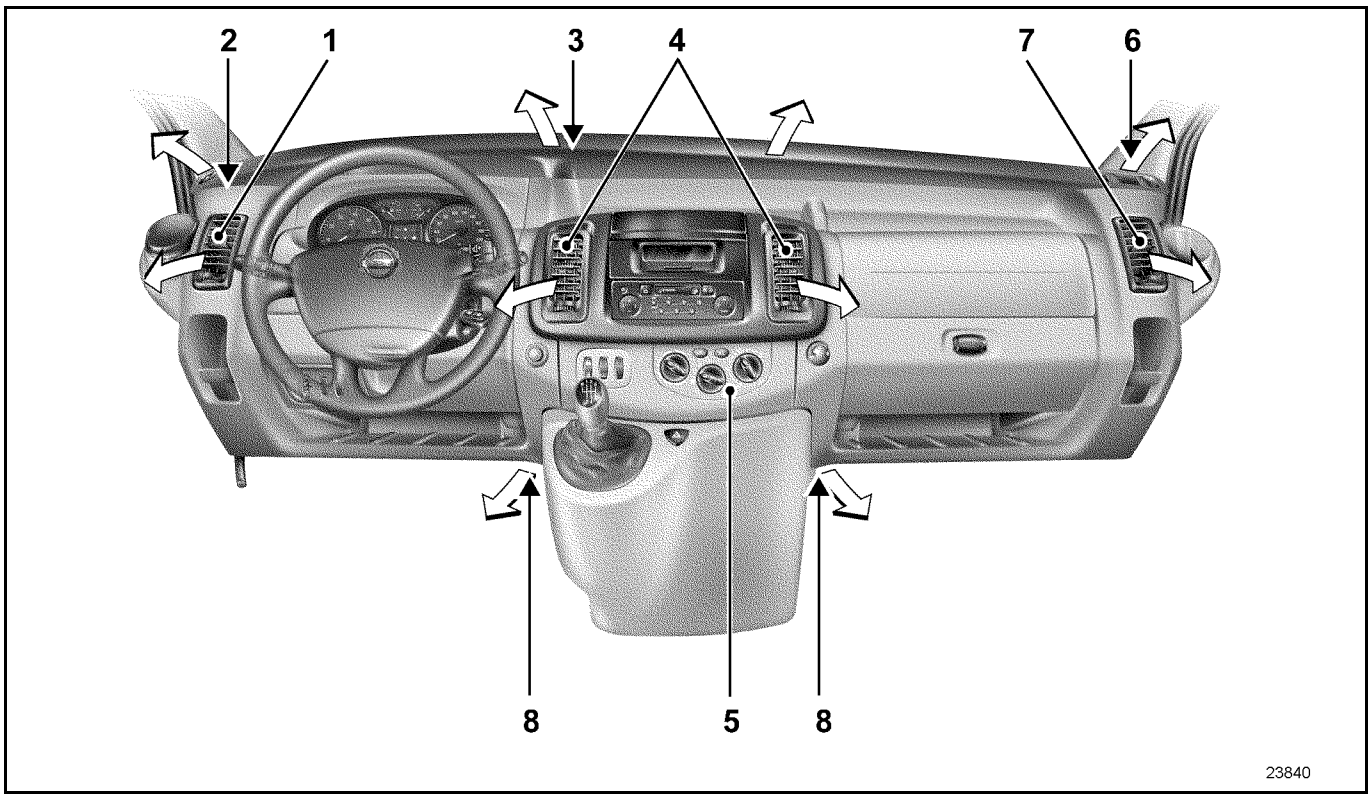
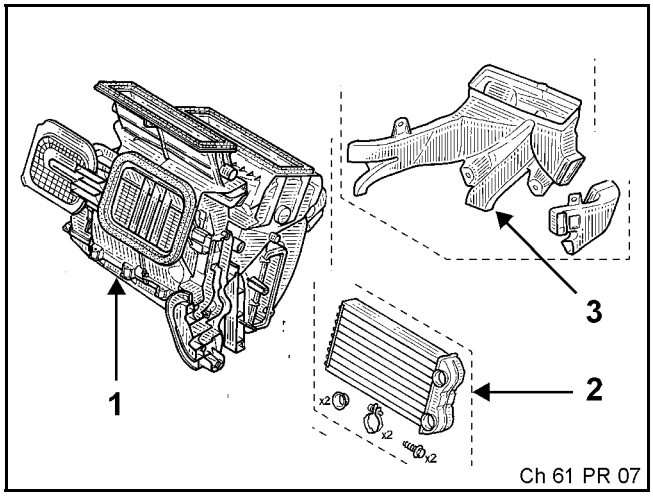
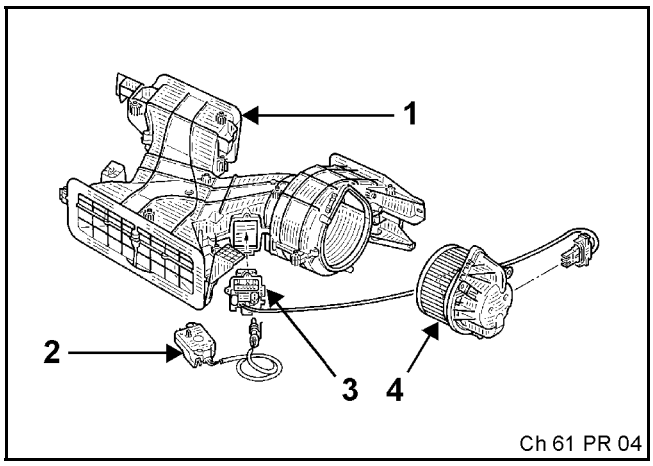
AIR DISTRIBUTION: description of the air distributors in the passenger compartment.



1 Left-hand side air vent
2 Left-hand side window demisting
3 Windscreen demisting
4 Central air vents
5 Control panel
6 Right-hand side window demisting
7 Right-hand side air vent
8 Footwell heater outlets for front passengers

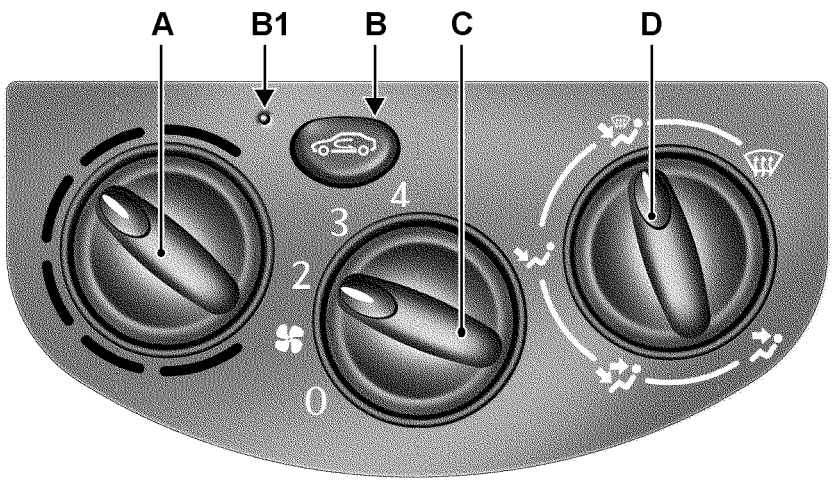


1 Air distribution unit
2 Heater radiator
3 Heater hoses



1 Fan assembly
2 Recirculation motor
3 Power module
4 Ventilation motor

CONTROL PANEL

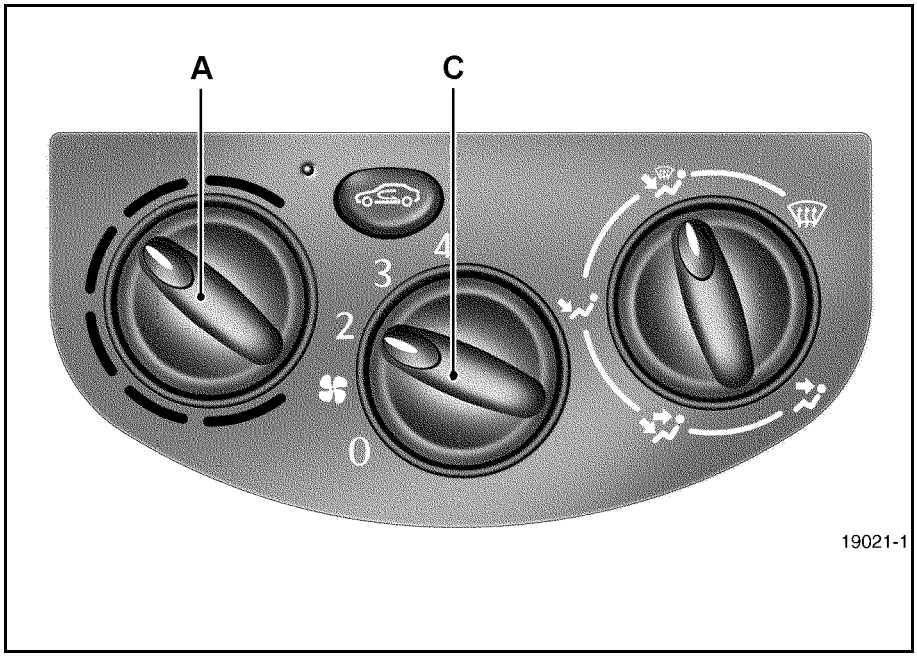


A Air temperature adjustment,
B Air recirculation operation,
B1 Passenger compartment air recirculation operating indicator light (on some vehicles),
C Adjustment of the amount of air delivered to the passenger compartment,
D Distribution of air in the passenger compartment.

Recirculation can:
– isolate the passenger compartment from the external atmosphere (e.g. when driving in polluted areas, etc.),
– reach the desired passenger compartment temperature quickly.

Prolonged use of the air recirculation mode may cause the windows to mist up or lead to odours, as the air is not renewed.

We therefore recommend that you return to normal mode (external air) as soon as you have passed through the polluted areas, by pressing button (B).



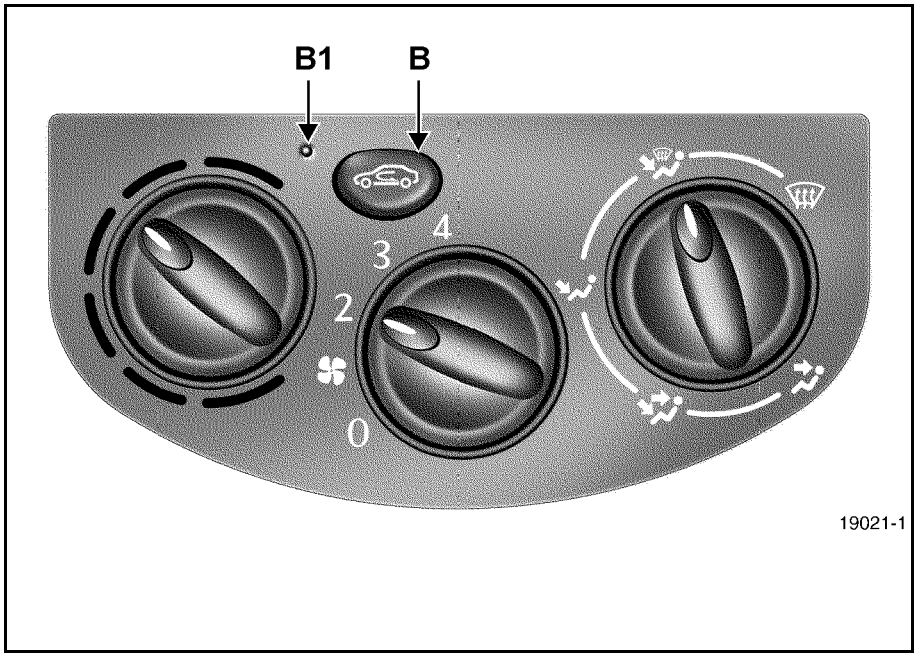
Air temperature adjustment
Move the control (A).
To the right: Maximum possible temperature.
To the left: Minimum possible temperature.

Adjustment of the amount of air delivered to the passenger compartment.
Move control (C).

The passenger compartment is ventilated by blown air. The ventilation fan determines the amount of air supplied, but vehicle speed does affect it slightly.

The further the control is moved to the right, the greater the quantity of air blown.

NOTE:
To fully close the air inlet and turn off this function, turn control (C) to **0**.



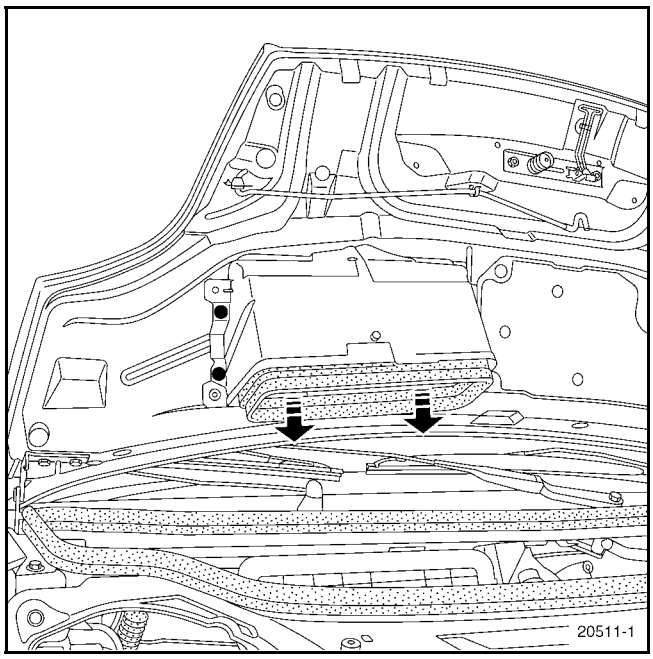
Air recirculation control
Press control (B); the operation indicator light (B1) lights up.

When this function is switched on, the air from the passenger compartment is recirculated and no external air is admitted.

REMOVAL

Open the bonnet.

Remove the filter.



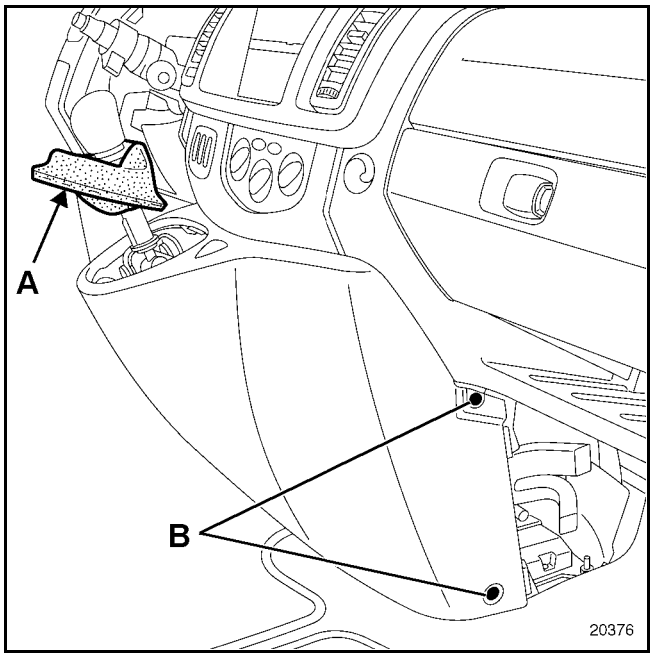
REFITTING

Proceed in the reverse order to removal.

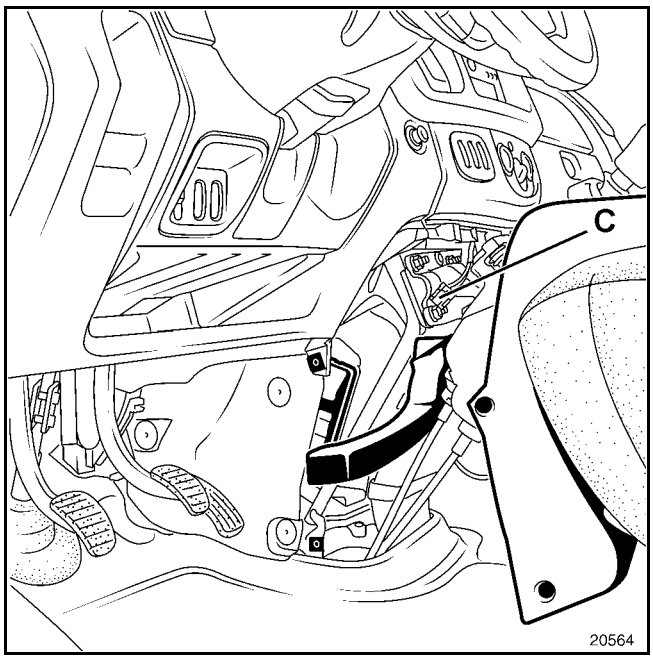
REMOVAL

Disconnect the battery.

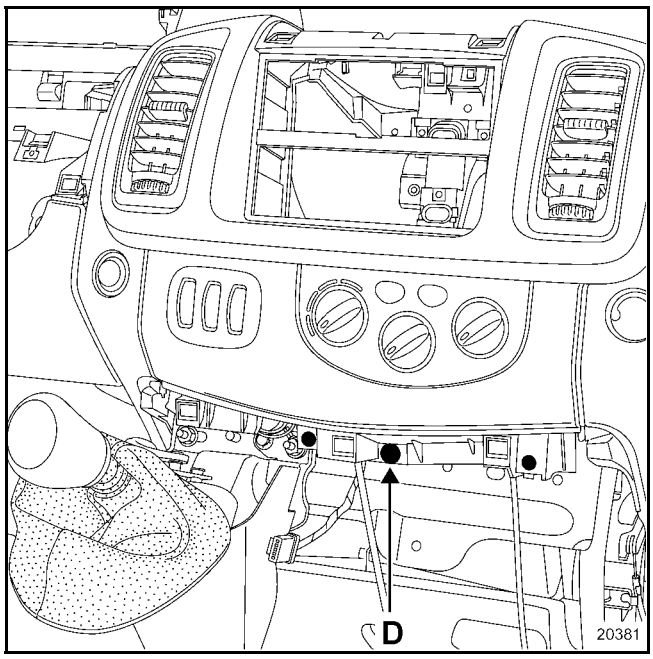
Unclip:
– gear lever gaiter (A) and unscrew the four bolts (B) on the console,



– the central console to access the hazard warning lights switch connector (C).

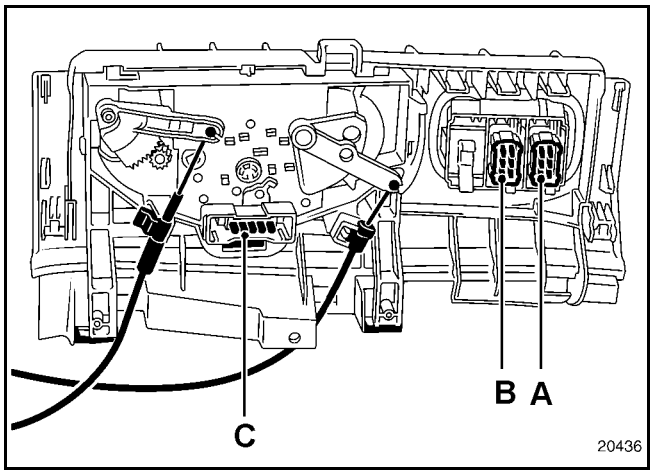


Remove the control panel and its support - bolt (D).

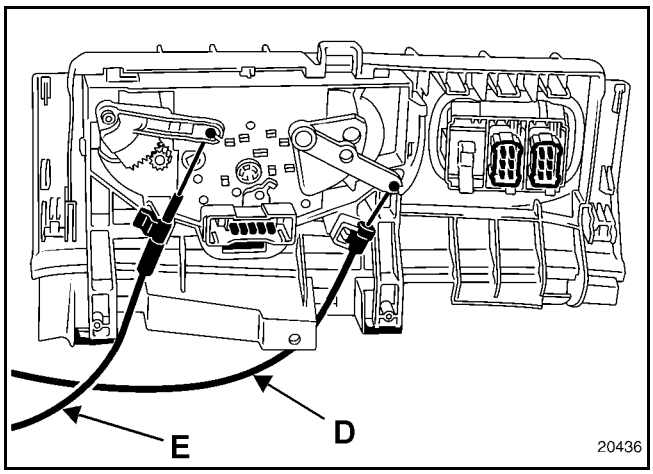


REMOVAL

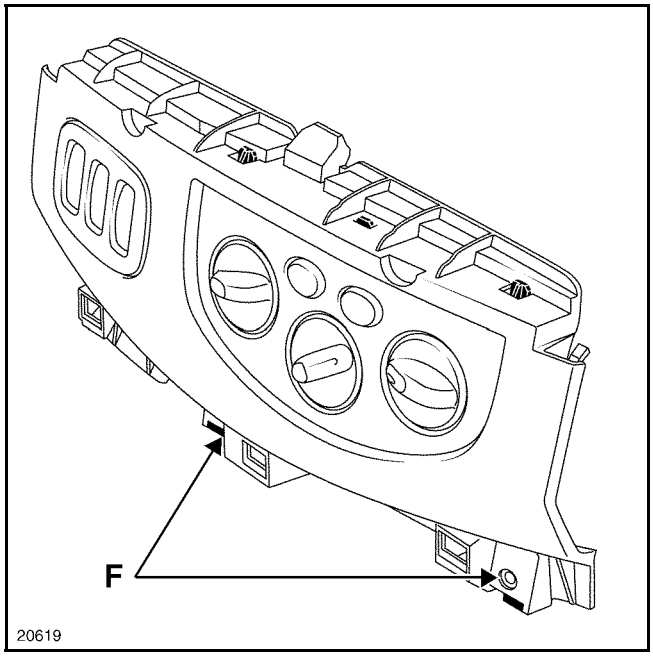
Disconnect connectors (A), (B) and (C).



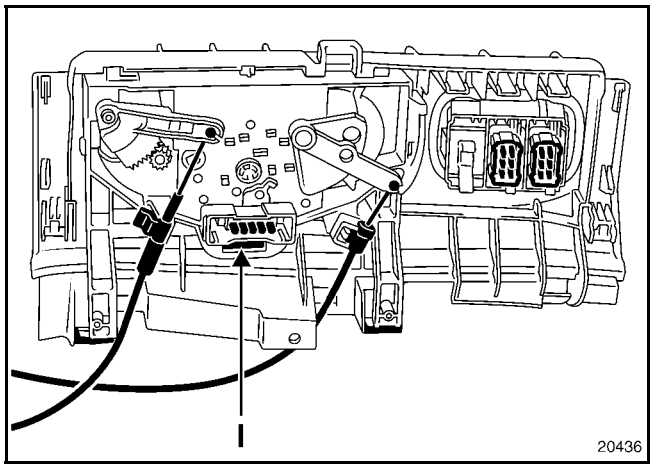
Remove:
– air temperature control wire (D),
– air distribution control wire (E),



– the two mounting bolts (F) securing the control panel to its support.



Remove lower mounting (I) and remove the control panel.



REFITTING

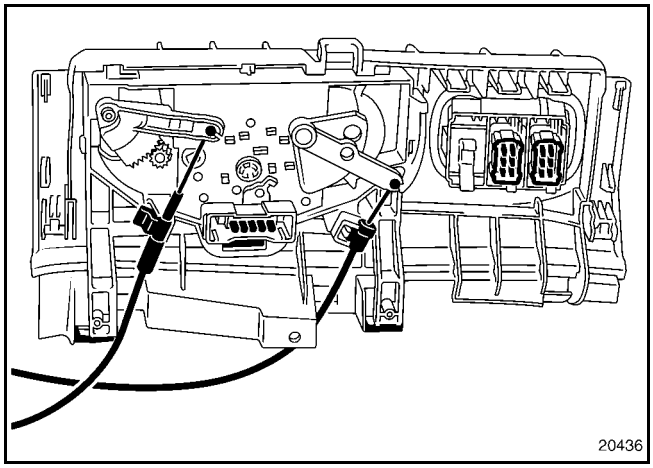
Carry out the removal procedure in reverse.

TEMPERATURE ADJUSTMENT DIAL CONTROL WIRE

REMOVAL

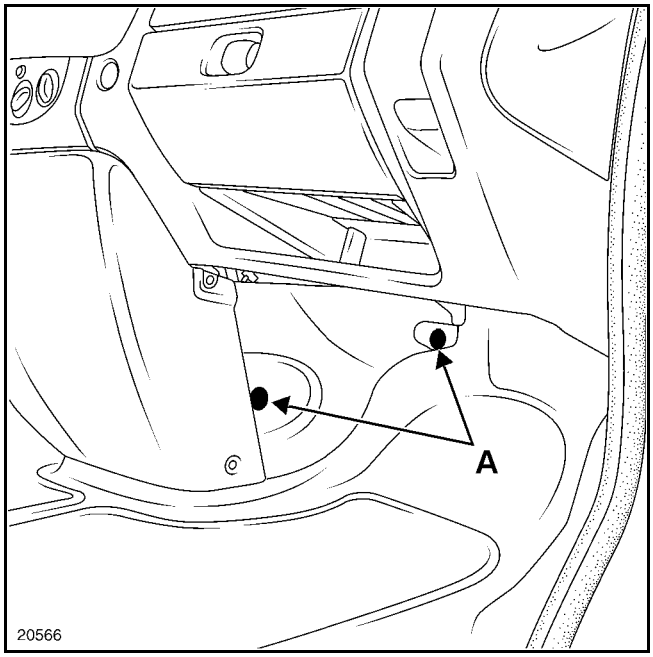
Temperature adjustment dial control wire on the control unit side.

Remove the control panel (see the **Control panel section**).

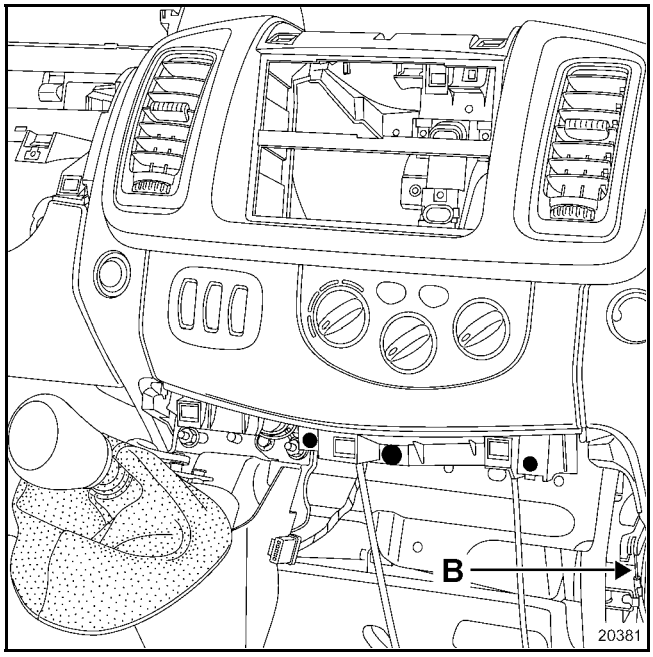


Temperature adjustment dial control wire on the distribution unit side.

Remove:
– the right-hand side covers,
– the two clips (A).



Remove wire (B).



REFITTING

Carry out the removal procedure in reverse.

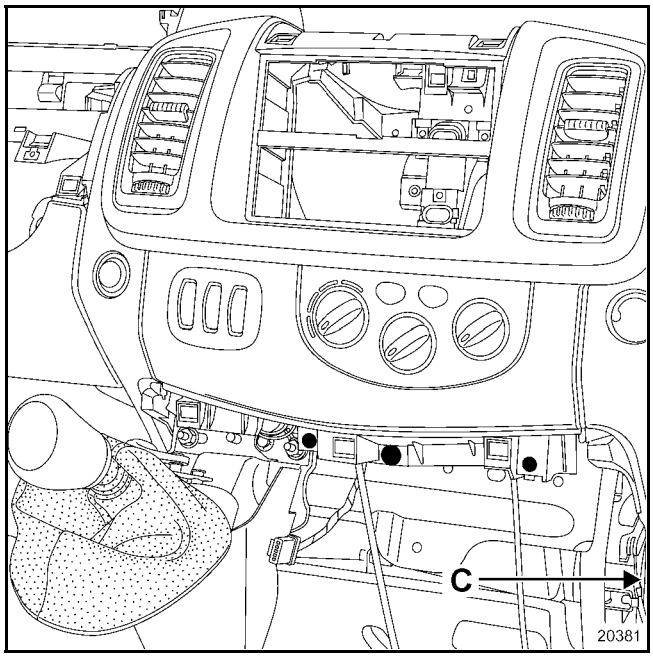
AIR MIXING FLAP CONTROL WIRE

REMOVAL

Air mixing flap control wire on the control unit side.

Remove the control panel (see the **Control panel section**).

Air mixing flap control wire on the distribution unit side.

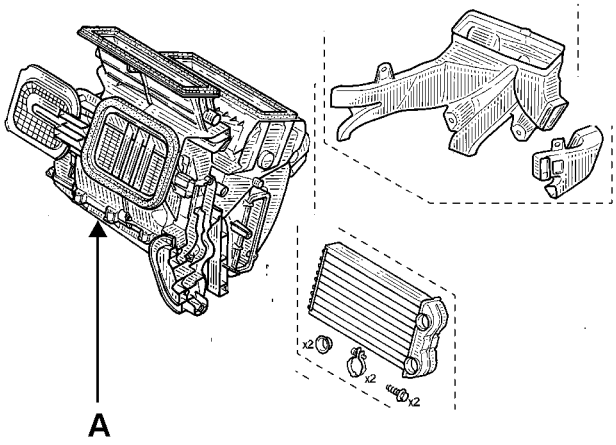


Remove:
– the two clips (A),
– the right-hand side cover.

Remove wire (C).

REFITTING

Carry out the removal procedure in reverse.



CH 61 PR 07

REMOVAL - REFITTING

Air distribution unit (A) can be accessed after removing the dashboard and the passenger compartment reinforcement beam.

Follow the removal - refitting instructions in **Section 62: Removal - refitting the evaporator unit**.

IMPORTANT:
Before reconnecting the driver's and passenger front airbag modules, the procedure for checking the correct operation of the system must be performed:

- Switch on the ignition and check that the indicator light comes on for three seconds and then goes out permanently.
- Refer to **Section 88** if the light fails to operate in this way.

ADJUSTMENT AND DISTRIBUTION OF THE HEATING POWER

There are two ways of varying the heating power:
– air flow,
– the air temperature.

The driver can adjust the air flow by using the control panel instruments.

The air temperature is adjusted using the various settings of the mixing flap. In the air distribution unit, the air is diverted depending on the position of the mixing flap, passes through to the heating radiator and is then mixed with cold air to obtain the air temperature requested by the user.

Air is supplied and distributed to the passenger compartment through:
– a five-mode air distributor,
– four vents,
– two front footwell ducts,
– a windscreen demisting/de-icing vent,
– two front side window demisting/de-icing vents.

REMOVAL

Engine compartment side

Place hose clamps over each coolant hose in front of the heater matrix bleed screws.

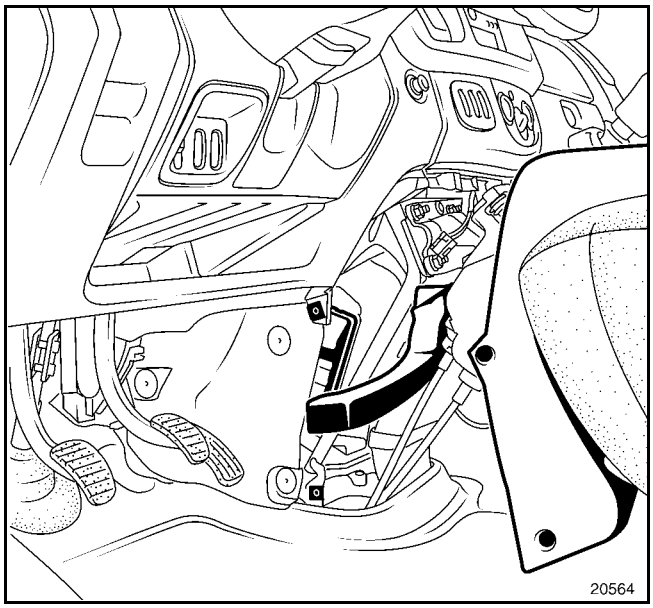
Passenger compartment side

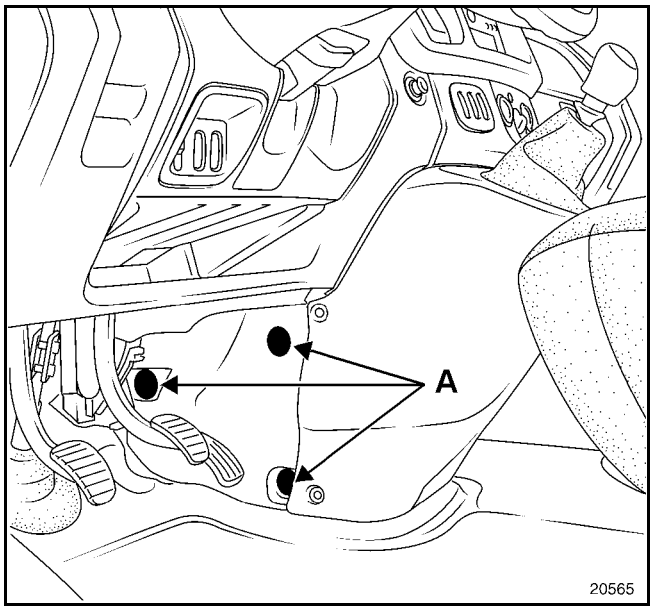
The dashboard does not need to be removed before removing the radiator.

Remove the central console (see the **Control panel section**).

Disconnect the hazard lights switch.

Unclip the three clips (A) on the left-hand side cover with the air duct.



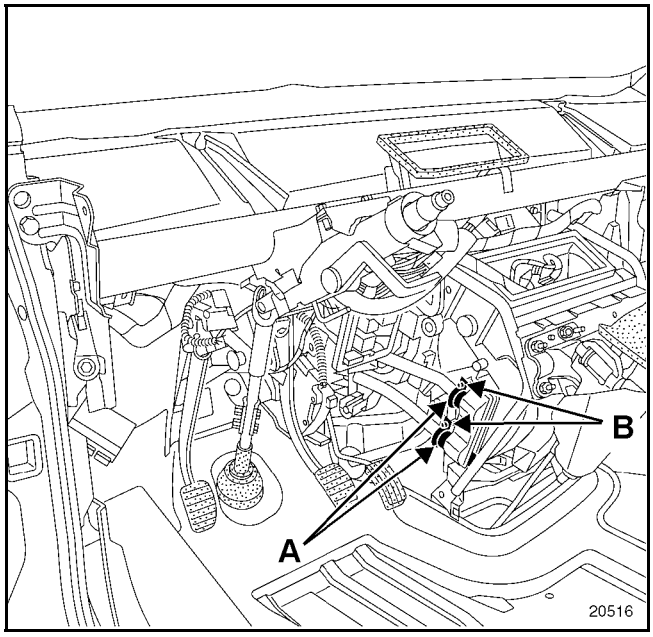


Place a container underneath the radiator and drain it.

Unscrew the two clips (A) on the radiator coolant circuit hoses.

Remove the two coolant hoses.

Unscrew the two radiator mounting bolts (B) and then remove the radiator.



REFITTING

Proceed in the reverse order to removal.

Replace the two radiator hose seals and replace the two clamps correctly.

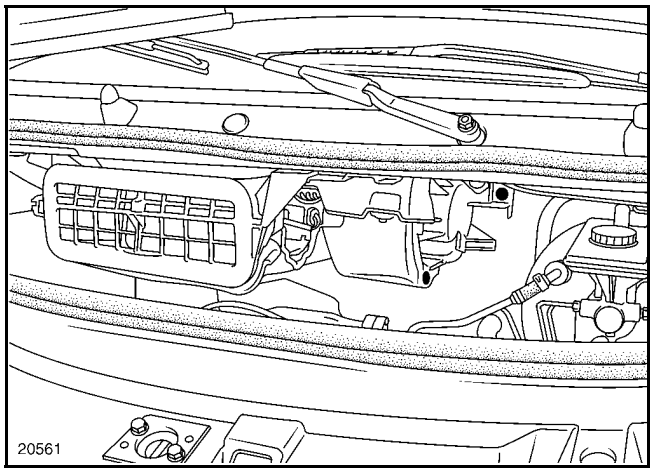
REMOVAL

Disconnect:
– the battery,
– the air inlet unit connector.

Remove the four air inlet unit mountings.

Remove the coolant recovery hose.

Remove the air inlet unit.



REFITTING

Proceed in the reverse order to removal.

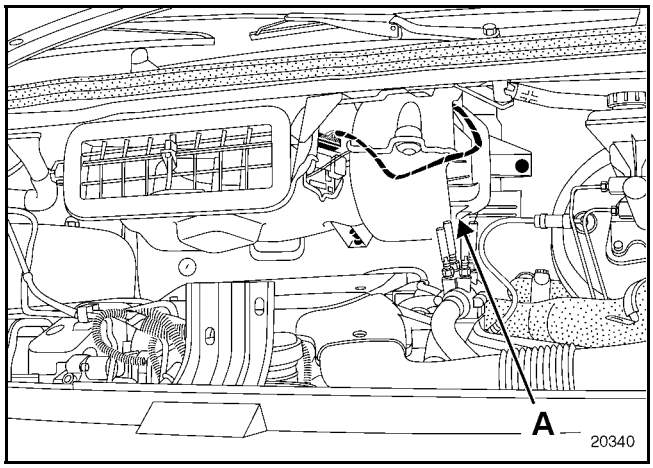
REMOVAL

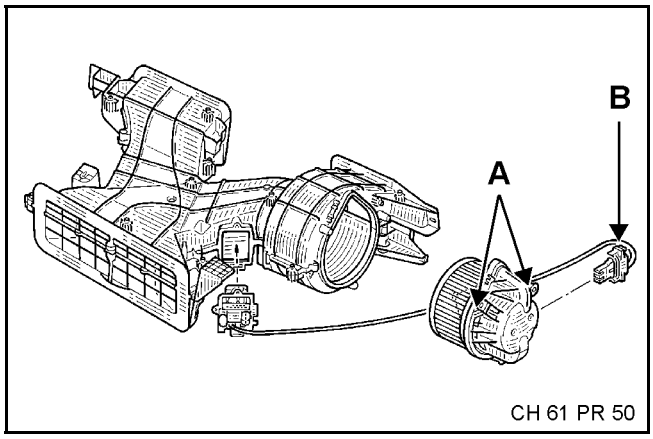
Open the bonnet.

Disconnect the battery.

Unscrew bolts (A) and remove the heating ventilation motor from its housing.

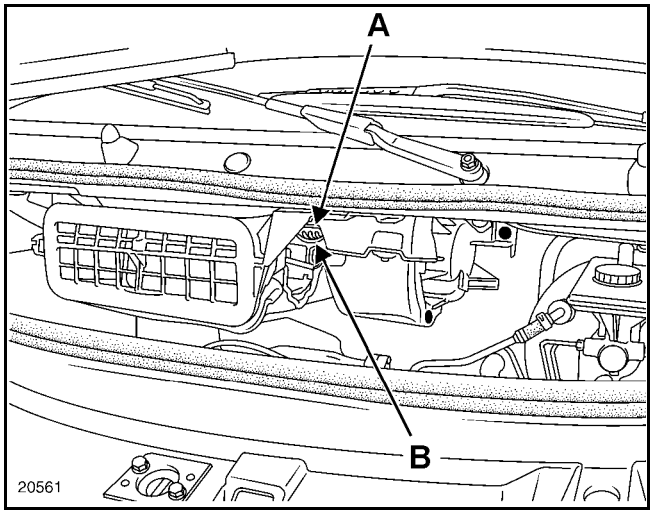
Remove the unit and turn it gently. This will enable you to disconnect supply connector (B).

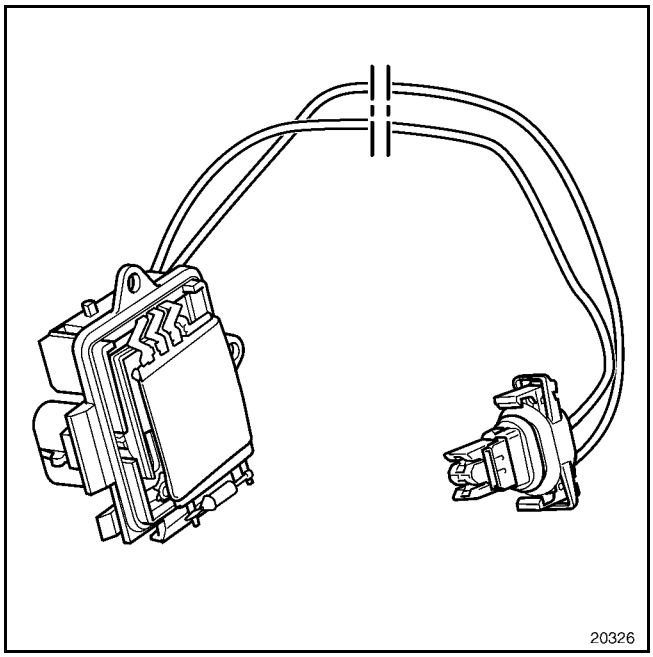




REFITTING

Proceed in the reverse order to removal.





The power module controls the speed of the fan assembly depending on the requirements determined by the automatic control.

It can be accessed without removing the fan assembly.

REMOVAL

Disconnect connectors, (A) and (B).

Unscrew the fan assembly trim bolt.

Remove:
– the wiring harness,
– the power module mounting bolt,
– the power module.

REFITTING

Carry out the removal procedure in reverse.

TIGHTENING TORQUE (in daNm)
Heater unit mounting bolts 0.8

The heater unit is located under the vehicle on the right-hand side.

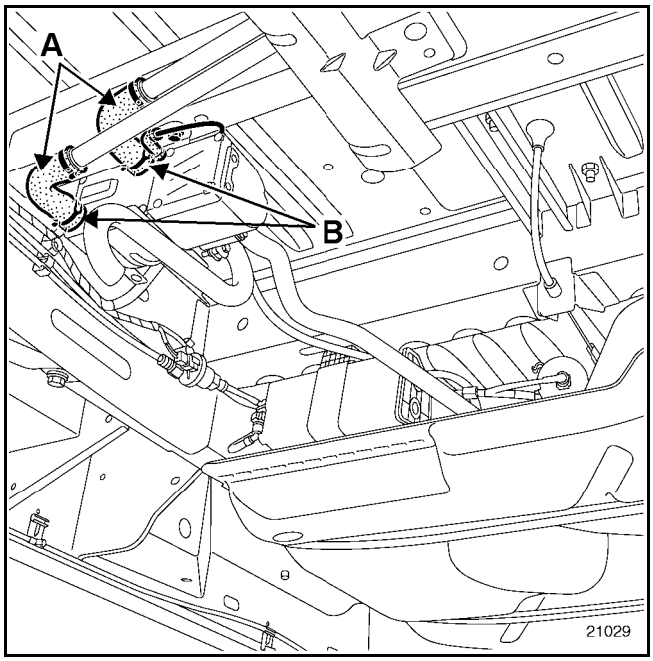
REMOVAL

Disconnect the battery.

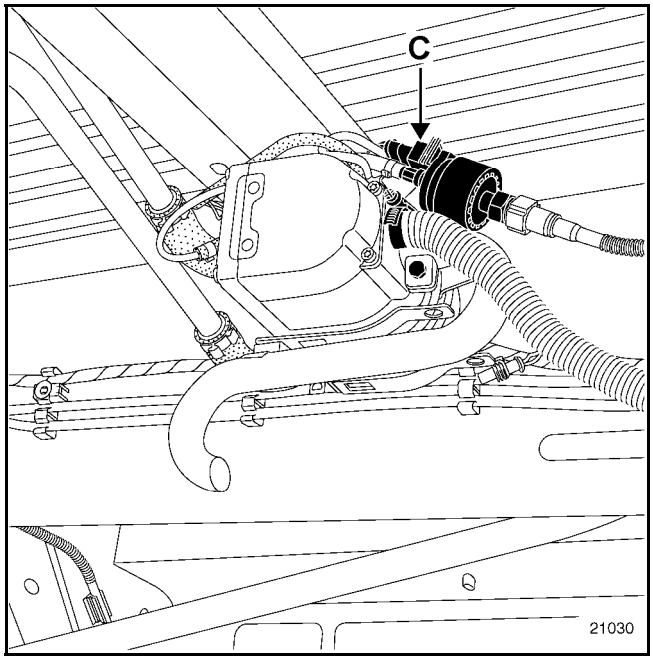
Put the vehicle on a 2-post lift (5 tonnes minimum).

Place a hose clamp on each pipe (A) of the coolant circuit, on the boiler side.

Remove the two clamps (B) on the coolant hoses (heater inlet/outlet connections).

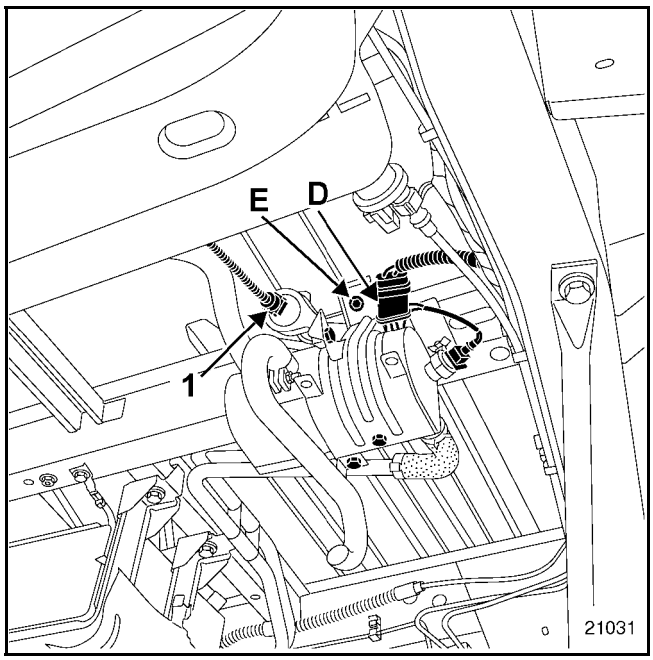


Disconnect connector (C) from the metering pump.

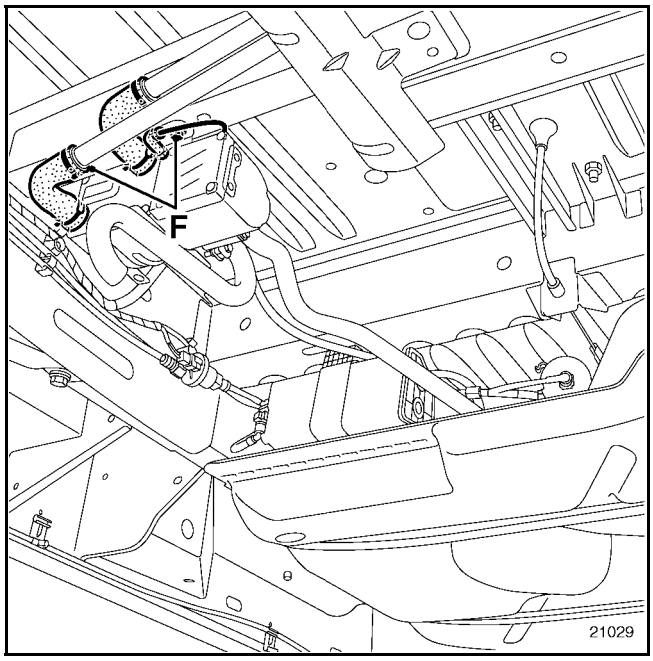


Disconnect heater connections (D).

Remove:
– supply hose (1) from the metering pump,
– boiler mounting bolt (E).

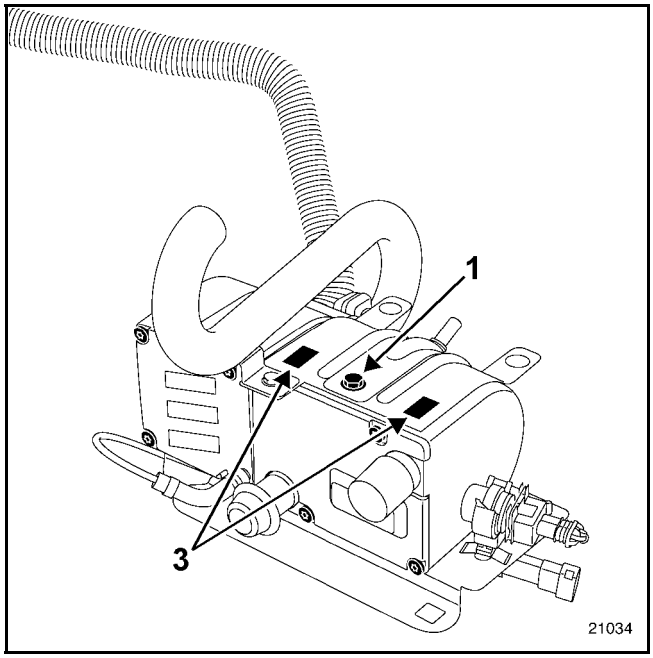


Remove the two other mounting bolts (F) while supporting it.

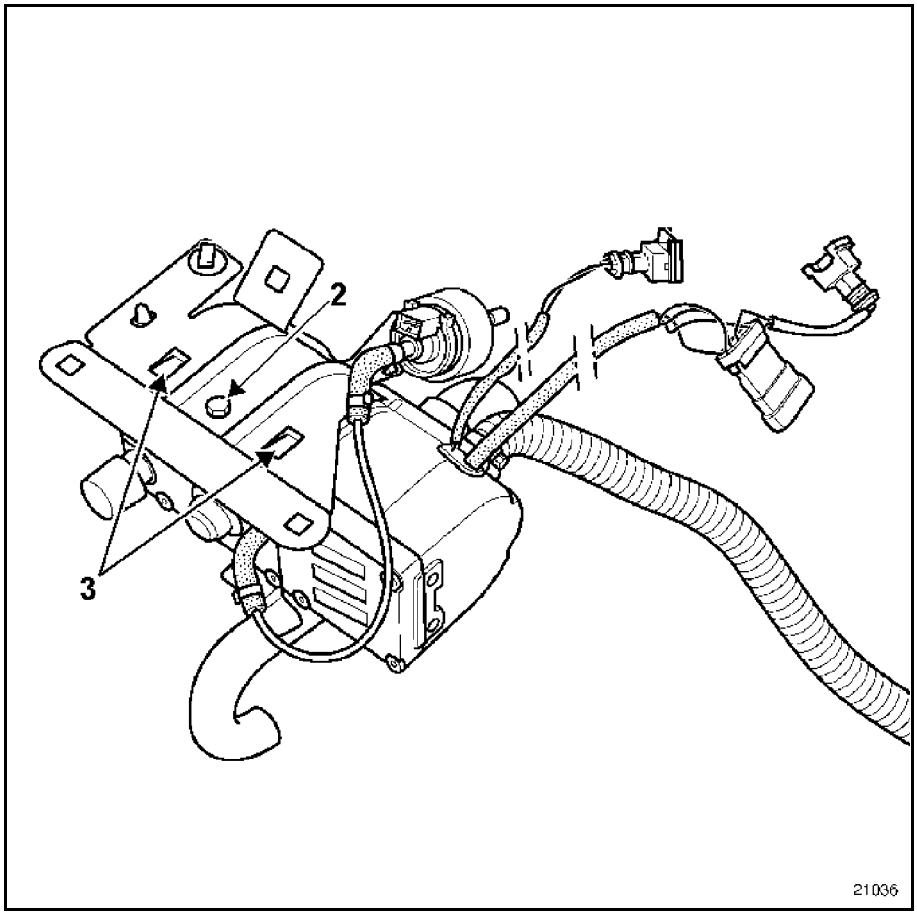


Removal of the heater from its bracket

Unscrew bolt (1) then turn the unit over.



Unscrew bolt (2) and remove the heater from its mounting by releasing lugs (3).



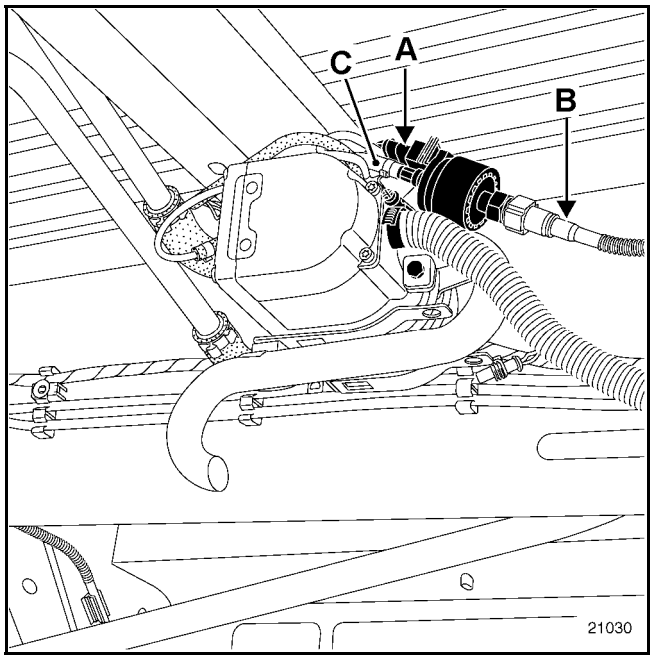
REMOVAL

Place the vehicle on a lift.

Disconnect the battery.

Disconnect connectors (A) on the metering pump.

Remove:
– fuel supply pipes (B) and (C),



– the metering pump with or without its mounting.

REFITTING

Proceed in the reverse order to removal.

IMPORTANT:
When refitting, fix the metering pump in the same position.

REMOVAL

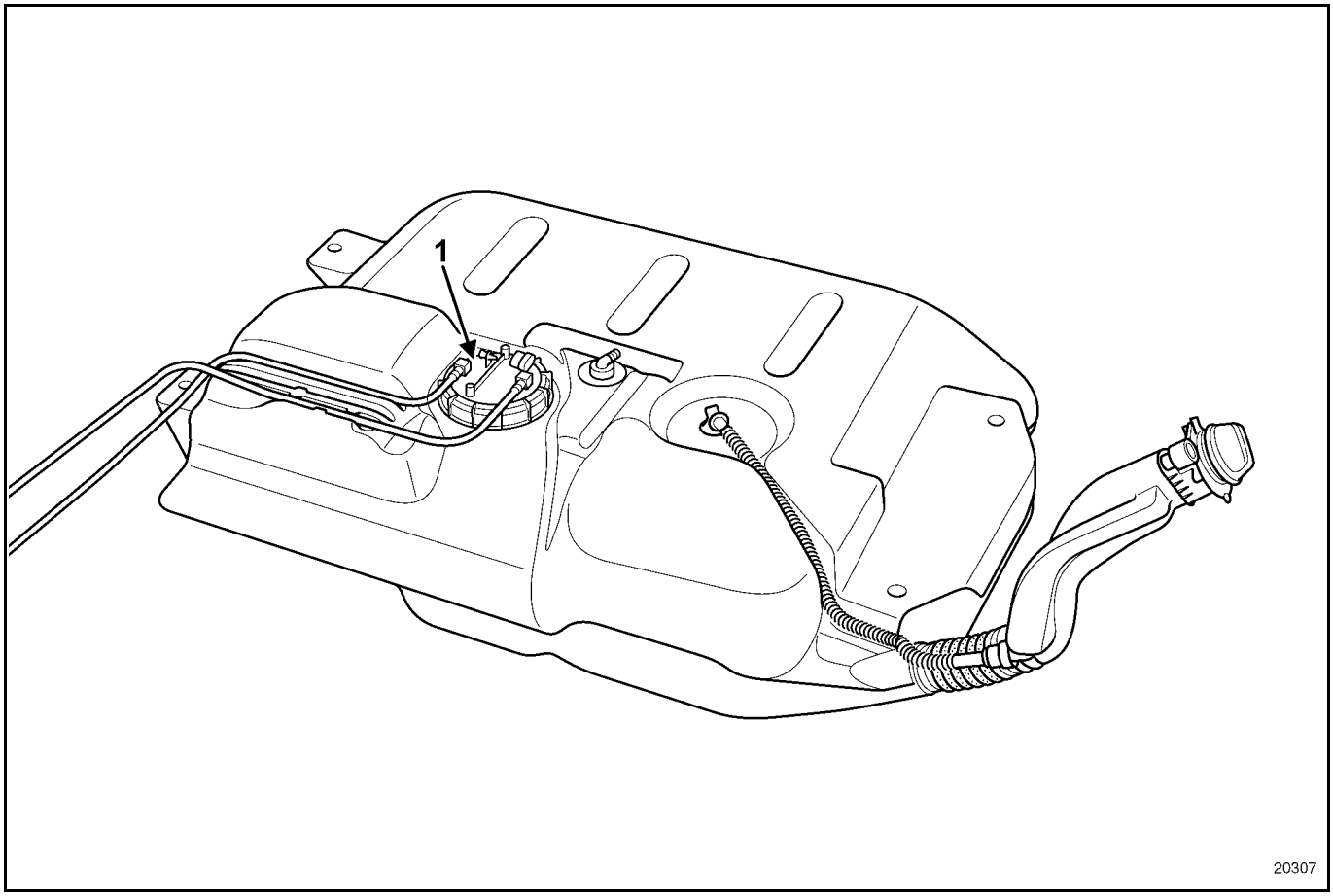
To remove the fuel supply pipe from the heater, you must first drain and remove the fuel tank (see the procedure in **Section 13** of the Workshop Repair Manual).

Disconnect the battery.

Unclip the supply quick-release union on the metering pump.

Drain the fuel tank and remove it.

Unclip supply quick-release union (1) on the pump-gauge assembly.

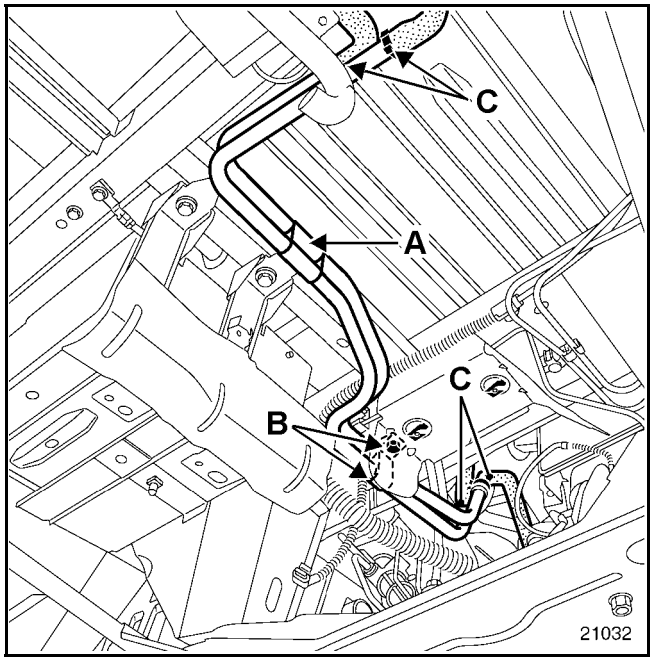


REFITTING

Refit in the reverse order to removal.

REMOVAL

To remove the coolant supply pipes from the heater unit, you must:
– disconnect the battery.
– fit a hose clamp on each side of the coolant supply pipe.
– pierce rivet (A) on the vehicles concerned.
– unscrew the two coolant supply pipe mounting bolts (B).
– loosen clamps (B) and remove the supply pipe housing.



REFITTING

Proceed in the reverse order to removal.

Top up the coolant and bleed the main circuit.

IMPORTANT:
It is not permitted to handle the pyrotechnic systems (airbags and pretensioners) near a source of heat or flame as there is a risk of triggering.

IMPORTANT:
Before removing a seat, lock the computer using the diagnostic tool. When this function is activated, all the trigger lines are disabled and the airbag indicator light on the instrument panel comes on.

REMOVAL

Remove the front bench seat (see **Section 75: Complete seat**).

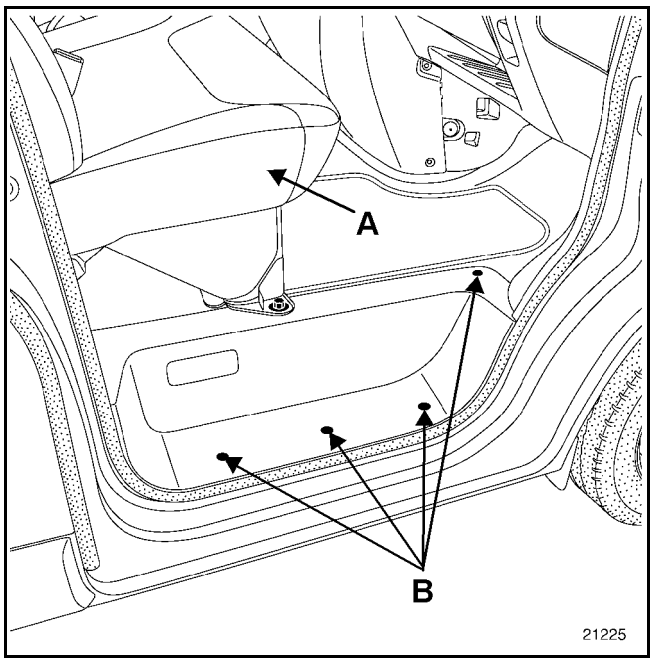
NOTE:
This operation does not require the removal of the driver's seat.

The procedure for removing the bench seat is identical to the procedure for removing a single seat.

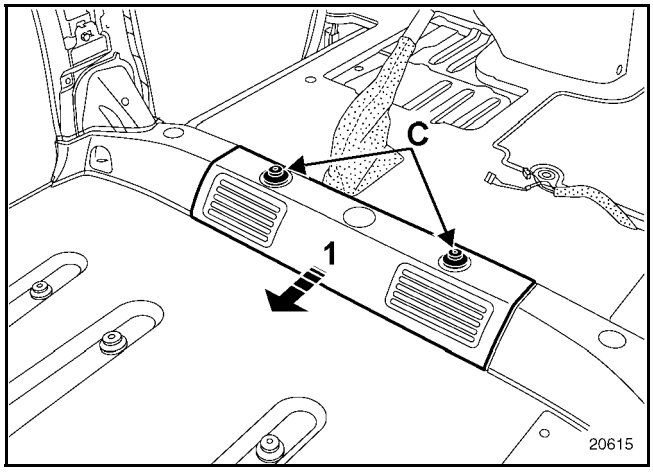
Remove the central console (see **Section 61: Control panel**).

Right-hand side

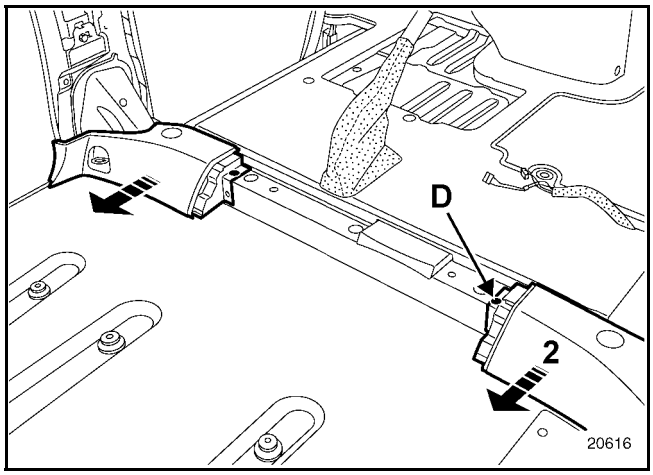
Remove:
– bench seat (A),
– mounting bolts (B), then release the step,



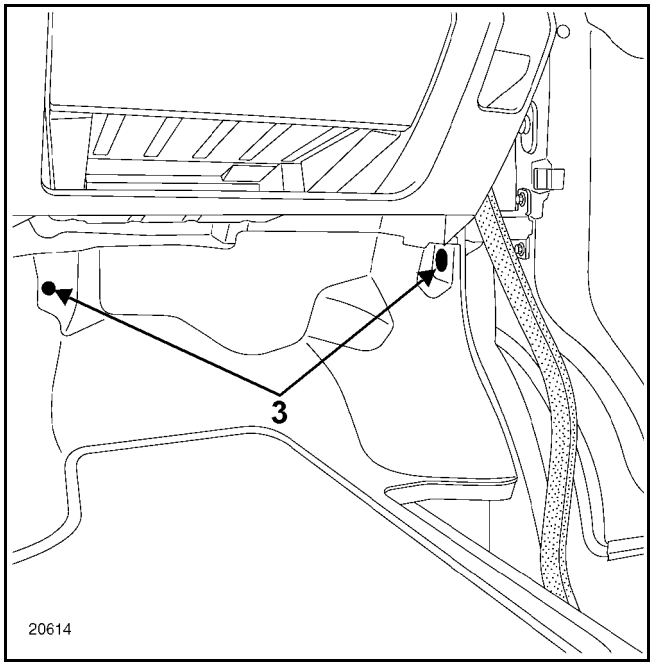
– the two front seat anchoring points (C), then remove the trim as shown above (1).



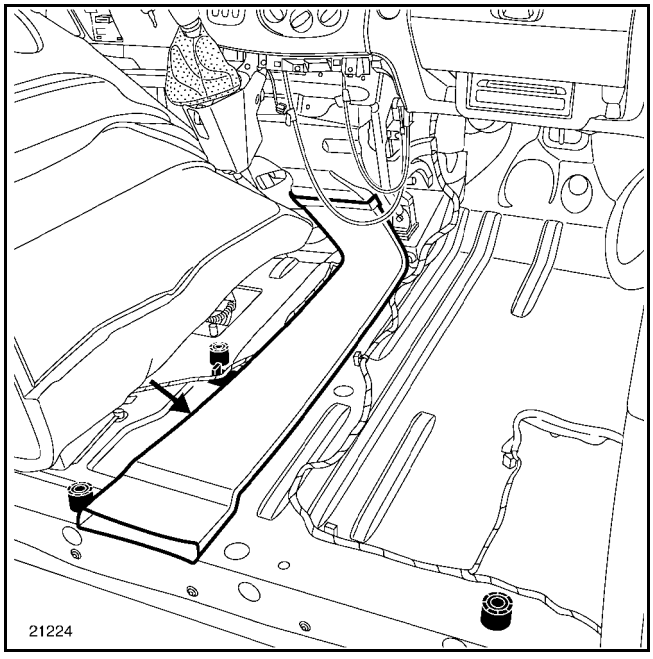
Remove mounting (D), then pull back the trim (2).



Partially release the door seal on the door on the right-hand side.

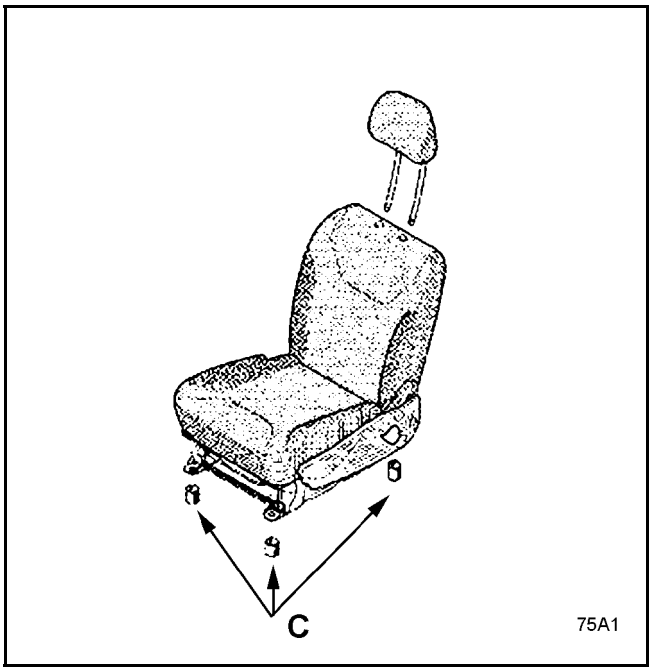


Remove the two clips (3) then partially remove the carpet and fold it back.
Unclip the electrical wiring harness clip.
Remove the air duct.



REFITTING

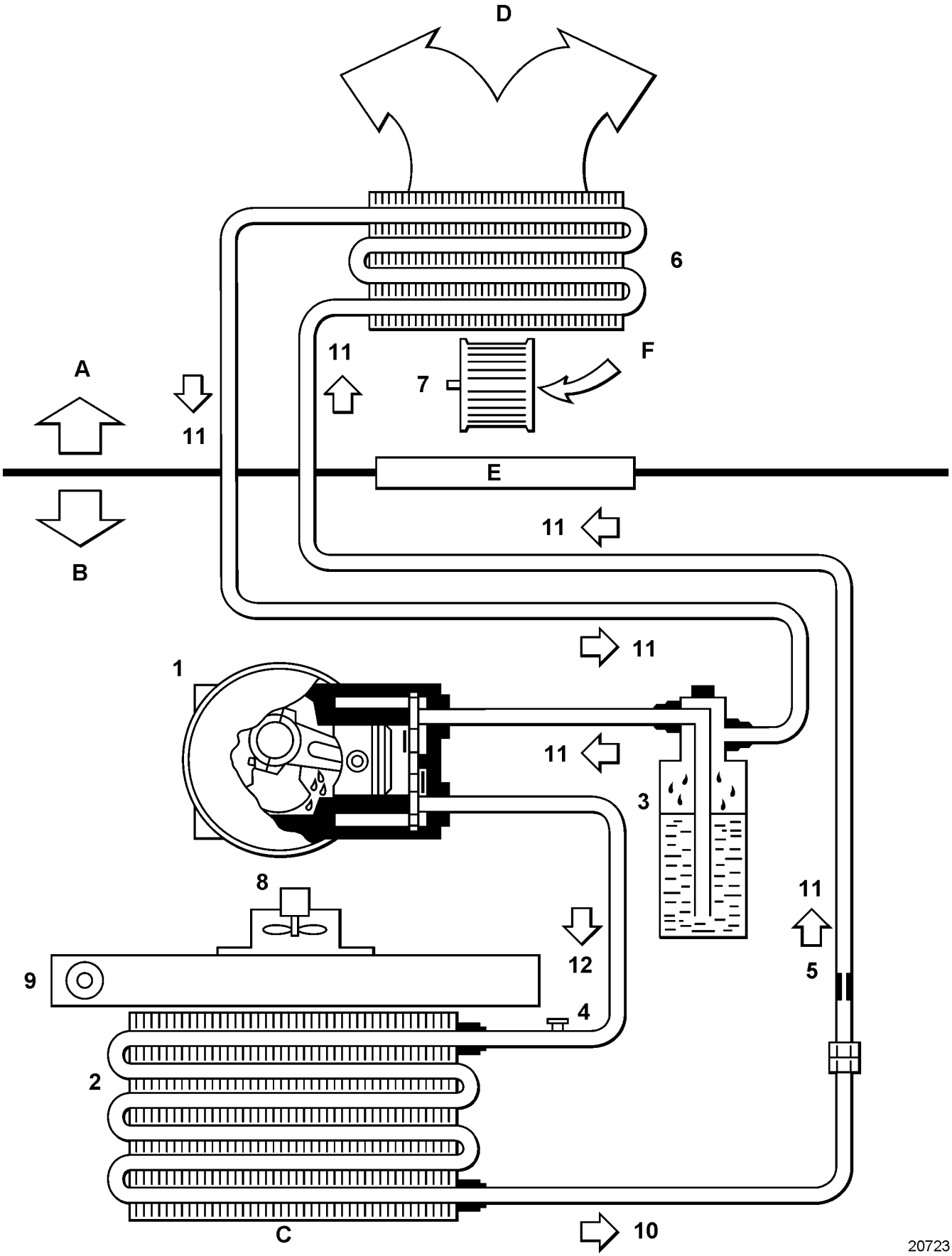
Proceed in the reverse order to removal.



When refitting the seat and the front bench seat, ensure that seat and front bench seat height adjustment spacers (C) are replaced.

IMPORTANT:
Before refitting the seat, check visually the condition of the connectors on the seat frame and on the body.

TIGHTENING TORQUES (in Nm)	▽
Front seat mounting nuts	**44**
Seat belt mounting	**37**


D
6
11
F
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A
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E
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2
C
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20723

A Passenger compartment
B Engine compartment
C External air
D To air mixing unit
E Bulkhead
F External or recirculated air

1 Compressor
2 Condenser
3 Dehydration canister
4 Pressure sensor
5 Pressure relief valve
6 Evaporator
7 Climate control fan
8 Engine cooling fan
9 Engine radiator
10 High pressure fluid
11 Low pressure vapour
12 High pressure vapour

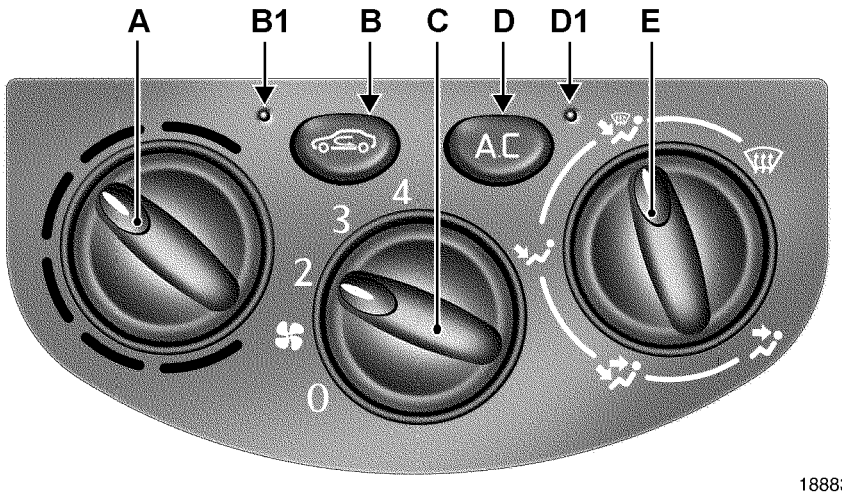
F9Q ENGINE

– Compressor:
DELPHI HARRISON V5

– Oil for **DELPHI HARRISON** compressor:
PLANETELF PAG 488 220 cm^3 + 15

– Refrigerant:
R134a: 700 + 25

CONTROL PANEL

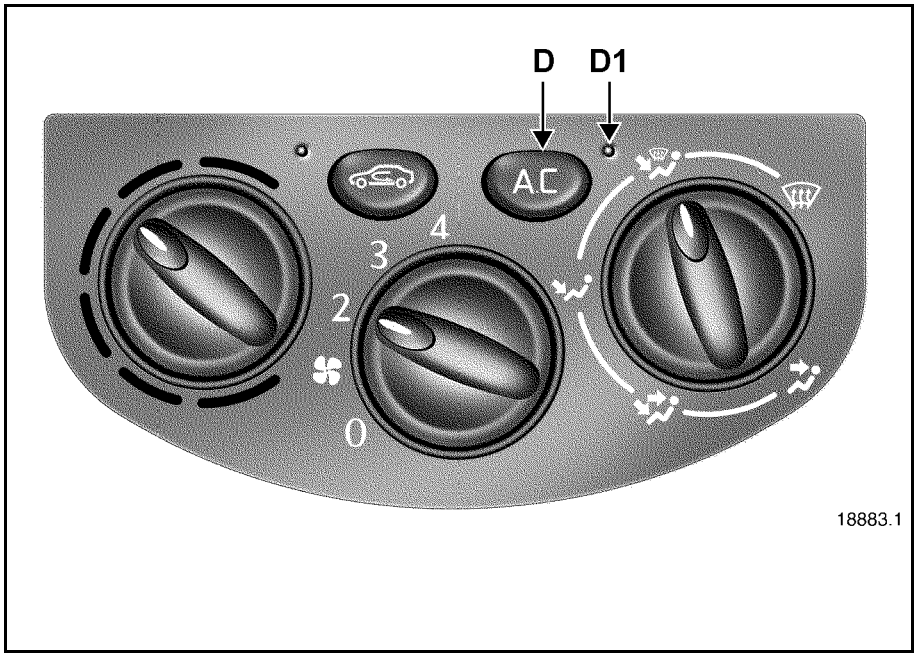


A Air temperature adjustment,
B Air recirculation selection,
B1 Passenger compartment air recirculation operating indicator light (on some vehicles),
C Adjustment of the amount of air delivered to the passenger compartment,
D Air conditioning selection,
D1 Air conditioning operation indicator light **(the air is taken from outside the vehicle and is recirculated continuously),**
E Distribution of air in the passenger compartment.

Recirculation can:
– isolate the passenger compartment from the external atmosphere (e.g. when driving in polluted areas, etc.),
– reach the desired passenger compartment temperature quickly.

Prolonged use of the air recirculation mode may cause the windows to mist up or lead to odours, as the air is not renewed.

We therefore recommend that you return to normal mode (external air) as soon as you have passed through the polluted areas, by pressing button (B).



AIR CONDITIONING

Air conditioning controls.

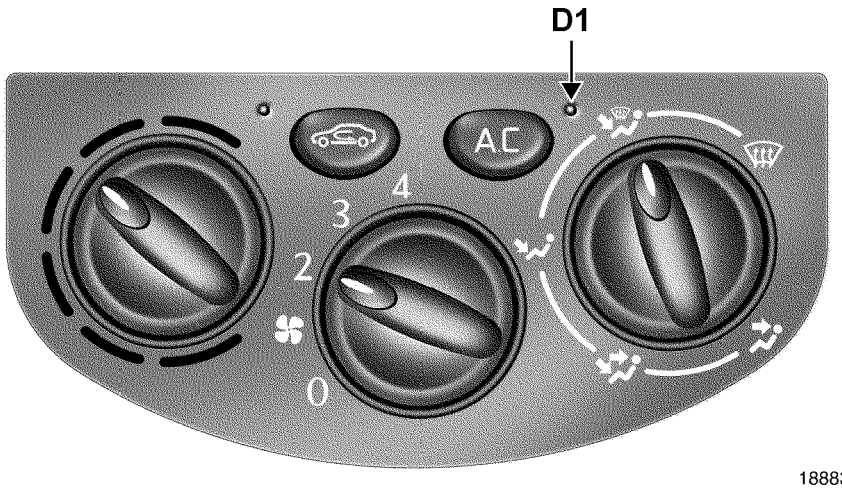
Control (D) switches the air conditioning system on and off.

Use the air conditioning to:
- lower the temperature inside the passenger compartment, especially on hot days when driving or after parking the vehicle in direct sunlight,
- reduce the volume of air blown into the passenger compartment (for demisting).

NOTE: the air conditioning can be used in any conditions, but it does not operate when the external temperature is low.

Indicator light D1 off
The air conditioning is not operating.
The heating and ventilation system is identical to a vehicle without air conditioning.

Indicator light D1 on
The air conditioning is operating normally.
The air is taken from outside the vehicle and is recirculated continuously.



In very hot weather, or when the vehicle has been parked in direct sunlight, open the doors for a few minutes to let the hot air out before driving off.

Use the isolating the passenger compartment function to lower the temperature to the desired level more quickly. Switch the recirculation mode off once the desired temperature level has been reached.

Keep the windows closed when using the air conditioning to ensure that the function works efficiently.

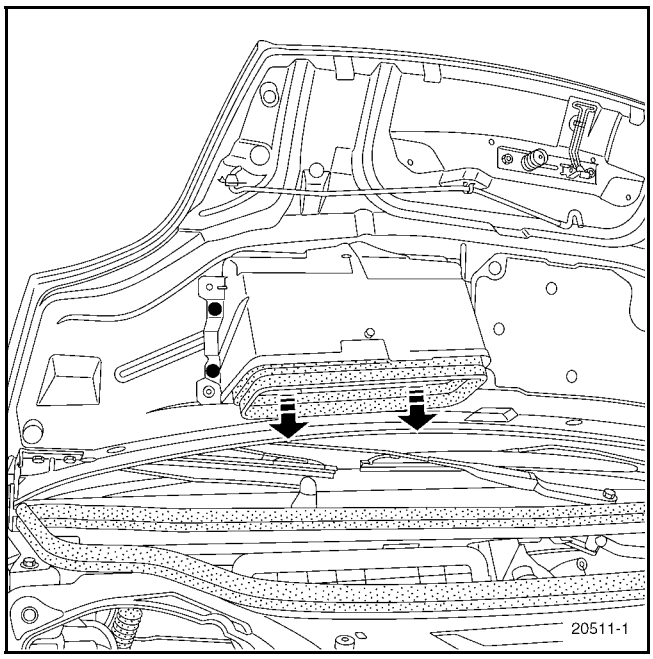
No cool air production
Check that the controls are working correctly and that the fuses are in good condition. If not, turn off the heating and ventilation function (**indicator light D1** goes out).

Do not open the circuit as the refrigerant can harm the eyes and skin.

REMOVAL

Open the bonnet.

Remove the filter.



REFITTING

Carry out the removal procedure in reverse.

REMOVAL

Disconnect the battery.

Drain the refrigerant circuit using the filling equipment.

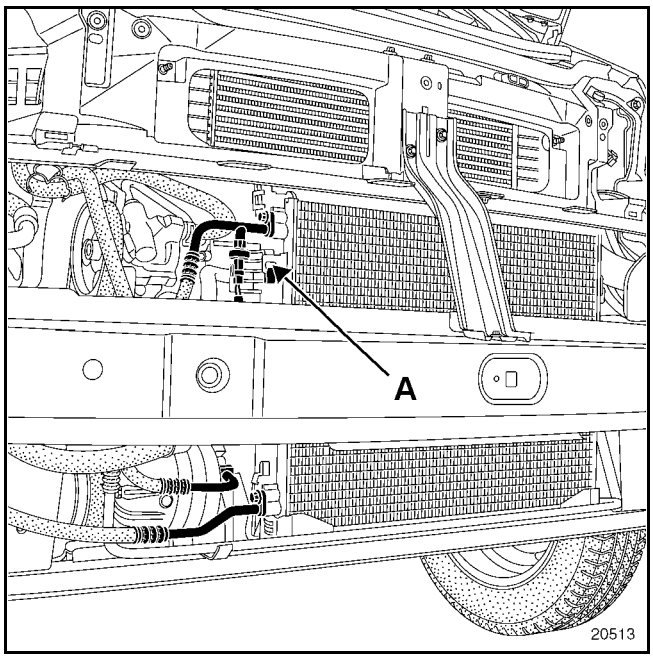
Remove:
– the radiator grille,
– the lens units,
– the engine undertray,
– the mudflap mountings on the bumper,
– the inner protection bolts on the wing fixed to the bumper only,
– front bumper (two-man job)
(see **the information on the exterior protection in section 55**).

Disconnect the pressure sensor.

Remove the hose unions on the condenser.

Unclip the condenser from the radiator at (A) and (B) then gently raise the condenser upwards.

Take the condenser out from underneath.



REFITTING

Check that the condenser is correctly secured.

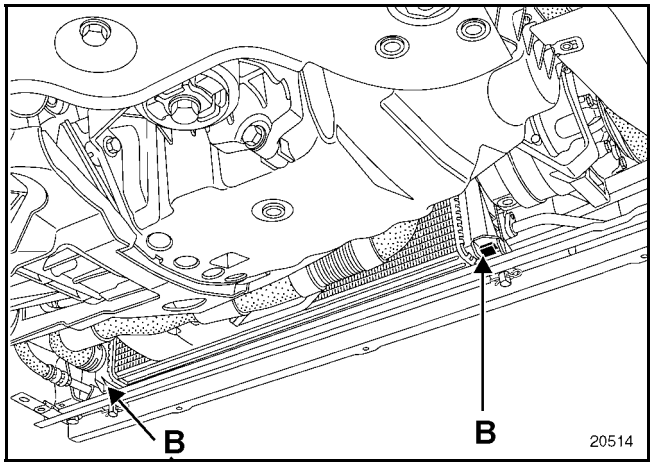
Carry out the removal procedure in reverse.

Refit the bumper (two-man job).

Fill up the refrigerant circuit using the filling equipment.

When replacing the condenser, add **30 ml** of recommended oil to the compressor.

NOTE: remember to reconnect the pressure sensor.

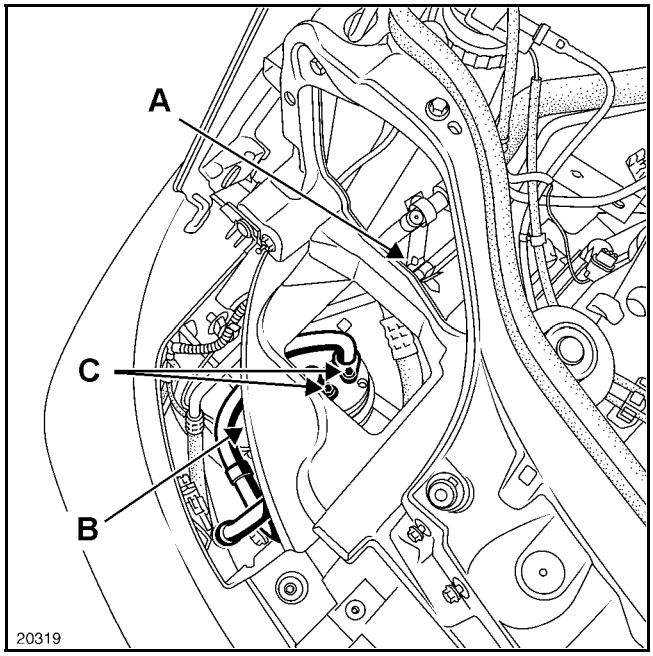


REMOVAL

Disconnect the battery.

Drain the refrigerant circuit using the filling equipment.

Remove:
– the radiator grille,
– the right-hand side lens unit,
– the mounting bolt (A) on the hose retaining bracket,
– the mounting bolt (B) on the low pressure hose on the body,
– the mounting bolts (C) on the two hoses on the dehydration canister,



– the canister with the seal.

REFITTING

Oil the hose seals with the recommended oil.

Carry out the removal procedure in reverse.

Fill up the refrigerant circuit using the filling equipment.

When changing the dehydration canister, add **15 ml** of recommended oil to the compressor.

REMOVAL

Disconnect the battery.

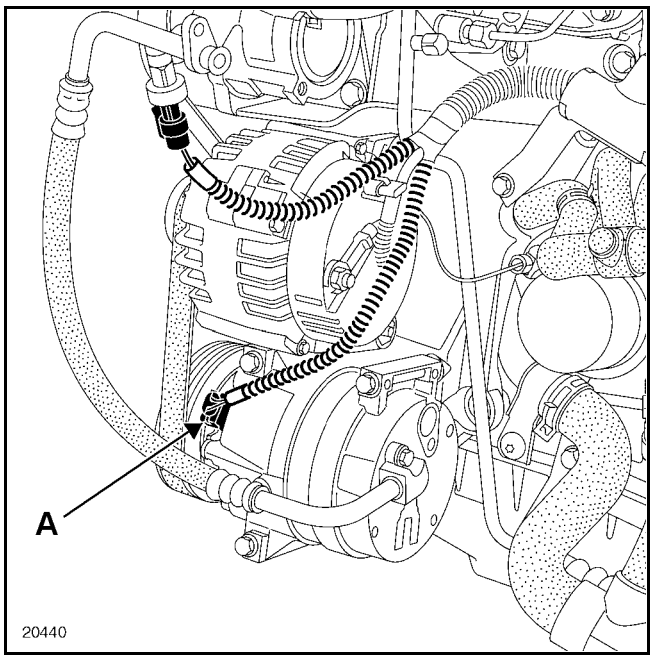
Drain the refrigerant circuit using the filling equipment.

Remove the accessories belt (see **Section 07 for information on the** accessories belt tension).

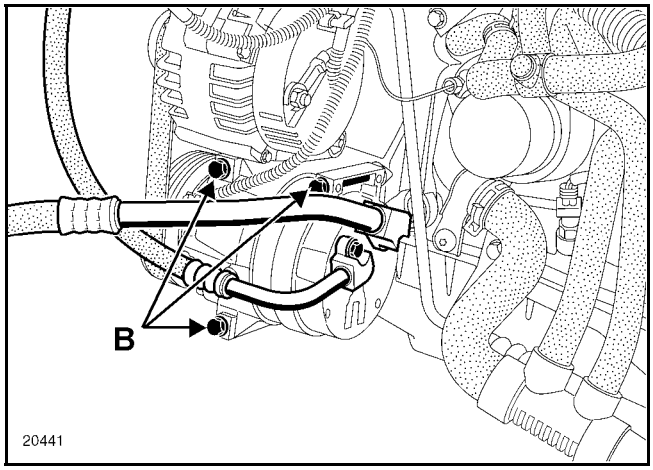
NOTE: all removed belts must be replaced.

Remove:
– the engine undertray,
– the air conditioning hoses.

Disconnect the compressor connector (A).



Remove the three mountings (B) on the compressor.



REFITTING

If you need to fit a new compressor, remember that they come pre-filled with oil.

IMPORTANT: Please follow carefully all the instructions relating to adding oil when working on air conditioning circuit components.

Oil the hose seals with the recommended oil.

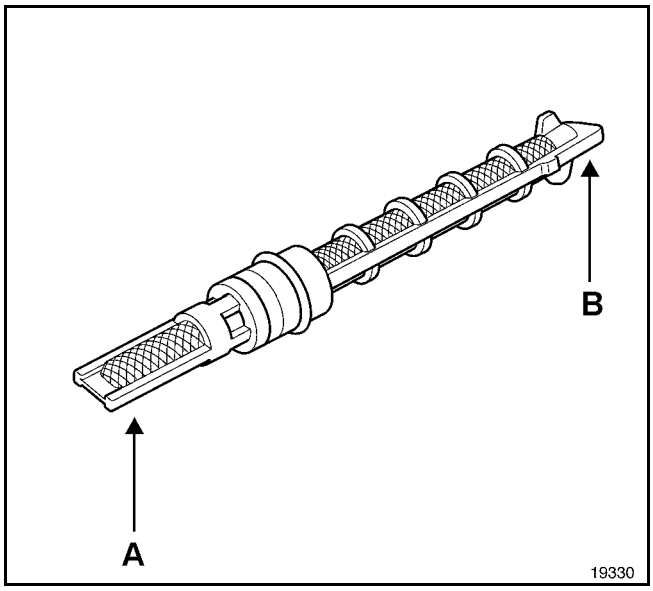
Proceed in the reverse order to removal (see **Section 07 Accessories belt tension**).

Tighten the refrigerant hose mounting bolts on the compressor to **3 daNm**.

Fill up the refrigerant circuit using the filling equipment.

SPECIAL FEATURE:

Trafic is fitted with a calibrated choke pressure relief valve.



A evaporator side

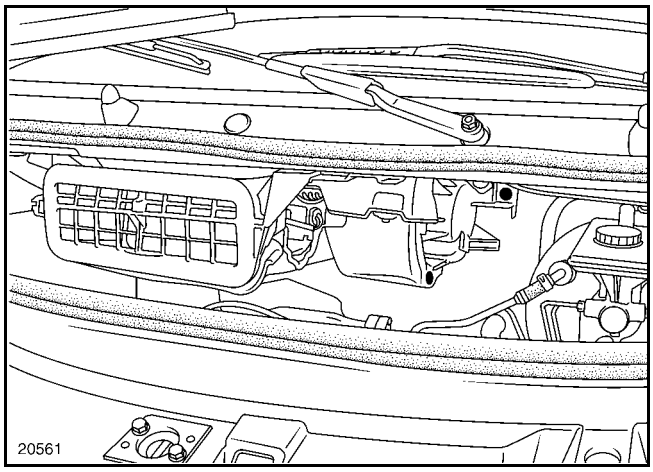
B driver's side

REMOVAL

Disconnect the battery.

Drain the refrigerant circuit using the filling equipment.

Remove the air inlet unit (see **Section 61 Heating for information on the air inlet unit and the fan assembly**).

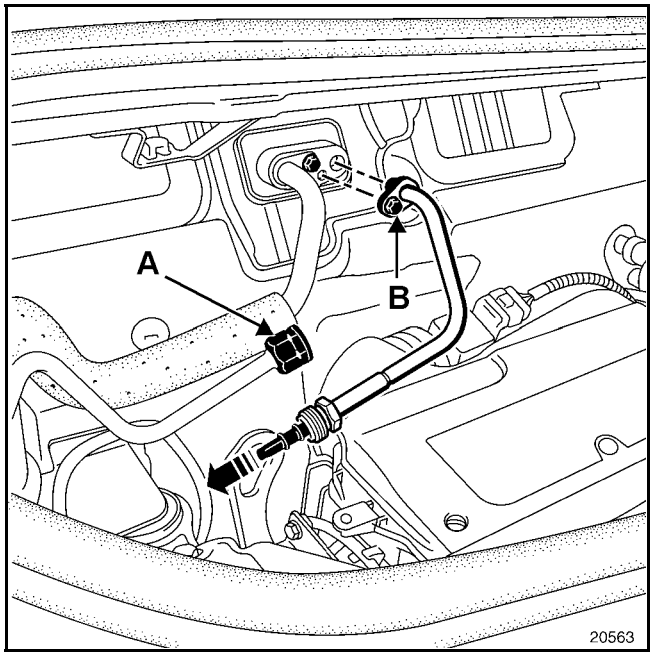


Loosen nut (A).

Unscrew bolt (B).

Take out the high pressure hose and finish unscrewing the nut.

Remove the pressure relief valve with a pair of long flat-nose pliers.



REFITTING

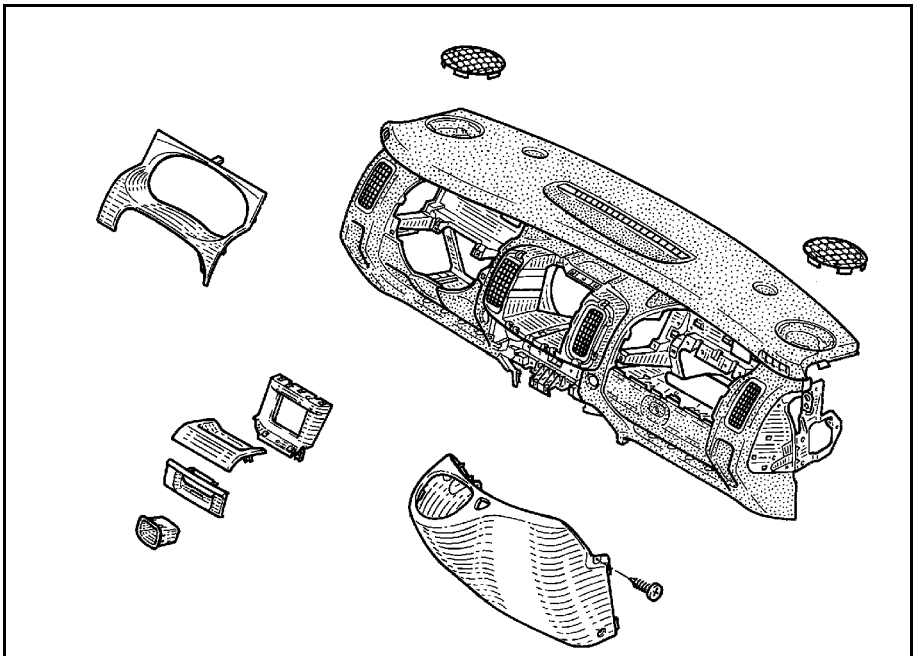
Oil the hose seals with the recommended oil.

Carry out the removal procedure in reverse.

Fill up the refrigerant circuit using the filling equipment.

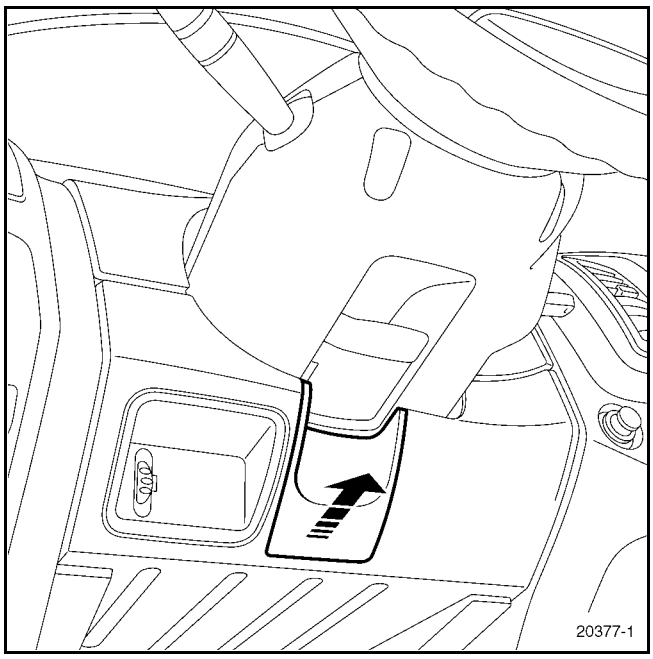
When changing the condenser, add **10 ml** of recommended oil to the compressor.

REMOVING THE DASHBOARD



IMPORTANT: it is forbidden to handle the pyrotechnic systems (air bags and pretensioners) near a source of heat or flame as there is a risk of triggering.

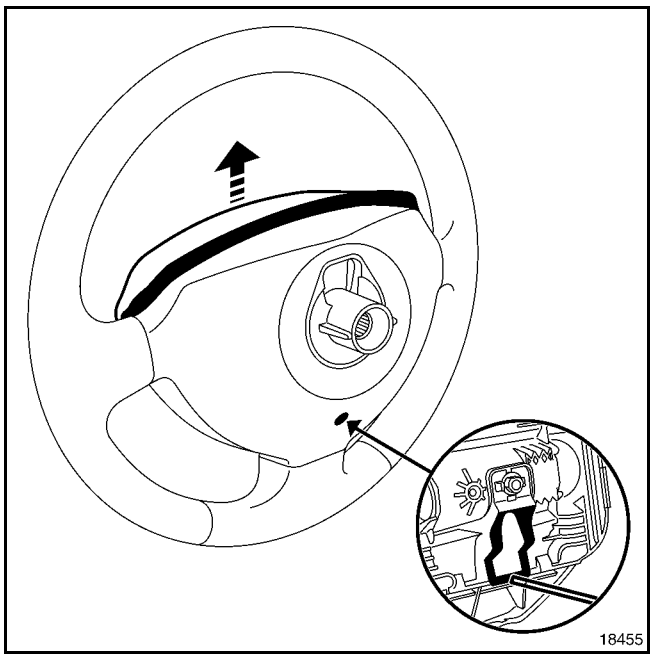
REMOVAL



Unclip the cover under the steering wheel.

IMPORTANT: use the diagnostic tool to lock the computer before removing the air bags (see Section 88 for instructions).

Disconnect the battery.

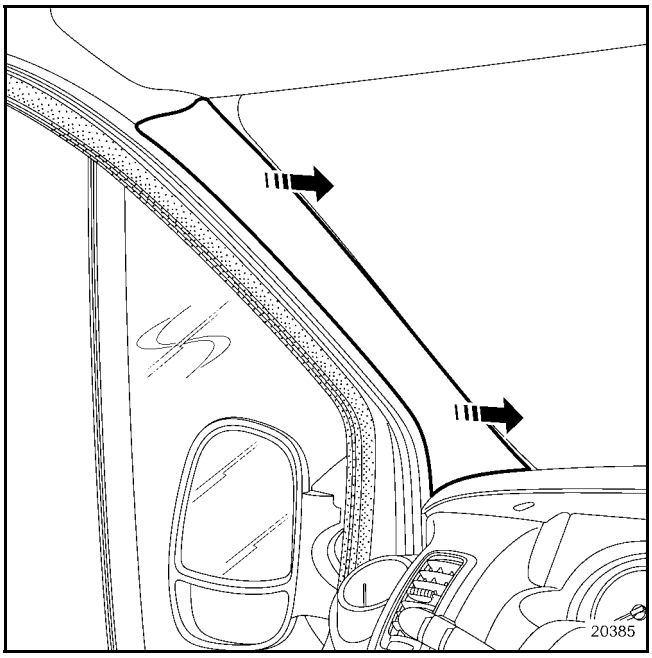


Unclip the steering wheel air bag cushion.

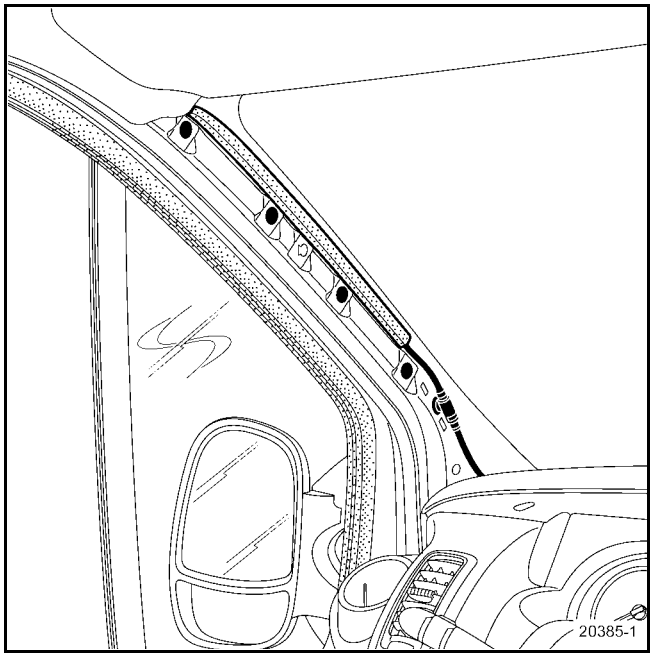
Disconnect the air bag connector.

IMPORTANT: you must mark the position of the rotary switch with the wheels straight at the removal stage. This will ensure that the strip length can be correctly positioned in the centre.

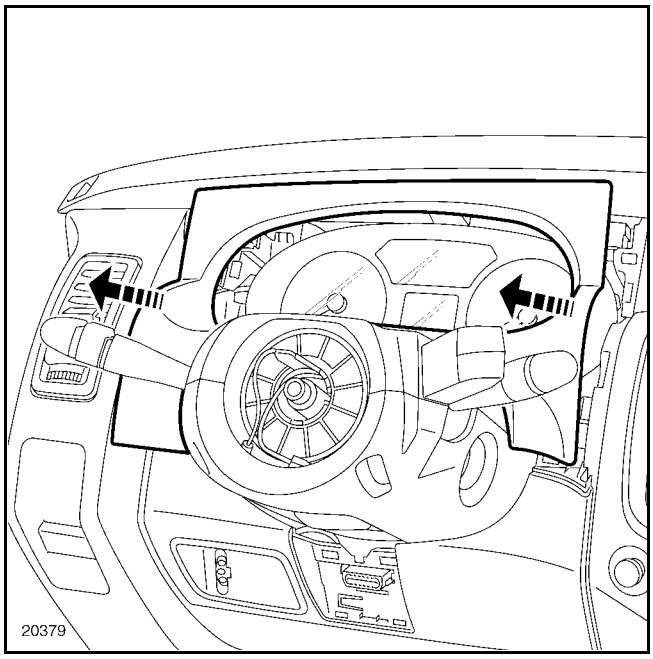
Remove:
– the steering wheel bolt,
– the steering wheel.



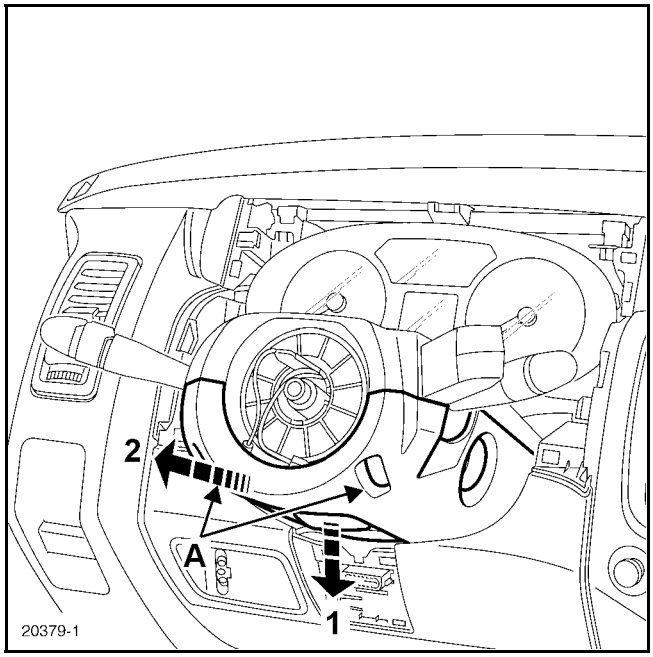
– the windscreen pillar trims.



Disconnect the antenna connector.



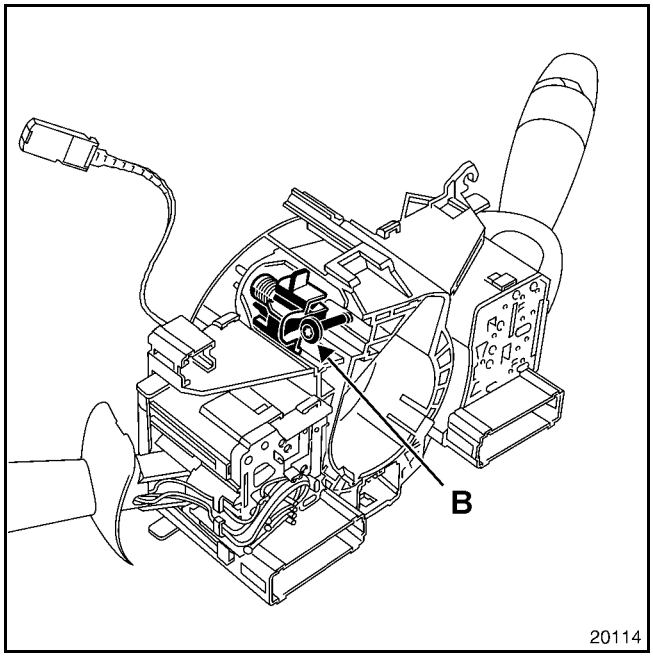
Unclip the instrument panel visor.



Remove the two mounting bolts (A).

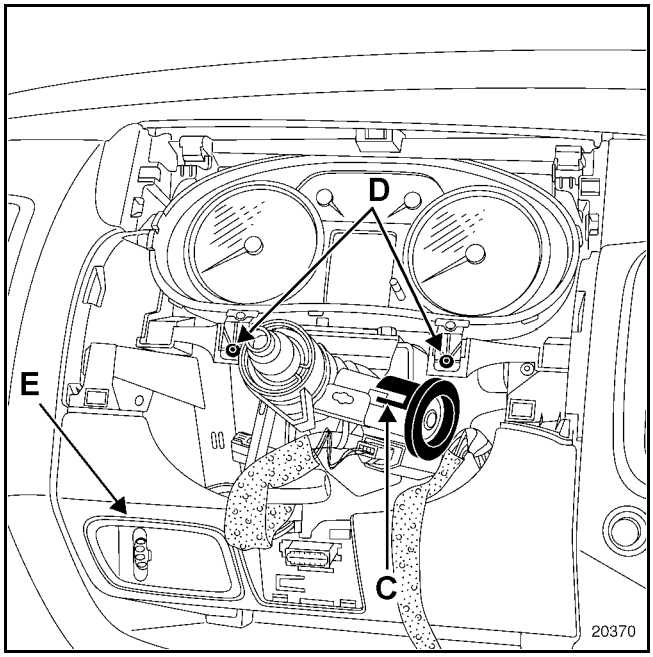
Unlock the steering wheel height adjustment control.

Undo the lower half cowling (1) then (2).

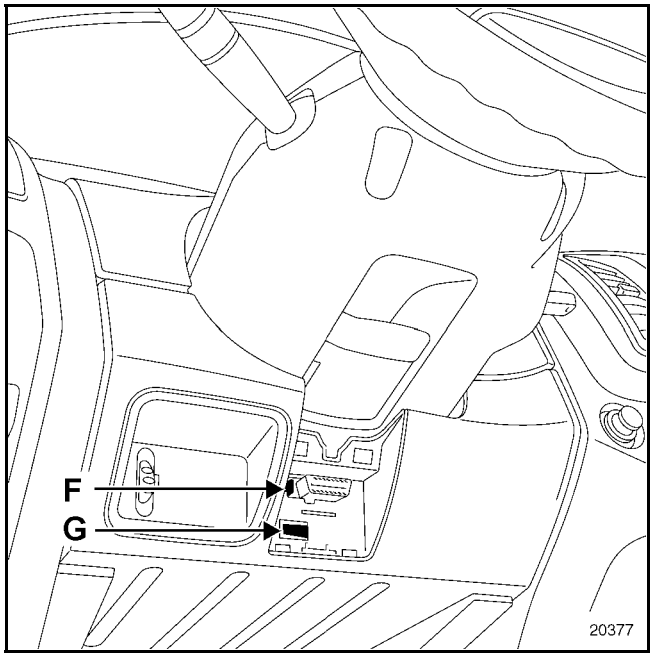


Disconnect the connectors.

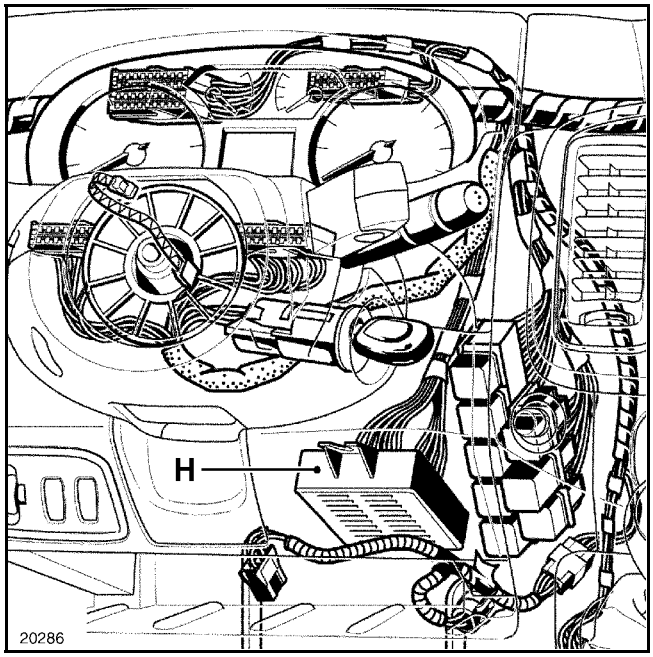
Undo the screw (B) then release the rotary switch.



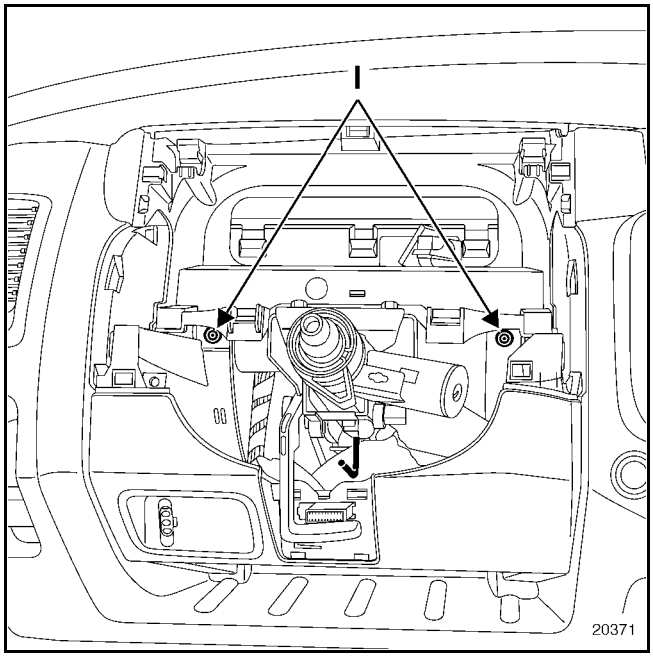
Remove:
– the transponder ring (C),
– the two dashboard mounting bolts (D),
– the instrument panel.
– the plate (E) and disconnect the connectors (according to the version).



Remove:
– the diagnostic socket (F),
– the ignition switch connector (G).

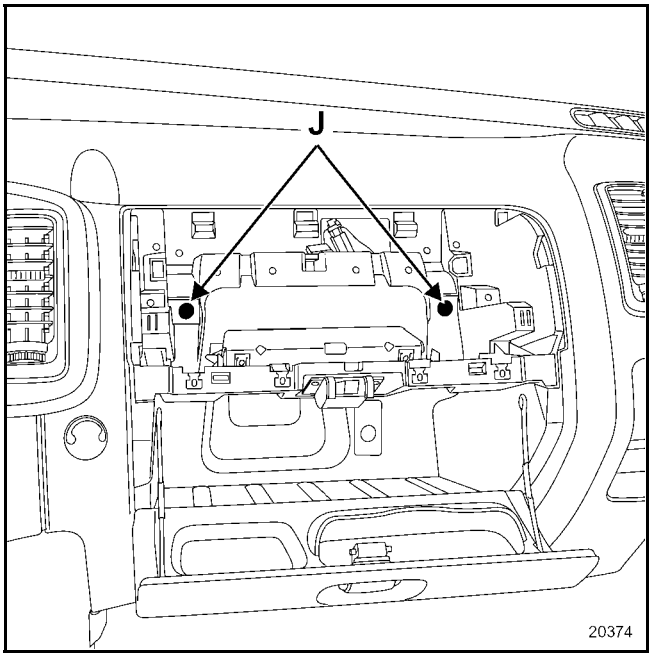


Disconnect the UCH (H) (it is located close to the steering column).



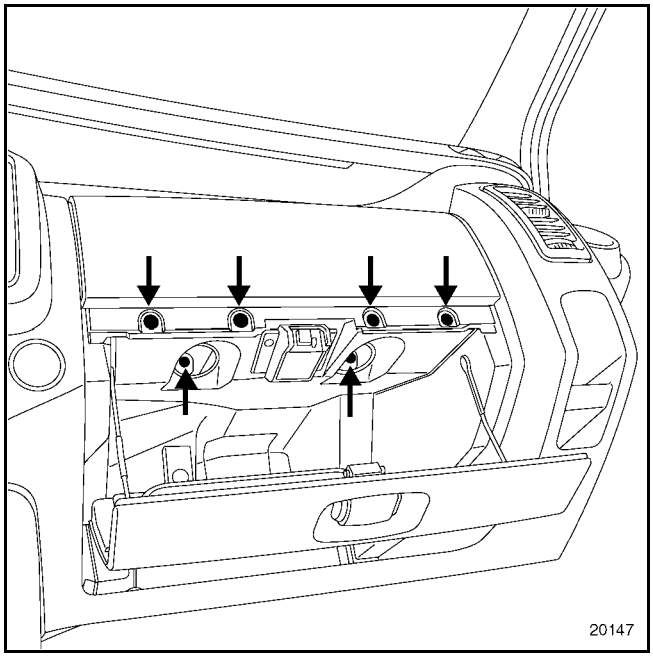
Remove the mounting bolts (I).

Lock the steering wheel height adjustment control.



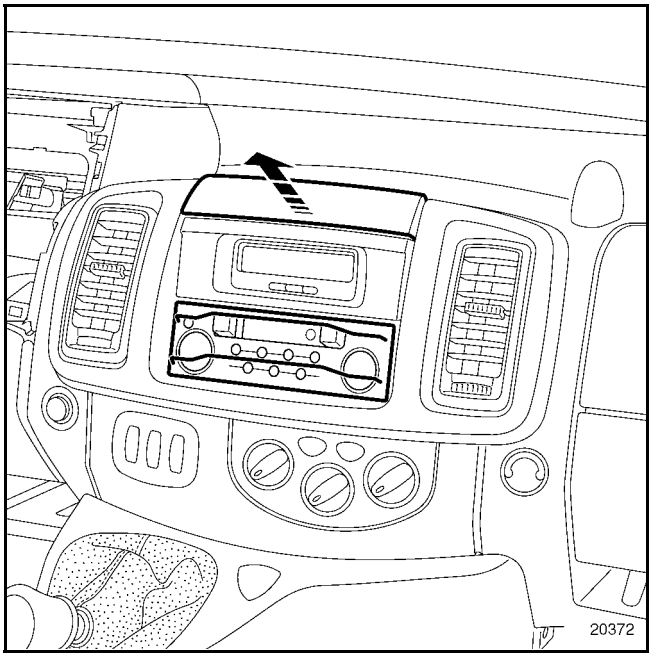
Remove the mounting bolts (J).

Disconnect the glove compartment light connector.



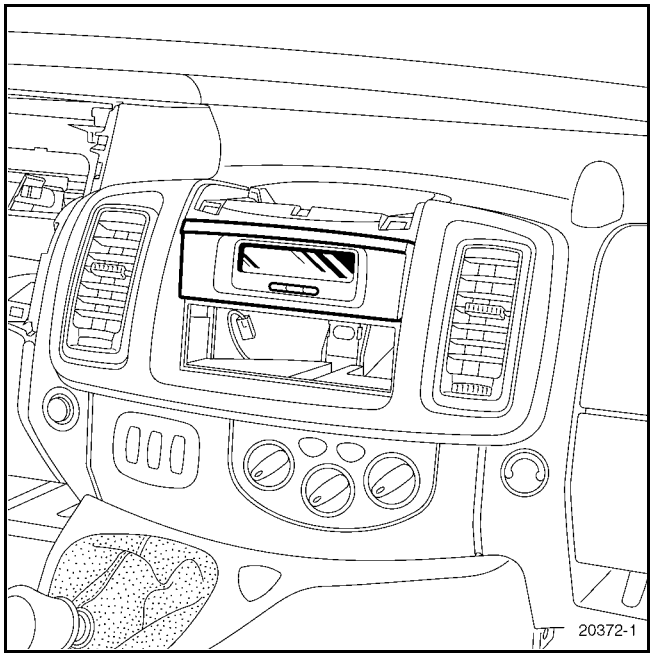
Remove the six mounting bolts from the passenger air bag.

Disconnect the connector, then release the air bag.

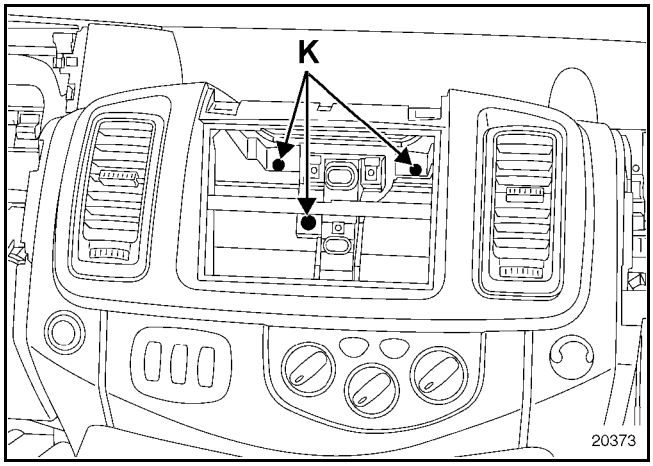


Unclip the central upper cover.

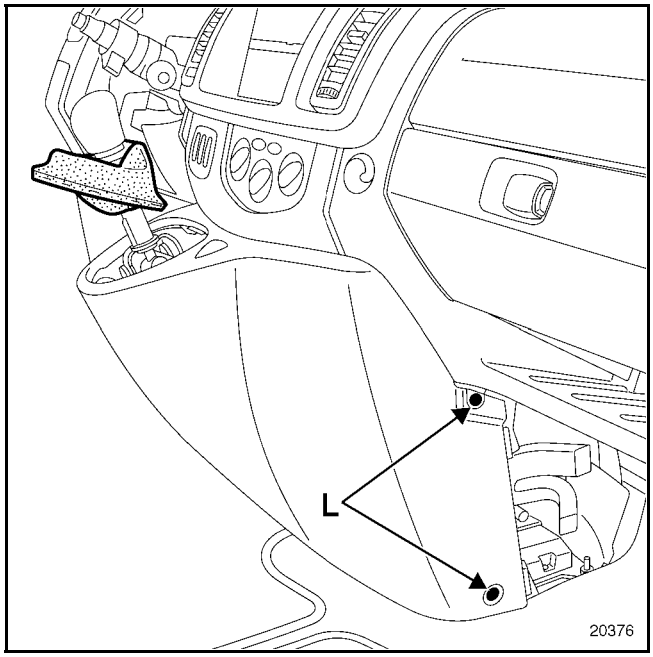
Remove the audio equipment.



Remove:
– the central display,



– the mounting bolts (K).

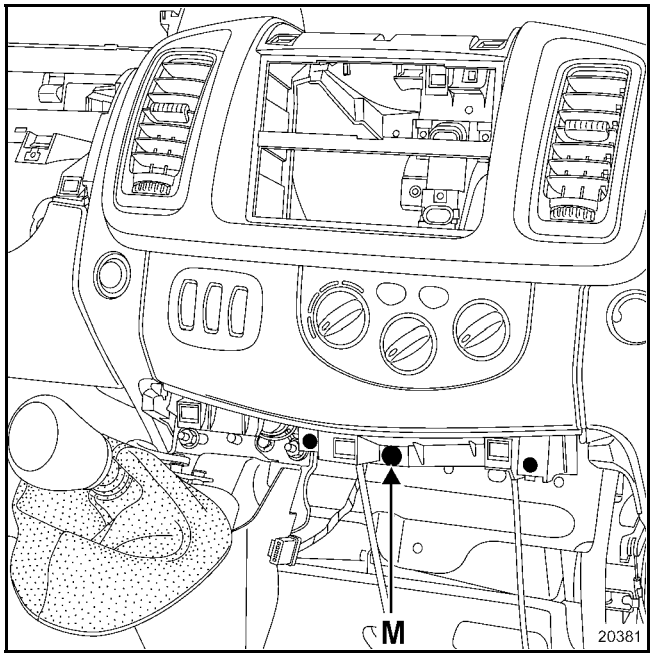


Unclip the gaiter from the gear control lever.

Remove the four mounting screws (L).

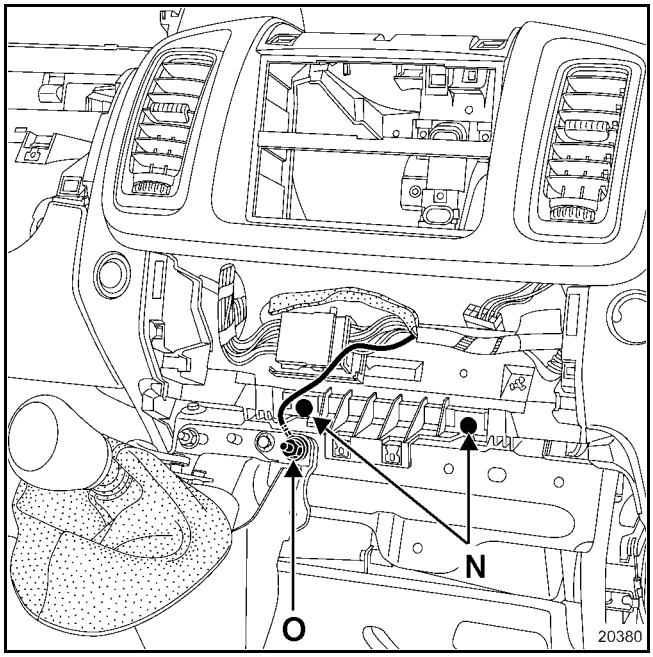
Disconnect the hazard warning lights connector.

Release the central console.

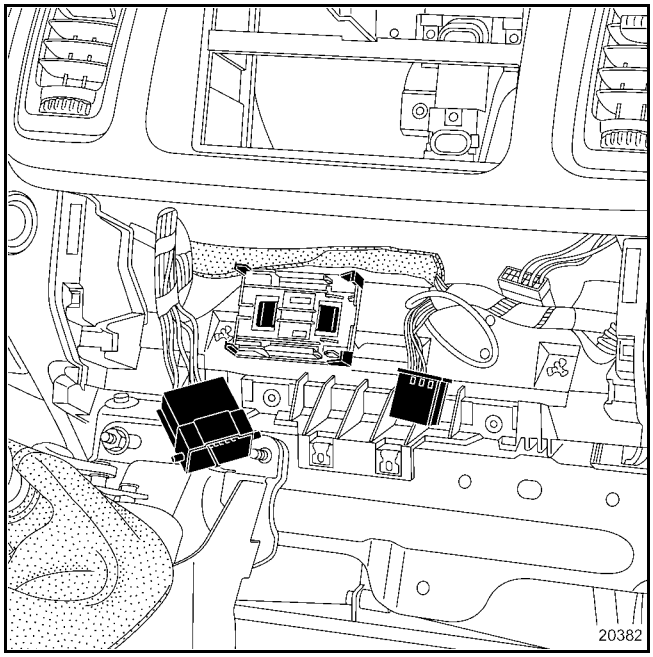


Remove the mounting bolt (M).

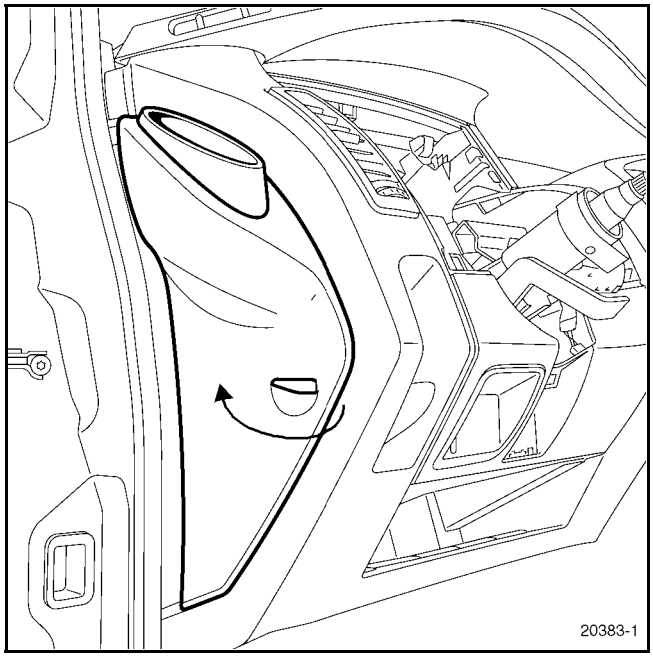
Disconnect the connectors, then release the heater control panel.



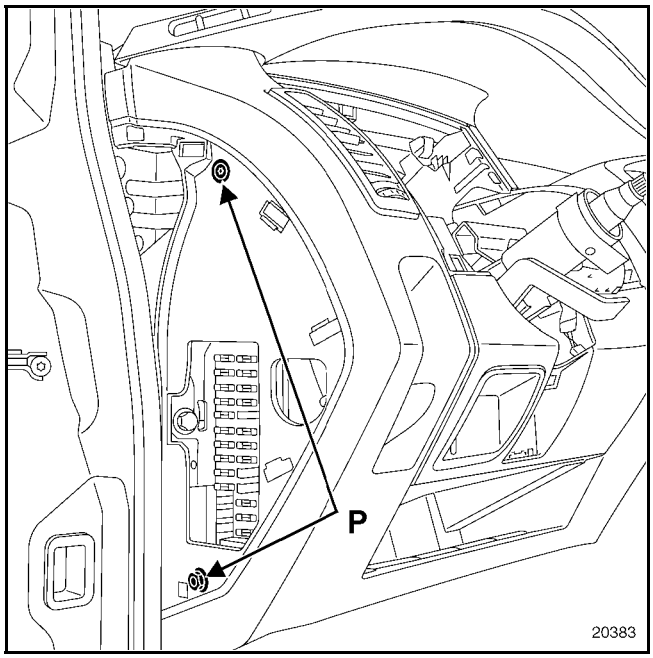
Remove:
– the mounting bolts (N),
– the earth wire (O),



– the connector.



Unclip the ashtray supports.



Remove the four side mounting bolts (P).

The remaining operations require two people.

Partially release the dash board.

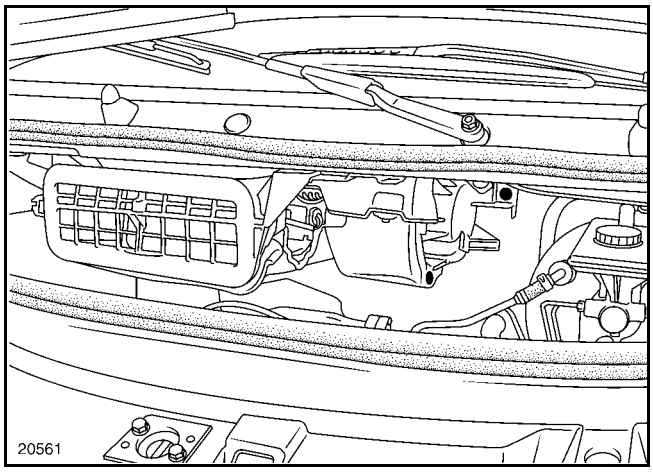
Disconnect the connectors from the speakers.

Remove the dashboard.

In the engine compartment

Drain the refrigerant circuit using the filling equipment.

Remove the air inlet unit (see **Section 61 for information on fan assembly heating**) to enable you to remove the two air conditioning hoses where they meet the bulkhead (**remember to plug the holes**).



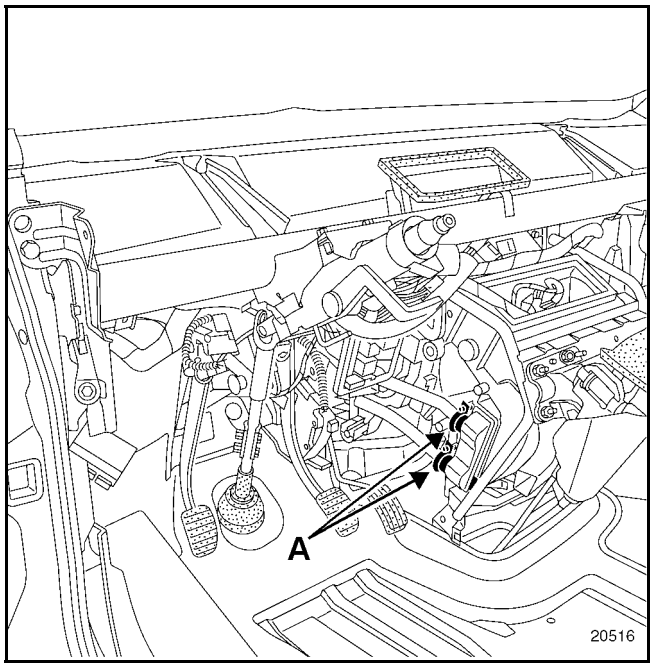
Fit a hose clamp on each refrigerant hose on the radiator in front of the heater matrix bleed screws.

Passenger compartment side

Remove the two side covers with their heating duct.

Place a container underneath the radiator and drain it.

Unscrew the two clamps (A) on the refrigerant hoses and then remove the hoses.

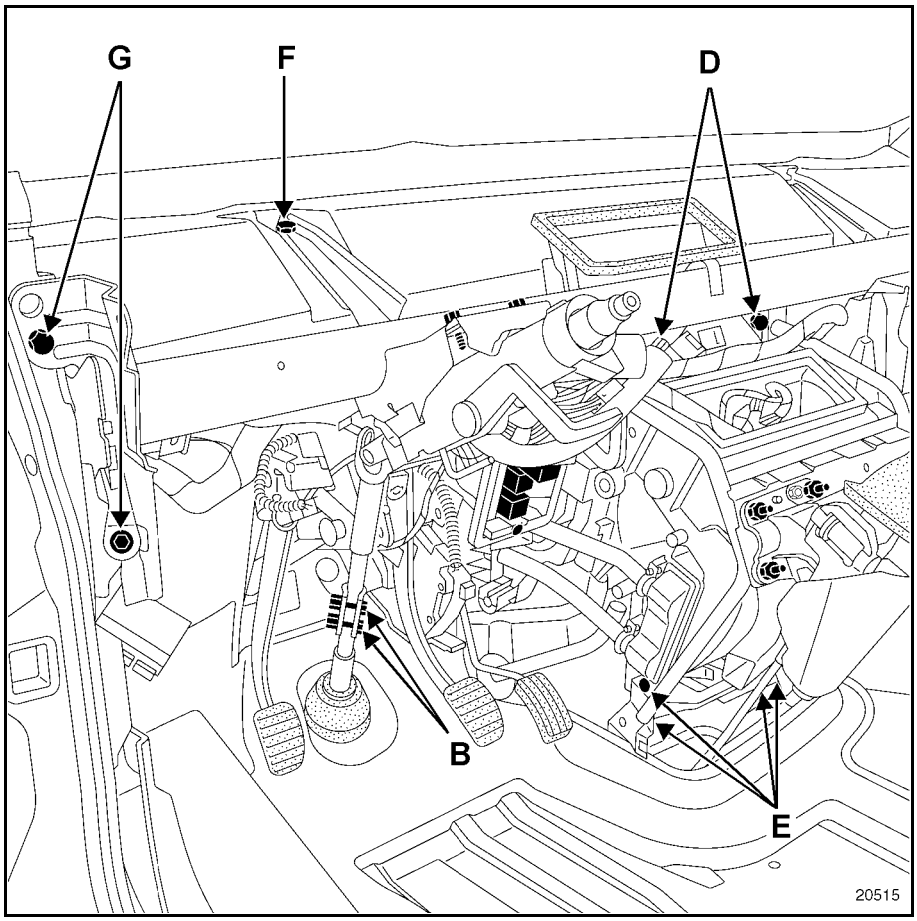


Remove the electric wiring harness and the relay plate (mountings linked to the reinforcer beam).

Disconnect the evaporator sensor.

Remove:
– the two mounting bolts (B) on the steering column,
– the bolts (D) and (E) on the air distribution unit,
– the mounting bolts (F) and (G) on the reinforcer beam,

Tip the reinforcer beam to remove the air distribution unit.

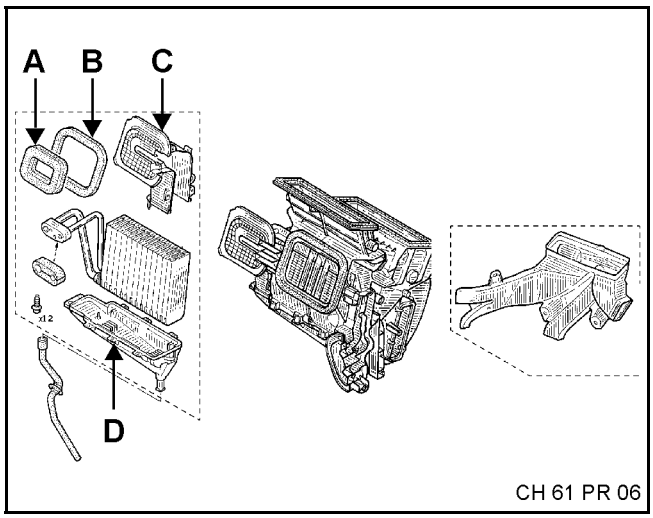


NOTE: check that the coolant channel of the evaporator is sound.

EVAPORATOR UNIT REMOVAL

Remove the seals (A) and (B).

Open the unit (C) and (D).



EVAPORATOR UNIT REFITTING

Oil the hose seals with the recommended oil.

Carry out the removal procedure in reverse.

IMPORTANT: It is essential to fit the electrical wiring harness correctly to avoid any possible damage.

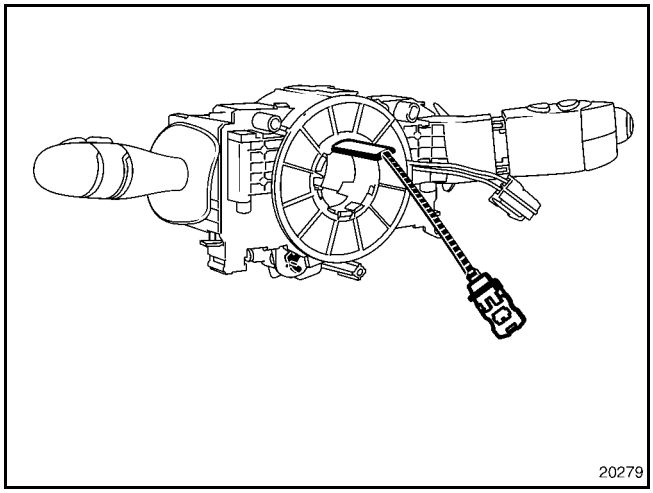
DASHBOARD REFITTING

Special notes on the rotary switch

Ensure that the wheels are straight.

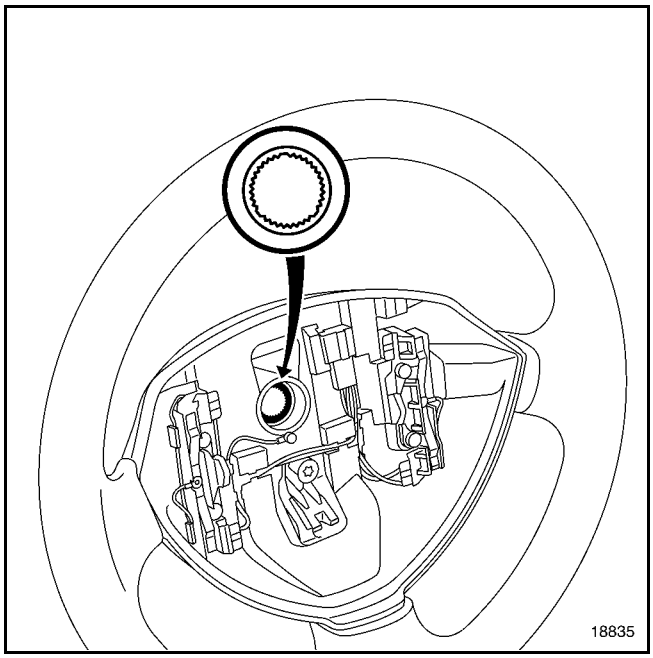
Tighten the rotary switch mounting bolt.

Connect the connectors.



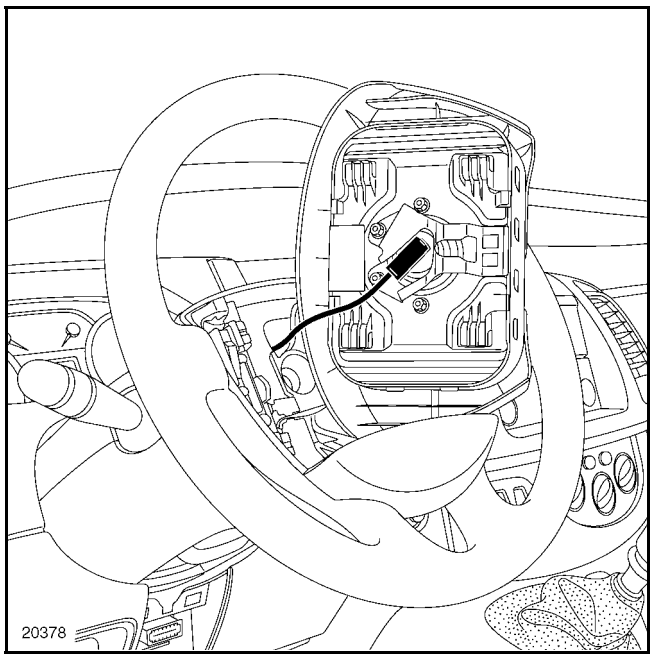
Special notes on the steering wheel

IMPORTANT: the splines on the steering wheel have foolproofing devices. **The steering wheel must fit back into the splines easily**. Be careful not to damage them.



It is essential to replace the steering wheel bolt each time it is removed and to tighten it to a torque of **4.4 daNm**.

Special notes on the driver's air bag



Connect the connector, the lock it.

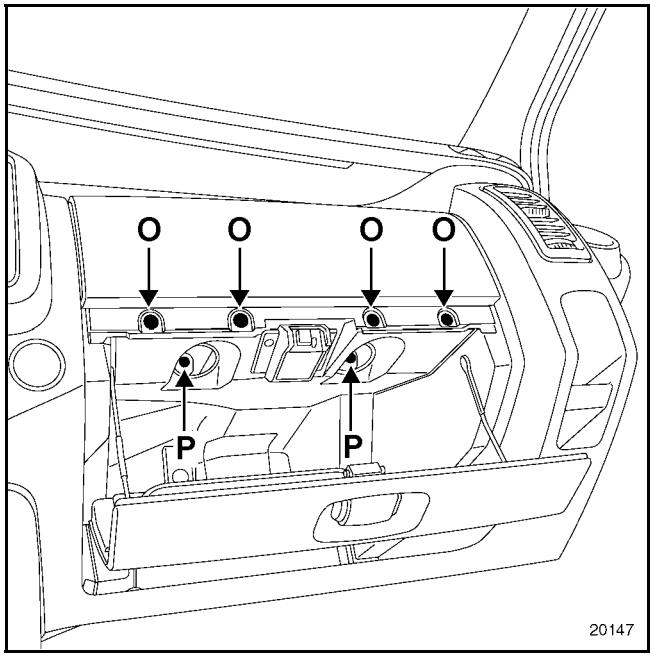
Place the cushion on the steering wheel and slide it downwards until it clicks.

Special notes on the passenger air bag

IMPORTANT:

– Check for foreign bodies (bolts, clips, etc.) when fitting the air bag module.

– On the module side, make sure that the connector is properly clipped (powerful clip) and position the safety lock.



It is essential to check the tightening torque of the mounting bolts:
– four bolts (O) = **2 daNm**,
– two bolts (P) = **8 daNm**.

Check the module using the diagnostic tool. If everything is correct, unlock the computer or see the **"Fault finding" section**.

Special features for vehicles fitted with a tachograph

Refer to the user's manual for vehicles fitted with a tachograph for a description of how to reboot the system.

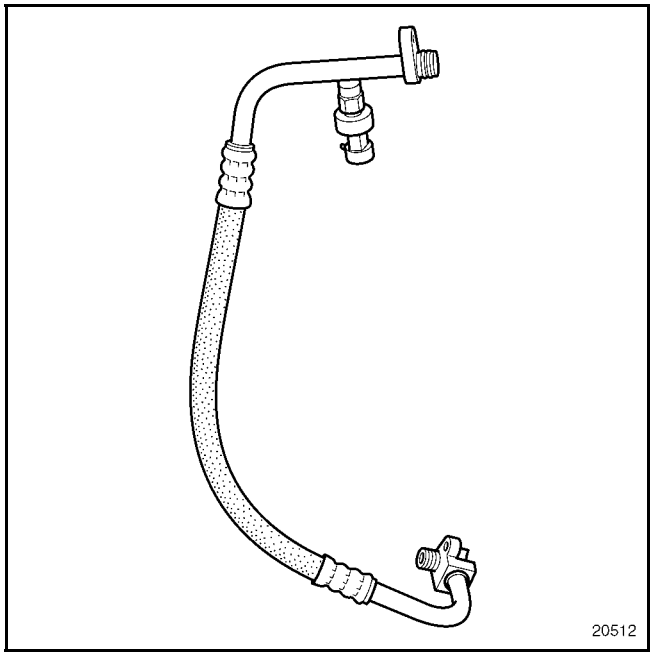
Fill up with refrigerant using the filling equipment.

HIGH PRESSURE HOSE BETWEEN THE COMPRESSOR AND THE CONDENSER

REMOVAL

Disconnect the battery.

Drain refrigerant circuit **R134a** using the filling equipment.



Remove:
– the assembly,
– the lens units,
– the radiator grille,
– the bumper,
– the hose.

Fit the plugs into the ports.

REFITTING

Carry out the removal procedure in reverse.

Oil the hose seals with the recommended oil.

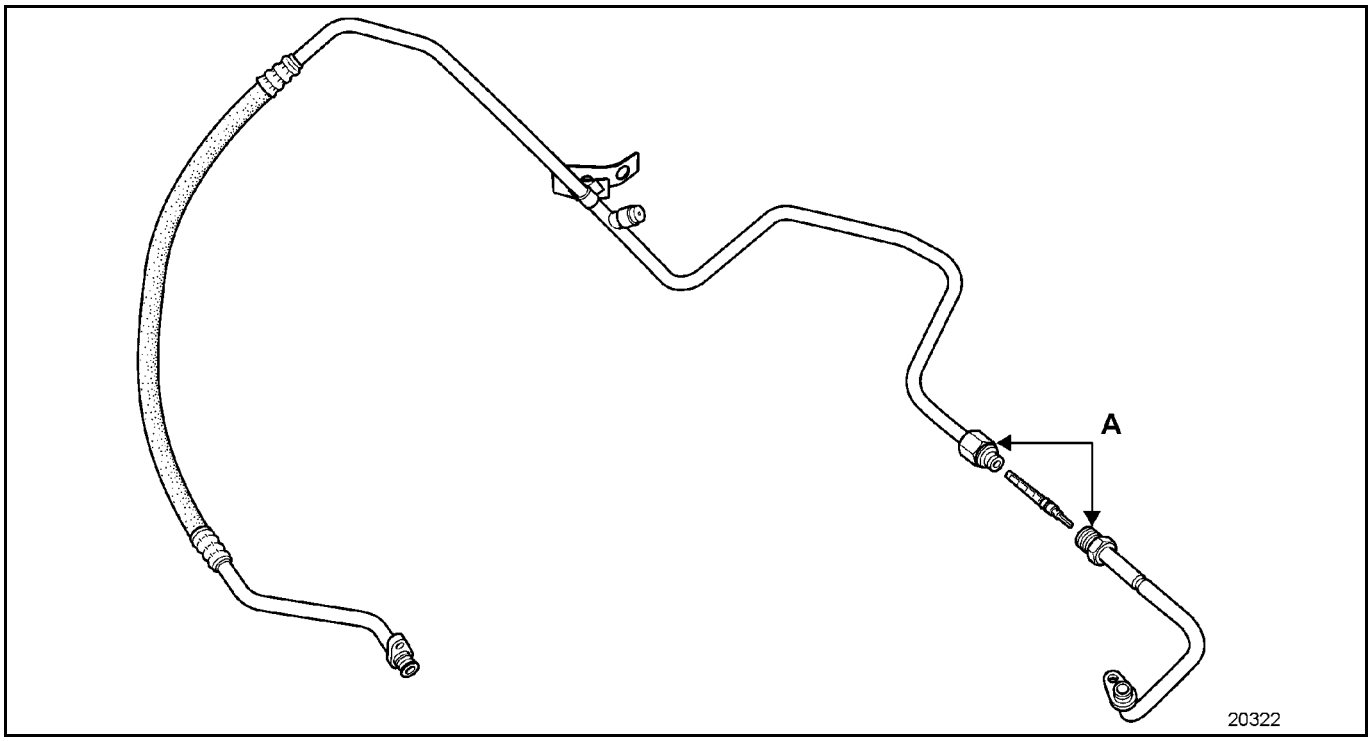
When changing a hose, add **10 ml** of oil or when a hose splits (rapid leak), add **100 ml**.

HIGH PRESSURE HOSE BETWEEN THE CONDENSER AND THE EVAPORATOR

REMOVAL

Disconnect the battery.

Drain refrigerant circuit **R134a** using the filling equipment.



Remove:
– the fan assembly,
– the mounting bolt on the evaporator where it meets the bulkhead,
– the radiator grille,
– the lens units.

Unclip the central retaining clip on the connecting hose.

Remove:
– the engine undertray (**front and centre sections**),
– the mounting bolt on the condenser.

Unscrew the front section and tip it up.

Remove the connecting hose.

Fit the plugs into the ports.

REFITTING

Carry out the removal procedure in reverse.

NOTE: divide the hose into two sections with the threaded union (A) to remove the pressure relief valve.

Oil the hose seals with the recommended oil.

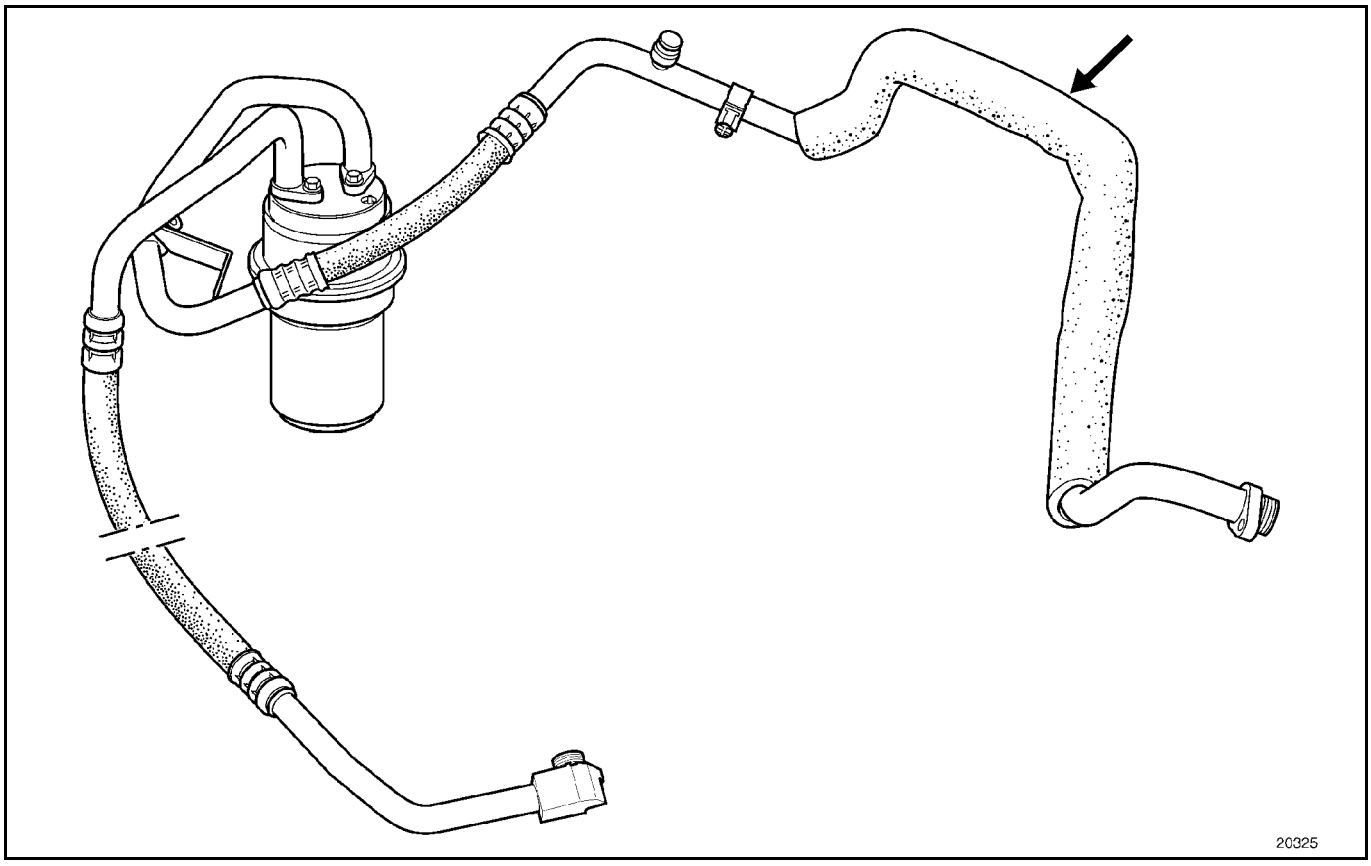
When changing a hose, add **10 ml** of oil or when a hose splits (rapid leak), add **100 ml**.

LOW PRESSURE HOSE BETWEEN THE EVAPORATOR AND THE DEHYDRATION CANISTER

REMOVAL

Disconnect the battery.

Drain refrigerant circuit **R134a** using the filling equipment.



Remove:
– the assembly,
– the radiator grille,
– the lens units,
– the mounting bolt on the evaporator where it meets the bulkhead,
– the mounting bolt on the dehydration canister,
– the retaining bracket bolt on the bumper.

Unclip the retaining clip on the retaining bracket located by the shock absorber.

Remove the hose.

Fit the plugs into the ports.

REFITTING

Carry out the removal procedure in reverse.

Oil the hose seals with the recommended oil.

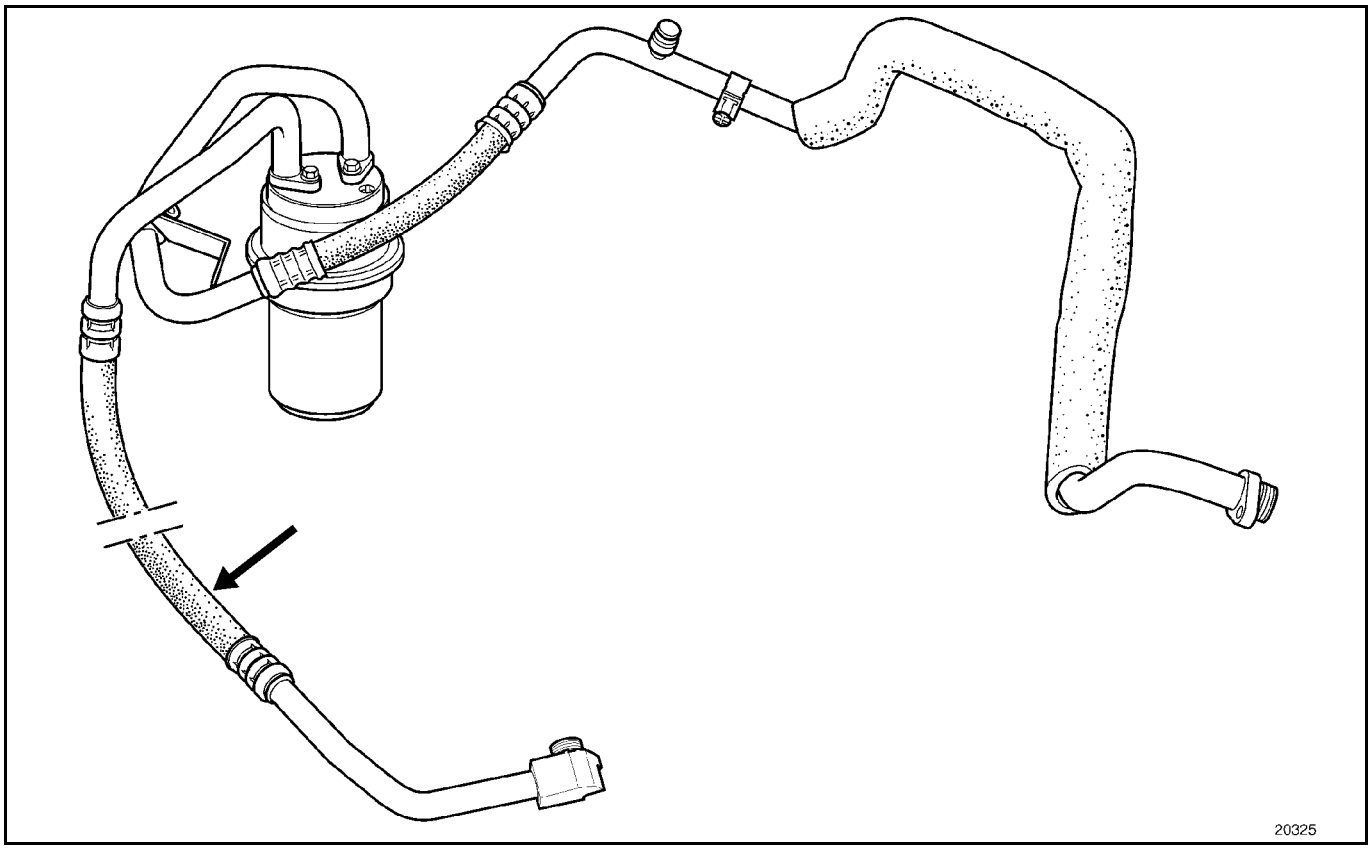
When changing a hose, add **10 ml** of oil or when a hose splits (rapid leak), add **100 ml**.

LOW PRESSURE HOSE BETWEEN THE DEHYDRATION CANISTER AND THE COMPRESSOR

REMOVAL

Disconnect the battery.

Drain refrigerant circuit **R134a** using the filling equipment.



Remove:
– the radiator grille,
– the lens units,
– the mounting bolt on the dehydration canister,
– the engine undertray (**front and centre sections**),
– the mounting bolt on the compressor.

Unclip the retaining clip on the retaining bracket located by the shock absorber.

Remove the hose.

Fit the plugs into the ports.

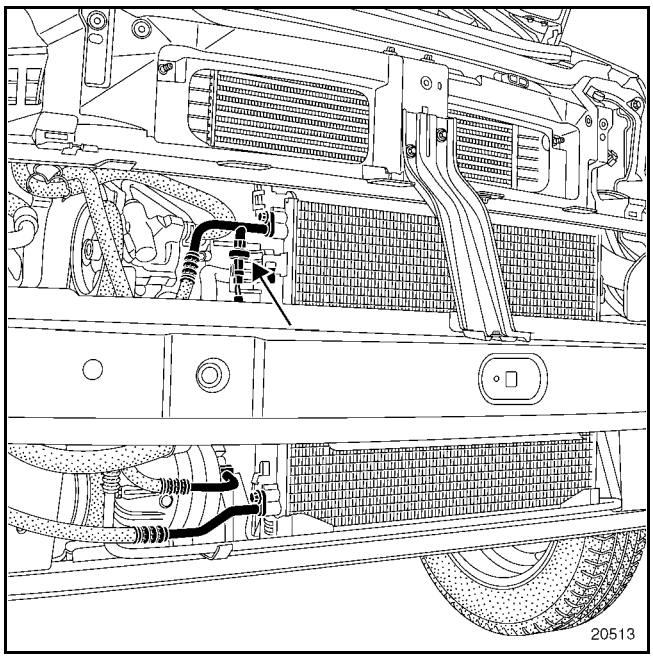
REFITTING

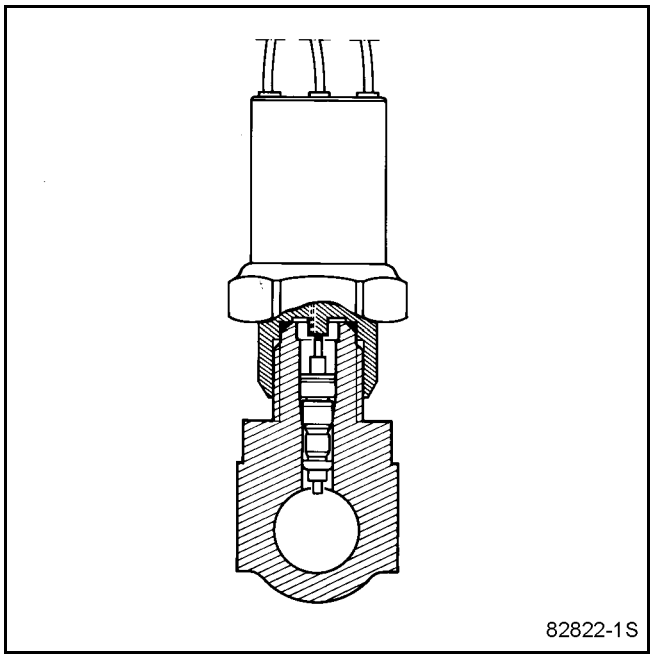
Carry out the removal procedure in reverse.

Oil the hose seals with the recommended oil.

When changing a hose, add **10 ml** of oil or when a hose splits (rapid leak), add **100 ml**.

PRESSURE SENSOR





The pressure sensor fitted at the condenser inlet protects the refrigerant circuit.

– Low pressure cut-off: **3 bar**

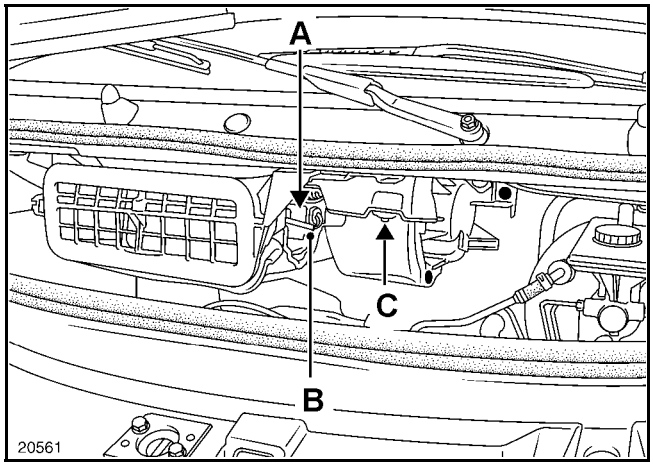
– High pressure cut-off: **30 bar**

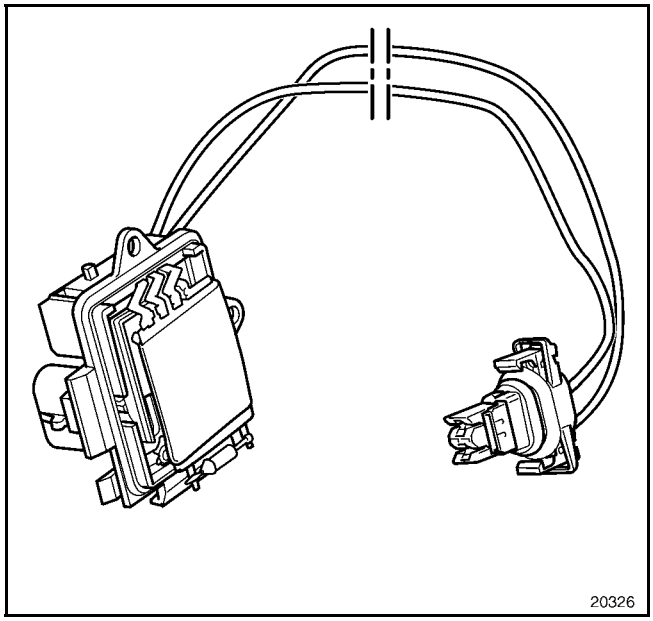
It keeps the injection computer informed of the refrigerant circuit pressure.

The injection computer controls the engine cooling fans depending on the high pressure in the refrigerant circuit and the vehicle speed.

You do not need to drain the refrigerant circuit to remove the pressure sensor.

An automatic shut-off valve isolates the circuit from the environment when the switch is removed.





The power module controls the speed of the blower depending on the requirements determined by the automatic control.

It can be accessed without removing the fan assembly.

REMOVAL

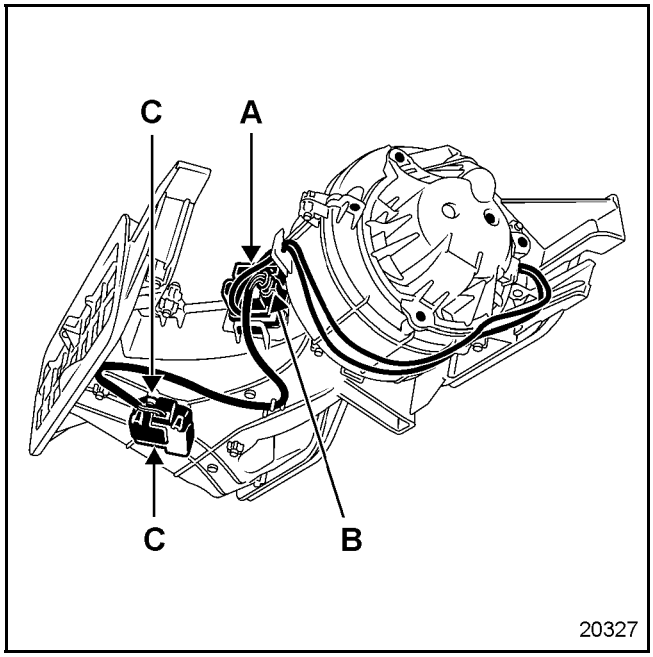
Disconnect the connectors, (A) and (B).

Unscrew the fan assembly trim bolt (C).

Remove:
– the wiring harness,
– the power module mounting bolt,
– the power module.

REFITTING

Carry out the removal procedure in reverse.



The recirculation motor positions the air inlet flap accrording to the requirements determined by the automatic control.

Remove the air inlet unit assembly before removing the recirculation motor.

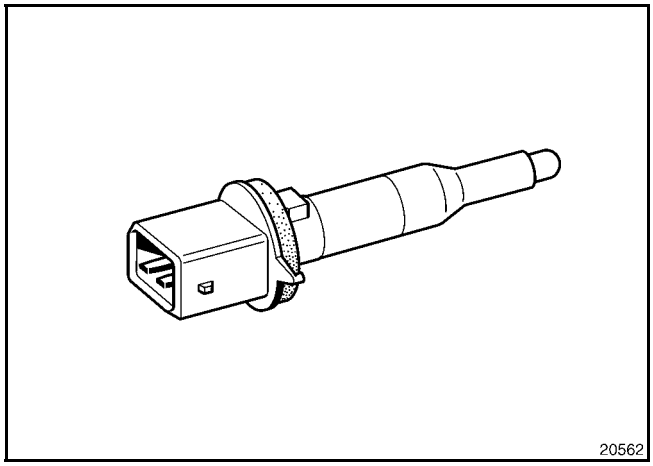
REMOVAL

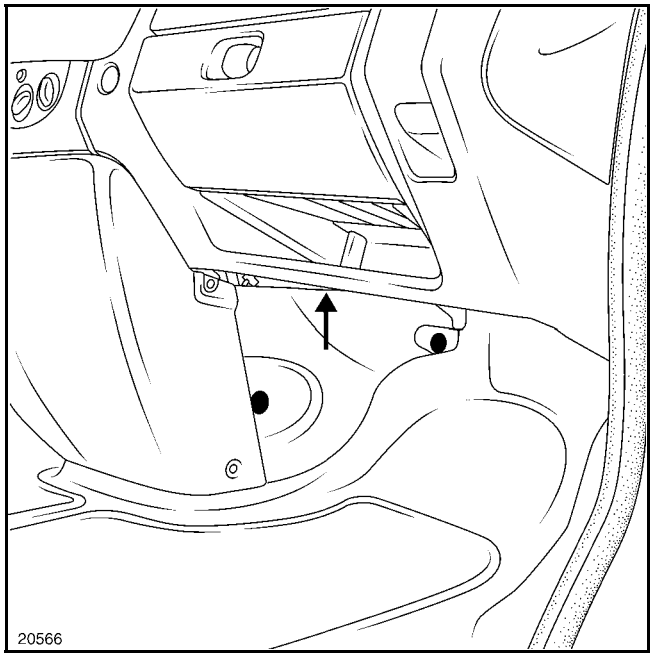
Disconnect:
– the main supply connector (A),
– the connector located on the power module (B).

Remove:
– the lower trim on the fan assembly,
– the recirculation motor mounting bolts (C),
– the recirculation motor.

REFITTING

Carry out the removal procedure in reverse.





The evaporator sensor provides information about the temperature at the evaporator outlet.

It is a negative temperature coefficient (**NTC**) thermistor.

REMOVAL

Slide your hand under the dashboard on the passenger side.

Disconnect the sensor connector.

Turn the sensor a quarter turn to remove it.

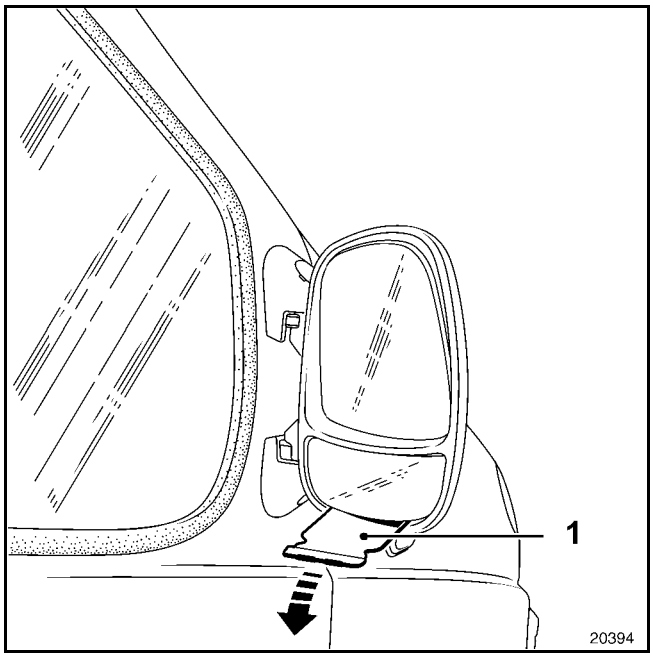
REFITTING

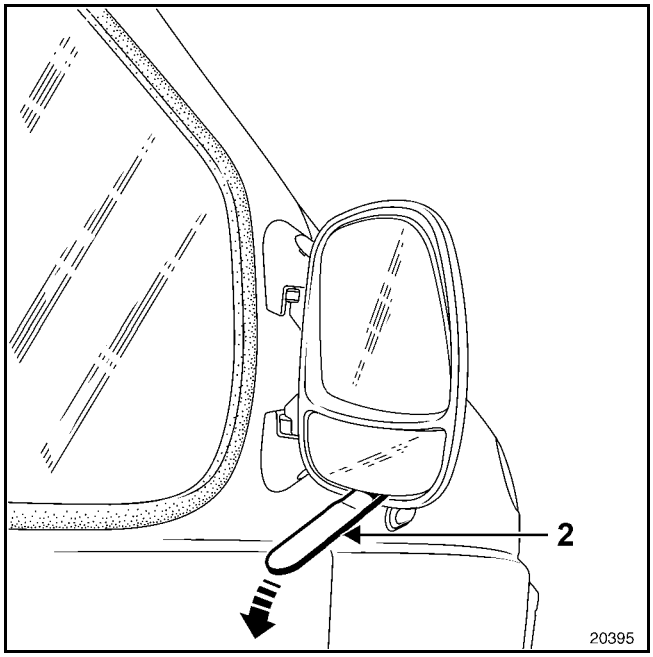
Carry out the removal procedure in reverse.

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

REMOVAL

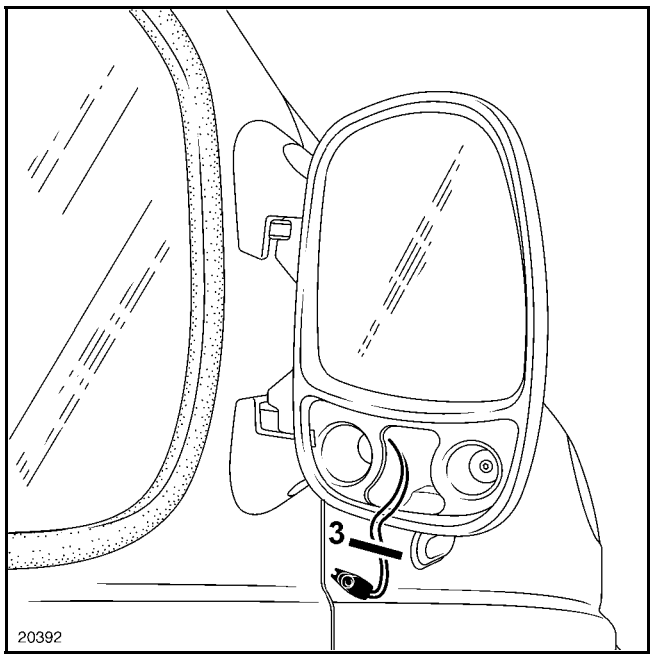
Use a mastic knife (1) to remove the inner reflective glass in the door mirror, then use tool **Car. 1363** (2), to complete the operation.





NOTE: the lower reflective glass is made of tough plastic.

Unclip the temperature sensor and cut the wires (3) to approximately four centimetres.



REFITTING

Rejoin the two temperature sensor wires using heat-shrink sleeves.

Fix the glass in place again with double sided tape.

NOTE: The external temperature sensor resistance should be approximately **2500** Ω at **20** °**C**.

FAULT FINDING - INTRODUCTION

This document presents the general fault finding procedure applicable to the auxiliary heating function on PRIMASTAR vehicles with petrol and diesel combi engines and bus versions.

To perform fault finding on this system, it is essential to have the following items available:

- The Workshop Repair Manual for the vehicle concerned,
- The wiring diagram of the function for the vehicle concerned,
- The tools listed under Special tooling required.

GENERAL APPROACH TO FAULT FINDING:

- Use one of the diagnostic tools for identifying the system fitted on the vehicle (reading the computer type, program number, Vdiag number, etc.).

- Look in the Fault finding documents corresponding to the system identified.

- Take note of information contained in the introductory sections.

- Read the faults stored in the computer memory and use the "Interpretation of faults" section of the documents.

  REMINDER:
  Each fault is interpreted for a particular type of storage (fault present, fault stored, fault present or stored). The specified checks for dealing with each fault are therefore only to be performed if the fault declared by the diagnostic tool can be identified in the document by its type. The way in which the fault is stored should be considered when using the diagnostic tool after switching the ignition off and on again.
  If a fault is interpreted when it is declared as stored, the conditions for applying fault finding appear in the notes box. When these conditions are not satisfied, use the fault finding procedure to check the circuit of the faulty part, since the fault is no longer present on the vehicle. Perform the same operation when a fault is declared as stored by the diagnostic tool but is only interpreted in the documentation as a present fault.

- Carry out the conformity check (appearance of possible faults not yet identified by the system's self-diagnostic procedure) and apply the associated fault finding procedure according to the results.

- Confirm the repair (customer complaint disappears).

- Use the fault finding procedure for each Customer complaint if the problem persists.

SPECIAL TOOLING REQUIRED:

- diagnostic tool,
- multimeter.

FAULT FINDING - INTERPRETATION OF FAULTS

DF001 PRESENT OR STORED	PRE-HEATER PLUG CC.0 : Short circuit to earth CO : Open circuit

NOTES	**Application condition for a fault finding strategy for a stored fault only one fault can be recalled at a time:** The fault is declared present after: – the spark plug has been ignited and with no other fault declared present.

Remove the blower cover and disconnect connector B2 from the control unit. Check the condition of the connector and replace it if necessary.
Check the **insulation, continuity and absence of interference resistance of the connections**: Connector B2 **track 9** ⟶ **+ Heater plug** Connector B2 **track 12** ⟶ **Earth** spark plug Repair if necessary.
If the fault persists, change the pre-heater plug.

AFTER REPAIR	Apply the procedures to confirm that the repair is successful. Deal with any other possible faults. Clear the stored faults and check that no other fault appears.

FAULT FINDING - INTERPRETATION OF FAULTS

DF002 PRESENT OR STORED	FUEL METERING PUMP CC.0 : Short circuit to earth CO : Open circuit

NOTES	**Application condition for a fault finding strategy for a stored fault only one fault can be recalled at a time:** The fault is declared present after: – the metering pump has been switched on and no other fault is declared present.

Check the condition of the 8-track connector and replace it if necessary.

Check the **insulation, continuity and absence of interference resistance of the connections**:

8-track connector **track 4** → **Track 2** connector **ST2** of the metering pump

8-track connector **track 2** → **Track 1** connector **ST2** of the metering pump

Repair if necessary.

Measure the resistance at the metering pump terminals, if it is not approximately **10** Ω replace the metering pump.

If the fault persists, replace the metering pump.

AFTER REPAIR	Apply the procedures to confirm that the repair is successful. Deal with any other possible faults. Clear the stored faults and check that no other fault appears.

FAULT FINDING - INTERPRETATION OF FAULTS

DF003 PRESENT OR STORED	COOLANT TEMPERATURE SENSOR CIRCUIT CC.0 : Short circuit to earth CO : Open circuit

NOTES	**Application condition for a fault finding strategy for a stored fault only one fault can be recalled at a time:** The fault is declared present after: – the boiler has been ignited and with no other fault has been declared present.

Remove the blower cover and disconnect connector B2 from the control unit. Check the condition of the connector and replace it if necessary.
Check the **insulation, continuity and absence of interference resistance of the connections**: Connector B2 **track 3** ⟶ Temperature sensor Connector B2 **track 4** ⟶ Temperature sensor Repair if necessary.
Measure the resistance at the sensor terminals. If it is not **12 KΩ ± 5% at 20°C**, replace the internal wiring of the boiler.
If the fault persists, replace the heater.

AFTER REPAIR	Apply the procedures to confirm that the repair is successful. Deal with any other possible faults. Clear the stored faults and check that no other fault appears.

FAULT FINDING - INTERPRETATION OF FAULTS

DF004 PRESENT OR STORED	COMBUSTION AIR FAN CC.0 : Short circuit to earth CO : Open circuit DEF : Blocked

NOTES	**Application condition for a fault finding strategy for a stored fault only one fault can be recalled at a time:** The fault is declared present after: – the boiler has been ignited and with no other fault has been declared present.

Remove the blower cover and disconnect connector B2 from the control unit.
Check the condition of the connector and replace it if necessary.

Check the **insulation, continuity and absence of interference resistance of the connections**:

Connector B2 **track 14** → **Earth** combustion air fan
Connector B2 **track 13** → **+** Combustion air fan

Repair if necessary.

Using a multimeter, check that the winding of the ventilation fan is not cut.

Replace the heater if necessary.

AFTER REPAIR	Apply the procedures to confirm that the repair is successful. Deal with any other possible faults. Clear the stored faults and check that no other fault appears.

FAULT FINDING - INTERPRETATION OF FAULTS

DF005 PRESENT OR STORED	OVERHEATING SWITCH CC.0 : Short circuit to earth CO : Open circuit

NOTES	**Application condition for a fault finding strategy for a stored fault: only one fault can be recalled at a time:** The fault is declared present after: – the boiler has been ignited and with no other fault has been declared present.

Remove the blower cover and disconnect connector B2 from the control unit.
Check the condition of the connector and replace it if necessary.

Check the **insulation, continuity and absence of interference resistance of the connections**:

Connector B2 **track 6** → Overheating switch
Connector B2 **track 5** → Overheating switch

Repair if necessary.

Measure the resistance at the terminals of the switch. If it is not **12 KΩ ± 5% at 20°C**, replace the internal wiring of the boiler (the overheating switch is not separated from the internal wiring).

If the fault persists, replace the heater.

AFTER REPAIR	Apply the procedures to confirm that the repair is successful. Deal with any other possible faults. Clear the stored faults and check that no other fault appears.

FAULT FINDING - INTERPRETATION OF FAULTS

DF006 PRESENT OR STORED	FLAME DETECTOR CC.0 : Short circuit to earth CO : Open circuit

NOTES	**Application condition for a fault finding strategy for a stored fault: only one fault can be recalled at a time:** The fault is declared present after: – the boiler has been ignited and with no other fault has been declared present.

Remove the blower cover and disconnect connector B2 from the control unit.
Check the condition of the connector and replace it if necessary.

Check the **insulation, continuity and absence of interference resistance of the connections**:

Connector B2 **track 1** ⟶ Flame detector
Connector B2 **track 2** ⟶ Flame detector

Repair if necessary.

Measure the resistance at the terminals of the flame detector. If it is not **1200 KΩ ± 5% at 50°C**, replace the internal wiring of the boiler (the flame detector is not separate from the internal wiring).

If the fault persists, replace the heater.

AFTER REPAIR	Apply the procedures to confirm that the repair is successful. Deal with any other possible faults. Clear the stored faults and check that no other fault appears.

FAULT FINDING - INTERPRETATION OF FAULTS

DF008 PRESENT OR STORED	HEATER STOPS OPERATING 1.DEF : Excess voltage 2.DEF : Not enough voltage

NOTES	**Application condition for a fault finding strategy for a stored fault: only one fault can be recalled at a time:** The fault is declared present after: – the boiler has been ignited and with no other fault has been declared present.

Check the voltage between **tracks 1** and **2** of the 8-track connector, it should be between: **10.2 V < X < 16 V**.

Check the **insulation, continuity and absence of interference resistance of the connections**:

8-track connector **track 1** ⟶ **+ Battery**
8-track connector **track 2** ⟶ **Battery earth**

Repair if necessary.

If the fault persists, check the vehicle battery and charge circuit.

AFTER REPAIR	Apply the procedures to confirm that the repair is successful. Deal with any other possible faults. Clear the stored faults and check that no other fault appears.

FAULT FINDING - INTERPRETATION OF FAULTS

DF010 PRESENT OR STORED	START UP TIME EXCEEDED 1.DEF

NOTES	**Application condition for a fault finding strategy for a stored fault: only one fault can be recalled at a time:** The fault is declared present after: – two unsucessful attempts have been made to ignite the heater in **180 seconds** and no other fault is declared present.

Check the **air inlet and exhaust ducts**. Repair if necessary.
Check the heater diesel fuel supply pipes and ensure that they contain no air bubbles, and check the condition of the metering pump filter. Repair if necessary.
Measure the resistance at the metering pump terminals, if it is not approximately **10** $\Omega \pm$ **5%** replace the metering pump.
Check the condition of the **spark plug**. Replace if necessary.
Replace the **heater** if the fault persists.

AFTER REPAIR	Apply the procedures to confirm that the repair is successful. Deal with any other possible faults. Clear the stored faults and check that no other fault appears.

FAULT FINDING - INTERPRETATION OF FAULTS

DF011 PRESENT OR STORED	COLD BLOWER TIME EXCEEDED 1.DEF : If the flame detector > 70°C the fan is triggered for 4 minutes

NOTES	**Application condition for a fault finding strategy for a stored fault only one fault can be recalled at a time:** The fault is declared present after: – the boiler has been ignited and with no other fault has been declared present.

Check the exhaust gas and combustion air pipes. Repair if necessary.
Remove the blower cover and disconnect connector B2 from the control unit. Check the condition of the connector and replace it if necessary.
Check the **insulation, continuity and absence of interference resistance of the connections**: Connector B2 **track 1** ⟶ Flame detector Connector B2 **track 2** ⟶ Flame detector Repair if necessary.
Measure the resistance at the terminals of the flame detector. If it is not **1200 KΩ ± 5% at 50°C**, replace the internal wiring of the boiler (the flame detector is not separate from the internal wiring).
Replace the **heater** if the fault persists.

AFTER REPAIR	Apply the procedures to confirm that the repair is successful. Deal with any other possible faults. Clear the stored faults and check that no other fault appears.

FAULT FINDING - INTERPRETATION OF FAULTS

DF012 PRESENT OR STORED	CONTROL UNIT 1.DEF : Unidentified electrical fault

NOTES	**Application condition for a fault finding strategy for a stored fault: only one fault can be recalled at a time:** The fault is declared present after: – the boiler has been ignited and with no other fault has been declared present.

Replace the **control unit**.

AFTER REPAIR	Apply the procedures to confirm that the repair is successful. Deal with any other possible faults. Clear the stored faults and check that no other fault appears.

FAULT FINDING - INTERPRETATION OF FAULTS

DF013 DF014 DF015 PRESENT OR STORED	MINIMUM FLAME EXTINGUISHER OUTPUT AVERAGE FLAME EXTINCTION OUTPUT MAXIMUM FLAME EXTINGUISHER OUTPUT DEF : Unidentified electrical fault

NOTES	**Application condition for a fault finding strategy for a stored fault only one fault can be recalled at a time:** The fault is declared present after: – the boiler has been ignited and with no other fault has been declared present.

Check the exhaust gas and combustion air pipes. Repair if necessary.
Check the diesel supply pipes to the heater for air bubbles. Repair if necessary.
Check the condition of connector B2 in the control unit and replace it if necessary.
Check the **insulation, continuity and absence of interference resistance of the connections**: Connector B2 **track 9** → **+ Heater plug** Connector B2 **track 12** → **Earth** spark plug Repair if necessary.
If the fault persists, replace the **spark plug**.

AFTER REPAIR	Apply the procedures to confirm that the repair is successful. Deal with any other possible faults. Clear the stored faults and check that no other fault appears.

FAULT FINDING - INTERPRETATION OF FAULTS

DF016 **DF017** **DF018** **PRESENT** **OR** **STORED**	OVERHEATING DETECTION: LOW PROBABILITY OVERHEATING DETECTION: LIKELY OVERHEATING DETECTION: CONFIRMED DEF : Unidentified electrical fault

NOTES	**Application condition for a fault finding strategy for a stored fault only one fault can be recalled at a time:** The fault is declared present after: – the boiler has been ignited and with no other fault has been declared present.
	Special features **likely:** difference in temperature of 15°C between the sensor and the overheating switch **confirmed:** temperature at the sensor or switch > 125°C **low probability:** material temperature threshold exceeded, sensor or switch > 130°C.

Check the circulation of coolant through the system. Ensure that it is thoroughly degassed.
Remove the blower cover and disconnect connector B2 from the control unit. Check the condition of the connector and replace it if necessary.
Check the **insulation, continuity and absence of interference resistance of the connections**: Connector B2 **track 3** → Temperature sensor Connector B2 **track 4** → Temperature sensor Connector B2 **track 5** → Overheating switch Connector B2 **track 6** → Overheating switch Repair if necessary.
Measure the resistance at the sensor terminals. If it is not **12 KΩ ± 5% at 20°C**, replace the internal wiring of the boiler. Measure the resistance at the switch terminals. If it is not **12 KΩ ± 5% at 20°C**, replace the internal wiring of the boiler.
If the fault persists, replace the heater.

AFTER REPAIR	Apply the procedures to confirm that the repair is successful. Deal with any other possible faults. Clear the stored faults and check that no other fault appears.

FAULT FINDING - INTERPRETATION OF FAULTS

DF019 PRESENT OR STORED	BLOCK: TOO MANY SUCCESSIVE START UPS DEF : Unidentified electrical fault

NOTES	Priority in dealing with a number of faults: If more than one of faults **DF019** and **DF001**, **DF002** are stored, deal with faults **DF001 Pre-heater plug** and **DF002 Metering pump** first. **Application condition for a fault finding strategy for a stored fault only one fault can be recalled at a time:** The fault is declared present after: – ten unsucessful attempts have been made to ignite the heater and no other fault is declared present.

Clear **incorrect start up counter** using the delete command **RZ002**.

AFTER REPAIR	Apply the procedures to confirm that the repair is successful. Deal with any other possible faults. Clear the stored faults and check that no other fault appears.

FAULT FINDING - INTERPRETATION OF FAULTS

DF020 PRESENT OR STORED	BLOCK: SUCCESSIVE OVERHEATING DEF : Unidentified electrical fault

NOTES	**Application condition for a fault finding strategy for a stored fault only one fault can be recalled at a time:** The fault is declared present after: – the heater has overheated ten times and no other fault is declared present.

Delete **overheating meter** using the clear control **RZ001**.

AFTER REPAIR	Apply the procedures to confirm that the repair is successful. Deal with any other possible faults. Clear the stored faults and check that no other fault appears.

FAULT FINDING - CONFORMITY CHECK

NOTES	Only check the conformity after a **complete check** with the diagnostic tool. The values indicated in this conformity check are given as examples. Condition for performing check: **engine temperature below 81°C and external temperature below 5°C**.

Order	Function	Parameter or state Check or action	Display and notes	Fault finding
1	+ After ignition feed present	**ET001:** + After ignition present	**YES**	If there is a fault, refer to the fault finding procedure for state **ET001**
2	Engine running	**ET007:** Engine running	**YES** **NO** if control **AC002** is active, light the heater	If there is a fault, refer to the fault finding procedure for state **ET007**
3	Heater ventilation	**ET002:** Combustion air fan	**LIT**	**In the event of a fault,** perform the **fault finding procedure** for fault **DF004** Combustion air fan
		PR014: Heater fan voltage	**0 at 7 V**	
4	Flame detected	**ET003:** Flame detected	**YES**	**In the event of a fault,** perform the **fault finding procedure** for fault **DF006** Flame detector
5	System blocked	**ET004:** System blocked	**NO**	**In the event of a fault,** perform the **fault finding procedure** for faults **DF019** Block due to successive starting, and **DF020** Block due to successive overheating
6	Heater output	**ET005:** Heater output	**MIN** **OR** **AVERAGE**	If there is a fault, refer to the fault finding procedure for state **ET005**

FAULT FINDING - CONFORMITY CHECK

NOTES	Only check the conformity after a **complete check** with the diagnostic tool. The values indicated in this conformity check are given as examples. Condition for performing check: **engine temperature below 81°C and external temperature below 5°C**

Order	Function	Parameter or state Check or action	Display and notes	Fault finding
9	Overheating switch	**PR008:** Overheating switch value measured	**Overheats if the temperature is above 125°C**	**If there is a fault,** apply the **fault finding procedure** for fault **DF005** Overheating switch
10	Coolant temperature sensor	**PR010:** Coolant temperature sensor value measured	**X = engine temperature ± 5 ºC**	**If there is a fault,** apply the **fault finding procedure** for fault **DF003** Coolant temperature sensor circuit
11	Flame detector	**PR013:** Flame detector value measured	**X = heater temperature ± 20°C**	**In the event of a fault,** perform the **fault finding procedure** for fault **DF006** Flame detector
12	Computer supply voltage	**PR108:** Computer supply voltage	**10.2 V < X < 16 V**	In the event of a problem, refer to the fault finding procedure for parameter **PR108**
13	Spark plug feed instruction	**PR016:** Pre-heater feed instruction	**None**	**If there is a fault,** apply the **fault finding procedure** for fault **DF001** Pre-heating plug
14	Fuel pump control frequency	**PR017:** Fuel pump control frequency	**X = frequency in Hz ± 5%**	**If there is a fault** apply the **fault finding procedure** for fault **DF002** Fuel metering pump

FAULT FINDING - INTERPRETATION OF CONTROLS

AC002 **AC003**	HEATER CONTROL AC002 : Ignite the heater AC003 : Switch off the heater

NOTES	Important : **During boiler control phase, it is essential that the engine is running to avoid any overheating due to non-circulation of coolant.**

The boiler can be activated or deactivated using the control menu on the fault finding tool. If it is not activated, check the following:

– there is fuel in the tank,
– that the fuses are intact
– that the combustion air and exhaust pipes are not plugged.

Repair if necessary.

Check **the connection and the condition of the intermediary 5-track connector** between the vehicle wiring and the heater and replace if necessary.

Check **the insulation, continuity and absence of interference resistance** on the connections between:

+ Battery	→	**Track A** 5-track connector
Earth	→	**Track D** 5 track connector
+12 V after ignition	→	**Track E** 5-track connector
Diagnostic socket HK7	→	**Track B** 5-track connector

Repair if necessary.

If the fault persists, replace the heater.

FAULT FINDING - INTERPRETATION OF STATES

ET001	+ AFTER IGNITION PRESENT

NOTES	None.

If the state is **INACTIVE** check that the battery charge is **above 10.2 V**, if not repair the vehicle charge circuit.
Check **the connection and the condition of the intermediary 5-track connector** between the vehicle wiring and the heater and replace if necessary. Check **the connection and condition of the intermediate 8-track connector located on the heater mounting**.
Check **the insulation, continuity and absence of interference resistance** on the connections between: **+ battery** → **Track 1** 8-track connector **Earth** → **Track 2** 8-track connector **+12 V after ignition** → **Track 7** 8 track connector Repair if necessary.
Replace the heater **control unit** if the fault persists.

FAULT FINDING - INTERPRETATION OF STATES

ET005	HEATER OUTPUT

NOTES	None

OFF	State normal **if engine** off. The heater state is **OFF** if the external air temperature is **above 5°C**. The heater state is also **OFF** if the engine temperature is above **82°C**.

MIN	The state of the heater is **MINIMUM OUTPUT** when the engine temperature is between **77°C and 82°C (and is increasing)** and the external air temperature is below **5°C**. The state of the heater is **MINIMUM OUTPUT** when the engine temperature is between **82°C and 73°C (and is decreasing)** and the external air temperature is below **5°C**.

AVERAGE	The heater state is **MEDIUM OUTPUT** when the outside temperature is below **5°C** and the coolant temperature is below **73°C**, it operates at this level of output until the coolant temperature reaches **77°C**.

FAULT FINDING - INTERPRETATION OF STATES

ET007	ENGINE RUNNING

NOTES	None.

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Check the **insulation, continuity and absence of interference resistance** of the connection between:

Inertia sensor → **Track 1** independent heating relay

Repair if necessary.

With the engine running, check that there is a **12 V supply** to **track 1** and **track 3** of the relay and an **earth** from the oil pressure switch on **track 2** of the relay.

Repair if necessary (see the vehicle wiring diagram).

Check **the insulation, continuity and absence of interference resistance** on the connections between:

Track 5 independent heating relay → **Track C** ST1 5-track connector

Track C ST1 5-track connector → **Track 1** ST3 bimetallic strip connector

Track 2 ST3 bimetallic strip connector → **Track 6** 8-track connector

Repair if necessary.

If the continuity is poor between **tracks 1 and 2 of the ST3 connector**, replace **the bimetallic strip with a shunt** and test the continuity between **tracks 1 and 2**.

Replace the bimetal strip if necessary.

Replace the heater **control unit** if the fault persists.

FAULT FINDING - INTERPRETATION OF PARAMETERS

PR108	COMPUTER SUPPLY VOLTAGE

NOTES	None.

Check **the connection and the condition of the intermediary 5-track connector** between the vehicle wiring and the heater and replace if necessary.

Check **the insulation, continuity and absence of interference resistance** on the connections between:

+ Battery → **Track A** 5-track connector
Earth → **Track D** 5-track connector
+12 V after ignition → **Track E** 5-track connector

Repair if necessary.

Check **the insulation, continuity and absence of interference resistance** on the connections between:

Track A 5-track connector → **Track 1** 8-track connector
Track D 5-track connector → **Track 2** 8-track connector
Track E 5-track connector → **Track 7** 8-track connector

Repair if necessary.

Replace the heater **control unit** if the fault persists.

DIAGNOSTICS - CUSTOMER COMPLAINTS

NO DIALOGUE WITH THE COMPUTER	**CHART 1**
NO HEATING OR INADEQUATE HEATING	**CHART 2**

FAULT FINDING - FAULT FINDING CHARTS

CHART 1	No dialogue with the computer

NOTES	None.

Try the diagnostic tool on another vehicle.

Check:
– the connection between the diagnostic tool and the diagnostic socket (wiring in good condition),
– the engine fuses.

Check for the presence of **+ 12 V before ignition** on **track 16**, for **+ 12 V after ignition** on **track 1** and for an **earth** on **tracks 4 and 5** of the diagnostic socket.

Repair if necessary.

Check **the insulation, continuity and absence of interference resistance** on the connections between:

Connector **ST1 track A**	→	**V battery** (fuse box)
Connector **ST1 track E**	→	**+ After ignition** (fuse box)
Connector **ST1 track D**	→	**Earth**
Connector **ST1 track B**	→	**Track 7** of the diagnostic socket (line K)

Repair if necessary.

FAULT FINDING - FAULT FINDING CHARTS

CHART 2	No heating or inadequate heating

NOTES	Only refer to this customer complaint after a complete check with the diagnostic tool.

Is the **air flow** correct?
- **NO** → Carry out the fault finding procedure for climate control.
- **YES** ↓

Is the **air distribution** correct?
- **NO** → Carry out the fault finding procedure for climate control.
- **YES** ↓

With the engine warm, turn the heating on full.

Is the air supplied hot?
- **NO** → Are the heater matrix pipes on the bulkhead **hot**?
  - **YES** → Check that the heater works properly with the **AC002** engine running command. **Does the heater heat up correctly (see parameter PR010: Coolant temperature sensor)?**
    - **NO** → Replace the heater.
    - **YES** → Check that the heater matrix is not **blocked**, clean or replace it if necessary.
  - **NO** → Check that the heater works properly with the **AC002** engine running command. **Does the heater heat up correctly (see parameter PR010: Coolant temperature sensor)?**
    - **NO** → Replace the heater.
    - **YES** → Check that the heater matrix is not **blocked**, clean or replace it if necessary.
- **YES** → Check that the heater matrix is not **blocked**, clean or replace it if necessary.

End of fault finding.

AFTER REPAIR	Check that the system is operating correctly.