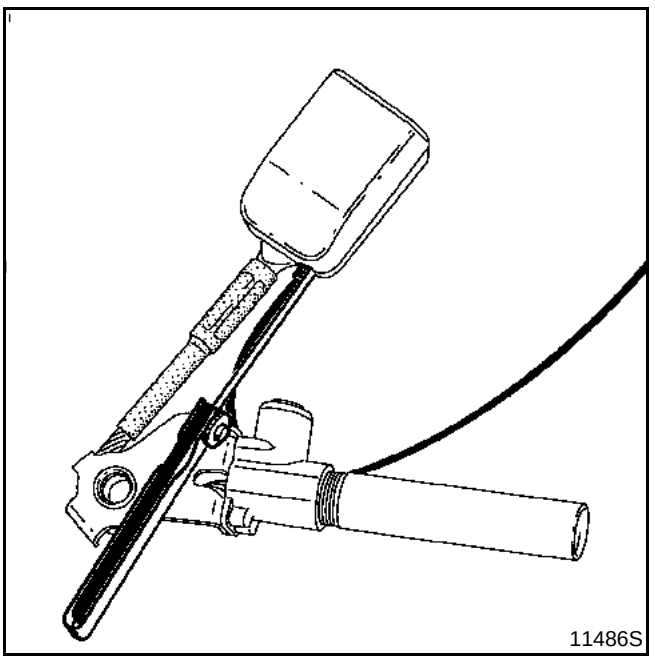
NOTE: On vehicles fitted with side airbags it is not possible to display the resistance of the seat belt pretensioners using the fault finding tool.

To do this use the tool **XRBAG, NXR** or **CLIP** (XRBAG function in the "**Measure**" menu).

Special notes

On certain vehicles, the seat belt catch on the driver's side has an electric switch so that a warning light on the instrument panel can signal that the seat belt has not been buckled.

To unclip the connector insert a feeler gauge of **0.25 mm** as shown on the drawing, to free the lock and then disconnect it by pulling on the wire.



Removal

WARNING: Handling the pyrotechnic systems (pretensioners or airbags) near a source of heat or a flame is forbidden; there is a risk of triggering.

IMPORTANT

Before removing a pretensioner, lock the computer using one of the fault finding tools.

When this function is activated all the ignition lines are inhibited and the airbag warning light on the instrument panel illuminated.

Remove:
- the pretensioner connector located under the front seat,
- the pretensioner assembly, after removing the protective trim.

IMPORTANT: Before scrapping a pretensioner which has not been triggered, it is **IMPERATIVE** that it is destroyed following the method (except parts returned under warranty), described in the "**Destruction procedure**" section (depending on country).

REMINDER: During seat belt pretensioner or airbag triggering the computer is locked definitively and illuminates the airbag warning light on the instrument panel. The computer must be replaced (certain components loose their rated characteristics after the passage of the trigger energy).

Refitting

Ensure that the wiring is correctly routed and the wiring mounting points under the seat are correct.

Pretensioner side, clip at the base of the connector (C) (strong clipping).

IMPORTANT: After replacing faulty parts and reconnecting the connectors carry out a check using the fault finding tool.

If everything is correct, unlock the computer or see the "**Fault finding**" section.

PRS SEAT BELTS

The front seat belts are fitted with a specific **P**rogrammed **R**estraint **S**ystem (PRS).

In this equipment, the seat belts are linked to the airbag function.

The programmed restraint system is calibrated differently depending on whether or not the seat belts are fitted opposite a PRS airbag.

IMPORTANT

If the vehicle is fitted with airbag cushions with the "**PRS**" symbol, the seat belt located opposite it **must** have the "**PRS airbag**" symbol on the label.

If the vehicle is not fitted with airbags or airbag cushions with the "**PRS**" symbol, the seat belt located opposite it **must not** have the "**PRS airbag**" symbol on its label (you must check the reference of each part before replacement).

When the pretensioners have triggered, the front seat belt(s) must be replaced as a matter of course if they were buckled during pretensioning (any doubt about the condition of the belt should result in its replacement).

The physical stresses exerted on the catch are transmitted to the inertia reel and may damage its mechanism.

DRIVER'S AIRBAG

The driver's airbag is fitted with a specific inflatable bag (cushion with **PRS** marking).

In this equipment, the airbag cushion is linked to the seat belt located opposite it.

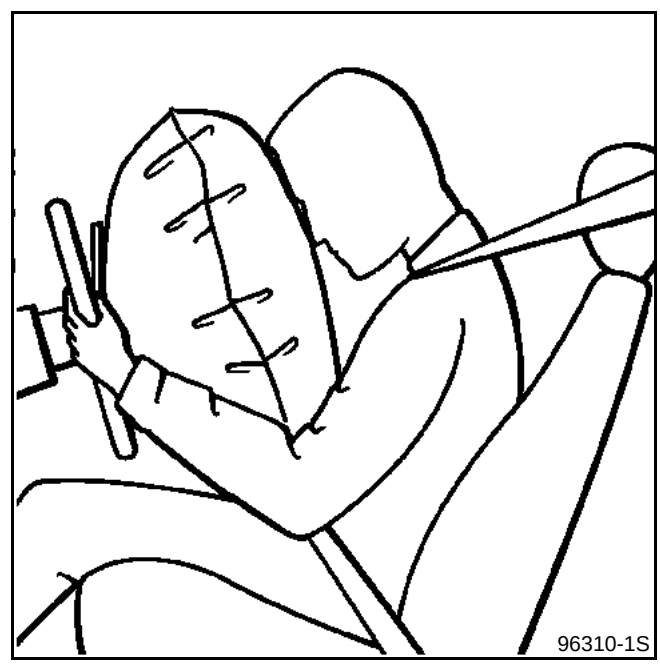
The programmed restraint system for the seat belt is calibrated specifically and is complementary for this type of airbag cushion.

Description

It is located in the steering wheel cushion.

It comprises:
– an inflatable bag,
– a pyrotechnic gas generator with its ignition module.

These components cannot be separated.



The inflatable bag rips through the steering wheel cover to deploy itself.

NOTE: This system is operational after ignition is switched on.

Removal

WARNING: Handling the pyrotechnic systems (pretensioners or airbags) near a source of heat or a flame is forbidden; there is a risk of triggering.

IMPORTANT: Before removing an airbag cushion, lock the computer using a fault finding tool.

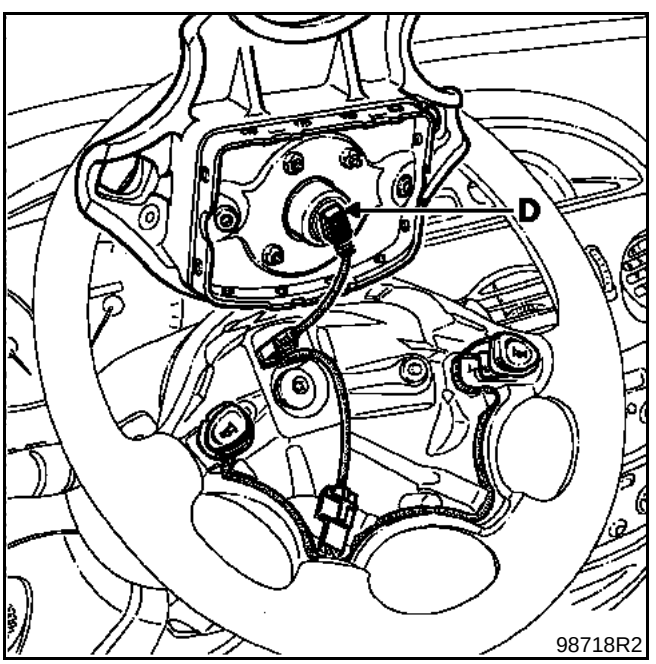
When this function is activated all the ignition lines are inhibited and the airbag warning light on the instrument panel illuminated when ignition is switched on.

IMPORTANT: Whenever the steering wheel is removed, the airbag connector (D) MUST be disconnected.

The airbag has a connector which short circuits if it is disconnected to prevent incorrect triggering.

Remove the airbag cushion using the two Torx bolts located behind the steering wheel and disconnect its connector (D).

Example: Mégane



IMPORTANT: Before scrapping an airbag cushion which has not been triggered, it is **IMPERATIVE** that it is destroyed following the method, see the "**Destruction procedure**" section (depending on country).

REMINDER: During seat belt pretensioner or airbag triggering, the computer is locked definitively and illuminates the airbag warning light on the instrument panel. The computer must be replaced (certain components loose their rated characteristics after the passage of the trigger energy).

Refitting

WARNING: When an airbag cushion is replaced on these vehicles, the replacement part **must** carry the "**PRS airbag**" symbol.

Reconnect the airbag cushion and attach it to the steering wheel (tightening torque: **0.5 daN.m**).

NOTE: On the cushion side, clip the connector at the base (D) (strong clipping).

IMPORTANT: After refitting everything, carry out a check using the fault finding tool.

If everything is correct, unlock the computer or see the "**Fault finding**" section.

ROTARY SWITCH

The rotary switch ensures electrical connection between the steering column and the steering wheel.

This switch consists of a tape with conductor tracks (airbag) whose length is intended to ensure **2.5 rotations** of the steering wheel (steering lock plus safety margin) in either direction.

Removal

WARNING: Handling the pyrotechnic systems (pretensioners or airbags) near a source of heat or a flame is forbidden; there is a risk of triggering.

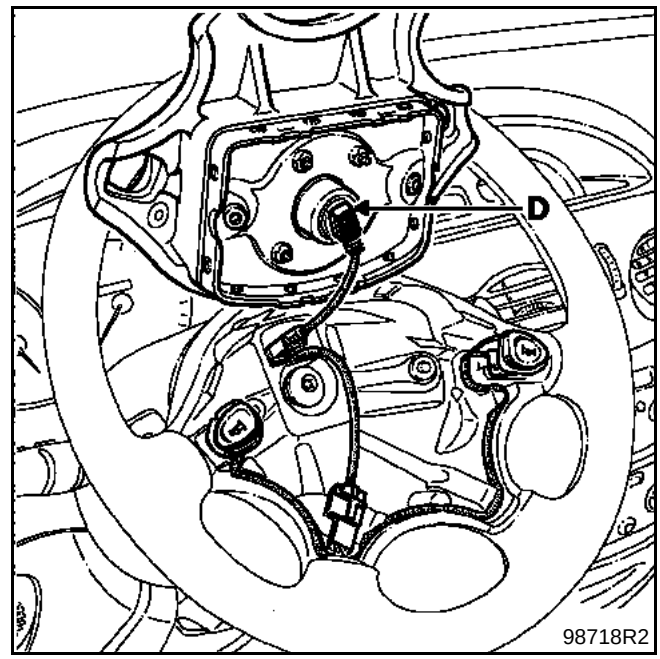
IMPORTANT: Whenever the steering wheel is removed, the airbag connector (D) **MUST** be disconnected. The airbag has a connector which short circuits if it is disconnected to prevent incorrect triggering.

IMPORTANT: Before removing an airbag cushion, lock the computer using a fault finding tool.

When this function is activated all the ignition lines are inhibited and the airbag warning light on the instrument panel illuminated.

Remove the airbag cushion using the two Torx bolts located behind the steering wheel and disconnect its connector (D).

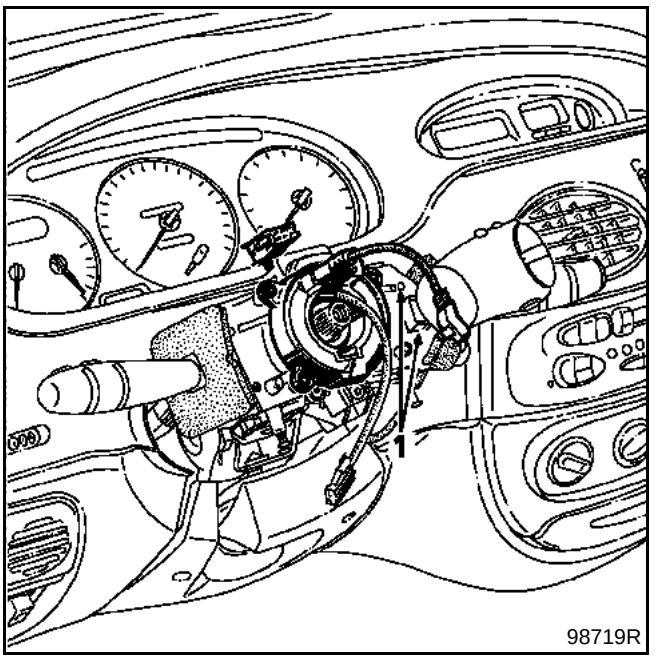
Example: Mégane



Depending on the vehicle, the rotary switch is attached to the lighting and windscreen wiper stalk mounting or is integrated in this.

Before removing the rotary switch, it is imperative that you mark its position:
– by ensuring that the wheels are straight during removal in order to position the track at the centre,
– by immobilising the rotary switch rotor with adhesive tape.

Example: Mégane



If it is being replaced, the new part is supplied ready centred by an adhesive label which will tear off as soon as the steering wheel is turned for the first time (fit with the wheels straight).

Refitting

Ensure that the wheels are still straight.

Check that the rotary switch is always immobilised before refitting (otherwise see the centring method described next).

WARNING: If these instructions are not followed the system may not operate normally and could even cause erratic triggering.

Change the steering wheel bolt after each removal (cemented bolt) and respect its tightening torque (**4.5 daN.m**).

Reconnect the airbag cushion and attach it to the steering wheel (tightening torque: **0.5 daN.m**).

WARNING: When an airbag cushion is replaced on these vehicles, the replacement part **must** carry the "**PRS airbag**" symbol.

On the cushion side, clip the connector at the base (D) (strong clipping).

After replacing faulty parts and reconnecting the connectors carry out a check using the fault finding tool.

If everything is correct, unlock the computer.

Otherwise see the "**Fault finding**" section.

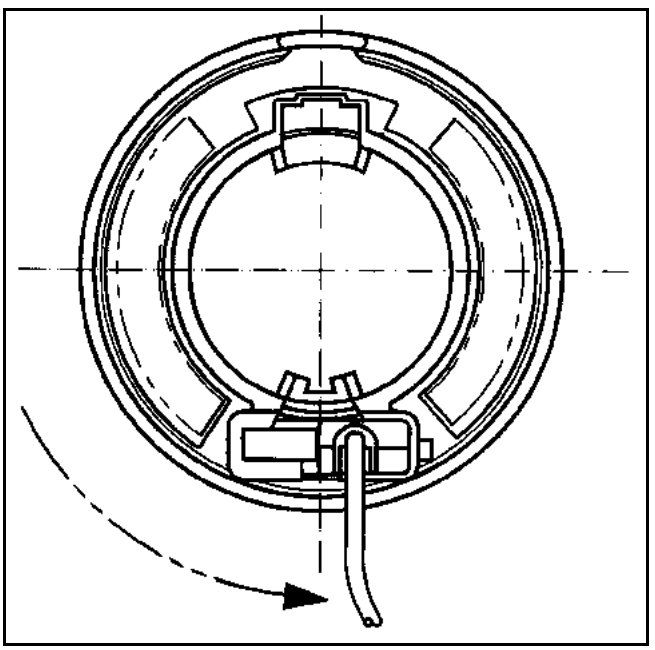
WARNING

- In order to avoid destroying the rotary switch it is important to maintain in fixed position of the steering wheel during the whole operation.
- The steering wheel should be removed and checked if there is any doubt about its position.
- In the case of an operation for removing the steering, the engine, the gearbox components..., requiring the steering rack and the steering column to be disconnected, the steering wheel must be immobilised using a "**steering wheel locking**" tool.

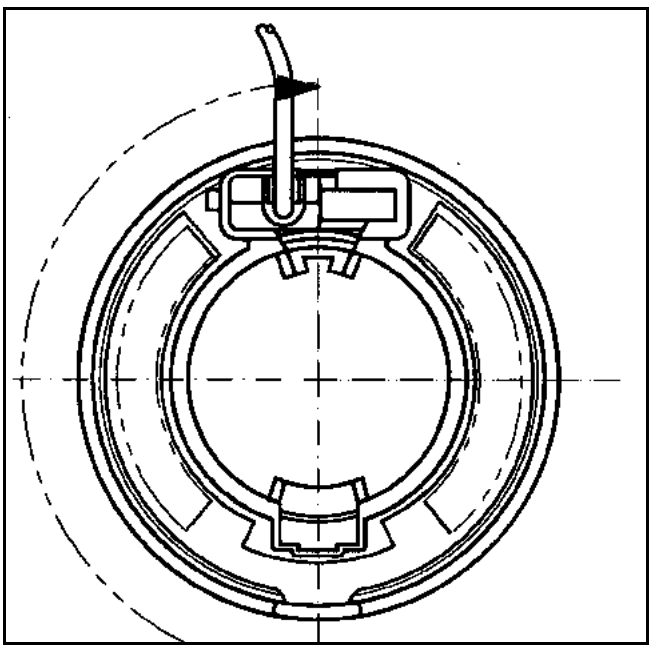
Method for centring the rotary switch

Turn the upper section of the rotary switch in an anticlockwise direction.

The approach to the end position, represented here, is indicated by the stiffness of rotation (do not force).



Next, gently turn the upper section of the part in a clockwise direction and check that the rotary switch is in the position shown.



Turn the part again in a clockwise direction and complete two full turns and ensure that after this operation the rotary switch is in the position described previously.

PASSENGER AIRBAG MODULE

The passenger airbag is fitted with an inflatable bag (module with PRS marking).

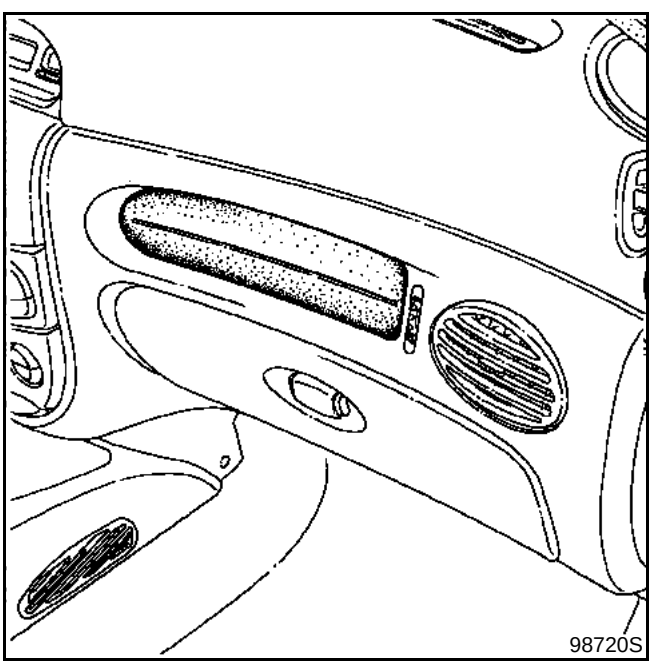
In this equipment, the airbag cushion is linked to the seat belt located opposite it.

The programmed restraint system for the seat belt is calibrated specifically and is complementary for this type of airbag cushion.

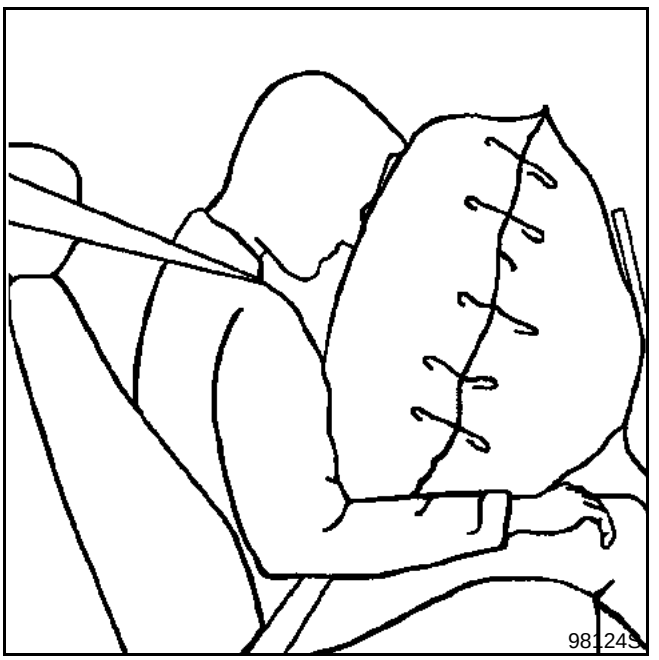
Description

It is mounted in the dashboard opposite the front passenger.

Example: Mégane



It comprises:
– an inflatable bag,
– a pyrotechnic generator with its ignition module.



The components of the airbag module cannot be separated.

NOTE: This system is operational after ignition is switched on.

Ignition module accessibility

To access the passenger airbag ignition module for fault finding, it is necessary to remove:
– the dashboard on Twingo and Kangoo,
– the top of the dashboard on Mégane,
– the glove compartment on Laguna,
– the airbag module on Safrane.

REMINDER: The ignition module must be checked using the fault finding tool and the **XRBAG**, or **CLIP**, or **NXR** as indicated in the "**Fault finding**" section.

Removal

WARNING: Handling the pyrotechnic systems (pretensioners or airbags) near a source of heat or a flame is forbidden; there is a risk of triggering.

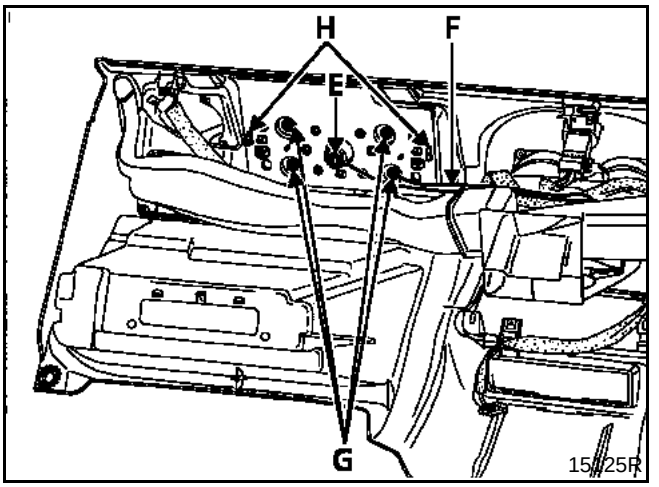
IMPORTANT: Before removing a passenger airbag module, lock the computer using a fault finding tool.

When this function is activated, all the ignition lines are inhibited and the airbag warning light on the instrument panel illuminated.

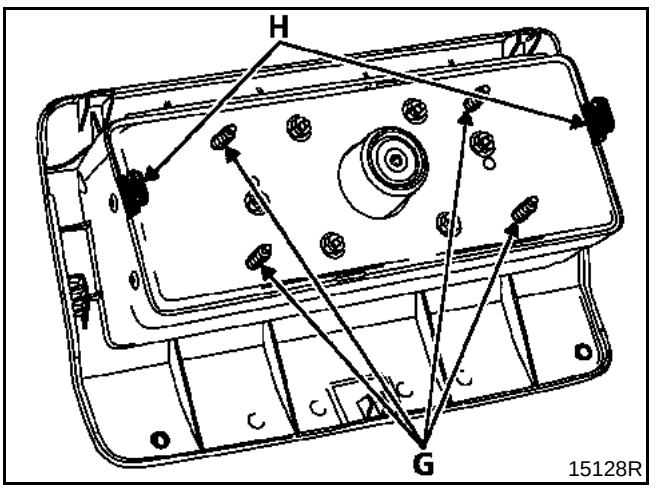
Twingo

To remove the passenger airbag module it is necessary to remove the dashboard after disconnecting the ignition module (E) and the earth wire (F).

The passenger airbag module is attached by four bolts (G)



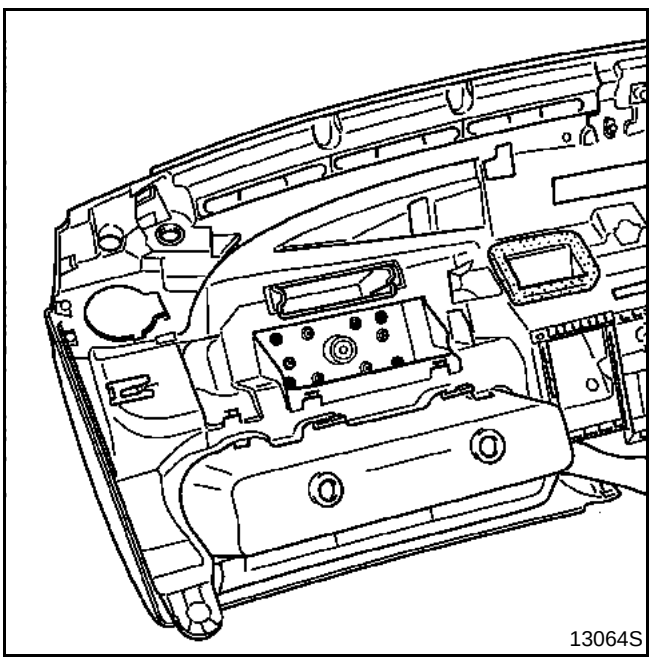
and two plastic tabs (H).



Kangoo

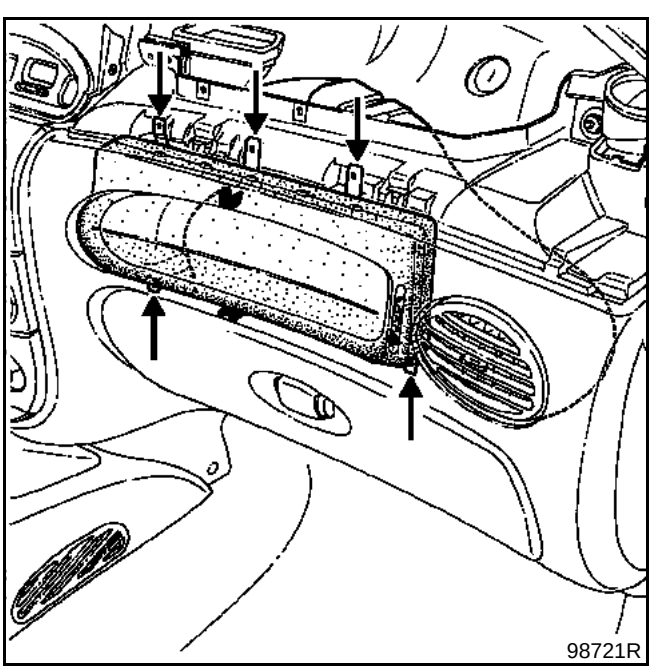
To remove the passenger airbag module it is necessary to remove the dashboard.

The passenger airbag module is attached by four nuts (G)



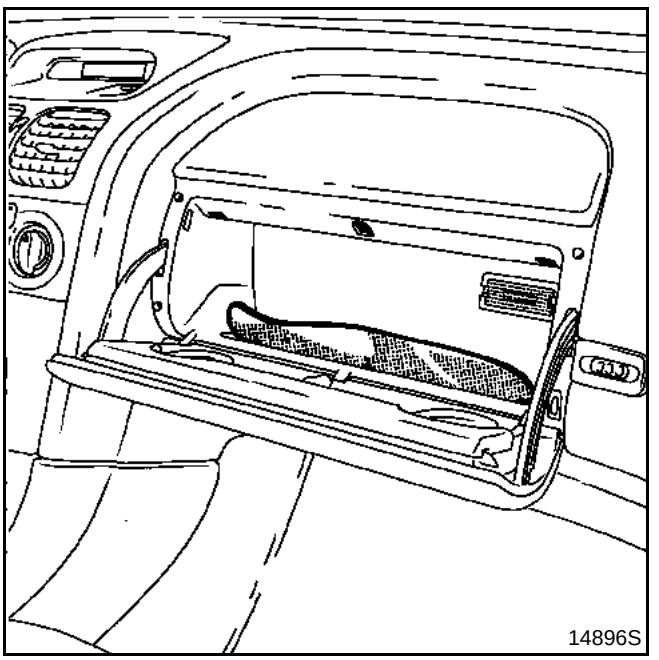
Mégane

To remove the passenger airbag module it is necessary to remove the dashboard.

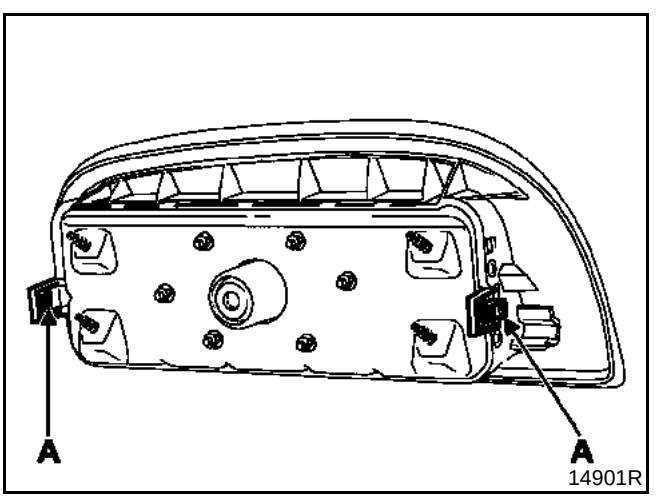


Laguna

To remove the passenger airbag module it is necessary to remove the glove compartment (6 bolts).



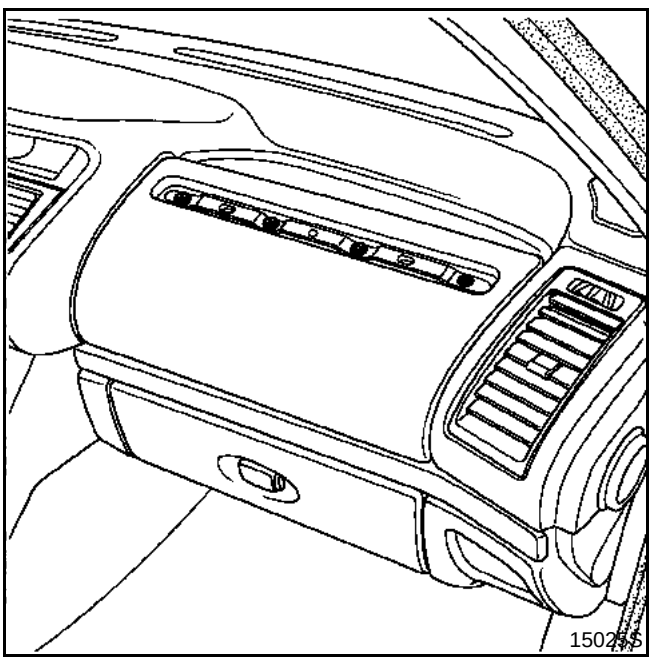
the passenger airbag module is attached by four nuts and two tabs (A).



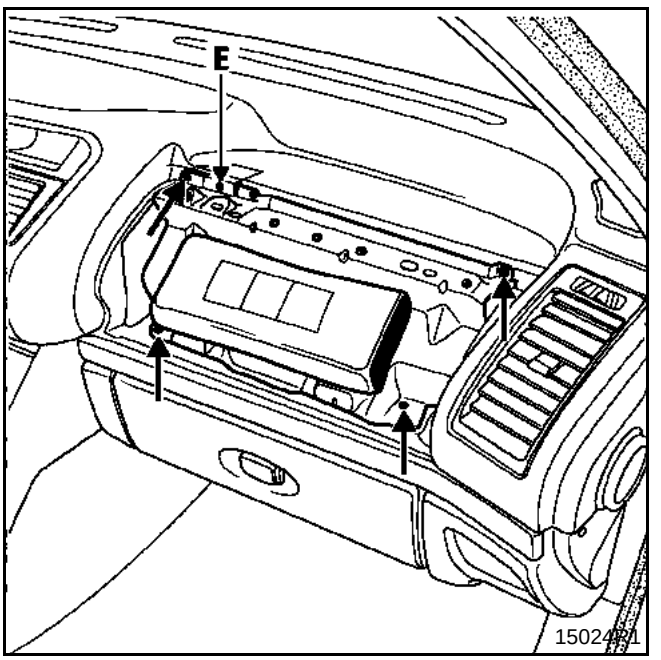
Safrane

To remove the passenger airbag module, pull out:
– the rubber lining on the dashboard,
– the blanking plate bar,
– the "Tamperproof system warning" light adhesive label (yellow when sent from factory and light blue after an operation at the Renault after-sales network).

Remove:
– the module cover by the four bolts (tightening torque: **0.5 daN.m**),



– the blanking plate (D) (one bolt),
– the airbag module by the five bolts.



IMPORTANT: When the passenger airbag module triggers, the deformation of and damage to attachments necessarily compels replacement of the dashboard. Do not forget to affix the label on the side of the new dashboard forbidding a child/baby seat to be fitted on the passenger seat with the back in the direction of travel (label available in the collection with part no. **77 01 205 442**).

IMPORTANT: Before scrapping an airbag cushion which has not been triggered, it is **IMPERATIVE** that it is destroyed following the method, see the "**Destruction procedure**" section (depending on country).

REMINDER: During seat belt pretensioner or airbag triggering the computer is locked definitively and illuminates the airbag warning light on the instrument panel. The computer must be replaced (certain components loose their rated characteristics after the passage of the trigger energy).

Refitting

WARNING: You **MUST** respect the safety advice which must be followed when removing or replacing the passenger airbag module.
If these instructions are not followed the system may not operate normally and could even represent a hazard for the vehicle occupants.

Proceed in the reverse order to removal and respect the tightening torque of the four securing nuts on the module.

IMPORTANT

- No foreign bodies (bolt, clip...) should be forgotten when fitting the airbag module.
- The module tightening torque is **0.2 daN.m**.
- When an airbag module is replaced on these vehicles the replacement part **must** carry the "**PRS airbag**" symbol.
- On the module side, clip at the base of the connector (C) (strong clipping).
- Attach a blue adhesive "**Tamperproof system warning light**" label sold under
  part no.: **77 01 040 764** (Safrane)
  77 01 040 153 (other vehicles).

Check it using the fault finding tool. If everything is correct, unlock the computer or see the "Fault finding" section.

SIDE AIRBAG MODULE

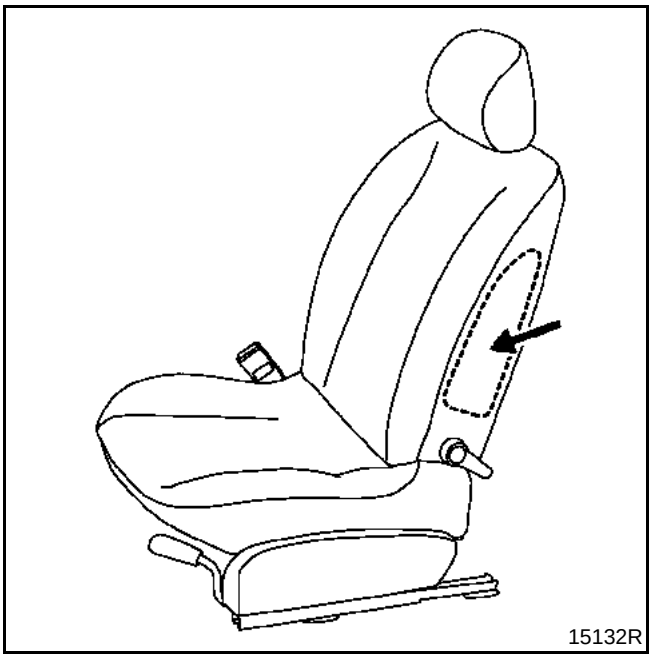
REMINDER: For the Safrane (fitted with autonomous side airbags) see Technical Note **2798A**.

Description

It is attached to the back of the front seats on the door side.

It comprises:
– an inflatable bag,
– a pyrotechnic gas generator with its ignition module.

These components cannot be separated.



The inflatable bag tears the module cover, the foam and the lining of the seat when it deploys.

NOTE: This system is operational after ignition is switched on.

Removal

WARNING:
Handling the pyrotechnic systems (pretensioners or airbags) near a source of heat or a flame is forbidden; there is a risk of triggering.

IMPORTANT: Before operating on a seatback or removing a seat fitted with a side airbag lock the computer using the fault finding tool. When this function is activated all the ignition lines are inhibited and the airbag warning light on the instrument panel illuminates when ignition is switched on.

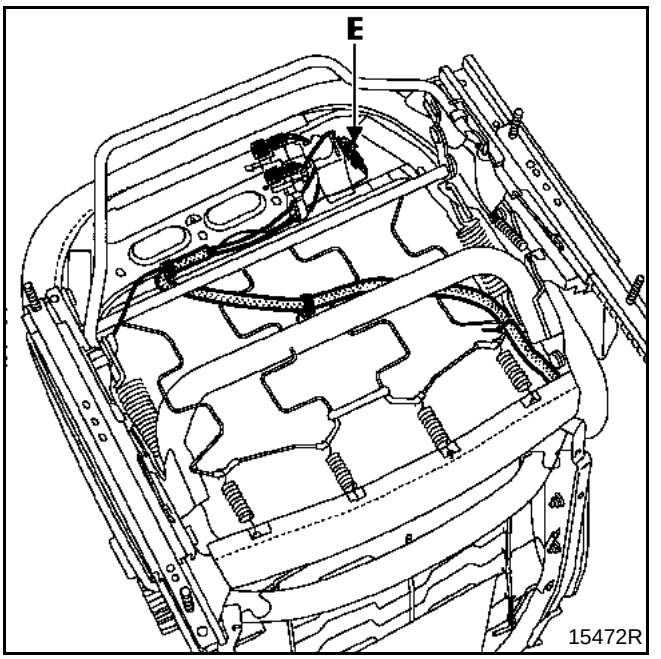
WARNING: To operate on a seatback fitted with an airbag and in order to guarantee proper deployment of the airbag, **it is imperative that you respect the advice** described in **bodywork Technical Note 539A** in relation to the type of seat in the vehicle (position, number, type of clip to be used).

Remove the seat from the vehicle.

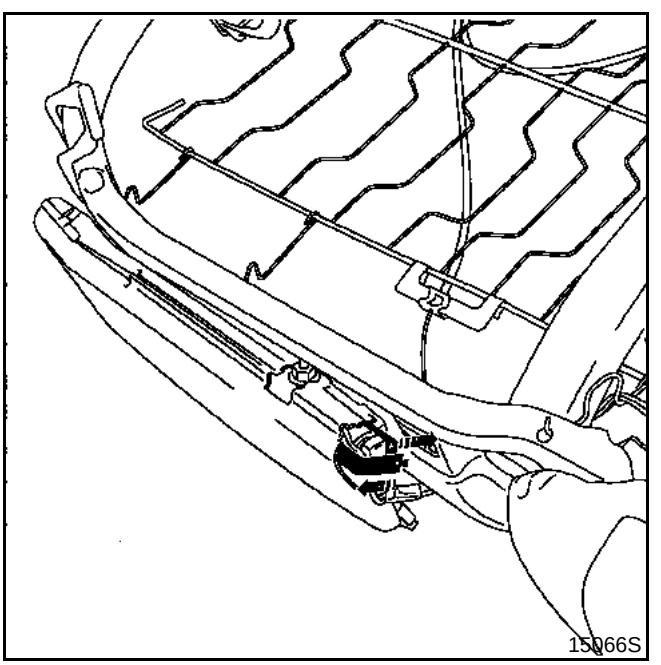
Strip the seatback.

Disengage the airbag module wiring and its earth wire (E) after disconnecting the connector (mark the wiring distance and the mounting points).

Example: Mégane



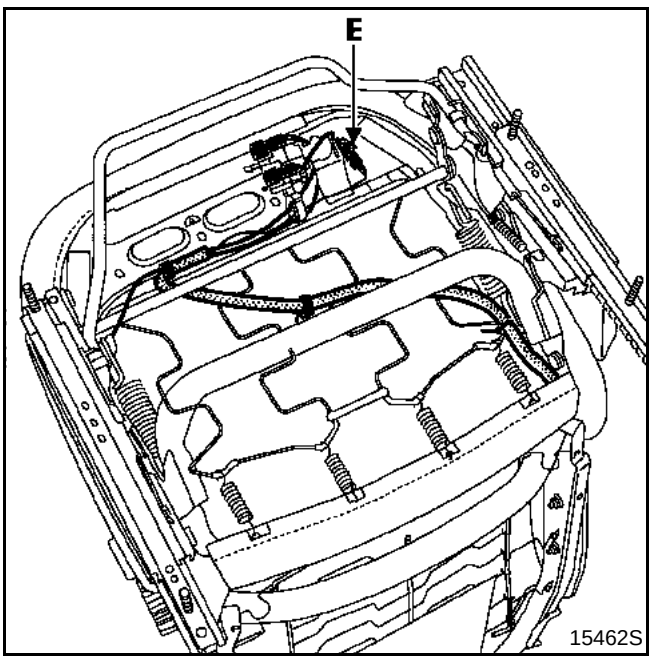
NOTE: For the ignition module wiring fault finding it is possible to unlock the mounting clip as shown below, to access the connector.



IMPORTANT: If the system has not triggered and is to be refitted, do not open the airbag module, the inflatable bag is specially folded.

Remove the airbag cushion by the two nuts.

Example: Mégane



IMPORTANT: Before scrapping an airbag cushion which has not been triggered, it is **IMPERATIVE** that it is destroyed following the method, see the"**Destruction procedure**" section.

REMINDER: During seat belt pretensioner or airbag triggering the computer is locked definitively and illuminates the airbag warning light on the instrument panel. The computer must be replaced (certain components lose their rated characteristics after the passage of the trigger energy).

WARNING: The covers for seats fitted with side airbags are specific. Ensure that the correct covers are used when replacing these elements.

Refitting

IMPORTANT: When the side airbag module triggers, the deformation of and damage to attachments necessarily compels replacement of the seat cushion frame.

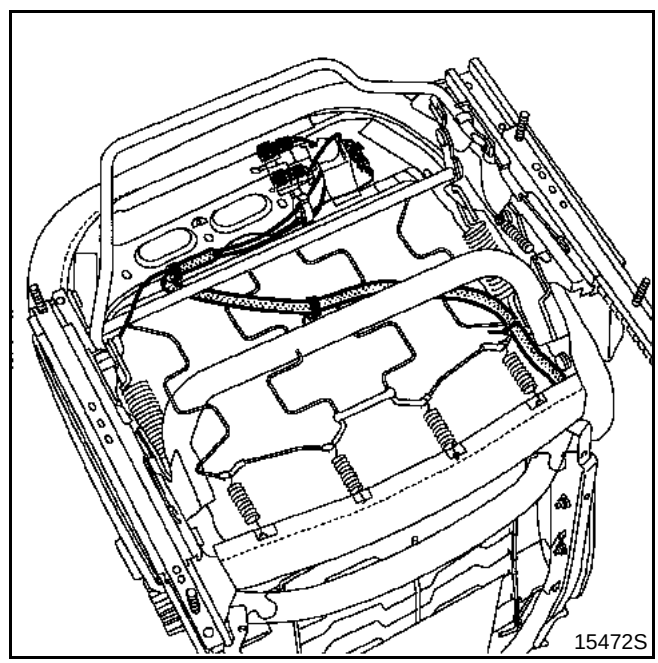
Attach the airbag module to the seat backrest frame (tightening torque: **0.8 daN.m**).

Ensure that the earth wire is correctly connected to the airbag module.

Refit the wiring under the seat as before and respect the routing and the mounting points.

Reconnect the earth wire (E) and check that the computer is locked.

Example: Mégane



Replace the seat upholstery respecting the recommendations described in the **bodywork Technical Note 539A** (type of clip, their positions, etc.)

Refit the seat in the vehicle and reconnect the connectors.

Check it using the fault finding tool.

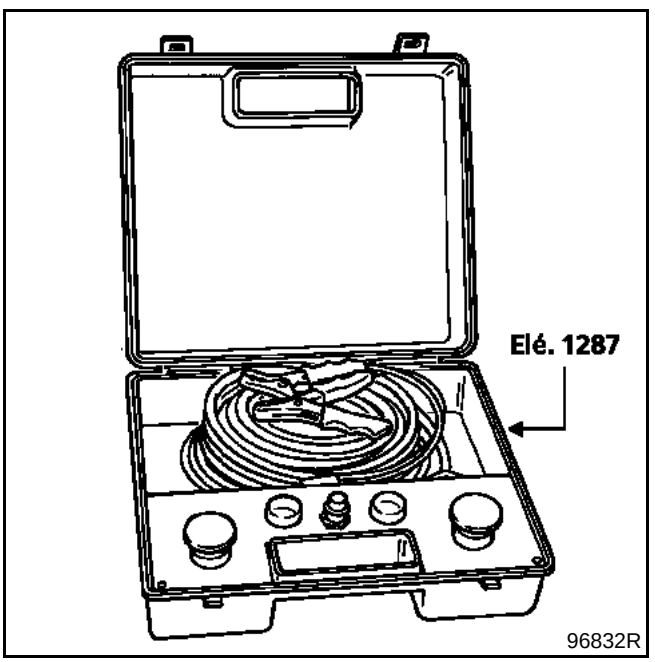
If everything is correct, unlock the computer or see the "**Fault finding**" section.

WARNING: If these instructions are not followed the system may not operate normally and could even cause erratic triggering.

DESTRUCTION PROCEDURE
(except Safrane side airbag)

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.

Tool **Elé. 1287** must be used for this.



IMPORTANT: Do not use the pyrotechnic components again as replacement parts. The pretensioners or airbags on a vehicle which are destined for scrap must be destroyed.

PRETENSIONERS

WARNING: Do not trigger pretensioners to be returned in the context of the warranty for a problem on the seat belt catch (depending on country). This makes examination by the supplier impossible. Return the part in the packaging of the new part.

Destruction of the part fitted to the vehicle

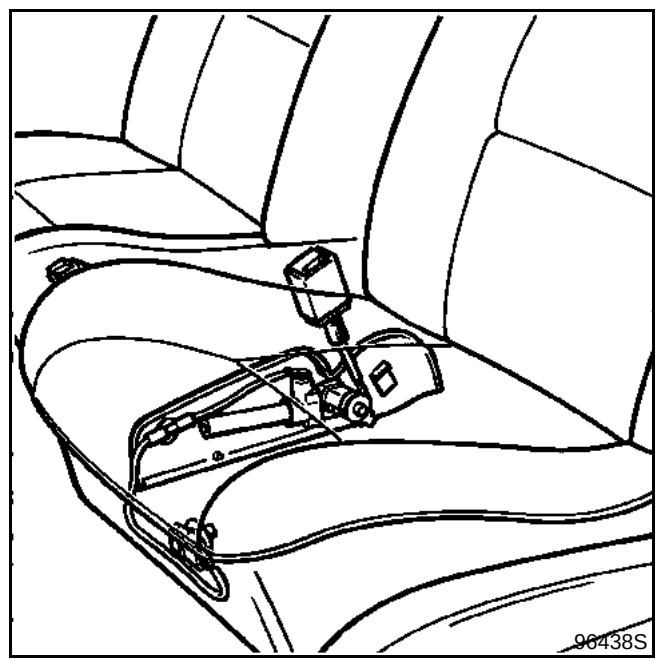
Move the vehicle outside the workshop.

Connect the destruction tool to the pretensioner after removing the seat runner cover.

Unwind all the tool wiring such that it is far enough away from the vehicle (approx. **10 metres**) during triggering.

Connect the two supply wires on the tool to a battery.

After checking that there is no-one nearby, destroy the pretensioner by pressing the two buttons on the tool at the same time.



NOTE: If triggering is impossible (faulty ignition module), return the part in the packaging of the new part to ITG (Service 0429).

Destruction of the part removed from the vehicle

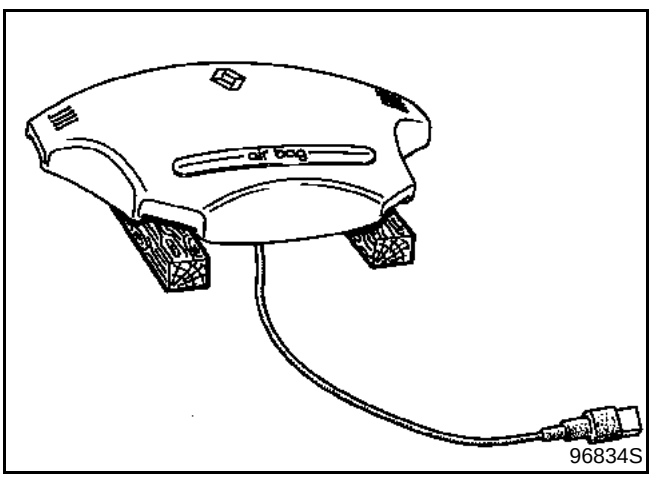
Proceed in the same way as for the driver's airbag in the old stacked up tyres (see below).

DRIVER'S AIRBAG

Destruction of the part removed from the vehicle

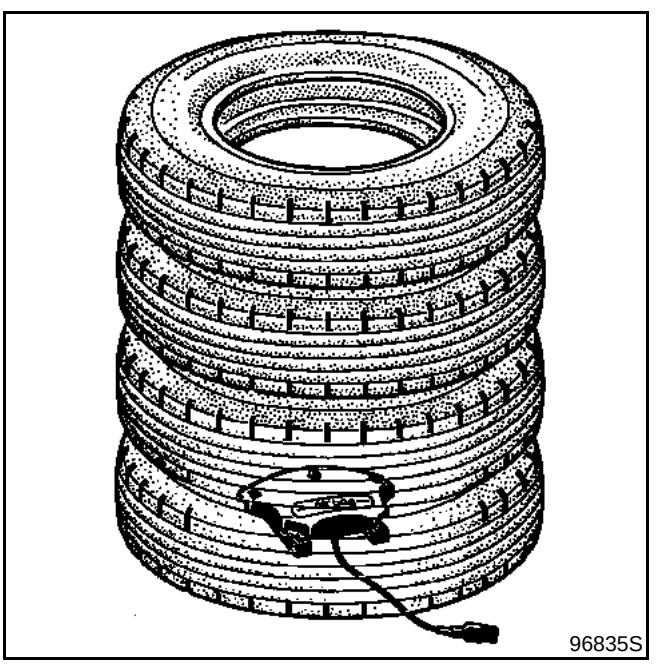
Carry out the operation outside of the workshop.

After connecting the appropriate wiring, set the airbag cushion on two blocks of wood to avoid damaging the connector against the ground.



96834S

Cover the assembly with a stack of four old tyres.


96835S

Unwind all the tool wiring such that it is far enough away from the unit (approx. **10 metres**) during triggering and connect it to the airbag cushion.

Connect the two supply wires on the tool to a battery.

After checking that there is no-one nearby, destroy the airbag by pressing the two buttons on the tool at the same time.

NOTE: If triggering is impossible (faulty ignition module), return the part in the packaging of the new part to **ITG** (Service **0429**).

PASSENGER AIRBAG MODULE

Destruction of the part removed from the vehicle

Proceed in the same way as for the driver's airbag in the old stacked up tyres (see opposite).

FAULT FINDING - INTRODUCTION

CONDITIONS FOR APPLICATION OF THE TESTS DEFINED IN THIS FAULT FINDING

The tests defined in this fault finding should only be applied to vehicles fitted with the new programmed restraint system (PRS) which reduces the tension of the seat belt on the chest during a violent impact.

This new system can be identified by the "PRS Airbag" inscription on the steering wheel cushion and on the passenger airbag module and by a 30 track yellow computer connector. Computer identification using the fault finding tool is: **4.Ab**.

The checks should only be applied if the fault is present on the vehicle. Only the "computer" fault leads to replacement of the computer whether the fault is present or simply stored.

If the fault is not present but simply stored, the application of checks recommended in the fault finding will not allow location of the origin of the fault stored. In this case only, the wiring and the faulty component connections should be checked (it is possible to access the wiring concerned in fault finding mode to try to display the passage from stored fault to present fault).

TOOLING REQUIRED FOR OPERATIONS ON THE AIRBAG AND SEAT BELT PRETENSIONER SYSTEMS:

– Fault finding tools.
– XRBAG set at update n° 4 (with the new yellow 30 track B40 adapter at the base of the computer).
– Multimeter.

REMINDER:

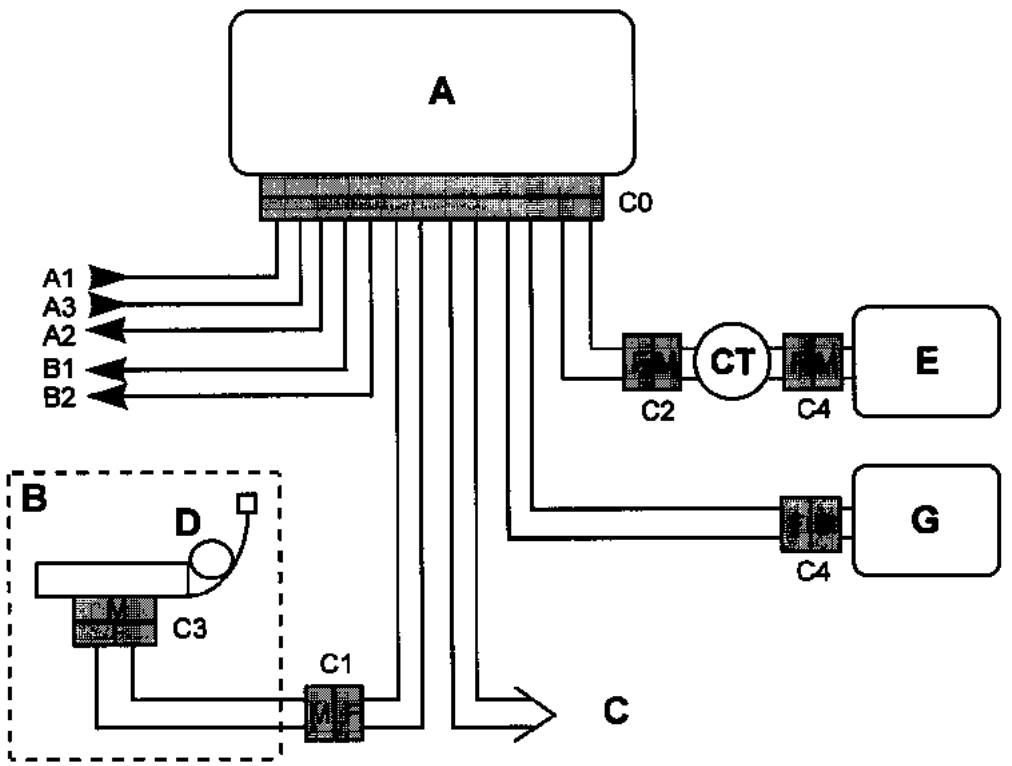
During operations on the airbag/seat belt pretensioner systems it is vital that you lock the computer by using the fault finding tool command (G80* on XR25) to prevent any risk of erratic triggering (all the ignition lines will be inhibited). The "locked" mode is signalled by the illumination of the instrument panel warning light. Without the fault finding tool, switch off the ignition and remove the supply fuse from the system, then wait at least 2 seconds for the power reserve capacity to discharge.

Never carry out measuring operations on the airbag and pretensioner ignition lines using any tool other than the XRBAG.

Ensure:
– before using a dummy ignition module, that its resistance is between **1.8 and 2.5 ohms**,
– that the voltage supply to the computer does not drop below 10 Volts (#01 on XR25) during the operation.

XRBAG FAULT FINDING - CHECK

Pretensioners, driver's and passenger's airbags



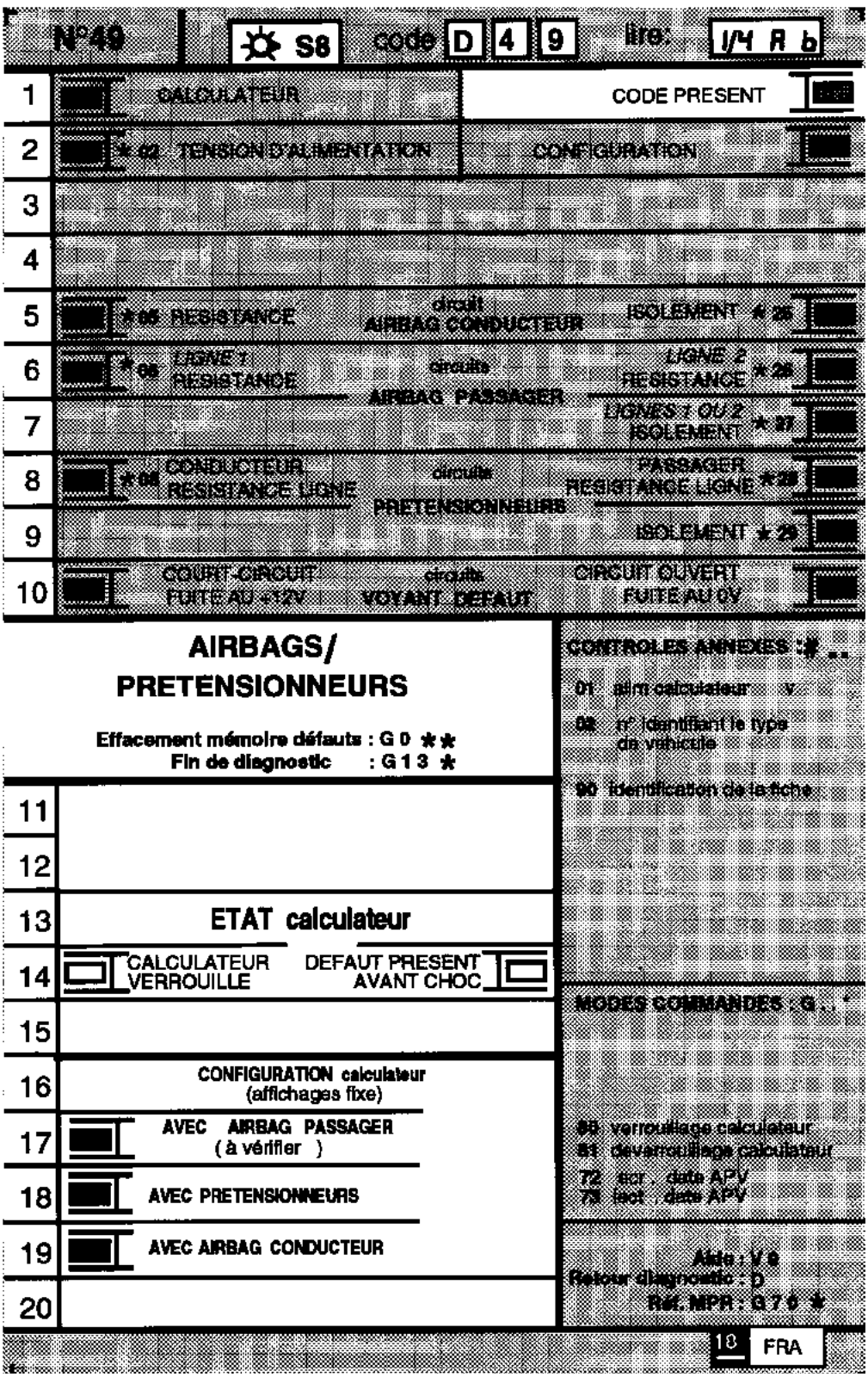
A	Central unit	
B	Driver's seat	
C	Front passenger seat	
D	Pretensioner	
E	Driver's airbag ignition module	
G	Passenger airbag ignition module	
CT	Rotary switch	
A1	+ 12 Volts	
A2	Warning light	
A3	Earth	
B1	} Fault finding lines	
B2	} Fault finding lines	

	AIRBAGS	
	Measuring point	Correct value
Driver	C0, C2 and C4	**2 to 9.4 ohms**
Passenger	C0 and C4	**1.6 to 4.6 ohms**
	PRETENSIONERS	
	Measuring point	Correct value
	C0, C1 and C3	**1.6 to 4.6 ohms**

Correct insulation value: display > = 100 h or 9999 flashing.

FAULT FINDING - XR25 FICHE

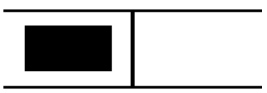
PRESENTATION OF XR25 FICHE N° 49 (cassette N° 18)



FAULT FINDING - XR25 FICHE

SIGNIFICANCE OF BARGRAPHS

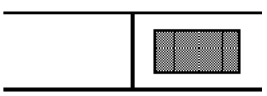
FAULT BARGRAPHS (always on coloured background)



If illuminated, indicates a fault on the product tested. The associated text defines the fault.
This bargraph may be:

- Illuminated : fault present.
- Flashing : fault stored.
- Extinguished : fault absent or not found.

STATUS BARGRAPHS (always on white background)



Bargraph always located on the top right hand side.
If illuminated, indicates establishment of dialogue with the product computer.
If it remains extinguished:

- The code does not exist.
- There is a fault in the tool, the computer or the XR25 / computer connection.

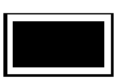
The following bargraph representations indicate their initial status:
Initial status: (ignition on, engine stopped, no operator action)

or

Indefinite

Extinguished

is illuminated when the function of the condition described on the fiche is carried out.



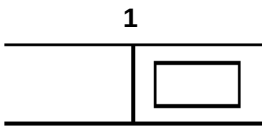
Illuminated

is extinguished when the function or the condition described on the fiche is no longer carried out.

ADDITIONAL NOTES

Certain bargraphs have a *. The *.. command, when the bargraph is illuminated, allows additional information on the type of fault or status to be displayed.

FAULT FINDING - INTERPRETATION OF FAULTS

1 	**Bargraph 1 extinguishes** Fiche n° 49 Code present

NOTES	None.

Ensure that the XR25 is not the cause of the fault by trying to communicate with a computer on another vehicle. If the XR25 is not the cause of the fault and dialogue cannot be established with any other computer on the same vehicle, it may be that a faulty computer is disrupting fault finding lines **K** and **L** . Disconnect the connections one at a time to locate the fault.
Check that the ISO selector is in position **S8**, that the latest XR25 cassette and the correct access code are being used.
Check the battery voltage and carry out the necessary operations to obtain a correct voltage **(10.5 Volts < battery voltage < 16 Volts)**.

Check the presence and status of the airbag computer supply voltage fuse. Check the computer connector connection and its condition. Check that the computer is correctly fed:
- Disconnect the airbag computer and fit the **30 track adapter B40** of the XRBAG.
- Check and ensure the presence of **+ APC** between the terminals marked **earth 1** and **+ APC**

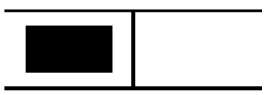
Ensure that the fault finding socket is correctly fed:
- **+ AVC** at **track 16**.
- **Earth** at **track 5**.

Check the continuity and insulation of the lines of the fault finding socket / airbag computer connection:
- Between the terminal marked **L** and **track 15** of the fault finding socket.
- Between the terminal marked **K** and **track 7** of the fault finding socket.

If dialogue is still not established after these various checks, replace the airbag computer (consult the "Aid" section for this operation).

AFTER REPAIR	When communication is established, deal with any faults indicated.

FAULT FINDING - INTERPRETATION OF FAULTS

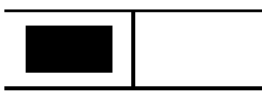
1 	**Left bargraph 1 illuminated or flashing** Fiche n° 49 Computer

NOTES	None.

Replace the airbag computer (consult the "Aid" section for this operation).

AFTER REPAIR	None.

FAULT FINDING - INTERPRETATION OF FAULTS

2 	**Left bargraph 2 illuminated or flashing** Fiche n° 49 Voltage supply **Tool XR25:** *02: 1.dEF : Too many micro-breaks 2.dEF : Voltage not within tolerance

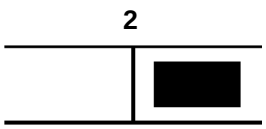
NOTES	Use the 30 track adapter of the XRBAG to operate on the computer connector.

1.dEF - 2.dEF	***NOTES***	None.

Carry out the operations necessary to obtain the correct voltage supply to the computer:
10.5 Volts ± 0.1 < correct voltage < 16 Volts ± 0.1.
– Battery charge check.
– Charging circuit check.
– Check the tightening and the condition of the battery terminals.
– Computer earth check.
– Connection status check on computer.
– Connector locking check.

AFTER REPAIR	Deal with any faults detected by the fault finding tool. Erase the computer memory (command G0** on XR25)

FAULT FINDING - INTERPRETATION OF FAULTS

	**Right bargraph 2 illuminated** Fiche n° 49 Configuration

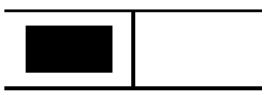
NOTES	None.

This fault indicates a mismatch between the computer configuration and the vehicle equipment detected by the computer.
The vehicle is fitted with a passenger airbag and the computer is configured "**Without passenger airbag**".

Modify the computer configuration using the **"With passenger airbag"** command (command G85*6* on XR25) or by the "Configuration" command on the other fault finding tools.

AFTER REPAIR	Erase the computer memory (command G0** on XR25) then turn off the ignition. Check again using the fault finding tool.

FAULT FINDING - INTERPRETATION OF FAULTS

5 	**Left bargraph 5 illuminated** Fiche n° 49 Driver's airbag resistance circuit **Tool XR25:** *05: CC : Short circuit CO : Open circuit

NOTES	Never carry out measurements on the ignition lines with equipment other than the XRBAG.

Lock the computer using the fault finding command (G80* on XR25).
Switch off the ignition and remove the 2 mounting bolts from the steering wheel cushion.
Check that it is correctly connected.

Disconnect the airbag cushion and connect a dummy ignition module to the ignition module connector.
Switch on the ignition and carry out a check using the fault finding tool.
Replace the airbag cushion if the fault has been stored (fault no longer indicated).

With the ignition switched off, disconnect, then reconnect the connector for the rotary switch below the steering wheel.
Operate on the connections if the fault has been stored (fault indicated present).

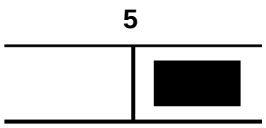
The XRBAG tool MUST be used for checking resistance at **point C2** of the driver's airbag circuit.
If the value obtained is not correct, replace the rotary switch under the steering wheel.

Reconnect the rotary switch under the steering wheel, disconnect the computer connector and fit the 30 track adapter B40.
The XRBAG tool MUST be used for checking resistance on the **wire marked A** on the adapter.
If the value obtained is not correct, check the connections on the 30 track connector (tracks 10 and 11) and replace the wiring if necessary.

If the checks carried out have not shown the presence of a fault, check on the base of the airbag computer for the presence of the 5 shunt opening pins for the 30 track connector.
Check the connection status on computer.
Check the status of the 30 track connector (locking system,...).

AFTER REPAIR	Reconnect the computer and driver's airbag ignition module and refit the cushion on the steering wheel. Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer using the fault finding command (G81* on XR25). Destroy the airbag cushion if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

	**Right bargraph 5 illuminated** Fiche n° 49 Driver's airbag insulation circuit **Tool XR25 :** *25: CC.1 : Short circuit to 12 Volts CC.0 : Short circuit to earth

NOTES	Never carry out measurements on the ignition lines with equipment other than the XRBAG.

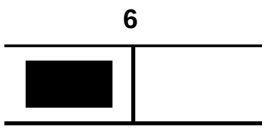
Lock the computer using the fault finding command (G80* on XR25). Switch off the ignition and remove the 2 mounting bolts from the steering wheel cushion. Check the condition of the trigger wire.

The XRBAG tool MUST be use for measuring insulation appropriate to the type of fault at **point C2** of the driver's airbag circuit. If the value obtained is not correct, replace the rotary switch under the steering wheel.

Reconnect the rotary switch under the steering wheel, disconnect the computer connector and fit the 30 track adapter B40. The XRBAG tool must be used to measure the appropriate insulation for the fault type on the **wire marked A** for the adapter. If the value obtained is not correct, check the connections on the 30 track connector (tracks 10 and 11) and replace the wiring if necessary.

AFTER REPAIR	Reconnect the computer and driver's airbag ignition module and refit the cushion on the steering wheel. Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer using the fault finding command (G81* on XR25). Destroy the airbag cushion if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS



Left bargraph 6 illuminated Fiche n° 49

Passenger airbag resistance circuit 1

Tool XR25: *06: CC : Short circuit
CO : Open circuit

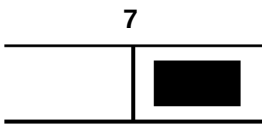
NOTES	Never carry out measurements on the ignition lines with equipment other than the XRBAG. On this vehicle "line 1" corresponds to the single trigger line of the passenger's airbag module . If the vehicle is not fitted with a passenger airbag, consult the treatment of the computer configuration status "with passenger airbag" (bargraph 17 left XR25).

Lock the computer using the fault finding command (G80* on XR25).
Switch off the ignition, disconnect the computer connector and fit the 30 track adapter B40.
The XRBAG tool MUST be used for checking resistance on the **wire marked B** on the adapter.
Is the value obtained correct?

YES	If the value obtained is correct on **wire B** of the adapter, check on the base of the airbag computer for the presence of the 5 shunt opening pins on the 30 track connector. Check the connection status on computer. Check the status of the 30 track connector (locking system, connections, ...).
NO	If the value obtained is not correct on **wire B** of the adapter, check the connections on the 30 track connector (tracks 13 and 14)
	If the value remains wrong, switch off the ignition and carry out the necessary removals to access the wiring of the passenger's airbag module (Safrane: remove the passenger airbag module - Laguna: remove the glove compartment - Twingo/Kangoo: remove the dashboard - Mégane: remove the top of the dashboard). Disconnect the passenger airbag ignition module, connect a dummy ignition module to the ignition module connector then re-measure the resistance on the **wire marked B** on the adapter, using XRBAG. If the value obtained is correct, replace the passenger's airbag module . If the value obtained is not correct, replace the airbag wiring.

AFTER REPAIR	Reconnect the computer and the ignition module of the passenger's airbag module, then switch on the ignition again. Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer using the fault finding command (G81* on XR25). Destroy the passenger's airbag module if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS



Right bargraph 7 illuminated Fiche n° 49

Passenger airbag insulation circuit 1 or 2

Tool XR25: *27: CC.1 : Short circuit to 12 Volts
CC.0 : Short circuit to earth

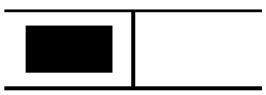
NOTES	Never carry out measurements on the ignition lines with equipment other than the XRBAG. On this vehicle "line 1" corresponds to the single trigger line of the passenger's airbag module .

Lock the computer using the fault finding command (G80* on XR25).
Switch off the ignition, disconnect the computer connector and fit the 30 track adapter B40.
The XRBAG tool MUST be used for measuring the insulation appropriate to the type of fault on the **wire marked B** on the adapter.
Is the value obtained correct?

YES	If the value obtained is correct on **wire B** of the adapter, check the status of the connections on computer.
NO	If the value obtained is not correct on **wire B** of the adapter, check the connections on the 30 track connector (tracks 13 and 14)
	If the value remains incorrect, replace the airbag wiring.

AFTER REPAIR	Reconnect the computer and the ignition module of the passenger's airbag module, then switch on the ignition again. Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer using the fault finding command (G81* on XR25). Destroy the passenger's airbag module if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

8 	**Left bargraph 8 illuminated** Fiche n° 49 Driver's pretensioner resistance circuit **Tool XR25:** *08: CC : Short circuit CO : Open circuit

NOTES	Never carry out measurements on the ignition lines with equipment other than the XRBAG.

Lock the computer using the fault finding command (G80* on XR25).
Switch off the ignition and check that the driver's pretensioner ignition module is connected correctly.

Disconnect the ignition module of the driver's pretensioner and connect a dummy ignition module to the ignition module connector.
Switch on the ignition and carry out an XR25 check.
Replace the driver's pretensioner if the fault has been stored (fault no longer indicated).

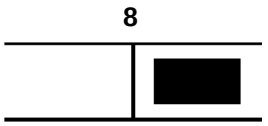
The XRBAG tool MUST be used for measuring the resistance at **point C1** (seat connector) on the driver's pretensioner line.
If the value obtained is not correct, replace the wiring between **points C1 and C3** (seat wiring).

Disconnect the computer connector and fit the 30 track adapter B40.
The XRBAG tool MUST be used for checking resistance on the **wire marked D** on the adapter.
If the value obtained is not correct, check the 30 track connector connections (tracks 1 and 2) and replace the wiring if necessary.

If the checks carried out have not shown the presence of a fault, check on the base of the airbag computer for the presence of the 5 shunt opening pins for the 30 track connector.
Check the connection status on computer.
Check the status of the 30 track connector (locking system, ...).

AFTER REPAIR	Reconnect the computer and the ignition module of the pretensioner, then switch on the ignition again. Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer using the fault finding command (G81* on XR25). Destroy the pretensioner if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

8 	**Right bargraph 8 illuminated** Fiche n° 49 Passenger's pretensioner resistance circuit **Tool XR25:** *28: CC : Short circuit CO : Open circuit

NOTES	Never carry out measurements on the ignition lines with equipment other than the XRBAG.

Lock the computer using the fault finding command (G80* on XR25).
Switch off the ignition and check that the passenger pretensioner ignition module is connected correctly.

Disconnect the ignition module of the passenger's pretensioner and connect a dummy ignition module to the ignition module connector.
Switch on the ignition and carry out a check using the fault finding tool.
Replace the passenger's pretensioner if the fault has been stored (fault no longer indicated).

The XRBAG tool MUST be used for checking resistance at **point C1** (seat connector) of the passenger's pretensioner line.
If the value obtained is not correct, replace the wiring between **points C1 and C3** (seat wiring).

Disconnect the computer connector and fit the 30 track adapter B40.
The XRBAG tool MUST be used for checking resistance on the **wire marked C** on the adapter.
If the value obtained is not correct, check the 30 track connector connection (tracks 3 and 4) and replace the wiring if necessary.

If the checks carried out have not shown the presence of a fault, check on the base of the airbag computer for the presence of the 5 shunt opening pins for the 30 track connector.
Check the connection status on computer.
Check the status of the 30 track connector (locking system, ...).

AFTER REPAIR	Reconnect the computer and the ignition module of the pretensioner, then switch on the ignition again. Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer using the fault finding command (G81* on XR25). Destroy the pretensioner if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

9 	**Right bargraph 9 illuminated** Fiche n° 49 Pretensioner circuits insulation **Tool XR25:** *29: CC.1 : Short circuit to 12 Volts CC.0 : Short circuit to earth

NOTES	Never carry out measurements on the ignition lines with equipment other than the XRBAG.

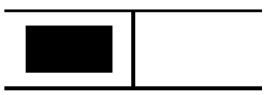
Lock the computer using the fault finding command (G80* on XR25).
Disconnect the ignition module of the driver's pretensioner and connect a dummy ignition module to the ignition module .
Switch on the ignition and carry out a check using the fault finding tool.
If the fault has been stored (fault no longer indicated), check the condition of the seat wiring.
Replace the driver's pretensioner if the wiring is not faulty.
Then carry out the same operation on the passenger's pretensioner (if not a driver's side fault).

The XRBAG tool MUST be used for measuring the insulation appropriate to the type of fault at **point C1** (seat connector) of the driver's pretensioner line.
If the value obtained is not correct, replace the wiring between **points C1 and C3** (seat wiring).
Then carry out the same measurement on the passenger's pretensioner line (if not a driver's side fault).

Disconnect the computer connector and fit the 30 track adapter B40.
The XRBAG tool MUST be used for measuring the insulation appropriate to the type of fault on the **wires marked C (passenger)** and **D (driver)** on the adapter.
If one of the values obtained is not correct, check the connections on the 30 track connector (tracks 3 / 4 for **wire C** and 1/2 for **wire D)** and replace the wiring if necessary.

AFTER REPAIR	Reconnect the computer and the ignition module of the pretensioner, then switch on the ignition again. Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer using the fault finding command (G81* on XR25). Destroy the pretensioner if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

10 	**Left bargraph 10 illuminated** Fiche n° 49 Airbag fault warning light circuit short circuit or insulation at 12 Volts

NOTES	Use the 30 track adapter of the XRBAG to operate on the computer connector.

Lock the computer using the fault finding command (G80* on XR25).
Check the condition of the warning light bulb.
Ensure insulation against **12 Volts** of the connection between the warning light and **track 7** of the 30 track connector.

If the checks carried out do not demonstrate the existence of a fault, replace the airbag computer (consult the "Aid" section for this operation).

AFTER REPAIR	Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer using the fault finding command (G81* on XR25).

FAULT FINDING - INTERPRETATION OF FAULTS

10 	**Right bargraph 10 illuminated** Fiche n° 49 Air bag fault warning light circuit open circuit or insulation to earth

NOTES	Use the 30 track adapter of the XRBAG to operate on the computer connector.

Warning light extinguished after ignition	***NOTES***	None.

Lock the computer using the fault finding command (G80* on XR25).
Check the condition of the warning light bulb.
Ensure the continuity of the connection between the warning light and **track 7** of the 30 track connector.
Ensure that **12 volts** are reaching the warning light.

If the checks carried out did not indicate a fault, disconnect the computer connector and fit the XRBAG B40 30 track connector. Use the XRBAG to test the function of the instrument panel from the **grey wire marked 1** on the adapter.
If it is possible to illuminate the warning light using the XRBAG, replace the airbag computer (consult the "Aid" section for this operation).
If it is impossible to operate the warning light, repeat the preceding checks.

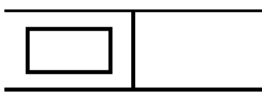
Warning light illuminated after ignition	***NOTES***	None.

Lock the computer using the fault finding command (G80* on XR25).
Ensure insulation against **earth** of the connection between the warning light and **track 7** of the 30 track connector

If the checks carried out do not demonstrate the existence of a fault, replace the airbag computer (consult the "Aid" section for this operation).

AFTER REPAIR	Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer using the fault finding command (G81* on XR25).

FAULT FINDING - INTERPRETATION OF STATUSES

14 	**Left bargraph 14** Fiche n° 49 Computer locked

NOTES	None.

When this state is validated, the computer is in "locked" mode.
All the ignition lines are inhibited, preventing the triggering of the airbags and seat belt pretensioners.
This status is validated in 2 cases:

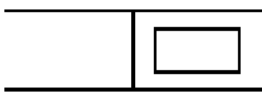
- The computer is new (it is sold locked).
- The computer locking command using the fault finding tool was used during an operation on the vehicle (command G80* on XR25).

UNLOCKING

- Erase the computer memory (command **G0**** on XR25) then switch off the ignition.
- Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer using the fault finding command (command G81* on XR25).

AFTER REPAIR	None.

FAULT FINDING - INTERPRETATION OF STATUSES

14 	**Right bargraph 14** Fiche n° 49 Fault present before impact

NOTES	None.

This status is validated in the following case:

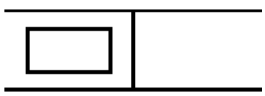
- An impact was detected.
- A fault was present in the computer memory before the impact.
- This fault was indicated by the illumination of the fault warning light before the impact.

This status can thus be used as evidence of failure of an airbag or seat belt pretensioner to trigger.

Inform Techline if this status is validated in other conditions (without fault, without impact, ...).

AFTER REPAIR	None.

FAULT FINDING - INTERPRETATION OF STATUSES

17 	**Left bargraph 17** Fiche n° 49 Computer configuration to "With passenger airbag"

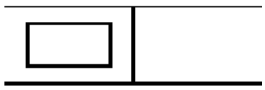
NOTES	None.

This status allows display of the computer configuration in respect of the passenger airbag function and to ensure that it is properly configured for the vehicle equipment.

If this status is validated and the vehicle is not fitted with a passenger airbag, use the fault finding tool configuration command "**Without passenger airbag**" (command G85*5* on XR25) or by the "Configuration" command on the other fault finding tools.

AFTER REPAIR	None.

FAULT FINDING - INTERPRETATION OF STATUSES

18-19 	**Left bargraphs 18 and 19** Fiche n° 49 Computer configuration to "With pretensioners and with driver's airbag"

NOTES	None.

These statuses allow the computer configuration to be displayed.

As the minimum equipment of these vehicles is one airbag and one driver's pretensioner, these 2 statuses are always validated.

AFTER REPAIR	None.

FAULT FINDING - CHECKING CONFORMITY

NOTES	Check the conformity after a full check using the fault finding tool.

Order	Function	Configuration / status, check or action	Display notes	Diag
1	Fault finding tool dialogue	**D49** + selector on S8 (XR25)	4.Ab	**BG 1D**
2	Computer conformity	"Vehicle type" configuration or **#02** XR25	Twingo 0 Kangoo 22 Mégane 7 Laguna 3 Safrane 4	None.
3	Computer configuration	Computer configuration statuses: – With driver's airbag – With passenger airbag – With driver's pretensioner – With passenger's pretensioner or Status bargraphs 17, 18 and 19.	Ensure that the computer configuration defined by these statuses corresponds to the vehicle equipment.	None.
4	Warning light operation - check computer initialisation	Switch on the ignition	3 second illumination of the warning light when ignition is switched on	None.

FAULT FINDING - AID

REPLACING THE AIRBAG COMPUTER

The airbag computers are sold in locked mode to avoid all risk of incorrect triggering (all ignition lines are inhibited). The "locked" mode is signalled by the illumination of the instrument panel warning light.

When replacing an airbag computer, follow this procedure:

– Ensure that ignition is switched off.

– Replace the computer.

– Carry out a check using the fault finding tool.

– If no fault is indicated by the fault finding tool, unlock the computer using the "**Computer unlocking**" command (command G81* on XR25).

If the vehicle is not fitted with a passenger airbag, use the fault finding configuration tool "**Without passenger airbag**" to configure without passenger airbag (command G85*5* on XR25) or the "Configuration" command on other fault finding tools.

If the vehicle is not fitted with an airbag use the fault finding configuration tool "**Without airbag (pretensioners only)**" to configure without passenger and driver's airbag (command G85*7* on XR25) or the "Configuration" command on other fault finding tools.

FAULT FINDING - INTRODUCTION

CONDITIONS FOR APPLICATION OF THE TESTS DEFINED IN THIS FAULT FINDING

The tests defined in this fault finding should only be applied to vehicles fitted with the new programmed restraint system (PRS) and driver's side airbag and passenger's front airbag.

This new system can be identified by:
– the "PRS airbag" inscription on the steering wheel cushion and on the passenger airbag module,
– the "airbag" inscription in the front seat backrests padding,
– an orange 50 track computer connector.

The tests defined in this fault finding should only be applied if the fault is present on the vehicle at the time of checking. Only the "computer" fault leads to replacement of the computer whether the fault is present or simply stored.

If the fault is not present but simply stored, the application of checks recommended in the fault finding will not allow location of the origin of the fault stored. In this case only, the wiring and the faulty component connections should be checked (it is possible to access the wiring concerned in fault finding mode to try to display the passage from stored fault to present fault).

TOOLING REQUIRED FOR OPERATIONS ON THE AIRBAG AND SEAT BELT PRETENSIONER SYSTEMS:

– XR25 (with the XR25 cassette n° 18) or NXR.
– XRBAG set at update n° 5 (with the new orange 50 track B50 adapter at the base of the computer).
– Multimeter.

REMINDER:

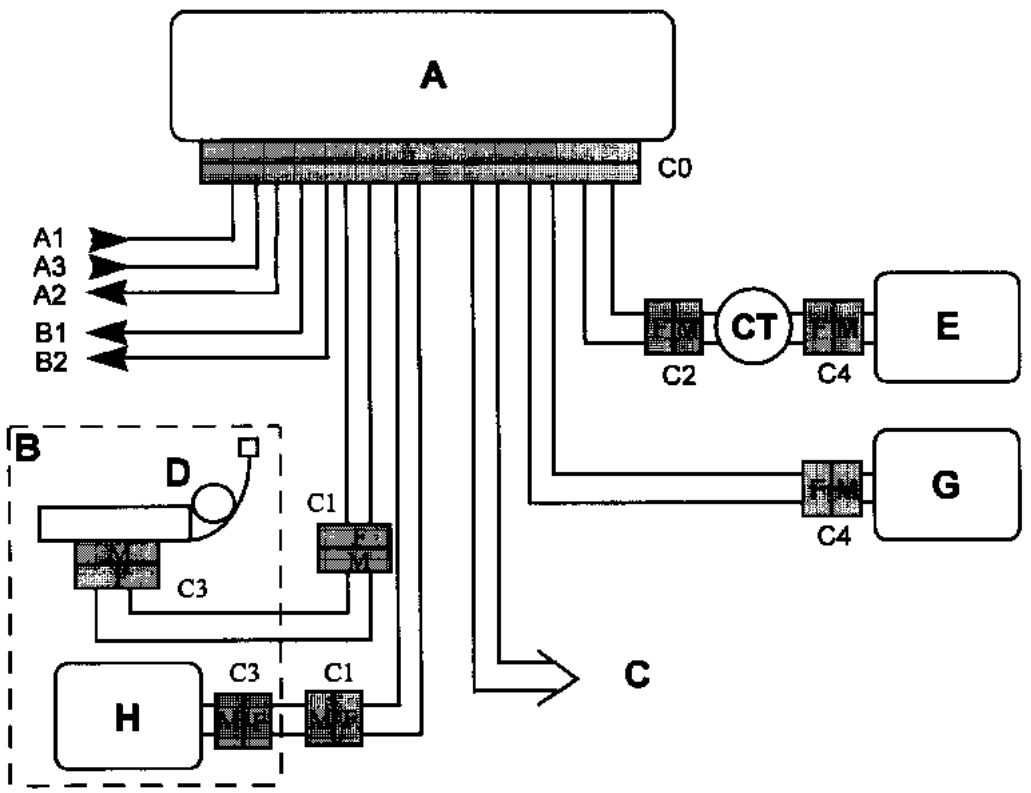
During operations on the airbag/seat belt pretensioner systems it is vital that you lock the computer using the fault finding tool (command G80* on XR25) to prevent any risk of erratic triggering (all the ignition lines will be inhibited). The "locked" mode is signalled by the illumination of the instrument panel warning light. Without the fault finding tool, switch off the ignition and remove the supply fuse from the system, then wait at least 2 seconds for the power reserve capacity to discharge.

Never carry out measuring operations on the airbag and pretensioner ignition lines using any tool other than the XRBAG.

Ensure:
– before using a dummy ignition module, that its resistance is between 1.8 and 2.5 ohms,
– that the voltage supply to the computer does not drop below **10 Volts** (#01) during the operation.

FAULT FINDING - XRBAG

PRETENSIONERS, FRONT AND SIDE AIRBAGS



A Central unit
B Driver's seat
C Front passenger seat
D Pretensioner
E Driver's airbag ignition module
G Passenger airbag ignition module
H Side airbag ignition module

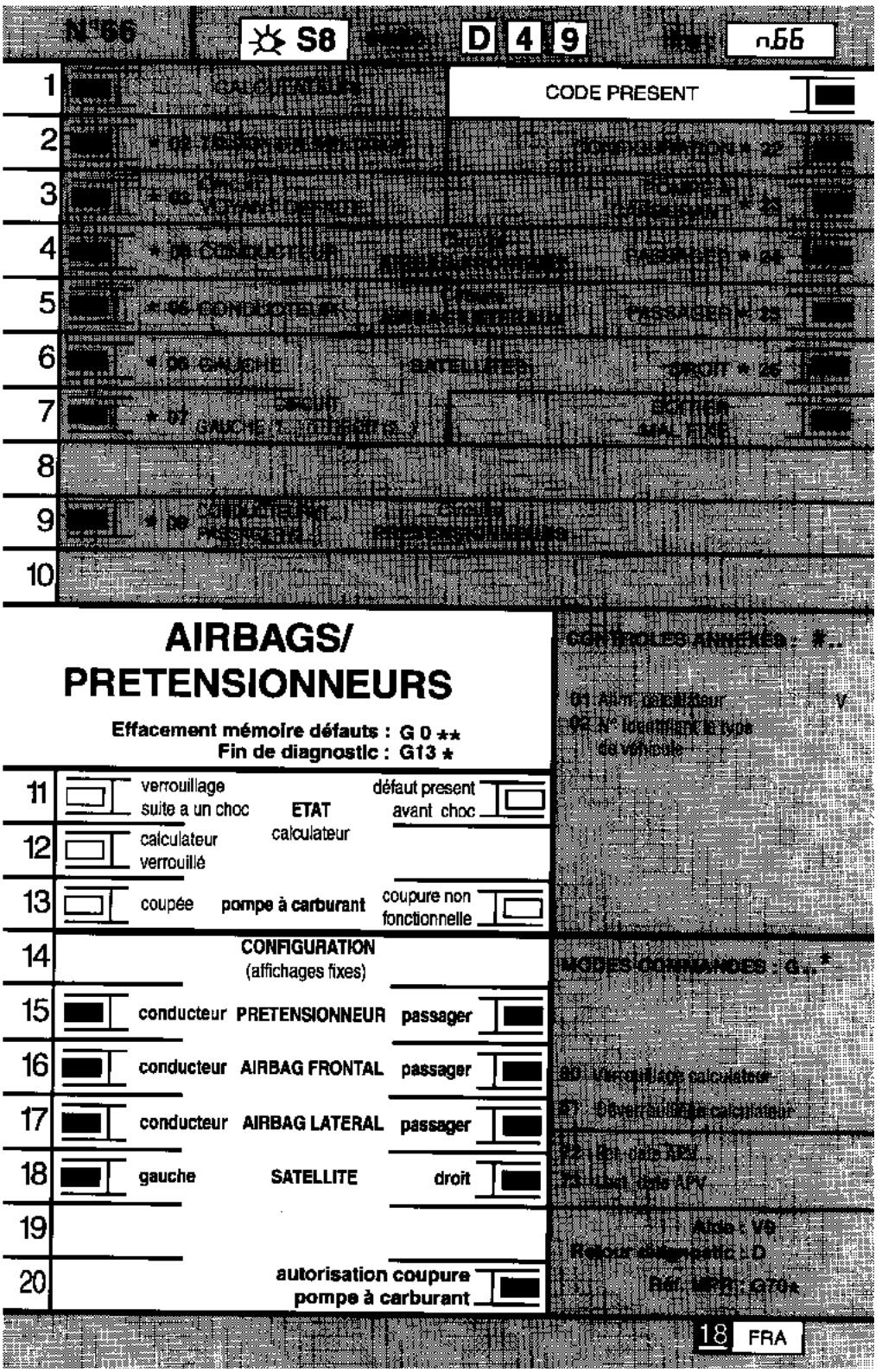
CT Rotary switch
A1 + 12 Volts
A2 Warning light
A3 Earth
B1, **B2** Fault finding lines

	FRONT AIRBAGS	
	Measuring point	Correct value
Driver	C0, C2 and C4	2 to 9.4 ohms
Passenger	C0 and C4	1.6 to 4.6 ohms
	SIDE AIRBAGS AND PRETENSIONERS	
	Measuring point	Correct value
	C0, C1 and C3	1.6 to 4.6 ohms

Correct insulation value: display >= 100 h or 9999 flashing.

FAULT FINDING - XR25 FICHE

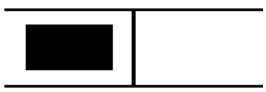
PRESENTATION OF XR25 FICHE N° 66 (cassette N° 18)



FAULT FINDING - XR25 FICHE

SIGNIFICANCE OF BARGRAPHS

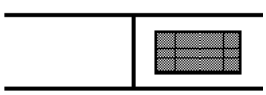
FAULT BARGRAPHS (always on coloured background)



If illuminated, indicates a fault on the product tested. The associated text defines the fault.
This bargraph may be:

- Illuminated : fault present.
- Flashing : fault stored.
- Extinguished : fault absent or not found.

STATUS BARGRAPHS (always on white background)



Bargraph always located on the top right hand side.
If illuminated, indicates establishment of dialogue with the product computer.
If it remains extinguished:

- The code does not exist.
- There is a fault in the tool, the computer or the XR25 / computer connection.

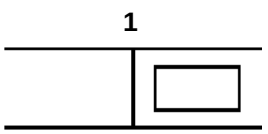
The following bargraph representations indicate their initial status:
Initial status: (ignition on, engine stopped, no operator action)

 or 	Indefinite	is illuminated when the function of the condition described on the fiche is carried out.
	Extinguished	
	Illuminated	Is extinguished when the function or the condition described on the fiche is no longer carried out.

ADDITIONAL NOTES

Certain bargraphs have a *. The *.. command, when the bargraph is illuminated, allows additional information on the type of fault or status to be displayed.

FAULT FINDING - INTERPRETATION OF FAULTS



Right bargraph 1 extinguished Fiche n° 66

Code present

NOTES	None.

Ensure that the XR25 is not the cause of the fault by trying to communicate with a computer on another vehicle. If the XR25 is not the cause of the fault and dialogue cannot be established with any other computer on the same vehicle, it may be that a faulty computer is disrupting fault finding lines **K** and **L**. Disconnect the connections one at a time to locate the fault.
Check that the ISO selector is in position **S8**, that the latest XR25 cassette and the correct access code are being used.
Check the battery voltage and carry out the necessary operations to obtain a correct voltage **(10.5 Volts < battery voltage < 16 Volts)**.

Check the presence and status of the airbag computer supply voltage fuse.
Check the computer connector connection and its condition.
Check that the computer is correctly supplied:
- Disconnect the airbag computer and fit the **50 track adapter B50** of the XRBAG.
- Check and ensure the presence of **+ APC** between the terminals marked **earth** and **+ APC**

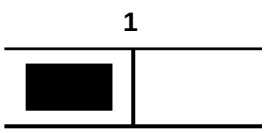
Ensure that the fault finding socket is correctly supplied:
- **+ AVC** at **track 16**.
- **Earth** at **track 5**.

Check the continuity and insulation of the lines of the fault finding socket / airbag computer connection:
- Between the terminal marked **L** and **track 15** of the fault finding socket.
- Between the terminal marked **K** and **track 7** of the fault finding socket.

If dialogue is still not established after these various checks, replace the airbag computer (consult the section on "Aid" for this operation).

AFTER REPAIR	When communication is established, deal with any faults indicated.

FAULT FINDING - INTERPRETATION OF FAULTS

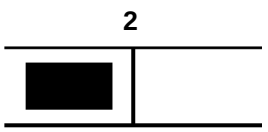
	**Left bargraph 1 illuminated or flashing** Fiche n° 66 Computer

NOTES	None.

Replace the airbag computer (consult the "Aid" section for this operation).

AFTER REPAIR	None.

FAULT FINDING - INTERPRETATION OF FAULTS

	**Left bargraph 2 illuminated** Fiche n° 66 Voltage supply **Tool XR25:** *02: 1.dEF : Too many micro-breaks 2.dEF : Voltage not within tolerance

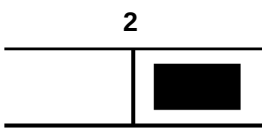
NOTES	Use the B50 adapter of the XRBAG to operate on the computer connector.

1.dEF - 2.dEF	***NOTES***	None.

Carry out the operations necessary to obtain the correct voltage supply to the computer:
10.5 Volts ± 0.1 < correct voltage < 16 Volts ± 0.1.
– Battery charge check.
– Charging circuit check.
– Check the tightening and the condition of the battery terminals.
– Computer earth check.
– Connection status check on computer + locking

AFTER REPAIR	Deal with any faults detected by the fault finding tool. Erase the computer memory (command G0** on XR25)

FAULT FINDING - INTERPRETATION OF FAULTS



Right bargraph 2 illuminated Fiche n° 66

Configuration

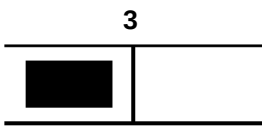
NOTES	None.

This fault indicates a mismatch between the computer configuration and the vehicle equipment detected by the computer. The computer detects the presence of an element additional to its configuration.

Modify the computer configuration using the "Configuration" command for the fault finding tools (except XR25).

AFTER REPAIR	Erase the computer memory (command G0** on XR25) then turn off the ignition. Check again using the fault finding tool.

FAULT FINDING - INTERPRETATION OF FAULTS



Left bargraph 3 illuminated Fiche n° 66

Airbag fault warning light circuit

Tool XR25: *03: 1CC.1 : Short circuit to 12 volts
1CO.0 : Open circuit or short circuit to earth

NOTES	Use the B50 adapter of the XRBAG to operate on the computer connector.

1CC.1	***NOTES***	None.

Lock the computer using the fault finding command (command **G80*** on XR25).
Check the condition of the warning light bulb.
Ensure insulation against **12 Volts** of the connection between the warning light and **track 7** of the 50 track connector.

1CO.0	***NOTES***	None.

Warning light extinguished after ignition

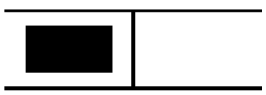
Lock the computer using the fault finding command (command **G80*** on XR25).
Check the condition of the warning light bulb.
Ensure the continuity of the connection between the warning light and **track 7** of the 50 track connector.
Ensure that **12 volts** are reaching the warning light.

If the checks carried out did not show the presence of a fault, disconnect the computer connector and fit the **50 track adapter B50** of XRBAG. Use the +XRBAG to test the operation of the warning light on the instrument panel from the adapter.
If it is possible to illuminate the warning light using the XRBAG, replace the airbag computer (consult the "Aid" section for this operation).
If it is impossible to operate the warning light, repeat the preceding checks.

AFTER REPAIR	Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer (command G81* on XR25).

6SRPG1TT1.0

FAULT FINDING - INTERPRETATION OF FAULTS

3  CONTINUED	

Warning light illuminated after ignition

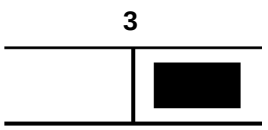
Lock the computer using the fault finding command (command **G80*** on XR25).

Disconnect the airbag computer and check the presence, on the base, of the 7 pins which open the connector shunts.

Ensure insulation against **earth** of the connection between the warning light and **track 7** of the 50 track connector

AFTER REPAIR	Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer (command G81* on XR25).

FAULT FINDING - INTERPRETATION OF FAULTS

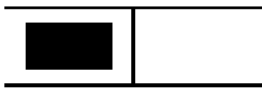
	**Right bargraph 3 illuminated** Fiche n° 66 Fuel pump

NOTES	None.

Fault not used by this application.

AFTER REPAIR	None.

FAULT FINDING - INTERPRETATION OF FAULTS

4 	**Left bargraph 4 illuminated** Fiche n° 66 Driver's front airbag circuit **Tool XR25:** *04: CC : Short circuit CO : Open circuit CC.1 : Short circuit to 12 volts CC.0 : Short circuit to earth

NOTES	Never carry out measurements on the ignition lines with equipment other than the XRBAG.

CO - CC	***NOTES***	None.

Lock the computer using the fault finding command (command **G80***on XR25).
Switch off the ignition and remove the 2 mounting bolts from the steering wheel cushion.
Check that it is correctly connected.

Disconnect the airbag cushion and connect a dummy ignition module to the ignition module connector.
Switch on the ignition and carry out a check using the fault finding tool.
Replace the airbag cushion if the fault has been stored (fault no longer indicated).

With the ignition switched off, disconnect, then reconnect the connector for the rotary switch below the steering wheel.
Operate on the connections if the fault has been stored (fault indicated present).

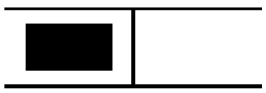
The XRBAG tool MUST be used for checking resistance at **point C2** of the driver's front airbag circuit.
If the value obtained is not correct, replace the rotary switch under the steering wheel.

Reconnect the rotary switch under the steering wheel, disconnect the computer connector and fit the **50 track adapter B50.**
The XRBAG tool MUST be used for checking resistance on the **wire marked C** on the adapter.
If the value obtained is not correct, check the connections on the 50 track connector (tracks 10 and 11) and replace the wiring if necessary.

If the checks carried out have not shown the presence of a fault, check on the base of the airbag computer for the presence of the 7 shunt opening pins for the 50 track connector.
Check the status:
– of the computer connections,
– of the 50 track connector (locking system, ...)

AFTER REPAIR	Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer (command G81* on XR25). Destroy the airbag cushion if it has been replaced (tool **Elé**. **1287**).

FAULT FINDING - INTERPRETATION OF FAULTS

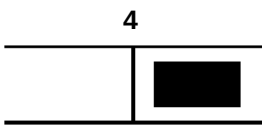
4  CONTINUED	

CC.1 - CC.0	***NOTES***	None.

Lock the computer using the fault finding command (command **G80***on XR25). Switch off the ignition and remove the 2 mounting bolts from the steering wheel cushion. Check the condition of the trigger wire.
The XRBAG tool MUST be use for measuring insulation appropriate to the type of fault at **point C2** of the driver's front airbag circuit. If the value obtained is not correct, replace the rotary switch under the steering wheel.
Reconnect the rotary switch under the steering wheel, disconnect the computer connector and fit the **50 track adapter B50**. The XRBAG tool MUST be use for measuring insulation appropriate to the type of fault on the **wire marked C** on the adapter. If the value obtained is not correct, check the connections on the 50 track connector (tracks 10 and 11) and replace the wiring if necessary.

AFTER REPAIR	Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer (command G81* on XR25). Destroy the airbag cushion if it has been replaced (tool Elé. **1287**).

FAULT FINDING - INTERPRETATION OF FAULTS



Right bargraph 4 illuminated Fiche n° 66

Passenger's front airbag circuit

Tool XR25: *24:

CC	:	Short circuit
CO	:	Open circuit
CC.1	:	Short circuit to 12 volts
CC.0	:	Short circuit to earth

NOTES	Never carry out measurements on the ignition lines with equipment other than the XRBAG.

CO - CC	***NOTES***	None.

Lock the computer using the fault finding command (command **G80***on XR25).
Switch off the ignition, disconnect the computer connector and fit the **50 track adapter B50**
The XRBAG tool MUST be used for checking resistance on the **wire marked D** on the adapter.
Is the value obtained correct?

YES	If the value obtained is correct on **wire D** of the adapter, check on the base of the airbag computer for the presence of the 7 shunt opening pins on the 50 track connector. Check: – the connection status on computer, – the status of the 50 track connector (locking system, connections, ...).

NO	If the value obtained is not correct on **wire D** of the adapter, check the connections on the 50 track connector (tracks 13 and 14)
	If the value remains wrong, switch off the ignition and carry out the necessary removals to access the wiring of the passenger's airbag module (Laguna: remove the glove compartment - Twingo/Kangoo: remove the dashboard - Mégane: remove the top of the dashboard). Disconnect the passenger airbag ignition module, connect a dummy ignition module to the ignition module connector then re-measure the resistance on the **wire marked D** on the adapter, using XRBAG. If the value obtained is correct, replace the passenger's airbag module. If the value obtained is not correct, replace the airbag wiring.

AFTER REPAIR	Reconnect the computer and the ignition module of the passenger's airbag module, then switch on the ignition again. Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer (command G81* on XR25). Destroy the passenger's airbag module if it has been replaced (tool **Elé**. **1287**).

FAULT FINDING - INTERPRETATION OF FAULTS

4  CONTINUED	

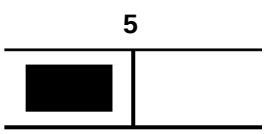
CC.1 - CC.0	***NOTES***	None.

Lock the computer (command **G80*** on XR25).
Switch off the ignition, disconnect the computer connector and fit the **50 track adapter B50**.
The XRBAG tool MUST be use for measuring insulation appropriate to the type of fault on the **wire marked D** on the adapter.
Is the value obtained correct?

YES	If the value obtained is correct on **wire D** of the adapter, check the status of the connections on computer.
NO	If the value obtained is not correct on **wire D** of the adapter, check the connections on the 50 track connector (tracks 13 and 14)
	If the value remains incorrect, replace the airbag wiring.

AFTER REPAIR	Reconnect the computer and the ignition module of the passenger's airbag module, then switch on the ignition again. Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer (command G81* on XR25). Destroy the passenger's airbag module if it has been replaced (tool **Elé**. **1287**).

FAULT FINDING - INTERPRETATION OF FAULTS



Right bargraph 5 illuminated Fiche n° 66

Driver's side airbag circuit

Tool XR25: *05:
CC : Short circuit
CO : Open circuit
CC.1 : Short circuit to 12 volts
CC.0 : Short circuit to earth

NOTES	Never carry out measurements on the ignition lines with equipment other than the XRBAG.

CO - CC	***NOTES***	None.

Lock the computer (command **G80*** on XR25).
The XRBAG tool MUST be used for measuring the resistance at **point C1** (seat connector) on the driver's side airbag module line.
Is the value obtained correct?

YES

Check the seat connector connections (point C1).
Visually inspect the seat wiring. Reconnect point **C1**.

Disconnect the computer connector and fit the **50 track adapter B50**.
The XRBAG tool MUST be used for measuring the resistance on the wire marked **E** of the adapter.
– If the value obtained is not correct, check the 50 track connector connections (tracks 16 and 17) and replace the wiring if necessary.
– If the value obtained is correct on **wire E** of the adapter, check on the base of the computer for the presence of the 7 shunt opening pins on the 50 track connector.

Check:
– the connection status on computer.
– the status of the 50 track connector (locking system, connections, ...).

NO

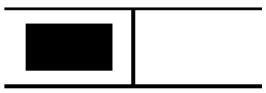
Check the seat connector connections.
Strip the driver's seat and check that the airbag ignition module is connected correctly.

Disconnect the driver's side airbag ignition module, connect a dummy ignition module to the ignition module connector then re-measure the resistance on XRBAG at **point C1**.
– If the value obtained is correct, replace the driver's side airbag module.
– If the value obtained is still incorrect, replace the wiring between **points C1 and C3** (seat wiring).

AFTER REPAIR	Reconnect the computer and the ignition module of the passenger's airbag module, then switch on the ignition again. Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer (command G81* on XR25). Destroy the passenger's airbag module if it has been replaced (tool **Elé**. **1287**).

6SRPG1TT1.0

FAULT FINDING - INTERPRETATION OF FAULTS

5  CONTINUED	

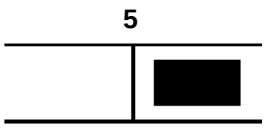
CC.1 - CC.0	***NOTES***	None.

Lock the computer (command **G80*** on XR25).
The XRBAG tool MUST be used for measuring the insulation appropriate to the type of fault at **point C1** (seat connector) of the driver's side airbag module line.
Is the value obtained correct?

YES	Check the seat connector connections (point C1). Visually inspect the seat wiring. Reconnect point **C1**.
	Disconnect the computer connector and fit the **50 track adapter B50**. The XRBAG tool MUST be use for measuring insulation appropriate to the type of fault on the **wire marked E** on the adapter. If the value obtained is not correct, check the 50 track connector connections (tracks 16 and 17) and replace the wiring if necessary.
NO	Check the seat connector connections. Replace the wiring between **points C1 and C3** (seat wiring).

AFTER REPAIR	Reconnect the computer and the ignition module of the passenger's airbag module, then switch on the ignition again. Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer (command G81* on XR25). Destroy the passenger's airbag module if it has been replaced (tool Elé. **1287**).

FAULT FINDING - INTERPRETATION OF FAULTS



Right bargraph 5 illuminated

Fiche n° 66

Passenger's side airbag circuit

Tool XR25: *25:

CC	:	Short circuit
CO	:	Open circuit
CC.1	:	Short circuit to 12 volts
CC.0	:	Short circuit to earth

NOTES	Never carry out measurements on the ignition lines with equipment other than the XRBAG.

CO - CC	***NOTES***	None.

Lock the computer (command **G80*** on XR25).
The XRBAG tool MUST be used for measuring the resistance at **point C1** (seat connector) on the passenger's side airbag module line.
Is the value obtained correct?

YES

Check the seat connector connections (point C1).
Visually inspect the seat wiring. Reconnect point **C1**.

Disconnect the computer connector and fit the **50 track adapter B50**.
The XRBAG tool MUST be used for measuring the resistance on the **wire marked E** of the adapter.
– If the value obtained is not correct, check the 50 track connector connections (tracks 18 and 19) and replace the wiring if necessary.
– If the value obtained is correct on **wire F** of the adapter, check on the base of the computer for the presence of the 7 shunt opening pins on the 50 track connector.

Check:
– the connection status on computer.
– the status of the 50 track connector (locking system, connections, ...).

NO

Check the seat connector connections.
Strip the driver's seat and check that the airbag ignition module is connected correctly.

Disconnect the passenger's side airbag ignition module, connect a dummy ignition module to the ignition module connector then re-measure the resistance on XRBAG at **point C1**.
– If the value obtained is correct, replace the passenger's side airbag module.
– If the value obtained is still incorrect, replace the wiring between **points C1 and C3** (seat wiring).

AFTER REPAIR	Reconnect the computer and the ignition module of the passenger's airbag module, then switch on the ignition again. Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer (command G81* on XR25). Destroy the passenger's airbag module if it has been replaced (tool **Elé**. **1287**).

FAULT FINDING - INTERPRETATION OF FAULTS

5  CONTINUED	

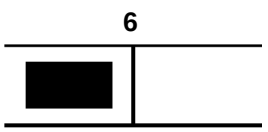
CC.1 - CC.0	***NOTES***	None.

Lock the computer (command **G80*** on XR25).
The XRBAG tool MUST be used for measuring the insulation appropriate to the type of fault at **point C1** (seat connector) of the passenger's side airbag module line.
Is the value obtained correct?

YES	Check the seat connector connections (point C1). Visually inspect the seat wiring. Reconnect point **C1**.
	Disconnect the computer connector and fit the **50 track adapter B50**. The XRBAG tool MUST be used for measuring insulation appropriate to the type of fault on the **wire marked F** on the adapter. If the value obtained is not correct, check the 50 track connector connections (tracks 18 and 19) and replace the wiring if necessary.
NO	Check the seat connector connections. Replace the wiring between **points C1 and C3** (seat wiring).

AFTER REPAIR	Reconnect the computer and the ignition module of the passenger's airbag module, then switch on the ignition again. Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer (command G81* on XR25). Destroy the passenger's airbag module if it has been replaced (tool **Elé**. **1287**).

FAULT FINDING - INTERPRETATION OF FAULTS

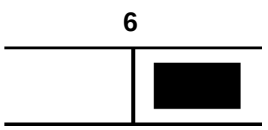
	**Left bargraph 6 illuminated** Fiche n° 66 Driver satellite (impact sensor for side airbag)

NOTES	None.

Replace the driver's side airbag satellite.

AFTER REPAIR	Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer (command G81* on XR25).

FAULT FINDING - INTERPRETATION OF FAULTS

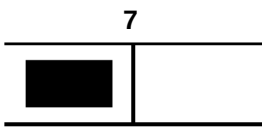
	**Right bargraph 6 illuminated** Fiche n° 66 Passenger satellite (impact sensor for side airbag)

NOTES	None.

Replace the passenger's side airbag satellite.

AFTER REPAIR	Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer (command G81* on XR25).

FAULT FINDING - INTERPRETATION OF FAULTS



Left bargraph 7 illuminated Fiche n° 66

Driver and passenger satellite circuits (impact sensors for side airbags)

Tool XR25: *07:

1.CO	:	Absence of driver's satellite signal
1.dEF	:	Driver's satellite signal faulty
2.CO	:	Absence of passenger satellite signal
2.dEF	:	Passenger satellite signal faulty

NOTES	None.

1.CO / 1.dEF	***NOTES***	None.

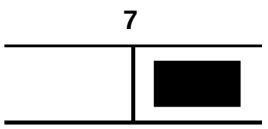
Lock the computer (command **G80*** on XR25).
Check that the driver's satellite is connected correctly and check the connections.
Check:
– the computer connections status (tracks 20 and 22),
– the status of the 50 track connector (locking system, connections, ...).
Replace the wiring if the fault persists.

2.CO / 2.dEF	***NOTES***	None.

Lock the computer (command **G80*** on XR25).
Check that the driver's satellite is connected correctly and check the connections.
Check:
– the computer connections status (tracks 21 and 23),
– the status of the 50 track connector (locking system, connections, ...).
Replace the wiring if the fault persists.

AFTER REPAIR	Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer (command G81* on XR25).

FAULT FINDING - INTERPRETATION OF FAULTS

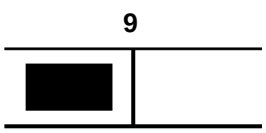
	**Right bargraph 7 illuminated** Fiche n° 66 Unit attached wrongly

NOTES	None.

Fault not used by this application.

AFTER REPAIR	None.

FAULT FINDING - INTERPRETATION OF FAULTS



Left bargraph 9 illuminated

Fiche n° 66

Driver and passenger pretensioner circuits

Tool XR25: *09:

CO	:	Open circuit
CC.1	:	Short circuit to 12 volts
CC.0	:	Short circuit to earth

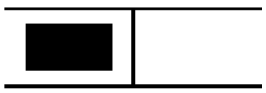
NOTES	Never carry out measurements on the ignition lines with equipment other than the XRBAG.

CO	***NOTES***	None.

Lock the computer (command **G80*** on XR25). Switch off the ignition and check that the driver and passenger pretensioner ignition modules are connected correctly.
Disconnect the ignition module of the driver's pretensioner and connect a dummy ignition module to the ignition module connector. Switch on the ignition and carry out a check using the fault finding tool. Replace the driver's pretensioner if the fault has been stored (fault no longer indicated). Then carry out the same operation on the Passenger's pretensioner (if not a driver's side fault).
The XRBAG tool MUST be used for measuring the resistance at **point C1** (seat connector) on the driver's pretensioner line. If the value obtained is not correct, replace the wiring between **points C1 and C3** (seat wiring). Then carry out the same measurement on the passenger's pretensioner line (if not a driver's side fault).
Disconnect the computer connector and fit the **50 track adapter B50**. The XRBAG tool MUST be used for measuring the resistance on the **wires marked B (passenger)** and **A (driver)** on the adapter. If one of the values obtained is not correct, check the connections on the 50 track connector (tracks 3 / 4 for **wire B** and 1/2 for **wire A)** and replace the wiring if necessary.

AFTER REPAIR	Reconnect the computer and the ignition module of the passenger's airbag module, then switch on the ignition again. Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer (command G81* on XR25). Destroy the passenger's airbag module if it has been replaced (tool **Elé**. **1287**).

FAULT FINDING - INTERPRETATION OF FAULTS

9  CONTINUED	

CC.1 - CC.0	***NOTES***	None.

Lock the computer (command **G80*** on XR25).
Disconnect the ignition module of the driver's pretensioner and connect a dummy ignition module to the ignition module connector.
Switch on the ignition and carry out a check using the fault finding tool.
If the fault has been stored (fault no longer indicated), check the condition of the seat wiring.
Replace the driver's pretensioner if the wiring is not faulty.
Then carry out the same operation on the Passenger's pretensioner (if not a driver's side fault).

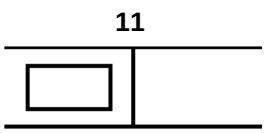
The XRBAG tool MUST be used for measuring the insulation appropriate to the type of fault at **point C1** (seat connector) of the driver's pretensioner line.
If the value obtained is not correct, replace the wiring between **points C1 and C3** (seat wiring).
Then carry out the same measurement on the passenger's pretensioner line (if not a driver's side fault).

Disconnect the computer connector and fit the **50 track adapter B50**.
The XRBAG tool MUST be used for measuring the insulation appropriate to the type of fault on the **wires marked B (passenger)** and **A (driver)** on the adapter.
If one of the values obtained is not correct, check the connections on the 50 track connector (tracks 3 / 4 for **wire B** and 1/2 for **wire A)** and replace the wiring if necessary.

If the checks carried out have not shown the presence of a fault on one of the pretensioner circuits, check on the base of the airbag computer for the presence of the 7 shunt opening pins for the 50 track connector.
Check:
- the computer connection status,
- the status of the 50 track connector (locking system, connections, ...).

AFTER REPAIR	Reconnect the computer and the ignition module of the passenger's airbag module, then switch on the ignition again. Erase the computer memory (command G0** on XR25) then turn off the ignition. Carry out the check again using the fault finding tool and, if there is no fault, unlock the computer (command G81* on XR25). Destroy the passenger's airbag module if it has been replaced (tool **Elé**. **1287**).

FAULT FINDING - INTERPRETATION OF STATUSES

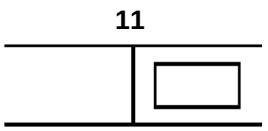
	**Left bargraph 11** Fiche n° 66 Computer locked following an impact

NOTES	None.

This status is validated when an impact has been detected by the system and the computer was not locked before the impact.
The "computer fault" is also indicated and the computer must be replaced along with the elements which were triggered (airbags and pretensioners)

AFTER REPAIR	None.

FAULT FINDING - INTERPRETATION OF STATUSES



Right bargraph 11 Fiche n° 66

Fault present before impact

NOTES	None.

This status is validated in the following case:

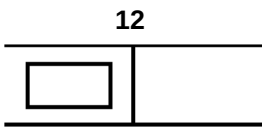
- An impact was detected.
- A fault was present in the computer memory before the impact.
- This fault was indicated by the illumination of the fault warning light before the impact.

This status can thus be used as evidence of failure of an airbag or seat belt pretensioners to trigger.

Inform Techline if this status is validated in other conditions (without fault, without impact, ...).

AFTER REPAIR	None.

FAULT FINDING - INTERPRETATION OF STATUSES



Left bargraph 12 Fiche n° 66

Computer locked

NOTES	None.

When this state is validated, the computer is in "locked" mode.
All the ignition lines are inhibited, preventing the triggering of the airbags and seat belt pretensioners.
This status is validated in 2 cases:

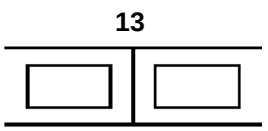
- The computer is new (it is sold locked).
- The computer locking command using the fault finding tool was used during an operation on the vehicle (command G80* on XR25).

UNLOCKING

- Erase the computer memory (command **G0**** on XR25) then switch off the ignition.
- Carry out the check again using the tool and, if there is no fault, unlock the computer (command **G81*** on XR25).

AFTER REPAIR	None.

FAULT FINDING - INTERPRETATION OF STATUSES

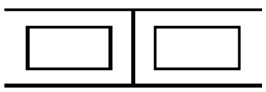
	**Right and left bargraph 13** Fiche n° 66 Fuel pump off Fuel pump not operational

NOTES	None.

Statuses not used by this application.

AFTER REPAIR	None.

FAULT FINDING - INTERPRETATION OF STATUSES

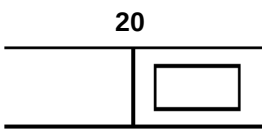
15-16-17-18 	**Left bargraphs 15, 16, 17 and 18** Fiche n° 66 Computer configuration - Driver's pretensioner - Passenger's pretensioner - Driver's front airbag - Passenger's front airbag - Driver's side airbag - Passenger's side airbag - Driver's impact sensor - Passenger's impact sensor

NOTES	None.

As the basic equipment for this vehicle includes driver's and passenger's front and side airbags, driver's and passenger's pretensioners and right and left satellites, these 8 configurations are always valid.

AFTER REPAIR	None.

FAULT FINDING - INTERPRETATION OF STATUSES

	**Right bargraph 20** Fiche n° 66 Authorisation to switch off fuel pump

NOTES	None.

Configuration not used by this application.

AFTER REPAIR	None.

FAULT FINDING - CHECKING CONFORMITY

NOTES	Only check the conformity after a full check using the fault finding tool.

Order	Function	Configuration / status, check or action	Display notes	Diag
1	Fault finding tool dialogue	**D49** + selector on S8 (XR25)	n.66	**BG 1D**
2	Computer Conformity	"Vehicle type" configuration or **#02** XR25	Twingo 0 Kangoo 22 Mégane 7 Laguna 3	None.
3	Computer configuration	Computer configuration statuses: – Driver's pretensioner – Passenger's pretensioner – Driver's front airbag – Passenger's front airbag – Driver's side airbag – Passenger's side airbag – Driver's impact sensor – Passenger's impact sensor or Status bargraphs 15, 16, 17 and 18.	Ensure that the computer configuration defined by these statuses corresponds to the vehicle equipment.	None.
4	Warning light operation Computer initialisation check.	Switch on the ignition	3 second illumination of the warning light when ignition is switched on	None.

FAULT FINDING - AID

REPLACING THE AIRBAG COMPUTER

The airbag computers are sold in locked mode to avoid all risk of incorrect triggering (all ignition lines are inhibited). The "locked" mode is signalled by the illumination of the instrument panel warning light.

When replacing an airbag computer, follow this procedure:

– Ensure that ignition is switched off.

– Replace the Computer.

– Carry out a check using the fault finding tool.

– Unlock the computer (command **G81*** on XR25), only if the fault indicated by the fault finding tool is absent.

FAULT FINDING - INTRODUCTION

CONDITIONS FOR APPLICATION OF THE TESTS DEFINED IN THIS FAULT FINDING

The tests defined in this fault finding should only be applied to vehicles fitted with driver's side airbags and passenger's front airbags and the 2nd generation of airbag computers. These new computers can be identified by the heading **AC6 Ph 2** on the fault finding tools.

The tests defined in this fault finding should only be applied if the fault is present on the vehicle at the time of checking. Only the "computer" fault leads to replacement of the computer whether the fault is present or simply stored.

If the fault is not present but simply stored, the application of checks recommended in the fault finding will not allow location of the origin of the fault stored. In this case only, the wiring and the faulty component connections should be checked (it is possible to access the wiring concerned in fault finding mode to try to display the passage from stored fault to present fault).

TOOLING REQUIRED FOR OPERATIONS ON THE AIRBAG AND SEAT BELT PRETENSIONER SYSTEMS:

- Fault finding tools (except XR25).
- Collection of adapters and borniers for using the "Airbag and pretensioner wiring harness check" function on CLIP and NXR tools or the XRBAG for update N°5 (with the new orange 50 track adapter B50 at the base of the computer).
- Multimeter.

REMINDER:

During operations on the airbag/seat belt pretensioner systems it is vital that you lock the computer using the fault finding tool to prevent any risk of erratic triggering (all the ignition lines will be inhibited). The "locked" mode is signalled by the illumination of the instrument panel warning light. Without the fault finding tool, switch off the ignition and remove the supply fuse from the system, then wait at least 2 seconds for the power reserve capacity to discharge.

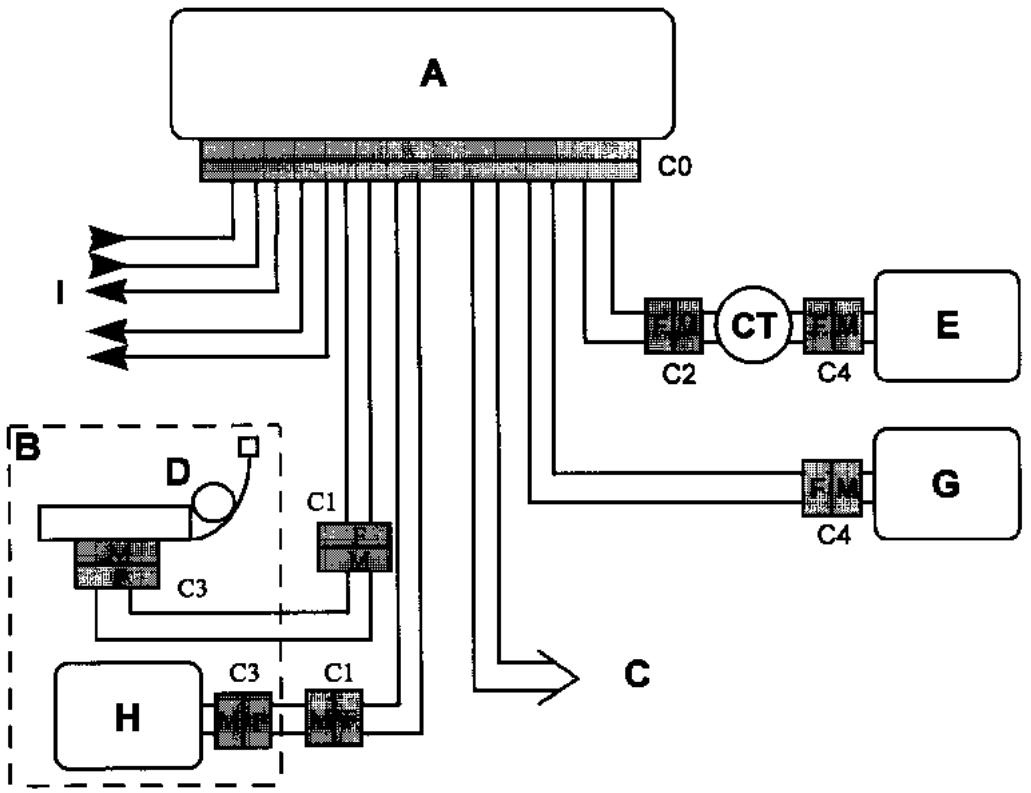
Never measure the airbag or pretensioner ignition lines with any device other than the XRBAG or by the "Airbag and pretensioner wiring harness check" function on the CLIP and NXR tools.

Before using a dummy ignition module, ensure that its resistance is between 1.8 and 2.5 ohms.

Ensure during the operation that the voltage supply to the computer does not drop below 10 Volts.

CONFIGURATION SYSTEM FAULT FINDING - FICHE

PRETENSIONERS, FRONT AND SIDE AIRBAGS



Connections are identical for the side airbags and pretensioners on both seats.

A Central unit
B Driver's seat
C Front passenger seat
D Pretensioner
E Driver's airbag ignition module
G Passenger airbag ignition module
H Side airbag ignition module

CT Rotary switch

+ 12 Volts / earth
I Warning light / Fault finding lines
Impact sensors / Impact information

	FRONT AIRBAGS	
	Measuring point	Correct value
Driver	C0, C2 and C4	2 to 9.4 ohms
Passenger	C0 and C4	1.6 to 4.6 ohms
	SIDE AIRBAGS AND PRETENSIONERS	
	Measuring point	Correct value
	C0, C1 and C3	1.6 to 4.6 ohms

Correct insulation value: display ≥ 100.h or 9999 flashing.

FAULT FINDING - INTERPRETATION OF FAULTS

DF001 PRESENT or STORED	Computer 1.dEF : Internal electronic fault 2.dEF : Impact detected

NOTES	None.

Replace the airbag computer (consult the "Aid" section for this operation).

AFTER REPAIR	None.

FAULT FINDING - INTERPRETATION OF FAULTS

DF002 PRESENT	Computer voltage supply 1.dEF : Too many micro-breaks 2.dEF : Voltage not within tolerance

NOTES	Use the B50 adapter to operate on the computer connector.

1.dEF - 2.dEF	***NOTES***	None.

Carry out the operations necessary to obtain the correct voltage supply to the computer:
10.5 Volts ± 0.1 < correct voltage < 16 Volts ± 0.1.
- Battery charge check.
- Charging circuit check.
- Check the tightening and the condition of the battery terminals.
- Computer earth check.
- Computer connection status + locking

AFTER REPAIR	Deal with any faults detected by the fault finding tool. Erase the computer memory.

FAULT FINDING - INTERPRETATION OF FAULTS

DF003 PRESENT	Driver's front airbag circuit CC : Short circuit CO : Open circuit CC.1 : Short circuit to 12 volts CC.0 : Short circuit to earth

NOTES	Never carry out measuring operations on ignition lines using any tool other than Clip, NXR or XRBAG.

CO - CC	***NOTES***	None.

Lock the computer using the fault finding command.
Switch off the ignition and remove the 2 mounting bolts from the steering wheel cushion.
Check that it is correctly connected.

Disconnect the airbag cushion and connect a dummy ignition module to the ignition module connector.
Switch on the ignition and carry out a check using the fault finding tool.
Replace the airbag cushion if the fault has been stored (fault no longer indicated).

With the ignition switched off, disconnect, then reconnect the connector for the rotary switch below the steering wheel.
Operate on the connections if the fault has been stored (fault indicated present).

The Clip, NXR or XRBAG tools MUST be used for checking resistance at **point C2** of the driver's front airbag circuit.
If the value obtained is not correct, replace the rotary switch under the steering wheel.

Reconnect the rotary switch under the steering wheel, disconnect the computer connector and fit the **50 track adapter B50**.
The Clip, NXR or XRBAG tool MUST be used for checking resistance on the **wire marked C** on the adapter.
If the value obtained is not correct, check the 50 track connector connections (tracks 10 and 11) and replace the wiring if necessary.

If the checks carried out have not shown the presence of a fault, check on the base of the airbag computer for the presence of the 7 shunt opening pins for the 50 track connector.
Check the connection status on computer.
Check the status of the 50 track connector (locking system, ...).

AFTER REPAIR	Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the airbag cushion if it has been replaced (tool Elé. 1287).

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FAULT FINDING - INTERPRETATION OF FAULTS

DF003 PRESENT CONTINUED	

CC.1 - CC.0	***NOTES***	None.

Lock the computer using the fault finding command. Switch off the ignition and remove the 2 mounting bolts from the steering wheel cushion. Check the condition of the trigger wire.
The Clip, NXR or XRBAG tools MUST be use for measuring insulation appropriate to the type of fault at **point C2** of the driver's front airbag circuit. If the value obtained is not correct, replace the rotary switch under the steering wheel.
Reconnect the rotary switch under the steering wheel, disconnect the computer connector and fit the **50 track adapter B50**. The Clip, NXR or XRBAG tools MUST be used for measuring the insulation appropriate to the type of fault on the **wires marked C** on the adapter. If the value obtained is not correct, check the 50 track connector connections (tracks 10 and 11) and replace the wiring if necessary.

AFTER REPAIR	Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the airbag cushion if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

DF004 PRESENT	Passenger's front airbag circuit CC : Short circuit CO : Open circuit CC.1 : Short circuit to 12 volts CC.0 : Short circuit to earth

NOTES	Never carry out measuring operations on ignition lines using any tool other than Clip, NXR or XRBAG.

CO - CC	***NOTES***	None.

Lock the computer using the fault finding command.
Switch off the ignition, disconnect the computer connector and fit the **50 track adapter B50**
The Clip, NXR or XRBAG tool MUST be used for checking resistance on the **wire marked D** on the adapter.
Is the value obtained correct?

YES	If the value obtained is correct on **wire D** of the adapter, check on the base of the airbag computer for the presence of the 7 shunt opening pins on the 50 track connector. Check the connection status on computer. Check the status of the 50 track connector (locking system, connections, ...).
NO	If the value obtained is not correct on **wire D** of the adapter, check the connections on the 50 track connector (tracks 13 and 14)
	If the value remains wrong, switch off the ignition and carry out the necessary removals to access the wiring of the passenger's airbag module (Twingo/Kangoo: remove the dashboard - Mégane: remove the top of the dashboard). Disconnect the passenger airbag ignition module, connect a dummy ignition module to the ignition module connector then re-measure the resistance on the **wire marked D** on the adapter. If the value obtained is correct, replace the passenger's airbag module. If the value obtained is not correct, replace the airbag wiring.

AFTER REPAIR	Reconnect the computer and the ignition module of the passenger's airbag module, then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the passenger's airbag module if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

DF004 PRESENT CONTINUED	

CC.1 - CC.0	***NOTES***	None.

Lock the computer.
Switch off the ignition, disconnect the computer connector and fit the **50 track adapter B50**.
The Clip, NXR or XRBAG tools MUST be used for measuring the insulation appropriate to the type of fault on the **wires marked D** on the adapter.
Is the value obtained correct?

YES	If the value obtained is correct on **wire D** of the adapter, check the status of the connections on computer.
NO	If the value obtained is not correct on **wire D** of the adapter, check the connections on the 50 track connector (tracks 13 and 14)
	If the value remains incorrect, replace the airbag wiring.

AFTER REPAIR	Reconnect the computer and the ignition module of the passenger's airbag module, then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the passenger's airbag module if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

DF008 PRESENT	Driver's side airbag circuit CC : Short circuit CO : Open circuit CC.1 : Short circuit to 12 volts CC.0 : Short circuit to earth

NOTES	Never carry out measuring operations on ignition lines using any tool other than Clip, NXR or XRBAG.

CO - CC	***NOTES***	None.

Lock the computer.
The Clip, NXR or XRBAG tools MUST be used for measuring the resistance at **point C1** (seat connector) on the driver's side airbag module line.
Is the value obtained correct?

YES

Check the seat connector connections (point C1).
Visually inspect the seat wiring. Reconnect point **C1**.

Disconnect the computer connector and fit the **50 track adapter B50**.
The Clip, NXR or XRBAG tool MUST be used for checking resistance on the **wire marked E** on the adapter.
– If the value obtained is not correct, check the 50 track connector connections (tracks 16 and 17) and replace the wiring if necessary.
– If the value obtained is correct on **wire E** of the adapter, check on the base of the computer for the presence of the 7 shunt opening pins on the 50 track connector.

Check:
– the connection status on computer.
– the status of the 50 track connector (locking system, connections, ...).

NO

Check the seat connector connections.
Strip the driver's seat and check that the airbag ignition module is connected correctly.

Disconnect the airbag ignition module for the driver's side airbag module, connect a dummy ignition module to the ignition module connector then re-measure the resistance at **point C1**.
– If the value obtained is correct, replace the driver's side airbag module.
– If the value obtained is still incorrect, replace the wiring between **points C1 and C3** (seat wiring).

AFTER REPAIR	Reconnect the computer and the ignition module of the driver's airbag module, then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the side airbag module if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

DF008 PRESENT CONTINUED	

CC.1 - CC.0	***NOTES***	None.

Lock the computer.
The Clip, NXR or XRBAG tool MUST be used for measuring the insulation appropriate to the type of fault at **point C1** (seat connector) of the driver's side airbag module line.
Is the value obtained correct?

YES	Check the seat connector connections (point C1). Visually inspect the seat wiring. Reconnect point **C1**.
	Disconnect the computer connector and fit the **50 track adapter B50**. The Clip, NXR or XRBAG tools MUST be used for measuring the insulation appropriate to the type of fault on the **wire marked E** on the adapter. If the value obtained is not correct, check the 50 track connector connections (tracks 16 and 17) and replace the wiring if necessary.
NO	Check the seat connector connections. Replace the wiring between **points C1 and C3** (seat wiring).

AFTER REPAIR	Reconnect the computer and the ignition module of the driver's airbag module, then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the side airbag module if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

DF009 PRESENT	Passenger's side airbag circuit CC : Short circuit CO : Open circuit CC.1 : Short circuit to 12 volts CC.0 : Short circuit to earth

NOTES	Never carry out measuring operations on ignition lines using any tool other than Clip, NXR or XRBAG.

CO - CC	***NOTES***	None.

Lock the computer.
The Clip, NXR or XRBAG tools MUST be used for measuring the resistance at **point C1** (seat connector) on the passenger's side airbag module line.
Is the value obtained correct?

YES

Check the seat connector connections (point C1).
Visually inspect the seat wiring. Reconnect point **C1**.

Disconnect the computer connector and fit the **50 track adapter B50**.
The Clip, NXR or XRBAG tool MUST be used for checking resistance on the **wire marked F** on the adapter.
– If the value obtained is not correct, check the 50 track connector connections (tracks 18 and 19) and replace the wiring if necessary.
– If the value obtained is correct on **wire F** of the adapter, check on the base of the computer for the presence of the 7 shunt opening pins on the 50 track connector.

Check:
– the connection status on computer.
– the status of the 50 track connector (locking system, connections, ...).

NO

Check the seat connector connections.
Strip the passenger seat and check that the airbag ignition module is connected correctly.

Disconnect the airbag ignition module for the passenger's side airbag module, connect a dummy ignition module to the ignition module connector then re-measure the resistance at **point C1**.
– If the value obtained is correct, replace the passenger's side airbag module.
– If the value obtained is still incorrect, replace the wiring between **points C1 and C3** (seat wiring).

AFTER REPAIR	Reconnect the computer and the ignition module of the passenger's airbag module, then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the side airbag module if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

DF009 PRESENT CONTINUED	

CC.1 - CC.0	***NOTES***	None.

Lock the computer.
The Clip, NXR or XRBAG tool MUST be used for measuring the insulation appropriate to the type of fault at **point C1** (seat connector) of the passenger's side airbag module line.
Is the value obtained correct?

YES	Check the seat connector connections (point C1). Visually inspect the seat wiring. Reconnect point **C1**.
	Disconnect the computer connector and fit the **50 track adapter B50**. The Clip, NXR or XRBAG tools MUST be used for measuring the insulation appropriate to the type of fault on the **wires marked F** on the adapter. If the value obtained is not correct, check the 50 track connector connections (tracks 18 and 19) and replace the wiring if necessary.
NO	Check the seat connector connections. Replace the wiring between **points C1 and C3** (seat wiring).

AFTER REPAIR	Reconnect the computer and the ignition module of the passenger's airbag module, then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the side airbag module if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

DF010 PRESENT	Airbag fault warning light circuit CC.1 : Short circuit to 12 volts CC.0 : Open circuit or short circuit to earth

NOTES	Use the 50 track B50 adapter to operate on the computer connector.

CC.1	***NOTES***	None.

Lock the computer using the fault finding command.
Check the condition of the warning light bulb.
Ensure insulation against **12 Volts** of the connection between the warning light and **track 7** of the 50 track connector.

CC.0	***NOTES***	None.

Warning light extinguished after ignition

Lock the computer using the fault finding command.
Check the condition of the warning light bulb.
Ensure the continuity of the connection between the warning light and **track 7** of the 50 track connector.
Ensure that **12 volts** are reaching the warning light.

If the checks carried out did not show the presence of a fault, disconnect the computer connector and fit the **50 track adapter B50**. Use Clip, NXR or XRBAG tool to test the operation of the instrument panel warning light using the **grey wire marked 2** on the adapter.
If it is possible to illuminate the warning light using the tool, replace the airbag computer (consult the "Aid" section for this operation).
If it is impossible to operate the warning light, repeat the preceding checks.

Warning light illuminated after ignition

Lock the computer using the fault finding command.
Disconnect the airbag computer and check the presence, on the base, of the 7 pins which open the connector shunts.
Ensure insulation against **earth** of the connection between the warning light and **track 7** of the 50 track connector

AFTER REPAIR	Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer.

FAULT FINDING - INTERPRETATION OF FAULTS

DF014 PRESENT	Pretensioner circuit CO : Open circuit CC.1 : Short circuit to 12 volts CC.0 : Short circuit to earth

NOTES	Never carry out measuring operations on ignition lines using any tool other than Clip, NXR or XRBAG.

CO	***NOTES***	None.

Lock the computer. Switch off the ignition and check that the driver and passenger pretensioner ignition modules are connected correctly.
Disconnect the ignition module of the driver's pretensioner and connect a dummy ignition module to the ignition module connector. Switch on the ignition and carry out a check using the fault finding tool. Replace the driver's pretensioner if the fault has been stored (fault no longer indicated). Then carry out the same operation on the Passenger's pretensioner (if not a driver's side fault).
The Clip, NXR or XRBAG tools MUST be used for measuring the resistance at **point C1** (seat connector) on the driver's pretensioner line. If the value obtained is not correct, replace the wiring between **points C1 and C3** (seat wiring). Then carry out the same measurement on the passenger's pretensioner line (if not a driver's side fault).
Disconnect the computer connector and fit the **50 track adapter B50**. The Clip, NXR or XRBAG tools MUST be used for measuring the resistance on the **wires marked B (passenger)** and **A (driver)** on the adapter. If one of the values obtained is not correct, check the connections on the 50 track connector (tracks 3 / 4 for **wire B** and 1/2 for **wire A)** and replace the wiring if necessary.

AFTER REPAIR	Reconnect the computer and the ignition module of the pretensioner, then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the pretensioner if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

DF014 PRESENT CONTINUED	

CC.1 - CC.0	***NOTES***	None.

Lock the computer.
Disconnect the ignition module of the driver's pretensioner and connect a dummy ignition module to the ignition module connector.
Switch on the ignition and carry out a check using the fault finding tool.
If the fault has been stored (fault no longer indicated), check the condition of the seat wiring.
Replace the driver's pretensioner if the wiring is not faulty.
Then carry out the same operation on the Passenger's pretensioner (if not a driver's side fault).

The Clip, NXR or XRBAG tool MUST be used for measuring the insulation appropriate to the type of fault at **point C1** (seat connector) of the driver's pretensioner line.
If the value obtained is not correct, replace the wiring between **points C1 and C3** (seat wiring).
Then carry out the same measurement on the passenger's pretensioner line (if not a driver's side fault).

Disconnect the computer connector and fit the **50 track adapter B50**.
The Clip, NXR or XRBAG tools MUST be used for measuring the insulation appropriate to the type of fault on the **wires marked B (passenger)** and **A (driver)** on the adapter.
If one of the values obtained is not correct, check the connections on the 50 track connector (tracks 3 / 4 for **wire B** and 1/2 for **wire A)** and replace the wiring if necessary.

If the checks carried out have not shown the presence of a fault on one of the pretensioner circuits, check on the base of the airbag computer for the presence of the 7 shunt opening pins for the 50 track connector.

Check:
- the computer connection status,
- the status of the 50 track connector (locking system, ...).

AFTER REPAIR	Reconnect the computer and the ignition module of the pretensioner, then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the pretensioner if it has been replaced (tool Elé. 1287).

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FAULT FINDING - INTERPRETATION OF FAULTS

DF027 PRESENT	Configuration of ignition modules

NOTES	This fault may appear after using the passenger airbag locking command as a result of failure to follow the procedure described in the Technical Note (this command allows a child/baby seat to be fitted on the front seat). **It is vital that you do not use this passenger airbag locking command before a Technical Note dealing with the subject has been distributed.**

This fault indicates a mismatch between the computer configuration and the vehicle equipment detected by the computer. The computer detects the presence of an element additional to its configuration.

Modify the computer configuration using the "Configuration" command for the fault finding tools.

AFTER REPAIR	Erase the computer memory then turn off the ignition. Check again using the fault finding tool.

FAULT FINDING - INTERPRETATION OF FAULTS

DF033 PRESENT	Side sensor programming not carried out

NOTES	None.

This fault corresponds to the absence of programming of side sensor identification by the airbag computer (this identification allows the calculator to check that the side sensors are those defined for the vehicle).

This fault normally occurs when the computer is new (it is sold without identification).

Program the side sensor identification using the "Side sensor programming" command on the fault finding tool ("Configuration" column).

AFTER REPAIR	Erase the computer memory then turn off the ignition. Check again using the fault finding tool.

FAULT FINDING - INTERPRETATION OF FAULTS

DF034 PRESENT	Computer locked 1.dEF : Locking following impact 2.dEF : Locking by the fault finding tool

NOTES	None.

This fault allows display of the locked status of the computer.
When it occurs, all the ignition lines are inhibited, preventing triggering of the airbags and seat belt pretensioners.

1.dEF	***NOTES***	None.

This fault occurs following seat belt pretensioner triggering with or without front airbag triggering or following side airbag triggering.
Replacement of the computer and the components which operated at the time of impact is compulsory.

2.dEF	***NOTES***	None.

This fault normally occurs in two cases:

– The computer is new (it is sold locked).
– The computer locking command using the fault finding tool was used during an operation on the vehicle.

UNLOCKING

– Erase the computer memory then turn off the ignition.
– Carry out the check again using the tool and, if there is no fault, unlock the computer ("Configuration" column).

AFTER REPAIR	Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer.

FAULT FINDING - INTERPRETATION OF FAULTS

DF036 PRESENT	Faulty driver's side sensor signal (or in open circuit)

NOTES	None.

Lock the computer using the fault finding command.
Check that the driver's side sensor is connected correctly and check the connections.
Check the computer connections status (tracks 20 and 22),
Check the status of the 50 track connector (locking system, connections, ...).

Replace the wiring if the fault persists.

AFTER REPAIR	Reconnect the computer and the driver's side sensor then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer.

FAULT FINDING - INTERPRETATION OF FAULTS

DF037 PRESENT	Driver's side sensor identification

NOTES	None.

This fault normally occurs when the computer detects a mismatch between the recognition signal transmitted by the side sensor and the way it was programmed.

Either the side sensor is not appropriate for the vehicle or the computer has come from another vehicle.

– If the sensor was replaced, fit another sensor appropriate to the vehicle.
– If the computer comes from another vehicle, use the "Side sensor programming" command on the fault finding tool to modify the computer programming ("Configuration" column).

AFTER REPAIR	Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer.

FAULT FINDING - INTERPRETATION OF FAULTS

DF038 PRESENT	Driver's side sensor

NOTES	None.

Replace the driver's side sensor.

AFTER REPAIR	Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer.

FAULT FINDING - INTERPRETATION OF FAULTS

DF039 PRESENT	Driver's side sensor circuit

NOTES	None.

Lock the computer using the fault finding command.
Check that the driver's side sensor is connected correctly and check the connections.
Check the computer connections status (tracks 20 and 22),
Check the status of the 50 track connector (locking system, connections, ...).

Replace the wiring if the fault persists.

AFTER REPAIR	Reconnect the computer and the driver's side sensor then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer.

FAULT FINDING - INTERPRETATION OF FAULTS

DF040 PRESENT	Passenger's side sensor circuit

NOTES	None.

Lock the computer using the fault finding command.
Check that the passenger's side sensor is connected correctly and check the connections.
Check the computer connections status (tracks 21 and 23),
Check the status of the 50 track connector (locking system, connections, ...).

Replace the wiring if the fault persists.

AFTER REPAIR	Reconnect the computer and the passenger's side sensor then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer.

FAULT FINDING - INTERPRETATION OF FAULTS

DF041 PRESENT	Faulty passenger's side sensor signal (or in open circuit)

NOTES	None.

Lock the computer using the fault finding command.
Check that the passenger's side sensor is connected correctly and check the connections.
Check the computer connections status (tracks 21 and 23),
Check the status of the 50 track connector (locking system, connections, ...).

Replace the wiring if the fault persists.

AFTER REPAIR	Reconnect the computer and the passenger's side sensor then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer.

FAULT FINDING - INTERPRETATION OF FAULTS

DF042 PRESENT	Passenger's side sensor identification

NOTES	None.

This fault normally occurs when the computer detects a mismatch between the recognition signal transmitted by the side sensor and the way it was programmed.

Either the side sensor is not appropriate for the vehicle or the computer has come from another vehicle.

– If the sensor was replaced, fit another sensor appropriate to the vehicle.
– If the computer comes from another vehicle, use the "Side sensor programming" command on the fault finding tool to modify the computer programming ("Configuration" column).

AFTER REPAIR	Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer.

FAULT FINDING - INTERPRETATION OF FAULTS

DF043 PRESENT	Passenger's side sensor

NOTES	None.

Replace the passenger's side sensor.

AFTER REPAIR	Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer.

FAULT FINDING - CHECKING CONFORMITY

NOTES	Only check the conformity after a full check using the fault finding tool.

Order	Function	Configuration / status, check or action	Display / notes	Diag
1	Fault finding tool dialogue	-	Airbag AC6 Ph2	**CHART 1**
2	Computer Conformity	Configuration "Vehicle type"	Twingo 0 Mégane 7 Kangoo 22	None.
3	Computer configuration	Using the "Reading configuration" command	Ensure that the computer configuration defined in the "Current" column corresponds to the vehicle equipment. If the "Passenger's front airbag" line is configured "Without", consult the Note.	None.
4	Warning light operation Computer initialisation check.	Switch on the ignition	3 second illumination of the warning light when ignition is switched on Consult the note if the warning light flashes for 12 seconds after 3 seconds of illumination.	None.

Note: The customer may have requested that the passenger's front airbag be locked to allow a child seat to be fitted to the front passenger seat. In this case, the computer configuration is "Without" passenger's front airbag and the light flashes for 12 seconds after the three seconds of illumination when ignition is switched on.

It is vital that you do not use this passenger airbag locking command before a Technical Note dealing with the subject has been distributed.

FAULT FINDING - AID

REPLACING THE AIRBAG COMPUTER

The airbag computers are sold in locked mode to avoid all risk of incorrect triggering (all ignition lines are inhibited). In the same way, the computer is waiting for the side sensors to be programmed (faults DF033 "Side sensor programming not carried out" occur on the fault finding tool).

The "locked" mode and programming not carried out are signalled by the illumination of the airbag fault warning light on the instrument panel.

When replacing an airbag computer, follow this procedure:

– Ensure that ignition is switched off.

– Replace the Computer.

– Program the side sensors ("Side sensor programming" command on fault finding tool in the "Configuration" column).

– If necessary modify the computer configuration using the "Configuration" command.

– Switch off the ignition.

– Carry out a check using the fault finding tool.

– Unlock the computer only if the fault indicated by the fault finding tool is absent.

IMPORTANT :

The owner of the vehicle may have carried out procedures to lock the passenger's front airbag to allow a child seat to be fitted to the front passenger seat. If this is the case, the passenger's front airbag locking procedure defined in the Technical Note dealing with this subject has been applied, either:
– **Customer release signature (sample in the NT).**
– **Replacement of the front passenger seat belt.**
– **Disconnection of the passenger's front airbag module.**
– **Locking the passenger's front airbag ignition line and modification of the computer configuration.**
– **Replacement of the "airbag" labels on the passenger's side.**

If this procedure has been applied it is vital that you re-lock the passenger's front airbag using the "Passenger's front airbag locking" command ("Configuration" column).

It is vital that you do not use this passenger airbag locking command before a TechnicalNote dealing with the subject has been distributed.

FAULT FINDING - FAULT CHARTS

ALP1	ABSENCE OF DIALOGUE WITH THE AIRBAG COMPUTER

NOTES	None.

Ensure that the fault finding tool is not the cause of the fault by trying to communicate with a computer on another vehicle. If the tool is not the cause of the fault and dialogue cannot be established with any other computer on the same vehicle, it may be that a faulty computer is disrupting fault finding lines **K** and **L**.
Disconnect the connections one at a time to locate the fault.
Check the battery voltage and carry out the necessary operations to obtain a correct voltage
(10.5 Volts < battery voltage < 16 Volts).

Check the presence and status of the airbag computer supply voltage fuse.
Check the computer connector connection and its condition.
Check that the computer is supplied correctly:
- Disconnect the airbag computer and fit the **50 track adapter B50** .
- Check and ensure the presence of **+ APC** between the terminals marked **earth** and **+ APC**

Ensure that the fault finding socket is correctly supplied:
- **+ AVC** at **track 16**.
- **Earth** at **track 5**.

Check the continuity and insulation of the lines of the fault finding socket / airbag computer connection:
- Between the terminal marked **L** and **track 15** of the fault finding socket.
- Between the terminal marked **K** and **track 7** of the fault finding socket.

If dialogue is still not established after these various checks, replace the airbag computer (consult the section on "Aid" for this operation).

AFTER REPAIR	When communication is established, deal with any faults indicated.

FAULT FINDING - INTRODUCTION

CONDITIONS FOR APPLICATION OF THE TESTS DEFINED IN THIS FAULT FINDING

The tests defined in this fault finding should only be applied to vehicles not fitted with side airbags but fitted with the 2nd generation of airbag computers.
These new computers can be identified by the heading **AC4 Ph 2** on the fault finding tools.

The tests defined in this fault finding should only be applied if the fault is present on the vehicle at the time of checking.
Only the "computer" fault leads to replacement of the computer whether the fault is present or simply stored.

If the fault is not present but simply stored, the application of checks recommended in the fault finding will not allow location of the origin of the fault stored. In this case only, the wiring and the faulty component connections should be checked (it is possible to access the wiring concerned in fault finding mode to try to display the passage from stored fault to present fault).

TOOLING REQUIRED FOR OPERATIONS ON THE AIRBAG AND SEAT BELT PRETENSIONER SYSTEMS:

– Fault finding tools (except XR25).
– Collection of adapters and borniers to be used for the "Airbag and pretensioner wiring harness check" function on the CLIP and NXR tools or the XRBAG.
– Multimeter.

REMINDER:

During operations on the airbag/seat belt pretensioner systems it is vital that you lock the computer using the fault finding tool to prevent any risk of erratic triggering (all the ignition lines will be inhibited). The "locked" mode is signalled by the illumination of the instrument panel warning light.
Without the fault finding tool, switch off the ignition and remove the supply fuse from the system, then wait at least 2 seconds for the power reserve capacity to discharge.

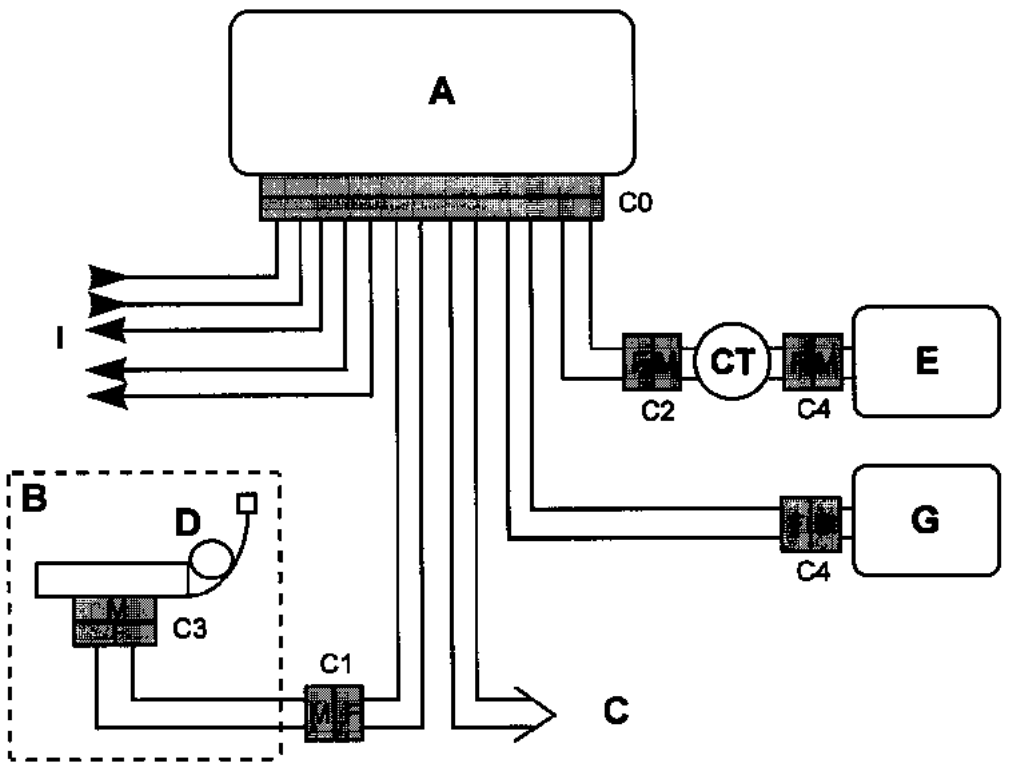
Never measure the airbag or pretensioner ignition lines with any device other than the XRBAG or by the "Airbag and pretensioner wiring harness check" function on the CLIP and NXR tools.

Before using a dummy ignition module, ensure that its resistance is between 1.8 and 2.5 ohms.

Ensure during the operation that the voltage supply to the computer does not drop below 10 Volts.

CONFIGURATION SYSTEM FAULT FINDING - FICHE

Pretensioners, passenger and driver's front airbags



A Central unit
B Driver's seat
C Front passenger seat
D Pretensioner
E Driver's airbag ignition module
G Passenger airbag ignition module

CT Rotary switch

I Impact information
+ 12 Volts/earth
Warning light / Fault finding lines

	AIRBAGS	
	Measuring point	Correct value
Driver	C0, C2 and C4	**2 to 9.4 ohms**
Passenger	C0 and C4	**1.6 to 4.6 ohms**
	PRETENSIONERS	
	Measuring point	Correct value
	C0, C1 and C3	**1.6 to 4.6 ohms**

Correct insulation value: display > = 100 h or 9999 flashing.

FAULT FINDING - INTERPRETATION OF FAULTS

DF001 PRESENT or STORED	Computer 1.dEF : Internal electronic fault 2.dEF : Impact detected

NOTES	None.

Replace the airbag computer (consult the "Aid" section for this operation).

AFTER REPAIR	None.

FAULT FINDING - INTERPRETATION OF FAULTS

DF002 PRESENT	Computer voltage supply 1.dEF : Too many micro-breaks 2.dEF : Voltage not within tolerance

NOTES	Use the 30 track B40 adapter to operate on the computer connector.

1.dEF - 2.dEF	***NOTES***	None.

Carry out the operations necessary to obtain the correct voltage supply to the computer:
10.5 Volts ± 0.1 < correct voltage < 16 Volts ± 0.1.
– Battery charge check.
– Charging circuit check.
– Check the tightening and the condition of the battery terminals.
– Computer earth check.
– Computer connection status + locking

AFTER REPAIR	Deal with any faults detected by the fault finding tool. Erase the computer memory.

FAULT FINDING - INTERPRETATION OF FAULTS

DF003 PRESENT	Driver's front airbag circuit CC : Short circuit CO : Open circuit CC.1 : Short circuit to 12 volts CC.0 : Short circuit to earth

NOTES	Never carry out measuring operations on ignition lines using any tool other than Clip, NXR or XRBAG.

CO - CC	***NOTES***	None.

Lock the computer using the fault finding command.
Switch off the ignition and remove the 2 mounting bolts from the steering wheel cushion.
Check that it is correctly connected.

Disconnect the airbag cushion and connect a dummy ignition module to the ignition module connector.
Switch on the ignition and carry out a check using the fault finding tool.
Replace the airbag cushion if the fault has been stored (fault no longer indicated).

With the ignition switched off, disconnect, then reconnect the connector for the rotary switch below the steering wheel.
Operate on the connections if the fault has been stored (fault indicated present).

The Clip, NXR or XRBAG tools MUST be used for checking resistance at **point C2** of the driver's front airbag circuit.
If the value obtained is not correct, replace the rotary switch under the steering wheel.

Reconnect the rotary switch under the steering wheel, disconnect the computer connector and fit the **30 track adapter B40**.
The Clip, NXR or XRBAG tool MUST be used for checking resistance on the **wire marked A** on the adapter.
If the value obtained is not correct, check the 30 track connector connections (tracks 10 and 11) and replace the wiring if necessary.

If the checks carried out have not shown the presence of a fault, check on the base of the airbag computer for the presence of the 5 shunt opening pins for the 30 track connector.
Check the connection status on computer.
Check the status of the 30 track connector (locking system, ...).

AFTER REPAIR	Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the airbag cushion if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

DF003 PRESENT CONTINUED	

CC.1 - CC.0	***NOTES***	None.

Lock the computer using the fault finding command. Switch off the ignition and remove the 2 mounting bolts from the steering wheel cushion. Check the condition of the trigger wire.
The Clip, NXR or XRBAG tools MUST be use for measuring insulation appropriate to the type of fault at **point C2** of the driver's front airbag circuit. If the value obtained is not correct, replace the rotary switch under the steering wheel.
Reconnect the rotary switch under the steering wheel, disconnect the computer connector and fit the **30 track adapter B40**. The Clip, NXR or XRBAG tools MUST be used for measuring the insulation appropriate to the type of fault on the **wire marked A** on the adapter. If the value obtained is not correct, check the 30 track connector connections (tracks 10 and 11) and replace the wiring if necessary.

AFTER REPAIR	Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the airbag cushion if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

DF004 PRESENT	Passenger's front airbag circuit CC : Short circuit CO : Open circuit CC.1 : Short circuit to 12 volts CC.0 : Short circuit to earth

NOTES	Never carry out measuring operations on ignition lines using any tool other than Clip, NXR or XRBAG.

CO - CC	***NOTES***	None.

Lock the computer using the fault finding command. Switch off the ignition, disconnect the computer connector and fit the **30 track adapter B40**.
The Clip, NXR or XRBAG tool MUST be used for checking resistance on the **wire marked B** on the adapter.
Is the value obtained correct?

YES

If the value obtained is correct on **wire B** of the adapter, check on the base of the airbag computer for the presence of the 5 shunt opening pins on the 30 track connector.
Check the connection status on computer.
Check the status of the 30 track connector (locking system, connections, ...).

NO

If the value obtained is not correct on **wire B** of the adapter, check the connections on the 30 track connector (tracks 13 and 14)

If the value remains wrong, switch off the ignition and carry out the necessary removals to access the wiring of the passenger's airbag module (Twingo/Kangoo: remove the dashboard - Mégane: remove the top of the dashboard). Disconnect the passenger airbag ignition module, connect a dummy ignition module to the ignition module connector then re-measure the resistance on the **wire marked B** on the adapter.

If the value obtained is correct, replace the passenger's airbag module .
If the value obtained is not correct, replace the airbag wiring.

AFTER REPAIR	Reconnect the computer and the ignition module of the passenger's airbag module, then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the passenger's airbag module if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

DF004 PRESENT CONTINUED	

CC.1 - CC.0	***NOTES***	None.

Lock the computer.
Switch off the ignition, disconnect the computer connector and fit the **30 track adapter B40**.
The Clip, NXR or XRBAG tools MUST be used for measuring the insulation appropriate to the type of fault on the **wires marked B** on the adapter.
Is the value obtained correct?

YES	If the value obtained is correct on **wire B** of the adapter, check the status of the connections on computer.
NO	If the value obtained is not correct on **wire B** of the adapter, check the connections on the 30 track connector (tracks 13 and 14)
	If the value remains incorrect, replace the airbag wiring.

AFTER REPAIR	Reconnect the computer and the ignition module of the passenger's airbag module, then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the passenger's airbag module if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

DF010 PRESENT	Airbag fault warning light circuit CC.1 : Short circuit to 12 volts CO.0 : Open circuit or short circuit to earth

NOTES	Use the 30 track B40 adapter to operate on the computer connector.

CC.1	***NOTES***	None.

Lock the computer using the fault finding command.
Check the condition of the warning light bulb.
Ensure insulation against **12 Volts** of the connection between the warning light and **track 7** of the 30 track connector.

CO.0	***NOTES***	None.

Warning light extinguished after ignition

Lock the computer using the fault finding command.
Check the condition of the warning light bulb.
Ensure the continuity of the connection between the warning light and **track 7** of the 30 track connector.
Ensure that **12 volts** are reaching the warning light.

If the checks carried out did not show the presence of a fault, disconnect the computer connector and fit the **30 track adaptor B40**. Use Clip, NXR or XRBAG tool to test the operation of the instrument panel warning light from the **grey wire marked 1** on the adapter.
If it is possible to illuminate the warning light using the tool, replace the airbag computer (consult the "Aid" section for this operation).
If it is impossible to operate the warning light, repeat the preceding checks.

Warning light illuminated after ignition

Lock the computer using the fault finding command.
Disconnect the airbag computer and check the presence, on the base, of the 5 pins which open the connector shunts.
Ensure insulation against **earth** of the connection between the warning light and **track 7** of the 30 track connector

AFTER REPAIR	Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer.

FAULT FINDING - INTERPRETATION OF FAULTS

DF016 PRESENT	Computer configuration

NOTES	This fault may appear after using the passenger airbag locking command as a result of failure to follow the procedure described in the Technical Note (this command allows a child/baby seat to be fitted on the front seat). **It is vital that you do not use this passenger airbag locking command before a Technical Note dealing with the subject has been distributed.**

This fault indicates a mismatch between the computer configuration and the vehicle equipment detected by the computer. The computer detects the presence of an element additional to its configuration.

Modify the computer configuration using the "Configuration" command for the fault finding tools.

AFTER REPAIR	Erase the computer memory then turn off the ignition. Check again using the fault finding tool.

FAULT FINDING - INTERPRETATION OF FAULTS

DF029 PRESENT	Driver's pretensioner circuit CC : Short circuit CO : Open circuit CC.1 : Short circuit to 12 volts CC.0 : Short circuit to earth

NOTES	Never carry out measuring operations on ignition lines using any tool other than Clip, NXR or XRBAG.

CO - CC	***NOTES***	None.

Lock the computer using the fault finding command.
Switch off the ignition and check that the driver's pretensioner ignition module is connected correctly.

Disconnect the ignition module of the driver's pretensioner and connect a dummy ignition module to the ignition module connector.
Switch on the ignition and carry out a check using the fault finding tool.
Replace the driver's pretensioner if the fault has been stored (fault no longer indicated).

The Clip, NXR or XRBAG tools MUST be used for measuring the resistance at **point C1** (seat connector) on the driver's pretensioner line.
If the value obtained is not correct, replace the wiring between **points C1 and C3** (seat wiring).

Disconnect the computer connector and fit the **30 track adapter B40**.
The Clip, NXR or XRBAG tool MUST be used for checking resistance on the **wire marked D** on the adapter.
If the value obtained is not correct, check the 30 track connector connections (tracks 1 and 2) and replace the wiring if necessary.

If the checks carried out have not shown the presence of a fault, check on the base of the airbag computer for the presence of the 5 shunt opening pins for the 30 track connector.
Check the connection status on computer.
Check the status of the 30 track connector (locking system, ...).

AFTER REPAIR	Reconnect the computer and the ignition module of the pretensioner, then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the pretensioner if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

DF029 PRESENT CONTINUED	

CC.1 - CC.0	***NOTES***	None.

Lock the computer using the fault finding command.
Disconnect the ignition module of the driver's pretensioner and connect a dummy ignition module to the ignition module connector.
Switch on the ignition and carry out a check using the fault finding tool.
If the fault has been stored (fault no longer indicated), check the condition of the seat wiring.
Replace the driver's pretensioner if the wiring is not faulty.

The Clip, NXR or XRBAG tool MUST be used for measuring the insulation appropriate to the type of fault at **point C1** (seat connector) of the driver's pretensioner line.
If the value obtained is not correct, replace the wiring between **points C1 and C3** (seat wiring).

Disconnect the computer connector and fit the **30 track adapter B40**.
The Clip, NXR or XRBAG tools MUST be used for measuring the insulation appropriate to the type of fault on the **wire marked D** on the adapter.
If the value obtained is not correct, check the 30 track connector connections (tracks 1 and 2) and replace the wiring if necessary.

If the checks carried out have not shown the presence of a fault on the driver's pretensioner circuits, check on the base of the airbag computer for the presence of the 5 shunt opening pins for the 30 track connector.
Check the connection status on computer.
Check the status of the 30 track connector (locking system, ...).

AFTER REPAIR	Reconnect the computer and the ignition module of the pretensioner, then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the pretensioner if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

DF030 PRESENT	Passenger's pretensioner circuit CC : Short circuit CO : Open circuit CC.1 : Short circuit to 12 volts CC.0 : Short circuit to earth

NOTES	Never carry out measuring operations on ignition lines using any tool other than Clip, NXR or XRBAG.

CO - CC	***NOTES***	None.

Lock the computer using the fault finding command.
Switch off the ignition and check that the passenger pretensioner ignition module is connected correctly.

Disconnect the ignition module of the passenger's pretensioner and connect a dummy ignition module to the ignition module connector.
Switch on the ignition and carry out a check using the fault finding tool.
Replace the passenger's pretensioner if the fault has been stored (fault no longer indicated).

The Clip, NXR or XRBAG tools MUST be used for measuring the resistance at **point C1** (seat connector) on the passenger's pretensioner line.
If the value obtained is not correct, replace the wiring between **points C1 and C3** (seat wiring).

Disconnect the computer connector and fit the **30 track adapter B40**.
The Clip, NXR or XRBAG tool MUST be used for checking resistance on the **wire marked C** on the adapter.
If the value obtained is not correct, check the 30 track connector connection (tracks 3 and 4) and replace the wiring if necessary.

If the checks carried out have not shown the presence of a fault, check on the base of the airbag computer for the presence of the 5 shunt opening pins for the 30 track connector.
Check the connection status on computer.
Check the status of the 30 track connector (locking system, ...).

AFTER REPAIR	Reconnect the computer and the ignition module of the pretensioner, then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the pretensioner if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

DF030 PRESENT CONTINUED	

CC.1 - CC.0	***NOTES***	None.

Lock the computer using the fault finding command.
Disconnect the ignition module of the passenger's pretensioner and connect a dummy ignition module to the ignition module connector.
Switch on the ignition and carry out a check using the fault finding tool.
If the fault has been stored (fault no longer indicated), check the condition of the seat wiring.
Replace the passenger's pretensioner if the wiring is not faulty.

The Clip, NXR or XRBAG tool MUST be used for measuring the insulation appropriate to the type of fault at **point C1** (seat connector) of the passenger's pretensioner line.
If the value obtained is not correct, replace the wiring between **points C1 and C3** (seat wiring).

Disconnect the computer connector and fit the **30 track adapter B40**.
The Clip, NXR or XRBAG tools MUST be used for measuring the insulation appropriate to the type of fault on the **wire marked C** on the adapter.
If the value obtained is not correct, check the 30 track connector connection (tracks 3 and 4) and replace the wiring if necessary.

If the checks carried out have not shown the presence of a fault on the passenger's pretensioner circuits, check on the base of the airbag computer for the presence of the 5 shunt opening pins for the 30 track connector.
Check the connection status on computer.
Check the status of the 30 track connector (locking system, ...).

AFTER REPAIR	Reconnect the computer and the ignition module of the pretensioner, then switch on the ignition again. Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer. Destroy the pretensioner if it has been replaced (tool Elé. 1287).

FAULT FINDING - INTERPRETATION OF FAULTS

DF034 PRESENT	Computer locked 1.dEF : Locking following impact 2.dEF : Locking by the fault finding tool

NOTES	None.

This fault allows display of the locked status of the computer.
When it occurs, all the ignition lines are inhibited, preventing triggering of the airbags and seat belt pretensioners.

1.dEF	***NOTES***	None.

This fault occurs following seat belt pretensioner triggering with or without front airbag triggering or following side airbag triggering.
Replacement of the computer and the components which operated at the time of impact is compulsory.

2.dEF	***NOTES***	None.

This fault normally occurs in two cases:

- The computer is new (it is sold locked).
- The computer locking command using the fault finding tool was used during an operation on the vehicle.

UNLOCKING

– Erase the computer memory then turn off the ignition.
– Carry out the check again using the tool and, if there is no fault, unlock the computer ("Configuration" column).

AFTER REPAIR	Erase the computer memory then turn off the ignition. Carry out the check again using the tool and, if there is no fault, unlock the computer.

FAULT FINDING - CHECKING CONFORMITY

NOTES	Only check the conformity after a full check using the fault finding tool.

Order	Function	Configuration / status, check or action	Display / notes	Diag
1	Fault finding tool dialogue	-	Airbag AC4 Ph2	**CHART 1**
2	Computer Conformity	Configuration "Vehicle type"	Twingo 0 Mégane 7 Kangoo 22 Laguna 3 Safrane 4	None.
3	Computer configuration	Using the "Reading configuration" command	Ensure that the computer configuration defined in the "Current" column corresponds to the vehicle equipment. If the "Passenger's front airbag" line is configured "Without", consult the Note.	None.
4	Warning light operation - check computer initialisation	Switch on the ignition	3 second illumination of the warning light when ignition is switched on Consult the note if the warning light flashes for 12 seconds after 3 seconds of illumination.	None.

Note: The customer may have requested that the passenger's front airbag be locked to allow a child seat to be fitted to the front passenger seat. In this case, the computer configuration is "Without" passenger's front airbag and the light flashes for 12 seconds after the three seconds of illumination when ignition is switched on.

It is vital that you do not use this passenger airbag locking command before a Technical Note dealing with the subject has been distributed.

FAULT FINDING - AID

REPLACING THE AIRBAG COMPUTER

The airbag computers are sold in locked mode to avoid all risk of incorrect triggering (all ignition lines are inhibited). The "locked" mode is signalled by the illumination of the airbag fault warning light on the instrument panel.

When replacing an airbag computer, follow this procedure:

– Ensure that ignition is switched off.

– Replace the Computer.

– Carry out a check using the fault finding tool.

– If necessary modify the computer configuration using the "Configuration" command.

– Switch off the ignition.

– Unlock the computer only if the fault indicated by the fault finding tool is absent.

IMPORTANT:

The owner of the vehicle may have carried out procedures to lock the passenger's front airbag to allow a child seat to be fitted to the front passenger seat. If this is the case, the passenger's front airbag locking procedure defined in the Technical Note dealing with this subject has been applied, either:
– Customer release signature (sample in the NT).
– Replacement of the front passenger seat belt.
– Disconnection of the passenger's front airbag module.
– Locking the passenger's front airbag ignition line and modification of the computer configuration.
– Replacement of the "airbag" labels on the passenger's side.

If this procedure has been applied it is vital that you re-lock the passenger's front airbag using the "Passenger's front airbag locking" command ("Configuration" column).

It is vital that you do not use this passenger airbag locking command before a Technical Note dealing with the subject has been distributed.

FAULT FINDING - FAULT CHARTS

ALP1	ABSENCE OF DIALOGUE WITH THE AIRBAG COMPUTER

NOTES	None.

Ensure that the fault finding tool is not the cause of the fault by trying to communicate with a computer on another vehicle. If the tool is not the cause of the fault and dialogue cannot be established with any other computer on the same vehicle, it may be that a faulty computer is disrupting fault finding lines **K** and **L**.
Disconnect the connections one at a time to locate the fault.
Check the battery voltage and carry out the necessary operations to obtain a correct voltage (10.5 Volts < battery voltage < 16 Volts).

Check the presence and status of the airbag computer supply voltage fuse.
Check the computer connector connection and its condition.
Check that the computer is correctly supplied:
- Disconnect the airbag computer and fit **the 30 track adaptor B40**.
- Check and ensure the presence of **+ APC between the terminals marked earth and + APC.**

Ensure that the fault finding socket is correctly supplied:
- **+ AVC** at **track 16**.
- **Earth** at **track 5**.

Check the continuity and insulation of the lines of the fault finding socket / airbag computer connection:
- Between the terminal marked **L** and **track 15** of the fault finding socket.
- Between the terminal marked **K** and **track 7** of the fault finding socket.

If dialogue is still not established after these various checks, replace the airbag computer (consult the section on "Aid" for this operation).

AFTER REPAIR	When communication is established, deal with any faults indicated.